

**Draft Initial Study/Mitigated Negative Declaration
for the proposed
Bahia Ridge Fire Road and Trail Improvement Project
at
Rush Creek Open Space Preserve**



Public Comment Period: April 19 through May 21, 2021

Marin County Open Space District
3501 Civic Center Drive, Suite 260, San Rafael, CA 94903



*This document has been prepared pursuant to the
California Environmental Quality Act of 1970, as amended.*

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PROJECT INFORMATION

Project Title

Rush Creek Open Space Preserve Bahia Ridge Fire Road and Trail Improvement Project

Lead Agency Name and Address

Marin County Open Space District
3501 Civic Center Drive, Suite 260
San Rafael, California 94903

Contact Person

Jason Hoorn, Natural Resources Coordinator
(415) 320-4610 or jhoorn@marincounty.org

Project Location

Rush Creek Open Space Preserve, Novato, Marin County, California

Local Jurisdiction, General Plan Land Use Designation, and Zoning

APN: 143-151-20

Jurisdiction: City of Novato

General Plan Land Use Designation: Open Space (OS)

Zoning: Publicly Owned Open Space (PD)

INTRODUCTION

The Marin County Open Space District (MCOSD)¹ is proposing the Bahia Ridge Fire Road and Trail Improvement Project (proposed project) within Rush Creek Open Space Preserve. This Initial Study has been prepared to provide information to the public and decision makers regarding the scope of the proposed project, the potentially significant environmental impacts that could result from implementation of the proposed project, and mitigation measures that would reduce potentially significant environmental impacts to a less-than-significant level.

CEQA Framework

This Initial Study has been prepared in compliance with the California Environmental Quality Act (CEQA) and the State CEQA Guidelines. The basic purposes of CEQA are to:

1. Inform governmental decision makers and the public about the potential significant environmental effects of proposed activities
2. Identify 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

The purpose of this Initial Study is to disclose information obtained during the analysis of environmental effects that could result from implementation of the proposed project, including construction, operation, and maintenance that has a potential for resulting in a direct physical change in the environment or a reasonably foreseeable indirect physical change in the environment. The conclusions of the Initial Study have been utilized to determine whether a Negative Declaration, Mitigated Negative Declaration, or Environmental Impact Report should be prepared. This determination depends on the conclusions of the Initial Study regarding potentially significant environmental impacts, based on substantial evidence:

Negative Declaration The Initial Study concludes no potentially significant environmental impacts would occur from implementation of the proposed project and no mitigation measures are required.

Mitigated Negative Declaration The Initial Study concludes that potentially significant environmental impacts could occur from implementation of the proposed project. Mitigation measures are included to reduce potentially significant environmental impacts to a less-than-significant level.

Environmental Impact Report The Initial Study concludes that potentially significant environmental impacts could occur from implementation of the proposed project. Mitigation measures are included to reduce potentially significant environmental impacts to a less-than-significant level, but potentially significant environmental impacts could still result.

The MCOSD is the CEQA Lead Agency for the proposed project, meaning that the MCOSD has the principal responsibility for carrying out or approving a project, including the decision of which environmental document should be prepared.

¹ The MCOSD is a special district pursuant to the California Public Resources Code.

Summary of the Proposed Project

Erosion, habitat fragmentation, and unsustainable trail density² created by the network of social trails are of concern for the health of vegetation and wildlife throughout the Rush Creek Open Space Preserve. MCOSD's proposed Bahia Fire Road and Trail Improvement Project would passively close and actively decommission some existing social trails. Many of the social trails have developed over time by users seeking easier access with greater route diversity than what is provided by the existing official trail network. The social trails identified for closure and decommissioning are segments that are no longer needed to access areas, have resulted in habitat fragmentation, or are in unacceptable conditions resulting from uncontrolled runoff and soil erosion. The proposed project includes decommissioning an existing fire road and conversion of a segment of fire road to a multi-purpose trail, because the fire road conditions are poor, emergency access is difficult, and other existing roads can provide adequate access to respond to emergencies across the Rush Creek Open Space Preserve. New, sustainable connector trails would be constructed to provide visitor access to areas where the decommissioned social trails are closed or decommissioned. The proposed project also includes conversion of an existing social trail that is stable and located in an ideal location. This social trail will be converted to a hiking-only section to improve visitor safety. Erosion control, revegetation, visitor education and signage are also components of the proposed project. The proposed project would reduce environmental impacts and provide long-term benefits for Rush Creek Open Space Preserve.

PROJECT NEED, PURPOSE, AND OBJECTIVES

Project Need

Rush Creek Open Space Preserve, owned and managed by the MCOSD, is a popular recreational area for pedestrians, cyclists, and equestrians in northeastern Marin County near the city of Novato. The 522-acre Rush Creek Open Space Preserve is mainly comprised of oak-savannah uplands bounded to the north and east by marshlands of the lower Petaluma River watershed and residential neighborhoods to the west and south. Rush Creek Open Space Preserve is bisected by Cemetery Marsh, with the Pinheiro Ridge uplands to the west and the Bahia Ridge uplands to the east. It supports a network of multi-use fire roads for hikers, bikers, and equestrians and offers expansive views of adjacent protected wetlands, making it a popular destination for birdwatching. Recreational access is currently provided on a series of historical fire protection and ranch roads and one designated multi-use trail. However, many of the upland roads are steep and difficult to negotiate for some visitors. As a result, social trails have developed over time by users seeking easier access with greater route diversity than what is provided by the existing official trail network. Erosion, habitat fragmentation, and unsustainable trail density created by the network of social trails are of concern for the health of vegetation and wildlife throughout the Rush Creek Open Space Preserve. MCOSD determined that decommissioning several social trails, building new sustainable connector trails to replace the poorly located social trails, and changing the designated use of some trails would reduce environmental impacts and provide long-term benefits for Rush Creek Open Space Preserve. Figure 1 illustrates the project location and Figure 2 illustrates existing conditions in the proposed project area.

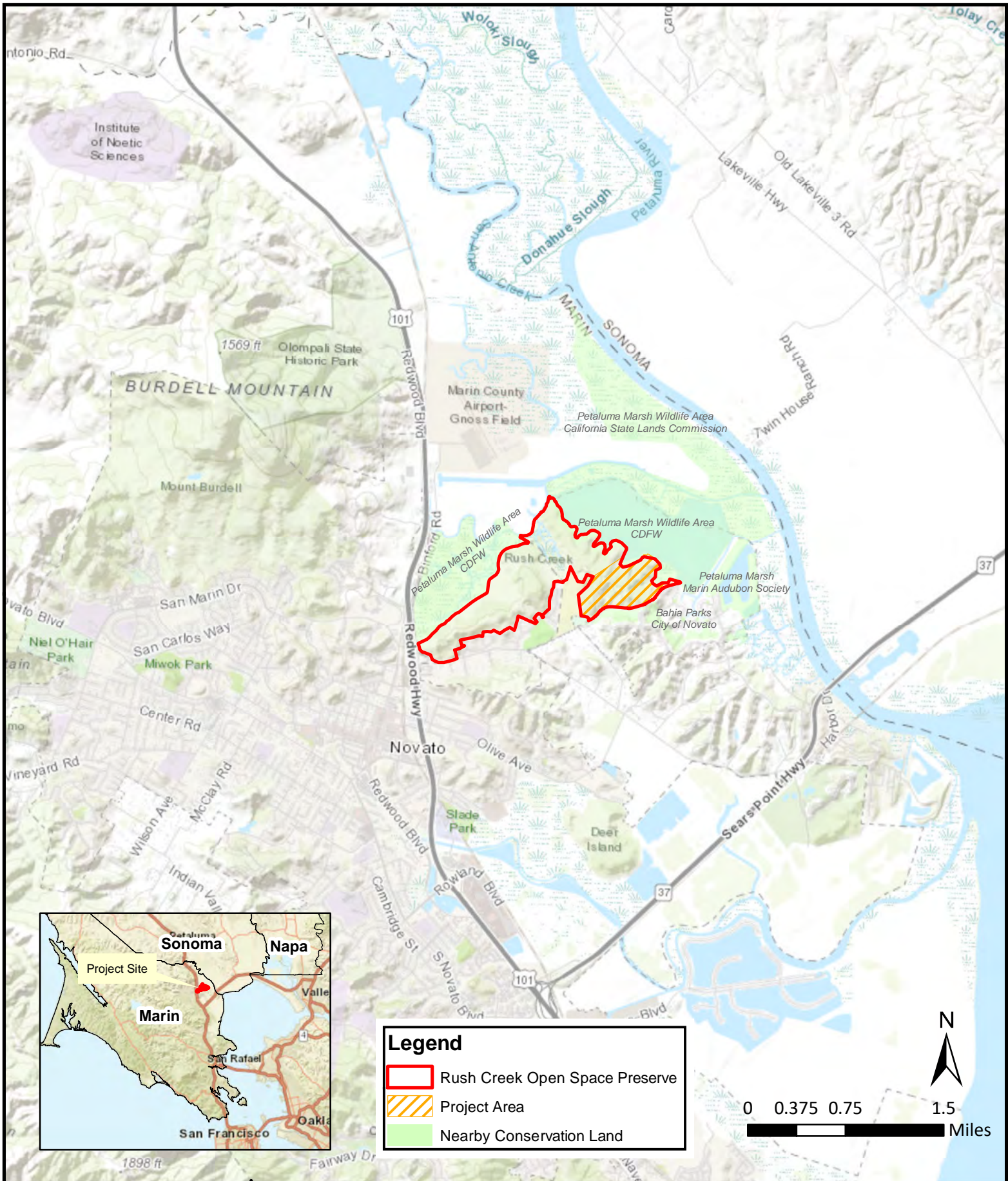
Figure 1 Project Location

Figure 2 Existing Conditions

Project Purpose

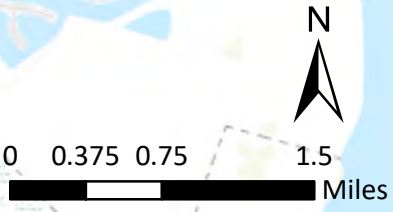
The purpose of the proposed project is to implement the MCOSD's Road and Trail Management Plan (RTMP) to provide the public with a safe multi-use trail system to enhance the visitor experience, reduce the environmental impacts on sensitive resources by reducing sedimentation and erosion, and establish a

² Trail density refers to the ratio of trail length to the preserve area or project area in which they are contained.

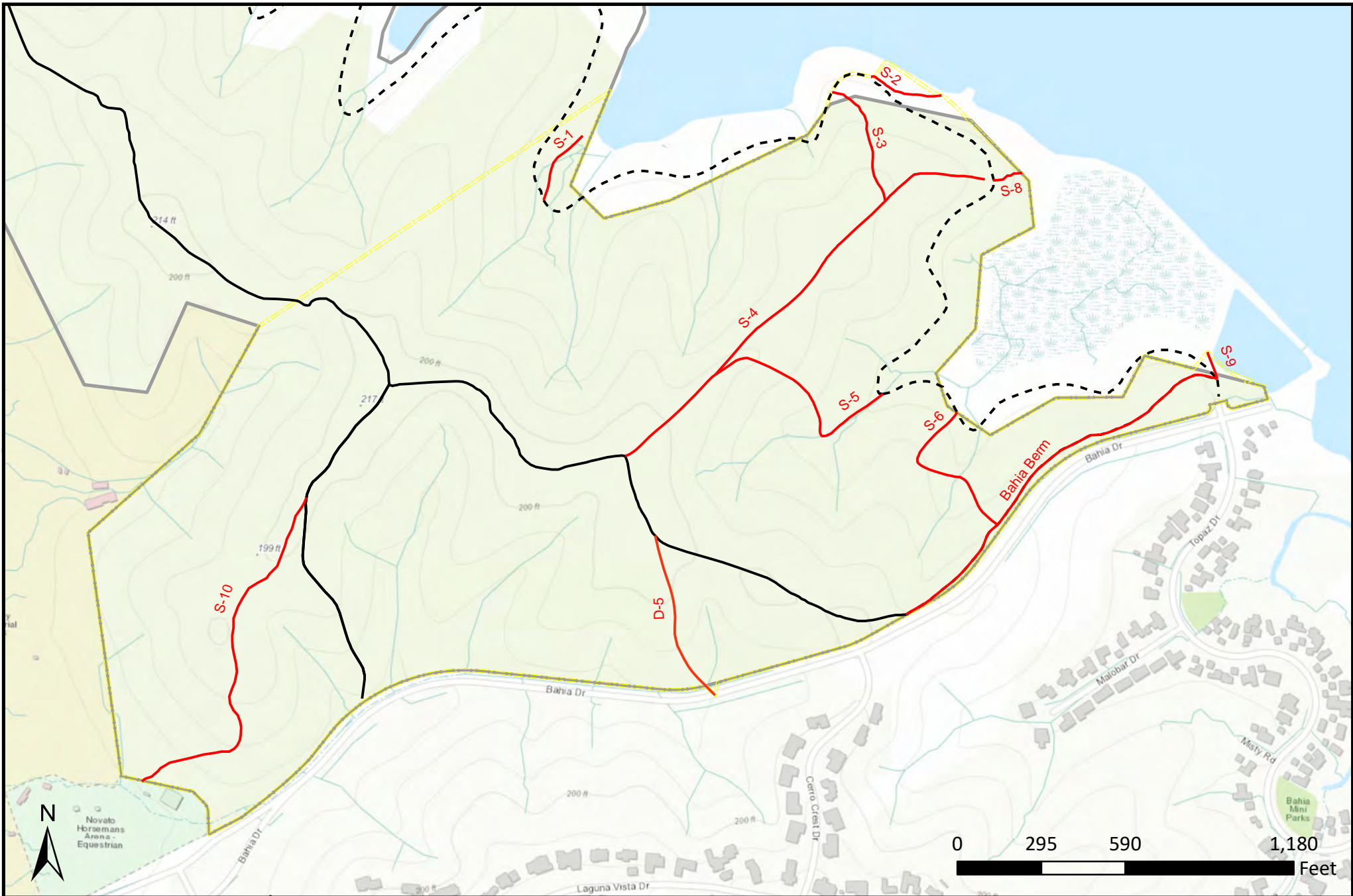


Legend

- Rush Creek Open Space Preserve
- Project Area
- Nearby Conservation Land



**Figure 1. Location Map
 Rush Creek Open Space Preserve
 Bahia Ridge Fire Roads and Trails Improvement Project
 Marin County Open Space District**



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10/20/2020

Sources: ESRI, Marin County, GRRCD

Figure 2. Project Area Existing Conditions
Rush Creek Open Space Preserve
Bahia Ridge Fire Roads and Trails Improvement Project
Marin County Open Space District

Legend

- Social Trail
- Designated Trail
- Fire Road
- Project Area
- Rush Creek Open Space Preserve

sustainable system of roads and trails that meet design and management standards to provide safe, year-round access along the trail alignment. Additionally, the proposed project would comply with the Marin County Parks Inclusive Access Plan (IAP). The RTMP and IAP are described in the Project Development section of this document.

Project Objectives

Implementation of the proposed project would achieve the following project objectives:

- Provide safe and sustainable year-round trail access to the Rush Creek Open Space Preserve
- Eliminate unsustainable social trails and road segments
- Enhance habitat quality
- Improve visitor access
- Reduce road and trail related erosion
- Reduce trail density and habitat fragmentation

EXISTING SETTING

Project Location, Surrounding Land Uses, and Access

Rush Creek Open Space Preserve encompasses 522-acres of uplands and wetlands near the City of Novato between the Petaluma River and State Highway 101; see Figure 1. The Preserve is located in the Petaluma River watershed, with Rush Creek and associated wetlands forming its northern boundary. Rush Creek collects runoff from northeastern Novato and flows east into Black John Slough, the Petaluma River, and San Pablo Bay. The saltwater and brackish marshes supported by the creek provide important habitat for birds and other wildlife. The wetlands are also utilized for winter stormwater management through a series of levees and floodgates. Rush Creek Open Space Preserve is primarily comprised of uplands adjacent to these wetlands and includes two main ridges. The Pinheiro Ridge runs from Highway 101 to the northeast, where it descends toward the wetlands. The Bahia Ridge, a shorter, secondary ridge, runs northwest-to-southeast on the eastern side of the preserve, where the proposed project area is located. Cemetery Marsh is located between these two uplands. Rush Creek Open Space Preserve supports a network of multiuse trails and fire roads for hikers, bikers, and equestrians and offers expansive views of adjacent protected wetlands, making it a popular destination for birdwatching; see Figure 2.

Surrounding land uses include the Rush Creek Marsh and Petaluma Marsh Wildlife Refuges to the north and northeast, owned by the California Department of Fish and Wildlife (CDFW); the Bahia Wetlands, owned by the Marin Audubon Society, and the Petaluma River to the east; and residential development along with City of Novato open space lands, a cemetery, and an equestrian center to the south. Rush Creek Park, a small county park that is not part of Rush Creek Open Space Preserve, is located across Saddlewood Road from Rush Creek Open Space Preserve.

Project Area Existing Conditions

The project area encompasses approximately 100 acres in the southeastern portion of Rush Creek Open Space Preserve along Bahia Drive. It consists primarily of forested open space land, with some ruderal areas along the fire roads and Bahia Drive. According to MCOSD's Vegetation and Biodiversity Management Plan (VBMP), the project area contains all four management zones: legacy, sustainable natural systems, natural landscape, and highly disturbed zones. Legacy zones are considered to have the highest biological value, and highly disturbed zones are considered to have the least. See MCOSD Governing and Guidance Documents, below, for a full description of the VBMP and these management zones.

The dominant vegetative communities in the project area are blue oak-white oak hybrid woodland, California bay-coast live oak forest, and coast live oak forest. Other communities include grasslands, black oak woodland, California bay forest, coyote brush scrub, and wet meadow³.

Topography within the project area is highly variable. From its high point on Bahia Ridge, the area slopes steeply downward to the west and east. Elevations in the project area range from approximately 280 feet above mean sea level (MSL) at Bahia Ridge to approximately 10 feet MSL along the marsh at the eastern edge of the property.

No named tributaries or defined water courses are present within the project area. Erosion within the project area, including erosion from the social trails that are proposed for closure or decommissioning, does not cause sediment impacts that reduce water quality in any streams or water courses. Public safety and trail sustainability, rather than water quality, are the primary reasons for the proposed social trail closures and decommissioning.

More detailed descriptions of specific project areas are provided below.

Blue Oak Trail Area

The Blue Oak Trail area extends from the Bahia Ridge Fire Road to the Bahia Trail along the eastern boundary of Rush Creek Open Space Preserve. Visitors have created numerous social trails to access the area between the trail and the fire road since no officially designated trail directly connects the two areas. The social trails exist primarily in blue oak-white oak hybrid woodland, with a diverse understory of native species and a relatively continuous canopy of oaks and California bay. The list below describes the condition of the social trail network in the area, including vegetation, terrain, and erosion/stability conditions. The social trails are identified numerically with a notation of S-#, and the trail locations are shown on Figure 2.⁴

Social trail S-1, in the northeast corner of the project area, is located within coyote brush scrub, meadow edge, and grassland communities. The trail is becoming overgrown by manzanita, coyote brush, and other shrubs. The trail is largely flat with a relatively low gradient, with no discernable erosion.

Social trails S-2 and S-3 are located along the eastern boundary of Rush Creek Open Space Preserve within blue oak-white oak hybrid woodland. These social trails occur in areas with robust native understory vegetation and a continuous canopy of oak and bay. S-2 is 145 feet in length and descends toward the marsh at a 9 percent gradient and is actively eroding. S-3 is a fall-line trail that alters natural hillslope drainage.

S-5 is an abandoned dozer line and social trail that extends from S-4 to the Bahia Trail through blue oak-white oak hybrid woodland and California bay-coast live oak forest. S-5 also crosses through an ephemeral drainage channel. The dozer line portion of S-5, from S-4 to the drainage, descends at a 35 percent gradient. It then transitions to a single-track social trail running from the drainage to Bahia Trail at an 8 percent gradient. S-5 is well-vegetated along its entire length, with no exposed soils, active erosion, or drainage alteration.

S-8 is a historical road cut that extends through blue oak-white oak hybrid woodland from the intersection of Bahia Trail and the proposed Blue Oak Trail to the levee complex along the marsh at the eastern boundary of Rush Creek Open Space Preserve. The cut is approximately 100 feet long and has been scraped to bedrock. Runoff currently flows down this social trail from social trail S-4.

Bahia Berm Trail Area

The Bahia Berm Trail area includes an existing social trail that parallels Bahia Drive along the southern edge of the project area. Given its location on a berm along a developed road, this area is designated as a Highly

³PCI. 2020. Biological Resources Assessment Rush Creek Open Space Preserve Trail Project.

⁴ "S" is the designation used to identify "social" trails. Social trails are informal trails created by erosion due to foot traffic from people and animals. The location of each social trail is shown on Figure 2.

Disturbed Zone in MCOSD's VBMP. The existing trail encounters no hillslope runoff because of its alignment along the berm crest. However, portions of the trail are poorly drained, resulting in some rainfall-induced erosion. The trail is moderately steep, with gradients between 5 percent and 25 percent.

The Bahia Berm Trail area also includes two existing social trails. S-6 is an old dozer line that runs between the Bahia Berm Trail and the Bahia Trail through blue oak-white oak hybrid woodland and California bay-coast live oak forest and crosses an ephemeral drainage. S-6 does not appear to be used as a social trail, and no ongoing erosion has been observed. As a result, it is proposed for passive closure.

S-9 is a short, steep social trail extending through grassland and scrub from the graded landing of the Bahia Trailhead at Topaz Way to the historical levee complex now under the jurisdiction of the California Department of Fish and Wildlife.

Iron Gate Multi-Use Trail and Horseman's Spur Trail Area

The Iron Gate Multi-Use Trail and Horseman's Spur Trail Area is located in the southwest corner of the project site. The area supports coast live oak forest, California bay-coast live oak forest, and blue oak-white oak hybrid woodland and includes the existing Iron Gate Fire Road and an active social trail, S-10.

Iron Gate Fire Road extends through blue oak-white oak hybrid woodland along a low gradient ridge top from Bahia Fire Road before dropping steeply down a ridge nose to its terminus at Bahia Drive. Iron Gate Fire Road is a redundant vehicle access point, as the ridge can be accessed more easily via the nearby Bahia Fire Road. The lower segment of Iron Gate Fire Road is extremely steep with a gradient of approximately 30 percent. This steep segment of the fire road prohibits both vehicle access and visitor use, and disrupts natural drainage and causes erosion. The steep lower portion of the fire road also runs through an area of relatively high habitat quality and native diversity, which is impacted by the road cut and associated hydrologic disruption. The upper portion of Iron Gate Fire Road along the ridge top has gradients from 0 percent to 9 percent. Some areas of active erosion are present.

S-10 is an active social trail, running from the Novato Horsemen's property to a ridgetop location on Iron Gate Fire Road, that is frequently used by equestrians. It travels through coast live oak forest, California bay-coast live oak forest, and blue oak-white oak hybrid woodland. This cross-contour trail includes steep gradients up to 20 percent, and impacts hillslope drainage and is susceptible to erosion. S-10 is proposed for active decommissioning.

SUMMARY OF THE PROPOSED PROJECT

The proposed Bahia Fire Road and Trail Project would decommission approximately 7,000 feet of existing social trails and develop approximately 2,200 feet of new trails at Rush Creek Open Space Preserve. The trails that would be adopted into the Rush Creek Open Space Preserve system as a result of the proposed project summarized below:

Blue Oak Trail. A new trail would be constructed to replace an existing social trail that would be decommissioned. The proposed Blue Oak Trail would be curvilinear, generally following the natural contours of the land, which easily allows for permanent and frequent drainage controls to be incorporated into its construction. The average gradient of the alignment is below 10 percent which would result in a sustainable trail from both a soil stability and trail maintenance perspective.

Iron Gate Trail. The proposed Iron Gate Trail consists of a fire road-to-trail conversion, decommissioning the lower segment of the existing Iron Gate Fire Road, and new trail construction. The proposed trail would provide a sustainable connection between Bahia Ridge and Bahia Drive. The lower segment of the existing Iron Gate Fire Road would be decommissioned and the upper segment would be converted to a trail. A new trail would be constructed between the converted portion of Iron Gate Fire Road and Bahia Drive. It would include one

climbing turn and one turnpike or causeway structure to cross a small alluvial fan near the lower trailhead at Bahia Drive.

Horseman's Spur Trail. The Novato Horsemen's Association property borders the Rush Creek Preserve near Bahia Drive and H-Lane. An existing social trail would be decommissioned and the proposed Horseman's Spur Trail would be constructed to provide a sustainable equestrian access from the Novato Horsemen's Association property to the Iron Gate Trailhead. The proposed trail would generally parallel the Horsemen's property line and then transition along the flat street frontage adjacent to Bahia Drive for 400 feet to the Iron Gate trailhead. The Horsemen's Spur Trail is proposed as an equestrian and hiking only trail.

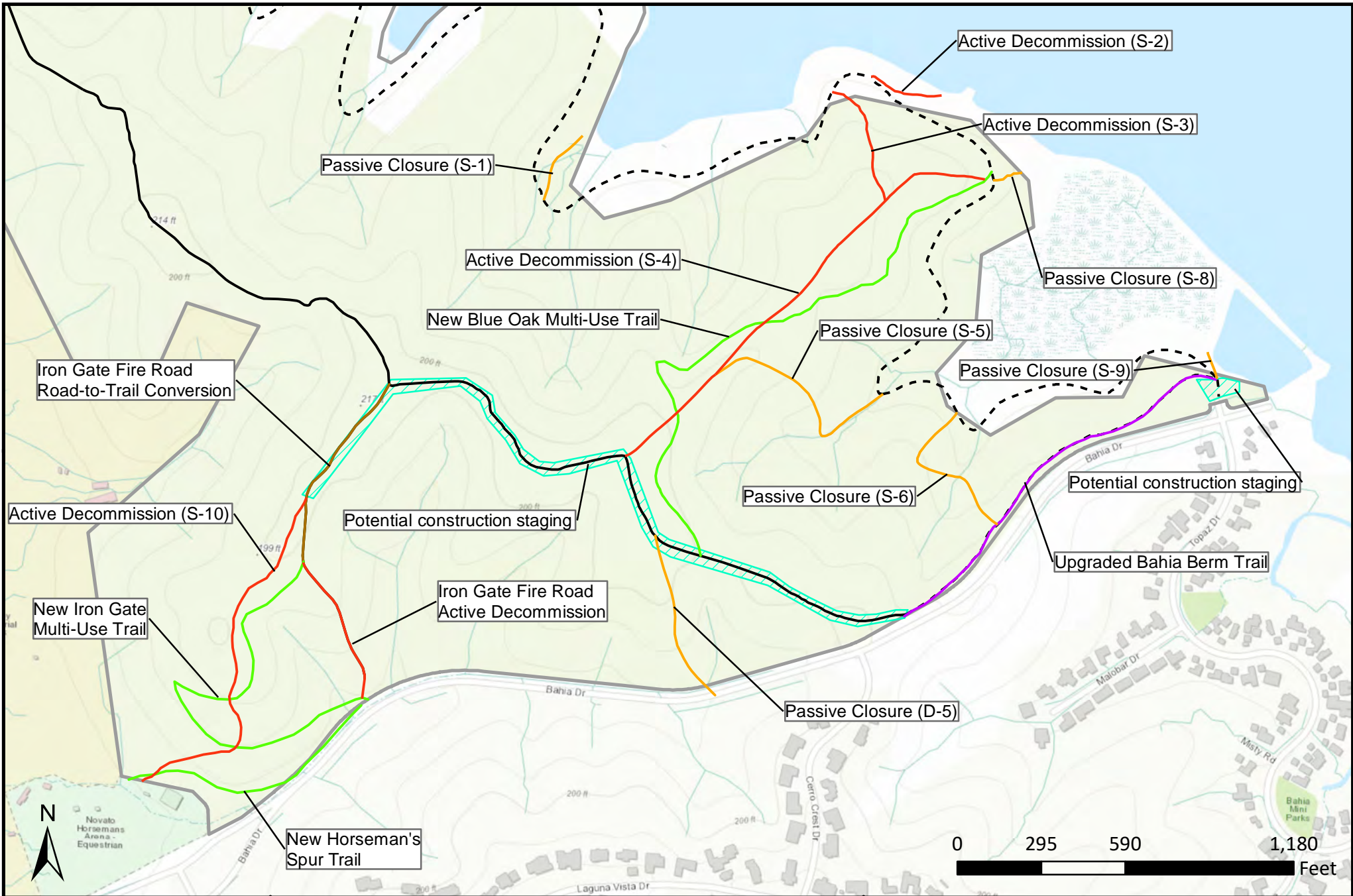
Bahia Berm Trail. The Bahia Berm Trail is an existing trail that parallels Bahia Drive, descending from the Bahia Ridge Fire Road gate to the trailhead of the Bahia Trail and occupies the top of the cut bank created during the construction of Bahia Drive. The Bahia Berm Trail is proposed for upgrade and adoption as a hiking only trail. A designated hiking only trail allows pedestrian access but does not allow access by equestrians or cyclists. This designation is proposed due to the trail's narrow width, lack of passing space, and steep downslopes on both sides of the trail. In addition, this trail provides an important connection between Bahia Ridge Fire Road and the Bahia Trail without walking along Bahia Drive, which does not have a sidewalk.

To accomplish the overall project, MCOSD would implement the following project elements as illustrated on Figure 3, Proposed Project. Important definitions of each project element are provided in detail in the sections below.

- Passively close five social trails using mainly passive closure measures including installation of split rail fencing and erosion blanket to deter continued use (S-1, S-5, S-6, S-8, S-9)⁵.
- Actively decommission and restore four social trails utilizing active closure measures including tread decompaction, cross drain installation, and recontouring to restore the area and deter future use (S-2, S-3, S-4, S-10).
- Restore approximately 500 feet of steep and unsustainable lower segment of Iron Gate Fire Road using active decommissioning measures.
- Convert 690 feet of the upper Iron Gate Fire Road from the full width roadway to a narrowed multi-use trail along the ridge top.
- Upgrade 1,375 feet of Bahia Berm Trail from a social trail to a hiking only system trail.
- Construct 2,440 feet of new multi-use Blue Oak Trail to replace the decommissioned S-4 social trail.
- Construct 1,680 feet of new multi-use trail (Iron Gate Trail) to replace the decommissioned segment of Iron Gate Road.
- Construct 970 feet of hiking and equestrian only Horsemen's Spur Trail to replace the decommissioned S-10 social trail.

Figure 3. Proposed Project

⁵ "S" is the designation used to identify "social" trails. Social trails are informal trails created by erosion due to foot traffic from people and animals. The location of each social trail is shown on Figure 2.



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10/20/2020

Sources: ESRI, Marin County, GRRCD

Figure 3. Proposed Project
Rush Creek Open Space Preserve
Bahia Ridge Fire Roads and Trails Improvement Project
Marin County Open Space District

Legend

- Actively Decommission Trail/Road
- Passively Close Trail
- Upgrade and Designate Trail
- Construct New Trail
- Road to Trail Conversion
- - - Designated Trail (No Action)
- Fire Road (No Action)
- ▨ Potential Staging Areas
- ▭ Rush Creek Open Space Preserve

PROJECT DESCRIPTION

The following provides details regarding the proposed project located in the eastern section of the Rush Creek Open Space Preserve. The location of components of the proposed project are shown on Figure 3, Proposed Project.

Passive Trail Closure, Active Decommissioning and Restoration

The proposed project would passively close and actively decommission social trails to reduce environmental impacts resulting from sedimentation and erosion and to reduce trail density through sensitive areas to reduce habitat fragmentation.

Passive Trail Closure

Passive trail closure⁶ would be used to eliminate use along existing social trails that do not require stabilization or scarification of the trail tread to effectively close trail segments. No earthwork would be involved to close these trails. The proposed project includes passive trail closure for five social trails totaling approximately 1,890 feet (S-1, S-5, S-6, S-8, S-9). Proposed passive trail closure methods include measures to disguise social trails to make it look like a trail was never there, to reduce visual openings of the old trail corridor and to educate visitors about trail closures. Closure methods would include a combination revegetation efforts and physical barriers to eliminate use and disguise the trail. Education would be used to help visitors understand why routes must be closed, and trail maps would be updated to remove all closed trail segments.

Passive trail closure methods would include measures such as use of erosion control blankets to cover bare soil and blend the social trail into the surrounding landscape to prevent visitor use. No heavy equipment would be used to close these trails. Trail ruts may be filled with soil or mulch to improve blending into the surrounding area where needed. Closures may also include natural recovery to allow local vegetation to re-establish itself along abandoned sections of closed social trails. Natural recovery would be used where soil conditions are present to serve as a seedbed and in areas that have suitable native seed sources nearby. Active revegetation⁷ efforts may be used to augment natural recovery in areas where soil conditions or native seed sources may not be sufficient to meet revegetation objectives, especially in areas with potentially high visibility.

Proposed revegetation is discussed in more detail below in the Revegetation Section.

Each of the five passive trail closure segments would receive different treatments based on existing trail conditions as follows.

- **S-1:** S-1 trail is a single-track social trail that is fairly well vegetated and has no discernable erosion or sediment transport. This trail segment would be closed for public use and allowed to revegetate naturally.
- **S-5:** S-5 trail is an abandoned dozer line located between Bahia Trail and social trail S-4. Revegetation efforts would be concentrated around the trail portion that intersects with the Bahia Trail to help discourage visitor use.
- **S-6:** S-6 trail is an abandoned dozer line located between Bahia Drive and Bahia Trail. Passive closure through visitor education is proposed.

⁶ Passive trail closure/passive restoration is defined as allowing an abandoned segment of trail to naturally recover following elimination of public access. Passive trail closure areas have limited existing erosion and trail drainage problems and the surrounding area provides sufficient seed source to allow for natural revegetation to occur.

⁷ Active revegetation is defined as planting the area using native plant species that will establish and grow well on the site without impeding natural community recovery and succession. Active revegetation differs from passive revegetation. Passive revegetation allows local vegetation to re-establish itself on an abandoned section of trail.

- **S-8:** S-8 trail is a short, steep social trail. Passive closure through visitor education is proposed, no other closure methods are proposed.
- **S-9:** S-9 trail was previously graded to bare mineral soil with some exposed bedrock. Installation of erosion control blanket and a split rail fence at the trail entrance would be installed along with use of visitor education to discourage use.

Active Trail Decommission

Active decommissioning measures would be used to stabilize eroded sections of trail and prevent future erosion, promote natural revegetation, and deter future use. Heavy equipment would be used to support active trail decommissioning to recontour slopes, decompact trail tread, and install cross-drains where appropriate given the site conditions in each area. Active trail decommissioning strategies would reestablish local drainage patterns, improve infiltration, promote revegetation, and blend the decommissioned trail corridor back into the surrounding landscape. The trail tread would be scarified where needed to reduce compaction, improve revegetation success, and improve infiltration. Active and passive/natural revegetation⁸ efforts would be implemented following the trail decommissioning measures.

The proposed project includes active trail decommissioning along four social trails totaling approximately 3,740 feet (S-2, S-3, S-4, S-10). These social trails are located in areas prone to runoff, erosion, and sedimentation. In addition, approximately 500 feet of the lower segment of the Iron Gate Fire Road would be actively decommissioned. This fire road segment is steep, unstable, and eroding, and no longer needed for vehicle access. Active trail decommissioning techniques would vary by trail segment with cross drains and other drainage features installed. The location of these social trails are shown on Figure 3, Proposed Project.

- **S-2:** S-2 trail is approximately 145 feet long. Active decommissioning of the trail would include recontouring to reestablish the natural hillslope drainage and obliterate the trail bench-cut. The trail would also receive erosion control and both active and passive revegetation efforts.
- **S-3:** S-3 would be decompact along the lower 70 feet to promote infiltration. The area would also receive native erosion control seed and erosion control blanket would be installed to prevent surface erosion, promote revegetation, and deter visitor access. Portions of the trail would have cross drains installed to improve drainage and reduce erosion. Closure treatments for S-4 would sufficiently close the upper portion of the S-3 trail; therefore, no passive closures or active decommissioning would be implemented in that location.
- **S-4:** Decommissioning of S-4 would be concentrated at both ends of the trail to reduce chronic erosion from the exposed trail. Trail closure signage, installation of split rail fencing, decompaction of the trail tread, construction of cross-drains, and installation of erosion control blanket are the proposed active trail decommission measures. Central segments of the closed trail would be allowed to revegetate naturally.
- **S-10:** S-10 would be decommissioned through installation of cross-drains and the hillslope would be recontoured where feasible along the lower half of the trail. The upper half of S-10 is located along a low gradient hillslope that requires no active closure methods.
- **Lower Iron Gate Fire Road:** A 500-foot segment of lower Iron Gate Fire Road would be actively decommissioned, because the section is extremely steep and eroding. Active trail decommission activities would include installation of split rail fencing, active revegetation efforts, mulching, hillslope recontouring where feasible, installation of erosion control blanket, and installation of cross drains.

⁸ Passive/natural revegetation is defined as allowing local, native vegetation to re-establish itself on an abandoned section of trail.

Monitoring Passive Trail Closure and Active Trail Decommissioning

MCOSD maintains a monitoring program that would include regular inspections of closed and decommissioned trails. This allows for early detection of, and rapid response to, any trail closure problems. The decommissioned trails at Rush Creek Open Space Preserve would be incorporated into this monitoring program, which would identify locations where visitors are bypassing closed entrances, determine the effectiveness of passive and active revegetation efforts, and assess the effectiveness of trail drainage features. If monitoring indicates passive trail closures or active trail decommissioning is ineffective or does not meet MCOSD objectives to reduce environmental impacts, MCOSD would identify and implement remediation actions. Remediation actions would include increased ranger presence to enforce the closure, increase signage about the trail closure, and installation of cameras to help with law enforcement efforts. Physical remediation actions may include additional active revegetation efforts to improve conditions and additional erosion control efforts to help stabilize the area. Monitoring and remediation work would continue until results meet expectations.

Fire Road to Trail Conversion

A 690-foot section of the existing upper Iron Gate Fire Road would be converted from a full width fire road to a five-foot-wide multi-use trail. The lower segment of the fire road would be actively decommissioned as described under “Active Trail Decommission.” A combination of techniques, including decompaction, recontouring, revegetation, mulching, wood placement, and the installation of split rail fence and erosion control blanket, would be utilized to convert the fire road to a five-foot-wide trail. Erosion control blanket would be installed at the entry gate to disguise the trail and help it blend with the surrounding landscape. The new Iron Gate Multi-Use Trail would connect to the fire road-to-trail conversion segment.

New Trail Construction

Several new trail segments would be constructed to provide connections to key locations along the fire road and trail network. These would provide sustainable replacements to several steep and eroding social trails that would be decommissioned as part of the proposed project. The proposed new trails would be designed and constructed to meet engineering standards addressed in the RTMP.⁹ Design and construction would be implemented in conformance with the Best Management Practices (BMPs) included in the RTMP, and the specific BMPs for the proposed project are addressed in the Best Management Practices section of the Project Description.

Blue Oak Multi-Use Trail

MCOSD recognizes that the S-4 trail provides a critical connection between Bahia Ridge Fire Road and the Bahia Trail; therefore, the new Blue Oak Multi-Use Trail would be constructed following decommissioning of social trail S-4. The proposed 3,410-foot Blue Oak Trail would be a multi-use system trail connecting to the Bahia Ridge Trail to the south and the Bahia Trail to the north as shown on Figure 3, Proposed Project. It would be constructed using a curvilinear design generally following the natural contours of the hillslope to allow for installation of permanent and frequent drainage controls along the 7 percent grade trail. The average gradient of the alignment would be below 10 percent, which would result in a sustainable trail from both a soil stability and trail maintenance perspective.

Iron Gate Multi-Use Trail

The existing Iron Gate Fire Road is a redundant vehicle access point, as the ridge can be reached with much less difficulty from the Bahia Fire Road entrance on Bahia Drive, located 0.4 miles to the east. The existing road is steep, poorly drained, and experiences accelerated erosion during runoff events. MCOSD understands the existing fire road provides public access to Rush Creek Open Space District from the Bugeia and H-Lane neighborhoods in Novato. As such, the project proposes to convert a segment of the existing fire road to a five-

⁹ Marin County Open Space District. 2014. Road and Trail Management Plan. December.

foot-wide trail (described above under Fire Road to Trail Conversion), decommission the lower segment of the fire road (described above under Active Trail Decommissioning: Lower Iron Gate Fire Road), and construct a new, sustainable trail segment to connect Bahia Ridge and Bahia Drive. The 1,680 feet of new trail construction would result in a trail with less than 7 percent grade. It would include one climbing turn and one turnpike or causeway structure to cross a small depositional area of loose, unconsolidated material near the lower trailhead at Bahia Drive.

Horseman's Spur Hiker/Equestrian Only Trail

The Novato Horsemen's Association property borders the Rush Creek Open Space Preserve near Bahia Drive and H-Lane. The proposed Horseman's Spur Trail would provide hiker and equestrian access from Novato Horsemen's to the Iron Gate Trailhead and would replace the actively decommissioned S-10 social trail. The proposed 970-foot trail would generally parallel the Horsemen's property line and then transition along the flat street frontage adjacent to Bahia Drive for 400 feet to the Iron Gate trailhead.

The trail network following implementation of the proposed project is illustrated on Figure 4, Post Project Trail Network.

Figure 4, Post Project Trail Network

Existing Social Trail Upgrade

Bahia Berm Hiker-only Trail

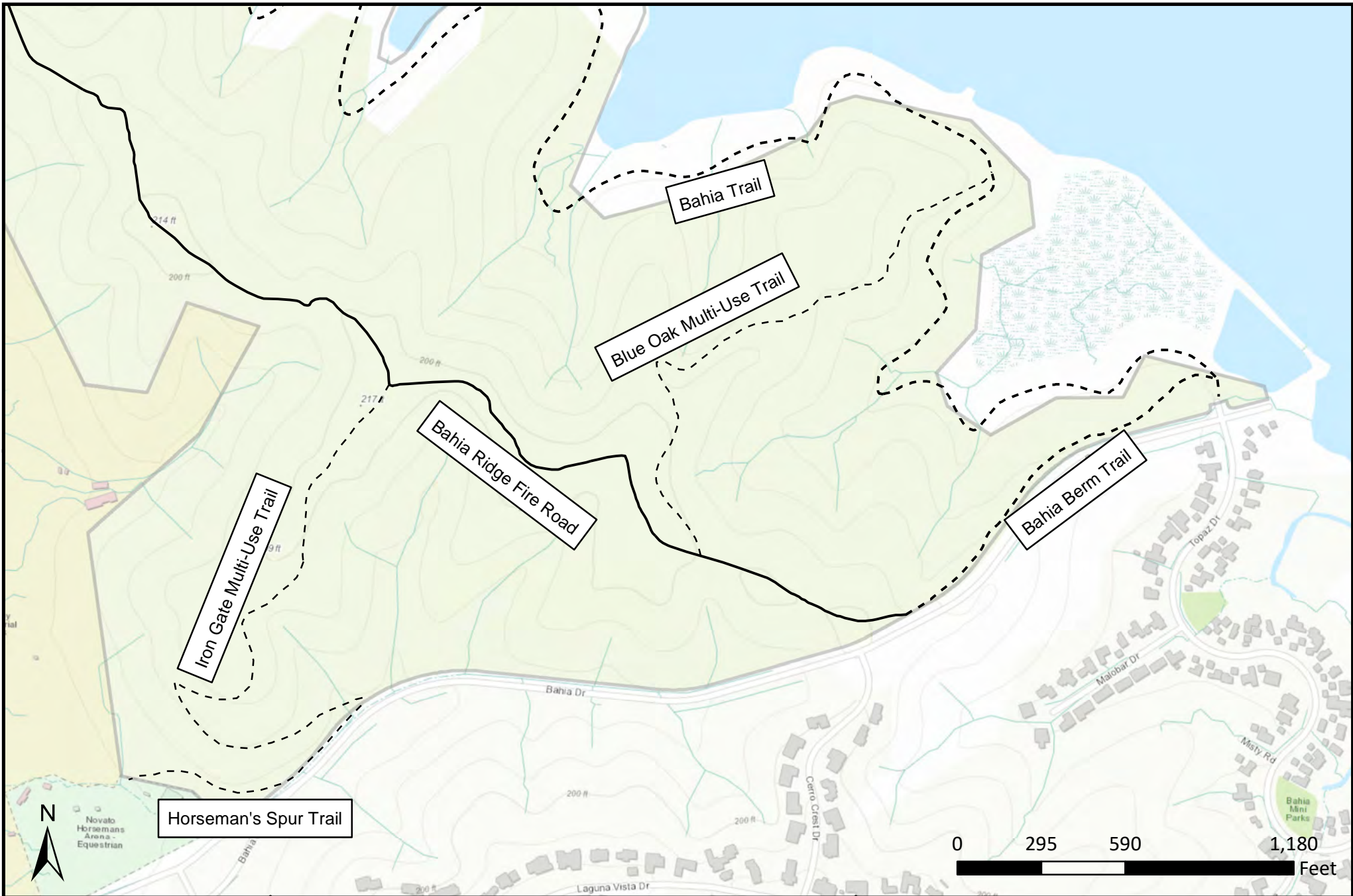
The Bahia Berm Trail is an existing social trail that parallels Bahia Drive, descending from the Bahia Ridge Fire Road gate to the trailhead of the Bahia Trail. The social trail developed along the roadway cutbank following construction of Bahia Drive. The trail provides hikers with an alternative to walking along Bahia Drive, which does not have a sidewalk. The Bahia Berm Trail is proposed for adoption as an official designated hiking-only trail. Because the trail is moderately steep and is located along the narrow cutbank, it is not desirable as a multi-use trail. The narrow, two-foot wide trail does not allow for safe passing widths or gradients for all user groups. The proposed project includes the installation of drainage improvements at key locations along the entire 1,375-foot trail length to improve conditions, reduce rutting and decrease erosion.

Erosion Control

MCOSD would implement erosion control on disturbed areas as part of the proposed project. Erosion control would include native erosion control seed mix and rice straw, where appropriate to mulch disturbed ground. If there is ample residual dry matter¹⁰, MCOSD may collect this material and substitute it for seed and straw where available to cover the soil surface to reduce erosion potential. On steeper segments of the Iron Gate Fire Road, erosion control would include installation of erosion control blanket along with straw wattles or coir logs¹¹. Silt fencing would be installed at the lower end of the actively decommissioned Iron Gate Fire Road and at the bottom of the actively decommissioned social trail S-2.

¹⁰ Residual dry matter includes dead grass, leaves, and other native material to provide ground cover.

¹¹ Straw wattles are man-made tubes of compressed straw, wheat or rice, also known as erosion logs. They provide perimeter protection along contours or at the base of slopes, inlets and roadways to reduce soil erosion, runoff and retain sediment. Coir logs (also called coir rolls) are densely packed solutions. They provide strong mechanical support to the soil and prevent it from being displaced by strong winds and water currents.



**Figure 4. Post-Project Trail Network
 Rush Creek Open Space Preserve
 Bahia Ridge Fire Roads and Trails Improvement Project
 Marin County Open Space District**

Legend

- - - Trail
- Fire Road
- Rush Creek Open Space Preserve



PRUNUSKE CHATHAM, INC.

10/20/2020

Sources: ESRI, Marin County, GRRCD

Revegetation

Revegetation would be included as part of all trail closures and new trail construction to stabilize disturbed areas and as part of social trail closure strategies. Two revegetation methods would be used depending on the site and the revegetation objectives. Proposed revegetation includes both passive and active methods.

Passive/natural revegetation would be used along abandoned trail segments where existing conditions facilitate local, native vegetation to re-establish itself. Passive revegetation would be used where soil and other site conditions allow for natural revegetation to occur without the need for manual seeding or planting of native vegetation and without the need for soil scarification or other manual planting techniques.

Active revegetation efforts would be used on disturbed sites to manually plant the areas with native seeds or shrubs. Active revegetation would occur in areas where site conditions following trail closure or new trail construction would leave the site prone to erosion or in areas where native seed sources are not present in sufficient quantities to allow for native vegetation to establish in the area.

Active revegetation would occur with locally sourced natives that could include California brome, purple needle grass, and blue wild rye. Shrubs and trees could include local coyote brush; toyon; California bay, blue oak, coast live oak, madrone, and manzanita sourced from Rush Creek Open Space Preserve or in areas nearby. Planting could occur immediately following trail closure and decommissioning and new trail construction if weather conditions were adequate for new plant survival; otherwise, planting would occur in fall and early winter. Plantings may require irrigation during the plant establishment period, typically no more than three years. Irrigation would be accomplished with water tanks and would not require installation of piping or associated infrastructure. Recycled wastewater would be used for irrigation to the extent feasible.

Signage and Public Education

MCOSD proposes to increase trail signage to inform visitors of the need to remain on designated network trails to improve success of trail closures and minimize the risk of new social trail establishment and to deter use of closed social trails. Implementation of the education program for the proposed project would focus on resource protection. MCOSD would produce educational signs and to disseminate information through the webpage, e-blasts, and social media accounts. The public education program would also include interpretive hikes on the Rush Creek Open Space Preserve with the County Naturalist, and educational tabling events set up at trailheads, such as Coffee with a Ranger. These programs would be used at the Rush Creek Open Space Preserve to inform users about conditions in the area and why social trails were closed.

Construction Activities

Construction of the proposed project would adhere to the Road and Trail Standards and BMPs outlined in Chapter 6 of the RTMP and included in Appendix A. The specific construction-period BMPs that would be implemented for this project are also listed in the Best Management Practices section, below. Construction would begin in mid-April, contingent on dry weather and the results of pre-construction special-status species surveys. Project construction would not include in-water activities, and no water crossings are proposed.

Construction would occur Monday through Friday, from 7:00 a.m. to 6:00 p.m. and would require approximately four to six weeks to complete. Much of the work would be accomplished using hand tools, but the proposed new trail construction, active decommissioning, and trail upgrades/conversion would require some use of equipment, including a mini excavator, dozer, water truck, and compactor. Construction staging areas would be restricted to existing fire roads, trails, and other developed or disturbed areas. Access to the project site for construction vehicles and equipment would be from Bahia Drive. Road closures would likely not be required for project construction, however temporary slowdowns may be required for equipment to enter and exit the project area.

New trail construction, road-to-trail conversion, and upgrade treatments would be constructed based on design typicals (see Figures 5 through 11). Areas to receive specific treatments would be marked with flagging in the field by the project engineer.

Project construction would require approximately 10 tons of base rock mix for trail surfacing, construction of three low-level rock walls, and installation of approximately 30 rolling dips. Minor tree trimming would be needed along the proposed new trail alignment.

Existing trails within the project area would be closed during the construction period to ensure public safety. Emergency access would be maintained at all times.

Operation and Maintenance

After project construction, recreational use of the proposed new trails would include hiking, biking, dog walking, and equestrian use on the Blue Oak and Iron Gate Trails, equestrian and hiking-use only on the Horsemen's Spur, and hiking only on the Bahia Berm Trail. The new trail configuration and upgraded trail would be incorporated into the Region 4 trail system and would be published on Marin County Parks trail maps. The proposed project does not include any new parking, trailheads, or other amenities to improve access to the trail system. Increases in trail use as a result of the proposed project are anticipated to be minor, while equestrian and bicycle use would decrease along the upgraded Bahia Berm Trail with the change in use designation. The level and types of recreational use of the project area to remain essentially the same as existing use patterns after implementation of the proposed project, although the improved conditions could attract a nominal increase in visitor use; however, increased use is expected to be minimal and largely result from the local communities.

The proposed new trail configuration would improve access for rangers and emergency responders on foot or using small all-terrain vehicles with the improved conditions along existing trails and with improved access using the new Iron Gate Trail and the Blue Oak Trail. Emergency vehicle and park ranger access would be unchanged along Bahia Ridge Fire Road.

Once the trails are incorporated into the MCOSD trail system, the trails would be maintained by MCOSD staff. As the trails are designed to improve existing trail sustainability and reduce erosion and runoff issues along existing trails in the project area, the level of maintenance is expected to be lower than existing trail maintenance. Regular maintenance of the trail surface and drainage includes brushing the trail corridor and clearing trail obstructions, such as fallen trees and branches, as needed. As part of the proposed project, the passively closed and actively decommissioned trail segments would be monitored to ensure revegetation and other closure methods are successful and prevent continued use of the decommissioned trails. Minor maintenance work may occur as needed to prevent access to the closed and decommissioned trails.

Project Design Features

The MCOSD would design the project and plan the construction in compliance with the RTMP. Appendix A of this document contains a list of all BMPs incorporated into the project. The following trail design features have been incorporated into the project design.

Figure 5: Typical Trail Turnpike

Figure 6: Typical Turnpike without a Ditch

Figure 7: Typical Insloped and Outsloped Trail

Figure 8: Typical Rolling Drainage Dip

Figure 9: Typical Cross Drain for Trail Drainage

Figure 10: Typical Grade Reversal for Trail Drainage

Figure 11: Typical Road-to-trail Conversion

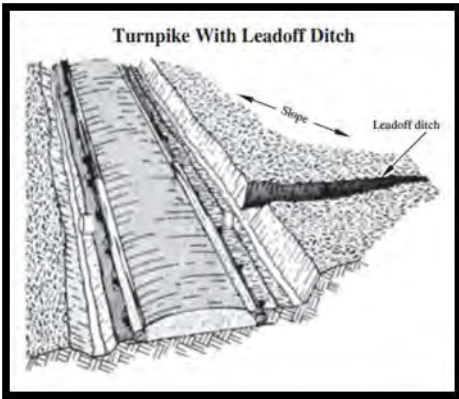


Figure 5: Typical Trail Turnpike

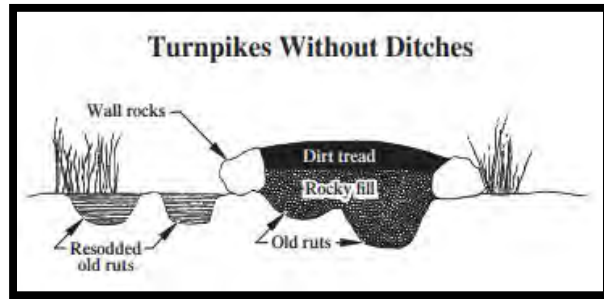


Figure 6: Typical Turnpike without a Ditch

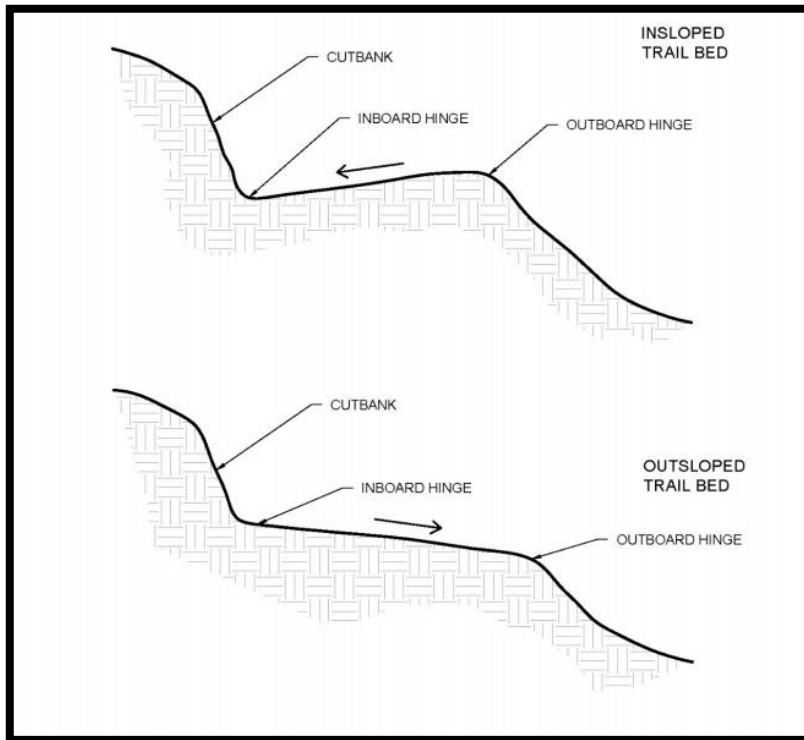


Figure 7: Typical Insloped and Outsloped Trail

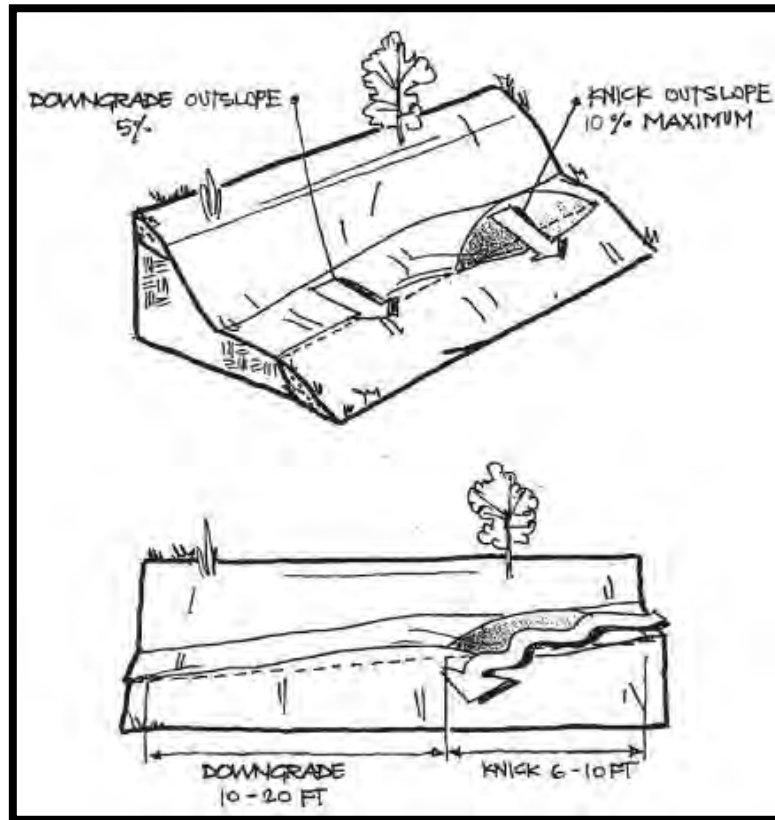


Figure 8: Typical Rolling Drainage Dip

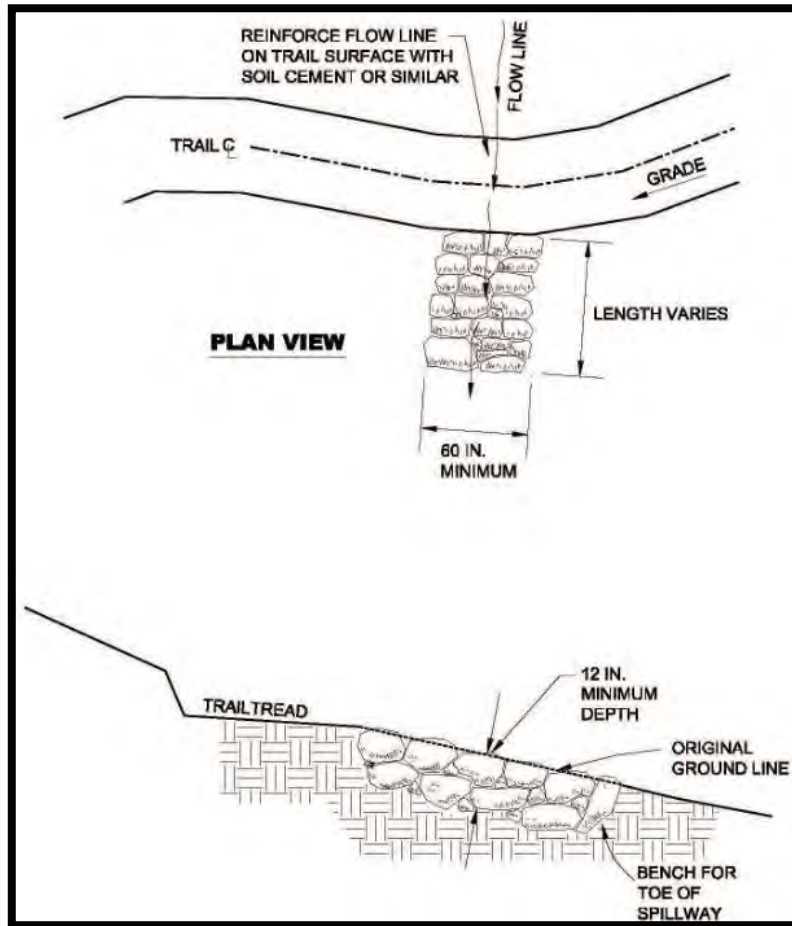


Figure 9: Typical Cross Drain for Trail Drainage

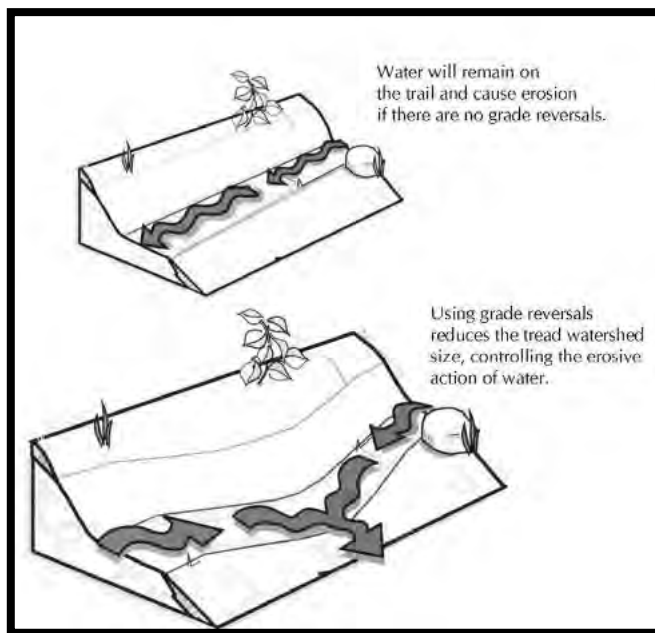


Figure 10: Typical Grade Reversal for Trail Drainage

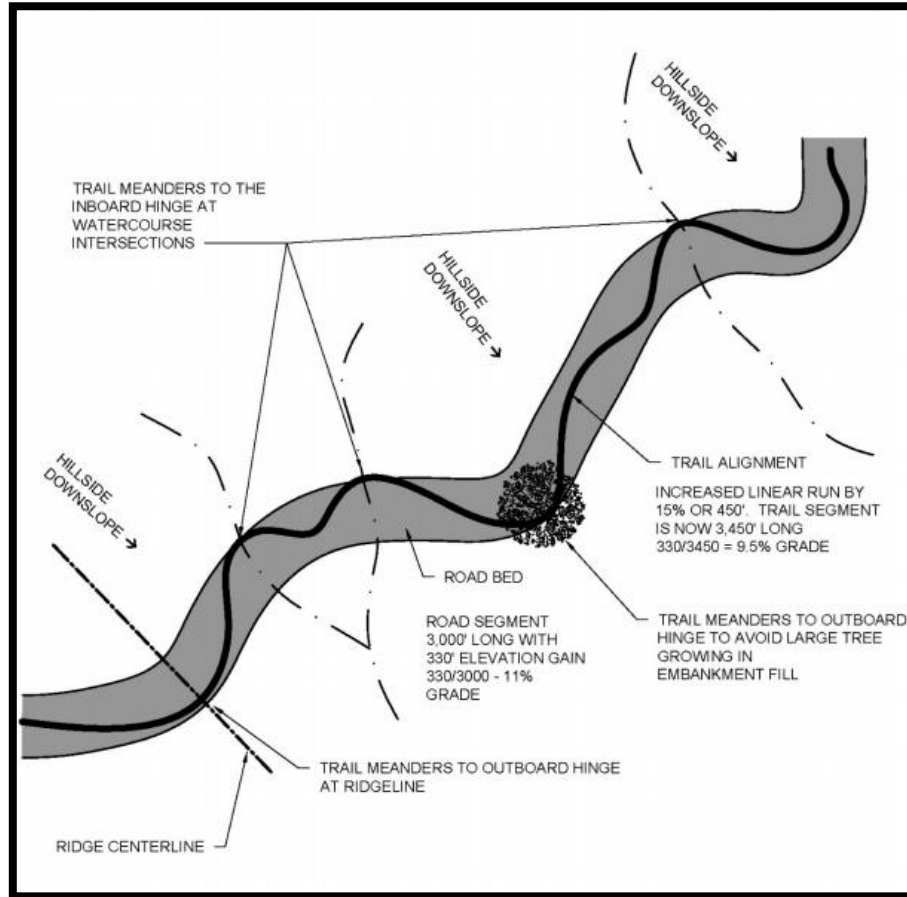


Figure 11: Typical Road-to-Trail Conversion Illustration

Project-Specific RTMP Best Management Practices

Introduction

The proposed project implements the objectives of the Road and Trail Management Plan. Trail design standards and Best Management Practices (BMPs) implemented as part of the proposed project adhere to the RTMP and reflect the project-specific application of the programmatic BMPs provided in the RTMP. The following list of BMPs are incorporated into the project based on the proposed trail closures, trail decommissioning, trail upgrades, and new trail construction and the location where these project elements occur. Most BMPs listed below are discussed in the CEQA Checklist for each resource area along with how the BMP reduces, minimizes, or avoids impacts. BMPs listed in **bold** are not assessed in the CEQA Checklist; nonetheless, they are also included in the proposed project. The BMPs identified would be needed to prevent or reduce erosion and sedimentation, protect sensitive natural resources, protect special-status plants and wildlife, reduce the risk of invasive species occupying the site, and protect cultural resources. The full text of these BMPs are included in Appendix A.

Preconstruction BMPs

- Special-Status Wildlife-1 Literature Reviews
- Special-Status Plants-1 Literature Reviews
- Cultural Resources-1 Historical and Archaeological Resource Mapping
- Cultural Resources-2 Consultation with Northwest Information Center

Cultural Resources-3 Tribal Consultation

Construction-period BMPs

Below is a list of BMPs from the RTMP that would be implemented during project construction to reduce or avoid impacts to sensitive resources. These BMPs are fully described in Appendix A.

Policy SW.24: Minimize Intrusions Larger Contiguous Habitat Areas and Wildlife Corridors

Policy SW.26: Control or Restrict Access to Ignition Prevention Zones when Red-Flag Conditions Exist

Policy SW-29: Retrofit or Upgrade Construction Equipment.

General-1 Limit Work Area Footprints in Sensitive Resource Areas

General-2 Modify Construction Related Vegetation Management Methods in and near Wetlands, Riparian Vegetation

General-3 Minimize Potential for Erosion

General-4 Control Food-Related Trash

General-5 Modify Construction Methods Relating to Soil Disturbance, Restrict Use of Offsite Soil, Aggregate, or Other Construction Materials

General-6 Prevent or Reduce Potential for Pollution

General-7 Include Standard Procedures in Construction Contracts

General-8 Control Noise

General-9 Conduct Worker Training

Sensitive Natural Resources-1 Modify Management Practices near Sensitive Natural Resources

Special-Status Wildlife-2 Preconstruction Surveys

Special-Status Wildlife-3 Seasonal Restrictions During Bird Nesting Season

Special-Status Wildlife-8 Worker Awareness Training

Special-Status Wildlife-9 Construction Monitoring

Special-Status Wildlife-10 Relocation of Special-Status Species

Special-Status Wildlife-11 Noise Control

Special-Status Wildlife-12 Trash Control

Special-Status Plants-6 Introduction of Invasive and Nonnative Plants and Plant Material

Special-Status Plants-7 Revegetation with Native, Geographically Appropriate Plant Species

Special-Status Plants-8 Worker Awareness Training

Special-Status Plants-11 Reuse and Replanting of Native Trees and Shrubs

Special-Status Plants-12 Ripping and Recontouring Roads

Invasive Plants-1 Compliance with Integrated Pest Management Ordinance

Invasive Plants-2 Herbicide Use near Sensitive Natural Resources

Invasive Plants-3 Survey and Control of Invasive Plants in Project Footprint

Invasive Plants-4 Limited Soil Disturbance

Invasive Plants-5 Cleaning of Heavy Equipment, Maintenance Tools, and Fire Management Vehicles

Invasive Plants-6 Reducing Potential of Invasive Plants on Disturbed Soil Surfaces

Cultural Resources-6 Construction Discovery Protocol

Cultural Resources-7 Human Remains

Cultural Resources-8: Community Awareness

Water Quality-2 Temporary Erosion and Sediment Control

Water Quality-3 Erosion Control Measures

Water Quality-4 Preventing or Reducing the Potential for Pollution

Water Quality-6 Grading Windows

Water Quality-8 Proper Disposal of Excess Materials

Water Quality-9 Sidecasting Construction Materials

Geologic Hazards-1: Assessment and Requirements in Areas of Potential Geologic Hazard

Geologic Hazards-2: Construction in Areas of Slides and Debris Flows

Geologic Hazards-3 Construction in Areas of Erodible and Expansive Soils

Geologic Hazards-4 Construction in Areas of Collapsible Soils

Air Quality-1 Implement BAAQMD Measures

Air Quality-2 Minimize Dust Control Emissions during Construction

Air Quality-3: Enhanced Dust Control during Construction.

Air Quality-4 Dust Control during Construction in Sensitive Resource Areas

Noise-1 County Noise Ordinance Requirements

Noise-2 Noise Control during Construction within and adjacent to Sensitive Wildlife Populations

Post-Construction BMPs

General -10 Road and Trail Inspections

General-11 Management of Sudden Oak Death

Special-Status Species-13 Road and Trail Inspections

Invasive Plants-7 Monitoring and Control of Invasive Plants in Road and Trail Management Work Areas

Invasive Plants-9 Road and Trail Inspections

Invasive Plants-10 Monitoring Decommissioned Areas

Water Quality-5 Road and Trail Inspections

PERMITS AND APPROVALS

The proposed project would be located entirely on the MCOSD Rush Creek Preserve. New trail segments would not be located in areas or disturb areas under the jurisdiction of other local, state, or federal agencies; therefore, no permits or approval would be necessary.

MCOSD AUTHORITY, MISSION, AND LEADERSHIP

The MCOSD is an independent legal entity and a special district operating pursuant to the California Public Resources Code. to fulfill the following mission:

We are dedicated to educating, inspiring, and engaging the people of Marin in the shared commitment of preserving, protecting, and enriching the natural beauty of Marin's parks and open spaces, and providing recreational opportunities for the enjoyment of all generations.

A five-member Board of Directors oversees MCOSD operations. A seven-member Parks and Open Space Commission advises the MCOSD Board of Directors on policy matters related to acquisition, development, funding, management, and operation. The MCOSD's Director and General Manager oversees the day-to-day operations.

MCOSD GOVERNING AND GUIDANCE DOCUMENTS

MCOSD is subject to the following governing and guidance documents:

- Marin County Strategic Plan, 2001
- Policy Review Initiative, 2005
- Marin Countywide Plan, 2007
- Marin County Department of Parks and Open Space Strategic Plan, 2008
- Marin County Fire Management Plan, 2008
- Marin County Integrated Pest Management Ordinance, 2009
- MCOSD Road and Trail Management Plan, 2014
- MCOSD Vegetation and Biodiversity Management Plan, 2015
- MCOSD Inclusive Access Plan, 2016

The two guidance documents most relevant to the proposed project are discussed below.

Road and Trail Management Plan (RTMP)

On December 16, 2014, the MCOSD Board of Directors approved the Road and Trail Management Plan (RTMP) and certified its program Environmental Impact Report (EIR)¹² (MCOSD 2014a and 2014b). The RTMP is a science-based comprehensive management plan to guide the MCOSD in the:

1. Establishment and maintenance of a sustainable system of roads and trails;
2. Reduction of environmental impact from roads and trails on natural resources; and
3. Improvements to visitor experience and safety.

The RTMP incorporates existing policies from the Countywide Plan and the MCOSD's Policy Review Initiative. Additionally, it identifies 34 new policies that govern the MCOSD's road and trail system. The intent of these policies is to reduce the environmental impact from the roads and trail system and to improve the recreational experience. In addition to these policies, the RTMP defined several best management practices (BMPs) that will reduce resource effects from any road and trail projects.

Appendix A includes the RTMP Policies and BMPs. Within the body of the CEQA Checklist, the specific RTMP BMPs applicable to implementation of the proposed project are identified.

The RTMP covers six regions Within Marin County, and 34 open space preserves. Region 4, which includes the project site, consists of six preserves totaling approximately 2,874 acres. In addition to the 522-acre Rush Creek Preserve, Region 4 includes the following preserves:

- Mount Burdell

¹² State Clearinghouse Number 2011012080

- Little Mountain
- Verissimo Hills
- Indian Tree
- Deer Island

MCOSD developed the RTMP over the course of four years based on extensive outreach and public input. After adoption of the plan and consistent with the RTMP's *Policy SW.2: System Roads and Trails*, MCOSD initiated a process to designate a system of roads and trails in all existing open space preserves. The roads and trails eligible for consideration must have existed as of November 2011, which is when the MCOSD completed a report on the condition of the existing roads and trails. The designation of a formal road and trail system is proceeding on a regional basis. The road and trail designation for Region 4 occurred in spring 2017. The Region 4 Designation Workshop was held on May 13, 2017. Following the workshop, the public had an opportunity to view and comment on the proposed road and trail system for Region 4. Rush Creek currently has 6.24 miles of designated roads and trails. According to the RTMP, 5.34 miles are in the fair to poor category for adequacy of road and trail drainage and 5.76 miles of roads and trail receive moderate to high visitor use. The Iron Gate Fire Road, which is proposed for decommissioning and road to trail conversion, is the only existing designated road or trail on Rush Creek that is part of this project. The Iron Gate Fire Road is included the poor road and trail drainage category. The other project trails are either undesignated social trails proposed for decommissioning or adoption, and proposed trail realignments that have not yet been built.

Figure 12: Rush Creek Open Space Preserve Trail Designations

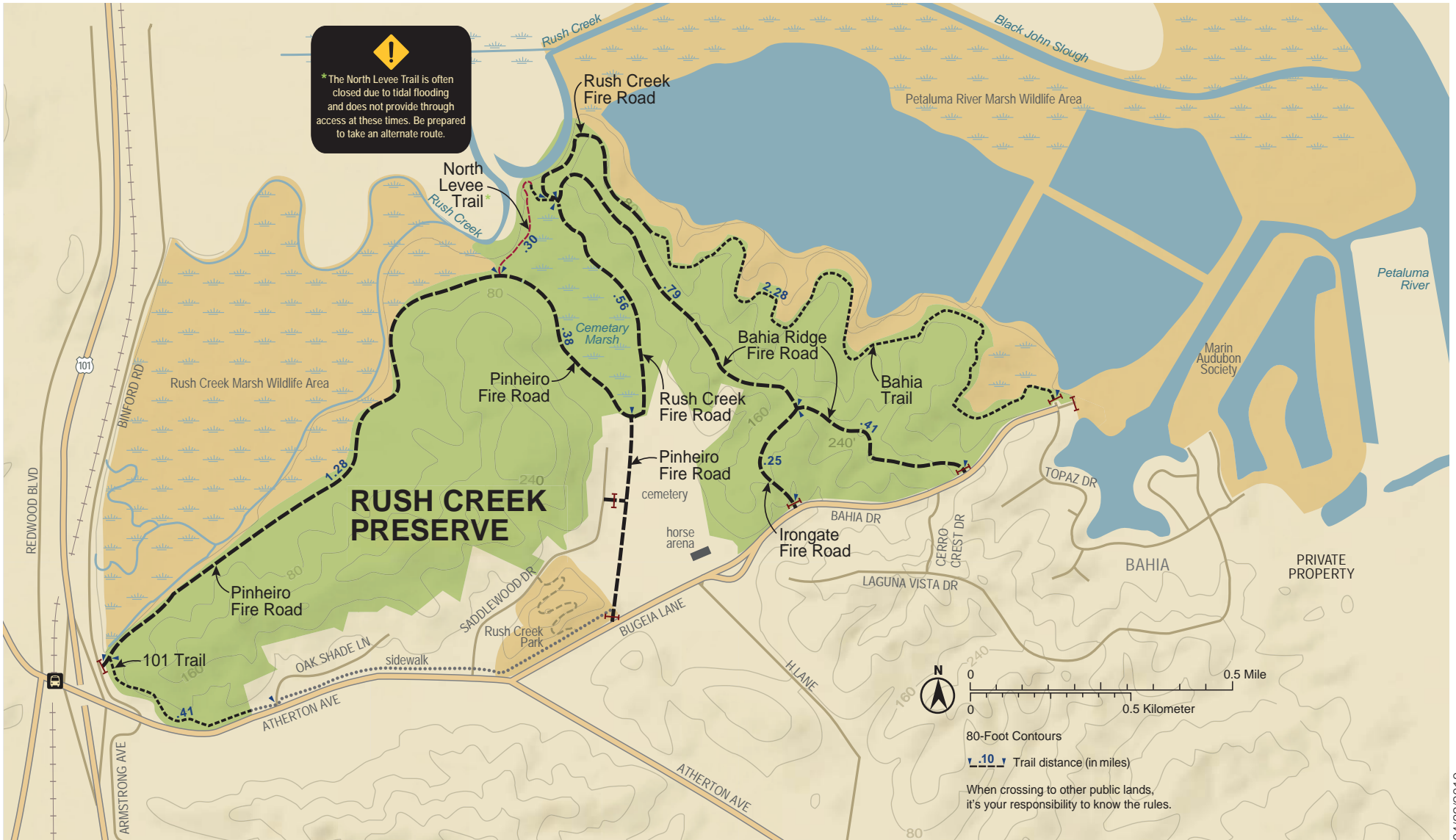
Inclusive Access Plan

The Inclusive Access Plan (IAP) was finalized in July 2016. The IAP is a guidance document focused on improving the MCOSD trail accessibility and increase the equitability of access to visitors of all abilities, developed with a public engagement process that included open houses, focus groups, workshops, and review of the IAP. The IAP is a supplement to the RTMP and helps to guide the accessibility component of trail-planning efforts. It includes:

- An evaluation of the existing inventory of pedestrian trails, the identification of an initial system of Access and Discovery Trails, providing access for users of all abilities to experiences in a variety of natural settings and a framework for expanding an Improved Access Trail system
- A review of and recommendations for policies and procedures, including the use of service animals, mobility devices, and visitor amenities in MCOSD open space preserves
- Recommendations for methods of communicating information about trails and trail conditions
- Design guidelines and standards that incorporate inclusive design principles and accessible elements in new construction and reconstruction of existing open space trails

As required by the IAP for trail redevelopment projects, MCOSD completed a Trail Accessibility Standards analysis for the proposed project relative to the applicability of accessibility standards as defined by the Architectural Barriers Act Accessibility Guidelines for Outdoor Developed Areas. The conclusion of this analysis was that Conditions of Exception would apply toward achieving full compliance. Specifically, meeting full compliance standards would be impracticable due to terrain and significant alteration to the nature of the facility (natural landscape). The proposed project would, however, adhere to the accessibility trail design guidelines to the extent possible and would be partially compliant with the IAP standards.

Figure 12. Current Trail Designations, Rush Creek Open Space Preserve



04/22/2019



FIRE ROAD AND TRAIL USES

FIRE ROAD
Hikers/Bikes/Horses

TRAIL
Hikers/Bikes/Horses

TRAIL
Hikers/Horses

TRAIL
Hikers/Bikes

TRAIL
Hikers Only

* The North Levee Trail is often closed due to tidal flooding and does not provide through access at these times. Be prepared to take an alternate route.

SYMBOLS

- Marin County Open Space District Preserve
- Other Public Lands
- Multiuse Pathway
- Trail (Non-MCOSD)
- Distance (miles)
- Gates
- Creeks & Streams
- Water Tank
- Public Transit

Vegetation and Biodiversity Management Plan

MCOSD developed the Vegetation and Biodiversity Management Plan (VBMP) in April 2015 to be implemented along with the RTMP. Its primary purpose is to provide comprehensive, long-term guidance for a new science-based approach to vegetation management that will:

1. Maintain the natural biodiversity of the vegetation within the preserves
2. Maintain patrol, emergency and public access, and
3. Manage fuel loads to reduce the threat of natural and human-caused fires.

The VBMP is not a prescriptive plan but rather it is a tool for decision-making associated with vegetation management projects on MCOSD lands. As part of this effort, MCOSD classified vegetation within each of the 34 preserves into four management zones based on the ecological and/or cultural importance of distinctive vegetation types, the condition of resources in particular locations, and the proximity of particular locations to urban or suburban areas. The four management zones include:

Legacy Zone. The legacy zone includes lands that support unique or irreplaceable remnants of natural biological diversity, along with other vegetation types with high biological value. The habitats for plants that have been identified as threatened, endangered, or rare in the world, the nation, the state of California, or Marin County are included in this zone, along with wetlands and selected upland vegetation types, including redwood forest, serpentine grasslands, and chaparral. Also included are habitats and vegetation types that are at the boundaries of their geographic distributions and that may be important to detecting, and managing for adaptation to, the effects of climate change. Native vegetation in this zone remains largely intact and free of invasion by nonnative plants. Because of their rarity and ecological importance, many species and vegetation types within this zone are protected by federal and state laws and regulations, or by other initiatives, such as the Upland Habitat Goals Project. The legacy zone will serve as a sanctuary for natural resources that otherwise could be permanently lost from Marin, California, and the world.

Sustainable Natural Systems. The sustainable natural systems zone includes lands that are valuable for ensuring the ecological resiliency of natural systems and the associated character of Marin County. Lands in this zone, which generally form a natural buffer around lands in the legacy zone, include corridors supporting wildlife movements and potentially the movements of species adapting to climate change, areas of refuge for species living within or migrating through Marin County, and vegetation types that are not considered as biologically valuable as those included in the legacy zone, but that are still considered “hot spots” in terms of relatively high species diversity. Lands in this zone contain only minimal infrastructure, and the vegetation types are relatively free of invasive species.

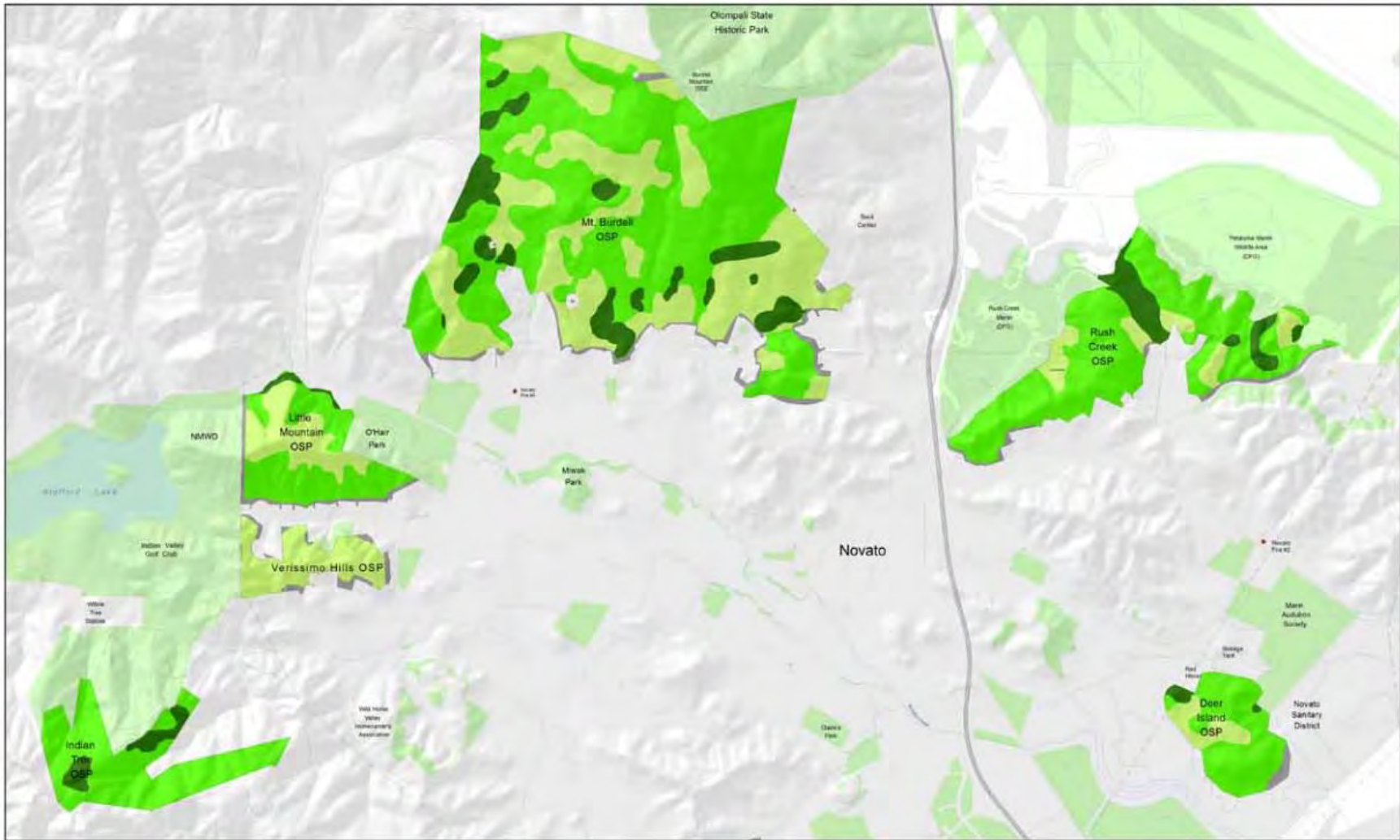
Natural Landscape Zone. The natural landscape zone includes lands that support native plants and natural vegetation types that are typical of Marin County landscapes. These common vegetation types, while not legally protected or recognized as rare, provide valuable habitat for a diversity of local native species. They contribute to the beauty of Marin County landscapes and add to the ecologically rich natural communities and scenic vistas that define MCOSD preserves. Vegetation within the natural landscape zone often provides important common oak and other woodland vegetation types, and coastal scrub. While this zone is more infested with invasive plants than the legacy and sustainable natural systems zones, it still provides valuable connectivity and important habitat for common wildlife and plants.

Highly Disturbed Zone. The Highly Disturbed Zone includes lands that provide essential services, such as fire protection, access to MCOSD open space lands, and in many cases is within the state defined Wildland Urban Interface. While these lands are also important to the enjoyment and protection of the natural diversity of Marin County, their management is influenced by their role in preventing the movement of fire between residences and open space lands, transmitting utilities, such as electrical power and water lines, to nearby communities, and facilitating visitor access. Due to high human use and disturbance, this zone is prone to invasive plant infestations; plant diseases and pathogen outbreaks; and neighboring land

influences, such as trespass, predation by domestic pets, green waste dumping, and the introduction of garden plant escapees.

Rush Creek Open Space Preserve is classified as consisting of all four management zones Legacy Zone, Sustainable Natural Systems Zone, Natural Landscape Zone, and Highly Disturbed Zone. The proposed project would occur in all four management zones.

Figure 13: Region 4 VBMP Classification



0 1,000 2,000 4,000 Feet

Data Source: Terracon, 5/15/19 and 5/17/20
 Coordinate System: NAD 83 (2011) Transverse Mercator (11 10N 4401 East)
 Projection: Lambert Conformal Conic

Map Prepared at the Marine County Open Space District for the
 Vegetation Management Plan, June 2019, under the direction of Kay R. Simmons, Inc.
 © Thomas H. Simmons, Inc., Vegetation Management Plan

- Legacy Zone
- Sustainable Natural Systems Zone
- Natural Landscape Zone
- Highly Disturbed Zone

Figure 13. MCOSD Vegetation Zoning Map - Region 4

PROJECT DEVELOPMENT AND COMMUNITY OUTREACH

Public and Stakeholder Meetings

MCOSD conducted a public meeting to present the proposed conceptual Region 4 designation map that included a proposal to convert the Iron Gate Fire Road to a multi-use trail on April 13, 2017. The purpose of the public meeting was to inform stakeholders about the potential road-to-trail conversion and to collect public comment about the potential change.

MCOSD met with Karen Killion, Novato Horsemen, Inc. (NHI), prior to the Region 4 public meeting to discuss the proposed trail changes in the Iron Gate Fire Road area of the Rush Creek Open Space Preserve. Novato NHI share a property boundary with the Rush Creek OSP. Equestrians have historically accessed the preserve on an eroded social trail leading from the NHI property. The meeting was to inform NHI of the proposed project and potential changes that would impact their access point, and the objective of the meeting was to discuss the road-to-trail change and the potential development of a trail to connect the existing horse arena to the newly converted Iron Gate Trail. On April 2, 2017, MCOSD staff attended a Novato Horseman meeting to discuss proposed improved trail connectivity opportunities. Concepts from the Novato Horseman meetings were presented to the public during the April 2017 public meeting.

MCOSD conducted a number of public meetings between March 2018 through June 2020. During 2018, MCOSD presented and discussed the proposed project with the public to review project alternatives, review biological assessments, and to present the planning process on March 19, May 24, July 17, and October 18, 2018. On February 11 and again on April 2, 2019, MCOSD met to continue discussing the proposed project with Novato Horsemen and to discuss concepts to improve trail connectivity. MCOSD met with five members of Novato Horseman Inc. on January 21 and 27, 2020. Members supported the proposed trail changes and requested MCOSD consider the addition of equestrian uses to the Bahia Trail, and MCOSD staff agreed to evaluate the request. The Novato Fire Department met with MCOSD staff on February 5, 2020, and fire department staff agreed that the Iron Gate Fire Road does not provide public safety value because emergency access occurs along the Bahia Ridge Fire Road. Lastly, MCOSD met with Novato Horsemen and the Marin County Bicycle Coalition on June 20, 2020 to discuss project concepts for trail connectivity.

Environmental Round Table

The MCOSD Environmental Round Table is a forum facilitated by MCOSD and includes two representatives from each of the following environmental organizations: California Native Plant Society, Sierra Club, Friends of Corte Madera Creek, Marin Conservation League, Environmental Forum of Marin, and Marin Audubon Society. The purpose of the Environmental Round Table is to facilitate a natural resources focused discussion and exchange of ideas between MCOSD and the environmental community as it relates to natural resources management and project development. The proposed project has been presented at Environmental Round Table meetings regularly between March 2018 through January 2020. MCOSD held a site visit on March 26, 2018. The Environmental Round Table has expressed general support for the proposed project because the improvements would support the project objectives.

Marin County Parks and Open Space Commission

The Parks and Open Space Commission advises the Marin County Board of Supervisors regarding parks and open space policy and conducts public hearings on parks and open space matters considered for recommendation to the Board when appropriate. There are seven members appointed by the Board, each having demonstrated expertise and interest in subject areas and disciplines beneficial to the county's provision of parks and open space stewardship, facilities, programs and services. MCOSD staff have presented the proposed project at three Commission meetings between 2018 and 2020. The Commission has expressed general support of the proposed project.

Native American Tribal Outreach

MCOSD staff provided notification of project to the Federated Indians of Graton Rancheria (FIGR) and the Lone Band of Miwok Indians (IBMI) October 15, 2020 and asked if they would like to initiate a consultation process pursuant to Assembly Bill 52. The notification satisfies RTMP BMP Cultural Resources-3: Tribal Consultation. Additional information on Native American outreach is presented in the Cultural Resources Study section of the CEQA Checklist section of this document. MCOSD and FIGR conducted an initial tribal consultation meeting on November 20, 2020. MCOSD presented the proposed project and answered questions. FIGR identified concerns associated with oak trees including continued tribal access for acorn gathering, preventing the spread of sudden oak death, and protection of the stand of blue oaks in the project vicinity. MCOSD assured FIGR that existing access for acorn gathering would continue although access along existing trails proposed for decommissioning would be closed for all visitors. The proposed Blue Oak Multi-Use Trail would provide access for tribal members to collect blue oak acorns along the new, sustainable system trail. MCOSD discussed RTMP BMP General-11: Management of Sudden Oak Death and committed to review this BMP relative to current science associated with sudden oak death. Implementation of RTMP BMP General-11 would require MCOSD to train the trail construction crew about sudden oak death and disease transmission pathways and require staff to implement measures to prevent the spread when implementing the proposed project, purchase nursery stock at nurseries that follow current measures to prevent spread of sudden oak death, and educate visitors about how to prevent the spread of sudden oak death, amongst other measures. MCOSD has not identified additional measures to enhance RTMP BMP General-11 but is continuing to discuss potential additional measures with FIGR as part of the tribal consultation process. Some proposed project elements would occur within blue oak – white oak woodlands, including several proposed trail decommissioning and development of the proposed Blue Oak Multi-Use Trail. The proposed Blue Oak Multi-Use Trail would provide a critical connection between Bahia Ridge Fire Road and the Bahia Trail, replacing a social trail proposed for decommissioning. No blue oaks or any other trees would be removed as a result of the proposed project. Disturbed areas created during trail construction would be revegetated using native grasses, forbs, shrubs, and trees with species dependent on the site-specific conditions. Revegetation efforts would also include planting oaks propagated from locally collected seed sources.

PROJECT STUDIES AND SPECIAL REPORTS

Marin County Open Space District Trail Log

The Gold Ridge Resource Conservation District, under contract with MCOSD, completed an evaluation of trail condition for the Bahia Area Road and Trail Project in March 2020¹³. The assessment and report were implemented to inform MCOSD staff about current conditions of the existing trail network and informal social trails in the Bahia area of the Rush Creek Preserve and to identify potential new trail segments and trail reroutes needed to create a sustainable trail network in the area. The assessment identified options for MCOSD to select for potential social trail closures and trail reroutes, and MCOSD used the study, along with input from the community, to develop the proposed project.

Biological Resources Assessment

Biologists from Prunuske Chatham, Inc. conducted site visits and prepared a biological resources assessment report for the southeastern section of the Rush Creek Open Space Preserve.¹⁴ The site evaluation was completed to assess biological resources within the project area, evaluate potential impacts to these resources

¹³ Gold Ridge Resource Conservation District. 2020. Bahia Area Road and Trail Project, Rush Creek Open Space Preserve prepared for Marin County Parks, Marin County Open Space District.

¹⁴ Prunuske Chatham, Inc. (PCI) 2020. Biological Resources Assessment Rush Creek Open Space Preserve, Eastern Section June.

from the implementation of the study project, identify appropriate best management practices, and recommend mitigation measures to reduce the effect of potential impacts to less than significant levels.

The Rush Creek Open Space Preserve is primarily comprised of uplands adjacent to the Rush Creek Marsh and the Petaluma Marsh Wildlife Refuges, the Bahia Wetlands, and the Petaluma River. Residential development and City of Novato open space lands border the southern boundary of the Preserve. The Rush Creek Open Space Preserve has two main ridges. One runs from Highway 101 to the northeast, where it descends toward the adjacent wetlands. A shorter, secondary ridge runs northwest-southeast on the eastern side of the Preserve, where the proposed project would be located. The biological study area supports primarily oak woodland and California bay-coast oak forest. Rush Creek flows within the larger Preserve boundary; however, it is outside the proposed project area.

The Rush Creek Open Space Preserve is 522 acres. The study area evaluated in the PCI Biological Resources Assessment Report included approximately 122 acres. The study area included the proposed project area in the southeast portion of the Rush Creek Open Space Preserve and a surrounding area buffer. While the Biological Resources Assessment Report describes the biological resources occurring or potentially occurring with the study area, only some portions of the study area would be disturbed by project-related trail closure and new trail construction. The Biological Resources section of the CEQA Checklist includes a broader summary of the Pacific Biology Report and biological resources within the project area. The report and report maps illustrate the distribution of the vegetation and habitat types through the project area, and it identifies wildlife that occur within the project area and how vegetation and wildlife could be affected by the proposed project.

Figure 14: Prunuske Chatham Biological Resources Assessment Report Study Area

Figure 15: Prunuske Chatham Biological Resources Assessment Report Plant Communities

Figure 16: Prunuske Chatham Biological Resources Assessment Report Special-Status Species

Plant Communities

PCI biologists and ecologists mapped five vegetation communities¹⁵. The plant communities are based on dominant overstory species and each community is named to conform with commonly acceptable nomenclature of the Manual of California Vegetation¹⁶ classification. PCI divided the nomenclature from the Manual of California Vegetation to correspond with the Marin County Park Vegetation Map nomenclature¹⁷. The table below lists the vegetation types present in the study area. The nomenclature presented in the table follows the existing classification and mapping performed for Marin County in 2008 by Aerial Information Systems¹⁸ and the California Native Plant Society. Figure 14 provides a general map of vegetation types based on the 2008 mapping with refinements following field evaluation by ecologists from Prunuske Chatham, Inc.

¹⁵ Plant communities are groups of plants that share a common environment and interact with each other, animal populations, and the physical environment. Plant communities are generally defined by the dominant plant species, which is a method to organize biological information, creating mappable units for land management and conservation planning.

¹⁶ Sawyer, John O., Todd Keeler-Wolf, and Julie M. Evans. 2009. *A Manual of California Vegetation*, Second Edition. California Native Plant Society Press.

¹⁷ MCP/MCOSD. 2014. *Vegetation and Biodiversity Management Plan and Aerial Information Systems*. 2008. *Vegetation Map of Marin County Open Space District Lands*. <https://map.dfg.ca.gov/metadata/ds0957.html>.

¹⁸ *ibid*

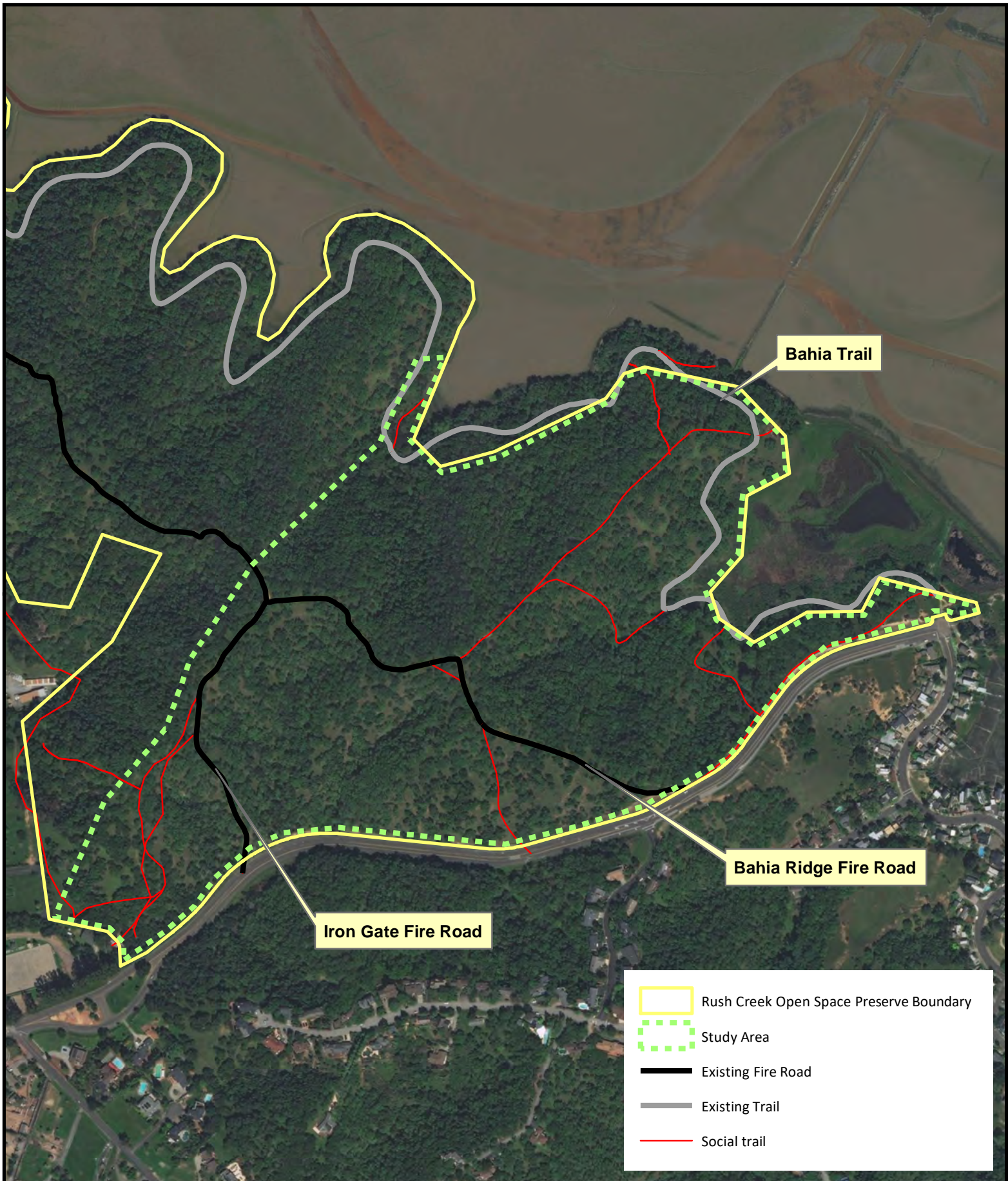


Figure 14. Study Area
 PCI Biological Resources Assessment
 Rush Creek Open Space Preserve, Eastern Section
 Bahia Area Fire Roads and Trails Improvement Project

0 0.04 0.08 0.16 Miles

6/2/2020
 Aerial: ESRI
 Trails: Marin County



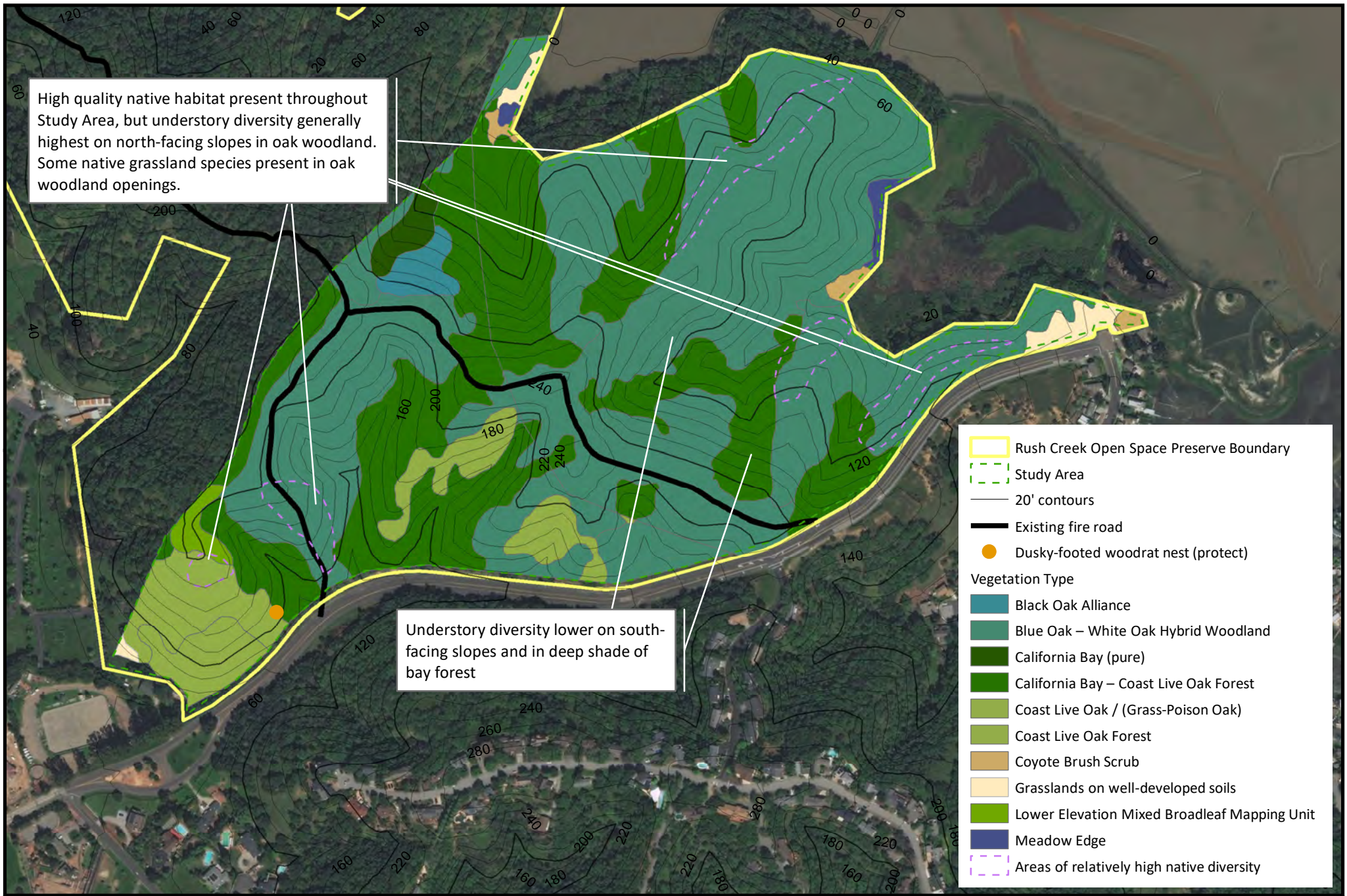


Figure 15. Vegetation Types and Areas of Interest
 Biological Resources Assessment
 Rush Creek Open Space Preserve
 Bahia Area Fire Roads and Trails Improvement Project

6/2/2020
 Aerial: ESRI
 Trails: Marin County
 Vegetation: Marin County, PCI



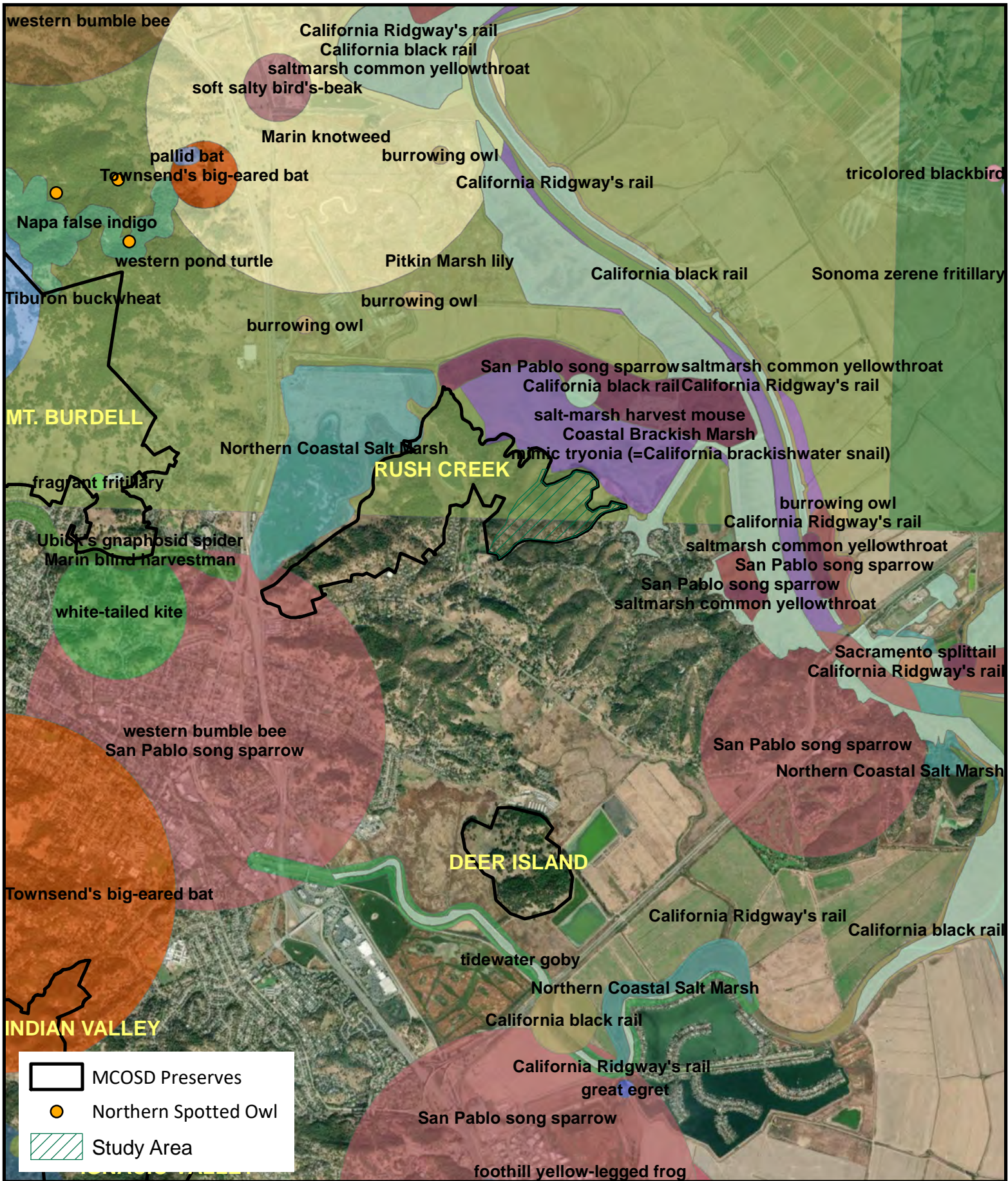


Figure 16. Reported Occurrences of Special-status Species
 Biological Resources Assessment
 Rush Creek Open Space Preserve, Eastern Section

0 0.25 0.5 1 Miles

6/3/2020
 Aerial: ESRI
 CNDDb: CDFW



Table 1: Vegetation Communities in the Rush Creek Open Space Preserve, Biological Study Area

General Vegetation Type	Vegetation Type – Marin County Vegetation Map nomenclature ¹⁹	CDFW Sensitive ²⁰ Communities Rank	Sensitive Natural Community ²¹
Oak Woodland	Black Oak Forest	G4S4	Yes
	Blue Oak - White Oak Hybrid Woodland	G4S4 (Blue oak)/ G4S3 (Oregon white oak)	
	Coast Live Oak Woodland	G5S4	
California Bay - Coast Live Oak Forest	California Bay – Coast Live Oak Forest and California Bay (pure) Forest	G4S3	Yes
Coyote Brush Scrub	Coyote Brush Scrub - Mixed Shrub/Grassland	G5S5	No
Grassland	Grasslands on well-developed soils	N/A	No
Wet Meadow	Temporary Flooded or Saturated Meadow Edge	N/A	Yes

Sensitive plant communities are those of limited distribution statewide or within a county or region. The California Department of Fish and Wildlife’s List of California Terrestrial Natural Communities and the Manual of California Vegetation indicate which plant communities are sensitive within the state of California classification system. Oak Woodland and California Bay – Coast Live Oak Forest communities are considered sensitive plant communities within the state and within county-level oak woodland policies.²² The Blue Oak – White Oak Hybrid Woodland is ranked “G4S4” for blue oak and “G4S3” for Oregon white oak in the Manual of California Vegetation, indicating Oregon white oak is considered “vulnerable” within the state and “apparently secure” globally. California Bay Forest is also ranked “G4S3”. Although California bay-coast live oak forest is considered a sensitive natural community by CDFW, it is widespread in Marin County.

The oak woodland vegetation type occupies most of the upper slopes and ridges of the study area where several proposed project elements would occur. The oak woodland stands are dominated by Oregon oak (*Q. garryana*), blue oak (*Q. douglasii*), and apparent hybrids of the two species. Black oak (*Q. kelloggii*), coast live oaks (*Q. agrifolia*), California bay (*Umbellularia californica*), and madrone (*Arbutus menziesii*) are all present in lower numbers. The understory in these stands are diverse and dominated by native shrubs, vines, grasses, and forbs. The oak woodlands provide high quality habitat for a variety of plants and wildlife, carbon sequestration²³, soil protection, and cooling and shading for humans and wildlife. A majority of the new trail construction and trail closures would occur in stands of blue oak –white oak hybrid woodlands. MCOSD would implement applicable RTMP BMPs to minimize potential impacts on sensitive natural communities.

¹⁹ Marin County Open Space District. 2008 Vegetation Mapping

²⁰ Manual of California Vegetation rankings. “G” indicates conservation priority at the global level and “S” refers to the conservation priority at the state level. 1 = critically imperiled; 2 = imperiled; 3 = vulnerable; 4 = apparently secure; 5 = secure. Alliances ranked 3 or lower are considered sensitive, and non-native alliances (i.e., semi-natural stands) are not ranked.

²¹ Sensitivity based on state (CDFW), and local (Marin County) regulations.

²² Marin County Ordinance # 3342

²³ A natural or artificial process by which carbon dioxide is removed from the atmosphere and held in solid or liquid form.

Implementation of specific RTMP BMPs include General 1: Limit Work Area Footprints in Sensitive Resource Areas are protected during project implementation. The RTMP Policies and BMPs are provided, in their entirety, in Appendix A. The Biological Resources Assessment Report did not identify any additional mitigation measures to protect sensitive natural communities.

California bay – Coast live oak forest occurs in drainage within the study area where limited proposed project elements would occur. This vegetation type is dominated by evergreen species, creating a dense canopy that limits the understory. The habitat quality in the bay forests is high and the presence of non-native species is limited. These forests occupy drainages and protect water resources and provide shelter and migration corridors for wildlife. Proposed trail work would be limited in this sensitive natural community. As with project activities through the oak woodlands, MCOSD would limit work areas to avoid impacts on sensitive resources as specified in the RTMP. No additional mitigation measures were identified.

A small meadow edge wetland is located adjacent to baylands inside the study area. The meadow edge wetland is surrounded by coyote brush scrub and grasslands. A proposed trail closure would occur in the grassland surrounding the wetland; however, no proposed project elements would occur in the wetland.

Coyote brush scrub and grasslands are present in small patches at lower elevations near baylands in the northern and northeastern portions of the study area. Neither vegetation type is considered sensitive by CDFW, and only one short segment of trail closure is proposed in an area that supports these vegetation communities.

Special-Status Plants

Special-status plants include those species that are state or federally listed as Rare, Threatened or Endangered; federal candidates for listing; proposed for state or federal listing; or identified by the CNPS Inventory of Rare and Endangered Plants of California (CNPS Inventory) as Rank 1, 2, 3, or 4 species. Special-status plant surveys were conducted in the study area on March 19 and April 25, 2018 and April 8, 2020. A total of 71 plant taxa were identified within the study area, none of which are designated as special-status or otherwise considered to be rare. A total of ten special-status plant species with the potential to occur within the study area were evaluated for presence in the study area, and none of the species were located during field assessments. Each had a low potential to occur on site because the site lacks suitable habitat or only marginal habitat is present within the study area.

- Franciscan onion (*Allium peninsulare* var. *franciscum*)
- Napa false indigo (*Amorpha californica* var. *napensis*)
- bent-flowered fiddleneck (*Amsinckia lunaris*)
- Ferris' milk-vetch (*Astragalus tener* var. *ferrisiae*)
- Point Reyes bird's beak (*Chloropyron maritimum* ssp. *palustre*)
- soft bird's beak (*Chloropyron molle* ssp. *Molle*) (previously *Cordylanthus mollis* ssp. *mollis*)
- western leatherwood (*Dirca occidentals*)
- fragrant fritillary (*Fritillaria liliacea*)
- white seaside tarplant (*Hemizonia congesta* ssp. *Congesta*)
- Pacific Grove clover (*Trifolium polyodon*)

Given the negative survey results, no special-status plant species are expected to occur in the study area and implementation of the proposed project is not expected to negatively impact special-status plant species. MCOSD would incorporate applicable RTMP Special-Status Plants BMPs, which were designed to minimize or avoid potential environmental impacts to biological resources. The RTMP Policies and BMPs are provided, in their entirety, in Appendix A. With implementation of these BMPs, the proposed project would not have a substantial adverse effect, either directly or through habitat modifications, on any special-status plant species.

The Biological Resources Assessment Report did not identify additional mitigation measures associated with protection of special-status plants.

Special-Status Wildlife

The presence of special-status wildlife species on MCOSD lands has been well documented through focused surveys and other observations made by MCOSD staff and the public. The Biological Resources Assessment Report included an evaluation of data collected and maintained by the MCOSD, a review of the CNDDDB, results of a site visit in March 2018 and a second site visit in April 2020, and other sources. Marin County staff have documented nine special-status animals within the larger Rush Creek Open Space Preserve. PCI documented two additional special-status animals in the proposed project study area during site visits in 2018 and 2020 and identified four additional species with a moderate to high potential to occur within or adjacent to the proposed project area based regional occurrence data. The 15 special-status wildlife species that have a potential to occur within the study area include:

- Northwestern pond turtle (*Actinemys marmorata*)
- Grasshopper sparrow (*Ammodramus savannarum*)
- Oak titmouse (*Baeolophus inornatus*)
- Northern harrier (*Circus cyaneus*)
- White-tailed kite (*Elanus leucurus*)
- Saltmarsh common yellowthroat (*Geothlypis trichas sinuosa*)
- California black rail (*Laterallus jamaicensis cotrunculus*)
- San Pablo song sparrow (*Melospiza melodia samuelis*)
- Nuttall's woodpecker (*Picoides nuttallii*)
- California Ridgway's rail (*Rallus obsoletus obsoletus*)
- Pallid bat (*Antrozous pallidus*)
- Townsend's big-eared bat (*Corynorhinus townsendii*);
- Western red bat (*Lasiurus blossevillei*)
- Salt-marsh harvest mouse (*Reithrodontomys raviventri*)
- American badger (*Taxidea taxus*)

MCOSD would incorporate applicable RTMP Policies and BMPs, which were designed to minimize or avoid potential environmental impacts to biological resources. The applicable RTMP Policies and BMPs are listed in their entirety in Appendix A. The Biological Resources Section of the CEQA Checklist includes mitigation measures to further protect special-status animals if encountered during project implementation.

Cultural and Historical Resources Studies

Tom Origer and Associates completed a cultural resources records search for the Rush Creek Trail Project and prepared a letter report documenting the results on March 15, 2018.²⁴ The records search consisted of ethnographic research, historical review, and archival review for a portion of the current proposed project area. The records search concluded there is a high potential for prehistoric sites to exist within the study area, though two surface field surveys completed in the 1970s did not locate prehistoric sites. The records search reported on historic-era location defined as Andre Anderson's house that includes a house, barn, and fences, and concluded this area has a high sensitivity in terms of historic-era resources. The remaining portions of the study area have a moderate sensitivity for historic-era resources; however, the records search recommended that trail routes be surveyed to identify additional historic-era resources with special attention in the area of Andrew Anderson's house. The records search also concluded that there is a very low probability of buried prehistoric archaeological sites within the study area due to the elevation of the trail segments within the study area.

²⁴ Origer, T. 2018. Archival Research Results for the Rush Creek Trail Project, Rush Creek Open Space Preserve, near Novato, Marin County, California.

Tom Origer and Associates completed a Cultural Resources Study for the currently proposed project and prepared a report documenting the results on September 1, 2020.²⁵ The Cultural Resources Study included a field survey and archival research the entire proposed project area. The study concluded that there are no recorded resources, including ethnographic sites, within the study area and a low potential for buried archaeological site indicators within the study area. No further studies were recommended.

Tom Origer and Associates sent a request to the State of California's Native American Heritage Commission (NAHC) dated August 18, 2020 seeking information from the Sacred Lands File and the names of Native American individuals and groups that would be appropriate to contact regarding this project. NAHC responded on August 20, 2020. Results of the review of the Sacred Lands File found that there are sacred sites within the vicinity of the study area, and NAHC recommended contacting the FIGR for more information and provided a list of contacts. On February 27, 2019, MCOSD sent letters to both FIGR and the Lone Band of Miwok Indians (IBMI) inviting consultation on the Rush Creek Loop Trail project, which included a re-route of an existing social trail adjacent to Bahia Drive and decommissioning several segments of the social trail, totaling approximately 7,000 feet. The Loop Trail, now called the Blue Oak Trail, is included in the proposed project. MCOSD subsequently sent letters to both tribes on October 15, 2020 inviting tribal consultation. No response was received from IBMI. A response was received from FIGR, and the initial tribal consultation meeting was conducted on November 20, 2020. This meeting is described in the Cultural Resources and Tribal Cultural Resources sections of the CEQA Checklist.

²⁵ Alshuth, T and Origer, T. 2020. Cultural Resources Study for the Rush Creek Open Space Preserve Trails Project Rush Creek Open Space Preserve near Novato, Marin County, California

DETERMINATION

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

- | | | |
|--|---|---|
| <input type="checkbox"/> Aesthetics | <input type="checkbox"/> Agriculture and Forestry Resources | <input type="checkbox"/> Air Quality |
| <input checked="" type="checkbox"/> Biological Resources | <input type="checkbox"/> Cultural Resources | <input type="checkbox"/> Energy |
| <input type="checkbox"/> Geology/Soils | <input type="checkbox"/> Greenhouse Gas Emissions | <input type="checkbox"/> Hazards & Hazardous Materials |
| <input type="checkbox"/> Hydrology/Water Quality | <input type="checkbox"/> Land Use/Planning | <input type="checkbox"/> Mineral Resources |
| <input type="checkbox"/> Noise | <input type="checkbox"/> Population/Housing | <input type="checkbox"/> Public Services |
| <input type="checkbox"/> Recreation | <input type="checkbox"/> Transportation | <input type="checkbox"/> Tribal Cultural Resources |
| <input type="checkbox"/> Utilities/Service Systems | <input type="checkbox"/> Wildfire | <input type="checkbox"/> Mandatory Findings of Significance |

DETERMINATION: (To be completed by the Lead Agency)

On the basis of this initial evaluation:

- I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
- I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
- I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
- I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
- I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Rachel Reid, Environmental Coordinator
Marin County Community Development Agency

Date

Summary of the CEQA Analysis

This Initial Study utilizes the checklist included as Appendix G to the CEQA Guidelines. The checklist includes the following 21 resource areas as listed in the Determination page above. For each topic area, the checklist includes specific questions. For each question, one of four responses is given:

No Impact	The proposed project will not have the impact described.
Less than Significant Impact	The proposed project may result in the impact described, but at a level that is less than significant. Mitigation is not required, however, may be included to further reduce the impact.
Potentially Significant Unless Mitigated	The proposed project may result in the impact described at a level that is potentially significant. The incorporation of proposed mitigation measures would reduce the potentially significant impact to a less-than-significant level. For these responses, proposed mitigation measures are included after the discussion of the potential impact.
Potentially Significant Impact	The proposed project may have the impact described at a level that is potentially significant. The potentially significant impact cannot be reduced to a less-than-significant level with the incorporation of proposed mitigation measures, requiring preparation of an Environmental Impact Report.

Each question is answered by evaluating the proposed project as a whole, considering the potentially significant environmental impacts that could occur for any phase of the proposed project. The Checklist includes a discussion of the potential impacts and reasoning of the response provided. The Initial Study Checklist is included in this document after the Project Description. The Initial Study concluded that implementation of the proposed project would not result in any Potentially Significant Impacts that could not be mitigated to a less-than-significant level. Most questions were answered with a No Impact or Less than Significant Impact response. Mitigation Measures have been included to address potentially significant impacts in the Biological Resources. With implementation of these mitigation measures, potentially significant environmental impacts would be reduced to a less-than-significant level.

The Initial Study concluded that implementation of the proposed project would not result in any potentially significant impacts that could not be mitigated to a less-than-significant level. Most questions were answered with a No Impact or Less than Significant Impact response. Mitigation measures have been included to address potentially significant impacts and/or augment RTMP BMPs in the Biological Resources section of the CEQA Checklist. The three biologic resources mitigation measures are listed below. With implementation of the RTMP Policies and BMPs and these mitigation measures, potentially significant environmental impacts would be reduced to a less-than-significant level.

Proposed Mitigation Measures

The RTMP includes measures to protect nesting birds; however, the BMP does not provide buffers by species or guild. MCOSD would implement the following mitigation measure to protect nesting birds during critical nesting time periods.

Mitigation Measure BIO-1: Special-status and Nesting Birds Protection

MCOSD shall implement the following seasonal restrictions to protect nesting birds. If work occurs outside the nesting bird window of January 1 to July 31, surveys and avoidance measures would not be necessary for special-status and nesting birds. The broadest nesting bird window based on Table 6 would be January 01 – October 31. The project area does not include habitat for double-crested cormorant, herons, egrets, bitterns, northern spotted owls and these species would not be affected by implementation of the proposed project; therefore, the nesting bird window of January 1 – July 31 is appropriate for the proposed project.

- Surveys shall be conducted within seven days of the start of active ground-disturbing activities within the general buffers identified in Table 2: Guideline Buffers by Species or Guild. If the work area is left unattended for more than seven days following the initial surveys, additional surveys shall be completed. This timing is standard protocol based on common knowledge of avian biology. Ongoing construction monitoring of active nests shall occur to ensure no nesting activity is disturbed.
- If the biologist finds no active nesting or breeding activity, work can proceed without restrictions.
- If active raptor or owl nests or active nests of other special-status birds are identified within the buffer area guidelines included in Table 2, a qualified biologist shall determine whether construction activities may impact the active nest or disrupt reproductive behavior. If the biologist determines construction would not affect an active nest or disrupt breeding behavior, construction can proceed without restrictions. The determination of disruption shall be based on the species' sensitivity to disturbance, which can vary among species; the level of noise or construction disturbance; and the line of sight between the nest and the disturbance. If the biologist determines activities would be detrimental to the species nest, the buffer area guidelines identified in Table 2: Guideline Buffers by Species or Guild would be established until the nest has been vacated, meaning that the chicks have fledged.
- If state and/or federally listed birds are found breeding within the construction area, activities shall be halted until the chicks have fledged. If construction activities must continue and would incur take of the listed species, MCOSD would consult with the CDFW and USFWS prior to the initiation of work that would result in take. If construction activities must continue and would not incur take of the listed species, MCOSD would establish the buffer area guidelines included in Table 2: Guideline Buffers by Species or Guild, until the nest has been vacated, meaning that the chicks have fledged.

Table 2: Guideline Buffer by Species or Guild

Species/Guild	Recommended Buffer meters/feet	Nesting Season
Diurnal Raptors (i.e.: Cooper's hawk)	76 meters (250 feet)	January 01 – July 31
Owls (except northern spotted owl)	50 meters (160 feet)	January 01 – July 31
Northern Spotted Owl	402 meters (1,320 feet or ¼ mile)	February 01- July 31
Double-crested Cormorant	50 meters (160 feet)	March 01 – October 31
Herons/Egrets/Bitterns	100 meters (330 feet)	January 01 – Sept. 30
Waterfowl	30 meters (100 feet)	March 01 – July 31
California black rail	213 meters (700 feet)	February 01 – August 31
Larger Passerines: Corvids (crows, jays), Thrushes	20 meters (65 feet)	March 01 – July 31
Most Songbirds	10 meters (30 feet)	March 01 – July 31
Hummingbirds	10 meters (30 feet)	January 01 – July 31
Woodpeckers	15 meters (50 feet)	March 01 – July 31
Band-tailed Pigeon (BTPI)	30 meters (100 feet)	March 01 – July 31
Pigeons/Doves (except BTPI)	20 meters (65 feet)	March 01 – July 31
Species of Special Concern (olive-sided flycatcher, grasshopper sparrow, San Pablo song sparrow)	22 meters (75 feet)	March 01 – July 31
Blackbirds (tri-colored and red-winged)	30 meters (100 feet)	March 01 – July 31
Turdidae (robins, thrushes)	20 meters (65 feet)	March 01 – July 31
Killdeer	22 meters (75 feet)	March 01 – July 31

Bat Protection

The RTMP does not include BMPs to address special-status or common bats. While tree pruning required to implement the proposed project would be minimal, bats could be harmed during tree trimming activities. MCOSD would implement the following bat protection measure:

Mitigation Measure BIO-2: Special-status and Common Bats Protection

The MCOSD shall ensure that the following protection measures for special-status and common bat species are implemented during project activities:

- For all trees previously identified as active (non-maternity) roost sites (during project surveys) and subject to pruning or removal, trees shall be taken down in a two-step process – limb removal on day one shall (at the discretion of a qualified biologist) be followed by whole removal

on day two. This approach will allow bats an opportunity to move out of the area prior to completing removal of the trees.

- If work is postponed or interrupted for more than two weeks from the date of the initial bat survey, the preconstruction survey shall be repeated.
- Construction shall be limited to daylight hours to avoid interference with the foraging abilities of bats.

Native Tree Protection

The RTMP does not include BMPs to address tree pruning. While tree pruning required to implement the proposed project would be minimal and would not result in a potentially significant environmental impact, MCOSD would implement the following tree protection measure:

Mitigation Measure BIO-3: Protect Native Trees

MCOSD shall ensure that the following measures are implemented during project activities to protect native trees:

- Minimize pruning. Light pruning may occur at any time of year. Heavy pruning may cause problems due to vigorous sprouting and subsequent witches broom or powdery mildew diseases. Heavy pruning shall be done on deciduous trees in the winter.
- Minimize impacts within the Root Protection Zone (RPZ), which is defined as 1.5 times the dripline radius measured from the tree trunk and extends approximately three feet below the soil surface.
 - Changes in drainage within protected tree perimeters shall be avoided to the extent feasible.
 - Soil compaction within protected tree perimeters shall be avoided to the extent feasible.
 - Heavy equipment, vehicles, and/or construction materials shall not be parked or stored beneath trees or operated within the delineated protected perimeter.

**CEQA CHECKLIST
AESTHETICS**

AESTHETICS CHECKLIST QUESTIONS					
	Except as provided in Pubic Resources Code Section 20199, would the Project:	Potentially Significant Impact	Less than Significant with Mitigation	Less-than-Significant Impact	No Impact
a)	Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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 type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c)	In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? <i>(Public views are those that are experienced from publicly accessible vantage points)</i> . If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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"/>

Setting

The Rush Creek Open Space Preserve is 522 acres located north of Atherton Avenue, east of Highway 101, and south of the Petaluma River Marsh Wildlife Area and the Rush Creek Marsh Wildlife Area in northeastern Marin County north of the city of Novato (see Figure 1). The Rush Creek Marsh and Petaluma Marsh Wildlife Refuges, owned by the California Department of Fish and Wildlife, are adjacent to the north and northeast. Additional marshlands owned by the Marin Audubon Society (Bahia Wetlands), and the Petaluma River, lie to the east. To the south, there is residential development mixed with City of Novato open space lands. The Preserve is bisected by Cemetery Marsh, with the Pinheiro Ridge uplands to the west and the Bahia Ridge uplands to the east. A small county park, Rush Creek Park, is present across Saddlewood Road from the Preserve. A cemetery and horse arena are also present just south of the Preserve. Elevations in the area range from approximately 280 feet to sea level.

The Rush Creek Open Space Preserve is located in the Rush Creek watershed. The Rush Creek Open Space Preserve is primarily comprised of oak-savannah uplands with the Rush Creek and associated wetlands forming its northern boundary. Rush Creek conveys water from the stormwater system in northeastern Novato and flows east into Black John Slough, the Petaluma River and San Pablo Bay. The wetlands are also managed for winter stormwater management through a series of levees and floodgates.

The Preserve has 6.2 miles of roads and trails, many of which are very gentle grade. Hikers, bikers, and equestrians use the trail network. Visitors have expansive views of the wetlands surrounding the Preserve.

The proposed project area is located in the southeast portion of the Preserve as shown on Figure 1. The proposed project area supports oak woodland and California bay-coast live oak forests. The proposed project would passively close or actively decommission social trails, convert a portion of an existing fire road to a 5-foot-wide trail, convert a social trail to a designed trail, and change designated users allowed on trails to protect resources.



Example trails in the Rush Creek Open Space Preserve

Applicable RTMP Policies and BMPs

The RTMP does not include Policies and BMPs specific to Aesthetics. The RTMP Policies and BMPs and are provided, in their entirety, in Appendix A.

CEQA Context

Potentially significant environmental impacts associated with aesthetics can be subjective in nature because the response to aesthetics varies from person to person. In terms of methodology, potentially significant environmental impacts to aesthetics have been determined by identifying whether project elements would result in the loss or degradation of a scenic attribute or in a demonstrable negative effect to overall visual quality.

a) Would the Project have a substantial adverse effect on a scenic vista? **No Impact**

A scenic vista can be defined as a viewpoint that provides expansive views of a highly valued landscape for the benefit of the general public. The City of Novato General Plan designates Pinheiro Ridge in the western portion of the Rush Creek Open Space Preserve as a scenic ridgeline.²⁶ Pinheiro Ridge is west of the proposed project area, and none of the proposed project activities would occur within the designated ridgeline scenic vista. However, some proposed trail closures and the Blue Oak Multi-Use and the Iron Gate Multi-Use trails would be located in areas of un-designated scenic vistas which would provide views of the surrounding wetlands, hillsides, and communities to the south. Nonetheless, the proposed activities would not impact scenic vistas.

The proposed project has been designed to avoid tree removal; although, implementation could result in tree trimming to provide sufficient space to construct new trail segments or to close existing social trails. Vegetation removal and tree pruning would not result in a substantial adverse effect on scenic vistas because the area following implementation would remain heavily vegetated. Trail decommission implementation would include revegetation with native plants appropriate for the specific area. As vegetation establishes, views would likely improve where visible from areas within the Preserve and from public roads and residential areas to the south.

²⁶ City of Novato. 2020a. General Plan 2023 Public Draft Review. September.

Construction activities could temporarily disrupt views within the project area. These disruptions would be temporary in nature, limited to the area of construction only, and would not result in a substantial adverse effect on scenic vistas. Implementation of the proposed project would have no impact to scenic vistas.

b) Would the Project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway? *No Impact*

Scenic resources can be defined as those landscape patterns and features that are visually or aesthetically pleasing. These include, but are not limited to, trees, rock outcroppings, and historic buildings. Scenic areas, open spaces, rural landscapes, and vistas also contribute to a net visual benefit for the viewer. The California Department of Transportation (Caltrans) manages the California Scenic Highway Program to protect State highways located in areas of outstanding natural beauty. The state legislature created the California's Scenic Highway Program in 1963 to protect and enhance the natural scenic beauty of California highways and adjacent corridors, through special conservation treatment. There are no designated scenic highways in Marin County and the proposed project contains no structures, historic or otherwise.²⁷ Although Highway 101 is located west of the Preserve, the project area is not visible from the highway. Implementation of the proposed project would have no impact to scenic resources within a state scenic highway.

c) In non-urbanized areas, would the Project substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage points). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?) *Less than Significant Impact*

Visual character can be defined as the perceived contrast between the existing visual elements of an area and how the area would look after the project is implemented, as a measure of how compatible the project would be with the existing visual environment after it is implemented. The proposed project is located within an open space preserve, which is accessed by the public for outdoor recreation. Publicly accessible vantage points would be from the existing trails.

Several project elements designed to prevent visitor access along closed social trails would be visible to Preserve users. Wood-split-rail fence would be installed to block access and prevent visitor use of closed social trails. These short segments of wood split-rail fencing would also be visible from existing trails and the fire road where access from social trails to system trails currently exists; however, the fencing would be designed with a rustic aesthetic to blend with the character of the Preserve and split-rail fencing is already used in areas throughout the Preserve to keep visitors from accessing sensitive areas. The addition of new fencing would not degrade the existing visual character, and the impact would be less than significant.

Trail drainage improvements and improvements to trail surfaces would not change the visual character of the area. These improvements would be integrated into the existing trails and would not require vegetation removal or tree pruning to accommodate construction. Trail segments would be temporarily closed during construction, and therefore, would not be visible to most Preserve users. Trail improvements are not expected to change the visual character of these areas.

The proposed project includes trail decommissioning and conversion of a segment of the existing Iron Gate Fire road to a five-foot-wide trail. These activities would be visible short-term during construction; however, the revegetation efforts associated with decommissioning trails and portions of the fire road would accelerate the establishment of native vegetation with the goal to have the areas blend with the natural surroundings. The

²⁷ California Department of Transportation (Caltrans). 2020. California Scenic Highway Mapping System. http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/. Viewed on November 17.

short-term changes in visual character would be less than significant, with a long-term visual character improvement in these areas.

Implementation of the proposed project would result in small-scale visual impacts during and after construction. The most prominent visual change would be from construction of the proposed Blue Oak Multi-Use and Iron Gate Multi-Use trails resulting from vegetation trimming to create a new trail where one does not currently exist. The new trails would be visible from existing fire roads and trails within the Preserve. However, these proposed new trails would be within the character of the area and would not substantially degrade public view. Minor vegetation removal and existing tree pruning associated with the proposed new trail construction is not expected to substantially degrade the existing visual character or quality of public views of the project area and surroundings, particularly because substantial existing vegetation would remain. The impact from the proposed new trail construction on the existing visual character would be less than significant.

Changes to the visual environment during construction would include construction equipment staged at the site, disturbed land, and temporary stormwater protection measures such as wattling and straw. After construction, the new and modified trail segments, and decommissioned areas would be visible, but as new vegetation grows, it would soften the visibility of these changes.

Designating the upgraded Bahia Berm Trail as hiker-only trail would have no impact on the visual environment because a change in designation would not involve a change to the physical environment.

Operation of the proposed project would involve use of the trails for recreation, similar to existing conditions, and trail maintenance would occur as needed, and therefore, would result in less than significant impacts.

Given the design of the changes to be generally compatible with semi-natural areas, their location in the visual setting, and the limited scale compared to the entire preserve, implementation of the proposed project would result in a less-than-significant impact on visual quality and character of public views.

d) Would the Project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area? *No Impact*

New sources of light and glare can occur from lighting associated with buildings and from exterior light sources such as street lighting, building illumination, security lighting, and landscape lighting. Glare is an objectionable brightness, the effect usually created by the reflection of sunlight or artificial light from highly polished surfaces, including windows and automobile glass during the daytime. During nighttime, glare is usually the result of the viewer being within the line of sight of a bright source of light, such as from a building or vehicle headlamps that contrast with surrounding low-ambient light conditions. Light pollution is an unwanted consequence of outdoor lighting and includes such effects as sky glow, light trespass, and glare. Light trespass is light cast where it is not wanted or needed, such as light from a streetlight or a floodlight that illuminates a neighbor's bedroom at night making it difficult to sleep.

The Rush Creek Open Space Preserve does not contain any sources of light or glare. The proposed project would not add any new sources of light or glare, and therefore, the project would result in no impact on day or nighttime views in the area.

AGRICULTURE AND FORESTRY RESOURCES

AGRICULTURE AND FORESTRY RESOURCES CHECKLIST QUESTIONS					
	Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation	Less-than-Significant Impact	No Impact
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 type="checkbox"/>	<input checked="" type="checkbox"/>
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"/>
c)	Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code §12220(g)), timberland (as defined by Public Resources Code §4526), or timberland zoned Timberland Production (as defined by Government Code §51104(g))?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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"/>
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 type="checkbox"/>	<input checked="" type="checkbox"/>

Setting

The California Department of Conservation's Farmland Mapping and Monitoring Program (FMMP) provides a classification system based on technical soil ratings and current land use. The FMMP is an informational service only and does not have regulatory authority over local land-use decisions. The minimum land use mapping unit is ten acres unless specified; the map incorporates smaller units of land into the surrounding map classifications. Pursuant to CEQA Guidelines Appendix G, the term "Farmland" refers to FMMP map categories Prime Farmland, Unique Farmland, and Farmland of Statewide Importance (hereafter collectively referred to as "Farmland"). Generally, any conversion of land from one of these categories to a lesser quality category or a non-agricultural use would be an adverse impact. These map categories are as follows:

Prime Farmland: Land which has the best combination of physical and chemical characteristics to produce crops. It has the soil quality, growing season, and moisture supply needed to produce sustained high yields of crops when treated and managed, including water management, according to current farming methods.

Unique Farmland: Land of lesser quality soils used to produce specific high economic value crops. It has the special combination of soil quality, location, growing season, and moisture supply needed to produce sustained high quality or high yields of a specific crop when treated and managed according to current farming methods. It is usually irrigated but may also include non-irrigated orchards or vineyards.

Farmland of Statewide Importance: Land that is like Prime Farmland but with minor shortcomings, such as greater slopes or less ability to hold and store moisture.

Rush Creek Open Space Preserve does not contain any prime, unique, or important farmland. The California Department of Conservation maps this area as "Other."²⁸

Applicable RTMP Policies and BMPs

The RTMP does not include Policies and BMPs specific to Agriculture and Forestry Resources. The RTMP Policies and BMPs and are provided, in their entirety, in Appendix A.

CEQA Context

A project would normally result in a significant impact to agriculture and/or forestry resources if the project will alter existing agricultural land uses or land use designations. Generally, any conversion of land from one of the Farmland categories to a lesser quality category or a non-agricultural use would be a potentially significant impact.

- a) Would the Project 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 a non-agricultural use? *No Impact***

The Rush Creek Open Space Preserve does not include mapped Farmlands, and it does not support agricultural use.²⁹ The project area would remain as open space preservation and recreation following implementation of the proposed project. Therefore, the proposed project would result in no impact from conversion of Farmland to a non-agricultural use.

- b) Would the Project conflict with existing zoning for agricultural use, or a Williamson Act contract? *No Impact***

The Rush Creek Open Space Preserve is designated for open space uses. There are no designated agricultural lands or Williamson Act contracted parcels on the site. Therefore, implementation of the proposed project would result in no impact to existing zoning for agricultural use or a Williamson Act contract.

- c) Would the Project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code §12220(g)), timberland (as defined by Public Resources Code §4526), or timberland zoned Timberland Production (as defined by Government Code §51104(g))? *No Impact***

In accordance with the definition provided in California Public Resources Code Section 12220(g), "forest land" is land that can support, under natural conditions, 10 percent native tree cover of any species, including hardwoods, and that allows for the preservation or management of forest-related resources, such as timber, aesthetic value, fish and wildlife, biodiversity, water quality, recreational facilities, and other public benefits. "Timberland" means land, other than land owned by the federal government and land designated as experimental forest land, which is available for, and capable of, growing a crop of trees of any commercial species used to produce lumber and other forest products, including Christmas trees.

²⁸ California Department of Conservation, 2018. Marin County, Important Farmland Data Availability <https://www.conservation.ca.gov/dlrp/fmmp/Pages/Marin.aspx>

²⁹ *ibid*

Zoning for the Rush Creek Open Space Preserve is Open Space. The project area does not include lands with forest land, timberland, or timberland production. Therefore, implementation of the proposed project would result in no impact to lands zoned as forest land, timberland, or timberland production.

**d) Would the Project result in the loss of forest land or conversion of forest land to non-forest use?
No Impact**

As described above, the Rush Creek Open Space Preserve is used for preservation and outdoor recreation, does not contain zoned forest land, and is not used for any timber related activities. Therefore, implementation of the proposed project would have no impact from the loss or conversion of forest land to a non-forest use.

e) Would the Project 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? *No Impact*

The Rush Creek Open Space Preserve does not include farmland or forest land. Implementation of the proposed project would not convert farmland to a non-agricultural use or convert forest land to a non-forest use; therefore, implementation of the proposed project would result in no impact association with farmland or forest land conversion to non-agricultural or non-forest use.

AIR QUALITY

AIR QUALITY CHECKLIST QUESTIONS					
	Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation	Less-than-Significant Impact	No Impact
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"/>
b)	Result in a cumulatively considerable net increase of any criteria pollutant under an applicable federal or state ambient air quality standard?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c)	Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d)	Result in other emissions (such as those leading to odors or dust) adversely affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Setting

Marin County is part of the nine-county San Francisco Bay Area Air Basin (SFBAAB). Air quality in the region is affected by natural factors, such as proximity to the bay and ocean, topography, and meteorology, as well as by anthropogenic factors related to air pollution from human activities. The Bay Area is characterized by its Mediterranean climate, with warm, dry summers and cool, wet winters. Sensitive receptors to substantial pollutant concentrations refers to those facilities or land uses that include members of the population that are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. There are no air quality standards for odors.

The coastal and southern portions of Marin County are often subject to cool marine air and substantial fog. Temperatures in these areas remain relatively steady throughout the year as a result of this marine influence. Eastern Marin County is warmer, with less fog, and more seasonal variability in temperature. Prevailing winds throughout the County are generally from the northwest, with wind speeds highest along the coast. Annual rainfall in Marin County is 37-49 inches. Winter rains account for the majority of rainfall in the County.

In general, ambient air quality in a region depends on the quantities of pollutants emitted by sources within the area, transportation of pollutants to and from surrounding areas, local and regional meteorological conditions, and the surrounding topography. Air quality is characterized by the concentration of pollutants in the atmosphere and/or emissions of pollutants. Units of concentration are typically expressed in parts per million (ppm) or micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) and emissions are typically expressed as pounds per day (lb/day) or tons per year.

The Federal Clean Air Act (CAA) and the California Clean Air Act form the basis of the air quality regulations and programs that govern the project area and the wider SFBAAB. Air quality is monitored and regulated by the U.S. Environmental Protection Agency (EPA), the California Air Resource Board (CARB), and the Bay Area Air Quality Management District (BAAQMD).

A region's success in promoting good air quality is measured by comparing the concentration of pollutants in the atmosphere to the known safe level set as State and federal standards. Chemicals with potential basin-wide effects are regulated under the CAA in two groups: 1) toxic air contaminants with immediate, acute toxicity

effects and 2) criteria pollutants that are common chemicals with long-term health effects. Acutely toxic chemicals are problematic at any concentration; however, the effect of criteria contaminants depends on the amount of exposure over time. Criteria pollutants include ozone, carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), sulfates, lead, and fine (PM_{2.5}) and coarse (PM₁₀) particulate matter.

EPA sets limits on maximum atmospheric concentration for each criteria pollutant. The State of California is required to use these limits, but may also set higher standards when CARB determines that doing so would protect human health. When an area is at or below the regulatory standard, it is said to be "Attainment" for that pollutant. The SFBAAB is designated nonattainment for the federal and State ozone standards, the state PM₁₀ standard, and the federal and state PM_{2.5} standards.³⁰ The SFBAAB is designated attainment or unclassified for all other state and Federal air quality standards.

Accordingly, the pollutants of greatest concern in Marin County are ozone and particulate matter. Ozone is primarily a problem in the summer, and PM_{2.5} pollution in the winter. Marin County in general does not experience problems with ozone, but the hilly terrain and colder winter temperatures can trap PM_{2.5} near the surface, sometimes resulting in air quality that exceeds health standards.

Ozone is not emitted directly, but is formed in the atmosphere through chemical reactions between precursor chemicals, including CO, NO₂, and volatile organic compounds (VOCs). Motor vehicles are the largest source of ozone precursor emissions. Particulate matter is divided into two categories: coarse particulate matter with a diameter of 10 microns or less (PM₁₀) and fine particulate matter with a diameter of 2.5 microns or less (PM_{2.5}). High concentrations of particulate matter can impact human health, as well as contribute significantly to regional haze and reduced visibility. PM₁₀ is produced by combustion, industrial processes, motor vehicles, and grading and construction. PM₁₀ emissions associated with motor vehicle use are primarily generated by re-suspended road dust, rather than direct vehicle emissions. PM_{2.5} is most commonly generated through combustion, including wood burning furnaces and regional wildfires.

In Marin County, air pollution potential is highest in the eastern portion of the County where the project area is located and where population and development are most concentrated. Though the County does not have many polluting industries, air quality along the U.S. 101 corridor, which is 1.5 miles from the project area, may be affected by emissions from increasing motor vehicle use within and through the county.

However, air quality in Marin County is generally very good. The BAAQMD measures air quality in Marin County at a monitoring station in San Rafael. With the exception of PM₁₀ and PM_{2.5}, this monitoring station has not reported any exceedances of ambient air quality standards over the past five years.³¹

Air pollutants can be locally problematic when they occur at high densities or when the source is close to a sensitive receptor. The project area is located northeast of the city of Novato, within the city limits. Lands surrounding the project area consist primarily of residences and undeveloped marsh and open space. Other than adjacent residential communities, the nearest sensitive receptor to Rush Creek Open Space Preserve is Olive Elementary School, approximately 1.2 miles to the southwest.

Applicable RTMP Policies and BMPs

MCOSD would incorporate the following applicable RTMP Policies and BMPs, which were designed to minimize or avoid potential environmental impacts associated with air quality. The applicable RTMP Policies and BMPs are listed in the Project Description and are provided, in their entirety, in Appendix A.

- Policy SW.29: Retrofit or Upgrade Construction Equipment

³⁰ BAAQMD 2017a. <https://www.baaqmd.gov/about-air-quality/research-and-data/air-quality-standards-and-attainment-status>

³¹ BAAQMD 2020. <https://www.baaqmd.gov/about-air-quality/current-air-quality/air-monitoring-data/#/aqi?id=316&date=2018-11-01&view=monthly>

- Air Quality-1: Implement BAAQMD Measures
- Air Quality-2: Minimize Dust Control Emissions during Construction
- Air Quality-3: Enhanced Dust Control during Construction
- Air Quality-4: Dust Control During Construction in Sensitive Resource Areas

CEQA Context

A project would normally result in significant impacts to air quality if changes to existing air quality would result from construction, operation, use, and/or maintenance activities from implementation of the project. The proposed project has been evaluated to determine if changes to existing air quality would result from construction, public use, operations, and/or maintenance.

a) Would the Project conflict with or obstruct implementation of the applicable air quality plan? *No Impact*

The applicable air quality plan for the project is the BAAQMD's 2017 Clean Air Plan: Spare the Air, Cool the Climate (2017 CAP) adopted in April 2017, which provides a regional strategy to reduce air pollution and thereby protect public health and climate³². The 2017 CAP describes how the BAAQMD will continue progress towards attaining all state and federal air quality standards and eliminating health risk disparities from exposure to air pollution among Bay Area communities. Regarding climate protection, the 2017 CAP focuses on achieving greenhouse gas reduction targets for 2030 and 2050, such as for methane and carbon dioxide. The 2017 CAP includes control measures designed to decrease emissions of air pollutants most harmful to Bay Area residents, including ozone and particulate matter.

The BAAQMD published CEQA Air Quality Guidelines in May 2017 (2017 BAAQMD Guidelines) to assist in evaluating the potential air quality impacts of proposed projects in the SFBAAB during the environmental review process consistent with CEQA requirements. Per the 2017 BAAQMD Guidelines, the BAAQMD considers a project consistent with the CAP if it: 1) can be concluded that a project supports the primary goals of the CAP (by showing that the project would not result in significant and unavoidable air quality impacts); 2) includes applicable control measures from the CAP; and 3) does not disrupt or hinder implementation of any CAP control measure.³³

Because the project would not result in new long-term operations-related emissions and construction-related emissions would be short-term and less than significant (see Impact b, below), implementation of the project would not conflict with the primary goals of the 2017 CAP. The CAP includes 85 control measures across nine sectors: stationary (industrial sources), transportation, energy, buildings, agriculture, natural and working lands, waste management, water, and super-GHG pollutants. The project does not include new stationary sources or new permanent mobile sources, does not introduce a new land use, and would not use a substantial amount of energy. The project would incorporate all applicable control measures and implementation of the project would not hinder implementation of any control measures included in the CAP. Additionally, the project would incorporate applicable RTMP Air Quality BMPs to avoid air quality impacts. Therefore, implementation of the proposed project would not conflict with or obstruct implementation of the applicable air quality plan.

³² BAAQMD Clean Air Plan, Spare the Air, Cool the Climate. 2017b.
http://www.baaqmd.gov/~media/files/planning-and-research/plans/2017-clean-air-plan/attachment-a_-proposed-final-cap-vol-1-pdf.pdf?la=en, April.

³³ *ibid*

b) Would the Project result in a cumulatively considerable net increase of any criteria pollutant under an applicable federal or state ambient air quality standard? *Less than Significant*

The SFBAAB is designated nonattainment for the federal and State ozone standards, the state PM10 standard, and the federal and state PM2.5 standards. Generally, no individual project is large enough to result in nonattainment of air quality standards on its own. Instead, individual projects emissions can cumulatively contribute to adverse air quality conditions.

The proposed project would result in minor criteria pollutant emissions during construction. Construction of the project would include limited use of heavy equipment, which would result in direct emissions of criteria pollutants. Grading activities and the movement of equipment and workers within the project area would also result in some fugitive dust emissions. Additionally, MCOSD employees and contractors driving to and from the site would result in emissions from vehicle use. These construction-related emissions would be temporary and short-term in nature and would cease after construction of the project. In addition, MCOSD would implement RTMP BMPs to reduce emissions associated with project implementation. These measures require MCOSD to implement measures to reduce emissions during construction, require hydroseeding or other soil protection measures to control dust during construction.

The proposed project would not result in additional emissions associated with ongoing operation. The proposed project would be located in Rush Creek Open Space Preserve, which is currently maintained by MCOSD staff and utilized by the public for low-intensity outdoor recreation. The project would not change the level of ongoing operation, maintenance, and public use activities on Rush Creek Open Space Preserve.

The 2017 BAAQMD Guidelines provide a process for evaluating the proposed project's impact related to criteria pollutant emissions and its potential to cause or contribute to a violation of air quality standards.³⁴ The first step in this process is to evaluate whether the project meets the screening criteria defined in the 2017 BAAQMD Guidelines. If the project meets all screening criteria, its impact is considered to be less than significant and further detailed analysis of potential project emissions is not required.

Table 3-1 of the 2017 BAAQMD Guidelines provides the following screening criteria size thresholds for the proposed project's land use of city park: 2,613 acres for operational criteria pollutants, 600 acres for operational greenhouse gases (GHG), and 67 acres for construction-related emissions (PM10). The total disturbance area associated with the project is approximately 3 acres, so the proposed project size is well below the described screening criteria size thresholds.³⁵ The proposed project would not include demolition, simultaneous occurrence of more than two construction phases, simultaneous construction of more than one land use type, extensive site preparation, or material transport greater than 10,000 cubic yards requiring considerable haul truck activity. Additionally, the project would incorporate applicable RTMP Air Quality BMPs, as noted above, which would ensure that all basic construction measures recommended by the BAAQMD would be implemented during project construction. As a result, the proposed project would meet all of the screening criteria identified in the 2017 BAAQMD Guidelines and the project would not result in a cumulatively considerable net increase of any criteria pollutant. Therefore, both construction-period and operational impacts associated with the proposed project would result in a less-than-significant increase of ozone and particulate matter, the criteria pollutants for which the Bay Area Air Basin is in non-attainment under applicable federal and state ambient air quality standards.

³⁴ BAAQMD 2017b. BAAQMD Clean Air Plan, Spare the Air, Cool the Climate.

³⁵ Assuming a 10-foot-wide disturbance area for 5,090 linear feet of new trail construction (Blue Oak Trail, Iron Gate Trail, and Horseman's Spur Trail), 1,375 linear feet of upgraded trail (Bahia Berm Trail), 690 linear feet of road to trail conversion (Iron Gate Fire Road), 1,890 linear feet of passive trail closures, and 4,240 linear feet of active trail decommissioning.

c) Would the Project expose sensitive receptors to substantial pollutant concentrations? *Less Than Significant*

Sensitive receptors are areas that are occupied by populations that are more susceptible to adverse effects from pollutants, such as children, the elderly, and people with illnesses. Sensitive receptors include facilities such as schools, hospitals, and communities for the elderly. Aside from nearby residential communities, the closest sensitive receptor to the project area is Olive Elementary School, approximately 1.2 miles to the southwest.

Implementation of the proposed project would contribute to a minor temporary increase in air pollutants associated with project construction as a result of vehicle emissions, operation of construction equipment, and ground disturbance. However, these emissions would be temporary and vehicle and equipment related emissions would not result in localized concentrations of any criteria pollutants that would impact sensitive receptors. Project construction would cause fugitive dust emissions associated with grading and the movement of equipment and staff around the project area. However, the project would implement RTMP Air Quality BMPs 1 through 4, which include rigorous dust control measures. As a result, the project would not result in fugitive dust impacts to nearby residential areas or other sensitive receptors.

The significance of impacts to sensitive receptors is also dependent on the chance of contracting cancer from exposure to Toxic Air Contaminants (TACs) or of having adverse health effects from exposure to non-carcinogenic TACs. Construction equipment can produce substantial amounts of diesel particulate matter, which has been identified by CARB as a TAC. A project is considered to have a significant impact if the incremental cancer risk at a receptor exceeds 10 in a million. Health risk is evaluated for sensitive receptors within a 1,000-foot radius of a project's impact area. Sensitive receptors within 1,000 feet of the proposed project consist of residential receptors immediately south of Bahia Drive.

The Office of Environmental Health Hazard Assessment (OEHHA) does not recommend assessing cancer risk for projects lasting two months or less³⁶. The proposed project would require six weeks of construction, so a cancer-risk assessment is not required. Most of the proposed project's construction-related activities would occur at a distance greater than 1,000 feet from the nearest residential receptors, including the majority of the new trail construction, passive closure, and active decommissioning and all of the road to trail conversion. Additionally, the proposed project would incorporate RTMP Policy SW.29, which would ensure that equipment used during project construction include diesel particulate filters or have electric, Tier III, or Tier IV off-road engines, as applicable. As a result, the project would not expose sensitive receptors to any substantial concentrations of diesel particulate matter or other TACs.

Implementation of the proposed project would not result in any long-term or chronic exposure of sensitive receptors to substantial pollution concentrations. Therefore, implementation of the proposed project would result in a less-than-significant impact associated with exposure of sensitive receptors to substantial pollution.

d) Would the Project result in other emissions, such as those leading to odors, adversely affecting a substantial number of people? *No Impact*

There are no air quality standards for odors. Odor impacts are subjective as odor sensitivity varies from person to person. Odor impacts are related, to some degree, to the distance from the origin of the odor to the receptor. Offensive odors rarely impact public health, however, odors can cause headaches and on-going odors can result in a negative impact to quality of life. In general, the types of land uses that could result in potential odor emissions include refineries, chemical plants, wastewater treatment plants, landfills, composting facilities, and transfer stations.

³⁶ Office of Environmental Health Hazard Assessment. 2015.

BAAQMD's Regulation 7 – Odorous Substances³⁷ places general limitations on odorous substances and specific emission limitations on certain odorous compounds. These substances and compounds include dimethylsulfide, ammonia, mercaptans calculated as methylmercaptan, phenolic compounds calculated as phenol, and trimethylamine. The proposed project would not utilize these substances or compounds during construction or operation and maintenance activities, and therefore the proposed project would be in compliance with this regulation.

Implementation of the proposed project would neither result in any major sources of odor nor introduce land uses that would pose potential future odor emissions. Short-term construction equipment related emissions, including diesel exhaust and fuel vapors, have the potential to result in short-term generation of odor emissions. These odor emissions would be temporary and would dissipate rapidly in the air, decreasing with distance from the source, thus minimizing potential exposure to persons utilizing open space near the project area. Implementation of the proposed project would not result in odor emissions that would adversely affect a substantial number of people. Therefore, implementation of the proposed project would not result in odor emissions that would adversely affect a substantial number of people.

³⁷ Bay Area Air Quality Management District (BAAQMD). Regulation 7 Odorous Substances. 1982.
<https://www.baaqmd.gov/~media/dotgov/files/rules/reg-7-odorous-substances/documents/rg0700.pdf?la=en>

BIOLOGICAL RESOURCES

BIOLOGICAL RESOURCES CHECKLIST QUESTIONS					
	Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation	Less-than-Significant Impact	No Impact
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 California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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 California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c)	Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e)	Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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"/>

Setting

Definitions

Project area refers to the area that would experience project-related temporary or permanent effects caused by surface disturbance, tree removal, or other alterations of habitat within the project construction area.

Study area refers to the larger area within which biological resources could be subject to effects (e.g., disturbance to wildlife from construction-related noise). The study area for the proposed project includes areas that could experience project-related temporary or permanent effects caused by surface disturbance, vegetation removal or tree trimming, or other alternatives of habitat within the construction area. The study area includes lands surrounding the proposed project activities: trail closure, decommissioning, and restoration; fire road to trail conversion; new trail construction; social trail upgrade; and revegetation.

Special-status biological resources include special-status plants, animals, and natural communities, plus wetlands and other waters of the United States and State, as defined by the U.S. Army Corps of Engineers (USACE), California Department of Fish and Wildlife (CDFW), and the State Water Resources Control Board (SWRCB).

A **special-status natural community** is a natural habitat community that receives regulatory recognition from municipal, county, State, and/or federal entities, such as the CDFW's California Natural Diversity Database (CNDDDB), because it is unique in its constituent components, restricted in distribution, supported by distinctive soil conditions, and/or considered locally rare.

Special-status plant and animal species are defined as:

- Species listed under the federal Endangered Species Act (FESA), Marine Mammal Protection Act, California Endangered Species Act (CESA), California Fish and Game Code (CFGF), and the California Native Plant Protection Act (NPPA) as endangered or threatened; species that are candidates or proposed for listing; or species that are designated as rare or fully protected
- Locally rare species, which may include species that are designated as sensitive, declining, rare, locally endemic, or as having limited or restricted distribution by various federal, State, and local agencies, organizations, and watch lists. This includes species on Lists 1B and 2 of the California Native Plant Society (CNPS).
- Species that otherwise meet the definition of rare, threatened, or endangered pursuant to Section 15380 of the CEQA Guidelines

Study Area

The study area for the proposed project is located in the southeast portion of the Rush Creek Open Space Preserve, which is located in northeastern Marin County, north of the city of Novato (Figure 1). The Rush Creek Marsh and Petaluma Marsh Wildlife Refuges, owned by the California Department of Fish and Wildlife, are adjacent to the north and northeast and additional marshlands owned by the Marin Audubon Society (Bahia Wetlands), and the Petaluma River, lie to the east. To the south, there is residential development mixed with City of Novato open space lands. A small county park, Rush Creek Park, is present across Saddlewood Road from the Preserve. A cemetery and horse arena are also present just south of the Preserve. Highway 101 is immediately west of the Preserve's westernmost boundary.

The Preserve is located in the Rush Creek watershed with the creek and associated wetlands forming the Preserve's northern boundary. Rush Creek conveys water from the stormwater system in northeastern Novato and flows east into Black John Slough, the Petaluma River and San Pablo Bay. The saltwater and brackish marsh habitats supported by the creek provide important habitat for birds and other wildlife. The wetlands are also managed for winter stormwater management through a series of levees and floodgates.

Rush Creek Open Space Preserve is primarily comprised of uplands adjacent to the surrounding wetlands. It includes two main ridges. Pinheiro Ridge runs from Highway 101 to the northeast, where it descends toward the wetlands. A shorter, secondary ridge runs northwest-southeast on the eastern side of the Preserve, where the Study Area is located.

Rush Creek Open Space Preserve currently contains 6.2 miles of roads and trails, many of which are very gentle in grade. Bahia Ridge Fire Road and Iron Gate Fire Road, which serve as emergency access and recreational use, are located in the project area. Bahia Fire Road bisects the project area and runs along a ridge from a preserve entrance on Bahia Drive west of Topaz Drive and Iron Gate is located along the western edge of the project area. Bahia Trail traverses the eastern project area boundary, just above the marshlands, from an entrance at Bahia Drive and Topaz Drive.

Elevations on Rush Creek Open Space Preserve range from approximately 280 feet to sea level. The project area supports plant communities including oak woodland and California bay-coast oak forest. The woodlands are interspersed with grasslands and mixed shrub/grassland. Habitats on the property offer nesting habitat, food, shelter, water, and migratory corridors for both common and special-status animals.

Biological Resource Study

To assist with understanding how implementation of the proposed project could affect biological resources, MCOSD contracted with Prunuske Chatham, Inc., (PCI) who prepared the Rush Creek Open Space Preserve, Eastern Section Biological Resources Assessment Report (PCI Biology Report)³⁸ in 2020. PCI assessed biological resources and habitat within the project area and evaluated potential impacts to these resources from the implementation of the proposed project. Wildlife and botanical surveys of the study area were conducted to evaluate the potential presence of special-status wildlife, compile an inventory of species observed and wildlife habitats, and complete an evaluation of existing habitats. PCI conducted botanical surveys to characterize plant communities, compile an inventory of species observed, and to evaluate the potential for presence of special-status plant species in spring 2018 and again in spring 2020. Surveys followed the protocol described in *Protocols for Surveying and Evaluating Impacts to Special-status Native Plant Populations and Natural Communities* (CDFW 2009), as well as other survey guidelines. Information included in the PCI Biology Report was used extensively in preparation of the Biological Resources section of the CEQA Checklist. The report is available for review at the Marin County Parks and Open Space District Administrative Office.

The study area evaluated in the PCI Biology Report includes approximately 122 acres, including the project area and a surrounding area buffer. While the PCI Biology Report describes the biological resources occurring or potentially occurring with the study area, the entire study area would not be disturbed by project-related improvements and activities.

Figure 17: PCI Biology Assessment Study Area

Figure 18: Study Area Vegetation Types

Vegetation Communities

PCI identified seven vegetation types within the study area from the Marin County Parks Vegetation maps and grouped them into five general vegetation types as shown in **Table-1** and illustrated on **Figure 18**. The mapped general vegetation types within the study area, which primarily supports oak woodland and California bay-coast oak forest. Naming nomenclature followed the existing classification and mapping performed for Marin County in 2008 by Aerial Information Systems and the California Native Plant Society:

³⁸ Prunuske Chatham, Inc. 2020. Rush Creek Open Space Preserve, Eastern Section Biological Resources Assessment Report. June 2020.

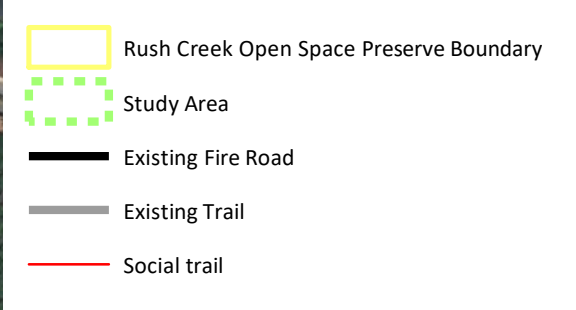
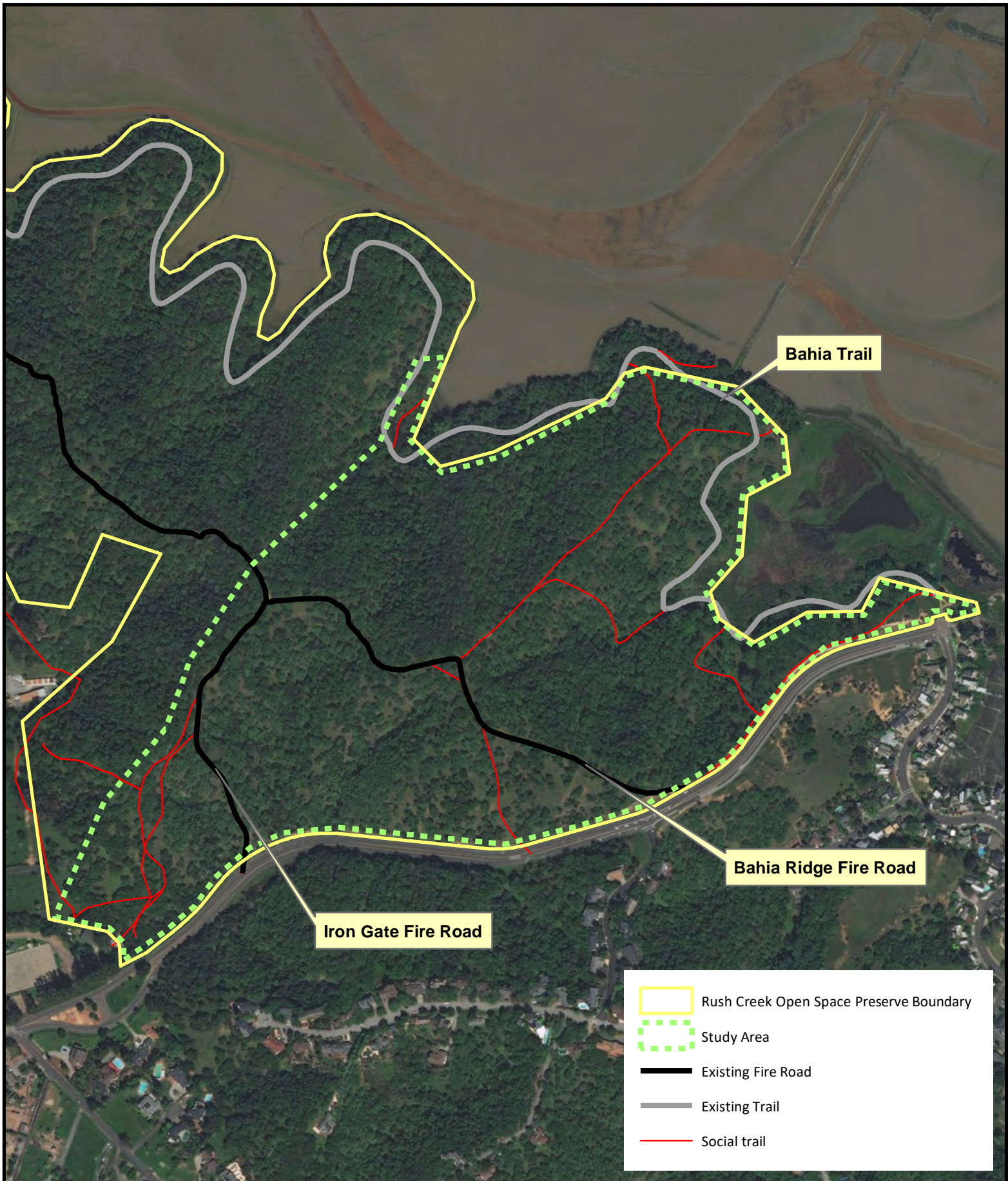
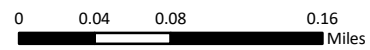


Figure 17. Study Area
 PCI Biological Resources Assessment
 Rush Creek Open Space Preserve, Eastern Section
 Bahia Area Fire Roads and Trails Improvement Project



6/2/2020
 Aerial: ESRI
 Trails: Marin County



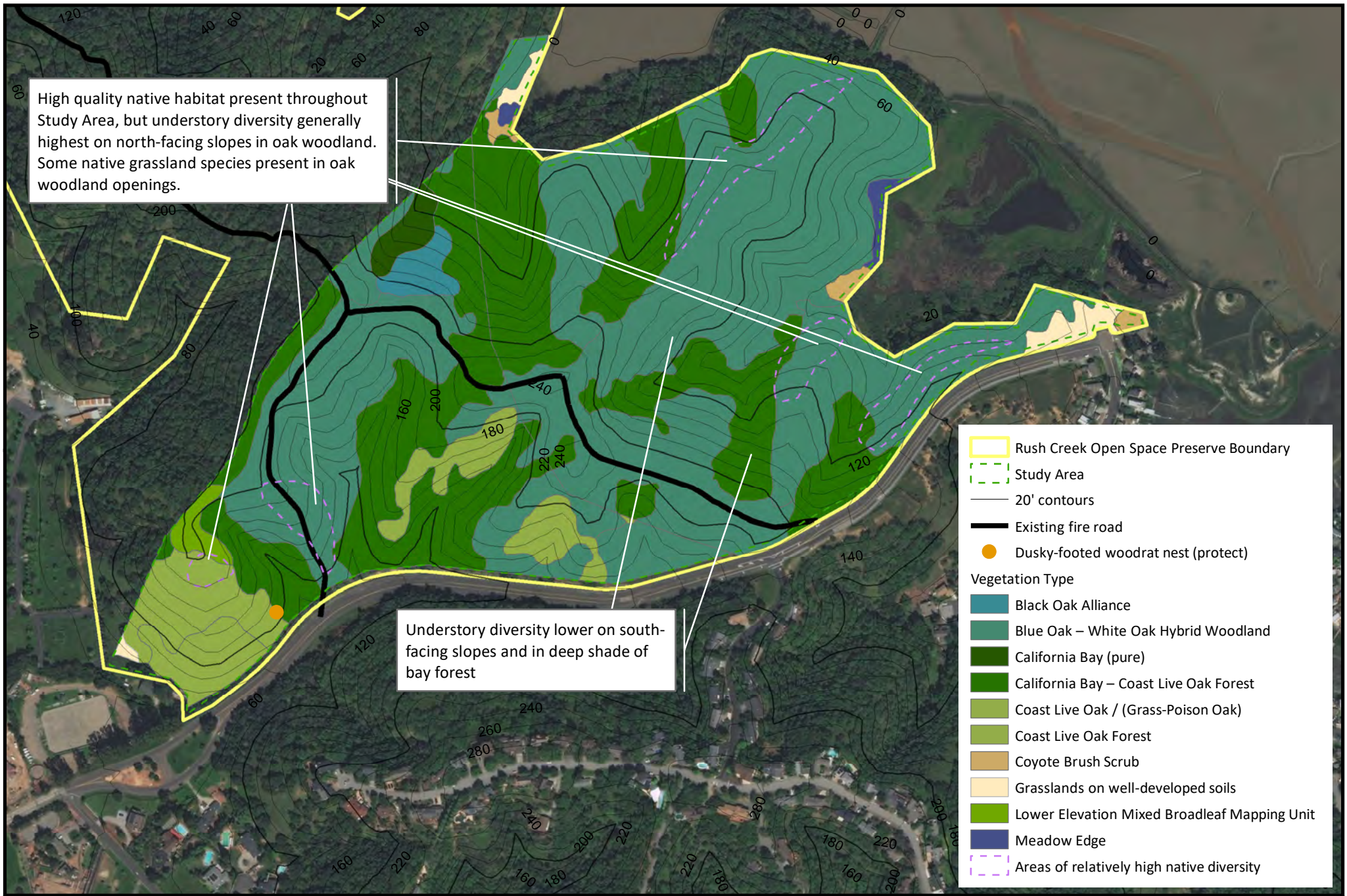


Figure 18. Vegetation Types and Areas of Interest
 Biological Resources Assessment
 Rush Creek Open Space Preserve
 Bahia Area Fire Roads and Trails Improvement Project

6/2/2020
 Aerial: ESRI
 Trails: Marin County
 Vegetation: Marin County, PCI



Table-1. Vegetation Types

General Vegetation Type	Vegetation Type – Marin County Parks Vegetation Map nomenclature	CDFW Rank ³⁹	Sensitivity ⁴⁰
Oak Woodland	Black Oak Forest	G4S4	Yes
	Blue Oak - White Oak Hybrid Woodland	G4S4 (Blue oak)/G4S3 (Oregon white oak)	Yes
	Coast Live Oak Woodland (including CLO - Grass/Poison Oak, Lower Elevation Mixed Broadleaf)	G5S4	Yes
California Bay - Coast Live Oak Forest	California Bay – Coast Live Oak Forest and California Bay (pure) Forest	G4S3	Yes
Coyote Brush Scrub	Coyote Brush Scrub - Mixed Shrub/Grassland	G5S5	No
Grassland	Grasslands on Well-developed Soils	N/A	No
Wet Meadow	Temporarily Flooded or Saturated Meadow Edge	N/A	Yes

Sensitive plant communities are those that are of limited distribution statewide or within a county or region, those that are particularly threatened by human activity, or those that provide especially important ecological values. The California Department of Fish and Wildlife’s List of California Terrestrial Natural Communities and the Manual of California Vegetation⁴¹ indicate which plant communities are sensitive within the state of California; other communities may be sensitive based on federal or local (county) regulations. Within the study area, the three oak woodland communities and the California Bay – Coast Live Oak Forest communities are considered sensitive plant communities.

Oak Woodland

Oak woodland occupies most of the upper slopes and ridges of the Study Area. These stands are dominated by Oregon oak (*Q. garryana*), blue oak (*Q. douglasii*), and apparent hybrids of the two. Black oak (*Q. kelloggii*), coast live oaks (*Q. agrifolia*), California bay (*Umbellularia californica*), and madrone (*Arbutus menziesii*) are all present in lower numbers. The canopy is relatively continuous except on some south-facing slopes, where cover is sparser and the canopy is more open.



³⁹ Provided where map classes correlate to CDFW alliances. “G” indicates conservation priority at the global level, and “S” refers to the state level. 1 = critically imperiled; 2 = imperiled; 3 = vulnerable; 4 = apparently secure; 5 = secure. “?” indicates the need for further study. Alliances ranked 3 or lower are considered sensitive. Non-native alliances (i.e., semi-natural stands) are not ranked.

⁴⁰ Sensitivity based on federal (U.S. Army Corps of Engineers; Section 404), state (CDFW), and local (Marin County) regulations.

⁴¹Sawyer, John O., Todd Keeler-Wolf, and Julie M. Evans. 2009.

Understory vegetation is diverse and dominated by native species. Shrubs, vines, grasses, forbs, and regenerating trees are all common. Habitat quality in these woodlands is high. Although annual grasses are present in the understory, a diversity of native herbaceous species is also present. Native understory diversity is generally somewhat higher on north-facing slopes than on south-facing slopes. Invasive species are limited. Natural regeneration of trees is common.

California Bay – Coast Live Oak Forest

California bay – coast live oak forest occurs in the drainages of the Study Area. This vegetation type is dominated by evergreen species, creating a dense canopy that limits the understory. Bay is dominant, coast live oak is common, and madrone is occasional. Sparse cover of shrubs, ferns, grasses and forbs is present and primarily composed of native species. Typical species include poison oak, honeysuckle, melic grass (*Melica sp.*), hedge nettle (*Stachys sp.*), Pacific sanicle, Pacific pea (*Lathyrus vestitus*), lady fern (*Athyrium filix-fimina*), and maidenhair fern (*Adiantum jordanii*).



Habitat quality in the bay forests is high. Although less diverse than the oak woodlands, non-native species are still limited, and natural regeneration of trees is common. These forests line the drainages of the study area.

Coyote Brush Scrub

Coyote brush (*Baccharis pilularis*) scrub occurs in small patches at lower elevations near the baylands. Stands in dryer locations are open and include an herbaceous layer of non-native annual grasses, while the northern stand is denser and includes other shrubs: common manzanita (*Arctostaphylos manzanita*), poison oak, and California blackberry (*Rubus ursinus*). This northern stand also has occasional native herbaceous species in the understory, including soaproot (*Chlorogalum pomeridianum*), California poppy (*Echscholzia californica*), and California oatgrass (*Danthonia californica*), as well as patches of invasive yellow starthistle (*Centaurea solstitialis*).



Habitat quality in the coyote brush scrub patches is moderate. These may represent areas recovering from human disturbance. Plant species diversity is generally low. However, they may provide valuable wildlife habitat, and the shrubs species may enable the gradual establishment of native trees and other native species.

Grassland

Grasslands occur mainly in two limited patches at lower elevations within the study area. These appear to represent locations of past disturbance. Other small stands are present at woodland edges and openings. The grassland stands are dominated by common non-native annual grasses including wild oats (*Avena sp.*), farmer's foxtail (*Hordeum murinum ssp. leporinum*), and soft chess (*Bromus hordeaceus*). Non-native forbs are common and



include vetch (*Vicia sp.*), English plantain (*Plantago lanceolata*), and Italian thistle (*Carduus pycnocephalus*). Noxious weed yellow starthistle occurs in patches along the trail.

Overall, habitat quality in the grasslands is moderate. Most of these areas are limited patches dominated by non-native species. However, native species are present at low densities at the entrance, especially at the edge of the stand, and in woodland openings.

Wet Meadow

Two small patches of wet meadow are within the study area, both near inlets of the bay. Vegetation is dominated by herbaceous species adapted to seasonal moisture, including a mixture of native and non-native species. These include Italian ryegrass (*Festuca perennis*), basket sedge (*Carex barbarae*), popcorn flower (*Plagiobothrys sp.*), and coyote thistle (*Eryngium sp.*). Below this elevation (and outside of the Study Area), salt marsh species are present, including saltgrass (*Distichlis spicata*) and pickleweed (*Salicornia sp.*). Habitat quality in these small patches of wet meadow is moderate, given their limited size and mixture of native and non-native species.

Wildlife Habitat

The biological resources study area supports extensive oak and California bay woodlands interspersed with patches of coyote brush scrub, non-native grassland, and wet meadow. It is part of a continuous, low-lying ridge that borders extensive tidal marsh and shallow bay habitats along the lower Petaluma River. The intact woodlands provide important wildlife corridors for species moving from the uplands towards the bay for food and water, and back. The absence of extensive trails across the interior buffers wildlife from recreation use and leave some habitats within the Rush Creek Open Space Preserve intact providing key habitat for many of Marin County's wildlife species through part or all of their life cycles.

Native bay and oak woodlands dominate the study area. Oak woodlands provide suitable habitat for a variety of terrestrial birds, mammals, amphibians, and reptiles, and birds represent the most abundant and prominent wildlife species within this habitat. Native oaks and oak woodland communities found within the study area serve as a resource for many wildlife species in the form of both food and shelter, and on the oak woodland floor, woody debris piles and layers of duff provide habitat for amphibians including the locally common California slender salamander and the coast range fence lizard were abundant in areas of downed wood and rock outcrops.

The oak woodland habitat supports a variety of mammals that use the habitat for escape, cover, and nesting sites. Although no large mammals were observed during the site evaluation, California ground squirrel were observed in areas of downed wood and burrows were present under rotting tree trunks. Botta's pocket gopher mounds and tunnels were seen throughout the woodland habitat. Bat species likely forage in the woodlands and roost in nearby larger trees. Black-tailed deer are abundant in the Iron Gate Fire Road area and across the Rush Creek Open Space Preserve, and a woodrat nest was observed in a coast live oak tree cluster off Bahia Drive in the southwest corner of the Preserve.

Patches of annual grassland, wet meadow, and coyote brush scrub border the woodlands in the study area. These habitats provide foraging opportunities for a number of bird species who are attracted to seeds, other plant material, invertebrates, and small vertebrates. Species such as the American goldfinch, Anna's hummingbird, and western bluebird forage in these open areas. Small vertebrates and invertebrates within these habitats are likely to serve as a food source for birds of prey that forage in more open areas. Native butterflies also use habitats including buckeye and western tiger swallowtail.

Special-Status Plants

The laws comprising California's legal framework and authority for plant species conservation include the FESA, CESA, the NPPA, and the California Environmental Quality Act (CEQA). Special-status plants include: those

listed as endangered, threatened, or rare; those listed as candidates for listing under FESA or CESA; those listed as rare under the NPPA; those meeting the definition of rare or endangered under CEQA⁴²; identified by the CNPS Inventory of Rare and Endangered Plants of California (CNPS Inventory) as Rank 1, 2, 3, or 4 species, and those considered locally significant.

Based on the background literature review, a number of special-status plant species were identified as having potential to occur in the study area; however, no special-status species were observed during site visits. Although the Rush Creek Open Space Preserve is relatively rich in native plant species; the special-status species with potential to occur required habitats or specific microhabitat conditions are not present within the project area. There are no unique substrates such as serpentine, limestone, or heavy clay or alkaline soils, and there are no particularly rare habitats such as dunes, maritime chaparral, or specialized wetland types.

Special-Status Wildlife

The presence of special-status wildlife species on MCOSD lands has been well documented through focused surveys, and other observations made by MCOSD staff and the public. PCI evaluated data collected and maintained by the MCOSD, a review of the CNDDDB, and other sources. Wildlife surveys were conducted to evaluate the potential presence of special-status wildlife, compile an inventory of species observed and wildlife habitats, and complete an evaluation of existing habitats. Based on the background literature review, a number of special-status animal species were identified as having the potential to occur in or near the study area. Species with reported observations in close proximity to the study area and/or in habitat types of relevance (e.g., woodland, grassland) were evaluated. Species that only occur in habitats not present within the study area (e.g., marine and freshwater aquatic habitats) or require specific microhabitat conditions not present within the study area are not discussed further. A complete list of species evaluated and detailed species and listing status⁴³ descriptions are available upon request.

Marin County staff have documented nine special-status animals within the larger Rush Creek Open Space Preserve.⁴⁴ PCI documented two additional special-status animals in the proposed project study area during site visits in 2018 and 2020. Four additional species have a moderate to high potential to occur within or adjacent to the proposed project area based regional occurrence data.⁴⁵ The 15 special-status wildlife species that have a potential to occur within the study area include:

- Northwestern pond turtle (*Actinemys marmorata*, SSC)
- Grasshopper sparrow (*Ammodramus savannarum*, SSC)
- Oak titmouse (*Baeolophus inornatus*, BCC)
- Northern harrier (*Circus cyaneus*, SSC)
- White-tailed kite (*Elanus leucurus*, FP)
- Saltmarsh common yellowthroat (*Geothlypis trichas sinuosa*, BCC, SSC)
- California black rail (*Laterallus jamaicensis cotrunculus*, BCC, ST, FP)
- San Pablo song sparrow (*Melospiza melodia samuelis*, BCC, SSC)

⁴² 6 CEQA §15380(b) and (d)

⁴³ Listing Status: FE-federally listed as endangered, FT-federally listed as threatened, BCC-Bird of Conservation Concern, SE-state listed as endangered, ST-state listed as threatened, Candidate SE-state candidate to be listed as endangered under CESA Candidate ST-state candidate to be listed as threatened under CESA, FP-State of California fully-protected species, SSC-California Species of Special Concern, and WL-Watch List.

⁴⁴ MCOSD 2016a. Vegetation and Biodiversity Management Plan, October.

⁴⁵ California Department of Fish and Wildlife (CDFW). 2020. California Natural Diversity Database, RareFind Version 5.0, Spotted Owl Viewer, and BIOS. California Department of Fish and Game. Sacramento, CA. <http://www.dfg.ca.gov/biogeodata/cnddb>, Townsend, S. 2016. Acoustic Monitoring for Bats at Indian Valley and Ignacio Valley OSP, Marin County. Memo to Marin County Parks dated August 19, 2016.

- Nuttall's woodpecker (*Picoides nuttallii*, BCC)
- California Ridgway's rail (*Rallus obsoletus obsoletus*, FE, SE, FP)
- Pallid bat (*Antrozous pallidus*, SSC; see *Special-status and Common Bat Species* below)
- Townsend's big-eared bat (*Corynorhinus townsendii*, SSC; see *Special-status and Common Bat Species* below)
- Western red bat (*Lasiurus blossevillii*, SSC; see *Special-status and Common Bat Species* below)
- Salt-marsh harvest mouse (*Reithrodontomys raviventris*, FE, SE, FP)
- American badger (*Taxidea taxus*, SSC)

Reptiles

Northwestern pond turtles occur in permanent or semi-permanent water sources and utilize uplands for nesting and overland migration. There are documented occurrences of this species in tidally influenced areas in the lower Petaluma River.⁴⁶ Although, suitable aquatic habitat is not present within the proposed project area, pond turtles may use baylands adjacent to the Bahia Trail and social trails S-1, S-2, S-3, S-4, S-8, and S-9 in the northern edge of the study area. Pond turtles may also use upland habitat in the northern portion of the project area for upland breeding or during migration.

Birds

The proposed project area supports habitat for three year-round resident, special-status bird species – oak titmouse, white-tailed kite, and Nuttall's woodpecker – and seasonal breeding habitat for grasshopper sparrow.

Grasshopper sparrows are a common summer resident in grassland habitats, and the occurrence potential in the proposed project area is high. This species forages for insects and seeds in moderately open grasslands with scattered shrubs. They nest in grass clumps. Grasshopper sparrows have been documented within the larger Preserve by Marin County staff.⁴⁷ This species may forage and nest in limited locations within the proposed project area.

Oak titmice are a common, year-round resident in oak woodland habitats and urban areas in Marin County. They typically forage for insects and seeds in trees and shrubs and nest in tree cavities and nest boxes. Oak titmice were documented within the proposed project area by PCI in 2018 and 2020, and suitable foraging and nesting habitat is present in the oak woodlands throughout the project area.

Northern harriers occupy wide-open habitats from grasslands to marshes. This species has been documented within the larger Preserve by Marin County staff.⁴⁸ However, limited open grassland habitat is present within the study area and the species is not likely to be in the project area with any frequency.

White-tailed kites occur in open woodlands and grassland habitats. They forage by hovering and diving for small rodents, and nests are constructed in trees and tall shrubs. White-tailed kites have been documented within the larger Preserve by Marin County staff.⁴⁹ Kites may forage and nest within the open woodlands throughout the study area.

Salt marsh common yellowthroats occur in wetland and riparian habitats. This species has been documented within the larger Preserve by Marin County staff.⁵⁰ Suitable wetland and riparian habitat is not present in the proposed project area; however, yellowthroats have a moderate potential to use suitable habitat near the Bahia Trail and social trails S-1, S-2, S-3, S-4, S-8, and S-9 in the northern edge of the study area.

⁴⁶ California Department of Fish and Wildlife (CDFW). 2020.

^{47,48} MCOSD 2016a. Vegetation and Biodiversity Management Plan, October.

⁴⁸MCOSD 2016a. Vegetation and Biodiversity Management Plan, October

⁴⁹ *ibid*

⁵⁰ *ibid*

California black rail and California Ridgway's rail occur in marsh habitats; however, the species are seldom seen. Both species have been documented in tidal marsh habitat adjacent to the Study Area along the Petaluma River⁵¹ and the larger Rush Creek Preserve by Marin County staff.⁵² Suitable marsh habitat is not present within the project area; however, these species could be present adjacent to proposed work on the social trails along the northern edge of the study area.

San Pablo song sparrows occur in tidal marsh habitats. This species has been documented within the larger Preserve by Marin County staff.⁵³ PCI identified song sparrows near the project area; although, the subspecies was not identified. Suitable wetland and riparian habitat is not present within the proposed project area. However, song sparrows may present in the study area on occasion given the proximity to suitable habitat.

Nuttall's woodpeckers occur in oak woodlands and streamside habitats where they probe for insects in tree bark and crevices. They nest in live or dead tree cavities. Nuttall's woodpeckers were documented within the study area by PCI in 2018 and 2020, and they may forage and nest in the area.

Mammals

Salt-marsh harvest mice occur in pickleweed-dominated marshes and wetlands, and presence of the species has been documented in tidal marsh habitat adjacent to the proposed project area along the Petaluma River⁵⁴ and within the larger Preserve by Marin County staff.⁵⁵ Suitable marsh habitat is not present within the project area. However, the northern study area boundary abuts salt-marsh harvest mouse habitat in the baylands.

American badgers occur in a variety of habitat types (e.g., herbaceous, shrub, or forest habitats) with dry, friable soils. They have been documented within the larger Preserve by Marin County staff.⁵⁶ The nearest recorded occurrence of American badger in the CNDDDB is a collection from 1949 located four miles north of the project area.⁵⁷ Badgers have also been documented on Mount Burdell to the west of the project area, across Highway 101.⁵⁸ PCI found no evidence of badger activity during the March 2018 survey; however, badgers may be present in the study area infrequently.

Special-status and Common Bat Species

There are approximately 15 bat species with known occurrences within Northern California, and a number of these species have a high probability of occurring within the study area. Bats are highly mobile; many are migratory. Foraging habitats range from woodlands, forests, and grasslands to open water. All of our local Marin County species are insectivorous and feed by echolocation. Bats use caves, mines, buildings, bridges, tree hollows, and other natural and man-made crevices for roosting. Focused surveys for bats were not performed as part of PCI's assessment; however, Susan Townsend completed bat acoustic monitoring of the nearby Mount Burdell Preserve to the west of the Study Area in similar habitats.⁵⁹ Fifteen species of bats were detected on the Mount Burdell Preserve including three CDFW listed species⁶⁰ (pallid, Townsend's big-eared, and

⁵¹ California Department of Fish and Wildlife (CDFW). 2020. California Natural Diversity Database, RareFind Version 5.0, Spotted Owl Viewer, and BIOS. California Department of Fish and Game. Sacramento, CA. <http://www.dfg.ca.gov/biogeodata/cnddb>

⁵² MCOSED 2016a. Vegetation and Biodiversity Management Plan, October.

⁵³ *ibid*

⁵⁴ California Department of Fish and Wildlife (CDFW). 2020.

⁵⁵ MCOSED 2016a. Vegetation and Biodiversity Management Plan, October.

⁵⁶ *ibid*

⁵⁷ California Department of Fish and Wildlife (CDFW). 2020.

⁵⁸ MCOSED 2016a. Vegetation and Biodiversity Management Plan, October.

⁵⁹ Townsend, S. 2016. Acoustic Monitoring for Bats at Indian Valley and Ignacio Valley OSP, Marin County. Memo to Marin County Parks dated August 19, 2016.

⁶⁰ Several of the detected species are also considered priority species for conservation by the Western Bat Working Group

western red bat). Given the similar habitat characteristics and close proximity to Mount Burdell, all three of these special-status species may forage over the study area and trees provide potential roosting habitat.

Pallid bat (*Antrozous pallidus*). This species is a CDFW Species of Special Concern; Western Bat Working Group high priority species. Pallid bat occurs in grassland, shrubland, forest, and woodland habitats at low elevations up through mixed coniferous forests. Roosting sites include caves, mines, crevices, buildings, and hollow trees during the day, and more open sites used at night. Pallid bats are year-round residents throughout most of their range. Suitable foraging and roosting habitat is present within the project area; though pallid bats have not been observed within the project area.

Townsend's big-eared bat (*Corynorhinus townsendii*). This species is a CDFW Species of Special Concern, Western Bat Working Group high priority species. In August 2016, CDFW issued a notice that a petition to add Townsend's big-eared bat to the list of threatened or endangered species under CESA is not warranted.⁶¹ Townsend's big-eared bat occurs in low to mid-elevation mesic habitats including riparian, mixed forest, coniferous forest, prairies, and agricultural lands. They utilize edge habitat for foraging and their roosting sites include caves, mines, tunnels, buildings, and other man-made structures. Suitable foraging habitat is present within the project area, though Townsend's big-eared bats have not been observed within the project area.

Western red bat (*Lasiurus blossevillei*). This is a CDFW Species of Special Concern, Western Bat Working Group high priority species. Western red bat occurs throughout California in forested and riparian habitat, typically along edges, field, and urban areas. These bats are typically solitary, coming together only during mating and migration and are a foliage dwelling species – roosting in leaves of trees and leaf litter in winter. There are no recent reports of western red bat in eastern Marin County, but bats are typically underrepresented in the CNDDDB. This species is documented at Mount Burdell. Suitable foraging habitat is present within the project area; though western red bats have not been observed within the project area.

Protected Nesting Birds

Nesting native bird species are protected under both federal and state regulations. According to US Fish and Wildlife Service, under the federal Migratory Bird Treaty Act of 1918⁶², "it is unlawful to pursue, hunt, take, capture, kill, possess, sell, purchase, barter, import, export, or transport any migratory bird, or any part, nest, or egg or any such bird, unless authorized under a permit issued by the Secretary of the Interior. Some regulatory exceptions apply. Take is defined as: 'pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to pursue, hunt, shoot, wound, kill, trap, capture, or collect.'" Bald and golden eagles are also protected under the federal Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c) of 1940.

Birds and their nests are also protected under the California Fish and Wildlife Code (§3503 and §3513). Under §3503, "it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto." Under §3513, "it is unlawful to take or possess any migratory nongame bird as designated in the Migratory Bird Treaty Act or any part of such migratory nongame bird except as provided by rules and regulations adopted by the Secretary of the Interior under provisions of the Migratory Treaty Act." The federal Endangered Species Act and California Endangered Species Act also protect nesting threatened and endangered bird species.

Most bird species, with a few specific exceptions, are protected under the MBTA⁶³ and California Fish and Game Code. Vegetation removal and/or construction activities in areas with suitable nesting habitat during the breeding period, typically mid-February to mid-August in this area, could result in nest abandonment or loss of

⁶¹ *ibid*

⁶² MBTA; 50 CFR 10.13

⁶³ *ibid*

native nesting birds unless appropriate actions are taken (e.g., preconstruction surveys, avoidance, monitoring, etc.).⁶⁴

Applicable RTMP Policies and BMPs

MCOSD would incorporate applicable RTMP Policies and BMPs, which were designed to minimize or avoid potential environmental impacts to biological resources. The applicable RTMP Policies and BMPs are listed in the Project Description and provided, in their entirety, in Appendix A.

- Policy SW.24: Minimize Intrusions Larger Contiguous Habitat Areas and Wildlife Corridors
- General-1: Limit Work Area Footprints in Sensitive Resource Areas
- General-2: Modify Construction Related Vegetation Management Methods in and near Wetlands, Riparian Vegetation
- General-3: Minimize Potential for Erosion
- General-4: Control Food-related Trash
- General-5: Modify Construction Methods Relating to Soil Disturbance, Restrict Use of Offsite Soil, Aggregate, or Other Construction Materials
- General-6: Prevent or Reduce Potential for Pollution
- General-8: Control Noise
- General-9: Conduct Worker Training
- General-10: Road and Trail Inspections
- General-11: Management of Sudden Oak Death
- Sensitive Natural Resources-1: Modify Management Practices Near Sensitive Natural Resources
- Special-Status Wildlife-1: Literature Reviews
- Special-Status Wildlife-2: Preconstruction Surveys
- Special-Status Wildlife-3: Seasonal Restrictions During Bird Nesting Season
- Special-Status Wildlife-8: Worker Awareness Training
- Special-Status Wildlife-9: Construction Monitoring
- Special-Status Wildlife-10: Relocation of Special-Status Species
- Special-Status Wildlife-11: Noise Control
- Special-Status Wildlife-12: Trash Control
- Special-Status Wildlife-13: Road and Trail Inspection
- Invasive Plants-1: Compliance with Integrated Pest Management Ordinance
- Invasive Plants-2: Herbicide Use Near Sensitive Natural Resources
- Invasive Plants-3: Survey and Control of Invasive Plants in Project Footprint
- Invasive Plants-4: Limited Soil Disturbance
- Invasive Plants-5: Cleaning of Heavy Equipment, Maintenance Tools, and Fire Management Vehicles
- Invasive Plants-6: Reducing Potential for Establishment of Invasive Plants on Disturbed Soil Surfaces
- Invasive Plants-7: Monitor and Control of Invasive Plants in Road and Trail Management Work Areas
- Invasive Plants-9: Road and Trail Inspections
- Invasive Plants-10: Monitoring Decommissioned Areas

CEQA Context

A project would normally result in significant impacts to biological resources if it substantially modifies sensitive habitats, adversely affects wetlands, negatively affects endangered plant and/or animal species, or conflicts with established policies, ordinances, or plans associated with the protection of biological resources.

⁶⁴ Riparian Habitat Joint Venture (RHJV). 2004. Version 2.0. The Riparian Bird Conservation Plan: A Strategy for Reversing the Decline of Riparian Associated Birds in California

- a) **Would the Project 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 California Department of Fish and Wildlife or U.S. Fish and Wildlife Service? *Less than Significant Impact with Mitigation***

Special-Status Plants. No special-status plants were identified in the proposed project area; therefore, no impacts would occur.

Common Wildlife. Implementation of the proposed project could modify wildlife habitat, potentially resulting in disturbance, displacement, or mortality of common terrestrial wildlife species. Wildlife species could be temporarily displaced during implementation of trail decommissioning and fire road to trail conversion. Wildlife would temporarily vacate the site during implementation of these elements of the proposed project; however, species would likely colonize adjacent habitats and move back into the area after restoration efforts cease and revegetation efforts are complete.

Wildlife species could be temporarily displaced as a result of construction of the new Blue Oak Multi-Use, Iron Gate Multi-Use, and Horseman's Spur trails. Construction of the new trail segments would require removal of shrubs and grasses along 5,090 feet. Construction of the new 5-foot-wide trails would result in removal of approximately 25,450 square feet of vegetation⁶⁵. No trees would be removed to accommodate construction of the new trail segments; however, trees along the trail alignment may be pruned during construction. Construction of the new trail segments could modify wildlife habitat, potentially resulting in disturbance, displacement, or mortality of common terrestrial wildlife species. Mobile wildlife species could be displaced as a result of trail construction; however, these species would likely colonize adjacent habitats and move back into the area after construction. Work areas would be limited to minimize disturbance to only areas needed to accommodate construction as required in BMP General 1-Limit Work Area Footprints in Sensitive Resource Areas. Vegetation removal would not result in habitat modifications that could cause potential impacts on general wildlife species that are known to occur within the study area or have the potential to occur within the project area.

Drainage improvements proposed along the Bahia Berm Trail would occur within the existing trail surface to reduce erosion and prevent degradation of the trail surface. Minor removal of vegetation may be required at drainage outlets; however, vegetation removal in these limited areas would not impact wildlife in the area.

With implementation of applicable RTMP Policies and BMPs included as part of the project and listed in the Project Description Best Management Practices Section, impacts on general wildlife and wildlife habitat would be less than significant. The policies and BMPs are designed to minimize or avoid potential environmental impacts to biological resources through limiting vegetation removal and protecting vegetation from unnecessary disturbance, educating workers about potential wildlife in the area and what to do if wildlife are encountered during work, and controlling noise that can disturb wildlife. Policies and BMPs specifically used to protect general wildlife include minimizing new trails in contiguous habitat areas and wildlife corridors (Policy SW.24), limiting work areas in sensitive resource areas (General-1), modifying construction near wetlands (General-2), minimizing erosion (General-3), controlling food related trash (General-4), modifying construction methods to minimize erosion (General-5), preventing and reducing pollution (General-6), controlling noise (General-8), conducting working training for biological resources (General-9), and conducting road and trail inspections (General-10). Implementation of these the policies and BMPs would protect general wildlife and their habitat; additional mitigation measures would not be required to address potential impacts to general wildlife and habitat.

Special-Status Wildlife. Implementation of the proposed project could modify habitat and potentially result in disturbance or displacement of the following special-status wildlife species: northwestern pond turtles, special-

⁶⁵Square footage was calculated for 5,090 feet of 5-foot wide trail.

status and nesting birds, American badger, and bats. Mortality of special-status wildlife species could occur if individuals are present in the proposed project area during implementation of trail decommissioning, new trail construction, or trail drainage improvements. These impacts could occur from trail decommissioning activities and from vegetation removal and tree pruning needed for new trail construction and drainage feature installation along existing trails. Construction of the proposed new trail segments could modify wildlife habitat and potentially result in disturbance, displacement, or mortality of special-status wildlife species. Noise associated with use of construction equipment could affect special-status species use of habitat near the construction site.

As discussed above under the evaluation of impacts to common wildlife, construction of proposed new trails would require removal of shrubs and grasses from approximately 25,450 square feet of currently vegetated areas. No trees would be removed to accommodate construction of the proposed new trail segments; however, trees along the trail alignment may be pruned during construction. Mobile wildlife species could be displaced as a result of trail construction; however, these species would likely colonize adjacent habitats and move back into the area after construction. Northwestern pond turtle, special-status bats, American badgers, and special-status birds could all be impacted with implementation of the proposed project.

As discussed above, MCOSD would incorporate applicable RTMP Policies and BMPs, which were designed to minimize or avoid potential environmental impacts to biological resources, including special-status wildlife species. In addition to the general BMPs included for the protection of general wildlife, the best management practices for protection of special-status wildlife would be implemented as part of the proposed project to protect against adverse effects, either directly or through habitat modifications, on wildlife species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.

Northwestern Pond Turtles

Northwestern pond turtles may occupy habitat and migrate through the uplands near the northern end of the Bahia and Blue Oak Multi-Use Trails and near social trails S-1, S-2, S-3, S-4, S-8, and S-9 in the northern edge of project area. Although suitable aquatic habitat is not present within proposed project area, pond turtles may use the aquatic habitat in the adjacent marshlands for breeding, especially in areas near social trails S-1, S-2, S-6, S-8, and S-9. Closure of these trails would improve habitat conditions for pond turtles by eliminating human use and allowing vegetation to return; however, active trail decommission activities could potentially result in disturbance or displacement of pond turtles should they be in the area during these activities.

Implementation of preconstruction surveys as specified in BMP Special-Status Wildlife-2: Preconstruction Surveys, requires a qualified biologist survey the proposed project area to determine presence of pond turtles and avoid impacts if turtles are present. Implementation of Sensitive Natural Resources-1: Modify Management Practices near Sensitive Natural Resources would also require an evaluation of potential modifications needed to protect turtles. Implementation of preconstruction surveys to determine the presence adult turtles or active turtle nests would be completed as part of BMP Special-Status Wildlife-2. If an adult turtle or an active nest site is identified near a proposed trail decommissioning or trail construction area, disturbance to the turtle would be avoided and the individual would be allowed to vacate the site before construction activities would occur. A 25-foot buffer would be established around any active turtle nest, and no work would occur in the buffer until a biologist determines the nest is vacated. Application of the RTMP Policies and BMPs would protect northwestern pond turtles from impacts during implementation of the proposed project, and impacts would be less than significant. No additional measures would be required.

Special-status Birds

Habitats within the project area provide potential nesting habitat for special-status bird species. Implementation of the proposed project could occur during nesting season, which could affect special-status and nesting birds. Construction activities could remove the nesting and foraging habitat of special-status birds and other wildlife that depend on grassland, and woodland through direct removal of habitat, or could result in disruption of

breeding and foraging habitat due to construction noise. Implementation of the proposed project could occur during nesting season, which could affect special-status and nesting birds. Potential impacts on special-status and migratory birds that could result from project construction activities include the destruction of eggs or occupied nests, mortality of young, and the abandonment of nests with eggs or young birds prior to fledging. Such potential construction-related impacts on special-status and migratory birds could be significant.

Construction-related noise impacts could occur within the proposed project area in locations that support habitat potentially used by special-status and nesting birds. Construction noise would occur during trail decommissioning, new trail construction, trail upgrades and trail conversion as these activities would require the use of mechanized equipment, and construction noise that occurs during critical nesting periods could result in abandonment of nests prior to eggs hatching or before young birds have fledged. Proposed active trail decommissioning of social trails near marsh habitats along the northern edge of the project area (social trail S-2, S-3, and S-4) could disturb California black rail and California Ridgway's rail in the adjacent tidal marsh. Breeding/wintering/foraging habitat for a number of native bird species, including several special-status species such as grasshopper sparrow, Nuttall's woodpecker, oak titmouse, saltmarsh common yellowthroat, San Pablo song sparrow, white-tailed kite, is located near the project area. Such potential impacts on nesting birds could be significant.

Vegetation removal and tree trimming could impact special-status or nesting birds if present during construction activities because the nesting season would overlap with the May/June construction timeframe. Vegetation removal to accommodate construction of the proposed new trails or during improvement of existing trail segments could destroy eggs or occupied nests, result in mortality of young, or cause abandonment of nests with eggs or birds prior to fledging. Such potential impacts resulting from the loss or abandonment of nests could be significant.

However, the project description incorporates applicable RTMP Policies and BMPs to minimize or avoid potential environmental impacts to biological resources, including special-status and nesting birds. Implementation of Mitigation Measure BIO-1 clarifies how RTMP BMP Special-Status Wildlife-3: Seasonal Restrictions During Bird Nesting Season would be implemented and would supersede the buffers included in the RTMP BMPs. In addition, implementation of Mitigation Measure BIO-1, along with implementation of applicable RTMP BMPs, would mitigate potential impacts on special-status and nesting birds to less than significant levels by requiring pre-construction surveys by a qualified biologist to determine whether special-status or bird nests are present at or near project activities and by providing appropriate distance between the proposed construction activities and the and by implementing related protection measures. The requirements are specified in BMPs Special-Status Wildlife-2: Preconstruction Surveys and Special-Status Wildlife-3: Seasonal Restrictions During Bird Nesting Season.

Mitigation Measure BIO-1: Special-status and Nesting Birds Protection

MCOSD shall implement the following seasonal restrictions to protect nesting birds. If work occurs outside the nesting bird window of January 1 to July 31, surveys and avoidance measures would not be necessary for special-status and nesting birds. The broadest nesting bird window based on Table 6 would be January 01 – October 31. The project area does not include habitat for double-crested cormorant, herons, egrets, bitterns, northern spotted owls and these species would not be affected by implementation of the proposed project; therefore, the nesting bird window of January 1 – July 31 is appropriate for the proposed project.

- Surveys shall be conducted within seven days of the start of active ground-disturbing activities within the general buffers identified in Table 2: Guideline Buffers by Species or Guild. If the work area is left unattended for more than seven days following the initial surveys, additional surveys shall be completed. This timing is standard protocol based on common knowledge of

avian biology. Ongoing construction monitoring of active nests shall occur to ensure no nesting activity is disturbed.

- If the biologist finds no active nesting or breeding activity, work can proceed without restrictions.
- If active raptor or owl nests or active nests of other special-status birds are identified within the buffer area guidelines included in Table 2, a qualified biologist shall determine whether construction activities may impact the active nest or disrupt reproductive behavior. If the biologist determines construction would not affect an active nest or disrupt breeding behavior, construction can proceed without restrictions. The determination of disruption shall be based on the species' sensitivity to disturbance, which can vary among species; the level of noise or construction disturbance; and the line of sight between the nest and the disturbance. If the biologist determines activities would be detrimental to the species nest, the buffer area guidelines identified in Table 2: Guideline Buffers by Species or Guild would be established until the nest has been vacated, meaning that the chicks have fledged.
- If state and/or federally listed birds are found breeding within the construction area, activities shall be halted until the chicks have fledged. If construction activities must continue and would incur take of the listed species, MCOSD would consult with the CDFW and USFWS prior to the initiation of work that would result in take. If construction activities must continue and would not incur take of the listed species, MCOSD would establish the buffer area guidelines included in Table 2: Guideline Buffers by Species or Guild, until the nest has been vacated, meaning that the chicks have fledged.

Table -2: Guideline Buffer by Species or Guild

Species/Guild	Recommended Buffer meters/feet	Nesting Season
Diurnal Raptors (i.e.: Cooper's hawk)	76 meters (250 feet)	January 01 – July 31
Owls (except northern spotted owl)	50 meters (160 feet)	January 01 – July 31
Northern Spotted Owl	402 meters (1,320 feet or ¼ mile)	February 01- July 31
Double-crested Cormorant	50 meters (160 feet)	March 01 – October 31
Herons/Egrets/Bitterns	100 meters (330 feet)	January 01 – Sept. 30
Waterfowl	30 meters (100 feet)	March 01 – July 31
California black rail	213 meters (700 feet)	February 01 – August 31
Larger Passerines: Corvids (crows, jays), Thrushes	20 meters (65 feet)	March 01 – July 31
Most Songbirds	10 meters (30 feet)	March 01 – July 31
Hummingbirds	10 meters (30 feet)	January 01 – July 31
Woodpeckers	15 meters (50 feet)	March 01 – July 31
Band-tailed Pigeon (BTPI)	30 meters (100 feet)	March 01 – July 31
Pigeons/Doves (except BTPI)	20 meters (65 feet)	March 01 – July 31
Species of Special Concern (olive-sided flycatcher, grasshopper sparrow, San Pablo song sparrow)	22 meters (75 feet)	March 01 – July 31
Blackbirds (tri-colored and red-winged)	30 meters (100 feet)	March 01 – July 31
Turdidae (robins, thrushes)	20 meters (65 feet)	March 01 – July 31
Killdeer	22 meters (75 feet)	March 01 – July 31

American Badger

Habitats within the project area could potentially support American badger. Badgers have been reported within Rush Creek Open Space Preserve by Marin County staff.⁶⁶ No evidence of American badgers was documented during the biological resource assessment.⁶⁷ American badgers have a relatively large home range, can expand their territories in the breeding season and in search of food, and may move into the project area at any time.

Implementation of the proposed project could result in disturbance to American badgers if they are present within the project work area. Disturbance to soils could result in compaction of den and burrows if present. The

⁶⁶ MCOSD 2016a. Vegetation and Biodiversity Management Plan, October.

⁶⁷ Prunuske Chatham, Inc (PCI), 2020 Biological Resources Assessment Rush Creek Open Space Preserve, Eastern Section June 2020.

presence of construction workers could preclude badgers from using habitat in the project area. Impacts to American badgers or loss of dens and burrows could be significant.

MCOSD has incorporated applicable RTMP Policies and BMPs into the project description. These measures were designed to minimize or avoid potential environmental impacts to biological resources. RTMP BMP Special-Status Wildlife-2 requires preconstruction surveys during the appropriate time window as determined by a qualified biologist to determine the presence or absence of the species, including American badger. If the preconstruction survey identifies any active burrows or other evidence of badgers, such as hunting holes or scat, within the project area, MCOSD would avoid the area until badgers leave the area. If evidence of past or current American badger activity is present in the project area, MCOSD would also implement RTMP BMP Special-Status Wildlife-9, which requires construction monitoring of federal- or state-listed wildlife species. If a listed species is observed by a worker or construction monitor, work would cease immediately to avoid impacts and appropriate resource agencies would be notified. Implementation of the RTMP BMPs would reduce potential impacts to less than significant levels, and no additional mitigation measures would be required.

Special-status and Common Bats

There are approximately 25 bat species known to occur in California, and a number of these species have a high probability of occurring within the project area and adjacent lands. Bats are highly mobile; many are migratory. Foraging habitats range from woodlands, forests, and grasslands to open water. As noted above, three special-status species (western red bat, Townsend's big-eared bat, pallid bat) have potential to occur within the Preserve based on nearby observations.⁶⁸ Additional bat species identified as having moderate to high priority for conservation by the Western Bat Working Group may also occur within the project area.

The proposed project was designed to avoid tree removal; however, some tree pruning would be required during construction of the three new trail segments to accommodate safe trail corridors for visitors. Some trees along these trails could contain cavities and other conditions that could provide suitable roosting habitat for special-status and common bat species. Tree pruning could result in disturbance to roosting bats through noise and vibration generated during the pruning or through removal of occupied habitat, and the impact to special-status or common bats or habitat occupied by bats could be significant.

MCOSD has incorporated applicable RTMP Policies and BMPs into the project description to avoid potential environmental impacts to biological resources, including RTMP BMP Special Status Wildlife-2: Preconstruction Surveys. The RTMP does not include BMPs specific to bats; therefore, Mitigation Measure BIO-2: Special-status and Common Bat Protection would be implemented to reduce potential impacts on special-status and common bat species to a less-than-significant level by requiring pre-construction surveys and the avoidance of disturbance to roosting bats.

Mitigation Measure BIO-2: Special-status and Common Bats Protection

The MCOSD shall ensure that the following protection measures for special-status and common bat species are implemented during project activities:

- For all trees previously identified as active (non-maternity) roost sites (during project surveys) and subject to pruning or removal, trees shall be taken down in a two-step process – limb removal on day one shall (at the discretion of a qualified biologist) be followed by whole removal on day two. This approach will allow bats an opportunity to move out of the area prior to completing removal of the trees.
- If work is postponed or interrupted for more than two weeks from the date of the initial bat survey, the preconstruction survey shall be repeated.

⁶⁸ Townsend, S. 2016. Acoustic Monitoring for Bats at Indian Valley and Ignacio Valley OSP, Marin County. Memo to Marin County Parks dated August 19, 2016.

- Construction shall be limited to daylight hours to avoid interference with the foraging abilities of bats.

b) Would the Project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by California Department of Fish and Wildlife or U.S. Fish and Wildlife Service? *Less than Significant*

Sensitive plant communities are that are of limited distribution statewide or within a county or region, those that are particularly threatened by human activity, or those that provide especially important ecological functions. The California Department of Fish and Wildlife’s List of California Terrestrial Natural Communities and the Manual of California Vegetation⁶⁹ indicate which plant communities are sensitive within the state of California classification. Within the study area, the Oak Woodland and the California Bay – Coast Live Oak Forest plant communities are considered sensitive plant communities. Oak Woodland includes three vegetation types using the Marin County Parks Vegetation Map nomenclature: Black Oak Forest ranked “G4S4”, Blue Oak - White Oak Hybrid Woodland ranked “G4S4” (Blue oak) and “G4S3” (Oregon white oak), Coast Live Oak Woodland ranked “G5S4”, and California Bay – Coast Live Oak Forest and California Bay (pure) Forest ranked “G4S3”. There is no riparian habitat or wet meadow habitat in the proposed project area.

Proposed passive trail closure and active trail decommissioning and new trail construction would occur through sensitive natural communities, including the communities the Blue Oak - White Oak Hybrid Woodland, Coast Live Oak Woodland, and California Bay – Coast Live Oak Forest, as shown in **Table 3**. Proposed passive trail closure and active trail decommissioning would improve conditions along closed trail routes through decompaction and revegetation efforts. Approximately 18,700 square feet of existing social trails would be actively decommissioned, approximately 6,900 square feet would be decommissioned along the upper Iron Gate Fire Road trail conversion, and approximately 9,450 square feet would be allowed to revegetate naturally by eliminating trail use. Proposed active decommission efforts would occur within the Blue Oak – White Oak Woodland and the Coast Live Oak Forest. Proposed trail decommissioning and road-to-trail construction would include recontouring compacted area to a natural condition, brushing and erosion control, and active native revegetation. Proposed revegetation efforts, following trail decommissioning, would include planting of trees, shrubs, forbs, and grasses found in the surrounding natural communities where natural revegetation would be slow or where native seed sources were located too far from the trail. Areas along the middle portion of social trail S-4 would be allowed to revegetate naturally as would passively closed social trails.

Table 3: Sensitive Natural Communities along Active Trail Decommission and Revegetation

Natural Communities	Active Trail Decommission S-2, S-3, S-4	Active Trail Decommission S-10	Iron Gate Fire Road Road-to-Trail Conversion
Blue Oak - White Oak Hybrid Woodland	X	X	X
Coast Live Oak Woodland		X	
California Bay – Coast Live Oak Forest		X	

Proposed new trail construction would occur through sensitive natural communities as shown in **Table 4**. The proposed new trails would be approximately five feet wide and understory vegetation would be removed to create the trail surface and trail drainage features. Proposed trail construction would require removal of some understory vegetation resulting in soil disturbance and soil compaction. Overhanging tree branches may be

⁶⁹ Sawyer, J., T. Keeler-Wolf, and J. Evens. 2009. A Manual of California Vegetation. Second Edition. California Native Plant Society and California Department of Fish and Game. Sacramento, CA.

trimmed to provide a safe trail for hikers, bike riders, and equestrians, incorporating Mitigation Measure BIO-3: Protect Native Trees. An area approximately a half-foot on each side of the trail would also be disturbed to accommodate construction; although, disturbance in these areas would be temporary and replanted following trail construction. Approximately 25,450 square feet of permanent vegetation removal would occur with construction of the three proposed new trails. The disturbed areas adjacent to the newly constructed trail would be revegetated following construction using shrubs, forbs, and grasses found in the surrounding vegetation communities as discussed in the project description for oak woodland.

Table 4: Sensitive Natural Communities along New Trail Construction

Natural Communities	Blue Oak Multi-Use Trail (2,440 ft or 12,200 sf)	Iron Gate Multi-Use Trail (1,680 ft or 8,400 sf)	Horseman's Spur Trail (970 ft or 4,850 sf)
Blue Oak - White Oak Hybrid Woodland	X	X	
Coast Live Oak Woodland		X	X
California Bay – Coast Live Oak Forest.	X	X	

Proposed active trail decommissioning, natural revegetation of the passively closed social trails and conversion of the Iron Gate Fire Road to trail would result in 35,050 square feet of revegetated, currently disturbed areas. Construction of three proposed new trails would result in loss of approximately 25,450 square feet of understory vegetation. Overall, the proposed project would result in the restoration of 10,600 square feet more than the area affected by new construction. The proposed project would benefit sensitive and other habitats by reducing road and trail redundancy, reducing erosion, and reducing habitat fragmentation. The proposed project is not expected result in substantial adverse effects sensitive natural communities identified in local or regional plans, policies, regulations, or by California Department of Fish and Wildlife or U.S. Fish and Wildlife Service. MCOSD would implement applicable RTMP BMPs to minimize potential impacts on sensitive natural communities, and the impacts would be less than significant. Implementation of specific RTMP BMPs include General 1: Limit Work Area Footprints in Sensitive Resource Areas and Special-Status Plant-1: Literature Reviews ensure sensitive plant communities are identified during planning and the work area is limited to only the area needed to implement the proposed project. No additional mitigation measures would be required.

c) Would the Project have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means? *No Impact*

Wetlands, creeks, streams, and permanent and intermittent drainages are subject to the jurisdiction of the U.S. Army Corps of Engineers (USACOE) under Section 404 of the Federal Clean Water Act (CWA). The California Department of Fish and Wildlife generally has jurisdiction over creeks, streams, and drainages, together with other aquatic features that provide an existing fish and wildlife resource pursuant to Sections 1602-1603 of the California Fish and Game Code. The California Department of Fish and Wildlife asserts jurisdiction to the outer edge of vegetation associated with a riparian corridor. Creeks and wetlands are subject to regulation of the Regional Water Quality Control Board (RWQCB) under both the federal CWA and the State of California's Porter-Cologne Water Quality Control Act (California Water Code, Division 7).

There is a wet meadow adjacent to the project area; however, there are no state or federally protected wetlands or riparian areas in the project area. Therefore, there would be no impact on state or federally protected wetlands.

d) Would the Project 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? *Less Than Significant*

Wildlife corridors are described as pathways or habitat linkages that connect discrete areas of natural open space otherwise separated or fragmented by topography, changes in vegetation, and other natural or manmade obstacles such as urbanization. They allow for the movement and migration of animals and plants, and are critical for the maintenance of ecological processes and viable populations of plants and animals by promoting (1) the continual exchange of genes between populations, which helps to maintain genetic diversity; (2) access to adjacent habitat areas that provide additional territory for foraging and breeding; (3) greater carrying capacity; and (4) routes for colonization of new habitat following locational population extinctions or habitat recovery from ecological catastrophes.

Habitat linkages are broader stretches of open space that allow for the movement of multiple species and maintenance of ecological processes. These linkages do not have to provide continuous habitat but could also be patches of suitable areas that support movement from one patch to another to allow dispersal and migration. Habitat linkages reduce the adverse effects of habitat fragmentation that can lead to decreased gene flow for small animals, such as amphibians, reptiles, and rodents.

The project area is located in an undeveloped area surrounded by open space. Wildlife is expected to currently use the project area for local and regional movements, and implementation of the proposed project is not expected to impact wildlife movements. The proposed project does not include the construction of any structures that would inhibit wildlife movement.

Construction of proposed new trail segments are designed to replace social trails which are located in more environmentally sensitive areas. Proposed active trail decommissioning and passive closure of social trails in the eastern portion of the project area (S-2, S-3, S-4, S-5, S-6, S-8, and S-9) coupled with construction of the new Blue Oak Multi-Use Trail would reduce trail access through wildlife habitat in Blue Oak – White Oak Woodland and California Bay – Coast Live Oak Forest. Active decommissioning of social trail S-10 and the lower 500 feet of the existing Iron Gate Fire Road would eliminate existing use and revegetate areas within Blue Oak – White Oak Woodland and Coast Live Oak Forest habitat in the western portion of the project area. Conversion of a 690-foot section of the existing Iron Gate Fire Road to a trail would improve conditions through oak woodland habitat. Construction of the new Iron Gate Trail and Horseman’s Spur Trail would concentrate visitor use along sustainable trail alignments.

Implementation of the proposed project would not result in significant impacts on wildlife movement activity in the surrounding area, because proposed trail decommissioning and trail construction activities would take place during the day and would be temporary, ceasing after project construction. Proposed trail improvements, including active trail decommissioning and passive closure of social trails throughout the project area, road-to-trail conversion, construction of three proposed new trails, and change in use of the Bahia Berm Trail are not expected to interfere with the movement of native resident or migratory fish or wildlife species, with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites. There is no fish habitat in the project area. Approximately 35,050 square feet of existing disturbed area would be actively or passively closed and revegetated, while approximately 25,400 square feet of area would be disturbed through construction of proposed new trails. Overall, the proposed project would result in a net increase of 10,650 square feet of restored habitat, and as such, the proposed project would benefit sensitive and other habitats by reducing road and trail redundancy, reducing erosion, and reducing habitat fragmentation.

Implementation of the proposed project would not 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 within the project area or the surrounding area. Under existing

conditions, resident wildlife have likely habituated to human activity along the trail system. Visitation is not expected to increase after the proposed project is implemented because the proposed project does not include additional parking capacity. The level and types of recreational use of the project area to remain essentially the same as existing use patterns after implementation of the proposed project; although, the improved conditions could attract a nominal increase in visitor use. However, increased use is expected to be minimal and largely result from nearby local communities. Visitor use would be eliminated along closed social trails and focused in areas that can support visitor use along sustainable trail segments.

The proposed project would passively close and actively decommission and revegetate social trails that will improve habitat conditions for wildlife in the area. Construction of new trail segments would provide visitor access in areas that can support visitor use without degrading site conditions and redundant trail segments would be eliminated to reduce public access within more continuous habitat areas; therefore, implementation of the proposed project would not interfere with the movement of native resident or migratory fish or wildlife species, with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites. The impact would be less than significant and no additional mitigation measures would be required.

e) Would the Project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance? *Less than Significant Impact with Mitigation*

The entire project area is located within the Novato city limits, which is governed by the City of Novato's General Plan 2035.⁷⁰ Other parts of Rush Creek Open Space Preserve are located within unincorporated Marin County, which is governed by the Marin Countywide Plan⁷¹. These respective plans include goals and policies to protect natural resources and manage invasive species and the spread of plant pathogens, and the proposed project is discussed in relationship to the Novato General Plan because the proposed project is located wholly within the City of Novato jurisdiction. The RTMP includes numerous policies and BMPs to protect biological resources, which are previously listed in this document.

Implementation of the proposed project would conform with the goals and policies of the City of Novato's General Plan. The RTMP BMPs and additional mitigation measures discussed under (a) through (d) in this section would ensure avoidance of special-status plants and animals and other sensitive resources protected under the Novato General Plan. The following provides a review of the conformance of the proposed project with respect to the Novato General Plan goals to provide access to public open space and protect trees and woodlands, and to manage invasive plant species and the spread of plant pathogens.

Access to Public Open Space and Natural Resource Protection. The Novato General Plan addresses protection of publicly owned open spaces in their natural state and encourages public access to publicly owned open space where appropriate in a manner compatible with the preservation and enhancement of the natural environment. The proposed project would meet these goals by improving trail sustainability, reducing habitat fragmentation, and improving visitor experience for hikers and cyclists.

Native Tree Protection.

The Novato General Plan requires protection of trees and woodlands that provide ecological, economic, and aesthetic benefits for Novato. Native woodlands are protected by maintaining the age and species diversity of trees and preserving the health of trees and other vegetation wherever feasible. The City of Novato has also established regulations for the preservation and protection of native trees and woodlands on or adjacent to public lands under the Novato Municipal Code, Chapter XVII and XIX.

⁷⁰ City of Novato General Plan 2035. 2020a. Public Draft Review. Sept 2020.

⁷¹ County of Marin, 2007. Marin Countywide Plan, November.

The proposed project has been designed to avoid tree removal however, construction of the proposed new trails may require trimming tree limbs to create a safe trail corridor along the multi-use trails. Any tree trimmed will remain and continue to grow.

The RTMP does not include BMPs to address tree pruning and/or removal. Implementation of Mitigation Measure BIO-3 would limit impacts on native trees by minimizing pruning and protecting tree root zones.

Mitigation Measure BIO-3: Protect Native Trees

MCOSD shall ensure that the following measures are implemented during project activities to protect native trees:

- Minimize pruning. Light pruning may occur at any time of year. Heavy pruning may cause problems due to vigorous sprouting and subsequent witches broom or powdery mildew diseases. Heavy pruning shall be done on deciduous trees in the winter.
- Minimize impacts within the Root Protection Zone (RPZ), which is defined as 1.5 times the dripline radius measured from the tree trunk and extends approximately three feet below the soil surface.
 - Changes in drainage within protected tree perimeters shall be avoided to the extent feasible.
 - Soil compaction within protected tree perimeters shall be avoided to the extent feasible.
 - Heavy equipment, vehicles, and/or construction materials shall not be parked or stored beneath trees or operated within the delineated protected perimeter.

Invasive Species Management. Invasive plant species are present within the project particularly in disturbed areas along trails, roads, and other places vegetation has been cleared or soil disturbed. Invasive species are those that have been introduced from other parts of the world that tend to grow and spread rapidly. They often create dense stands where little else can grow and change habitat conditions in ways that are detrimental to native plant species and native wildlife. They can also increase fire hazards. Implementation of the proposed project would involve equipment operation, grading, and other disturbances that could result in the introduction or spread of invasive plant species along active trail decommissioned trails and along the three proposed new trails, which could result in the spread of invasive species into adjacent areas.

The RTMP Invasive Plants BMPs address reducing the spread of invasive species. Invasive Plants BMPs 1 through 7 require compliance with the Integrated Pest Management Ordinance, limits use of herbicides near sensitive nature resources, require survey and control of invasive plants in the project footprint, limits soil disturbance to limit the spread of invasive species, require cleaning of all equipment to prevent the spread of invasive species during construction, require reducing the potential for invasive species establishment on disturbed soils, and require monitoring and control of invasive plants in all road and trail work. Invasive Plants BMPs 9 and 10 require road and trail inspections for invasive plants and monitoring decommissioned areas. The suite of RTMP BMPs to prevent the spread of invasive plants have been incorporated into the proposed project, and no additional mitigation measures are required to reduce impacts from invasive species.

Sudden Oak Death. *Phytophthora ramorum* and other common plant pathogens have the potential to spread, especially as public uses increase, climate changes, and plants become more stressed. The RTMP includes BMP General-11: Management of Sudden Oak Death to reduce and control the spread of SOD within the MCOSD system. As a result of the initial tribal consultation meeting with the Federated Indians of Graton Rancheria on November 20, 2020, MCOSD reviewed RTMP BMP General-11 and concluded that it reflects the current science associated with sudden oak death. This BMP would be incorporated into the proposed project. No additional mitigation measures would be required.

- f) The proposed project would not conflict with any local policies or ordinances protecting biological resources. Would the Project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan? *No Impact***

Habitat conservation plans (HCPs) are planning documents required as part of an application for an incidental take permit. They describe the anticipated effects of the proposed taking; how those impacts would be minimized or mitigated; and how the HCP is to be funded. HCPs can apply to both listed and non-listed species, including those that are candidates or proposed for listing. An HCP can apply to individual projects that affect a limited number of species or can be regional plans to address endangered species impacts in the area from otherwise legal development.

A Natural Community Conservation Planning program (NCCP) takes a broad-based ecosystem approach to planning for the protection and perpetuation of biological diversity. It is broader in its orientation and objectives than the California and federal Endangered Species Acts, as these laws are designed to identify and protect individual species that have already declined in number significantly. An NCCP identifies and provides for the regional protection of plants, animals, and their habitats, while allowing compatible and appropriate economic activity.

There are no adopted HCPs or NCCPs in Marin County, and therefore, implementation of the proposed project would not conflict with an adopted HCP, NCCP, or other approved local, regional, or state habitat conservation plan.

CULTURAL RESOURCES

CULTURAL RESOURCES CHECKLIST QUESTIONS					
	Would the project:	Potentially Significant Impact	Less than Significant with Mitigation	Less-than-Significant Impact	No Impact
a)	Cause a substantial adverse change in the significance of a historic resource pursuant to §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b)	Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c)	Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Setting

Cultural and Historical Resources Studies

Tom Origer & Associates prepared an Archival Research Memo in 2018⁷² and a Cultural Resources Study Report (CRSR) for the proposed project 2020⁷³. The archive study included an examination of historical maps to gain insight into the nature and extent of historical development in the general project vicinity, and especially within the study area. The 2020 CRSR included a cultural resources literature search completed at the Northwest Information Center of the California Historical Resources Information System (CHRIS), initial Native American Consultation with the Native American Heritage Commission, and an archaeological survey of the project area. The CRSR satisfies the requirements of RTMP BMP Cultural Resources-1: Historical and Archaeological Resource Mapping and Cultural Resources-2: Consultation with Northwest Information Center. Much of the setting information and environmental impact analysis is based on information contained in the study.

CHRIS records search identified no cultural resources within or adjacent to the area. No cultural resources or archaeological site indicators were identified within the study area, and application of a buried sites models indicates a low potential for buried resources in the area. No historic resources/or properties are listed on federal, state, or local inventories within or abutting the project. The Native American Heritage Commission responded that there are sacred sites within the vicinity of the study area, and NAHC recommended contacting the Federated Indians of Graton Rancheria (FIGR) to gather additional information about the area. Origer & Associates sent a letter to FIGR and to the Guidiville Indian Rancheria on August 24, 2020 to request additional information; however, Mr. Origer received no responses to the outreach letter.

Origer & Associates did not recommend any additional work. The CRSR includes a description of the process to follow should a buried or previously unrecognized archaeological deposits or materials be inadvertently exposed during any construction activity. It recommends work in the immediate area of the find be halted until a qualified archaeologist evaluates the find and provides recommendations for further treatment, if warranted. Construction and potential impacts to the area(s) within a radius determined by the archaeologist shall not

⁷² Origer 2018. Archival Research Results for the Rush Creek Trail Project, Rush Creek Open Space Preserve, near Novato, Marin County, California. March 15, 2018.

⁷³ Origer 2020. Cultural Resources Study for the Rush Creek Open Space Preserve Trails Project Rush Creek Open Space Preserve near Novato, Marin County, California. September 1, 2020.

recommence until the assessment is complete. This recommendation has been incorporated into the proposed project through RTMP BMP Cultural Resources – 6: Construction Recovery Protocol and RTMP BMP Cultural Resources-7: Human Remains.

Project Area History

In northern California, archaeological evidence suggests human occupation had occurred by at least 12,000 years ago. Initial use of the area was for hunting and gathering resources by highly mobile, extended families who had limited exchange systems or social structure. With the introduction of a milling technology later on, and even later, a dependence on an acorn economy, population growth, expansion, and trade systems were developed. Sociopolitical complexity and status distinctions based on wealth are also observable in the archaeological record, by an increased range and distribution of trade goods such as shell beads and obsidian tools, which are possible indicators of both status and increasingly complex exchange systems. At Euroamerican contact, Marin County was inhabited and controlled by the Coast Miwok people. They settled in large, permanent villages and also used seasonal camps and task-specific locations. Their society consisted of many tribelets that were small independent groups of usually related family members occupying a specific territory and speaking the same language or dialect. The Coast Miwoks pursued a subsistence cycle focused on gathering and harvesting seasonally available resources. This group managed their environment to improve and maintain it to suit their needs. Inter-tribelet relationships were socially and economically advantageous, offering marriage partners, information, and materials and services not available locally. In central Marin County, Native American archaeological sites are recorded on terraces adjacent to creeks and springs, along ridgelines and within rock outcroppings.

Between A.D. 1579 to 1603, contact with native populations likely occurred during the voyages of Drake, Cermeño, and possibly Vizcaino. In this area, Spanish interaction resumed with the local Native Americans probably somewhat before the establishment of Mission Dolores in San Francisco in 1776. Later, Mission San Rafael Arcángel was founded in December 1817. After secularization of the missions, large areas of land were opened for land grants. In 1835, Rancho Nicasio was one of three land grants granted to local Marin County Native Americans who had been a part of the mission system. Nicasio land grant consisted of 20,000 square leagues and was granted to Teodosio Quilajuequi, but never confirmed. Fairfax is named for Charles S. Fairfax and his wife who settled in the area in 1856. The couple were likely gifted some land and continued to live there throughout their lives.

Applicable Regulations

National Historic Preservation Act Context

The proposed project would likely require a Section 404 Permit from the USACE, and therefore, would be subject to compliance with Section 106 of the National Historic Preservation Act⁷⁴ to address potential impacts to historic properties. This includes resources that are eligible for listing on the National Register of Historic Places (NRHP).

Section 106 of the National Historic Preservation Act

Federal protection of resources is legislated by the NHPA of 1966 as amended by 16 U.S. Code 470, the Archaeological Resource Protection Act of 1979, and the Advisory Council on Historical Preservation. These laws and organizations maintain processes for determination of the effects on historical properties eligible for listing in the NRHP.

Section 106 of the NHPA and accompanying regulations⁷⁵ constitute the main federal regulatory framework guiding cultural resources investigations and require consideration of effects on properties that are listed in or

⁷⁴ 54 USC 306108

⁷⁵ 36 Code of Federal Regulations (CFR) Part 800

may be eligible for listing in the NRHP. The NRHP is the nation's master inventory of known historic resources. It is administered by the National Park Service and includes listings of buildings, structures, sites, objects, and districts that possess historic, architectural, engineering, archaeological, and cultural districts that are considered significant at the national, state, or local level. The formal criteria⁷⁶ for determining NRHP eligibility are as follows:

1. The property is at least 50 years old however, properties under 50 years of age that are of exceptional importance or are contributors to a district can also be included in the NRHP;
2. It retains integrity of location, design, setting, materials, workmanship, feeling, and associations; and
3. It possesses at least one of the following characteristics:
 - a. Events: Association with events that have made a significant contribution to the broad patterns of history.
 - b. Persons: Association with the lives of persons significant in the past.
 - c. Architecture: Distinctive characteristics of a type, period, or method of construction, or represents the work of a master, or possesses high artistic values, or represents a significant, distinguishable entity whose components may lack individual distinction.
 - d. Has yielded, or may be likely to yield, information important to prehistory or history (information potential).

Listing in the NRHP does not entail specific protection or assistance for a property but it does guarantee recognition in planning for federal or federally assisted projects, eligibility for federal tax benefits, and qualification for federal historic preservation assistance. The potential effects of a proposed project on properties listed in the NRHP must be evaluated under CEQA.

The National Register Bulletin also provides guidance in the evaluation of archaeological site significance. If a heritage property cannot be placed within a particular theme or time period, and thereby lacks "focus," it is considered not eligible for the NRHP. In further expanding upon the generalized National Register criteria, evaluation standards for linear features such as roads, trails, fence lines, railroads, ditches, and flumes are considered in terms of four related criteria that account for specific elements that define engineering and construction methods of linear features: size and length; presence of distinctive engineering features and associated properties; structural integrity; and setting. The highest probability for National Register eligibility exists within the intact, longer segments, where multiple criteria coincide.

Secretary of the Interior's Standards

The *Secretary of the Interior's Standards for the Treatment of Historic Properties* (Secretary's Standards) provide guidance for working with historic properties. The Secretary's Standards are used by CEQA lead agencies to evaluate proposed rehabilitative work on historic properties. They are a useful analytic tool for understanding and describing the potential impacts of proposed changes to historic resources. Projects that comply with the Secretary's Standards benefit from a regulatory presumption that they would not result in a significant impact to a historic resource. Projects that do not comply with the Secretary's Standards may or may not cause a substantial adverse change in the significance of a historic property.

In 1992, the Secretary's Standards were revised so they could be applied to all types of historic resources, including landscapes. They were reduced to four sets of treatments to guide work on historic properties: Preservation, Rehabilitation, Restoration, and Reconstruction. The four distinct treatments are defined as follows:

⁷⁶ 36 CFR 60.4

- Preservation is defined as the act or process of applying measures necessary to sustain the existing form, integrity, and materials of a historic property. Work, including preliminary measures to protect and stabilize the property, generally focuses upon the ongoing maintenance and repair of historic materials and features rather than extensive replacement and new construction. New exterior additions are not within the scope of this treatment; however, the limited and sensitive upgrading of mechanical, electrical, and plumbing systems and other code-required work to make properties functional is appropriate within a preservation project.
- Rehabilitation is defined as the act or process of making possible a compatible use for a property through repair, alterations, and additions while preserving those portions or features that convey its historical, cultural, or architectural values.
- Restoration is defined as the act or process of accurately depicting the form, features, and character of a property as it appeared at a particular period of time by means of the removal of features from other periods in its history and reconstruction of missing features from the restoration period. The limited and sensitive upgrading of mechanical, electrical, and plumbing systems and other code-required work to make properties functional is appropriate within a restoration project.
- Reconstruction is defined as the act or process of depicting, by means of new construction, the form, features, and detailing of a non-surviving site, landscape, building, structure, or object for the purpose of replicating its appearance at a specific period of time and in its historic location.

The appropriate treatment for any renovation project under the Secretary's Standards for Treatment of Historic Properties is rehabilitation. There are no existing structures within the project area, historic or otherwise.

AB 52 Consultation with Federated Indians of Graton Rancheria

Assembly Bill 52 (AB 52) is described in the Tribal Cultural Resources section of this Checklist. MCOSD sent letters to the Lone Band of Miwok Indians and the Federated Indians of Graton Rancheria (FIGR) to inform them about the project and to invite the tribes to consult with the agency regarding the proposed project. The invitation to consult letters were sent on October 15, 2020, and were consistent with RTMP BMP Cultural Resources-3: Tribal Consultation. The Lone Band did not request consultation. FIGR responded on October 21, 2020 requesting consultation under CEQA, and MCOSD met with the Tribal Historic Preservation Officer (THPO) on November 20, 2020.

At the initial tribal consultation meeting with FIGR, MCOSD presented the proposed project and answered questions. FIGR identified concerns associated with oak trees including continued tribal access for acorn gathering, preventing the spread of sudden oak death, and protection of the stand of blue oaks in the project vicinity. MCOSD assured FIGR that existing access for acorn gathering would continue although access along existing trails proposed for decommissioning would be closed for all visitors. The proposed Blue Oak Multi-Use Trail would provide access for tribal members to collect blue oak acorns along the new, sustainable system trail. MCOSD discussed RTMP BMP General-11: Management of Sudden Oak Death and committed to review this BMP relative to current science associated with sudden oak death. Implementation of RTMP BMP General-11 would require MCOSD to trail the trail construction crew about sudden oak death and disease transmission pathways and require staff to implement measures to prevent the spread when implementing the proposed project, purchase nursery stock at nurseries that follow current measures to prevent spread of sudden oak death, and educate visitors about how to prevent the spread of sudden oak death, amongst other measures. MCOSD has not identified additional measures to augment RTMP BMP General-11 but is continuing to discuss potential additional measures with FIGR as part of the tribal consultation process. Some proposed project elements would occur within blue oak – white oak woodlands, including several proposed trail decommissioning and development of the proposed Blue Oak Multi-Use Trail. The proposed Blue Oak Multi-Use Trail would provide a critical connection between Bahia Ridge Fire Road and the Bahia Trail, replacing a social trail proposed for decommissioning. No blue oaks or any other trees would be removed as a result of the proposed

project. Disturbed areas created during trail construction would be revegetated using native grasses, forbs, shrubs, and trees with species dependent on the site-specific conditions. Revegetation efforts would also include planting oaks propagated from locally collected seed sources.

Applicable RTMP Policies and BMPs

MCOSD would incorporate applicable RTMP Policies and BMPs, which were designed to minimize or avoid potential environmental impacts to biological resources. The applicable RTMP Policies and BMPs are listed in the Project Description and are provided, in their entirety, in Appendix A.

- General-11: Management of Sudden Oak Death
- Cultural Resources-1: Historical and Archaeological Resource Mapping
- Cultural Resources-2: Consultation with Northwest Information Center
- Cultural Resources-3: Tribal Consultation
- Cultural Resources-6: Construction Discovery Protocol
- Cultural Resources-7: Human Remains
- Cultural Resources-8: Community Awareness

CEQA Context

Cultural and historical resources are nonrenewable and are easily damaged or destroyed. Potential impacts to cultural and historical resources are determined by analyzing the potential effect of implementing the proposed project to known and unknown cultural and historical resources.

a) Would the Project cause a substantial adverse change in the significance of a historic resource pursuant to §15064.5? *Less than Significant Impact*

Historical resources are defined by CEQA Guidelines §15064.5 as “Any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California. Generally, a resource shall be considered historically significant if the resource meets the criteria for listing on the California Register of Historical Resources.”

Origer & Associates conducted a records search at the Northwest Information Center of the California Historical Resources Information System and evaluated the project area as part of the Cultural and Historical Resources Study. They identified a concrete feature (possibly a trough) within the study area. The evaluation concluded that the feature is disassociated from any nearby agricultural feature, and they found no information that suggests it is associated to any important persons or events. The precast concrete feature has no distinct architectural characteristics and does not have the ability to yield information that would be considered important to local, state, or national history. The concrete feature does not meet the criteria for eligibility on the California Register or the National Register. No historic resources or properties were identified, or are listed on federal, state, or local inventories within or abutting the project area.

Although no historic resources were identified in the project area, ground disturbing activities associated with trail decommissioning and trail construction could reveal unknown historic resources. To address this issue, the proposed project would implement the applicable RTMP BMPs, which would ensure that the implementation of the proposed project would not result in significant impacts. BMP Cultural Resources-6: Construction Discovery Protocol provides a process to follow in the event a previously undiscovered historic resource is unearthed during construction. Following the procedures in the BMP would provide the protections needed to avoid a substantial adverse change in the significance of a historic resources pursuant to CEQA Guidelines §15064.5. Therefore, implementation of the proposed project would result in a less-than-significant impact associated with

a substantial adverse change in the significance of a historic resources pursuant to CEQA Guidelines Section 15064.5.

b) Would the Project cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5? *Less than Significant Impact*

An archaeological resource is defined by CEQA §21083.2 as “an archaeological artifact, object, or site, about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

1. Contains information needed to answer important scientific research questions and there is a demonstrable public interest in that information
2. Has a special and particular quality such as being the oldest of its type of the best available example of its type
3. Is directly associated with a scientifically recognized important prehistoric or historic event or person.

No archaeological resources have been identified within the project area. Based on the geology and soil type mapped within the project area, site evaluations, and Origer & Associates application of a buried sites model, the project area has a low potential for buried archaeological resources. However, ground disturbing activities associated with proposed active trail decommissioning and trail construction could reveal previously undiscovered buried archaeological resources. To address this issue, the proposed project would implement the applicable RTMP BMPs, which would ensure that the implementation of the proposed project would not result in significant impacts. Specifically, BMP Cultural Resources-6: Construction Discovery Protocol provides a process to follow in the event a previously undiscovered archaeological resource is unearthed during construction. BMP Cultural Resources-7: Human Remains provides the necessary series of steps required to protect human remains. Additionally, MCOSD would directly contact the Federated Indians of Graton Rancheria in the event that cultural resources are inadvertently discovered. Following the procedures in the BMPs would provide the protections needed to avoid a substantial adverse change in the significance of a historic resources pursuant to CEQA Guidelines §15064.5. Therefore, implementation of the proposed project would result in a less-than-significant impact associated with a substantial adverse change in the significance of a historic resources pursuant to CEQA Guidelines Section 15064.5.

c) Would the Project disturb any human remains, including those interred outdoors of formal cemeteries? *Less than Significant Impact*

Section 7050.5 of the California Health and Safety Code states that it is a misdemeanor to knowingly disturb a human burial and Section 5097.99 of the Public Resources Code defines the obtaining or possession of Native American remains or grave goods to be a felony. Buried human remains, by law, must be reported to the County Coroner. The disposition of Native American burials is within the jurisdiction of the Native American Heritage Commission (NAHC), who has the statutory authority to mediate agreements regarding the disposition of Native American remains. In cases in which human remains are known or believed to be likely, consultation with the NAHC is initiated early in the planning process so that the consultations with appropriate Native American most likely descendant occurs and agreement regarding the disposition of the remains can be reached. Additionally, MCOSD would directly contact the Federated Indians of Graton Rancheria in the event that human remains are inadvertently discovered. Minor ground disturbance associated with trail decommissioning and trail construction could reveal unknown human remains. Should this occur MCOSD would follow state law and contact the County Coroner and the NAHC. MCOSD would also contact the Federated Indians of Graton Rancheria. The proposed project includes implementation of applicable RTMP BMPs, including Cultural Resources-7: Human Remains, which identifies protocols to follow should the project uncover human remains. Implementation of the proposed

ENERGY

ENERGY CHECKLIST QUESTIONS					
	Would the project:	Potential Significant Impact	Less than Significant with Mitigation	Less-than-Significant Impact	No Impact
a)	Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b)	Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Setting

Current energy use within the project area is very minimal. Recreational visitors may use small amounts of gasoline to drive to and from the project area, and personal motorized vehicles are prohibited from entering the preserve. Similarly, MCOSD rangers and maintenance staff drive to and from the project area and use petroleum during routine maintenance activities such as mowing and weed whacking. There is no electrical use in the project area.

Assembly Bill (AB) 32, the Global Warming Solutions Act, addresses greenhouse gas emissions and associated energy use across the State and throughout different sectors of California’s economy, with the goal of reducing emissions to 1990 levels by 2020 and 40 percent below 1990 levels by 2030. CARB is tasked with the implementation of AB 32 through the development of a Scoping Plan, which is to be updated every five years. CARB produced its second update to the Scoping Plan in 2017.⁷⁷ The Scoping Plan’s objective for natural lands is to maintain them as a carbon sink while minimizing emissions, including emissions from energy use, associated with factors such as management and wildfire.

Locally, the Marin County Climate Action Plan provides emissions reduction goals and measures for unincorporated Marin County, with the overall target of reducing emissions to 30 percent below 1990 levels by 2020.⁷⁸ The City of Novato Climate Action Plan establishes targets of 15 percent below 2005 levels by 2020 and 40 percent below 2005 levels for 2040 and provides ten goals to meet those targets.⁷⁹ Efficient energy use is a key component to achieving these emissions reduction goals.

Applicable RTMP Policies and BMPs

MCOSD would incorporate the following applicable RTMP Policies and BMPs, which were designed to minimize or avoid potential environmental impacts associated with energy use. The applicable RTMP Policies and BMPs are listed in the Project Description and are provided, in their entirety, in Appendix A.

- Policy SW.29: Retrofit or Upgrade Construction Equipment

CEQA Context

In order to ensure that energy implications are considered in project decisions, CEQA Section 21100(b)(3) requires that the potential energy impacts of proposed project be considered, with emphasis on avoiding or

⁷⁷ California Air Resources Board. 2017. California’s 2017 Climate Change Scoping Plan

⁷⁸ Marin County. 2014. Climate Action Plan. August

⁷⁹ City of Novato. 2005. Climate Action Plan

reducing inefficient, wasteful, and unnecessary consumption of energy. Appendix F of the CEQA Guidelines provides guidance for assessing the significance of potential energy impacts.

a) Would the Project result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation? *No Impact*

The proposed project would not result in measurable incremental increases in the use of fuel. During construction, the proposed project would require the use of diesel-powered heavy equipment and gas-powered vehicles to access the site and bring materials and equipment to the area. Equipment would include a mini excavator, dozer, water truck, compactor, power saws, and other hand tools. As described in the project description, equipment would be operated over a six-week construction period, approximately eight to ten hours a day. Up to five MCOSD staff members would drive to and from the project site each day during construction to close social trails and to build proposed new trails, to monitor construction activity, and to ensure that all RTMP BMPs and Mitigation Measures are implemented. Given the short construction period and limited size of the proposed project elements, energy consumption required for construction of the project would be not be significant in scale and would not have a measurable effect on local and regional energy supplies. Additionally, implementation of Policy SW-29: Retrofit or Upgrade Construction Equipment would ensure that MCOSD uses the most efficient equipment available and conducts the project in an energy efficient manner. The proposed project would not result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction.

Operation of the project would occur as described in the project description and would continue in a manner similar to existing conditions. Energy demands associated with operation and maintenance would include truck trips to and from the site for MCOSD staff to patrol and maintain the area. The frequency of staff operations and maintenance activities would not increase as a result of the project. Ultimately, the project is anticipated to result in reduced maintenance needs as the proposed trail improvements would alleviate erosion and increase trail sustainability.

The proposed project would not significantly increase vehicle trips for recreational use of Rush Creek Open Space Preserve because the proposed project would not include additional parking, new or expanded recreational uses, or a net increase in recreational amenities.

The construction and operation of the proposed project would not result in wasteful, inefficient, or unnecessary consumption of energy resources. Therefore, the proposed project would not result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources during project operation.

b) Would the Project conflict with or obstruct a state or local plan for renewable energy or energy efficiency? *No Impact*

The proposed project would use small amounts of energy during construction, including the use of equipment and truck trips associated with employees driving to and from the site and from material deliveries. Operation and maintenance activities would be similar to existing conditions and energy use would not increase compared to baseline conditions. Implementation of Policy SW-29: Retrofit or Upgrade Construction Equipment would ensure that MCOSD uses the most efficient equipment available and conducts the project in an energy efficient manner. The project would not conflict with renewable energy or energy efficiency plans, including goals set forth in AB 32, the objectives of the 2017 CARB Scoping Plan, the goals and policies contained in Marin County's Countywide Plan and Climate Action Plan, and the City of Novato Climate Action Plan. Therefore, the proposed project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

GEOLOGY AND SOILS

GEOLOGY AND SOILS CHECKLIST QUESTIONS					
	Would the project:	Potential Significant Impact	Less than Significant with Mitigation	Less-than-Significant Impact	No Impact
a)	Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:?				
	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.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b)	Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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 type="checkbox"/>	<input checked="" type="checkbox"/>
d)	Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e)	Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f)	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"/>

Setting

Geology within the study area consists primarily of Novato Conglomerate, which is composed of chert, rhyolite, granite, and quartzite pebbles and cobbles and are found in a coarse, sandy matrix.⁸⁰ This formation dates to between 66 and 201 million years ago. Small portions of trail segments at the lowest elevations show as being on bay mud formed during the Holocene Epoch (11,700 years ago to the present). One small portion of the northern most trail to be decommissioned lies on colluvium formed during the early Holocene and latest Pleistocene (30,000 to ~6,000 years ago).

The Rush Creek Open Space Preserve is located within the central portion of the Coast Range Physiographic Province of California, composed of a series of northwest-southeast aligned coastal mountain chains dominated by a similar trending San Andreas Fault Zone.⁸¹ Marin County has several faults delineated by the California Division of Mines and Geology, with the San Andreas Fault being the only fault identified by the Alquist-Priolo Earthquake Fault Zoning Act. In addition, an active portion of the Hayward fault lies near the county. There is a 62 percent likelihood of fault rupture with a magnitude of 6.7 or greater to occur on one of the San Francisco Bay Area active faults, including the San Andreas or the Hayward faults, before the year 2032.⁸² The Burdell Mountain fault trace traverses the City of Novato, and the fault is considered potentially active.⁸³ It is also possible, but with a low probability, that earthquakes may occur on inactive or previously unidentified faults. No mapped faults or earthquake fault zones are identified in the project area.⁸⁴⁸⁵

Ground rupture is a geologic hazard in areas immediately adjoining a fault. The Burdell Mountain fault is a quaternary fault with an age of last movement in the 1.6-million-year timeframe, which would have a minimal potential to cause ground rupture in the project area.⁸⁶

Land subsidence is the sinking of a large area of ground surface in which the material is displaced vertically downward, with little or no horizontal movement. Subsidence problems are common in the diked baylands because of the highly compressible nature of the existing fill. Areas susceptible to earthquake-induced settlement include those areas underlain by thick layers of colluvial material or un-engineered fill. Land within the proposed project area are not susceptible to land subsidence.

The main geologic hazards for the MCOSD's open space areas and trail infrastructure are landslides and other related slope stability hazards under strong seismic shaking, or more commonly, during intense rainfall events that quickly saturate the soil. Landslides are the downward movement of materials such as rock, soil, or fill. Debris flows are a rapid downslope movement of thick slurry composed of loose soil, rock, and organic material entrained with air and water; a debris avalanche is a more rapid or extreme debris flow.

Landslides are downward and outward movements of slope-forming materials including rock, soil, artificial fill, or combinations of such materials. The size of landslides can vary from small events to massive slides containing millions of cubic yards. A landslide may move rapidly, as in a soil or rock avalanche, or it may move slowly. A similar but much slower movement is called creep. The proposed project area is mapped as few landslides.⁸⁷

Ground shaking is one of the key geologic hazards associated with seismic activity, with some areas more susceptible to strong shaking and potential damage due to their proximity to the fault zone or their underlying

⁸⁰ California Geologic Survey. 2002. Geologic Map of the Novato 7.5' Quadrangle Marin and Sonoma Counties, California. A digital database.

⁸¹ Marin County Open Space District (MCOSD). 2014a. Road and Trail Management Plan. November.

⁸² Marin County. 2007. Marin Countywide Plan, November.

⁸³ City of Novato. 2020a. General Plan 2023 Public Draft Review. September

⁸⁴ ABAG. 2020b. Ground Shaking Map. Earthquake Shaking Hazard Maps. accessed November 20.

⁸⁵ City of Novato. 2020a. General Plan 2023 Public Draft Review. September

⁸⁶ *ibid*

⁸⁷ ABAG. 2020d Landslide Maps, accessed November 20.

soil composition. Soils most susceptible to seismic shaking amplification tend to be younger alluvial deposits, bay mud, and artificial fill found in the lower lying areas around open water including Bolinas, San Pablo, and Richardson Bays. Road and trail stability are also influenced by the underlying soils—how easily they are compacted and eroded, and how stable they are on slopes. The project area is prone to severe and very strong ground shaking during an earthquake along the San Andres.⁸⁸ Liquefaction potential in the project area is very low given the site topography and soil types in the area.⁸⁹

Soils in the study area are mapped as Bressa variant - McMullin variant complex, 30-50percent slopes.⁹⁰ Both Bressa and McMullin soils are well-drained, gravelly loams. These soil types are found on slopes and formed from residuum weathered from conglomerate rock. Weathered bedrock is typically present at a depth of 30-34 inches for Bressa soils and 14-18 inches for McMullin soils. Both types are considered moderately susceptible to erosion. Trails in the eastern portion of the Rush Creek Open Space Preserve show little sign of erosion and runoff where the trail grade is less than 15 percent and runoff is controlled; however, steeper trails with poor drainage show signs of accelerated erosion.⁹¹ The native vegetation is primarily hardwoods with an understory of grasses, forbs, and brush. Historically, these soils were used for livestock grazing, homesite development, and recreation. The soils in the project area have little or no potential to undergo changes in volume, in the form of either shrinking or swelling, due to changes in moisture content.

Applicable RTMP Policies and BMPs

MCOSD would incorporate applicable RTMP Policies and BMPs, which were designed to minimize or avoid potential environmental impacts to geology and soils. The applicable RTMP Policies and BMPs are listed in the Project Description and are provided, in their entirety, in Appendix A.

- General-3: Minimize Potential for Erosion
- General-4: Modify Construction Methods Relating to Soil Disturbance, Restrict Use of Offsite Soil, Aggregate, or Other Construction Materials
- Water Quality-2: Temporary Erosion and Sediment Control
- Water Quality-3: Erosion Control Measures
- Water Quality-6: Grading Windows
- Geologic Hazards-1: Assessment and Requirements in Areas of Potential Geologic Hazard
- Geologic Hazards-2: Construction in Areas of Slides and Debris Flows

CEQA Context

A project would normally result in a significant impact to geology and soils if it would result in substantial erosion, expose people to major geologic hazards, or a permanent loss of natural geologic resources created by a substantial change in topography or land subsidence.

⁸⁸ ABAG. 2020b. Ground Shaking Map. Earthquake Shaking Hazard Maps. accessed November 20.

⁸⁹ ABAG 2020c. Liquefaction Map. Liquefaction Hazard Maps. accessed November 20.

⁹⁰ NRCS. 2020. Custom Soil Resource Report for Marin County, California. November 20.

⁹¹ Gold Ridge RCD. 2020. Bahia Area Road and Trail Project, Rush Creek Open Space Preserve. March 25.

a) Would the Project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:

- 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***

No portion of the project area is located within an Alquist-Priolo Earthquake Fault Zone and there are no mapped active faults in the project area. As noted above, there is a trace of the potentially active Burdell Mountain fault immediately west of the proposed project area. The nearest known active earthquake faults are the San Andreas Fault, located approximately 13 miles to the west, and the Hayward Fault, approximately 13 miles east. Implementation of the proposed project, including active trail decommissioning, new trail construction, or trail conversion, would not be located in areas prone to ground rupture and the project would not increase the risk of ground rupture in the area. Therefore, implementation of the proposed project would result in no impact associated with rupture of a known earthquake fault involving risk of loss, injury, or death.

ii) Strong seismic ground shaking? *No Impact*

The project area is located in an area that could experience earthquakes and ground shaking; however, the proposed project would not directly or indirectly result in substantial adverse effects from strong ground shaking. The proposed trail decommissioning would remove social trails, especially those located on steep slopes and subject to erosion. Proposed new trail construction and conversion of the Iron Gate Fire Road to hiking trail would provide stable trail surfaces to withstand ground shaking. In addition, the proposed project does not include construction of any occupied structures that could pose a safety hazard to trail users and would not substantially alter the existing conditions or introduce new hazards that could contribute to strong seismic ground shaking. Implementation of the proposed project would support existing outdoor recreation uses would not alter or introduce substantial adverse effects related to strong seismic ground shaking, including the risk of loss, injury, or death involving strong seismic ground shaking. Therefore, implementation of the proposed project would not directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking.

iii. Seismic-related ground failure, including liquefaction? *No Impact*

ABAG has identified the liquefaction hazard at the project sites as “very low” based on California Geologic Survey data.⁹² The risk of liquefaction is nil within the project area, because the soils present are not prone to liquefaction. Therefore, implementation of the proposed project would not directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving seismic-related ground failure including liquefaction.

iv. Landslides. *Less than Significant*

The project area is mapped as few landslides by both ABAG and Marin County.⁹³ Fire roads and system trails in the proposed project area are located on gentle slopes and are currently in stable condition with no landslides identified. Several of the social trails are in degraded condition resulting from poor drainage along steep sections

⁹² ABAG 2020c. Liquefaction Map. Liquefaction Hazard Maps.

⁹³ *ibid*

of trail; although, no active or dormant landslides were identified during site visits by Gold Ridge RCD staff during development of the proposed project.⁹⁴

Active trail decommissioning measures would be used to stabilize eroded sections of trail and prevent future erosion, promote natural revegetation, and deter future use. Active trail decommissioning would include slope recontouring, tread decompaction and cross-drain installation to reduce concentrated water runoff to reestablish local drainage patterns, improve infiltration, and promote revegetation to improve conditions and reduce risk of erosion. The trail tread would be scarified where needed to reduce compaction and improve revegetation success and improve infiltration; thereby reducing the risk of a future landslide to less than significant levels. The proposed new trail segments and the road-trail-conversion are proposed on nearly flat ground or along gently sloping areas that are not prone to landslides.⁹⁵

The proposed project would not expose recreational users to new hazards. Therefore, implementation of the proposed project would result in a less-than-significant impact associated with risk of loss, injury, or death involving landslides.

b) Would the Project result in substantial soil erosion or the loss of topsoil? *Less than Significant*

Erosion is a natural process whereby soil and highly weathered rock materials are worn away transported, most commonly by wind or water. Soil erosion can become problematic when rapid soil loss and the development of erosional features, such as incised channels, rills, and gullies undermine roads, buildings, or utilities or when erosion results in impacts to water quality aquatic resources, and other natural resources. Natural rates of erosion can vary depending on slope, soil type, and vegetative cover.

Soils in the study area are mapped as Bressa variant - McMullin variant complex. Both soil types in the complex are well-drained, gravelly loams that are considered moderately susceptible to erosion, especially when subject to concentrate runoff. Evidence of concentrated runoff was present during evaluation of trail conditions throughout the proposed project area.

According to field observations recorded during mapping and assessing the MCOSD's trail and road network, soils in the vicinity of roads and trails were moderately drained with high erosion potential, which was most evident in areas where runoff was concentrated. The breakdown of soil under heavy trail use often leads to accelerated erosion and trail rutting.⁹⁶ One of the primary purposes of the RTMP is to establish and maintain a sustainable system of roads and trails that meet design and management standards. This includes reduction of soil erosion.

Site evaluations during development of the proposed project identified approximately 3,740 feet of social trails (S-2, S-3, S-4, S-10) located in areas prone to runoff and erosion. In addition, the lower 500 feet of the existing Iron Gate Fire Road is actively eroding. The proposed trail decommissioning would reduce existing erosion by re-contouring, trail tread decompaction, and cross-drain installation to reestablish drainage patterns and improve infiltration. These measures would eliminate existing erosion problems.

Construction of the new trail segments and reducing the footprint of the existing Iron Gate Fire Road to a 5-foot-wide trail would not increase erosion. The proposed new trails would be constructed on less than 10 percent slopes in most locations, and trail construction would include use of outsloping, rolling dips, and water bars to provide a well-drained trail surface to reduce the risk of concentrated runoff and subsequent erosion as described in the project description.

⁹⁴ Gold Ridge Resource Conservation District (Gold Ridge RCD). 2020. Bahia Area Road and Trail Project, Rush Creek Open Space Preserve. March 25.

⁹⁵ *ibid*

⁹⁶ MCOSD. 2014b. Road and Trail Management Plan Recirculated Final Tiered Program Environmental Impact Report, November.

The proposed project includes implementation of BMPs from the RTMP designed to limit disturbed areas and minimize potential for erosion and requires temporary erosion and sediment control on all disturbed areas resulting from project construction. MCOSD would use silt fences, erosion control blankets, and mulch to prevent significant erosion during and after construction to reduce erosion to less than significant levels. Decommissioning of actively eroding social trails and the Iron Gate Fire would improve drainage and reduce erosion of topsoil and result in the beneficial reduction of existing erosional problems. Therefore, implementation of the proposed project would result in a less-than-significant impact associated with substantial soil erosion or the loss of topsoil.

c) Would the Project 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? *No Impact*

Slope failures, commonly referred to as landslides, include many phenomena that involve the downslope displacement and movement of material, either triggered by static forces, such as gravity, or dynamic forces, such as earthquake. Slope stability can depend on several complex variables, including the geology, structure, and the amount of groundwater present, as well as external processes such as climate, topography, slope geometry, and human activity. Liquefaction is the rapid loss of shear strength experienced in saturated, predominantly loose granular soils below the groundwater level during strong earthquake ground-shaking and occurs due to an increase in pore water pressure. Earthquake-induced settlement of soils results when relatively unconsolidated granular materials experience vibration associated with seismic events. The vibration causes a decrease in soil volume as the soil grains tend to rearrange into a denser state. This decrease in volume and consolidation of soil can result in the settlement of overlying structural improvements.

As noted in the setting section, the Rush Creek Open Space Preserve has few landslides and is not prone to increased risk of landslide. Nonetheless, shallow landslides have occurred within the MCOSD's preserves in recent years from high intensity and long-duration storm events. The slides usually occur in areas where steep slopes are over-steepened due to bank erosion, or along ravines or swales with higher levels of surface and groundwater. Conditions where landslides have occurred within MCOSD's preserves do not exist within the proposed project area. There are no streams, ravines, or swales within the proposed project area, and no areas with high groundwater has been identified. The soils in the area are not prone to liquefaction, nor are they prone to subsidence. In addition, the proposed project area is not located on an unstable geologic unit. Therefore, there would be no impact resulting from on- or off-site landslide, lateral spreading, subsidence, or liquefaction. Therefore, implementation of the proposed project would not cause a geologic unit or soil to become unstable and result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse, and there would be no impact.

d) Would the Project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property? *No Impact*

Expansive soils expand and contract in response to changes in soil moisture, most notably when near-surface soils change from saturated to dry and back again. Generally, the expansiveness relates to the clay content in the soil. These soils often expand in the winter and shrink in the dry summer months. The soil types in the proposed project area are not subject to the conditions of shrink/swell and they are not identified as expansive soils. Therefore, implementation of the proposed project would not result in or cause direct or indirect risks to life or property associated with expansive soils.

e) Would the Project have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater? *No Impact*

Implementation of the proposed project would not generate wastewater and would not include the installation or use of any septic tanks or alternative wastewater disposal systems. Therefore, implementation of the proposed project would result in no impact associated with septic tanks and alternative wastewater disposal systems.

f) Would the Project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? *No Impact*

Geology within the study area consists primarily of Novato Conglomerate, which is composed of chert, rhyolite, granite, and quartzite pebbles and cobbles and are found in a coarse, sandy matrix. This formation dates to between 66 and 201 million years ago. Small portions of trail segments at the lowest elevations show as being on bay mud formed during the Holocene Epoch (11,700 years ago to the present). One small portion of the northern most trail to be decommissioned lies on colluvium formed during the early Holocene and latest Pleistocene (30,000 to ~6,000 years ago).⁹⁷ A records search showed that no recorded fossil sites are located within Marin County, although there are multiple records of invertebrate and plant fossils assigned to the Holocene or recent epoch.⁹⁸ No unique geologic features were identified in the proposed project area.

Trail decommissioning, new trail construction, and conversion of the Iron Gate Fire Road to a trail would disturb the top foot of soil and no deep excavation is proposed as part of the project. Therefore, implementation of the proposed project would not directly or indirectly destroy unique paleontological resources or site, or unique geologic features and there would be no impact.

⁹⁷ Origer 2020. Cultural Resources Study for the Rush Creek Open Space Preserve Trails Project Rush Creek Open Space Preserve near Novato, Marin County, California. September 1.

⁹⁸ Marin County Open Space District (MCOSD). 2014a. Road and Trail Management Plan. November.

GREENHOUSE GAS EMISSIONS

GREENHOUSE GAS EMISSIONS CHECKLIST QUESTIONS					
	Would the project:	Potentially Significant Impact	Less than Significant with Mitigation	Less-than-Significant Impact	No Impact
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"/>
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"/>

Setting

Global climate change is the observed increase in average global temperatures, along with other changes in climatic factors such as wind, precipitation, and storm frequency and intensity. Climate change can result from natural factors and processes, but recent trends in global climate change, including the marked increase in global temperatures over the past half-century, are primarily attributable to human activities. By trapping heat in the atmosphere, greenhouse gas emissions (GHGs), which result from a wide array of human activities such as the burning of fossil fuels and deforestation, are a primary cause of human-induced climate change.

GHGs include carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF₆), and nitrogen trifluoride (NF₃). Known as Global Warming Potential (GWP), the potency each GHG and its relative contribution to global climate change can vary widely depending on the ability of the GHG to trap heat in the atmosphere and its atmospheric lifetime. GWP is measured relative to CO₂, the most abundant GHG, which has a GWP of 1. Methane has a GWP of 28-36, nitrous oxide has a GWP of 265-298, and the GWP of HFCs and PFCs can be in the tens of thousands (EPA 2017). Total GHG emissions are typically measured in metric tons of CO₂ equivalent (MTCO₂e).

There are two means for reducing GHGs in the atmosphere: cutting emissions of GHGs and increasing sequestration, the process by which atmospheric GHGs are stably incorporated into non-mobile forms such as trees and soil. In California, there are four significant pieces of legislation seeking to address climate change and GHG emissions:

- Assembly Bill (AB) 32, the Global Warming Solutions Act, addresses total GHG emissions across the State and throughout different sectors of California's economy, with the goal of reducing emissions to 1990 levels by 2020 and 40 percent below 1990 levels by 2030.
- Senate Bill (SB) 375 requires reduction of emissions from automobiles and light trucks.
- SB 97 requires consideration of climate change in all environmental assessments under CEQA, regardless of the specific source of GHGs or other climate change effects.
- SB 32 sets a GHG emissions reduction target of 40 percent below 1990 levels by 2030.

CARB is tasked with the implementation of AB 32 through the development of a Scoping Plan, which is to be updated every five years. CARB produced its second update to the Scoping Plan in 2017.⁹⁹ The Scoping Plan identifies natural and working (i.e., agricultural) lands as a critical component to the State's climate change

⁹⁹ California Air Resources Board (CARB) 2017. California's 2017 Climate Change Scoping Plan.

strategy and notes their potential to be both a source and a sink for GHG emissions. In recent years, natural and working lands in California have experienced significant carbon loss, primarily as a result of wildfire. The Scoping Plan states that the objective for natural lands such as Rush Creek Open Space Preserve is to promote their role as a carbon sink while minimizing GHG and other emissions associated with factors such as management and wildfire.

GHG emissions are also regulated by the BAAQMD. The BAAQMD 2017 CEQA Guidelines provide standards for analyzing a project's potential impacts on GHG emissions and thresholds of significance for operational emissions.¹⁰⁰ The BAAQMD 2017 Climate Action Plan also addresses climate change and GHG emissions. For natural and working lands, the CAP focuses primarily on increasing carbon sequestration on lands such as the Preserve.¹⁰¹

Locally, the Marin County Climate Action Plan provides GHG reduction goals and measures for unincorporated Marin County, with the overall target of reducing emissions to 30 percent below 1990 levels by 2020.¹⁰² The City of Novato Climate Action Plan establishes targets of 15 percent below 2005 levels by 2020 and 40 percent below 2005 levels for 2040 and provides ten goals to meet those targets.¹⁰³ The western portion of Rush Creek Open Space Preserve is located in unincorporated Marin County, while the eastern portion, where the project area is located, falls within the Novato city limits.

In 2005, GHG emissions in the City of Novato were estimated to total 465,892 MTCO₂e.¹⁰⁴ Of this total, the transportation sector accounted for 67.2 percent, residential sector for 18.3 percent, commercial/industrial sector for 12.2 percent and waste sector for 2.2 percent. For municipal activities from County government operations, estimated GHG emissions in 2012 totaled approximately 15,000 MTCO₂e.¹⁰⁵ This amount is equivalent to the annual GHG emissions generated by approximately 3,000 passenger vehicles. Of this total, employee commute accounted for 40 percent, building energy use for 36 percent, vehicle fleet for 18 percent, wastewater treatment for 1.4 percent, and streetlights and traffic signals, refrigerants, stationary sources, solid waste generation, and water conveyance accounted for the remainder at less than 1 percent each.¹⁰⁶

Applicable RTMP Policies and BMPs

MCOSD would incorporate the following RTMP Policies and BMPs, which were designed to minimize or avoid potential environmental impacts from increased greenhouse gas emission. The RTMP Policies and BMPs are listed in the Project Description and are provided, in their entirety, in Appendix A.

- Policy SW.29: Retrofit or Upgrade Construction Equipment
- Air Quality-1: Implement BAAQMD Measures

CEQA Context

A project would normally result in a significant impact on greenhouse gas emissions if it results in a significant increase in greenhouse gas emissions or conflicts with a plan, policy or regulation intended to reduce greenhouse gas emissions.

¹⁰⁰ BAAQMD 2017b. Clean Air Plan, Spare the Air, Cool the Climate.

¹⁰¹ BAAQMD 2017c. California Environmental Quality Act Air Quality Guidelines. May

¹⁰² Marin County. 2014.Climate Action Plan. August

¹⁰³City of Novato. 2005. Climate Action Plan.

¹⁰⁴ibid

¹⁰⁵ Marin County. 2014.Climate Action Plan. August

¹⁰⁶ ibid

a) Would the Project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? *Less than Significant*

Construction of the proposed project would result in minor GHG emissions from the use of equipment and vehicles. Construction of the proposed project would require limited use of heavy equipment, including a mini excavator, dozer, water truck, and compactor, and fossil fuel combustion from use of equipment would result in emissions of CO₂ and other GHGs. Emissions would also result from MCOSD staff driving to and from the site each day during the six-week construction period. These construction-related emissions would be limited as a result of the project's short six-week construction period and the small scale of the proposed improvements.

Operation of the project would occur as described in the project description and would continue in a manner similar to existing conditions. GHG emissions associated with operation and maintenance would result from truck trips to and from the site for MCOSD staff to patrol and maintain the area as well as from vehicle trips from users driving to and from Rush Creek Open Space Preserve. The frequency of staff operations and maintenance activities would not increase as a result of the project. Ultimately, the proposed project is anticipated to result in reduced maintenance needs as the proposed trail improvements would alleviate erosion and increase trail sustainability. Additionally, the proposed project would not significantly increase vehicle trips for recreational use of Rush Creek Open Space Preserve because the proposed project would not include additional parking, new or expanded recreational uses, or a net increase in recreational amenities. As a result, operation of the project would not change GHG emissions relative to existing baseline conditions.

The 2017 BAAQMD Guidelines provide a process for evaluating the proposed project's impact on GHG emissions.¹⁰⁷ The first step in this process is to evaluate whether the project meets the screening criteria defined in the 2017 BAAQMD Guidelines. If the project meets all screening criteria, its impact is considered to be less than significant and further detailed analysis of potential project emissions is not required.

Table 3-1 of the 2017 BAAQMD Guidelines provides the following screening criteria size thresholds for the proposed project's land use of city park: 2,613 acres for operational criteria pollutants, 600 acres for operational greenhouse gases (GHG), and 67 acres for construction-related emissions (PM10). The total disturbance area associated with the project is approximately 3 acres, so the proposed project size is well below the described screening criteria size thresholds.¹⁰⁸ The entire portion of Rush Creek Open Space Preserve that encompasses the project area is approximately 120 acres, also well below the screening size for operational GHG emissions. The project would not include demolition, simultaneous occurrence of more than two construction phases, simultaneous construction of more than one land use type, extensive site preparation, or material transport greater than 10,000 cubic yards requiring considerable haul truck activity. Additionally, the proposed project would incorporate applicable RTMP BMPs, including SW.29 and Air Quality-1, which would further reduce the GHG emissions associated with construction and operation of the project. The specific BAAQMD measures are listed in Appendix C. As a result, the project would meet all of the screening criteria identified in the 2017 BAAQMD Guidelines and the project would not result in GHG emissions that would have a significant impact on the environment. Therefore, construction and operation of the proposed project would result in a less-than-significant impact associated with the generation of greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.

¹⁰⁷ BAAQMD 2017c. California Environmental Quality Act Air Quality Guidelines. May

¹⁰⁸ Assuming a 10-foot-wide disturbance area for 5,090 linear feet of new trail construction (Blue Oak Trail, Iron Gate Trail, and Horseman's Spur Trail), 1,375 linear feet of upgraded trail (Bahia Berm Trail), 690 linear feet of road to trail conversion (Iron Gate Fire Road), 1,890 linear feet of passive closures, and 4,240 linear feet of active decommissioning.

b) Would the Project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases? *No Impact*

Neither construction nor operation of the proposed project would not result in GHG emissions that would have a significant impact to the environment. The proposed project does not create any new stationary or mobile sources of GHG emissions and does not alter land use or otherwise inhibit carbon sequestration. The project would not conflict with the GHG reduction goals and policies set forth in statewide legislation, the CARB Scoping Plan, the BAAQMD Climate Action Plan, the City of Novato Climate Action Plan, the Marin County Countywide Plan, or the Marin County Climate Action Plan. Therefore, implementation of the proposed project would result in no impact associated with a conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

HAZARDS AND HAZARDOUS MATERIALS

HAZARDS AND HAZARDOUS MATERIALS CHECKLIST QUESTIONS					
	Would the project:	Potentially Significant Impact	Less than Significant with Mitigation	Less-than-Significant Impact	No Impact
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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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"/>
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"/>
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"/>
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 or excessive noise for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f)	Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g)	Would the Project expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Setting

California Health and Safety Code Section 25501 defines hazardous material as materials that, because of its quantity, concentration, or physical or chemical characteristics, poses significant present or potential hazard to human health and safety or to the environment if released into the workplace or environment, or a material specified as hazardous by ordinance.

The MCOSD uses a limited amount of hazardous materials at Rush Creek Open Space Preserve during routine maintenance that includes the use of motorized equipment for vegetation control, trail maintenance, and routine

patrols. The vehicles and equipment utilized by MCOSD contain hazardous materials, including gasoline, lubricants, and other solutions. However, no hazardous material is stored at within the Preserve.

Applicable RTMP Policies and BMPs

MCOSD would incorporate the following RTMP Policies and BMPs, which were designed to minimize or avoid potential environmental impacts to hazards and hazardous materials. The RTMP Policies and BMPs are listed in the Project Description and are provided, in their entirety, in Appendix A.

- Policy SW.26: Control or Restrict Access to Ignition Prevention Zones when Red-Flag Conditions Exist
- General-6: Prevent or Reduce Potential for Pollution
- Water Quality-4: Prevent or Reduce the Potential for Pollution

CEQA Context

A project would normally result in a significant impact on hazards and hazardous materials if the project would expose people and/or the environment to hazards or hazardous materials.

a) Would the Project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? *Less than Significant*

Construction of the proposed project would include the use of vehicles and equipment that require small quantities of hazardous materials, including fuel and lubricants. Operation of the proposed project would occur as described in the project description and would continue in a manner similar to existing conditions. Operation and maintenance activities would include the operation of vehicles and equipment that use hazardous materials, including fuel and lubricants. However, operation of the proposed project would not result in an increase in the transport, use, or disposal of hazardous materials relative to baseline conditions.

Any time such materials are used, transported, or disposed there is the potential for spills or other releases of the materials, which could affect MCOSD staff, construction workers, recreational users, and the environment. Transport of hazardous materials to and from the project area could result in an incremental increase in the potential for accidents. However, existing laws and regulations govern the storage, transport, use, and disposal of hazardous materials. Caltrans and the California Highway Patrol (CHP) regulate the transportation of hazardous materials and wastes, including container types and packaging requirements, as well as licensing and training for truck operators, chemical handlers, and hazardous waste haulers. Worker safety regulations cover hazards related to the prevention of exposure to hazardous materials and a release to the environment from hazardous materials use. Regulations and criteria for the disposal of hazardous materials mandate disposal at an appropriate landfill. The California Occupational Safety and Health Administration (Cal-OSHA) enforces hazard communication program regulations, which contain worker safety training and hazard information requirements, such as procedures for identifying and labeling hazardous substances, communicating hazard information related to hazardous substances and their handling, and preparation of health and safety plans to protect workers and employees. The transport, use, and disposal of hazardous materials for the construction and operation of the project would be adequately controlled through these existing regulatory requirements and the potential for impacts would be less than significant.

Additionally, the proposed project includes implementation of RTMP BMPs that would further reduce any potential hazards to the public and the environment. BMPs General-6 and Water Quality-4 provide guidance for the safe use and disposal of materials, including hazardous materials, during construction and operation of the project. Implementation of these BMPs would ensure that the project would not create a significant hazard to the public or the environment through the transport, use, or disposal of hazardous materials. Therefore, implementation of the proposed project would result in a less-than-significant impact associated with creation

of a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.

b) Would the Project 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? *Less than Significant*

As described under a), above, the project would involve construction activities that use limited quantities of hazardous materials, such as fuel and lubricants. Operation of the proposed project would require occasional use of vehicles and equipment, with associated hazardous materials, but is not anticipated to increase the use of such materials relative to baseline conditions. Construction and operation of the proposed project could incrementally increase the potential for accidents involving the release of hazardous materials into the environment. However, as described above, the project would be subject to federal, state, and local laws and regulations governing hazardous materials and BMPs included in the MCOSD's Road and Trail Management Plan would be implemented, which would reduce the likelihood of accidental release into the environment. Therefore, implementation of the proposed project would result in a less-than-significant impact associated with creation of 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.

c) Would the Project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school? *Less than Significant*

The closest school to the project area is Olive Elementary School, approximately 1.2 miles to the southwest. There are no existing or planned schools within one-quarter mile of the project area or the wider Rush Creek Open Space Preserve. Although highly unlikely, implementation of the proposed project could result in the release of hazardous materials from routine transportation or use of hazardous materials such as oils, lubricants and other fluids required for construction and/or operation equipment. Potential releases would be limited to fluids used for construction equipment, which would be onsite in small quantities. Since the proposed project is located more than ¼ mile from any school, there is a very low potential for a spill to affect a school. Construction and operation activities associated with implementation of the proposed project would be subject to federal, state, and local laws and regulations governing hazardous materials and all applicable policies and BMPs included in the MCOSD's Road and Trail Management Plan would be implemented, including measures to prevent pollution and reduce the likelihood of accidental release. Therefore, implementation of the proposed project would result in a less-than-significant impact associated with the emission of hazardous emissions or handling of hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.

d) Would the Project 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? *No Impact*

The Hazardous Waste and Substance Sites (Cortese) List, maintained by the California Environmental Protection Agency and the California Department of Toxic Substances, is the official database of hazardous materials sites compiled pursuant to Government Code Section 65962.5. The Cortese List shows several active sites in the general vicinity of Rush Creek Open Space Preserve; however, the nearest site is over 1.4 miles away from the project area. The project area is not located on a hazardous materials site. Therefore, implementation of the proposed project would result in no impact associated with creation of a significant hazard to the public or the environment due to its location on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5.

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 or excessive noise for people residing or working in the project area? *No Impact*

The project area is located approximately 1.2 miles south of the Marin County's public airport, known as Gross Field, and is within the geographic boundary of the airport's land use plan (Marin County 1991). The proposed project would implement improvements to the trail system in Rush Creek Open Space Preserve and does not include any new housing or office space. The proposed project and its proximity to the airport would not result in a safety hazard or excessive noise relative to baseline conditions for staff or recreational users at Rush Creek Open Space Preserve. Implementation of the project would not conflict with the airport land use plan for Gross Field. Therefore, implementation of the proposed project would result in no impact associated with creation of a safety hazard or excessive noise for people residing or working in the project area.

f) Would the Project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan? *No Impact*

The project area is not located within an adopted emergency response plan or emergency evacuation plan area. Implementation of the proposed project would improve pedestrian, bicycle, and equestrian egress in case of a fire or other emergency should one occur within Rush Creek Open Space Preserve. Therefore, implementation of the proposed project would result in no impact associated implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

g) Would the Project expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires? *Less than Significant*

Portions of the Rush Creek Open Space Preserve are located in the wildland-urban interface (WUI). The southern portion of the preserve that parallels Bahia Drive is located in the WUI. In accordance with California Public Resource Code Sections 4201 through 4204 and Government Code Sections 51175 through 51189, the Novato Fire Protection District has mapped areas of significant fire hazards because of fuels, terrain, weather, and other relevant factors. The project area moderate fire risk.¹⁰⁹ Equipment used during construction and maintenance activities associated with the proposed project could generate sparks which could result in wildland fire. The MCOSD would require the contractor and maintenance staff to implement applicable policies and Best Management Practices included in the used MCOSD's Road and Trail Management Plan to minimize risk of wildfire that could be initiated from equipment to construct and maintain the proposed project, such as requiring vehicles be equipped with fire extinguishers to address small fires ignited by construction or maintenance activities before a wildland fire develops. The MCOSD's Road and Trail Management Policy SW-26 allows the MCOSD to temporarily or permanently close preserves or restrict uses in preserves to reduce fire risk during periods of high fire danger. Therefore, implementation of the proposed project would result in a less-than-significant impact associated with the exposure of people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires.

¹⁰⁹ Marin Map 2020 – Wildland Fire Risk, City of Novato 2020

HYDROLOGY AND WATER QUALITY

HYDROLOGY AND WATER QUALITY CHECKLIST QUESTIONS					
	Would the project:	Potentially Significant Impact	Less than Significant with Mitigation	Less-than-Significant Impact	No Impact
a)	Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b)	Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 or through the addition of impervious surfaces, in a manner which would:				
	i) result in substantial erosion or siltation on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	iii) 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 type="checkbox"/>	<input checked="" type="checkbox"/>
	iv) impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d)	In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e)	Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Setting

The Rush Creek Open Space Preserve is located in the Rush Creek watershed in eastern Marin County. Rush Creek originates on the north edge of Novato and flows 1.5 miles (2.4 km) northeasterly through wetlands into Black John Slough and then the Petaluma River.¹¹⁰ Figure 19 Rush Creek Watershed, illustrates the Rush Creek Open Space Preserve's location within the greater Rush Creek Watershed. Rush Creek is located along

¹¹⁰ Marin County Watershed Program, 2020a. Rush Creek Watershed

the northern boundary of the preserve, outside the proposed project area. Several small, unnamed channels are mapped in the project area; although, none of these channels are mapped in the Marin County Watershed map. No active trail decommissioning efforts or trail construction activities would cross any stream channels or other drainages. Several proposed passive closure trail segments either cross or parallel several unnamed channels. Social trail S-1, S-2, S-3, S-8, and S-9 are located adjacent to marshlands between the Rush Creek Open Space Preserve and the Petaluma River in the northern part of the project area. Social trail S-5 parallels and unnamed channel for a portion of its length, and social trail S-6 crosses an unnamed channel at one location.

Applicable RTMP Policies and BMPs

MCOSD would incorporate applicable RTMP Policies and BMPs, which were designed to minimize or avoid potential environmental impacts to hydrology and water quality. The applicable RTMP Policies and BMPs are listed in the Project Description and are provided, in their entirety, in Appendix A.

- Water Quality-2: Temporary Erosion and Sediment Control
- Water Quality-3: Erosion Control Measures
- Water Quality-4: Preventing or Reducing the Potential for Pollution
- Water Quality-5: Road and Trail Inspections
- Water Quality-8: Proper Disposal of Excess Materials
- Water Quality-9: Sidecasting Construction Material

CEQA Context

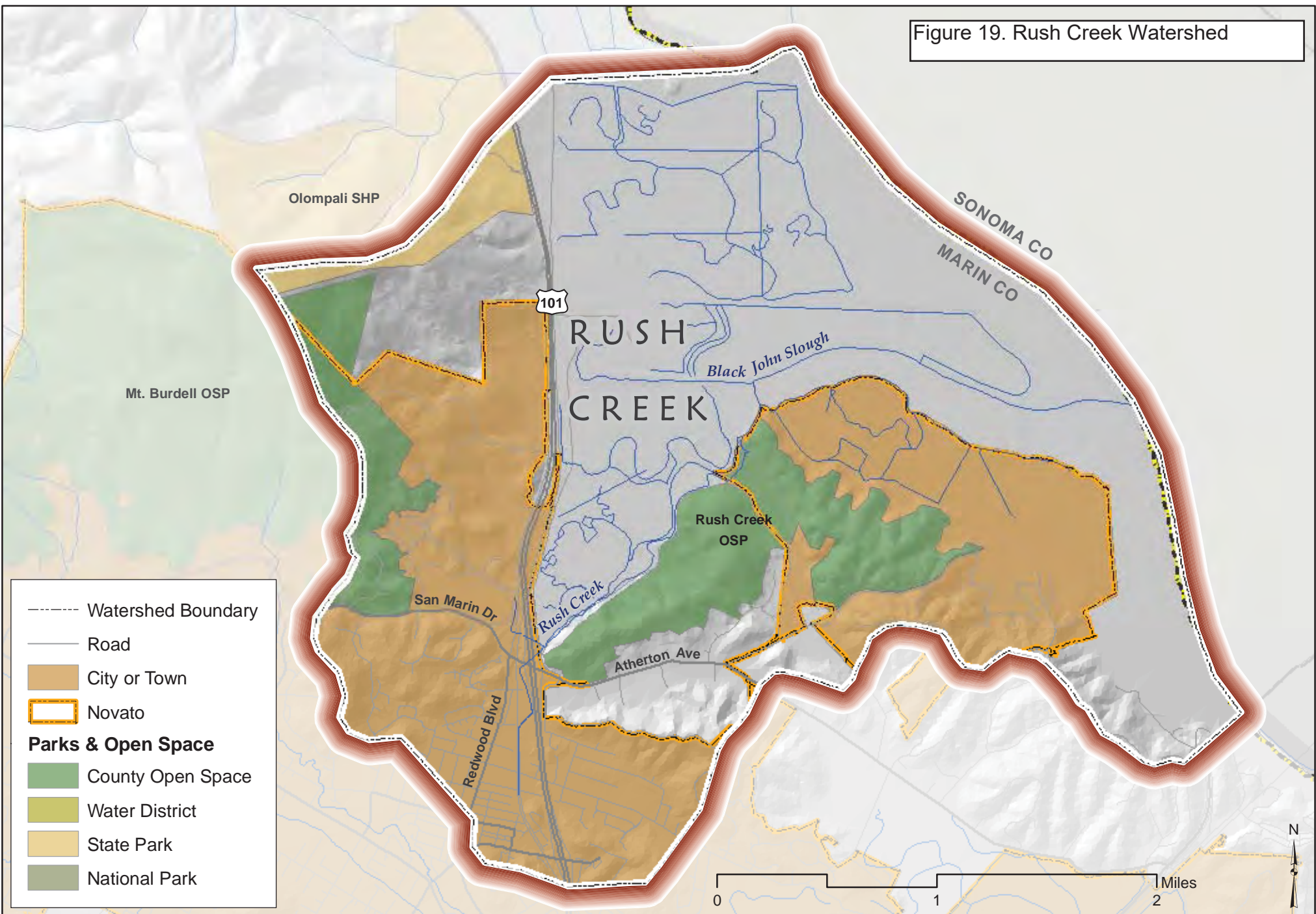
A project would normally result in a significant impact to hydrology or water quality if it would substantially degrade water quality, contaminate a public water supply, substantially degrade or deplete groundwater resources, interfere substantially with groundwater recharge, encourage activities that result in the use of large amounts of water, use water in a wasteful manner, or cause substantial flooding.

a) Would the Project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality? *Less than Significant*

Earthwork and construction activities could be a source of sediment that could affect water quality. Social trails S-2, S-3, and the northeastern portion of S-4 would be actively decommissioned as part of the proposed project, and these three trails are located adjacent to the marshlands along the northern boundary of the project area. Erosion resulting from active decommissioning activities could affect water quality in the marshlands through erosion caused from grading and earthmoving operations and a release of fuels or other chemicals used during construction. Grading and earthmoving would expose soil during construction and could result in erosion, with excess sediments carried in stormwater runoff to the marshlands. Implementation of the proposed project would incorporate and be consistent with the following RTMP Water Quality BMPs, and implementation of these measures would protect water quality

Social trails S-1, S-5, S-6, S-8, and S-9 would be passively closed as part of the proposed project. Passive trail closures would not include earthwork, and therefore, would not result in water quality impacts. Passive trail closure methods would include a combination revegetation efforts and physical barriers to eliminate use and disguise the trail. These activities would not result in water quality impacts.

Figure 19. Rush Creek Watershed



Rush Creek Watershed

Map for general purposes only; not for site-specific planning purposes.



Although active trail decommissioning would include earthwork and soil disturbance, Social Trail S-10 and the decommissioning of the Lower Iron Gate Fire Road are not located near watercourses. Additionally, none of the proposed new trails would cross, parallel, or be constructed near any watercourses. Therefore, no water quality impact would result from active trail decommissioning of Social Trail-10 and the Lower Iron Gate Fire Road or construction of the Blue Oak Multi-Use Trail, the Iron Gate Multi-Use Trail, or the Horseman's Spur Hiker/Equestrian Only Trail.

Water Quality-2: Temporary Erosion and Sediment Control requires implementation of temporary sediment-control practices when new trail construction or existing trail improvements would result in greater than 1 acre of disturbance. Water Quality-3: Erosion Control Measures, requires immediate rehabilitation of areas where project activities have disturbed soil. Water Quality-4: Preventing or Reducing the Potential for Pollution, requires worker training for spill prevention and clean up, and it also requires immediate response to inadvertent spills and storage of emergency containment materials on site. Water Quality-5: Road and Trail Inspections, requires MCOSD to inspect roads and trails for conditions that might adversely affect water quality or other resources. Proposed earthwork could occur beginning in April, which is inconsistent with RTMP BMP Water Quality-6: Grading Windows. Given the location of the proposed project in relation to watercourses and with implementation of the applicable RTMP BMPs, construction work beginning in April would not impact water quality.¹¹¹ The primary objectives of the proposed project are to reduce road and trail-related erosion and to focus visitor use to trails that are more sustainable. Implementation of the RTMP BMPs, policies, and design standards, plus implementation of the proposed erosion control measures included as part of the project, would minimize potential water quality impacts from actively decommissioning social trails near the marshland, even if the early start date would be inconsistent with RTMP BMP Water Quality-6. Therefore, implementation of the proposed project would result in a less-than-significant impact associated with a potential violation of water quality standards or waste discharge requirements, and a less-than-significant impact associated with potential degradation of surface or ground water quality. Furthermore, implementation of the proposed project would benefit surface water quality by improving the trail system and removing social trails that are eroding and are currently in an unsustainable condition. continued visitor use along the trails in Rush Creek Open Space Preserve with the closure of social trails would have no impact on water quality.

b) Would the Project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin? *No Impact*

The project area lies within the Novato Valley Groundwater Basin, which is a 32-square mile structural depression north of San Rafael and west of San Pablo Bay. Streams discharging to San Pablo Bay drain the basin and are subject to tidal influences in their lower reaches. Water in the basin occurs primarily in semi-confined alluvial deposits composed of unconsolidated clay, silt, sand, and intermittent gravel lenses. Groundwater type is typically calcium bicarbonate with the tidally influenced alluvium showing sodium chloride type. Tidal fluctuations can introduce brackish water into the groundwater reservoir, degrading water quality.¹¹²

Implementation of the proposed project would improve conditions along decommission social trails and redundant fire roads to consolidate visitor use to a sustainable trail network. The existing fire roads and trails are not paved, and no impervious surfaces would be created that would impede groundwater recharge with implementation of the project. Visitors would still utilize parking along public roadways, and no new parking is included in the proposed project. The proposed project would not introduce new groundwater uses. Therefore, implementation of the proposed project would have no impact associated with substantially decreased

¹¹¹ Construction in April would only begin if this Initial Study/Proposed Mitigated Negative Declaration is adopted and the project is approved before April 2021. Construction could begin later depending on the CEQA adoption and project approval timeline.

¹¹² Marin County Open Space District (MCOSD). 2014a. Road and Trail Management Plan. November.

groundwater supplies or substantial interference with groundwater recharge such that the project may impede sustainable groundwater management of the basin.

c) Would the Project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:

i) Result in substantial erosion or siltation on- or off-site? *Less than Significant*

The terrain in the project area is highly variable with areas of steep slopes. Although most trails within the project area are primarily less than 10 percent slope, social trails in some locations are steep and eroding. Portions of the Iron Gate Fire Road are also steep¹¹³ and showing signs of erosion and gullying.¹¹⁴

The proposed project includes actively decommissioning currently eroding social trails S-2, S-3, S-4, S-10 and the lower portion of the Iron Gate Fire Road. These trail segments would be decommissioned to stabilize the eroded sections through slope recontouring, tread decompaction, and trail drainage installation to re-establish local drainage patterns, improve infiltration, and promote revegetation. MCOSD would also apply straw and other erosion control measures, construct split-rail fencing where needed to prevent public access to close trail segments. The upper portion of Iron Gate Fire Road would be converted from a fire road to a trail to accomplish the same goals as trail decommissioning. The proposed trail closure methods would be designed to reduce existing erosion and prevent future erosion from the sites.

Proposed new trails including the Blue Oak Trail, Horseman's Spur, and Iron Gate Trail, would be curvilinear in design and would primarily follow the natural contours of the land to reduce potential for runoff and erosion. The proposed improvements would ensure the trails are properly drained, minimize future maintenance, improve sustainability, and improve user safety. The proposed new trails would include permanent and frequent drainage control to prevent concentrated runoff and substantial erosion. MCOSD would also implement a trail monitoring program to ensure the proposed project successfully prevents erosion and runoff from currently eroding site and proposed new trails adequately drain and do not result in runoff during project operation. Therefore, implementation of the proposed project would result in a less-than-significant impact associated with substantial erosion or siltation on- or off-site from alteration of the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces.

ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site? *No Impact*

Drainage improvements to the trails would include installation of rolling dips and outsloping of the trail. Rolling dips are drainage dips excavated into the trail to convey water off the trail and into stable, undisturbed ground. This is the preferred technique to drain water off an existing trail. Outsloped tread is a technique that alters the trail to be lower on the outside or downhill side of the trail than it is on the inside or bank side. Outsloping allows water to sheet drain across the trail naturally. The tread would be outsloped at approximately five percent. The proposed project would include the installation of rolling dips at various locations, to be determined in the field during construction. The net effect of these improvements is to move water off the trail surfaces as quickly as possible and drain them into the adjacent natural landscape. With these improvements, the proposed project would reduce the concentration of runoff and water velocity over what currently occurs on these trails and this impact would be less than significant.

¹¹³ Steep slopes are generally greater than 10 percent

¹¹⁴ Gold Ridge RCD. 2020. Bahia Area Road and Trail Project, Rush Creek Open Space Preserve. March 25

The project area is not located within a 100-year flood hazard zone and would not expose people or structures to flooding hazards.¹¹⁵ The proposed project would improve drainage of the site. It would not affect flood flows through the site and would not affect the risk of flooding. Implementation of the proposed project would not include any impervious surfaces and therefore would not increase the rate or amount of surface runoff. Therefore, implementation of the proposed project would not alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site.

iii) Create runoff which would exceed capacity of stormwater drainage systems or provide additional sources of polluted runoff? *No Impact*

The project area does not contain existing stormwater drainage systems, and none are planned as part of the proposed project. Implementation of the proposed project would not include any impervious, and therefore, would not increase the rate or amount of surface runoff. The proposed project includes drainage improvements to decommissioned trails and new trail construction, including installation of rolling drainage dips and trail cross drains as previously described. Implementation of the proposed project would not substantially alter existing drainage patterns of the site or area. Therefore, the proposed project would not exceed the capacity of a stormwater drainage system or provide additional sources of polluted runoff. Implementation of the proposed project would reduce the concentration of runoff and water velocity over what currently occurs on these trails, which is a beneficial impact.

iv) Impede or redirect flood flows? *No Impact*

The project area is not located within a flood area and the proposed project does not include construction of any structures. Therefore, implementation of the proposed project would not impede or redirect flood flows.

d) Would the Project, in flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation? *No Impact*

The project area is not located in an area subject to the effects of a tsunami¹¹⁶ or seiche¹¹⁷, or near a large body of water that would be subject to seiches or tsunami.¹¹⁸ There are no creeks or rivers in the project area that could cause flooding. Therefore, implementation of the proposed project would have no impact associated with the risk the release of pollutants due to inundation by seiche, tsunami, or flood.

e) Would the Project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan? *No Impact*

There is no sustainable groundwater management plan developed for the Novato Valley groundwater basin. Rush Creek is not listed as a Clean Water Act Section 303(d): Impaired Waters and Total Maximum Daily Loads (TMDLs), and there is no implementation plan specific for the Rush Creek watershed. Implementation of the proposed project would improve water quality conditions in the project area by reducing erosion. None of the proposed actions would conflict with either a water quality control plan or a sustainable groundwater management plan. The proposed project would not utilize groundwater during construction or operation, and

¹¹⁵ Marin Map 2020d. Map Showing Flood Hazard Zones from 2017.

¹¹⁶ Tsunami is a long high sea wave caused by an earthquake, submarine landslide or volcanic eruption, or other disturbance. The speed of tsunami waves is a factor of ocean depth, not distance from the ocean. Tsunami waves build to higher heights as they travel inland as the depth of the ocean decreases.

¹¹⁷ Seiche is a temporary standing wave in the water level of a lake or partially enclosed body of water, usually caused by changes in atmospheric pressure caused by earthquakes or landslides.

¹¹⁸ Marin Map 2020e. Map Showing Tsunami from 2017.

none of the proposed improvements would impede groundwater recharge. Therefore, implementation of the proposed project would no conflict with or obstruct implementation of a sustainable groundwater management plan.

LAND USE AND PLANNING

LAND USE AND PLANNING CHECKLIST QUESTIONS					
	Would the project:	Potentially Significant Impact	Less than Significant with Mitigation	Less-than-Significant Impact	No Impact
a)	Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b)	Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Setting

The project area is located within the southeastern portion of the Rush Creek Open Space Preserve within the City of Novato. Surrounding land uses include the Rush Creek Marsh and Petaluma Marsh Wildlife Refuges, owned by the California Department of Fish and Wildlife (CDFW), to the north and northeast; the Bahia Wetlands, owned by the Marin Audubon Society, and the Petaluma River to the east; and residential development along with City of Novato open space lands, a cemetery, and an equestrian center to the south. Rush Creek Park, a small county park that is not part of Rush Creek Open Space Preserve, is located across Saddlewood Road from Rush Creek Open Space Preserve. Rush Creek Open Space Preserve is governed by the City of Novato General Plan and zoning ordinance.¹¹⁹ The land use designation is Open Space (OS) and the parcel is zoned Publicly Owned Open Space (PD).¹²⁰

Applicable RTMP Policies and BMPs

The RTMP does not include Policies and BMPs specific to land use and planning. The RTMP Policies and BMPs are provided, in their entirety, in Appendix A.

CEQA Context

A project would normally result in a significant impact to land use and planning if it would conflict with the adopted land use and zoning regulations or if would disrupt or divide the physical arrangement of an established community.

a) Would the Project physically divide an established community? *No Impact*

The project area is located on open space property that is surrounded by marshes, wetlands, and creeks on three sides. The southern extent of the project area abuts Bahia Drive and a residential community. The proposed project includes trail decommissioning, new trail construction, road-to-trail conversion, trail designated use changes, and revegetation efforts. None of the proposed activities include construction of features that would physically divide an established community. For this reason, implementation of the proposed project would not physically divide an established community.

¹¹⁹ City of Novato. 2020a. General Plan 2023 Public Draft Review. September

¹²⁰ City of Novato Zoning Maps. 2020b, Website: <http://novato.org/government/community-development/planning-division/maps>. Accessed on November 24.

b) Would the Project cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect? *No Impact*

The proposed project is subject to the MCOSD governing and guidance documents listed in the project description, and the applicable RTMP polices would be met with implementation of the project. Specifically, this proposed project is designed to eliminate non-system roads and trails and remove social trails that cause impacts from existing erosion as addressed in Policy SW-2: System Roads and Trails and Policy SW-3: Social Trails. The project also addresses Policy SW-4: Overall Reduction of Road, Trail, and Visitor Impacts through reducing the overall impact by decommissioning trails, upgrading a social trail to become a system trail, and by changing the uses of trails needed to protect resources.

In addition, the City of Novato General Plan policies apply to the proposed project. Implementation of the proposed project would not change or otherwise affect land use designations, zoning, or existing use of the property. Public recreation would continue, which is consistent with the applicable land use and zoning designations. The City of Novato does not currently have a habitat conservation or natural community conservation plan. Therefore, implementation of the proposed project would have no impact associated with a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

MINERAL RESOURCES

MINERAL RESOURCES CHECKLIST QUESTIONS					
	Would the project:	Potentially Significant Impact	Less than Significant with Mitigation	Less-than-Significant Impact	No Impact
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"/>

Setting

The State Mining and Reclamation Act of 1975 requires that counties adopt policies to protect certain state-designated mineral resource sites from land uses that preclude or inhibit mineral extraction needed to satisfy local market demand on a timely basis. The purpose of the Act is to ensure that construction materials are available to all areas of the state at a reasonable cost. Mineral resources occur throughout Marin County and extraction of these resources has occurred throughout the history of human habitation of the area. Presently, mining operations are primarily related to the extraction of rock, sand, and earth for use in construction and related activities. The California Geological Survey (CGS) has mapped and classified areas of significant mineral resources in the North Bay as MRZ-2¹²¹. Much of the eastern portion of Rush Creek Open Space Preserve, including the proposed project area, is designated as MRZ-2 for construction aggregates, including portland cement concrete-grade aggregate, asphalt-grade aggregate, and Class II base-grade aggregate.

Applicable RTMP Policies and BMPs

The RTMP does not include Policies and BMPs specific to mineral resources. The RTMP Policies and BMPs are provided, in their entirety, in Appendix A.

CEQA Context

A project would normally result in a significant impact to mineral resources if a loss of known mineral or of a locally important mineral resources recovery area occurred from implementation of the project.

a) **Would the Project 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? *No Impact***

The proposed project would implement social trail and fire road decommissioning, trail upgrades, and new trail construction within Rush Creek Open Space Preserve. The project area is designated by CGS to be an MRZ-2 area that contains regionally significant mineral resources. However, the proposed project does not include any change in land use that would result in the loss of availability of this mineral resource relative to baseline conditions. The project area is currently a public open space preserve and this land use would not change as a result of the project. Additionally, the proposed project does not include mineral extraction or excavation sufficient to affect the underlying mineral resources in the project area. Therefore, implementation of the

¹²¹ Areas designated MRZ-2 are “areas underlain by mineral deposits that geologic data indicate to be significant. Contains known economic mineral deposits.” (CGS 2013)

proposed project would have no impact associated with the loss of availability of a known mineral resource that would be of value to the region and the residents of the state.

b) Would the Project 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? *No Impact*

The Draft Novato General Plan 2035 recognizes the MRZ-2 zones designated by CGS as mineral resource sites, including the project area. However, as described above in response to checklist item a), they would not affect the availability of this mineral resource site. Therefore, implementation of the proposed project would have no impact associated with the loss of availability of a locally important mineral resource recover site delineated on a local general plan, specific plan, or other land use plan.

NOISE

NOISE CHECKLIST QUESTIONS					
	Would the project:	Potentially Significant Impact	Less than Significant with Mitigation	Less-than-Significant Impact	No Impact
a)	Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project 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"/>
b)	Generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c)	For a project located within the vicinity of a private airstrip or 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"/>

Setting

Noise is defined as unwanted sound and is a subjective reaction to the physical phenomenon of sound. Noise interferes with sleep, speech, recreation, and tasks demanding concentration or coordination. The result is an increase in public annoyance with the noise source and a decrease in environmental quality.

Sound is compression waves that can travel through air, earth, and water. The most common unit of sound measurement is the decibel (dB). The threshold of hearing is considered to be 0 dB, and the range of sounds in normal human experience is 0 to 140 dB. Each 10 decibels reflect a 10-fold increase in noise intensity.

Sound waves travel at different frequencies. Because sound drops off with distance, all sound measurements are reported with distance from the source. The decibel scale is further refined to measure human hearing by using an A-weighted scale (dBA) that counts sounds within the center of human hearing frequencies as louder.

How humans perceive noise can be further influenced by how quiet background sound levels are and the kind of sound being generated. For instance, the same noise source would tend to sound louder at night, when background sound levels are generally lowest. Two common noise metrics account for this variability: the day-night average level (Ldn) is a 24-hour average noise level that adds 10 dB to nighttime noise between 10:00 p.m. and 7:00 a.m.; and the Community Noise Equivalent Level (CNEL) is identical to Ldn but adds an additional 5 dB to noise between 7:00 p.m. and 10:00 p.m.

Some people and circumstances are more vulnerable to the adverse effects of noise than others. Known as “sensitive receptors,” these include residences, schools, hospitals, long-term care facilities, places of public worship, and libraries. Noise level is often evaluated at the nearest sensitive receptor.

Table 5, below, shows typical noise levels associated with common activities.

Table 5: Noise Levels from Common Activities

Activity	dBA
Rock band (near amplifier)	110
Jet fly-over at 1,000 feet	105
	100
Gas lawnmower at 3 feet	95
	90
Diesel truck 50 mph at 50 feet	85
	75
Gas lawnmower at 100 feet	70
Normal Speech at 3 feet	65
Heavy traffic at 300 feet	60
Large business office	55
Quiet urban area in day	50
Normal speech at 50 feet	45
Quiet urban area at night	40
Quiet rural area at night	25

Source: Caltrans 2009

The various noise exposure limits of different State and federal agencies range from 75 to 90 dBs to protect hearing over the long term. However, the EPA recommends a level of 55 dB to protect against non-auditory health effects such as hypertension, cardiovascular disease, and nervous disorders.

The ambient (or background or pre-project) noise level is defined as the noise from all sources near and far and usually refers to the noise level that is present before a noise source being studied is introduced. In very quiet environments, virtually any change in local activities would cause an increase in noise levels and a loss of "peace and quiet." Such increases may be considered significant by residents in these areas, even if the measured increase is small.

The Novato General Plan 2035 regulates noise levels associated with new development and other activities within the City limits. The City of Novato Municipal Code Zoning Ordinance¹²² establishes specific measures for allowable exterior noise levels; see **Table 6** below. Uses, activities, and processes are not to generate noise in excess of these established standards. However, Section 19.22.070(7) exempts authorized construction activities from the allowable noise level requirements for construction occurring between 7 a.m. and 6 p.m. on weekdays and between 10 a.m. and 5 p.m. on Saturdays. Routine maintenance activities are also exempt under the ordinance.

¹²² Section 19.22.070

Table 6. Allowable Exterior Noise Levels – City of Novato Municipal Code

Type of Land Use	Allowable Exterior Levels ⁽¹⁾	
	Time Interval	Maximum Noise Level
Residential ⁽³⁾	10 p.m. to 6 a.m.	45 dBA
	6 a.m. to 10 p.m.	60 dBA
Commercial ⁽⁴⁾	10 p.m. to 6 a.m.	60 dBA
	6 a.m. to 10 p.m.	70 dBA
Industrial or manufacturing ⁽⁴⁾	Any time	70 dBA

Notes:

- (1) Each of the noise limits specified in Table 3-5 shall be reduced by 5 dBA for impulse or simple tone noises. If the ambient noise exceeds the resulting standard, the ambient shall be the standard.
- (2) Maximum noise levels shall not be exceeded for an aggregate period of more than three minutes within a one-hour time period or by more than 20 dBA at any time.
- (3) Residential standards apply to sensitive receptors such as schools, hospitals, libraries, group care facilities, and convalescent homes. These uses may require special mitigation.
- (4) Commercial standards apply to Mixed Use Districts.

The area around Rush Creek Open Space Preserve is primarily residential and open space. Noise levels in the area are heavily influenced by its proximity to roadways, including Highway 101, and the Marin County Airport. As a result, ambient noise levels at Rush Creek Open Space Preserve are typically higher than many other MCOSD preserves. In general, noise levels within and adjacent to MCOSD preserves typically range from 40-60 dBA in the daytime and from 20-40 dBA at night.¹²³ Typical noise levels within the project area and the wider Rush Creek Open Space Preserve are likely on the higher end of these ranges because the roadways and airport surrounding the preserve.

Applicable RTMP Policies and BMPs

MCOSD would incorporate the following RTMP Policies and BMPs, which were designed to minimize or avoid potential environmental impacts to noise. The RTMP Policies and BMPs are listed in the text below and provided, in their entirety, in Appendix A.

- Noise-1: County Noise Ordinance Requirements
- Noise-2: Noise Control during Construction within and adjacent to Sensitive Wildlife Populations

CEQA Context

A project would normally result in a significant impact to noise if it would substantially exceed or increase the ambient noise levels for adjoining areas or if it exceeded the noise levels recommended in an adopted plan or noise ordinance. Noise impacts are assessed by first determining which project components would generate noise and then comparing the anticipated noise levels with existing noise levels from other sources in the project area and with past land uses practices on the property.

¹²³ Marin County Open Space District (MCOSD). 2014a. Road and Trail Management Plan. November.

a) Would the Project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies? *Less than Significant*

Construction of the proposed project would require limited use of heavy equipment, including a mini excavator, dozer, water truck, and compactor, as well as power saws and other hand tools that would generate noise. Construction would occur over a six-week period, Monday through Friday, between 7:00 a.m. to 6:00 p.m. During project construction activities involving the use of heavy equipment or chainsaws, noise levels could reach a maximum of 85 dBA at a distance of 50 feet.¹²⁴ The majority of project activities would take place in the interior of Rush Creek Open Space District, far from any residences. However, the construction of the new Horseman's Spur Trail and the upgraded Bahia Berm Trail would take place along Bahia Drive, within 500 feet of nearby residences within the City of Novato. Since noise levels decrease by 6 dB with each doubling of distance, peak construction noise from the project would reach a maximum of 67 dBA at the nearest residences.¹²⁵ The noise impacts from these activities to nearby residences would be temporary, given the short construction period required for implementation of the proposed project, and limited, as the majority of work would be carried out with hand tools and only occasional use of heavy equipment would be required. The City of Novato Municipal Code Zoning Ordinance establishes that authorized construction activities occurring between 7:00 a.m. and 6:00 p.m. on weekdays and between 10 a.m. and 5 p.m. on Saturdays are exempt from the noise standards contained within the ordinance. As noted above, construction of the project would occur during these time frames. Therefore, project construction would not result in noise levels in excess of standards established in the local noise ordinance.

Operation of the project would result in occasional noise from the use of vehicles and tools for trail maintenance. However, the project is not anticipated to require additional maintenance beyond the current level of maintenance required for the Rush Creek Open Space District trail system. Implementation of the proposed project is also not anticipated to result in any increase to the level and type of recreational use of Rush Creek Open Space Preserve, although a nominal increase in visitor use could result from improved trail conditions. The proposed project does not include parking or other amenities and therefore any increased use of the project area would be negligible and proportional with regional population growth. Any potential increase in visitor use would not result in significant noise impacts, because recreation noise would be from unamplified voices and such recreational use is already part of the existing condition within the project area. As a result, the project would not result in noise impacts exceeding existing baseline conditions.

The proposed project would include implementation of RTMP noise BMPs, to further reduce potential noise impacts. BMP Noise-1 would reduce noise impacts by ensuring that all construction and maintenance activities occur in accordance with Marin County day and time restrictions. BMP Noise-2 would ensure that equipment and vehicles used for the project construction and maintenance utilize the best available noise-control techniques. With implementation of these BMPs, the construction and operation of the project would not result in noise levels that exceed local standards.

The proposed project would not result in a substantial permanent increase in ambient noise levels in its vicinity compared to existing conditions during construction or post-construction operation. Therefore, implementation of the proposed project would result in a less-than-significant impact associated with generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.

¹²⁴ Caltrans. 2009. Technical Noise Supplement

¹²⁵ Office of Environmental Health Hazard Assessment. 2015 Noise Manual

b) Would the Project result in generation of excessive groundborne vibration or groundborne noise levels? *Less than Significant*

Noticeable or distressing groundborne vibration is commonly caused by heavy construction such as pile driving, blasting, or heavy-tracked construction equipment, as well as by trains and other vehicles with significant mass and speed. Vibration can cause damage to buildings and roadways depending on the magnitude of vibration and proximity to the vibration-producing action.

There are no adopted state or local policies or standards for groundborne vibration or noise. Vibration can be detectable by humans at levels as low as 0.50 millimeter per second (0.02 inch per second), when background noise and vibration levels are low.¹²⁶ Vibration intensity is typically expressed as peak particle velocity (PPV), the maximum speed at which the ground moves while it temporarily shakes, measured in inches per second. The Federal Transit Administration (FTA) has published guidance for assessing vibration impacts.¹²⁷ According to the FTA, fragile buildings can be exposed to groundborne vibration PPV levels of 0.5 inch per second without experiencing damage. This threshold is typically used to evaluate potential vibration impacts.

Construction of the proposed project would result in minor groundborne vibration from the operation of construction equipment, including a mini excavator, dozer, water truck, and compactor. Actual vibration levels would vary depending on soil conditions, construction methods, and equipment used. The typical vibration levels for common construction equipment are shown in **Table 7**, below.

Table 7. Groundborne Vibration from Construction Equipment

Equipment	PPV (in/sec) at 25 feet
Compactor/Vibratory Roller	0.210
Large bulldozer	0.089
Loaded trucks	0.076
Small bulldozer	0.003

Source: FTA 2006

As indicated in the table above, construction of the project would generate vibration levels well below the 0.5 in/sec PPV threshold that could cause groundborne vibration impacts to nearby buildings, even if multiple pieces of construction equipment were operating within 25 feet of a building. Construction activities associated with the proposed project would take place within the undeveloped Rush Creek Open Space Preserve; the nearest residences are approximately 500 feet away from proposed construction at its closest location. Therefore, implementation of the proposed project would result in a less-than-significant impact associated with the generation of excessive groundborne vibration or groundborne noise levels.

c) For a project located within the vicinity of a private airstrip or 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? *No Impact*

The project area is located approximately 1.2 miles south of the Marin County's public airport, known as Gness Field, and is within the geographic boundary of the airport's land use plan.¹²⁸ The proposed project would

¹²⁶ Caltrans. 2013. Transportation and Construction Vibration. September

¹²⁷ Federal Transit Administration (FTA). 2006. Transit Noise and Vibration Impact Assessment

¹²⁸ Marin County. 1991. Airport Land Use Plan Marin County Airport Gness Field. June.

implement improvements to the trail system in Rush Creek Open Space District and does not include any new housing or office space. The project area is beyond the airport's 60 dbA noise contour, as mapped in City of Novato General Plan 2035.¹²⁹ The project and its proximity to the airport would not result in exposure to excessive noise relative to existing baseline conditions for staff or recreational users at Rush Creek Open Space Preserve. Implementation of the project would not conflict with the airport land use plan for Gness Field. Therefore, implementation of the proposed project would not expose people residing or working in the project area to excessive noise levels associated with a private airstrip, an airport land use plan, or within two miles of a public.

¹²⁹ Novato 2020

POPULATION AND HOUSING

POPULATION AND HOUSING CHECKLIST QUESTIONS					
	Would the project:	Potentially Significant Impact	Less than Significant with Mitigation	Less-than-Significant Impact	No Impact
a)	Induce substantial unplanned 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"/>
b)	Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Setting

The project area is located within the City of Novato and adjacent to open space and residential land uses. This area is governed by the City of Novato General Plan 2035, which provides the framework for growth and development throughout the city limits. The project area's land use designation is Open Space (OS) and the parcel is zoned Publicly Owned Open Space (PD)¹³⁰. These designations preclude residential and commercial development on the area and the area is largely undeveloped, aside from amenities for passive recreation such as trails and fire roads.

Applicable RTMP Policies and BMPs

The RTMP does not include Policies and BMPs specific to population and housing. The RTMP Policies and BMPs are provided, in their entirety, in Appendix A.

CEQA Context

A project would normally result in a significant impact to population and housing if it would cause substantial population growth or would remove existing housing.

- a) Would the Project induce substantial unplanned 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)? *No Impact***

The proposed project would not include any new housing or businesses or the extension of roads or other infrastructure that would potentially lead to future residential or commercial development. Implementation of the project would not result in the need for new permanent workers or otherwise induce population growth. Therefore, implementation of the proposed project would have no impact associated with the inducement of substantial unplanned population growth in an area, either directly, such as by proposing new homes and businesses, or indirectly such as through extension of roads or other infrastructure.

¹³⁰ City of Novato Zoning Maps. 2020b, Website: <http://novato.org/government/community-development/planning-division/maps>. Accessed on November 24.

b) Would the Project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere? *No Impact*

The project area is undeveloped and no housing would be affected by implementation of the project. There is no housing within Rush Creek Open Space Preserve and implementation of the proposed project would not cause any displacement. Therefore, implementation of the proposed project would have no impact associated with the displacement of existing people or housing, or necessitate the construction of replacement housing.

PUBLIC SERVICES

PUBLIC SERVICES CHECKLIST QUESTIONS					
	Would the project:	Potentially Significant Impact	Less than Significant with Mitigation	Less-than-Significant Impact	No Impact
a)	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"/>

Setting

The project area is existing open space within the City of Novato. The project area is served by the Novato Fire Protection District and the City of Novato Police Department. Other portions of Rush Creek Open Space Preserve outside of the Novato city limits are served by the Marin County Fire Department and the Main County Sheriff's Office. Emergency access to the project area occurs via Bahia Drive and the Bahia Ridge Fire Road. Additional emergency access for the wider Rush Creek Open Space Preserve, outside of the project area, occurs via Pinheiro Fire Road and Rush Creek Fire Road.

Applicable RTMP Policies and BMPs

The RTMP does not include Policies and BMPs specific to public services. The RTMP Policies and BMPs are provided, in their entirety, in Appendix A.

CEQA Context

A project would normally result in a significant impact public services if it would result in the need for new or additional public services in order to maintain acceptable service ratios, including response times and other performance objectives.

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?

Police protection?

Schools?

Parks?

Other public facilities?

No Impact

Implementation of the proposed project would improve the existing trail system at Rush Creek Open Space Preserve, which is an existing public facility. The proposed trail improvements would improve safety for trail users by providing more sustainable trails on reduced gradients from the existing alignments, which is a beneficial effect.¹³¹ Implementation of the proposed project would not increase emergency response demands¹³². Existing emergency access would be maintained during implementation and operation of the proposed project.

The proposed project would not include new residential or commercial development and would not affect service ratios for fire or police protection, schools, or other public facilities. The trail improvements included the proposed project would not necessitate the provision of new or altered government facilities. The proposed project would include decommissioning a portion of Iron Gate Fire Road and converting the remainder of the fire road to a recreational trail. MCOSD staff consulted with the Novato Fire Department¹³³, which confirmed that the proposed activities would not adversely affect emergency response or firefighting capacity. Iron Gate Fire Road is currently not used for emergency access, as it is overly steep and redundant with the nearby Bahia Ridge Fire Road.

The proposed project is not anticipated to result in substantially increased public visitation to Rush Creek Open Space Preserve. The proposed project does not include parking or other amenities and therefore any increased use of the project area would be negligible and proportional with regional population growth. As a result, the project would not increase emergency response demands relative to baseline conditions. Emergency access to the project area and the wider Rush Creek Open Space District would be maintained during project construction and operation. Therefore, implementation of the proposed project would not result in the 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 fire protection, police protection, schools, parks, or other public facilities.

¹³¹ Pers. Comm. Campo & Novato Fire Chief January 2020 & Campo and Veliquet February 2020

¹³² *ibid*

¹³³ *ibid*

RECREATION

RECREATION CHECKLIST QUESTIONS					
	Would the project:	Potentially Significant Impact	Less than Significant with Mitigation	Less-than-Significant Impact	No Impact
a)	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"/>
b)	Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Setting

The proposed project is located within existing open space utilized by the public for outdoor recreation including hiking, biking, and equestrian uses. The project area consists of approximately 100 acres in the southeastern portion of Rush Creek Open Space Preserve. Recreationalists use both system trails and social trails in the project area including hikers, bike riders, and equestrians. The purpose of the proposed project is to implement the RTMP to provide the public with a safe multi-use trail system to enhance the visitor experience, reduce the environmental impacts, and establish a sustainable system of roads and trails that meet design and management standards and would provide year-round recreational access. The proposed project would satisfy the project objectives which include providing safe and sustainable equestrian trail access from the Novato Horseman equestrian center to the Rush Creek Open Space Preserve, eliminating unsustainable social trails and road segments, enhancing habitat quality, improving visitor access, reducing road and trail related erosion, and reducing trail density and habitat fragmentation. The proposed project meets all the project objectives for recreational use of the Rush Creek Open Space Preserve with the proposed social trail elimination, new sustainable trail construction, conversion of a fire road to a multi-use trail, and re-designating trails to eliminate uses that may be unsafe or those that may harm the environment. Use of signage and public education included in the project would further help achieve the stated project objectives.

Applicable RTMP Policies and BMPs

MCOSD would incorporate applicable RTMP Policies and BMPs, which were designed to minimize or avoid potential environmental impacts from MCOSD's road and trail system and to improve the recreational experience. The RTMP Policies and BMPs that apply to specific CEQA Checklist topic areas are listed in each section of this checklist and are provided, in their entirety, in Appendix A.

CEQA Context

A project would normally result in a significant impact to recreation if it would conflict with the established recreational uses of the project area.

- 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? *No Impact***

The proposed project includes passive closure and decommissioning of social trails and constructing three new trail segments including the Blue Oak Trail, the Iron Gate Trail, and the Horsemen's Spur Trail. The proposed

Blue Oak Trail would be multi-use and would replace a system of social trails in the area (S-1, S-2, S-3, S-4, S-5, and S-8). Two proposed new trails in the southwest corner of the project area would be constructed to replace social trail S-10 and to provide improved equestrian access to the trail network. The proposed Horseman's Spur Trail would extend from the Novato Horsemen's Association, adjacent to Rush Creek Open Space Preserve, along the flat Bahia Drive frontage to Iron Gate trailhead. The proposed new Iron Gate Multi-Use Trail would extend from the Iron Gate Trailhead. This new trail would replace the lower portion of Iron Gate Fire Road. The lower segment of Iron Gate Fire Road is extremely steep which prohibits both vehicle access and visitor use, and disrupts natural drainage and causes erosion. The upper portion of Iron Gate Fire Road along the ridge top is proposed for road-to-trail conversion and would become part of the new Iron Gate Multi-Use Trail, linking the newly constructed trail and the Bahia Ridge Fire Road. The existing social trail known as the Bahia Berm Trail would be upgraded to a system trail and the use would be limited to hikers only, because the trail is too narrow to safely accommodate other uses.

The purpose of the proposed project is to provide the public with a safe multi-use trail system to enhance the visitor experience, reduce the environmental impacts, and establish a sustainable system of roads and trails that meet design and management standards and would provide year-round recreational access. Implementation of the proposed project would not increase use of existing neighborhood and regional parks because the proposed project creates a sustainable trail network that would accommodate appropriate use for each trail segment. The proposed project would not eliminate or exclude any user groups that would seek recreational opportunities that might increase uses elsewhere. MCOSD expects approximately the same number of visitors to use the preserve following project implementation, and visitors would continue to use available street parking. The level and types of recreational use of the project area to remain essentially the same as existing use patterns after implementation of the proposed project, although the improved conditions could attract a nominal increase in visitor use; however, increased use is expected to be minimal and largely result from the local communities. The proposed project does not include parking or other amenities which would typically induce increased visitation. For this reason, increased visitation associated with implementation of the proposed project is expected to be negligible, and proportional with regional population growth. Implementation of the proposed project would reduce the number of unsustainable roads and trails, which would reduce erosion, sedimentation, habitat fragmentation, and improve the visitor experience. No new, off-sight facilities would be needed to accommodate recreationalists as a result of the proposed project. Therefore, implementation of the proposed project would result in no impact associated with increasing 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.

b) Would the Project include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment? *No Impact*

As discussed above, implementation of the proposed project would not require construction or expansion of new recreational facilities. The proposed new trails would replace passively closed or actively decommissioned trails with new sustainable trails to reduce erosion, sedimentation, habitat fragmentation, and improve the visitor experience. No other recreational facilities would be required as a result of the proposed project.

The proposed project has been designed to minimize potential adverse physical effects on the environment through design and all applicable RTMP Policies and BMPs would be implemented. This Initial Study has identified potentially significant impacts that could result from implementation of the proposed project even with implementation of applicable RTMP Policies and BMPs, and has included mitigation measures to reduce the potentially significant environmental impacts to biological resources to a less-than-significant level.

With the implementation of the applicable RTMP Policies and BMPs and the implementation of mitigation measures included in this Initial Study, implementation of the proposed project would not result in an adverse physical effect on the environment. The proposed project consists of improvements to an existing trail system

TRANSPORTATION

TRANSPORTATION CHECKLIST QUESTIONS					
	Would the project:	Potentially Significant Impact	Less than Significant with Mitigation	Less-than-Significant Impact	No Impact
a)	Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b)	Conflict with or be inconsistent with CEQA Guidelines §15064.3, subdivision (b)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c)	Substantially increase hazards due to a geometric 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"/>
d)	Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Setting

The project is located within the City of Novato, adjacent to Bahia Drive, and is subject to the City of Novato General Plan 2035. The Transportation Authority of Marin (TAM) is the congestion management agency and transportation sales tax authority for Marin County. TAM is responsible for managing a variety of transportation projects and programs throughout the County and works closely with eleven cities and towns, including Novato, as well as the County government. TAM is responsible for developing and overseeing a Congestion Management Program that monitors local multi-modal transportation networks, including monitoring of levels of service on roadways throughout the County, and works to improve all methods of transportation locally and regionally. The 2019 Congestion Management Program is the most recent biennial update of the program document.¹³⁴

Rush Creek Open Space Preserve does not have dedicated parking areas. Visitors typically utilize on-street parking along Bahia Drive to access the project area. More ample parking, including space for horse trailers, is available along Binford Road on the western edge of Rush Creek Open Space Preserve. The Novato San Marin station, a Sonoma-Marin Area Rail Transit (SMART) train stop, is located across Highway 101, approximately 500 feet from the western boundary of Rush Creek Open Space Preserve. The proposed project does not include construction of parking facilities.

Applicable RTMP Policies and BMPs

The RTMP does not include Policies and BMPs specific to transportation. The RTMP Policies and BMPs are provided, in their entirety, in Appendix A.

CEQA Context

Effective January 1, 2020, CEQA documents are required to utilize the vehicle miles traveled (VMT) methodology to analyze transportation impacts. Vehicle miles traveled refers to the amount and distance of automobile travel attributable to a project. Other relevant considerations may include the effects of the project

¹³⁴ Transportation Authority of Marin (TAM). Marin County, Final 2019 Congestion Management Program (CMP) Update 2019 P 117

on transit and non-motorized travel. Automobile delay, represented by level of service (LOS) analysis, does not constitute a significant effect on the environment though it can still be utilized as an augment to the required VMT analysis. Other considerations include conflict with programs, plans, ordinances, or policies that address circulation systems including transit roadway, bicycle, and pedestrian facilities; an increase in hazards due to road geometry or project design features; and inadequate emergency access.

a) Would the Project conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities? *No Impact*

The proposed project would implement improvements to the recreational trail network within the project area in Rush Creek Open Space Preserve, including new trail construction, trail upgrades, fire road decommissioning and conversion, and social trail decommissioning in the southeast portion of Rush Creek Open Space Preserve. The purpose of the project is to implement the MCOSD's Road and Trail Management Plan (RTMP) to provide the public with a safe multi-use trail system to enhance the visitor experience, reduce the environmental impacts on sensitive resources by reducing erosion, and establish a sustainable system of roads and trails that meet design and management standards to provide safe, year-round access along the trail alignment. The proposed project would not affect the transportation networks beyond the boundaries of Rush Creek Open Space Preserve and would have no impact on the wider circulation system in the City of Novato. Implementation of the project would not conflict with the City of Novato General Plan 2035 or the TAM 2019 Congestion Management Program. Under existing conditions, there is no dedicated parking for Rush Creek Open Space Preserve and the proposed project would not develop parking facilities. Visitors accessing Rush Creek Open Space Preserve by vehicle would continue to utilize on-street parking on public roads. Therefore, implementation of the proposed project is not expected to result in a significant increase in traffic, and therefore it would not conflict with TAM Congestion Management Program.

The Marin Countywide Plan and Marin County's Congestion Management Program contain policies to encourage non-vehicle modes of travel and the proposed project would be consistent with these plans. The proposed project consists of improvements to the existing trail system at Rush Creek Open Space Preserve, which would benefit existing pedestrian and bicycle facilities. Therefore, implementation of the proposed project would not conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities. Implementation of the proposed project would result in a beneficial effect on existing bicycle and pedestrian facilities at Rush Open Space Preserve and the nearby residential community.

b) Would the Project conflict with or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)? *Less than Significant*

CEQA Guidelines Section 15064.3(b) describes the criteria for analyzing transportation impacts associated with the proposed project's projected increase in vehicle miles traveled (VMT), which refers to the amount and distance of automobile travel attributable to a project. Based on the guidance provided in Section 15064.3(b), a qualitative analysis of VMT is appropriate for this project, as potential VMT impacts relate primarily to construction traffic, and no quantitative modeling of VMT associated with the proposed project is required.

Construction of the proposed project would result in temporary transportation-related impacts as a result of workers, equipment, and materials being transported to and from the site during the six-week construction period. This would result in a temporary increase in VMT in the project area. Construction of the proposed project would require three trips for equipment hauling and a total of approximately five truck trips for materials

delivery.¹³⁵ Construction would also require approximately ten vehicle trips per day for staff and workers throughout the six-week construction period, as well as daily water truck trips for dust control.

Operation of the proposed project could potentially generate a small increase in VMT. Maintenance of the project would be anticipated to match existing baseline conditions, thus no increase in VMT is anticipated from MCOSD staff trips for maintenance and patrol as a result of the project. However, the proposed project would result in an improved trail network, which could potentially cause a nominal increase in public use of the area and an associated nominal increase in vehicle trips for recreational users. The proposed project would not include development of any new parking, additional use would likely occur by foot or bicycle from nearby communities, by horseback from the adjacent Novato Horsemen's property, or by vehicle from existing street parking along Bahia Drive. The improved trail system could attract a nominal increase in visitor use however, increased use is expected to be minimal and largely result from the local communities and proportional with regional population growth. Additional user vehicle trips to the area, and associated VMT, as the result of project implementation would not be substantial.

The California Office of Planning and Research (OPR) Technical Advisory on Evaluating Transportation Impacts in CEQA states that "absent substantial evidence indicating that a project would generate a potentially significant level of VMT, projects that generate or attract fewer than 110 trips per day generally may be assumed to cause a less-than-significant transportation impact." As described above, project construction would require an average of 11 vehicle trips per day during the six-week construction period, well below the 110-trip-per-day screening threshold. Additional user trips associated with operation of the proposed project would also be well below this threshold. Therefore, implementation of the proposed project would result in a less-than-significant impact associated with a conflict or inconsistency with CEQA Guidelines Section 15064.3, subdivision (b).

c) Would the Project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)? *No Impact*

The proposed project would take place entirely within open space property owned and managed by MCOSD. Implementation of the proposed project would not include work on public roadways. The proposed project would include decommissioning the lower segment of Iron Gate Fire Road, which currently poses hazards to vehicle access due to its condition and extremely steep grade. The proposed project would not increase hazards due to any geometric design feature or incompatible uses. Therefore, implementation of the proposed project would result in no impact associated with a substantial increase in hazards due to a geometric design feature such as sharp curves or dangerous intersections, or incompatible uses such as farm equipment.

d) Would the Project result in inadequate emergency access? *No Impact*

Emergency access to the project area occurs via Bahia Drive and the Bahia Ridge Fire Road. Additional emergency access for the wider Rush Creek Open Space Preserve, outside of the project area, occurs via Pinheiro Fire Road and Rush Creek Fire Road. The proposed project would include decommissioning a portion of Iron Gate Fire Road and converting the remainder of the fire road to a recreational trail. MCOSD staff consulted with the Novato Fire Department, which confirmed that the proposed activities would not adversely affect emergency response or firefighting capacity.¹³⁶ Iron Gate Fire Road is currently not used for emergency access, as it is hazardous for vehicle use and redundant with the nearby Bahia Ridge Fire Road.

¹³⁵ Implementation of the Project would require an estimated 10 tons of rock, which would require one truck trip based on an assumed 12-ton capacity for typical dump trucks. Additional material deliveries would include planting and erosion control materials, posts and wood for split rail fencing, and miscellaneous construction materials and tools. Project construction would also require use of three pieces of heavy equipment – a mini excavator, compactor, and dozer – each of which would require one haul trip to and from the site.

¹³⁶ Pers. Comm. Campo & Novato Fire Chief January 2020 & Campo and Veliquet February 2020

Emergency access to the project area and the wider Rush Creek Open Space Preserve would be maintained during project construction and operation. Implementation of the proposed project would not result in inadequate emergency access. Therefore, implementation of the proposed project would result in no impact associated with inadequate emergency access.

TRIBAL CULTURAL RESOURCES

TRIBAL CULTURAL RESOURCES CHECKLIST QUESTIONS					
	Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code §21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:	Potentially Significant Impact	Less than Significant with Mitigation	Less-than-Significant Impact	No Impact
a)	Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code §5020.1(k)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b)	A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1? In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Setting

Assembly Bill 52 (AB52) is a CEQA amendment approved September 24, 2014 provides California Native American tribes on the Native American Heritage commission (NAHC) list the right to consult with a CEQA lead agency prior to the release of a Negative Declaration, Mitigated Negative Declaration, or Environmental Impact Report for a project if they have requested AB52 consultation. AB52 also established the Tribal Cultural Resources section of the CEQA Checklist, requires CEQA lead agencies to consider tribal cultural values when assessing project impacts and mitigation, and requires formal notice to tribes who request it and meaningful consultation. The MCOSD has received two such notices, one from the Federated Indians of Graton Rancheria (FIGR) and one from the lone Band of Miwok Indians.

Consultation is defined as the meaningful and timely process of seeking, discussing, and considering carefully the views of others, in a manner that is cognizant of all parties' cultural values and, where feasible, seeking agreement. Consultation shall also recognize the tribes' potential needs for confidentiality with respect to places that have traditional tribal cultural significance.

CEQA defines tribal cultural resources as sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that meet the following criteria:

Public Resources Code (PRC) Section 21074 defines tribal cultural resources as either of the following:

- Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either of the following:
 - Included or determined to be eligible for inclusion in the CA Register of Historic Resources.
 - Included in a local register of historical resources as defined in PRC Section 5020.1(k).¹³⁷
 - A resource determined by the Lead Agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in PRC Section 5024.1(c).¹³⁸ In applying the criteria set forth in PRC Section 5024.1(c), for the purposes of this paragraph, the Lead Agency shall consider the significance of the resource to a CA Native American tribe.
 - A cultural landscape that meets the above criteria is a tribal cultural resource to the extent that the landscape is geographically defined in terms of size and scope of the landscape.
 - A historical resource described in PRC Section 21084.1,¹³⁹ a unique archaeological resource described in PRC Section 21083.2(g),¹⁴⁰ or a non-unique archaeological resource as defined in PRC 21083.2(h)¹⁴¹ if it conforms with the criteria of subdivision (a).¹⁴²

¹³⁷ Local register of historical resources” means a list of properties officially designated or recognized as historically significant by a local government pursuant to a local ordinance or resolution.

¹³⁸ A resource may be listed as an historical resource in the California Register if it meets any of the following National Register of Historic Places criteria:

- (1) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.
- (2) Is associated with the lives of persons important in our past.
- (3) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.
- (4) Has yielded, or may be likely to yield, information important in prehistory or history.

¹³⁹ A project that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment. For purposes of this section, an historical resource is a resource listed in, or determined to be eligible for listing in, the California Register of Historical Resources. Historical resources included in a local register of historical resources, as defined in subdivision (k) of Section 5020.1, or deemed significant pursuant to criteria set forth in subdivision (g) of Section 5024.1, are presumed to be historically or culturally significant for purposes of this section, unless the preponderance of the evidence demonstrates that the resource is not historically or culturally significant. The fact that a resource is not listed in, or determined to be eligible for listing in, the California Register of Historical Resources, not included in a local register of historical resources, or not deemed significant pursuant to criteria set forth in subdivision (g) of Section 5024.1 shall not preclude a lead agency from determining whether the resource may be an historical resource for purposes of this section.

¹⁴⁰ As used in this section, “unique archaeological resource” means an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

- (1) Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.
- (2) Has a special and particular quality such as being the oldest of its type or the best available example of its type.
- (3) Is directly associated with a scientifically recognized important prehistoric or historic event or person.

¹⁴¹ As used in this section, “nonunique archaeological resource” means an archaeological artifact, object, or site which does not meet the criteria in subdivision (g). A nonunique archaeological resource need be given no further consideration, other than the simple recording of its existence by the lead agency if it so elects.

¹⁴² As part of the determination made pursuant to Section 21080.1, the lead agency shall determine whether the project may have a significant effect on archaeological resources. If the lead agency determines that the project may have a significant effect on unique archaeological resources, the environmental impact report shall address the issue of those resources. An environmental impact report, if otherwise necessary, shall not address the issue of nonunique archaeological resources. A negative declaration shall be issued with respect to a project if, but for the issue of nonunique archaeological resources, the negative declaration would be otherwise issued.

While CEQA evaluates potential impacts on a physical aspect, tribal cultural resources can also include intangible attributes such as their association with historical events, oral history, customs, and traditions. Both tangible and intangible should be considered, evaluated, and managed together.

MCOSD invited the Lone Band of Miwok Indians (IBMI) and the Federated Indians of Graton Rancheria (FIGR) to learn about the proposed project and to invite the tribes to consult with the agency. MCOSD invitation to consult letters were sent on October 15, 2020. The IBMI did not request consultation. FIGR responded on October 21, 2020 requesting consultation under CEQA, and MCOSD met with the Tribal Historic Preservation Officer (THPO) on November 20, 2020. MCOSD presented the proposed project and answered questions. FIGR identified concerns associated with oak trees including continued tribal access for acorn gathering, preventing the spread of sudden oak death, and protection of the stand of blue oaks in the project vicinity. MCOSD assured FIGR that existing access for acorn gathering would continue although access along existing trails proposed for decommissioning would be closed for all visitors. The proposed Blue Oak Multi-Use Trail would provide access for tribal members to collect blue oak acorns along the new, sustainable system trail. MCOSD discussed RTMP BMP General-11: Management of Sudden Oak Death and committed to review this BMP relative to current science associated with sudden oak death. Implementation of RTMP BMP General-11 would require MCOSD to train the trail construction crew about sudden oak death and disease transmission pathways and require staff to implement measures to prevent the spread when implementing the proposed project, purchase nursery stock at nurseries that follow current measures to prevent spread of sudden oak death, and educate visitors about how to prevent the spread of sudden oak death, amongst other measures. MCOSD has not identified additional measures to augment RTMP BMP General-11 but is continuing to discuss potential additional measures with FIGR as part of the tribal consultation process. Some proposed project elements would occur within blue oak – white oak woodlands, including several proposed active trail decommissionings and development of the proposed Blue Oak Multi-Use Trail. The proposed Blue Oak Multi-Use Trail would provide a critical connection between Bahia Ridge Fire Road and the Bahia Trail, replacing a social trail proposed for decommissioning. No blue oaks or any other trees would be removed as a result of the proposed project. Disturbed areas created during trail construction would be revegetated using native grasses, forbs, shrubs, and trees with species dependent on the site-specific conditions. Revegetation efforts would also include planting oaks propagated from locally collected seed sources.

Applicable RTMP Policies and BMPs

MCOSD would incorporate applicable RTMP Policies and BMPs, which were designed to minimize or avoid potential environmental impacts to tribal cultural resources. The applicable RTMP Policies and BMPs are listed in the Project Description and are provided, in their entirety, in Appendix A.

- Cultural Resources-6: Construction Discovery Protocol
- Cultural Resources-7: Human Remains
- General-11: Management of Sudden Oak Death

Studies

Cultural and Historical Resources Studies

Tom Origer & Associates prepared an Archival Research Memo in 2018¹⁴³ and a Cultural Resources Study Report (CRSR) for the proposed project 2020.¹⁴⁴ The archive study included an examination of historical maps to gain insight into the nature and extent of historical development in the general project vicinity, and especially

¹⁴³ Origer & Associates (Origer) 2018. Archival Research Results for the Rush Creek Trail Project, Rush Creek Open Space Preserve, near Novato, Marin County, California. March 15.

¹⁴⁴ Origer 2020. Cultural Resources Study for the Rush Creek Open Space Preserve Trails Project Rush Creek Open Space Preserve near Novato, Marin County, California. September 1

within the study area. The 2020 CRSR included a cultural resources literature search completed at the Northwest Information Center of the California Historical Resources Information System (CHRIS), initial Native American Consultation with the Native American Heritage Commission, and an archaeological survey of the project area. The CRSR satisfies the requirements of RTMP BMP Cultural Resources-1: Historical and Archaeological Resource Mapping and Cultural Resources-2: Consultation with Northwest Information Center. Much of the setting information and environmental impact analysis is based on information contained in the study.

CHRIS records search identified no cultural resources within or adjacent to the area. No cultural resources or archaeological site indicators were identified within the study area, and application of a buried sites models indicates a low potential for buried resources in the area. No historic resources or properties are listed on federal, state, or local inventories within or abutting the project. The Native American Heritage Commission responded that there are sacred sites within the vicinity of the study area, and NAHC recommended contacting the Federated Indians of Graton Rancheria (FIGR) to gather additional information about the area. Origer & Associates sent a letter to FIGR and to the Guidiville Indian Rancheria on August 24, 2020 to request additional information; however, Mr. Origer received no responses to the outreach letter.

Origer & Associates did not recommend any additional work. The CRSR includes a description of the process to follow should a buried or previously unrecognized archaeological deposits or materials be inadvertently exposed during any construction activity. It recommends work in the immediate area of the find be halted until a qualified archaeologist evaluates the find and provides recommendations for further treatment, if warranted. Construction and potential impacts to the area(s) within a radius determined by the archaeologist shall not recommence until the assessment is complete. This recommendation has been incorporated into the proposed project through RTMP BMP Cultural Resources – 6: Construction Recovery Protocol and RTMP BMP Cultural Resources-7: Human Remains.

CEQA Context

A project would normally result in a significant impact to tribal cultural resources if it would adversely change the significance of a tribal cultural resource, including those identified by tribes.

- a) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code §21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code §5020.1(k)? *Less than Significant***

Historical and archaeological resource mapping and consultation with the Northwest Information Center occurred and results are presented in the 2020 Origer report.¹⁴⁵ No listed or eligible for listing in the California Register of Historic Resources or in a local register of historical resources as defined in PRC Section 5020.1(l) were identified in the proposed project area.¹⁴⁶ No historical resources were found within the study area.¹⁴⁷ FIGR identified acorns as a tribal cultural resources during the November 20, 2020 tribal consultation meeting with MCOSD. MCOSD is committed to providing on-going tribal access for acorn collection. FIGR also identified health and protection of oaks as a tribal cultural resource and expressed concern regarding sudden oak death. To address concerns regarding oak death, MCOSD reviewed RTMP BMP-11: Management of Sudden Oak Death and determined it is consistent with current science. RTMP BMP-11: Management of Sudden Oak Death

¹⁴⁵ *ibid*

¹⁴⁶ Origer 2020. Cultural Resources Study for the Rush Creek Open Space Preserve Trails Project Rush Creek Open Space Preserve near Novato, Marin County, California. September 1

¹⁴⁷ *ibid*

would be implemented as part of the proposed project implementation and on-going operation. MCOSD confirmed that no trees would be removed as part of implementation of the proposed project, though limb pruning may be required. Pruning of oak trees is addressed in the biological resources section. The proposed project includes implementation of the cultural resource protection BMPs from the RTMP. Although no resources were identified in the project area during the evaluation conducted for this project, previously undiscovered resources or human remains could be discovered during project implementation and two RTMP BMPs address the steps necessary to protect previously undiscovered resources. Cultural Resources-6: Construction Discovery Protocol addresses the requirements and steps MCOSD would follow if a previously undiscovered resource is found during construction activities. Cultural Resources-7: Human Remains addresses the process required in the event a human skeleton is uncovered during construction. Therefore, implementation of the proposed project would not result in a substantial adverse change in the significance of a tribal cultural resource cultural landscape listed or eligible for listing on the California Register of Historical Resources. Additionally, MCOSD would directly notify the Federated Indians of Graton Rancheria of any inadvertent discovery of cultural or historical resources, human remains, and/or tribal cultural resources.

For these reasons implementation of the proposed project would result in a less-than-significant impact associated with a substantial adverse change in the significance of a tribal cultural resource, defined in PRC Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in PRC Section 5020.1(k) substantial adverse change in the significance of a tribal cultural resource, defined in PRC Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in PRC Section 5020.1(k)

b) Would the Project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code §21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1? In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe. *Less than Significant*

MCOSD met with FIGR tribal members on November 20, 2020 to discuss the proposed project and to identify whether or not the proposed project area included significant tribal resources. In addition to the concerns addressed under item (a), FIGR identified blue oaks as both biologically and culturally significant. The blue oaks in the project area are found in association with the blue oak – white oak hybrid woodland vegetation type. The area supports high quality native habitat with understory diversity highest on the north-facing slopes in oak woodlands. FIGR expressed concern about the loss of blue oaks associated with the proposed project.

Some proposed project elements would occur within blue oak – white oak woodlands. Social trails S-5, S-6, S-8, S-9 the old dozer trail (D-5) would all receive passive trail closure treatment, which would block or otherwise discourage visitor access and the trails would be allowed to revegetate naturally where conditions are appropriate and would include native tree and shrub plantings where necessary to revegetate the sites in locations where native seed sources are lacking. Social trails S-2, S-3, S-4, S-10, and the lower portion of the Iron Gate Fire Road would receive active decommissioning treatments including decompaction, recontouring, installation of cross-drains and planting native grass, forbs, shrubs, and trees. A portion of the Iron Gate Fire

road would be converted from a 12-foot wide fire road to a 5-foot wide trail through the oak woodland and the area would receive the same proposed treatment as the active decommissioned trail segments. Revegetation efforts would also include planting oaks propagated from locally collected seed sources.

The new Blue Oak Multi-Use Trail would be constructed primarily through the blue oak – white oak woodland vegetation type. The trail would serve as a critical connection between Bahia Ridge Fire Road and the Bahia Trail and would replace the S-4 trail. The proposed Blue Oak Trail would be curvilinear, generally following the natural contours, which easily allows for permanent and frequent drainage controls to be incorporated into its construction. The average gradient of the alignment is below 7 percent which would result in a sustainable trail from both a soil stability and trail maintenance perspective. Trail construction would avoid tree removal along the entire length. Disturbed areas created during trail construction would be revegetated using native grasses, forbs, shrubs, and trees with species dependent on the site-specific conditions. No blue oaks or any other trees would be removed as a result of the proposed project.

Blue oaks provide local Native Americans with a wealth of resources. Acorn flour was, and still is, a very important food source for the natives of California. Besides acorns, blue oak also provided wood for building, for making utensils, for fuel, and produced an extract used as a dye. In addition to being concerned about the loss of blue oak trees, FIGR is concerned that trail closures would exclude tribal members from blue oak acorn collection. Tribal members would have the same access for acorn collection as they do currently; however, access along closed trails would be blocked for all preserve visitors. The new Blue Oak Multi-Use Trail would provide access for tribal members to collect blue oak acorns along the new, sustainable system trail. MCOSD would continue to allow collection following implementation of the proposed project, and there would be a less-than-significant impact.

FIGR expressed concern about the spread of sudden oak death (SOD) into the oak woodlands in the project area from implementation of the project. As evaluated in the Biological Resources section, SOD has the potential to spread, especially as public uses increase, climate changes, and plants become more stressed. The RTMP includes BMP General-11: Management of Sudden Oak Death to reduce and control the spread of SOD within the MCOSD system. The BMP includes visitor education requirements about preventing the spread of SOD, and these efforts would continue with implementation of the proposed project. MCOSD would train the trail construction crew about SOD and disease transmission pathways and require staff to implement measures to prevent the spread when implementing the proposed project. The BMP also requires MCOSD to purchase nursery stock for this project and other restoration plantings at nurseries that follow current measures to prevent spread of SOD. Implementation of the proposed project with measures required in RTMP General BMP-11 would reduce the risk of spreading SOD to less than significant levels and no additional mitigation would be required.

MCOSD and FIGR initiated tribal consultation about the project on November 20, 2020. FIGR identified the issues described regarding tribal cultural resources and MCOSD has subsequently addressed these concerns. The design of the proposed project, in conjunction with implementation of the RTMPs measures associated with protection of tribal resources and native oak trees, and mitigation measures associated with protection of native oak trees would be protective of tribal resources. MCOSD and FIGR may continue additional tribal consultation meetings through implementation and operation of the proposed project. Therefore, implementation of the proposed project would result in a less-than-significant impact associated with a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1.

UTILITIES AND SERVICE SYSTEMS

UTILITIES AND SERVICE SYSTEMS CHECKLIST QUESTIONS					
	Would the project:	Potentially Significant Impact	Less than Significant with Mitigation	Less-than-Significant Impact	No Impact
a)	Require or result in the relocation or construction of new or expanded water, wastewater treatment, stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b)	Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c)	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"/>
d)	Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e)	Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Setting

The proposed project would take place on Rush Creek Open Space Preserve, an undeveloped open space preserve owned and operated by MCOSD for natural resource preservation and low-intensity public outdoor recreation. Facilities on the project area include trails, fire roads, gates, and informational signage. Rush Creek Open Space Preserve does not have any restrooms, drinking water fountains, or other facilities that would require utilities, including electricity, potable water, or wastewater and none are proposed as part of the project.

Applicable RTMP Policies and BMPs

The RTMP does not include Policies and BMPs specific to utilities and service systems. The RTMP Policies and BMPs are provided, in their entirety, in Appendix A.

CEQA Context

A project would normally result in a significant impact on utilities and service systems if it would exceed or conflict with existing standards, service capacities, and/or entitlements. Potentially significant impacts to utilities and service systems have been evaluated by determining new or altered services that would be required to implement the proposed project.

a) Would the Project require or result in the relocation or construction of new or expanded water, wastewater treatment, stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction of which could cause significant environmental effects? *No Impact*

The proposed project would include improvements to the trail system in the southeast portion of Rush Creek Open Space Preserve, including new trail construction, trail upgrades, fire road decommissioning and road to trail conversion, and social trail decommissioning. Water would be imported during construction of the proposed project for construction-related dust control needs. Implementation of the proposed project would rely on construction equipment powered by diesel fuel and gasoline and would not require or impact any electrical infrastructure. Therefore, implementation of the proposed project would result in no impact associated with the relocation or construction of new or expanded water, wastewater treatment, stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction of which could cause significant environmental effects.

b) Would the Project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years? *No Impact*

The project area is within the service area of the North Marin Water District. Currently, the project area and the wider Rush Creek Open Space Preserve receives no water service and none would be proposed as part of the project. During project construction, minor amounts of imported water may be required for dust control. The proposed project would also require minimal amounts of water for seasonal irrigation of revegetated areas during the plant establishment period. Project revegetation would utilize native vegetation appropriate for site conditions (see Project Description) and irrigation requirements would be minimal. If required, MCOSD would irrigate plantings by hand utilizing either a truck-mounted or ATV-mounted water tank. Irrigation would not require installation of a tank and irrigation lines. MCOSD would utilize recycled wastewater whenever it is available. Operation of the project would not require new water use beyond the plant establishment period. Implementation of the proposed project would not create new demands for water supply and would not include or require any drinking fountains, irrigation, or water facilities. Therefore, implementation of the proposed project would result in no impact associated with the sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years.

c) Would the Project 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? *No Impact*

There are no existing or proposed restrooms, water facilities, or wastewater service at the project area. Implementation of the project would not require wastewater treatment and would have no effect on wastewater treatment capacity. Therefore, implementation of the proposed project would result in no impact associated with adequate wastewater treatment capacity to serve the project's projected demand in addition to the provider's existing commitments.

d) Would the Project generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals? *No Impact*

MCOSD would take waste generated from the project site to the Redwood Landfill, located in Novato. Redwood Landfill has a maximum permitted throughput capacity of 2,300 tons per day and a remaining design capacity of 26,000,000 cubic yards.¹⁴⁸ Project construction would likely generate small amounts of waste, but the volume

¹⁴⁸ CalRecycle. 2020. <https://www2.calrecycle.ca.gov/SolidWaste/SiteActivity/Details/3054?siteID=1727>. Accessed November 28.

of waste would not affect landfill capacity because material would not be hauled off-site. The proposed project would comply with applicable County, State, and federal regulations regarding solid waste disposal. The majority of waste generated by construction of the proposed project would consist of wood and green waste resulting from vegetation trimming and trail maintenance; this waste would remain on-site. Operation of project would result in small amounts of waste generation from maintenance activities and public use of the project area. However, the waste generated by operation of the project would not noticeably exceed baseline conditions. Construction and operation of the project would not generate solid waste in excess of any state or local standards or in excess of local capacity. Therefore, implementation of the proposed project would result in no impact associated with generation of solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals.

e) Would the Project comply with federal, state, and local management and reduction statutes and regulations related to solid waste? *No Impact*

The majority of the waste generated by project construction would be wood and green waste that would not be hauled off-site. Waste from operation of the project, from trail users and periodic maintenance activities would not exceed baseline conditions. The proposed project would comply with all federal, state, and local management and reduction statutes and regulations related to solid waste. Therefore, implementation of the proposed project would result in no impact associated with compliance with federal, state, and local management and reduction statutes and regulations related to solid waste.

WILDFIRE

WILDFIRE CHECKLIST QUESTIONS					
	If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:	Potentially Significant Impact	Less than Significant with Mitigation	Less-than-Significant Impact	No Impact
a)	Impair an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b)	Due to slope, prevailing winds, and other factors, would the Project exacerbate wildfire risks and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c)	Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d)	Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Setting

Portions of the Rush Creek Open Space Preserve are located in the wildland-urban interface (WUI).¹⁴⁹ The southern portion of the preserve that parallels Bahia Drive is located in the WUI. In accordance with California Public Resource Code Sections 4201 through 4204 and Government Code Sections 51175 through 51189, the Novato Fire Protection District has mapped areas of significant fire hazards because of fuels, terrain, weather, and other relevant factors. The project area moderate fire risk.¹⁵¹

Applicable RTMP Policies and BMPs

MCOSD would incorporate applicable RTMP Policies and BMPs, which were designed to minimize or avoid potential environmental impacts to wildfire. MCOSD currently implements the following RTMP Policy and would continue to do so regardless of whether the proposed project is implemented.

- RTMP Policy SW.26: Control or Restrict Access to Ignition Prevention Zones when Red-Flag Conditions Exist

CEQA Context

A project would normally result in a significant impact on wildfire if it is located in or near state responsibility areas or lands classified as a very high fire hazard severity zone and would increase wildfire risk, increase air pollution concentration from wildfire due to topographic features or prevailing winds, increase risk to people or structures

¹⁴⁹ The wildland urban interface is an area where human made structures and infrastructure (e.g., cell towers, schools, water supply facilities, etc.) are in or adjacent to areas prone to wildfire.

¹⁵⁰ Marin Map 2020c – Wildland-Urban Interface

¹⁵¹ Marin Map 2020b – Wildland Fire Risk, City of Novato. 2020d Wildland fire risk map

form post-wildfire flooding or landslides, or conflict with an adopted emergency response plan or emergency evacuation plan.

a) Would the Project impair an adopted emergency response plan or emergency evacuation plan? *No Impact*

Implementation of the proposed project would not interfere with established emergency response plans or emergency evacuation plans. MCOSD coordinated with local fire departments¹⁵² to determine that the Iron Gate Fire Road was not needed to provide adequate emergency access to the preserve. The lower section of the Iron Gate Fire Road is steep and eroding, and emergency access through the preserve is primarily along the Bahia Ridge Fire Road. Decommissioning the lower Iron Gate Fire Road and conversion of the upper sections of the road to a hiking trail would not impair an emergency evacuation plan. Furthermore, the proposed project would not include construction activities along Bahia Drive; therefore, Bahia Drive would remain open at all times during construction of the proposed project. Implementation of the proposed project would not change or disrupt vehicular or pedestrian traffic in the site vicinity in a way that would have the potential to interfere with emergency response or evacuation. Implementation of the proposed project would improve trail access and safety within the project area, which would improve egress of visitors from the project area in case of an emergency. Emergency vehicles would continue to access trails within the project area utilizing the existing rock fords within San Anselmo Creek. Therefore, implementation of the proposed project would result in no impact associated with impairment an adopted emergency response plan or emergency evacuation plan

b) Due to slope, prevailing winds, and other factors, would the Project exacerbate wildfire risks and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire? *No Impact*

Implementation of the proposed project would not exacerbate wildfire risks in the area. The proposed project would passively close or actively decommission a number of social trails S-1 through S-10, construct proposed new trails in more sustainable locations to allow visitors to access the preserve including the new Iron Gate Multi-Use Trail, the new Blue Oak Multi-Use Trail, and the new Horseman's Spur Trail, and conversion of the Bahia Berm Trail to a designated trail. Proposed passive trail closures and proposed new trail construction would occur in areas already subject to visitor use, and no new areas would be open to the public as a result of implementation of the proposed project; therefore, the risk of wildfire would not change.

Construction and maintenance could generate sparks and could temporarily increase fire risk. The RTMP contains policies and BMPs to reduce this hazard. RTMP Policy SW.26 allows MCOSD to temporarily or permanently close preserves or restrict uses in preserves to reduce fire risk during periods of high fire danger, including construction and maintenance activities. In addition, MCOSD vehicles are equipped with fire extinguishers to address small fires ignited by construction activities before a problem develops. The potential impact from increased associated with construction and maintenance activities would be less than significant with preserve closures during high fire danger with implementation of the RTMP measures.

The proposed project does not include changes to preserve policies, and the continued use of the preserve by visitors would not increase the fire risk. Therefore, implementation of the proposed project would result in no impact associated with exacerbation of wildfire risks that would thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire.

¹⁵² ¹⁵² Pers. Comm. Campo & Novato Fire Chief January 2020 & Campo and Veliquet February 2020

c) Would the Project require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment? *No Impact*

Decommissioning of the lower Iron Gate Fire Road and conversion of the upper section to a hiking trail would not require installation of additional infrastructure. The Bahia Ridge Fire Road would continue to provide emergency access to the preserve, and no new infrastructure would be needed either during implementation of the proposed project or during operation of the preserve. There would not impact from installation or maintenance of associated infrastructure.

Implementation of the proposed project would improve conditions of the existing trail system at Rush Creek Open Space Preserve, the only infrastructure within the project area. There are no existing vehicular roads, water sources, power lines or other utilities within the project area and none are proposed as part of the project. The proposed project does not include any structures or other facilities that would be flammable or otherwise increase the wildfire risk

Implementation of the proposed project would result in a beneficial effect on the existing MCOSD's fuel management activities within Rush Creek Open Space Preserve because the trail access would be improved. The proposed trail system improvements would improve safety for trail users, which is a beneficial effect and would provide improved egress for visitors utilizing the trail system in case of emergency. The proposed project would improve fire department access by improving the condition of the existing Bahia Ridge Fire Road, which would continue to be available for emergency vehicle use same as existing conditions. This is a beneficial impact. Therefore, implementation of the proposed project would result in no impact associated with the installation or maintenance of associated infrastructure, such as roads, fuel breaks, emergency water sources, power lines or other utilities that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment.

d) Would the Project expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes? *No Impact*

Implementation of the proposed project would not change the existing fire risk. The moderate fire risk would remain. The proposed passive trail closures and new trail construction include drainage features designed to direct runoff off the trail onto native vegetation. The trail improvements would reduce the risk of concentrated runoff, improve drainage, and reduce the risk of concentrated runoff which could result in slope instability issues should wildfire occur in the preserve. Therefore, the proposed project would not expose people or structures to significant downstream or downslope risks due to wildfire. Therefore, implementation of the proposed project would result in no impact associated with the exposure of people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes.

MANDATORY FINDINGS OF SIGNIFICANCE

TABLE 24: MANDATORY FINDINGS OF SIGNIFICANCE CHECKLIST QUESTIONS					
	Would the project:	Potentially Significant Impact	Less than Significant with Mitigation	Less-than-Significant Impact	No Impact
a)	Does the project have the potential to substantially 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, substantially 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"/>
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, current, and probable future projects.)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c)	Does the project have environmental effects that 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"/>

Setting

- a) Does the project have the potential to substantially 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, substantially 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? *Less than Significant with Mitigation***

As discussed in Section IV, Biological Resources, of this IS/MND, while the potential exists for northern pond turtles, American badger, special-status bats, and nesting birds and raptors protected by the MBTA to occur on-site, implementation of RTMP BMPs and Mitigation Measures BIO 1 through 4 would ensure that impacts to special-status species would be less than significant. The proposed project would not be expected to 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, or reduce the number or restrict the range of rare or endangered plants or animals.

In addition, as described in the Section 4.5, Cultural Resources and Section 4.17, Tribal Cultural Resources, the project area does not contain any known historic or prehistoric sites and concerns expressed by the Federated Indians of Graton Rancheria have been addressed by MCOSD staff. Thus, implementation of the proposed project is not anticipated to result in potentially significant impacts related to historic or prehistoric

resources. Nevertheless, implementation of RTMP BMPs would ensure that in the event that historic or prehistoric resources are discovered within the project area during construction activities, such resources are protected in compliance with the requirements of CEQA. Additionally, MCOSD would directly notify the Federated Indians of Graton Rancheria of any inadvertent discovery of cultural or historical resources, human remains, and/or tribal cultural resources.

The Tribal Cultural Resources section discusses the cultural resource blue oaks serve for local Native American tribes and the potential risk spread of Sudden Oak Death and altered public access might have on this resource. Although the proposed project closes some social trails throughout the project area, it includes construction of a new system trail that provides a sustainable means to access the preserve. No changes to the collection of blue oak acorns is anticipated. The proposed project includes RTMP BMPs designed to prevent the spread of SOD resulting from construction activities. Implementation of the necessary BMPs would ensure the risk of spreading SOD is minimized. Tribal cultural resources would be protected, and the impact would be less than significant.

Considering the above, the proposed project would not: 1) degrade the quality of the environment; 2) substantially reduce or impact the habitat of fish or wildlife species; 3) cause fish or wildlife populations to drop below self-sustaining levels; 4) threaten to eliminate a plant or animal community; 5) reduce the number or restrict the range of a rare or endangered plant or animal; 6) eliminate important examples of the major periods of California history or prehistory, or 7) eliminate or restrict use of a tribal resource. Therefore, a less-than-significant impact would occur.

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, current, and probable future projects.) *Less than Significant*

The proposed project is one of several trail projects that the MCOSD has constructed in the last five years as part of its implementation of the RTMP. These projects include repairs and improvements to the following trails:

- Dawn Falls Trail, Baltimore Canyon Open Space Preserve, Larkspur
- Piedmont Trail, Blithedale Summit Open Space Preserve, Larkspur
- Roy's Redwoods Loop Trail, Roy's Redwoods Open Space Preserve, San Geronimo Valley)
- Cascade Canyon Fire Road, Cascade Canyon Open Space Preserve, Fairfax
- Old Railroad Grade Trail, Loma Alta Open Space Preserve, Fairfax
- Val Vista Trail, Camino Alto Open Space Preserve, Mill Valley
- Octopus Trail, Camino Alto Open Space Preserve, Mill Valley
- Contour/Candelerio complex trails, Gary Giacomini Open Space Preserve, San Geronimo Valley
- Bob Middagh and Gasline trails, Alto Bowl Open Space Preserve, Mill Valley
- Hunt Camp Trail, Gary Giacomini Open Space Preserve, San Geronimo Valley
- Irving Fire Road, Terra Linda – Sleepy Hollow Divide Open Space Preserves, San Anselmo
- Ponti Ridge Trail, Pacheco Valle Preserve, Novato

MCOSD implemented improvements and repairs to several roads and trails between 2018 and 2020, including the following:

- 2019 Eagle Rim Trail, Mount Burdell Open Space Preserve, Novato
- 2018 Old Railroad Grade, Loma Alta Open Space Preserve, Fairfax
- 2018 Alto Bowl Fire Road, Alto Bowl Open Space Preserve, Mill Valley
- 2018 Bob Middagh Culvert Replacement, Alto Bowl Open Space Preserve, Mill Valley
- 2018 Conifer Fire Road Gary Giacomini Open Space Preserve, San Geronimo Valley

- San Carlos Fire Road, Mount Burdell Open Space Preserve, Novato
- Middle Burdell Fire Road, Mount Burdell Open Space Preserve, Novato
- Tomahawk Fire Road, Terra Linda – Sleepy Hollow Divide Open Space Preserves, San Anselmo

Additionally, MCOSD and Marin County Parks are undergoing a planning process for several road and trail improvement projects including, but not limited to, the following:

- Cascade Fire Road Bridges, Cascade Canyon Open Space Preserve, Fairfax
- Roy's Redwoods access and restoration, Roy's Redwoods Preserve, Woodacre
- Toyon fire Road, Cascade Canyon Open Space Preserve, Fairfax
- Buck Gulch Falls Trail, Ignacio Open Space Preserve, Novato
- Memorial and Fox Lane Trail, Terra Linda Open Space Preserve, San Anselmo

All MCOSD projects would comply with the requirements of the RTMP, including Policy SW.4: Overall Reduction in Road, Trail, and Visitor Impacts, which mandates the designation of new roads and trails resulting in a net reduction of environmental impacts from the existing road and trail system. The projects would achieve this policy goal through reducing erosion and sedimentation, improving environmental conditions at existing stream crossings, redesigning trails to avoid impacts to sensitive habitat and species, and decommissioning of existing non-designated (social) trails. In combination, these projects would result in a net improvement to the resources of the open space preserves. The trail projects included measures to avoid impacts to special-status species, sensitive habitats, nesting birds, wildlife, native trees, and aquatic and wetland resources. Future trail projects also include measures to avoid impacts.

The proposed project would include passive trail closures and active trail decommissioning, revegetation efforts, new trail construction, conversion of a fire road to a hiking trail, and a change in use of a trail to hiking only. Although the proposed project may incrementally affect other resources that were determined to be less than significant, when viewed in conjunction with other closely related past, present, or reasonably foreseeable future projects, implementation of the proposed project would not result in a cumulatively considerable contribution to cumulative impacts and the project's incremental contribution to cumulative impacts would be less than significant.

c) Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly? *Less than Significant*

The proposed project would not create substantial adverse effects on human beings due to its short duration and limited project area. The proposed project does not propose any new permanent structures or operations. The proposed project would comply with all applicable MCOSD RTMP policies and BMPs. The proposed project would also meet the Novato General Plan designations and standards as well as comply with the applicable zoning standards. In addition, as discussed in the Air Quality, Geology and Soils, Hazards and Hazardous Materials, Greenhouse Gas Emissions, and Noise sections of this IS/MND, the proposed project would not cause substantial effects to human beings, including effects related to exposure to air pollutants, geologic hazards, GHG emissions, hazardous materials, and excessive noise. Therefore, the proposed project's impact would be less than significant.

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Appendix A: RTMP Policies and Best Management Practices

**APPENDIX A – MARIN COUNTY OPEN SPACE DISTRICT
ROAD AND TRAIL MANAGEMENT PLAN (RTMP)
POLICIES AND BEST MANAGEMENT PRACTICES (BMPs)**

POLICIES

Policy SW.1: Application of this Road and Trail Management Plan Policies

The policies and requirements of this plan will apply within all open space preserves, and within any new preserves that may be established. These policies will also apply to existing and future trail easements unless they would conflict with the terms of the easement, in which case the easement will prevail.

Policy SW.2: System Roads and Trails

The MCOSD will, following adoption of this plan, designate a system of roads and trails, referred to as “system roads and trails”, in all existing and new open space preserves, through a collaborative public process. Those roads and trails eligible for consideration as part of the system must have been constructed as of November 2011. The MCOSD may improve, maintain, convert, or reroute system roads and trails according to the policies and requirements of this plan, as time and resources allow. Nonsystem roads and trails, defined as those roads and trails not designated as system roads and trails, may be decommissioned at any time, as time and resources allow.

Policy SW.3: Social Trails

For the purpose of this policy, social trails are defined as narrow pedestrian footpaths that a) were not constructed; and b) have not been improved, managed, or maintained. This definition extends to wildlife trails used occasionally by pedestrians. This plan recognizes that, for all practical purposes, social trails will continue to exist after the system of roads and trails has been designated. Social trails are not subject to closure or decommissioning unless a) their continued existence compromises public safety; b) results in unacceptable levels of erosion, or damage or disruption to plants and wildlife; c) their volume of use increases; and/or d) they are used by equestrians or bikers.

Policy SW.4: Overall Reduction of Road, Trail, and Visitor Impacts

The designated system of roads and trails will have less overall impact to resources compared to the network of roads and trails existing as of November 2011. Impacts will be reduced by decommissioning non-system roads and trails, and by the improvement, conversion, or rerouting of system roads and trails. The MCOSD will maximize the reduction of road, trail, and visitor impacts in Sensitive Resource Areas, compared to Conservation Areas and Impacted Areas. Impacted Areas will exhibit the widest range of acceptable road, trail and visitor impacts.

Policy SW.5: Policy on Pedestrian Activities

Pedestrians are encouraged to stay on system roads and trails.

Policy SW.6: Prohibition on Off-Road or Off-Trail Equestrian Use

Horses and pack animals must stay on system roads and trails, except when watering or resting the animal. Off-trail riding is prohibited. Riding or possession of a horse or pack animal on non-system roads and trails is prohibited. Riding or possession of a horse or pack animal on social trails is prohibited.

Policy SW.7: Prohibition on Off-Road or Off-Trail Bicycle Use

Mountain bikers must stay on system roads and trails designated for bicycle use. Off-trail riding is prohibited. Riding or possession of a bicycle on non-system roads and trails is prohibited. Riding or possession of a bicycle on social trails is prohibited.

Policy SW.8: Prohibition on Off-Road or Off-Trail Pedestrians with Dogs or Other Domestic Animals

Pedestrians with dogs and other domestic animals must stay on system roads and trails. Off-trail use by pedestrians with dogs and other domestic animals is prohibited. Use of non-system roads and trails, and social trails, by pedestrians with dogs and other domestic animals is prohibited.

Policy SW.9: Prohibition of Dogs within Sensitive Water Resources

Dogs are not allowed to travel, run, walk, hunt, or bathe in streams or any sensitive water bodies, such as marshes, lakes, or ponds, within the preserves.

Policy SW.10: Policy on Leash Only Preserves

Due to the occurrence of sensitive resources, dogs must be leashed on all roads and trails in those preserves currently designated as “leash only” (i.e., Cascade Canyon, Ring Mountain, and Rush Creek Preserves). The MCOSD may designate other “leash only” preserves in the future.

Policy SW.11: Policy on Leash Requirements for Dogs

Dogs must be on leash (no more than 6 feet in length) a) in all designated “leash only” preserves; and b) on all trails. Dogs may be off leash, but under voice control, only on fire roads that are not within leash only preserves. The MCOSD will identify roads passing through leash only preserves with signs. Dogs under voice control must remain on the fire road.

Policy SW.12: Road and Trail Connectivity

The MCOSD will strive to increase road and trail connectivity for all trail users. The MCOSD will strive to provide opportunities for short to medium distance loops and long-distance routes. The MCOSD may consider one-way, uphill-only, time separation, and single-use or priority-use trails to achieve these ends.

Policy SW.13: Prohibition on Dangerous Activities

Activities that exceed the established speed limit, are reckless, or pose a danger to the user or to other road and trail users, are prohibited.

Policy SW.14: Road and Trail Etiquette

All road and trail users will practice good etiquette at all times. Mountain bikers will always yield to both hikers and equestrians. Hikers will yield to equestrians. Mountain bikers must announce their presence by using a bell or calling out when overtaking other trail users.

Policy SW.15: Expectation of Active Cooperation of All Road and Trail Users

Increased trail use opportunities must be coupled with cooperation among all trail users, and with the MCOSD, to promote lawful trail use, reduce violations, reduce impacts to natural resources, prevent displacement of any trail user types, minimize disturbance to existing neighbors, and avoid endangerment of other trail users.

Policy SW.16: Prohibition of Uses

The MCOSD may prohibit certain trail uses or apply increased trail use restrictions within certain areas to enhance safety, minimize conflicts between trail users, and protect natural resources. Examples of areas where this policy may apply include, but are not limited to, those proximate to stables and those traditionally heavily traveled by equestrians, and in Sensitive Resource Areas.

Policy SW.17: Displacement of Existing Trail Users

The MCOSD will strive to prevent displacement of equestrians and pedestrians when accommodating trail access and trail connections for mountain bikers. When considering the designation of existing trails as single-use or priority-use, the MCOSD will take care to maintain connectivity between destinations for user groups historically using those trails.

Policy SW.18: Unauthorized Trail Construction and Maintenance

The MCOSD has no tolerance for unauthorized trail construction and unauthorized reopening of closed or decommissioned roads and trails. The MCOSD will prosecute such violations to the fullest extent of the law. The MCOSD will apply new deterrence methods, including rigorous investigation and increased penalties to stop such damaging and unlawful activities.

Policy SW.19: Redundant Roads and Trails

Redundant roads or trails are defined as those that roughly parallel an existing route serving essentially the same purposes, uses, and user groups. Through designation of the road and trail system, the MCOSD will reduce the overall level of redundancy compared to baseline levels and when doing so will exclude from designation the road or trail segment or segments that have the highest overall maintenance costs and the

worst profile of environmental impacts. The MCOSD may strategically retain some redundant roads and trails in the interest of separating user groups and avoiding user conflict. Redundant roads and trails that are not designated as system roads and trails will be decommissioned as time and resources allow. All decommissions of redundant fire road segments will be subject to consultation with Marin County Fire and the relevant local fire agencies.

Policy SW.20: Conversion of System Roads to Trails

The MCOSD may convert system roads to trails to protect natural resources, enhance visitor experience and/or safety, or align maintenance costs with available funds. System roads encumbered by license, lease, or easement for nonrecreational purposes, and roads required for maintenance or emergency access, may not be converted to trails unless encumbrances are removed, or roads are no longer necessary for maintenance or emergency use.

Policy SW.21: Roads or Trails Serving Nonrecreational Uses

Roads or trails subject to or encumbered by license, lease, or easement, for nonrecreational purposes, and those roads required for maintenance or emergency access, will become system roads and trails, unless encumbrances are removed, or roads are no longer necessary for maintenance or emergency use.

Policy SW.22: Protect High-Value Vegetation Types

As a general policy, visitors will be directed away from areas of high-value vegetation types, as identified in the MCOSD's mapped Legacy Vegetation Management Zones and other more site-specific biotic assessments undertaken or commissioned by the MCOSD, to prevent disturbance and adverse impact. This will be done through the appropriate placement of new and rerouted trails, by erecting fencing, or by installing educational signs that provide information about the resource values being protected.

Policy SW.23: Identify High Value Biological Resources

Designation of the road and trail system and evaluation of road and trail project proposals will be based on best available data, including inventories of wildlife, and vegetation resources. The MCOSD will undertake site specific and programmatic efforts to extend and improve upon the biological data underlying its decision-making criteria. System designations, project design, and project implementation are subject to amendment on the basis of new information.

Policy SW.24: Minimize Intrusions into Larger Contiguous Habitat Areas and Wildlife Corridors

In designating the system of roads and trails, the MCOSD will minimize their adverse effects on sensitive vegetation, as well as, habitat connectivity and migration corridors for all native species of wildlife.

Policy SW.25: Helmet Requirement

Per California state law, bicycle riders less than 18 years old are required to wear a helmet when riding on the MCOSD roads and trails.

Policy SW.26: Control or Restrict Access to Ignition Prevention Zones when Red-Flag Conditions Exist

Appropriate actions will be taken to minimize the risk of wildfire ignition when red-flag conditions exist. These actions may include prohibiting vehicle access, closing trails, or closing entire areas to all human activities until red-flag conditions expire. The public will be informed of the reasons why such actions are being taken, and areas will be patrolled to ensure compliance.

Policy SW.27: Protect High-Value Cultural and Historic Resources by Rerouting or Confining Visitor Access

Areas of high-value cultural and historic resources will be protected from disturbance and adverse impact. This will be done through the appropriate placement of trails, by erecting barriers, or other methods to discourage access.

Policy SW.28: Remove or Realign Roads and Trails Away from High-Value Cultural and Historic Resources

As a general policy, designated roads and trails will be rerouted away from high-value cultural and historic resources whenever possible and feasible. Areas where roads or trails are removed will be restored to natural conditions. The removal or realignment of roads will be done in consultation with Marin County Fire and other local fire agencies.

Policy SW.29: Retrofit or Upgrade Construction Equipment

Work with the Bay Area Air Quality Management District to implement feasible actions from the 2010 Clean Air Plan MSM C-1 – Construction and Farming Equipment. Pursue funding to retrofit the existing construction equipment engines with diesel particulate filters or upgrade to equipment with electric, Tier III, or Tier IV off-road engines. Seek to rent construction equipment that meets these criteria, if available.

Policy SW.30: Permeable Paving

For any new parking areas and other large areas of potentially impermeable surfaces, use permeable paving or an equivalent for all paved areas to provide for the infiltration of rainfall.

Policy SW.31: Floodplain Policy for New and Improved Roads and Trails

The MCOSD will review current Federal Emergency Management Agency Flood Insurance Rate Maps and other current flood maps to assess potential flood impacts to any proposed new or improved road, trail, or associated facilities located in the lower elevation bayland or coastal areas (i.e., Santa Margarita Island, Santa Venetia Marsh, Bothin Marsh, Rush Creek, Deer Island, and Bolinas Lagoon). In cases where a flood risk is identified, proposed facilities shall either be relocated outside of the flood prone area or designed and constructed in a manner to protect public safety and not increase base flood elevations. As part of public safety, the MCOSD shall also review the most current Tsunami Inundation Maps as part of the trail improvement planning efforts in those areas in order to identify areas that may require escape plans or proper notification.

Policy T.1: Loop and Long-Distance Trail Connections

When designating system roads and trails, the MCOSD will seek to maintain and/or develop new opportunities for loop and long-distance travel, when such opportunities do not conflict with resource protection or visitor safety.

Policy T.2: Visitor Amenities

The MCOSD may provide or permit visitor amenities such as a) facilities to encourage the pickup and disposal of pet waste; b) watering opportunities for horses and other pack animals; c) potable water; and d) small bike repair stations.

Policy T.3: Visitor Safety

The safety of all road and trail users depends in large part on visitor conduct. The MCOSD expects that all users will conduct themselves in a safe manner, to protect their own safety and the safety of other users. The MCOSD shall consider visitor safety in designating the road and trail system.

SPECIAL USE POLICIES

In addition to providing public access for recreational uses, the MCOSD preserves also allows uses such as commercial dog walking, recreational events, and access for utility providers such as Verizon and PG&E. There is a need for a consistent and structured approach for the MCOSD to respond to requests for special uses. New policies to accomplish this are described below.

Policy SP-1: Lease/License/Other Form of Approval Required for Land Management or Utility Activities

Consistent with the MCOSD's Nonconforming Use Policy, all agencies and service providers requesting access to open space preserves will be required to obtain a lease, license, or other form of approval from the MCOSD describing the purpose and timing of their activities. The MCOSD may impose fees and conditions. Such conditions may include, but will not be limited to, the timing of the activity with respect to seasonal and weather concerns, the protection of natural resources, and the location of the activity. The MCOSD's Nonconforming Use Policy provides specific guidance for permitting use of open space by utilities, water districts, and other similar entities.

Policy SP-2: Permit Required for Organized Recreational Activities or Events

All private parties or public agencies requesting access to the MCOSD preserves for recreation-related or other special events will be required to complete and obtain a permit detailing the purpose and timing of their activities. The MCOSD may impose fees and conditions. Such conditions may include, but will not be limited to, the timing of the activity with respect to seasonal and weather concerns, the number of participants, the protection of natural resources, and the location of the activity. An administrative fee will be charged by the MCOSD for reviewing and granting any permits. Additional fees may be incurred by the applicant for administration and monitoring of the event by the MCOSD staff, or if compliance with the California Environmental Quality Act or any regulatory permit is required. The MCOSD insurance and indemnity requirements will also apply.

Policy SP-3: Prohibition on Unofficial, Non-sponsored Group Activities

Any unofficial, non-sponsored outdoor recreation event involving more than 15 participants is prohibited.

GENERAL BMPs

General 1: Limit Work Area Footprints in Sensitive Resource Areas

Limit the size of construction-related road and trail management activities to the minimum size needed to meet project objectives. BMPs include:

- Minimize project footprint. Minimize the size of the work area, including the project area, access roads, and staging areas. Wherever possible, use existing upland roads, trails, and other disturbed areas for project activities in order to reduce unnecessary disturbance, minimize soil and water erosion, and reduce overall project costs.
- Reduce or relocate footprint during planning and design phase. Reduce the work area footprint in sensitive resource areas or move the work area to common natural communities and upland areas. Implement further refinements during site preparation and construction to further reduce impacts.
- Minimize soil disturbance. Minimize soil disturbance to the greatest extent possible to reduce the potential for introducing or spreading invasive plants, to protect topsoil resources, and to reduce available habitat for the establishment of new invasive plants.
- Mark project footprint near sensitive natural resources. Mark ingress/egress routes, staging areas, and sensitive resources to prevent inadvertent impacts to sensitive resources.
- Restrict soil disturbance and import of nonnative soil or fill material. To reduce the potential for damage of native plants and/or introduction of invasive plants, the contractor will be required to minimize the footprint of soil disturbance to the minimum amount necessary to complete the contracted work. In particular, access roads, staging areas, and areas of temporary disturbance will be minimized in size. The contractor and its staff and subconsultants agree not to drive off-road or drive or park on native vegetation unless approved in advance by the MCOSD natural resource staff. The contractor agrees that if soil excavation is required, every attempt will be made to have a balanced cut and fill project that reuses all native soils onsite. No nonnative soil or fill material will be brought onsite or used during the contractor's activities unless approved by the MCOSD natural resource staff.

General-2: Modify Construction- Related Vegetation Management Methods in and near Wetlands, Riparian Vegetation

Restrict construction-related vegetation management near wetlands in a manner that reduces the potential for sediment or pollutants to enter wetlands. Implement the following BMPs, as needed:

- Establish a buffer of 100 feet from wetland and tidally influenced areas (i.e., from the ordinary high-water mark of flowing or standing water in creeks, streams, or ponds). Avoid construction work within this buffer area. If construction work in wetlands and riparian areas cannot be fully avoided, consult with the appropriate state and federal agencies to obtain permits.
- Within the buffer, restrict routine vegetation management activities in creeks, streams, other waterways, and tidally influenced areas. Limit vegetation management work to least-harmful methods; restrict herbicides to those that are EPA-approved for use near water. Prohibit activities that disturb soil or could cause soil erosion or changes in water quality.
- Within the buffer, limit work that may cause erosion to the low flow or low tide periods. Low flow months for local creeks are typically August to October. For tidal areas, work will not occur within 2 hours of high tide events at construction sites when high tide is greater than 6.5 feet measured at the Golden Gate Bridge, using corrections for areas near individual MCOSD preserves. Tide charts are available online from the National Oceanic and Atmospheric Agency/National Weather Service (<http://www.wrh.noaa.gov/mtr/sunset.php>).
- Within the buffer, minimize erosion and sedimentation; maintain erosion and sediment control devices during ground disturbing activities and until all disturbed soils have been stabilized. Measures include weed-free straw, hydromulch, geofabrics, wattles, sediment traps, check dams, drainage swales, and sand bag dikes. Materials must be certified weed-free to prevent the

introduction of wheat, barley, and other nonnative plant seeds. Erosion control materials must be constructed of natural fibers (e.g., coconut fiber mats, burlap, and rice straw wattles, etc.) and may not be constructed with plastic monofilaments or other materials that could entrap snakes or amphibians.

- Prepare and implement a Stormwater Pollution Prevention Plan (SWPPP) to protect water quality for work in or near wetlands, ponds, seeps, creeks, tidal areas, or stream crossings.

General-3: Minimize Potential for Erosion

Conduct road and trail activities in a manner that controls and minimizes the potential for soil erosion and contribution of sediment to wetlands. Implement the following as needed:

- To minimize erosion and sedimentation, maintain erosion and sediment control devices during ground disturbing activities and until all disturbed soils have been stabilized. Measures include rice straw, hydromulch, geofabrics, wattles, sediment traps, check dams, drainage swales, and sand bag dikes. Materials must be certified weed-free to prevent the introduction of wheat, barley, and other nonnative plant seeds. Erosion control materials must be constructed of natural fibers (e.g., coconut fiber mats, burlap and rice straw wattles, etc.) and may not be constructed with plastic monofilaments or other materials that could entrap snakes or amphibians.
- Unless no feasible alternative is available, avoid using heavy equipment in areas with soils that are undisturbed, saturated, or subject to extensive compaction. Where staging of heavy equipment, vehicles, or stockpiles is unavoidable, limit and mark the allowable disturbance footprint with flagging or fencing. Following the end of work, scarify surface soils to retard runoff and promote rapid revegetation.
- Immediately rehabilitate areas where project actions have disturbed soil. Require areas disturbed by equipment or vehicles to be rehabilitated as quickly as possible to prevent erosion, discourage the colonization of invasive plants, and address soil compaction. Techniques include decompacting and aerating soils, recontouring soils to natural topography, stabilizing soils via erosion control materials, revegetating areas with native plants, and removing and monitoring invasive plants.

General-4: Control Food-Related Trash

Food-related trash can attract wildlife to road and trail project sites. Store food-related trash in closed containers and remove from the project site daily.

General-5: Modify Construction Methods Relating to Soil Disturbance, Restrict use of Offsite Soil, Aggregate, or Other Construction Materials

Conduct construction-related vegetation management in a manner that restricts the use of offsite materials that could introduce or spread invasive plants. Implement the following as needed:

- Minimize soil disturbance. Minimize soil disturbance to the greatest extent possible to reduce the potential for introducing or spreading invasive plants, to protect topsoil resources, and to reduce available habitat for the establishment of new invasive plants.
- Do not allow the introduction of incompatible fill. Use only clean, native soils and aggregate materials from projects within the preserve or use fill that is purchased from a certified weed-free source, before allowing the importation of materials from outside the preserves. Fill materials should be approved by natural resource staff to ensure compatibility with future restoration/rehabilitation goals.
- Segregate and treat soils and vegetation contaminated with invasive plant seeds and propagules. Treat, as appropriate, to prevent the spread of invasive plants. Treatment may include disposal onsite within already infested areas, chipping or pile burning and mulching to eliminate viable seeds, or disposal at an approved cogeneration plant or green waste facility.
- Salvage, store, and reuse topsoil. Where activities disturb soil temporarily, require salvage of the top 6 to 12 inches of topsoil (to retain seeds, soil mycorrhizae, and fungi) from all excavation and

disturbance areas. Require reapplication of the salvaged topsoil as a topdressing or topcoat over backfill, unless known to contain invasive plant seeds or propagules.

- Establish dedicated areas for cleaning vehicles, inside and out, of soil or invasive plant seeds or plant parts before entering the MCOSD preserves, whenever moving equipment between areas within the preserves, and before leaving preserves. Within the wash areas, the tires and body of vehicles and equipment will be brushed off and/or hosed down.
- Inspect construction equipment for soil or invasive seeds or plant parts. Require contractors to make equipment available for inspection before entering the MCOSD preserves, when moving between sites within the preserves, and before leaving preserves.
- Develop a native seed mix for erosion control. Develop the seed mixture on a project-by-project basis based on the observed mixture of native and naturalized plants in and near the impact area. Where possible, ensure that seeds are collected locally (i.e., within the same watershed or preserve as the impact), or obtained from a reputable native plant nursery specializing in seed that is collected from local sources.
- Maintain erosion and sediment control devices during ground disturbing activities and until all disturbed soils have been stabilized to help minimize erosion and sedimentation. Measures include rice straw, hydromulch, geofabrics, wattles, sediment traps, check dams, drainage swales, and sand bag dikes. Materials must be certified as weed-free to prevent the introduction of wheat, barley, and other nonnative plant seeds. Erosion control materials must be constructed of natural fibers (e.g., coconut fiber mats, burlap and rice straw wattles, etc.) and not of plastic monofilaments or other materials that could entrap snakes or amphibians.
- Immediately rehabilitate areas where road and trail project activities have disturbed soil. Areas disturbed by equipment or vehicles should be rehabilitated as quickly as possible to prevent erosion, discourage the colonization of invasive plants, and address soil compaction. Techniques include de-compacting and aerating soils, recontouring soils to natural topography, stabilizing soils via erosion control materials, revegetating areas with native plants, and removing and monitoring invasive plants.

General-6: Prevent or Reduce Potential for Pollution

Ensure that actions are taken during ongoing road and trail project activities to prevent or reduce the potential for pollutants entering the MCOSD preserve. Implement the following as needed:

- Prohibit, or restrict equipment refueling, fluid leakage, equipment maintenance, and road surfacing activities near wetlands. Require placement of fuel storage and refueling sites in safe areas well away from wetlands. Safe areas include paved or cleared roadbeds, within contained areas such as lined truck beds, or other appropriate fuel containment sites. Inspect equipment and vehicles for hydraulic and oil leaks regularly. Do not allow leaking vehicles on the MCOSD preserves and require the use of drip pans below equipment stored onsite. Require that vehicles and construction equipment are in good working condition, and that all necessary onsite servicing of equipment be conducted away from the wetlands.
- Require all contractors to possess, and all vehicles to carry, emergency spill containment materials. Absorbent materials should be on hand at all times to absorb any minor leaks and spills.

General-7: Include Standard Procedures in Construction Contracts

When using contractors to perform vegetation management, related to road and trail project activities, the MCOSD will include some or all of the following standard procedures in those contracts.

The contractor will work with the MCOSD natural resource staff to determine the optimal timing of contracted work. Many timing restrictions relate to protecting special-status species. Other types of timing restrictions include timing to control invasive plants; timing to avoid migration, gestation, or flowering periods for special-status species; or timing work in wetlands to the dry season.

- Establish a buffer of 100 feet from wetland and tidally influenced areas (i.e., from the ordinary high-water mark of flowing or standing water in creeks, streams, or ponds). Avoid construction work within this buffer area.
- Within the buffer, limit work that may cause erosion to low flow periods. Low flow months for local creeks are typically August to October. For tidal areas, work will not occur within 2 hours of high tide events at construction sites when high tide is greater than 6.5 feet measured at the Golden Gate Bridge, using corrections for areas near individual MCOSD preserves. Tide charts are available online from the National Oceanic and Atmospheric Agency/National Weather Service (<http://www.wrh.noaa.gov/mtr/sunset.php>).
- If construction work cannot be fully avoided in wetlands and riparian areas, consult with the appropriate state and federal agencies to obtain permits.
- Require the contractor to prepare and implement a Stormwater Pollution Prevention Plan (SWPPP) to protect water quality for road and trail project work in or near wetlands, ponds, seeps, creeks, tidal areas, or stream crossings.

The contractor will work with the MCOSD natural resource staff to identify any priority invasive plants that occur near the project work area, including the project footprint, access roads, staging areas, and similar work areas. The contractor agrees to comply with requirements to reduce the spread or transport of priority invasive plants related to construction activities. Requirements may include some or all of the following:

- Conduct a training program for all field personnel involved with the proposed road and trail project prior to initiating project. The program will consist of a brief presentation by person's knowledgeable in the special-status species, sensitive resource, or invasive plants known from the project area. The program will include the following: a photograph and description of each special-status species, sensitive resource, or invasive plant known from the project area; a description of its ecology and habitat needs; an explanation of the measures being taken to avoid or reduce adverse impacts; and the workers' responsibility under the applicable environmental regulation. The worker training may be conducted in an informal manner (e.g., as part of a routine tailgate safety meeting).
- Restrict work to periods when invasive plants are not in fruit or flower.
- Establish dedicated area for cleaning vehicles, inside and out, of soil or invasive plant seeds or plant parts before entering the MCOSD preserves, whenever moving equipment between areas within the preserves, and before leaving preserves. Within the wash areas, the tires and body of equipment will be brushed off or hosed down.
- Inspect construction equipment for soil or invasive seeds or plant parts. Require contractors to make equipment available for inspection before entering the MCOSD preserves, when moving between sites within the preserves, and before leaving preserves.
- Dispose of green waste in a manner that does not spread invasive plants. Methods include onsite disposal in an already infested area; offsite disposal to a cogeneration plant or an approved green waste composting facility).
- Protect environmentally sensitive areas. The MCOSD natural resource staff will identify any Environmentally Sensitive Areas in or near the road and trail project area prior to the start of work. Environmentally Sensitive Areas may include: special-status plant or wildlife species or their habitats (e.g., woodrat nests, habitat for special-status plant and wildlife species, individuals or populations of listed special-status plant or wildlife species or locally rare species); wetlands including creeks streams and related riparian area; and sensitive vegetation types as described in this report. The MCOSD staff and contractors will fully avoid and protect such areas during habitat restoration work or will help obtain and comply with necessary permits and regulatory requirements.
- Use locally collected plant materials for revegetation projects. Plant materials will be collected onsite at the MCOSD preserves or within the same watershed as the revegetation project. The contractor will work with the MCOSD to identify native plant nurseries that can collect and

propagate seed and other plant materials from the local area. No use of commercial grassland mixtures for erosion control unless approved in advance by the MCOSD. The contractor will allow the MCOSD to inspect and approve all plant materials and seed prior to use onsite.

- Protect special-status species habitat. For vegetation work in or near special-status species habitat, the contractor is required to comply with requirements of the MCOSD project permits to protect special- status species and their associated habitats before and during construction, and to cooperate with the MCOSD in implementing any state and federal permits and agreements for the project. The special- status species population plus a buffer should be designated as an “Environmentally Sensitive Area” using lath and flagging, pin flags, or temporary fencing (depending on resource sensitivity to work). The contractor will be required to avoid all designated Environmentally Sensitive Areas during construction. For any special-status species or their habitats that cannot be fully avoided, the contractor will work with the MCOSD to obtain and comply with federal and state Endangered Species Acts, the federal Migratory Bird Treaty Act, and the state Fish and Game Code permits and agreements.
- Restrict soil disturbance, import of nonnative soil or fill material. To reduce the potential for damage of native plants and/or introduction of invasive plants, the contractor will be required to minimize the footprint of soil disturbance to the minimum amount necessary to complete the contracted work. In particular, minimize the footprint of access roads, staging areas, and areas of temporary disturbance. The contractor and its staff and subconsultants agree not to drive off-road or drive or park on native vegetation unless approved in advance by the MCOSD natural resource staff. The contractor agrees that if soil excavation is required, every attempt will be made to have a balanced cut and fill project that reuses all native soils onsite. Unless pre-approved by the MCOSD natural resource staff, there will be no use of nonnative soil or fill material during the contractor’s activities.
- To minimize erosion and sedimentation, maintain erosion and sediment control devices during ground disturbing activities and until all disturbed soils have been stabilized. Measures include rice straw, hydromulch, geofabrics, wattles, sediment traps, check dams, drainage swales, and sand bag dikes. Materials will be certified weed-free to prevent the introduction of wheat, barley, and other nonnative plant seeds. Erosion control materials will be constructed of natural fibers (e.g., coconut fiber mats, burlap and rice straw wattles, etc.) and may not be constructed with plastic monofilaments or other materials that could entrap snakes or amphibians.

Other procedures:

- All entry gates to the project site not used for construction access will be locked at all times and gates used for construction access will be locked during non-construction hours.
- All vehicles will carry a suitable fire extinguisher.
- Immediately rehabilitate areas where project actions have disturbed soil. Require areas disturbed by equipment or vehicles to be rehabilitated as quickly as possible to prevent erosion, discourage the colonization of invasive plants, and address soil compaction. Techniques include de-compacting and aerating soils, recontouring soils to natural topography, stabilizing soils via erosion control materials, revegetating areas with native plants, and removing and monitoring invasive plants.
- Unless no feasible alternative is available, avoid using heavy equipment in areas with soils that are undisturbed, saturated, or subject to extensive compaction. Where staging of heavy equipment, vehicles, or stockpiles is unavoidable, limit and mark the allowable disturbance footprint with flagging or fencing. Following the end of work, scarify surface soils to retard runoff and promote rapid revegetation.

General-8: Control Noise

To reduce daytime noise and potential disturbance to wildlife species, the MCOSD will require contractors to muffle or control noise from equipment through implementation of the following measures:

- Equipment and vehicles should utilize the best available noise control techniques (e.g., improved mufflers, equipment redesign, and use of intake silencers, ducts, engine enclosures and acoustically attenuating shields or shrouds, and installation of sound blanket around the project site).

General-9: Conduct Worker Training

The MCOSD will conduct a worker-training program for all field personnel involved with the proposed road and trail management project prior to initiating the project. The program will consist of a brief presentation by persons knowledgeable in the special-status species, sensitive resource, or invasive plants known from the project area. The worker training may be conducted in an informal manner (e.g., as part of a routine tailgate safety meeting). The program will include a photograph and description of each special-status species, sensitive resource, or invasive plant known from the project area; and a description of its ecology and habitat needs; an explanation of the measures being taken to avoid or reduce adverse impacts; and the workers' responsibility under the applicable environmental regulation(s).

General-10: Road and Trail Inspections

- Regularly inspect road and trail features and associated infrastructure to ensure they are well maintained and posing no threat to surrounding sensitive and/or special-status natural resources. Staff will record information pertaining to the status of biophysical resources that could be affected by road or trail use, maintenance, or management activities. These inspections will monitor for the spread of invasive, exotic plants that could affect sensitive and/or special-status native plant or wildlife habitats and any other changes that could create negative impacts to known sensitive and/or special-status native plant or wildlife populations in the immediate vicinity. Staff will report any findings and make recommended corrective actions if appropriate.

General-11: Management of Sudden Oak Death

To reduce and control the spread of Sudden Oak Death (SOD) within the MCOSD system, the following practices will be implemented.

- The MCOSD staff will educate visitors about preventing the spread of Sudden Oak Death (SOD).
- The MCOSD may use interpretive signs, brochures, ranger talks, and other online and print materials that explain the importance of preventing the spread of pathogens and use of preventative measures.
- The education materials should explain that SOD occurs within the preserve; identify typical symptoms; explain that SOD can be spread by park users, especially during rainy and windy weather; and request that park visitors:
 - Use designated parking areas
 - Avoid transporting SOD on shoes, bicycles, and the feet of pet dogs and horses through the use of cleaners and disinfectants.

The MCOSD staff shall be trained about SOD host species and disease transmission pathways and, when undertaking road and trail construction and maintenance activities in areas of the preserves affected by SOD, shall implement the following measures.

- Clean equipment, boots, truck tires, and any other exposed material after working in forest and woodland habitats, with a 10% bleach solution or other disinfectant
- Avoid pruning oaks or other affected trees in wet weather.
- Avoid work in forest and woodlands during the wet season when spores are being produced and infections are starting.
- Leave potentially infected downed trees on site instead of transporting the material to an uninfected area.
- Remove potentially infected downed trees from the property only if it is the first infected tree to be detected in the area or if there is a high fire risk.

- Dispose of infected materials at an approved and permitted dump facility within the 14-county infected quarantine zone.
- If necessary to reduce safety or fire hazards or to address aesthetic or recreational impacts, cut, branch, chip, and/or split infected trees in areas where the material would be less likely to be transported to an uninfected location.
- Purchasing nursery stock for restoration plantings at nurseries that follows current BMPs for preventing the spread of SOD (consult the California Oak Mortality Task Force, www.suddenoakdeath.org, for current standards).
- Inspect all plant materials for symptoms of SOD before bringing any plants onto the property.

SENSITIVE NATURAL RESOURCES BMP

Sensitive Natural Resources–1: Modify Management Practices near Sensitive Natural Resources

For construction related activities requiring extensive ground disturbance in and near known sensitive biological resources, the MCOSD will assess the project or proposed action prior to the start of work to suggest modifications to standard procedures considered necessary to help ensure avoidance of impacts to special- status species and other sensitive biological resources. Actions that may be taken include one or more of the following:

- Mark project footprint near sensitive natural resources. Mark ingress/egress routes, staging areas, and sensitive resources to prevent inadvertent impacts to sensitive resources.
- Inspect ingress/egress routes, escort vehicles, and equipment onto the site if necessary to help prevent impacts on ground nesting and ground dwelling species. Work should be conducted during bird non- breeding season (published California Department of Fish and Wildlife non-breeding season dates are August 15 - March 1 but should be adjusted to local conditions).
- Maintain a 15 MPH speed limit in sensitive habitat areas. This will reduce the potential for mortality, dust impacts on vegetation and wildlife. For larger projects, water the roads for dust control near sensitive resources.

SPECIAL STATUS WILDLIFE BMPs

Special-Status Wildlife-1: Literature Reviews

Prior to all road and trail management activities, literature reviews will be conducted to determine if special-status wildlife-species or critical habitats exist within the project area.

The first source reviewed will be the MCOSD's database of special-status wildlife occurrences and sensitive habitats. This database is actively updated and maintained by the MCOSD natural resource staff and contains the most relevant data on sensitive resources on MCOSD land.

In addition to the MCOSD database, the following resources will be reviewed, as necessary, prior to work:

- U.S. Geological Survey topographic maps
- Aerial photographs
- California Department of Fish and Wildlife Natural Diversity Database records
- U.S. Fish and Wildlife Service quadrangle species lists
- University of California at Davis Information Center for the Environment Distribution Maps for Fishes in California
- National Marine Fisheries Service Distribution Maps for California Salmonid Species

Database searches for known occurrences of special-status wildlife species will focus on the vicinity of the project area. Biological communities will be classified as sensitive or non-sensitive as defined by the California Environmental Quality Act and other applicable laws and regulations

Special-Status Wildlife-2: Preconstruction Surveys

If it is determined that special-status wildlife species may occur in a project area, a qualified biologist will survey the area during the appropriate time window to determine the presence or absence of the species. If the species is located, the MCOSD should conduct the activity to avoid impacts to the species. If avoidance is not possible, the appropriate resource agencies will be contacted to obtain guidance or the necessary permits.

Special-Status Wildlife-3: Seasonal Restrictions During Bird Nesting Season

The MCOSD will implement the following seasonal restrictions to protect nesting birds. If work will occur outside the nesting bird window of February 1 to August 31, surveys and avoidance measures will not be necessary for nesting birds. However, surveys for special-status species may still be necessary if they are present in the area.

- Identify potential habitat for nesting birds and survey to determine if active nests are present before initiating road and trail management actions. Surveys will include the proposed road and trail management footprint, and a ¼ mile buffer area (for raptors) or a 150 foot buffer area (for other birds). Surveys will be conducted within 14 days of the start of active ground-disturbing activities.
- If any active nests of protected bird species are found, prohibit brushing, mowing and tree removal activities at the nest site and within a buffer area until the young birds have fledged and left the site, and/ or the nest has been abandoned. The buffer area will be 50-250 feet, or as determined through consultation with the California Department of Fish and Wildlife, pursuant to section 2081 of the California Fish and Game Code and the federal Migratory Bird Treaty Act. In general, a line-of-site buffer of at least 150 feet between the nest site and road and trail management activities is recommended. For raptors, buffer distances may be increased to 250 feet or more, depending on the visual distance from the nest to the road and trail management work area, and the sensitivity of the raptor species to road and trail management activities. In addition, a 5 MPH speed limit will be enforced in and near bird nesting habitats and other sensitive habitat areas.
- If impacts to nesting birds cannot be avoided, contact the U.S. Fish and Wildlife Service and the California Department of Fish and Wildlife to obtain the necessary permits before initiating road and trail management activities.

Special-Status Wildlife-4: Avoidance and Protection of Northern Spotted Owl

Northern spotted owls have potential to occur on the MCOSD preserves. The MCOSD will undertake the following actions when construction-related road and trail management actions are planned to occur within or adjacent to potential northern spotted owl habitat:

- Identify potential habitat for the northern spotted owl and survey to determine if it is occupied or if active nests are present before initiating road and trail management activities. Surveys will include the proposed road and trail management footprint and a 150 foot buffer area. Surveys will be conducted within 14 days of the start of active ground-disturbing activities.
- To the greatest extent possible, avoid occupied habitat completely during key northern spotted owl breeding and nesting season (March-September).
- Mark occupied habitat with flagging or temporary fencing.
- Avoid removal of trees with documented northern spotted owl nests. Removal of nest trees typically requires compensatory mitigation.
- Establish a buffer of at least 100 feet around occupied habitats. Within the buffer area, select least harmful road and trail management activities. Within the buffer area, retain old-growth forest trees and forest canopy, and minimize removal of other vegetation to the fullest extent possible.
- Avoid cutting native trees greater than 10 inches in diameter at breast height within occupied northern spotted owl habitat.
- Conduct a worker training program for all field personnel involved with the proposed road and trail management project prior to project initiation. The program will consist of a brief presentation by persons knowledgeable about the northern spotted owl. The program will include the following: a photograph and description of the northern spotted owl, a description of its ecology and habitat needs, an explanation of the measures being taken to avoid or reduce adverse impacts, and the workers' responsibility under applicable environmental regulations. The worker training may be conducted in an informal manner (e.g., as part of a routine tailgate safety meeting).
- If impacts cannot be avoided, contact the U.S. Fish and Wildlife Service and/or the California Department of Fish and Wildlife to obtain the necessary permits before initiating road and trail management activities.
- Notify the U.S. Fish and Wildlife Service and/or the California Department of Fish and Wildlife within 24 hours of finding any injured northern spotted owl or any unanticipated damage to its habitat associated with the proposed action. Notification must include the date, time, and precise location of the specimen/ incident, and any other pertinent information. Dead animals will be sealed in a plastic zip lock bag containing a piece of paper indicating the location, date, and time when it was found, and the name of the person who found it; the bag should be frozen in a freezer in a secure location. The MCOSD will contact the U.S. Fish and Wildlife Service within seven days to transfer any dead or injured specimens.

Special-Status Wildlife-5: Avoidance and Protection of Double-Crested Cormorant Nests and Heron and Egret Rookery Sites

There are several known or suspected double-crested cormorant, great blue heron, snowy egret, and black-crowned night heron rookery or nesting sites existing on the MCOSD preserves. These procedures are similar to those described in Special-Status Wildlife Protection-3 for seasonal restrictions during bird nesting season but are more specific to these particular bird species and therefore supersede the more general practices for protecting all nesting birds. The MCOSD will undertake the following procedures when construction-related road and trail management is planned to occur within or adjacent to potential nesting or rookery sites for these species:

- Identify potential habitat for double-crested cormorant, heron, and egret nest and rookery sites and survey to determine if they are occupied or if nests are present before initiating road and trail management actions. Surveys will include the proposed road and trail management footprint and

a 150-foot buffer area. Surveys will be conducted within 14 days of the start of active ground-disturbing activities.

- To the greatest extent possible, avoid nests and rookery sites completely during key breeding and nesting periods. Activities in or near known sites will be limited during the known nesting seasons for each species, or until young have fully fledged.
- Establish a buffer of at least 100 feet around rookery and nest sites. Within the buffer area, select least harmful road and trail management activities. Restrict activities within the buffer to those that will not disturb roosting or nesting behavior (e.g., noise and visual disturbances).
- Mark occupied habitat with flagging or temporary fencing.
- Prohibit the removal of known roost or nest trees. Restrict the removal of other mature riparian trees within the buffer zone.
- Conduct a worker training program for all field personnel involved with the proposed road and trail management project prior to project initiation. The program will consist of a brief presentation by persons knowledgeable about the special-status species. The program will include the following: a photograph and description of the special-status species, a description of its ecology and habitat needs, an explanation of the measures being taken to avoid or reduce adverse impacts, and the workers' responsibility under applicable environmental regulations. The worker training may be conducted in an informal manner (e.g., as part of a routine tailgate safety meeting).
- If impacts cannot be avoided during the nesting season (March 1 – August 31), contact the California Department of Fish and Wildlife to obtain the necessary permits before initiating road and trail management activities.
- Notify the California Department of Fish and Wildlife within 24 hours of finding any injured special-status species or any unanticipated damage to its habitat associated with the proposed action. Notification must include the date, time, and precise location of the specimen/incident, and any other pertinent information. Dead animals will be sealed in a plastic zip lock bag containing a piece of paper indicating the location, date, and time when it was found, and the name of the person who found it; the bag should be frozen in a freezer in a secure location. The MCOSD will contact the California Department of Fish and Wildlife within seven days to transfer any dead or injured specimens.
- Prohibit or restrict equipment refueling, fluid leakage, equipment maintenance, and road surfacing activities near wetlands. Fuel storage and refueling will occur in safe areas well away from wetlands; safe areas may include paved or cleared roadbeds and other contained areas, such as lined truck beds. Equipment and vehicles will be inspected regularly for hydraulic and oil leaks, and leaking vehicles will not be allowed on the MCOSD preserves. Drip pans will be placed underneath equipment stored on site. Vehicles and construction equipment will be maintained in good working condition, and any necessary on-site servicing of equipment will be conducted away from the wetlands.
- Require all contractors to possess, and all vehicles to carry, emergency spill containment materials.
- Absorbent materials will be on hand at all times to absorb any minor leaks and spills.

Special-Status Wildlife-6: Avoidance and Protection of California Clapper Rail, California Black Rail, and Salt Marsh Harvest Mouse

The MCOSD preserves encompass some tidal areas that are known to support, or have the potential to support, California clapper rail, California black rail and salt-marsh harvest mouse. In areas where road and trail management activities are planned to occur within or adjacent to salt marsh or brackish marsh habitats, the MCOSD will first consult with the U.S. Fish and Wildlife Service and the California Department of Fish and Wildlife to determine locations where these species could potentially be affected. The MCOSD will obtain and comply with necessary permits for working in suitable habitat for these species, including, but not limited to the following types of protective actions to prevent harm to these species:

- To the greatest extent possible, avoid occupied California clapper rail and California black rail habitat completely during key breeding and nesting periods. Noise-generating activities, including operating heavy machinery in or near known California clapper or California black rail sites, will be avoided during the nesting season (March 1 – August 31).
- During the California clapper rail and California black rail breeding season, identify potential habitat for California clapper rail and California black rail, and survey to determine if it is occupied before initiating road and trail management activities. Survey will include the proposed road and trail management footprint and a 150-foot buffer area around occupied habitat. Surveys will be conducted within 14 days of the start of active ground- disturbing activities. Occupied habitat will be marked with flagging or temporary fencing.
- Assume presence of salt marsh harvest mouse in appropriate habitats, avoid impacting these areas, and establish a protective buffer. Because the U.S. Fish and Wildlife Service frequently does not allow trapping of the salt marsh harvest mouse to determine its presence, the MCOSD will assume presence in appropriate habitats and avoid disturbing them. If appropriate habitats are present, a 200-foot buffer will be established around the habitat. If work is required within the buffer, activities will be restricted within the buffer to those that will not disturb nesting behavior (e.g., through noise or visual disturbances), and vegetation will be removed by hand under the supervision of a qualified biologist to ensure no impacts to the salt marsh harvest mouse occur.

Special-Status Wildlife-7: Protection of Fish Habitat

If crossing a stream with the potential to support fish is part of a road or trail project, proper fish passage will be designed:

- Preference will be for a bridge instead of a culvert, and an open-arch culvert instead of a pipe culvert. A bridge that will not affect streamflow will be the preferred option. If a culvert is necessary, an open-arch design that does not affect the bed or flow of the stream will be preferred. If an open arch culvert is not possible, pipe culverts will be installed slightly below grade in an area perpendicular to the crossing where the existing streamflow is linear. Resting pools will be designed above and below culverts to allow fish to rest before and after having to pass through the culvert.

Special-Status Wildlife-8: Worker Awareness Training

Conduct worker awareness training. Worker training will include the following information: a photograph and description of each special-status species, sensitive, resource, or invasive plant known from the project area; a description of its ecology and habitat needs; potentially confusing resources (e.g., similar species or habitats); an explanation of the measures being taken to avoid or reduce adverse impacts; reporting and necessary actions if sensitive resources are encountered; and workers' responsibility under the applicable environmental regulation.

Special-Status Wildlife-9: Construction Monitoring

If federal- or state-listed wildlife species are known to be present in the project area or immediate surroundings, a qualified biologist will monitor construction activities to ensure impacts to species will be avoided. If listed wildlife species are present within the immediate vicinity of the project area, a more involved monitoring program might be necessary to ensure that these species do not enter the project area. If a listed species is observed by a worker or construction monitor, work will cease immediately, and the appropriate resource regulatory agency will be contacted if necessary. A construction monitoring program will be developed for each project on a project-specific basis.

Special-Status Wildlife-10: Relocation of Special-Status Species

If federal- or state-listed wildlife species are located on site, the appropriate resource agency will be contacted, and a qualified biologist possessing any necessary permits will relocate individuals to suitable habitat off site as applicable.

Special-Status Wildlife-11: Noise Control

Utilize the best available noise-control techniques when in proximity to occupied sensitive wildlife habitat. The best available noise-control techniques (e.g., improved mufflers, equipment redesign, and use of intake silencers, ducts, engine enclosures, and acoustically attenuating shields or shrouds) will minimize disturbance of nearby wildlife populations.

Special-Status Wildlife Protection-12: Trash Control

Store food-related trash in closed containers and remove it from the project site daily. Food-related trash can attract wildlife to construction sites, disrupting their normal behavior patterns.

Special-Status Wildlife-13: Road and Trail Inspections

Regularly inspect road and trail features and associated infrastructure to ensure they are well maintained and posing no threat to surrounding special-status wildlife species. Staff will record information pertaining to the spread of invasive exotic plants that could affect wildlife habitats and to the status and quality of any known special-status wildlife species in the immediate vicinity that could be affected by road or trail use, maintenance, or management activities. Staff will report any findings to MCOSD natural resource staff and make recommended corrective actions if appropriate.

SPECIAL STATUS PLANTS BMPs

Special-Status Plants-1: Literature Reviews

Prior to all management activities, literature reviews will be conducted to determine if special-status plant species, critical habitats, or sensitive communities exist within the project area. In addition to the MCOSD database, the following resources will be reviewed, as necessary, prior to work:

- U.S. Geological Survey topographic maps
- U.S. Fish and Wildlife Service National Wetlands Inventory maps
- Bay Area Aquatic Resource Inventory Database
- Aerial photographs
- California Department of Fish and Wildlife Natural Diversity Database records
- U.S. Fish and Wildlife Service quadrangle species lists
- California Native Plant Society inventory records

Database searches for known occurrences of special-status plant species will focus on the vicinity of the project area. Biological communities present in the project location and surrounding areas will be classified based on existing plant community descriptions described in the Preliminary Descriptions of the Terrestrial Natural Communities of California. Biological communities will be classified as sensitive or non-sensitive as defined by the California Environmental Quality Act and other applicable laws and regulations.

Special-Status Plants-2: Avoidance and Protection of Special- Status Plant Species near Road and Trail Management Projects

The MCOSD will undertake the following actions when construction-related road and trail management is planned to occur within or adjacent to special-status plant populations:

- Identify potential special-status plant habitat and survey to determine if it is occupied before initiating road and trail management activities. Surveys will include the proposed road and trail management footprint and a 100-foot buffer area around the footprint if potential special-status plant habitat exists. Surveys will be conducted within 14 days of the start of active ground-disturbing activities.
- To the greatest extent possible, avoid occupied special-status plant populations completely.
- If full avoidance is not possible, restrict work to the period when special-status plants have flowered or set seed.
- Establish a buffer of at least 100 feet around special-status plant populations. Within the buffer area, select the least harmful road and trail management activities.
- Mark special-status plant populations with flagging or temporary fencing.
- Prevent unnecessary vehicular and human intrusion into special-status plant species habitat from adjacent construction, maintenance, and decommissioning activities. Where necessary, reroute or sign and fence trails to avoid the special-status plant population.
- Prohibit or restrict equipment refueling, fluid leakage, equipment maintenance, and road surfacing activities near special-status plant populations. Activities will be restricted within the buffer to those that will not disturb roosting or nesting behavior (e.g., through noise or visual disturbances). Fuel storage and refueling will occur in safe areas well away from wetlands; safe areas may include paved or cleared roadbeds and other contained areas, such as lined truck beds. Equipment and vehicles will be inspected regularly for hydraulic and oil leaks, and leaking vehicles will not be allowed on the MCOSD preserves. Drip pans will be placed underneath equipment stored on site. Vehicles and construction equipment will be maintained in good working condition, and any necessary on-site servicing of equipment will be conducted away from special-status plant populations.

- To minimize downslope erosion and sedimentation near special-status plants, maintain erosion- and sediment-control devices during ground-disturbing activities and until all disturbed soils have been stabilized. Control devices include rice straw, hydromulch, geofabrics, wattles, sediment traps, check dams, drainage swales, and sand bag dikes. Materials must be certified weed-free to prevent the introduction of wheat, barley, and other nonnative plant seeds. Erosion-control materials must be constructed of natural fibers (e.g., coconut fiber mats, burlap and rice straw wattles, etc.) and may not be constructed with plastic monofilaments or other materials that could entrap snakes or amphibians.
- Conduct a worker training program for all field personnel involved with the proposed road and trail management project prior to project initiation. The program will consist of a brief presentation by people knowledgeable about the special-status species. The program will include the following: a photograph and description of the special-status species, a description of its ecology and habitat needs, an explanation of the measures being taken to avoid or reduce adverse impacts, and the workers' responsibility under applicable environmental regulations. The worker training may be conducted in an informal manner (e.g., as part of a routine tailgate safety meeting).
- If impacts cannot be avoided, contact the U.S. Fish and Wildlife Service and/or the California Department of Fish and Wildlife to obtain the necessary permits before initiating road and trail management activities. Permit conditions will likely require presence of a biological monitor, installation of exclusion fencing, surveys to relocate or avoid the species, and/or possibly timed or staged road and trail management activities that avoid the species or reduce potential for take or harm.
- If a special-status plant species is detected during work activities, stop work immediately at that location and contact the U.S. Fish and Wildlife Service and/or the California Department of Fish and Wildlife within two working days. Work will not resume at that location until authorization is obtained from the appropriate agency (unless prior approval has already been granted).
- Notify the U.S. Fish and Wildlife Service and/or the California Department of Fish and Wildlife within 24 hours of finding any damaged special-status plant species or any unanticipated damage to plant habitats associated with the proposed action. Notification must include the date, time, and precise location of the specimen/incident, and any other pertinent information. Dead plants should be sealed in a zip lock bag containing a piece of paper indicating the location, date, and time when it was found, and the name of the person who found it; the bag should be frozen in a freezer in a secure location. The MCOSD will contact the California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service within two days and transmit the specimen in the appropriate manner.
- If work occurs during the dry season and is greater than 100 feet from special-status plant species habitat, erosion control and water quality protection measures generally will not be necessary.

Special-Status Plants-3: Ensure Proposed Actions are Consistent with Ongoing Special-Status Plant Management Programs

Some MCOSD preserves (e.g., Ring Mountain and Old Saint Hilary's) have ongoing special-status plant management and monitoring programs. In these locations the MCOSD will ensure that all new proposed road and trail management activities are consistent with the ongoing management of these sites:

- Review existing management plans and analyze proposed actions for consistency against adopted procedures.
- Ensure that new road and trail management projects do not interfere with ongoing management and maintenance activities.

Special-Status Plants-4: Earthwork near Special-Status Plant Populations

Many special-status plants are closely associated with specific soil types or geologic conditions (e.g., serpentine or ultramafic soils). To protect these species, the MCOSD will implement the following practices:

- Use native soil in all MCOSD road and trail management projects in natural habitat areas.

- Do not allow the introduction of incompatible fill near special-status plant populations. Fill will consist of clean, native soils and aggregate materials from other projects within the preserve if available, or it will be purchased from a certified weed-free source before allowing the importation of other materials from outside the preserves. Fill materials will be approved by natural resource staff to ensure compatibility with future restoration/rehabilitation goals.
- Salvage, store, and reuse topsoil. Where activities disturb soil temporarily, the top 6 to 12 inches of topsoil will be salvaged to retain seeds, soil mycorrhizae, and fungi from the excavated or otherwise disturbed area. The salvaged topsoil will be reapplied as a topdressing or topcoat over backfill, unless it is known to contain invasive plant seeds or propagules.

Special-Status Plants-5: Erosion Potential near Special-Status Plants

The MCOSD will seek to prevent erosion near special-status plants. To protect these species, the MCOSD will:

- Unless no feasible alternative is available, avoid using heavy equipment in areas with soils that are undisturbed, saturated, or subject to extensive compaction. Where staging of heavy equipment, vehicles, or stockpiles is unavoidable, the allowable disturbance footprint will be limited and marked with flagging or fencing. Following the end of work, surface soils will be scarified to retard runoff and promote rapid revegetation.
- Maintain a 15 MPH speed limit in sensitive habitat areas. This will reduce the potential for dust impacts on vegetation. For larger projects, roads will be watered for dust control near sensitive resources.
- Immediately rehabilitate areas where project actions have disturbed soil. Areas disturbed by equipment or vehicles will be rehabilitated as quickly as possible to prevent erosion, discourage the colonization of invasive plants, and address soil compaction. Techniques include decompacting and aerating soils, recontouring soils to natural topography, stabilizing soils via erosion-control materials, revegetating areas with native plants, and removing and monitoring invasive plants.
- To minimize erosion and sedimentation, maintain erosion- and sediment-control devices to protect special-status plant populations during ground- disturbing activities and until all disturbed soils have been stabilized. Measures include rice straw, hydromulch, geofabrics, wattles, sediment traps, check dams, drainage swales, and sand bag dikes. Materials must be certified weed-free to prevent the introduction of wheat, barley, and other nonnative plant seeds, must be constructed of natural fibers (e.g., coconut fiber mats, burlap and rice straw wattles, etc.), and may not be constructed with plastic monofilaments or other materials that could entrap snakes or amphibians. If work occurs during the dry season and is more than 100 feet from special- status plant populations, erosion-control and water quality protection measures will not be necessary.

Special-Status Plants-6: Introduction of Invasive and Nonnative Plants and Plant Material

The MCOSD will prevent the introduction of invasive and other nonnative plant material into special-status plant habitats by implementing the following practices:

- To the extent feasible, use plant seeds, cuttings, and other propagules that are collected from the same area as the project site (usually the same watershed or preserve). Allow collection of no more than 5% of any native plant population to prevent over collecting of wild plant material sources.
- To minimize erosion and sedimentation, maintain erosion- and sediment-control devices during ground- disturbing activities and until all disturbed soils have been stabilized. Measures include rice straw, hydromulch, geofabrics, wattles, sediment traps, check dams, drainage swales, and sand bag dikes. Only weed-free materials will be used as erosion- and sediment control devices. Materials must be certified weed- free to prevent the introduction of wheat, barley, and other nonnative plant seeds. Erosion-control materials must be constructed of natural fibers (e.g., coconut fiber mats, burlap and rice straw wattles, etc.) and not of plastic monofilaments or other materials that could entrap snakes or amphibians.
- Do not allow the introduction of incompatible fill near special-status plant populations. Fill will consist of clean, native soils and aggregate materials from other projects within the preserve if available, or it will be purchased from a certified weed-free source before allowing the importation of other materials from outside the preserves. Fill materials will be approved by natural resource staff to ensure compatibility with future restoration/rehabilitation goals.
- Segregate and treat soils and vegetation contaminated with invasive plant seeds and propagules. To prevent the spread of invasive plants, treatment of contaminated soils may include disposal on site within already infested areas, chipping or pile burning and mulching to eliminate viable seeds, or disposal at an approved cogeneration plant or green-waste facility.
- Clean vehicles of contaminated soil, invasive plant seeds, or plant parts before entering the MCOSD preserves, whenever moving equipment between areas within the preserves, and before leaving the preserves. Vehicle-cleaning areas will be established for this purpose. Within the cleaning areas, tires and interior and exterior of vehicles and equipment will be brushed off or hosed down.
- Inspect construction equipment for soil or invasive seeds or plant parts. Contractors will be required to make equipment available for inspection before entering the MCOSD preserves, when moving between sites within the preserves, and before leaving the preserves.

Special-Status Plants-7: Revegetation with Native, Geographically Appropriate Plant Species

The MCOSD will revegetate areas where construction and ground disturbance has occurred, to promote a species composition and vegetative structure that integrates with the surrounding natural community, to the maximum extent possible. This will be accomplished by implementing the following:

- Revegetate with annual grasses and forbs. Use of annual grasses and forbs can provide rapid vegetative cover and initial soil stabilization, and erosion control, promote habitat for native species, and provide a more desirable visual cover.
- Prepare a project-specific revegetation plan. The MCOSD natural resource staff will develop a revegetation plan for projects as needed.
- Wherever possible use locally collected native plant materials from the project footprint and surrounding areas. If possible, plant materials should be collected from within the same watershed or preserve. The MCOSD will allow collection of no more than 5% of any native plant population to prevent over collection of wild plant material sources. If sufficient local plant materials are not available for collection prior to project activities, geographically appropriate native plant materials will be purchased from a local nursery or seed supplier.

Special-Status Plants-8: Worker Awareness Training

The MCOSD will conduct a worker awareness training for all field personnel involved with proposed road and trail management activities prior to initiating the project. The program will include the following:

- a photograph and description of each special-status species, sensitive resource, or invasive plant known from the project area
- a description of its ecology and habitat needs
- potentially confusing resources (e.g., similar species or habitats)
- an explanation of the measures being taken to avoid or reduce adverse impacts
- reporting and necessary actions if sensitive resources are encountered
- workers' responsibility under the applicable environmental regulation

Special-Status Plants-9: Relocation of Special- Status Plants

If special-status species are located in the project area and impacts to these species are unavoidable, plants and/or propagules will be relocated to suitable habitat off site prior to the commencement of construction or management activities. Alternatively, off-site mitigation for impacts could be considered. If special-status wildlife species are located on site, the appropriate resource agency will be contacted, and a qualified biologist possessing any necessary permits will relocate individuals to suitable habitat off site as applicable.

Special-Status Plants-10: Road and Trail Inspections

Regularly inspect road and trail features and associated infrastructure to ensure they are well maintained and posing no threat to surrounding special-status plant resources. Staff will record information pertaining to the spread of invasive, exotic plants that could affect special-status plant habitats and to the status and quality of any known special-status plant populations in the immediate vicinity that could be affected by road or trail use, maintenance, or management activities. Staff will report any findings and make recommended corrective actions if appropriate.

Special-Status Plants-11: Reuse and Replanting of Native Trees and Shrubs

Where feasible, replant excavated trees and shrubs, removed from unstable fill slopes and cut banks, on graded contours to restore the areas with native vegetation and promote native plant habitat. These plants will represent the most locally appropriate materials for restoration and conform to the vegetation types of the surroundings.

Special-Status Plants-12: Ripping and Recontouring Roads

Rip and de-compact road and trail surfaces where appropriate. Ripping surfaces provides a more suitable substrate for recolonization or revegetation by native plant materials. Decommissioned road and trail surfaces will be recontoured and sloped away from wetlands and water bodies to prevent the potential for erosion into these features. Any shoulders, ditches, or embankments will also be removed, and the area graded to a natural contour.

INVASIVE PLANTS BMPs

Invasive Plants-1: Compliance with Integrated Pest Management Ordinance

All herbicide use will be administered under Marin County's Integrated Pest Management (IPM) Ordinance, and work will only be conducted under the supervision of a certified pest control applicator. All herbicide use for vegetation management actions will be posted and reported consistent with the ordinance.

Invasive Plants-2: Herbicide Use near Sensitive Natural Resources

Limit herbicide use within 100 feet of sensitive natural resources. Hand control, mechanical control, and cultural control will be used wherever possible to minimize the use of herbicides near sensitive resources.

Invasive Plants-3: Survey and Control of Invasive Plants in Project Footprint

Before ground-disturbing activities begin, inventory, and prioritize invasive plant infestations for treatment within the project footprint and along access routes. Controlling priority invasive plant infestations at least a year prior to the planned disturbance, if feasible, will minimize invasive plant seeds in the soil.

- Where feasible, survey the road shoulders of access routes for invasive plant species and remove priority invasive plants that could be disturbed by passing vehicles.
- Avoid establishing staging areas in areas dominated by invasive plants. If populations of priority invasive plants occur within or near staging areas, their perimeters will be flagged so that vehicle and foot traffic can avoid them.
- Clean vehicles of contaminated soil, invasive plant seeds, or plant parts before entering the MCOSD preserves, whenever moving equipment between areas within the preserves, and before leaving the preserves. Vehicle-cleaning areas will be established for this purpose. Within the cleaning areas, tires and the insides and outsides of vehicles and equipment will be brushed off or hosed down.
- Inspect construction equipment for soil or invasive seeds or plant parts. Contractors will be required to make equipment available for inspection before entering the MCOSD preserves, when moving between sites within the preserves, and before leaving the preserves.

Invasive Plants-4: Limited Soil Disturbance

Soil disturbance during road and trail projects will be minimized to reduce the potential for introduction or spread of invasive plant species, to protect topsoil resources and to reduce available habitat for new invasive plant species:

- Plan all road and trail management activities to disturb as little area as possible.

Invasive Plants-5: Cleaning of Heavy Equipment, Maintenance Tools, and Fire Management Vehicles

The MCOSD will implement the following procedures when working in or near infested areas:

- Clean vehicles of contaminated soil, invasive plant seeds, or plant parts before entering the MCOSD preserves, whenever moving equipment between areas within the preserves, and before leaving the preserves. Vehicle-cleaning areas will be established for this purpose. Within the cleaning areas, tires and the insides and outsides of vehicles and equipment will be brushed off or hosed down.
- Inspect construction equipment for soil or invasive seeds or plant parts. Contractors will be required to make equipment available for inspection before entering the MCOSD preserves, when moving between sites within the preserves, and before leaving the preserves.

Invasive Plants-6: Reducing Potential for Establishment of Invasive Plants on Disturbed Soil Surfaces

To minimize the establishment of invasive species in disturbed soil areas, the MCOSD will implement one or more of the following actions:

- To minimize erosion and sedimentation, maintain erosion- and sediment-control devices during ground- disturbing activities and until all disturbed soils have been stabilized. Control devices include rice straw, hydromulch, geofabrics, wattles, sediment traps, check dams, drainage swales, and sand bag dikes. Materials must be certified weed-free to prevent the introduction of wheat, barley, and other nonnative plant seeds. Erosion-control materials must be constructed of natural fibers (e.g., coconut fiber mats, burlap and rice straw wattles, etc.) and may not be constructed with plastic monofilaments or other materials that could entrap snakes or amphibians.
- Do not allow the introduction of incompatible fill. Fill will consist of clean, native soils and aggregate materials from other projects within the preserve if available, or it will be purchased from a certified weed- free source before allowing the importation of other materials from outside the preserves. Fill materials will be approved by natural resource staff to ensure compatibility with future restoration/rehabilitation goals.
- Segregate and treat soils and vegetation contaminated with invasive plant seeds and propagules. To prevent the spread of invasive plants, treatment of contaminated soils may include disposal on site within already infested areas, chipping or pile burning and mulching to eliminate viable seeds, or disposal at an approved cogeneration plant or green-waste facility.

Invasive Plant Management-7: Monitor and Control of Invasive Plants in Road and Trail Management Work Areas

- Periodically monitor areas subject to road and trail management activities for a minimum of three years following project completion for the presence of invasive plant species. If invasive plants threaten to become established or spread as a result of project activities, they will be treated in conformance with the Vegetation and Biodiversity Management Plan.

Invasive Plant Management-8: Protection of Streambanks and Water Quality During Invasive Plant Removal

- Install approved erosion-control devices following the removal of invasive plants from streambanks to prevent sediment movement into watercourses and to protect bank stability. The MCOSD will obtain and comply with necessary wetland permits and integrated pest management procedures related to work in and near wetlands. Where appropriate, the MCOSD will also seek guidance from a fisheries biologist regarding the amount of material permissible to remove from stream corridors when controlling large patches of invasive plants, so as to prevent changes in water temperature and quality. If work occurs during the dry season near seasonally wet areas, erosion-control and water quality protection measures generally will not be necessary.

Invasive Plant Management-9: Road and Trail Inspections

Regularly inspect road and trail features and associated infrastructure to ensure they are well maintained and posing no threat to surrounding sensitive biological resources. Inspectors will record information pertaining to invasive exotic plant populations and new infestations that may be threatening sensitive species and habitats. Inspectors will report any findings and make recommended corrective actions if appropriate.

Invasive Plant Management-10: Monitoring Decommissioned Areas

Monitor areas of decommissioned roads and trails for the presence of invasive plant species for two years following decommissioning to ensure no infestations develop. If invasive species are detected at this time, corrective actions will be taken as appropriate.

CONSTRUCTION CONTRACTS BMP

Construction Contracts-1: Standard Procedures in Construction Contracts

When using contractors to perform road and trail management, the MCOSD will include some or all of the following standard procedures into construction contracts.

Time of work. The contractor will work with the MCOSD natural resource staff to determine the optimal timing of contracted work. Many timing restrictions relate to avoiding migration, gestation, or flowering periods for special-status species. Other types of timing restrictions relate to avoiding the spread of invasive plants or scheduling work in wetlands during the dry season.

Work in and near water bodies and wetlands. To protect water quality, the contractor will be required to prepare and implement a stormwater pollution prevention plan for road and trail management work in or near wetlands, ponds, seeps, creeks, tidal areas, or stream crossings. The following practices will be followed to protect these habitats:

- Avoid construction work within a buffer of 100 feet from the ordinary high-water mark of any water body, wetland, or tidally influenced area. If construction work cannot be fully avoided in water bodies, wetlands and riparian areas, the appropriate state and federal agencies will be consulted and permits obtained.
- Within the buffer, restrict activities to the least-harmful methods. For example, herbicides will be restricted to those that are EPA-approved for use near water. Activities that disturb soil or could cause soil erosion or changes in water quality will be prohibited.
- Within the buffer, limit work that may cause erosion to low-flow periods. Low-flow months for local creeks are typically August to October. For tidal areas, work will not occur within two hours of high-tide events at construction sites when high tide is greater than 6.5 feet as measured at the Golden Gate Bridge, using corrections for areas near individual MCOSD preserves. Tide charts are available online from the National Oceanic and Atmospheric Agency/National Weather Service (<http://www.wrh.noaa.gov/mtr/sunset.php>).

Work in and near invasive plant infestations. The contractor will work with the MCOSD natural resource staff to identify any priority invasive plants that occur near the project work area, including the project footprint, access roads, staging areas, and similar work areas. The contractor will agree to comply with requirements to reduce the spread or transport of priority invasive plants related to construction activities. Requirements may include some or all of the following:

- Conduct a training program for all field personnel involved with the proposed road and trail management project prior to initiating the project. The program will consist of a brief presentation by persons knowledgeable about the special-status species, sensitive resource, or invasive plants known from the project area. The program will include the following: a photograph and description of each special-status species, sensitive resource, or invasive plant known from the project area; a description of its ecology and habitat needs; an explanation of the measures being taken to avoid or reduce adverse impact; and the workers' responsibility under the applicable environmental regulation. The worker training may be conducted in an informal manner (e.g., as part of a routine tailgate safety meeting).
- Restrict work to periods when invasive plants are not in fruit or flower.
- Clean vehicles of contaminated soil, invasive plant seeds, or plant parts before entering the MCOSD preserves, whenever moving equipment between areas within the preserves, and before leaving the preserves. Vehicle-cleaning areas will be established for this purpose. Within the cleaning areas, tires and insides and outsides of vehicles and equipment will be brushed off or hosed down.

- Inspect construction equipment for soil or invasive seeds or plant parts. Contractors will be required to make equipment available for inspection before entering the MCOSD preserves, when moving between sites within the preserves, and before leaving the preserves.
- Dispose of green waste in a manner that does not spread invasive plants. Disposal practices may include on-site disposal in an already infested area or off-site disposal in a cogeneration plant or an approved green-waste composting facility.

Work in environmentally sensitive areas. The MCOSD natural resource staff will identify any environmentally sensitive areas in or near construction projects prior to the start of the project. The following practices will be followed to protect these resources: Environmentally sensitive areas may include special-status plant or wildlife species or their habitats; wetlands; creeks, streams, and related riparian areas; and sensitive vegetation types as described in this report.

- Avoid work in environmentally sensitive areas. If work cannot be fully avoided, any applicable regulatory agencies will be consulted and the necessary permits obtained.
- Use locally collected plant materials for revegetation projects. Whenever possible, locally collected native plant materials from the project footprint and surrounding area will be used for revegetation. Plant materials should be collected from within the same watershed or the MCOSD preserve if possible. The MCOSD will allow collection of no more than 5% of any native plant population to avoid over collection of wild plant material sources. If sufficient local plant materials are not available for collection prior to project activities, geographically appropriate native plant materials will be purchased from a local nursery or seed supplier. The contractor will allow the MCOSD to inspect and approve all plant materials and seed prior to use on site.
- Comply with requirements of the MCOSD project permits to protect special-status species and their associated habitats. For road and trail management work in or near special-status species habitat, the contractor is required to comply with requirements of the MCOSD project permits to protect special-status species and their associated habitats before and during construction, and to cooperate with the MCOSD in implementing any state and federal permits and agreements for the project. The special-status species population plus a buffer will be designated as an environmentally sensitive area using lath and flagging, pin flags, or temporary fencing (depending on resource sensitivity to work). The contractor will be required to avoid all designated environmentally sensitive areas during construction. For any special-status species or their habitats that cannot be fully avoided, the contractor will work with the MCOSD to obtain and comply with federal and state Endangered Species Acts, the federal Migratory Bird Treaty Act, and the California Fish and Game Code permits and agreements.
- Restrict soil disturbance and import of nonnative soil or fill material. To reduce the potential for damage of native plants and/or introduction of invasive plants, the contractor will be required to minimize the footprint of soil disturbance to the minimum amount necessary to complete the contracted work. This includes the footprint of access roads, staging areas, and areas of temporary disturbance. The contractor and its staff and subcontractors will agree not to drive off road or drive or park on native vegetation unless approved in advance by the MCOSD natural resource staff. The contractor will agree that if soil excavation is required, every attempt will be made to have a balanced cut-and-fill project that reuses all native soils on site. Nonnative soil or fill material will not be used unless preapproved by the MCOSD natural resource staff.
- To minimize erosion and sedimentation, maintain erosion- and sediment-control devices during ground- disturbing activities and until all disturbed soils have been stabilized. Control devices include rice straw, hydromulch, geofabrics, wattles, sediment traps, check dams, drainage swales, and sand bag dikes. Materials will be certified weed-free to prevent the introduction of wheat, barley, and other nonnative plant seeds. Erosion-control materials will be constructed of natural fibers (e.g., coconut fiber mats, burlap and rice straw wattles) and may not be constructed with plastic monofilaments or other materials that could entrap snakes or amphibians.

Other procedures:

- Keep all entry gates to the project site locked during non-construction hours or locked at all times if not needed for construction access.
- Equip all vehicles with a suitable fire extinguisher.
- Immediately rehabilitate areas where project actions have disturbed soil. Areas disturbed by equipment or vehicles will be rehabilitated as quickly as possible to prevent erosion, discourage the colonization of invasive plants, and address soil compaction. Techniques include de-compacting and aerating soils, recontouring soils to natural topography, stabilizing soils via erosion-control materials, revegetating areas with native plants, and removing and monitoring invasive plants.

CULTURAL RESOURCES BMPs

Cultural Resources-1: Historical and Archaeological Resource Mapping

Prior to constructing any project that would involve ground disturbance outside road or trail beds or other areas previously disturbed when constructing the road and trail system, the MCOSD staff will determine whether or not the project area is located within an area that is mapped as “historically or archaeologically sensitive” according to map 4-1 (Historical Resources) in the Marin Countywide Plan and/or identified as culturally sensitive on other confidential maps on file with the county that list prehistoric or archeological sites. If the project area is identified as sensitive on any of these maps, the site will be field surveyed by a state-qualified archeologist or an archeological consultant recommended by the Federated Indians of Graton Rancheria, who will make recommendations and develop proposals for any procedures deemed appropriate to further investigate and/or mitigate adverse impacts to those resources.

Cultural Resources-2: Consultation with Northwest Information Center

Prior to constructing any project that would involve ground disturbance outside road or trail beds or other areas previously disturbed when constructing the road and trail system, the MCOSD staff will contact the Northwest Information Center of the California Historical Resources Information System and request a records search of known historic and cultural resources within and adjacent to the proposed project area, and seek the determination of the information center coordinator regarding the potential for cultural resources on the site. Should the records request or the recommendation of the coordinator indicate the presence of sensitive resources, the site will be field surveyed by a state-qualified archeologist or archeological consultant recommended by the Federated Indians of Graton Rancheria, who will make recommendations and develop proposals for any procedures deemed appropriate to further investigate and/or mitigate adverse impacts to those resources.

Cultural Resources-3: Tribal Consultation

The following tribal consultations will be conducted prior to any new ground disturbance related to road or trail construction:

- Send the road and trail project description information to the Native American Heritage Commission and request contact information for tribes with traditional lands or places located within the geographic areas affected by the proposed changes.
- Contact each tribe identified by the commission in writing and provide them the opportunity to consult about the proposed project.
- Organize a consultation with tribes that respond to the written notice within 90 days.
- Refer proposals associated with proposed road and trail modifications to each tribe identified by the commission at least 45 days prior to the proposed action.
- Provide notice of a public hearing at least 10 days in advance to tribes and any other persons who have requested that such notice be provided.

Cultural Resources-4: Alteration of Historic Structures

Limit the modification of ranch structures or other historical features to maintain the aesthetic quality, historical setting, and rural character of the preserves.

Cultural Resources-5: Permanent Protection

Where road and trail activities cannot avoid sensitive cultural resources, require modifications to the actions to incorporate the resource and include a resource protection plan for its maintenance and future protection.

Cultural Resources-6: Construction Discovery Protocol

If cultural resources are discovered on a site during construction activities, halt all earthmoving activity in the area of impact until a qualified archeological consultant examines the findings, assesses their significance, and develops proposals for any procedures deemed appropriate to further investigate and/or mitigate adverse impacts to those resources.

Cultural Resources-7: Human Remains

In the event that human skeletal remains are discovered, discontinue work in the area of the discovery and contact the County Coroner. If skeletal remains are found to be prehistoric Native American remains, the coroner will call the Native American Heritage Commission within 24 hours. The commission will identify the person(s) it believes to be the most likely descendant of the deceased Native American. The most likely descendant will be responsible for recommending the disposition and treatment of the remains. The most likely descendant may make recommendations to the landowner or the person responsible for the excavation/grading work for means of treating or disposing of the human remains and any associated grave goods as provided in section 5097.98 of the California Public Resources Code.

Cultural Resources-8: Community Awareness

Increase public awareness of local history and archeology, and the need to protect cultural resources. This may be accomplished by highlighting cultural resources along a road or trail with interpretive signs and information kiosks, and/or by placing a historical marker along the road or trail segment to inform trail users about the importance of the site and/or event.

WATER QUALITY BMPs

Water Quality-1: Modifications to Road and Trail Management Actions to Protect Water Bodies, Wetlands, and Tidally Influenced Areas

Road and trail management activities will be restricted near wetlands and other waters to reduce the potential for sediment or pollutants to enter water bodies or wetlands. If work occurs during the dry season and is greater than 100 feet from creeks and wetlands, erosion control and water quality protection measures will not be necessary.

- If possible, avoid work around water bodies, wetlands, and tidally influenced areas, including a buffer area of 100 feet around these areas (i.e., as measured from the top bank of creeks, streams, or ponds).
- If construction work in wetlands, riparian areas, or tidally influenced areas cannot be fully avoided, consult with the appropriate state and federal agencies. This consultation may result in wetland delineation, permit applications, and mitigation that meets Countywide Plan and other regulatory requirements.
- Within the 100-foot buffer, limit construction activities. Limit activities to least-harmful methods; restrict herbicides to those that are EPA-approved for use near water. Prohibit activities that disturb soil or could cause soil erosion or changes in water quality.
- Within the 100-foot buffer, limit work that might cause erosion to low-flow or low-tide periods. Low-flow months for local creeks are typically August to October. For tidal areas, work will not occur within two hours of high-tide events at construction sites when high tide is greater than 6.5 feet as measured at the Golden Gate Bridge, using corrections for areas near individual MCOSD preserves. Tide charts are available online from the National Oceanic and Atmospheric Agency/National Weather Service (<http://www.wrh.noaa.gov/mtr/sunset.php>).
- Within the 100-foot buffer, minimize erosion and sedimentation by maintaining erosion- and sediment- control devices during ground-disturbing activities and until all disturbed soils have been stabilized. Control devices include weed-free straw, hydromulch, geofabrics, wattles, sediment traps, check dams, drainage swales, and sand bag dikes. Materials must be certified weed-free to prevent the introduction of wheat, barley, and other nonnative plant seeds. Erosion-control materials must be constructed of natural fibers (e.g., coconut fiber mats, burlap and rice straw wattles) and may not be constructed with plastic monofilaments or other materials that could entrap snakes or amphibians.

Water Quality-2: Temporary Erosion and Sediment Control

Temporary sediment-control practices will be implemented when new trail construction or existing trail improvements will result in greater than 1 acre of disturbance. Temporary practices may also be required when disturbance is less than 1 acre but close to a sensitive resource or has the potential to discharge a significant amount of sediments or pollutants to surface water. Several of the listed temporary practices can also be used as post-construction stabilization measures: Information and standard details for temporary erosion-control BMPs can be found in the California Stormwater BMP Handbook – Construction (CASQA 2009).

- Install temporary fencing around staging areas and along limits of construction when work areas are immediately adjacent to sensitive resources. This will limit the disturbance footprint and help protect resources, including native vegetation, wetlands, and streams, during grading operations.
- Install linear sediment barriers to slow and filter stormwater runoff from disturbed areas. Fiber or straw roll barriers can also be spaced along the contours of a disturbed area after construction to prevent concentrated flow and stabilize the area until there is sufficient vegetation coverage.
- Apply one or more of the following to restore or protect areas disturbed by excavation or grading operations:
 - tilling (minimum 6-inch depth) and seeding

- hydromulch and tackifier
- planting
- straw or wood mulch
- coir (jute) netting
- biodegradable erosion-control blankets
- plastic sheeting (only as an interim protection during storm events when construction site is still active)
- Cover soil and loose material stockpiles with weighted plastic sheeting when inactive or prior to storm events.
- Active and inactive material stockpiles will be encircled at all times with a linear sediment barrier.
- Manage sediment when diverting streamflow. When constructing trail or road stream crossings, a temporary clear-water diversion may be required. The following options will be considered for isolating the work area and protecting resources when diverting streamflow via gravity-fed flexible pipe or active pumping around the work area: sand or gravel bag coffer dam enclosed in plastic sheeting, water-filled dam (e.g., Aquadam), sheet piling, and turbidity curtains.
- Manage sediment during dewatering operations. The following options will be considered for applying or containing and treating sediment-laden water produced during dewatering operations: sprinkler system to open area (as long as there is no visible surface runoff), temporary constructed sediment basin or trap, rented sedimentation tank (e.g., Baker Tank).

Water Quality-3: Erosion Control Measures

- Avoid the use of heavy equipment in areas with soils that are undisturbed, saturated, or subject to extensive compaction.
- If no feasible alternative is available and staging of heavy equipment, vehicles, or stockpiles is unavoidable, limit the disturbance footprint and flag or mark the allowable disturbance area in the field. Following the end of work, newly disturbed soils will be scarified to retard runoff and promote rapid revegetation.
- Immediately rehabilitate areas where project actions have disturbed soil. Require areas disturbed by equipment or vehicles to be rehabilitated as quickly as possible to prevent erosion, discourage the colonization of invasive plants, and address soil compaction. Techniques include decompacting and aerating soils, recontouring soils to natural topography, stabilizing soils via erosion-control materials, revegetating areas with native plants, and removing and monitoring invasive plants.
- Leave the roots of target invasive trees and shrubs in place in areas with highly erosive soils or steep slopes. Stumps may be cut or ground down to the ground level.

If work occurs during the dry season and is greater than 100 feet from water bodies and wetlands, erosion control and water quality protection measures will not be necessary.

Water Quality-4: Preventing or Reducing the Potential for Pollution

- Include spill prevention and clean-up in annual staff training sessions.
- Properly use, store, and dispose of chemicals, fuels, and other toxic materials according to manufacturer's specifications and agency regulations.
- Prohibit or restrict equipment refueling, fluid leakage, equipment maintenance, and road surfacing activities near wetlands. Fuel storage and refueling will occur in safe areas well away from wetlands; safe areas may include paved or cleared roadbeds and other contained areas, such as lined truck beds.
- Equipment and vehicles will be inspected regularly for hydraulic and oil leaks, and leaking vehicles will not be allowed on the MCOSD preserves. Drip pans will be placed underneath equipment

stored on site. Vehicles and construction equipment will be maintained in good working condition, and any necessary on-site servicing of equipment will be conducted away from the wetlands.

- Require all contractors to possess, and all vehicles to carry, emergency spill containment materials.
- Absorbent materials will be on hand at all times to absorb any minor leaks and spills.

Water Quality-5: Road and Trail Inspections

Inspect roads and trails for conditions that might adversely affect water quality or other resources. Road and trail maintenance staff will use road/trail inspection forms to facilitate complete and consistent data capture and reporting of the following conditions:

- concentrated flows on roads and trails that cause erosion, rilling, or gulying
- runoff and effects to water quality of nearby habitats
- the spread of invasive exotic plants near wetlands and waters
- the status and quality of any known sensitive resources in the immediate vicinity that could be affected by road or trail use and/or maintenance

Staff will report any findings and make recommended corrective actions if appropriate.

Water Quality-6: Grading Windows

Restrict grading activity to the dry months (generally May 15 – October 15), when associated erosion will be reduced to the maximum extent possible.

Water Quality-7: Culvert Inspection

Inspect culverts on a regular basis. Inspections will ensure that culverts do not clog with sediment or debris. Blocked culverts may affect water quality, change the water course, increase erosion or sediment runoff, or affect wildlife. Any materials blocking culverts will be removed and disposed of outside of the watercourse in an area not subject to erosion. If a significant blockage or sedimentation exists, the MCOSD will plan and implement corrective actions as necessary. Excavation of sediments within streams may require a maintenance permit from the U.S. Army Corps of Engineers, the California Department of Fish and Wildlife, and/or the San Francisco Water Quality Control Board.

Water Quality-8: Proper Disposal of Excess Materials

Avoid resource impacts when disposing of materials. Any excess material related to new construction, maintenance, or decommissioning (including soils, debris, trash, or other materials that need to be removed as part of management activities) will be disposed of at an appropriate site where materials could not impact sensitive resources. For example, grading-related excess soils or removed debris will not be placed in or around a water body or wetland, where the materials could be subject to erosion that would affect water quality.

Water Quality-9: Sidecasting Construction Material

Avoid sidecasting, or at a minimum contain and remove sidecast material when it has the potential to reach surface waters. The following “rules of thumb” based on Fishnet 4C Guidelines (2007) will be used as guidance:

Slope Gradient	Distance to Watercourse	Sidecast Rule
Any Slope	Will likely enter watercourse	Not Allowed
Less than or equal to 20 percent	Greater than 150 feet	Allowed
Less than or equal to 50 percent	Greater than 300 feet	Allowed
Greater than 50 percent	Long vegetated slope	Allowed
Greater than 50 percent	Shorter, sparsely vegetated slope	Not Allowed

GEOLOGIC HAZARDS BMPs

Geologic Hazards-1: Assessment and Requirements in Areas of Potential Geologic Hazard

Given the unique and potentially high risks associated with geologic hazards, general best management practices for these types of potential impacts are not appropriate. Instead, when new trails or trail improvements are proposed in preserve areas with a propensity for geologic instabilities, including slides or debris flows in the more elevated areas and subsidence or liquefaction in the low-lying areas, a site assessment will be conducted by a certified geologist or geotechnical engineer. If geologic hazards are confirmed in the area, the site assessment will propose adequate avoidance measures or engineering elements to ensure trail and infrastructure stability and maintained public safety.

Geologic Hazards-2: Construction in Areas of Slides and Debris Flows

In areas of identified slide and debris flow hazards, locate and design new trails, drainage improvements, or irrigation so as not to alter the shape or stability, or change the drainage or groundwater conditions, of an existing slide area. Such alterations would potentially result in reactivation or further destabilization of the slope.

Geologic Hazards-3: Construction in Areas of Erodible and Expansive Soils

Use avoidance tactics or engineered grading to mitigate adverse geologic conditions and potential hazards. Prior to final road or trail project design, consult with engineering geologists and/or geotechnical engineers to identify and implement mitigating road or trail designs for new facility locations or when improving existing facilities.

Geologic Hazards-4: Construction in Areas of Collapsible Soils

In any of the lower elevation preserves (i.e., those near sea level) assess soil type and the potential for subsidence to determine optimum trail location and structural foundations necessary to avoid collapsible soils. In consultation with a certified geologist or geotechnical engineer, design roads and trails to avoid or reduce this potential hazard through optimizing location or by implementing appropriate engineering designs.

AIR QUALITY BMPs

Air Quality-1: Implement BAAQMD Measures

As part of the review process required under the California Environmental Quality Act, the MCOSD will use the current Bay Area Air Quality Management District guidelines to evaluate the significance of air quality impacts from road and trail management plans and projects, and to establish appropriate mitigation requirements.

Air Quality-2: Minimize Dust Control Emissions during Construction

The MCOSD will require its staff or contractors to implement appropriate Bay Area Air Quality Management District control measures for emissions of dust during construction of all road and trail modifications and improvements. The following basic control measures cover routine operation and maintenance and day-to-day upkeep of roads and trails, minor road and trail reconstruction, and minor decommissioning activities, they also cover changes in use, the conversion of a road to a trail, or any proposed action that does not involve construction activities, but an increase or decrease in the level of activity:

- Water all active construction areas at least twice daily.
- Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least 2 feet of freeboard (vertical space between the top surface of the material and the top of the hauling container).
- Pave, apply water three times daily, or apply nontoxic soil stabilizers on all unpaved access roads, parking areas, and staging areas at construction sites.
- Sweep daily (with water sweepers) all paved access roads, parking areas, and staging areas at construction sites.
- Sweep streets daily (with water sweepers) if visible soil material is carried onto adjacent public streets.

Air Quality-3: Enhanced Dust Control during Construction

The following enhanced control measures cover major road and trail reconstruction, rerouting, and decommissioning activities, such as repairing, replacing, or restoring heavily used and wide road and trail segments; they also cover resurfacing, replacing, and restoring trailhead areas and installing new water quality and drainage features:

- Hydroseed or apply nontoxic soil stabilizers to inactive construction areas (previously graded areas inactive for ten days or more).
- Enclose, cover, water twice daily, or apply nontoxic soil binders to exposed stockpiles (dirt, sand, etc.).
- Limit traffic speeds on unpaved roads to 15 miles per hour.
- Install sandbags or other erosion-control measures to prevent silt runoff to public roadways.
- Replant vegetation in disturbed areas as quickly as possible.

Air Quality-4: Dust Control during Construction in Sensitive Resource Areas

The MCOSD will require its staff or contractors to implement appropriate Bay Area Air Quality Management District optional control measures for emissions of dust during construction of all road and trail modifications and improvements that are large in area, located near sensitive resources, or which for any other reason may warrant additional emission reductions. The following measures cover rerouting road and trail alignments, significant decommissioning or restoration activities, and the construction of a new road and trail alignment on undisturbed land to connect previously unconnected points:

- Install wheel washers for all exiting trucks or wash off the tires or tracks of all trucks and equipment leaving the site.
- Install wind breaks, or plant trees/vegetative wind breaks, at windward side(s) of construction areas.
- Suspend excavation and grading activity when winds (instantaneous gusts) exceed 25 miles per hour.
- Limit the area subject to excavation, grading, and other construction activity at any one time.

NOISE BMPs

Noise-1: County Noise Ordinance Requirements

For all maintenance and construction projects using powered or heavy equipment, implement the day and time restrictions for equipment operation and maintenance specified by Marin County Ordinance 3431, Construction Noise.

Noise-2: Noise Control during Construction within and adjacent to Sensitive Wildlife Populations

- Ensure that equipment and vehicles utilize the best available noise-control techniques (e.g., improved mufflers, equipment redesign, and use of intake silencers, ducts, engine enclosures and acoustically attenuating shields or shrouds) to prevent disturbance of nearby wildlife populations.

Except for emergency projects, prohibit nighttime operations or planned operations during breeding season in areas adjacent