

COASTAL CONSERVANCY

Staff Recommendation  
March 22, 2018

**LAGUNITAS CREEK FLOODPLAIN AND RIPARIAN ENHANCEMENT  
IMPLEMENTATION**

Project No. 16-020-02  
Project Manager: Joel Gerwein

**RECOMMENDED ACTION:** Authorization to disburse up to \$5,000 to Turtle Island Restoration Network to restore floodplain and riparian coho salmon rearing habitat on a one mile reach of Lagunitas Creek, Olema, Marin County, and to adopt the Mitigated Negative Declaration and Mitigation Monitoring and Reporting Program for the project.

**LOCATION:** Olema, Marin County

**PROGRAM CATEGORY:** Integrated Coastal and Marine Resources Protection

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**EXHIBITS**

- Exhibit 1: [Project Location](#)
- Exhibit 2: [Project Designs](#)
- Exhibit 3: [Site photographs](#)
- Exhibit 4: [Final Initial Study and Mitigated Negative Declaration and Mitigation, Monitoring and Reporting Plan](#)
- Exhibit 5: [Project Letters](#)

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**RESOLUTION AND FINDINGS:**

Staff recommends that the State Coastal Conservancy adopt the following resolution pursuant to Section 31220 of the Public Resources Code:

“The State Coastal Conservancy hereby authorizes the disbursement of an amount not to exceed \$5,000 (five thousand dollars) to Turtle Island Restoration Network (TIRN) to restore floodplain and riparian coho salmon rearing habitat along a one mile reach of Lagunitas Creek near the community of Olema, Marin County. The Conservancy adopts the *Lagunitas Creek Floodplain and Riparian Restoration Project Environmental Assessment and Initial Study/Mitigated Negative Declaration (IS/MND)* and the Mitigation Monitoring and Reporting Program (MMRP) (both attached to the accompanying staff recommendation as Exhibit 4). This authorization is subject to the following conditions:

1. Prior to commencement of the project, TIRN shall submit for the review and approval of the Executive Officer:
  - a. A work plan, schedule, budget, and the names of any contractors or subcontractors to be retained for implementation of the project.
  - b. Evidence that all permits and approvals necessary to the project have been obtained.
  - c. Evidence that all necessary funds for implementation of the project have been obtained.
  - d. A plan for the installation of a sign acknowledging Conservancy funding.
2. In implementing the project, TIRN shall comply with all mitigation measures and monitoring and reporting requirements for the project that are identified in the IS/MND and MMRP and in any permits, approvals or additional environmental documentation required for the project.”

Staff further recommends that the Conservancy adopt the following findings:

“Based on the accompanying staff report and attached exhibits, the State Coastal Conservancy hereby finds that:

1. The proposed project is consistent with the current Project Selection Criteria and Guidelines.
2. The proposed project is consistent with the purposes and objectives of Chapter 5.5 of Division 21 of the Public Resources Code, regarding integrated coastal and marine resources protection projects.
3. The Conservancy has independently reviewed and considered the information contained in the *Lagunitas Creek Floodplain and Riparian Restoration Project Environmental Assessment and Initial Study/Mitigated Negative Declaration (IS/MND)* and public comments received on this document, pursuant to its responsibilities under the California Environmental Quality Act (“CEQA”). The IS/MND has been completed in compliance with CEQA and reflects the Conservancy’s independent judgment and analysis.
4. The IS/MND identifies potentially significant effects of the project in the areas of air quality, biological resources, cultural resources, hazards/hazardous materials, hydrology/water quality, transportation/traffic, and tribal cultural resources. As modified by incorporation of the mitigation measures identified in the IS/MND, the project will avoid, reduce, or mitigate all of the possible significant environmental effects of the project to a level that is less than significant. Based on the record as a whole, there is no substantial evidence that the implementation of the Lagunitas Creek Floodplain and Riparian Enhancement Project, as mitigated, will have a significant effect on the environment.
5. The Turtle Island Restoration Network is a nonprofit organization existing under section 501(c)(3) of the U.S. Internal Revenue Code, and whose purposes are consistent with Division 21 of the Public Resources Code.”

**PROJECT SUMMARY:**

Staff recommends that the Conservancy disburse up to \$5,000 to Turtle Island Restoration Network (TIRN) to restore riparian and floodplain coho salmon rearing habitat along a one mile reach of Lagunitas Creek near the community of Olema in Marin County (Exhibits 1-3). Restoration of coho habitat in Lagunitas Creek is identified as a core priority by the National Oceanic and Atmospheric Administration (NOAA) and the California Department of Fish and Wildlife (CDFW) in their respective coho recovery plans. The proposed project will implement a design prepared by the grantee with a Conservancy grant to restore a historic river floodplain located on National Park Service (NPS) lands. The project is designed to restore the functions of the floodplain and create critical coho salmon rearing habitat in Lagunitas Creek in Marin County. The project consists of the removal of abandoned structures and 13,000 cubic yards of retaining walls and landfill; regrading of the floodplain to restore hydrologic connectivity with the channel and provide off-channel habitat; placement of ten large woody debris structures in the creek to improve hydrologic floodplain function and offer flood refuge for endangered salmonids, as well as numerous other wildlife species; and removal of invasive plants and planting of native plants in the floodplain. This project will restore hydrologically connected floodplains and redwood forests with high quality aquatic habitat that is essential to sensitive populations of coho salmon, steelhead, and endangered California freshwater shrimp. The project will be carried out by TIRN through its Salmon Protection and Watershed Network (SPAWN) program.

The project area is located in the abandoned historic community of Jewell, which consisted of approximately 15 houses and additional accessory structures. In 2016, during an earlier phase of the project, the NPS removed abandoned structures from the project area. The NPS provided \$563,000 in funds and staff time, removing 15 abandoned homes, 10 garages, 9 sheds, and 1,150 feet of chain link fencing from the project area.

The project will remove the fill and remnants of structures built in the riparian corridor, creating floodplain and riparian habitat (Exhibits 2 and 3). Grading will take place in two parts of this one mile reach, separated by ~2,000 ft, referred to on the design sheets and in the IS/MND as Sites 1 and 2 (Exhibit 2). SPAWN will first remove residential structure remnants, such as elements of house foundations, stairs, patios, and septic tanks. Following removal of these hardscape features, the project area will be regraded to remove fill and create transitional slope, floodplain, backwater alcove, and high-flow channel and perennial channel features. In-channel habitat structures will be installed to improve and enhance existing and proposed channel features in the project reach. The project area will also be enhanced by removal of invasive and non-native plant species. Once non-native vegetation is removed, the area will be revegetated using appropriate native plant species. Banks below Sir Francis Drake Blvd that may be susceptible to erosion will be protected with brush mattress, vegetated rock, and buried rock structures. The project includes removal of approximately 1.20 acres of former developed area, and restoration of 2.71 acres of transitional riparian and channel habitat.

Sixty years ago, estimates of the annual Central California Coho population in the Lagunitas Creek Watershed were about 6,000. Now the annual population of adult coho is less than 400 female spawning fish, a greater than 90% decline from historic numbers. This watershed serves a critical role as habitat for endangered coho smolts, but a primary constraint on coho smolt production in the Lagunitas Watershed is winter habitat, which provides low velocity refugia and

side-channel habitats (Lagunitas Limiting Factors Analysis, Stillwater Sciences, 2008; San Geronimo Creek Enhancement Plan, Prunuske Chatham Inc. 2009). The only undammed headwaters of Lagunitas Creek are in the San Geronimo Creek Watershed, which are characterized by confined channels with high gradients and incised channels with stream-side development. Salmonid juvenile habitat is very limited in the San Geronimo Watershed, so most smolts rear in the lower reaches of the watershed along Lagunitas Creek including in the project area. These studies and the annual population monitoring done by the Marin Municipal Water District, SPAWN, and NPS all predict that that fish emigrating from the constrained upstream habitat during winter are able to survive long enough to smolt by residing in the mainstem of Lagunitas Creek, primarily in the reach of this project area. Prunuske Chatham Inc. identified the Tocaloma area, included in this project reach, as having the highest potential for the restoration of low velocity, off-channel habitat, despite the fact that a large portion of the reach consists of limited off-channel floodplain habitats as a result of past development (Prunuske Chatham Inc 2009).

The reach of Lagunitas Creek that is the focus of this project was historically a wide alluvial valley floodplain with excellent habitat for coho and steelhead but, beginning in the 1930's, was utilized for the development of numerous large, rural residential properties. Fill was placed in the floodplain for the housing developments, resulting in a 50% reduction in accessible floodplain habitat in this one mile reach of the creek. Historic development cut off 0.5 miles of historic side channels and oxbow features from the mainstem, elevated the floodplain and disconnected it from the creek, and introduced concrete retaining walls, concrete fill, patios, fences and decks built along the creek that have led to severe channel entrenchment. The creek and riparian area also contain extensive sections of non-native vegetation, an absence of once abundant mature conifer canopy vegetation, and inadequate large woody debris for habitat cover (ESA and SPAWN 2015, "Lagunitas Creek Floodplain and Riparian Enhancement Feasibility Study"). Non-native vegetation including bamboo, vinca, ivy, and Himalayan blackberry covers large portions of the properties within the floodplain area and are threatening the establishment and survival of native vegetation, especially coastal redwood trees that were abundant in this reach prior to the logging in the 1890's. Redwoods are critical to the survival of coho, providing many benefits including bank stability, thermal cover, food, and carbon sequestration. Redwood forests and their associated floodplain habitat need to be re-established in this reach in order to restore high quality coho habitat.

The planning and design phase of the project, funded by the Conservancy and now nearly completed, involved environmental compliance work, including analysis of potential impacts under the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA), and the preparation of necessary permit applications. A combined environmental assessment and initial study/mitigated negative declaration was prepared to satisfy the requirements of CEQA and NEPA. Based on the joint CEQA-NEPA document, the NPS intends to issue a Finding of No Significant Impact (FONSI). CEQA and NEPA work also included public outreach to solicit input in scoping and designing the project, including meetings to present and discuss the proposed design to the interested public. The Conservancy is the CEQA lead agency, and the NPS is the lead NEPA agency. An application to the US Army Corps of Engineers for a Clean Water Act Section 404 permit and an application to CDFW for a Safe Harbor Agreement for compliance with the California Endangered Species Act have been submitted. An application to the San Francisco Bay Regional Water Quality Control Board for a

Clean Water Act Section 401 permit has been prepared but not yet submitted. The NPS has submitted a biological opinion to the USFWS and National Marine Fisheries Service as part of compliance with the federal Endangered Species Act. The following permit applications are currently being prepared: CDFW Section 1600 Streambed Alteration Agreement, Marin County Encroachment Permit, and NPS Land Use Permit.

The native plants to be used for the project include 1,500 locally-sourced plants that were propagated as part of the previous phase of the project. The plant materials were propagated from seeds and cuttings collected from permitted areas entirely within the Lagunitas Creek Watershed. As part of an ongoing partnership with Oakland High School (OHS) in West Oakland, SPAWN brought 1,200 students to Lagunitas Creek over the course of the previous phase of the project to participate in the propagation of native redwood trees that will be planted at the site. SPAWN will work with volunteers to plant natives in the project area.

TIRN is highly qualified to carry out this work. TIRN has been involved with habitat restoration, research, and planning projects in the Lagunitas Creek Watershed for 23 years and has been responsible for implementing 35 habitat restoration, protection, and planning projects totaling \$2.7 million. These projects have included unpaved road upgrades, floodplain restoration, culvert replacement, stream bank stabilization, dam removal, land acquisition, riparian vegetation restoration, habitat planning, salmonid population monitoring, and water quality monitoring. TIRN has been awarded four achievement awards by the California Salmonid Restoration Federation for excellence in designing and implementing habitat restoration projects.

**Site Description:** The project area is located along a one-mile stretch of Lagunitas Creek beginning 6.4 miles above the Highway 1 Bridge in Point Reyes Station, CA (see Exhibit 1). This stretch of creek is located entirely within the Golden Gate National Recreation Area. Sir Francis Drake Blvd. runs parallel with Lagunitas Creek through the project reach. The project extends from the TIRN offices to the downstream extent of the Samuel P. Taylor State Park border. The characteristics of the creek and floodplain in the project area are described above in the “Project Summary” section.

**Project History:** The Conservancy has supported recovery efforts for coho salmon and other fish and wildlife species in the Lagunitas Creek watershed for many years. The Conservancy funded County of Marin (County) fish passage improvement project on Woodacre Creek in the Lagunitas Creek watershed in 2008. The Conservancy provided a \$100,000 grant to the County in 2008 to prepare an enhancement plan for San Geronimo Creek, a tributary to Lagunitas Creek, and a second grant to implement the plan in 2010. TIRN submitted a proposal for the proposed project’s design and permitting phase to the Conservancy’s second Proposition 1 grant round in December 2015, and the Conservancy authorized a grant of \$490,578 for that phase in May 2016. The planning and design phase is nearly complete. TIRN approached Conservancy staff to request that the Conservancy act as lead CEQA agency and provide a small grant to facilitate implementation in January 2017.

## PROJECT FINANCING

Coastal Conservancy	\$5,000
California Department of Fish and Wildlife	\$935,467

State Water Resources Control Board	\$800,000
<b>Project Total</b>	<b>\$1,740,467</b>

The Conservancy’s funds for project implementation are expected to come from the Conservancy’s FY 2000-2001 appropriation from the Habitat Conservation Fund (“HCF”) (under the “California Wildlife Protection Act of 1990,” Fish and Game Code section 2785 et seq.). The Conservancy may use HCF funds for the restoration or enhancement of wetlands, and for restoration or enhancement of aquatic habitat for spawning and rearing of anadromous salmonids and trout resources. (Fish & Game Code section 2786(d) and (e)). Since the proposed project will restore floodplain and riparian habitat for coho salmon, an anadromous salmonid, the proposed project is an appropriate use of HCF funds.

The California Department of Fish and Wildlife (CDFW) is expected to provide \$935,467 in Proposition 1 funding for project implementation. CDFW indicated its intent to award those funds to TIRN for the project in December 2016. The State Water Resources Control Board intends to provide \$800,000 in 319(h) nonpoint source pollution control grant funds for the project.

TIRN will provide in-kind contributions of survey field equipment including field vehicles, waders, GPS units, and volunteer labor. SPAWN’s in-kind contribution is valued at approximately \$89,000.

**CONSISTENCY WITH CONSERVANCY’S ENABLING LEGISLATION:**

The proposed project is undertaken pursuant to Chapter 5.5 of Division 21 of the Public Resources Code (Section 31220), as follows:

Pursuant to Section 31220(b)(2), the Conservancy may undertake projects to protect and restore coastal habitats if the project “protects or restores fish and wildlife habitat within coastal and marine waters and coastal watersheds.” Consistent with this section, the proposed project will restore and enhance riparian areas that provide habitat for fish and wildlife, including listed species, in the Lagunitas Creek watershed.

Consistent with section 31220(a), the Conservancy has consulted with the State Water Resources Control Board in the development of the project to ensure consistency with Chapter 3 of Division 20.4 of the Public Resources Code regarding water quality. (See Exhibit 3, Project Letters).

Section 31220(c) states that “projects funded pursuant to this section shall include a monitoring and evaluation component and shall be consistent with the following, if available and relevant to the project...” A monitoring plan has been prepared as part of the project. The proposed project is consistent with applicable and relevant Integrated Regional Water Management programs, local watershed management plans, and water quality control plans adopted by the state or regional water quality control boards, as discussed in the “Required Criteria” and “Consistency with Local Watershed Management Plan/State Water Quality Plan” sections below.

**CONSISTENCY WITH CONSERVANCY'S 2018-2022 STRATEGIC PLAN  
GOAL(S) & OBJECTIVE(S):**

Consistent with **Goal 6, Objective B** of the Conservancy's 2018-2022 Strategic Plan, the proposed project will restore 2.7 acres of the Lagunitas Creek stream corridor. Lagunitas Creek is a coastal watershed.

Consistent with **Goal 6, Objective D** of the Conservancy's 2018-2022 Strategic Plan, the proposed project will implement a project to enhance floodplains in Lagunitas Creek, a coastal watershed.

Consistent with **Goal 6, Objective E** of the Conservancy's 2018-2022 Strategic Plan, the proposed project will restore fish habitat and provide in-stream habitat and favorable water temperatures in Lagunitas Creek, a coastal watershed and floodplain area.

Consistent with **Goal 4, Objective A** of the Conservancy's 2018-2022 Strategic Plan, the proposed project will support a program to improve public understanding of coastal resources by working with youth and other volunteers to plant native plants as part of the Lagunitas Creek floodplain restoration and educating them about salmon habitat.

**CONSISTENCY WITH CONSERVANCY'S  
PROJECT SELECTION CRITERIA & GUIDELINES:**

The proposed project is consistent with the Conservancy's current Project Selection Criteria and Guidelines, in the following respects:

**Required Criteria**

1. **Promotion of the Conservancy's statutory programs and purposes:** See the "Consistency with Conservancy's Enabling Legislation" section above.
2. **Consistency with purposes of the funding source:** See the "Project Financing" section above.
3. **Promotion and implementation of state plans and policies:** The project will help implement two priority actions identified in the 2014 *California Water Action Plan* (CWAP):  
  
Action 4: Protect and Restore Important Ecosystems. The project will implement this action by restoring riparian and instream habitat in Lagunitas Creek, a coastal watershed, which will provide valuable fish and wildlife habitat.  
  
Action 8: Increase Flood Protection. The CWAP calls for action to address flooding threats due to aging levee infrastructure and sea level rise due to climate change. The project will implement this action by restoring floodplain areas that will increase floodplain storage and channel conveyance on Lagunitas Creek, providing protection for downstream residents in the watershed from flooding and storm damage that will increase with sea level rise.

The project will implement a Management Measure identified in the *California Nonpoint Source Pollution Control Program* prepared by the State Water Resources Control Board in 2000: MM6B- Restoration of Wetlands and Riparian Areas. The project will further the following statewide goal of the *California Wildlife Action Plan* (Wildlife Plan), prepared by the California Department of Fish and Wildlife in 2015:

Goal 3.3 (Hydrological Regime): Maintain or improve hydrological regimes vital for sustaining ecosystems (including riverine, lacustrine, and estuarine hydrodynamics). (pg. 4-3)

The project will further Goal 3.3. by reconnecting Lagunitas Creek with its floodplain. Floodplain connectivity will improve the creek's hydrologic regime by reducing the flashiness of the hydrograph and allowing for sediment deposition in the floodplain. Sediment deposition in the floodplain will reduce the threat of the loss of conveyance capacity in the creek, which would disrupt the hydrologic regime.

The project will help meet the following goals identified by the Wildlife Plan for North Coastal Riparian Forest and Woodland on the North Coast:

By 2025, acres of habitat (riparian) are increased by at least 5 percent from 2015 acres.

By 2025, acres where native species are dominant are increased by at least 5 percent from 2015 acres.

By 2025, acres/miles with desired channel pattern (natural floodplain) are increased by at least 5 percent from 2015 acres/miles.

By 2025, miles connected (to natural floodplain) are increased by at least 5 percent from 2015 miles. (pg 5.1-37-38)

The project will further these goals by restoring 2.7 acres of riparian habitat where native species are dominant, and reconnecting approximately one mile of Lagunitas Creek to its floodplain.

The project will help implement the following conservation strategies identified by the Wildlife Plan for anadromous salmonids statewide:

Enhance and protect key spawning and rearing habitat for each specific anadromous species; and

Restore marsh and riparian habitat to improve carrying capacity of anadromous fishes;

(pg. 6-19)

The project will further these strategies by enhancing rearing habitat for coho salmon and steelhead in Lagunitas Creek and restoring 2.7 acres of riparian habitat which will benefit coho salmon by providing winter refugia from high flows for juveniles.

The project will help implement the following tasks identified in the *Recovery Strategy for California Coho Salmon*, prepared by CDFW in 2004:

- Lagunitas Creek Task BM-LA-16: Recommend the NPS continue practices to benefit coho salmon, which include restoration projects.

- Rangewide- Task XIII-C-02: Where appropriate and feasible, work with all parties, including landowners, to reconfigure levees and channelized streams to benefit coho salmon.
  - Rangewide- Task XV-B-01: Maintain or re-establish geographic distribution of coho salmon by continuing to allocate substantial improvement efforts towards identified key refugia with substantial coho salmon populations and/or otherwise suitable conditions.
  - Rangewide- Task XXII-A-04 Encourage restoration of LWD and shade by improvement of existing riparian zones through planting, release of conifers or other appropriate native species, and control of blackberries and other competitors.
4. **Support of the public:** The project is broadly supported, including by Marin County Supervisor Damon Connolly, Congressman Jared Huffman, and Assembly Member Marc Levine (Exhibit 5).
  5. **Location:** The Lagunitas Creek watershed is a coastal watershed, but the project area is located just outside the coastal zone, one mile upstream of the boundary of Samuel P. Taylor State Park. Although the project area is located outside the coastal zone, it provides critical habitat to maintain and restore salmon and steelhead populations, a coastal resource.
  6. **Need:** The project will not occur without the Conservancy taking part as a funder and lead CEQA agency. None of the other partners are able to serve as lead CEQA agency.
  7. **Greater-than-local interest:** The public trust value of California’s salmon and steelhead populations, valuable state resources, warrant the enhancement of historically rich but degraded habitat areas, such as the Lagunitas Creek watershed. The watershed is prioritized for restoration in federal and state recovery plans for coho salmon, as discussed above.
  8. **Sea level rise vulnerability:** The project area is not tidally influenced and will not be vulnerable to flooding related to sea level rise.

**Additional Criteria**

9. **Urgency:** The precarious status of salmonid populations makes it urgent to move forward with restoration planning on Lagunitas Creek.
10. **Leverage:** See the “Project Financing” section above.
11. **Readiness:** TIRN expects to be ready to proceed with the project in summer 2018. All other funding has been secured and most of the required permit applications have been submitted or prepared.
12. **Realization of prior Conservancy goals:** See “Project History” above.
13. **Cooperation:** The public and TIRN will contribute significantly to the project as discussed above in the “Project Summary” section.
14. **Vulnerability from climate change impacts other than sea level rise:** The project design addresses higher flows expected from storm events of increasing severity expected to result from climate change, and is designed to reduce flooding of downstream reaches by increasing flood storage and channel conveyance capacity in the project reach.

**15. Minimization of greenhouse gas emissions:** The project includes measures to avoid or minimize greenhouse gas emissions to the extent feasible and consistent with the project objectives, such as minimizing grading to the extent feasible, utilizing live trees onsite in the construction of large woody debris structures, and minimizing haul distances for excess fill material removed by the project.

**CONSISTENCY WITH LOCAL COASTAL PROGRAM POLICIES:**

While the project is located outside the coastal zone, it will facilitate floodplain and riparian habitat restoration for a reach of Lagunitas Creek, which drains to Tomales Bay. This project will enhance the scenic values and wildlife habitat values of the Lagunitas Creek watershed. The proposed project is therefore consistent with the Coastal Act, section 30231 which states “(t)he biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained, and, where feasible, restored through, among other means, minimizing adverse effects of waste water discharges and entrainment, controlling runoff, preventing depletion of groundwater supplies and substantial interference with surface waterflow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.” (Pub. Res. Code § 30231). By reversing past inappropriate land use practices, the proposed project will expand, protect and enhance the aquatic and riparian habitat of Lagunitas Creek for the benefit of federally listed salmonids. Units I and II of the Marin County LCP identify Marin’s numerous coastal zone streams and creeks as sensitive habitats for many species of birds and fish. Lagunitas Creek contains runs of coho and steelhead and is specifically highlighted in the LCP. (LCP, Unit II at p. 65).

Sedimentation, water pollution, and protection of riparian habitats are identified as the key concerns for protecting the aquatic resources of the Lagunitas Creek watershed, and the Tomales Bay ecosystem into which Lagunitas Creek flows. (LCP, Unit II at pp. 66-67). Because the proposed project will restore riparian and in-stream habitat to a portion of the Lagunitas Creek watershed, restore the in-stream habitat of the project areas, and improve sediment transport by restoring connectivity with the floodplain and reducing channel entrenchment, the proposed project is consistent with the LCP Policies.

**CONSISTENCY WITH LOCAL WATERSHED MANAGEMENT PLAN/  
STATE WATER QUALITY CONTROL PLAN:**

The project is consistent with, and furthers the goals of, the Tomales Bay Watershed Stewardship Plan, prepared by the Tomales Bay Watershed Council in July 2003. The project is consistent with Goal B of the Tomales Bay Watershed Stewardship Plan, as implementation would improve the integrity of natural habitats and native communities.

The project is also consistent with the Tomales Bay Integrated Coastal Watershed Management Plan (“ICWMP”), completed in September 2007. The ICWMP is a cooperative effort by the Tomales Bay Watershed Council, Bolinas Community Public Utilities District, Inverness Public Utility District, Marin Municipal Water District, and North Marin Water District to identify management strategies and regional and projects that meet multiple objectives for the Tomales

Bay region. The project is consistent with ICWMP Objective 5, as the project would improve streams and riparian areas for native species, including salmonids and redwoods (ICWMP at p. 3-12). The project is consistent with ICWMP Objective 6, as implementation would improve habitats of special status species, including coho salmon and steelhead, California freshwater shrimp, Northern spotted owl, and California red-legged frog (ICWMP at p. 3-12).

The proposed project is also consistent with the Water Quality Control Plan for the San Francisco Bay Basin (adopted by the Regional Water Quality Control Board Central Coast Region in 1995 and reviewed every three years (“Water Quality Control Plan”) in that it will enhance fish and wildlife habitat, including habitat for federally-listed species steelhead and coho salmon in the Lagunitas Creek watershed. The project will protect and improve the following beneficial uses identified for the Lagunitas Creek watershed in the Water Quality Control Plan (Table 2-1):

- Cold Freshwater Habitat
- Wildlife Habitat
- Preservation of Rare and Endangered Species
- Fish Migration

#### **COMPLIANCE WITH CEQA:**

As the lead agency under the California Environmental Quality Act (CEQA), Conservancy staff prepared, with the assistance of consultants and TIRN, the *Lagunitas Creek Floodplain and Riparian Restoration Project Environmental Assessment and Initial Study/Mitigated Negative Declaration* (IS/MND).

The IS/MND analyzes the potential environmental effects of the proposed project. A CEQA scoping notice was released on March 24, 2017 and was open for 30 days. Two comments were received, one from Marin Audubon Society (MAS) and one from a local resident. Both comments were supportive of the overall project. MAS suggested expanding the scope of the project to remove currently occupied buildings in the floodplain. While this is outside the scope of the current project, a later phase to remove occupied buildings is being considered. The other comment letter suggested that the project should involve the community in hands-on stewardship as much as possible. As discussed above, the project has provided opportunities for volunteer and student involvement and will continue to do so.

Comments and concerns were solicited from the Federated Indians of Graton Rancheria (FIGR) in October 2016, and again at the time of the March 2017 scoping. FIGR did not raise any concerns. A Notice of Intent to Adopt Proposed Mitigated Negative Declaration and a Notice of Completion for the IS/MND was issued for agency and public review and sent to the State Clearinghouse on January 24, 2018 to announce the availability of the document and the 30-day review period. The proposed IS/MND was available online at [scc.ca.gov](http://scc.ca.gov), and copies of the IS/MND were made available at the San Rafael and Point Reyes Station branches of the Marin County Library, and at the Conservancy offices in Oakland. Fourteen comments were received including from one government agency (California Department of Fish and Wildlife), two organizations, and eleven unaffiliated individuals, with some of those individuals submitting

more than one comment letter. The final IS/MND includes responses to all submitted comments. Revisions were made to four mitigation measures in the proposed IS/MND to make minor changes in response to CDFW's comments. None of the revisions constitutes a substantial revision that triggers recirculation of the IS/MND.

Nine comments addressed project design, asking why some structures were retained in close proximity to those that were removed. As described in the IS/MND, initial scoping of the project proposed removing all structures and restoring the full floodplain. While initially the project designs included the removal of all structures/buildings, it was later determined that the NPS had not identified those structures for demolition under their 2015 report, Removal of Structures at Tocaloma and Jewell, Section 106 Study Report. As the designs for the proposed project got underway, it was also discovered that one of the structures may be eligible for listing in the National Register of Historic Places. Section 106 of the National Historic Preservation Act (NHPA) of 1966 requires federal agencies to consider the effects of their undertakings on properties listed or potentially eligible for listing on the National Register of Historic Places. It was determined that some structures would remain because performance of a Section 106 consultation was beyond the scope of this project and would indefinitely hold up the rest of the restoration. The project was designed for the eventual removal of the additional structures following Section 106 consultations with the State Historic Preservation Officer. In addition, the restoration designs have been developed so that floodplain restoration would not be impacted by the remaining structures and will function as intended to provide and support specific habitats.

### **Significant Effects Reduced To Less Than Significant Levels by Mitigation**

The IS/MND provides a detailed analysis of potential environmental impacts and proposed mitigation measures to address the possible impacts associated with the proposed project (See Exhibit 4, IS/MND). The IS/MND identified possible significant effects of the project in the areas of air quality, biological resources, cultural resources, hazards/hazardous materials, hydrology/water quality, transportation/traffic, and tribal cultural resources. Mitigation measures identified in the IS/MND will reduce all of these impacts to a less than significant level.

The potentially significant environmental effects of the project along with the mitigation measures that reduce such effects to less than significant, are summarized below. Most of these effects are associated with construction of the proposed project.

#### *Air Quality*

**Contribution to Air Quality Standards Violations.** Without mitigation, the maximum average daily construction emissions of NO<sub>x</sub> during project construction would exceed the Bay Area Air Quality Management District (BAAQMD) significance thresholds.

*Mitigation Measure AIR-1: Implementation of Best Management Practices.* During restoration activities, the following BAAQMD-recommended measures shall be implemented to control fugitive dust and NO<sub>x</sub> emissions:

- All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
- All haul trucks transporting soil, sand, or other loose material off-site shall be covered.

- All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping shall be prohibited.
- All vehicle speeds on unpaved roads shall be limited to 15 miles per hour.
- Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.
- All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications.
- The project shall be carried out in accordance with a plan, to be developed prior to project commencement, that provides for the off-road equipment (more than 50 horsepower) used in the construction project (i.e., owned, leased, and subcontractor vehicles) to achieve a project wide fleet-average 20 percent NOX reduction and 45 percent PM reduction compared to the most recent Air Resources Board (ARB) fleet average. Acceptable options for reducing emissions include the use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, add-on devices such as particulate filters, and/or other available options.

### ***Biological Resources***

**1. Impacts to special status species from increased turbidity, direct impact, or the spread of invasive species.** Project construction could adversely affect special status aquatic species (coho, steelhead, California freshwater shrimp), amphibians (California red-legged frog), Northern spotted owl and nesting birds, bats, or plants (Western leatherwood and California bottle brush grass).

*Mitigation Measure BIO-1: Seasonal Avoidance of Sensitive Aquatic Species.* In-water construction work with the potential to result in short-term impacts to sensitive aquatic species, including project activities that are expected to create turbidity or disturb the streambed, shall be conducted only from July 1 through October 15.

*Mitigation Measure BIO-2: Relocation of Special Status Fish.* If necessary, fish shall be captured and relocated to avoid injury and mortality and minimize disturbance during construction. NPS will be the point of contact for any fish relocation activities and results. The following guidelines shall apply:

- The project sponsor shall consult with NPS, with NOAA Fisheries (under Section 7 of the federal Endangered Species Act) and with CDFW (under Fish and Game Code Section 1600 and the California Endangered Species Act) to provide preservation and avoidance measures commensurate with the CDFW standards for the affected species.
- The capture and relocation of Coho Salmon and coastal steelhead associated with work site clear-water creek diversions would require an Incidental Take Permit under

Section 2081 of the California Fish and Game Code, or a Safe Harbor Agreement, to be issued by the CDFW. A Safe Harbor Agreement shall be obtained prior to implementing fish relocation actions.

- Prior to and during the initiation of construction activities, a qualified CDFW-, NMFS-, and USFWS-approved biologist and other approved fisheries biologists shall be present during installation and removal of clear-water creek diversions.
- For sites that require flow diversion and exclusion, the work area will be blocked by placing fine-meshed nets or screens above and below the work area to prevent state or federally listed species from re-entering the work area. To minimize entanglement, mesh diameter will not exceed 1/8 inch. The bottom edge of the net or screen will be secured to the channel bed to prevent fish from passing under the screen and avoid scour by flow. Exclusion screening will be placed in low velocity areas to minimize impingement. Screens will be checked twice daily (at the beginning and end of each work day) and cleaned of debris to permit free flow of water.
- Before removal and relocation begins, a qualified fisheries biologist will identify the most appropriate release location(s). In general, release locations should have water temperatures similar to (<3.6°F difference) the capture location and offer ample habitat (e.g., depth, velocity, cover, connectivity) for released fish, and should be selected to minimize the likelihood of reentering the work area or becoming impinged on exclusion nets or screens.
- The means of capture will depend on the nature of the work site, and will be selected by a qualified fisheries biologist. Complex stream habitat may require the use of electrofishing equipment (e.g., Smith-root LR-24 backpack electrofisher), whereas in outlet pools, aquatic vertebrates and invertebrates may be captured by pumping down the pool and then seining or dipnetting. Electrofishing will be used only as a last resort; if electrofishing is necessary, it will be conducted only by properly trained personnel following the NMFS guidelines dated June 2000 (NMFS, 2000).
- When feasible, initial fish relocation efforts will be performed several days prior to the scheduled start of construction. To the extent feasible, flow diversions and species relocation will be performed during morning periods. The fisheries biologist will survey the flow exclusions throughout the diversion effort to verify that no state or federally listed fish or aquatic invertebrates are present. Afternoon pumping activities should generally not occur and pumping should be limited to days when ambient air temperatures are not expected to be high. Air and water temperatures will be measured periodically, and flow diversion and species relocation activities will be suspended if temperatures exceed the limits allowed by NMFS guidelines.
- Handling of fish and aquatic invertebrates will be minimized. When handling is necessary, personnel will wet hands or nets before touching them.
- Prior to translocation, any state or federally listed species that are collected during surveys will be temporarily held in cool, aerated, shaded water using a five-gallon container with a lid. Overcrowding in containers will be avoided; at least two containers will be used and no more than 25 fish will be kept in each bucket. Aeration will be provided with a battery-powered external bubbler. Fish will be protected from jostling and noise, and will not be removed from the container until the time of release. A thermometer will be placed in each holding container and partial water changes will be conducted as necessary to maintain a stable water temperature. Special-status fish will not be held more than 30 minutes. If water temperature

reaches or exceeds NMFS limits, the fish and other aquatic species will be released and relocation operations will cease.

- If state or federally listed fish are abundant, capture will cease periodically to allow release and minimize the time fish spend in holding containers.
- Fish will not be anesthetized or measured. However, they will be visually identified to species level, and year classes will be estimated and recorded.
- Reports on fish relocation activities will be submitted to CDFW and NMFS in a timely fashion.
- If mortality during relocation exceeds three percent (or as determined by NMFS), relocation will cease and CDFW and NMFS will be contacted immediately or as soon as feasible.

*Mitigation Measure BIO-3: Impacts to Rare Plants.* A qualified biologist shall conduct a pre-construction survey for special status plant species with the potential to occur within the area of disturbance. At least two surveys shall be completed, one in winter or early spring to capture the flowering period of Western leatherwood and one in summer to capture the flowering period of California bottle brush grass. The surveys shall be floristic in nature and shall follow the procedures outlined in the California Department of Fish and Wildlife Publication *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (CDFW, 2009).

If special status plant species are found, SPAWN shall coordinate with NPS, USFWS, and CDFW to provide preservation and avoidance measures commensurate with the standards provided in applicable NPS, USFWS, and CDFW protocols for the affected species. The preservation and avoidance measures shall include, at a minimum, appropriate buffer areas clearly marked during project activities with orange fencing, monitoring by a qualified plant biologist, and the development and implementation of a replanting plan.

*Mitigation Measure BIO-4: Contractor Environmental Awareness Training and Site Protection.* All construction personnel that are working in areas of potential endangered species habitat shall attend an environmental education program delivered by a qualified biologist prior to working on the project site. The program shall include an explanation as how to best avoid the accidental take of California freshwater shrimp, California red-legged frog, listed birds and fish species. The program shall also include how to identify and avoid Japanese knotweed, and what to do if new plants are found.

The training session shall be mandatory for contractors and all construction personnel. The field meeting shall include topics on species identification, life history, descriptions, and habitat requirements during various life stages. Emphasis shall be placed on the importance of the habitat and life stage requirements within the context of project maps showing areas where minimization and avoidance measures are being implemented. The program shall include an explanation of appropriate federal and state laws protecting endangered species.

The contractor shall provide closed garbage containers for the disposal of all trash items (e.g., wrappers, cans, bottles, food scraps). The site shall be cleaned of litter before closure each day, and placed in wildlife-proof garbage receptacles. Construction personnel shall not feed or

otherwise attract any wildlife in the project area. No pets, excluding service animals, shall be allowed in the project area.

*Mitigation Measure BIO-5: Avoid or Minimize Impacts to Special Status Species.*

**California Freshwater Shrimp:** Prior to commencing construction, trees and vegetation overhanging into the wetted creek channel lining the banks at each restoration site will be surveyed for the presence of undercut root masses (i.e., potential winter habitat). If trees with such features are identified, they will be avoided during construction, as feasible. Avoidance measures will include adjusting grading limits. In addition, construction crews shall be directed to retain riparian vegetation near the margins of the low flow channel, as feasible. Avoidance measures may include adjusting grading limits and reducing the area of flow diversions. Large wood structures shall be placed and constructed to avoid existing habitat to the greatest extent feasible. If relocation is necessary to minimize impacts, a qualified USFWS and CDFW-approved biologist will perform the relocation of California freshwater shrimp, according to the following measures:

- At least 15 days prior to the onset of activities, the name(s) and credentials of biologists who will conduct California freshwater shrimp survey and relocation activities shall be submitted to the USFWS and CDFW for approval.
- No in-channel work activities shall begin until proponent has received written approval from the USFWS and CDFW that the biologist(s) is qualified to conduct the work, and take authorization has been secured under FESA Section 7 and CESA Section 2081.
- Before removal and relocation begins, the biologist shall identify the most appropriate release location(s). Suitable habitat is defined as creek sections that will remain wet over the summer and where banks are structurally diverse with undercut banks, exposed fine root systems, overhanging woody debris, or overhanging vegetation.
- California freshwater shrimp shall be captured by hand-held nets [e.g., heavy-duty aquatic dip nets (12-inch D-frame net) or small minnow dip nets] and relocated out of the work area in the net or placed in buckets containing stream water and then moved directly to the nearest suitable habitat in the same branch of the creek.
- No California freshwater shrimp shall be placed in buckets containing other aquatic species. Handling shall be minimized, as feasible.
- California freshwater shrimp shall not be held more than 30 minutes.
- Any California freshwater shrimp rescued or relocated shall be reported to the NPS, USFWS and CDFW.
- Release locations should offer ample habitat and should be selected to minimize the likelihood of reentering the work area. To prevent California freshwater shrimp from reentering the work area, the channel will be blocked by placing fine-meshed nets or screens above and below the work area. To minimize entanglement, mesh diameter will not exceed 1/8 inch. The bottom edge of the net or screen will be secured to the channel bed. Exclusion screening will be placed in low velocity areas to minimize impingement. Screens will be checked periodically and cleaned of debris to permit free flow of water. At the completion of in-stream work, all temporary materials will be completely removed.

**California Red-legged Frog and Western Pond Turtle:**

- The name(s) and credentials of the qualified biologist(s) to act as construction monitors shall be submitted to the USFWS for approval at least 15 days before construction work begins.
- Vegetation shall be cleared to 18 inches prior to conducting surveys for California red-legged frogs.
- No more than 24 hours before initial ground disturbance activities, including grading and excavation, an approved biologist shall conduct onsite monitoring for the presence of California red-legged frog and other special status species with potential to be present, such as western pond turtle, in the area where ground disturbance or vegetation removal shall occur. Areas of dense vegetation may be mowed or trimmed to 18 inches in height, in order to more effectively survey for frogs.
- Vegetation may be cleared to ground level within 24 hours after being cleared for California red-legged frogs.
- Vegetation removed at the Project Site shall be placed directly into a disposal vehicle and removed from the site. Vegetation shall not be piled on the ground unless it is later transferred, piece by piece, under the direct supervision of the qualified biologist.
- At the beginning of each workday that includes initial ground disturbance, including grading, excavation, and vegetation-removal activities, an approved biologist shall conduct onsite monitoring for the presence of these species in the area where ground disturbance or vegetation removal shall occur. Perimeter fences shall be inspected to ensure they do not have any tears or holes, that the bottoms of the fences are still buried, and that no individuals have been trapped in the fence.
- All excavated or deep-walled holes or trenches greater than 2 feet deep shall be covered at the end of each workday using plywood, steel plates, or similar materials, or escape ramps shall be constructed of earth fill or wooden planks to allow animals to exit. Before such holes are filled, they shall be thoroughly inspected for trapped animals.

If a special status species is present within the exclusion fence area during construction, work shall cease in the vicinity of the animal, and the animal shall be allowed to relocate of its own volition. If the animal does not relocate of its own volition, the animal shall be relocated in accordance with the SPAWN Relocation Plan. NPS, USFWS, and CDFW will be notified about any California red-legged frog sightings and removals.

- The contractor shall maintain the temporary fencing—both exclusion fencing and protective fencing (if installed)—until all construction activities are completed. No construction activities, parking, or staging shall occur beyond the fenced exclusion areas. Perimeter fences shall be inspected to ensure they do not have any tears or holes, that the bottoms of the fences are still buried, and that no individuals have been trapped in the fence. After construction is completed, the exclusion fencing and associated debris shall be removed and stored or disposed of off-site.

***Northern Spotted Owl and Nesting Birds:*** Tree removal activities will be avoided during the nesting season (February 1 to July 31) unless a nesting bird survey shows that no nesting activity is present. Fifteen days prior to construction, a qualified biologist will conduct a nesting bird survey in the project area and areas within 1/2-mile. The four nearby spotted owl activity centers (Bike Path, McIsaac, Cheda Creek, and Jewel Trail) will be avoided with a buffer of 1/4-mile during the active nesting season. NPS will conduct spotted owl nesting surveys if necessary, according to USFWS protocol. Other nesting birds will be avoided by a suitable buffer

determined in coordination with NPS. Construction work may continue outside of the no-work buffer.

**Bats:** Fifteen days prior to project construction, a qualified bat biologist shall conduct a pre-construction survey for roosting bats in trees to be removed or pruned and structures to be demolished. If no roosting bats are found, no further action is required. If a bat roost is found, the following measures shall be implemented to avoid impacts on roosting bats.

- If active maternity roosts are found in trees or structures that will be removed or demolished as part of project construction, tree removal or demolition of that structure shall commence before maternity colonies form (generally before March 1) or after young are flying (generally by July 31). Active maternal roosts shall not be disturbed.
- If a non-maternal roost of bats is found in a tree or structure to be removed or demolished as part of project construction, the individuals shall be safely evicted, under the direction of a qualified bat biologist and with approval from NPS. Removal or demolition shall occur no sooner than at least two nights after the initial minor site modification (to alter airflow). Departure of the bats from the construction area will be confirmed with a follow-up survey prior to start of construction.

## **2. Impacts to riparian habitat or other sensitive natural community from project construction and spread of invasive plants.**

*Mitigation Measure VEG-1: General Native Vegetation Protection.* Before construction begins, the project engineer and a qualified biologist will identify locations for equipment and personnel access and materials staging that will minimize riparian vegetation disturbance. During construction, as much native understory brush and as many native trees as possible will be retained. The emphasis will be on retaining shade-producing and bank-stabilizing vegetation. Woodrat nests will be avoided. All trees to remain during construction within the grading area will be protected and trimmed in the fall or winter, if necessary, to ensure their trunks and/or limbs are not disturbed during construction. When heavy equipment is required, unintentional soil compaction will be minimized by using equipment with a greater reach, or using low-pressure equipment. Disturbed soils will be decompacted when work is completed.

All vehicles and equipment entering each project site (Sites 1, 2, and 3) shall be clean of noxious weeds and free from oil leaks, and are subject to inspection. Noxious weeds could spread between sites as well as from outside the project area. All construction equipment shall be washed thoroughly to remove all dirt, plant, and other foreign material prior to entering and leaving the project area. Particular attention shall be shown to the under-carriage and any surface where soil containing exotic seeds may exist. These efforts are critical to prevent the introduction and establishment of non-native plant species into each project site. Arrangements shall be made for inspections of each piece of equipment before entering each project site, and records of inspections will be maintained. Equipment found operating on the project site that has not been inspected or has oil leaks will be shut down and may be subject to citation. Certified weed-free permanent and temporary erosion control measures shall be implemented to minimize erosion and sedimentation during and after construction. The project sponsor shall conform to the Federal Seed Act, the Federal Noxious Weed Act, and applicable state and local seed and noxious weed laws. Nursery operations where plants are stored, propagated, or purchased must

certify implementation of best management practices to reduce pest and pathogen contamination within their nursery.

Any disturbed and decompacted areas outside the restoration area will be revegetated with locally native vegetation. Revegetated areas shall be protected and cared for, including watering when needed, until restoration criteria have been met under project permits and/or NPDES standards. Revegetated areas shall be monitored in accordance with permit requirements to ensure success criteria are met.

*Mitigation Measure VEG-2: Vegetation Monitoring and Management Plan.* SPAWN shall prepare a Vegetation Monitoring and Management Plan in consultation with NPS. The plan shall describe required salvage and replanting protocols prior to and after construction is complete. This plan shall include, but not be limited to, protocols for replanting of vegetation removed prior to or during construction, and management and monitoring of the plants to ensure replanting success. To the extent feasible and within the goals of the restoration project, native riparian vegetation within the project area shall be salvaged prior to construction and replanted after construction is completed. Areas impacted from construction-related activity shall be replanted or reseeded with native trees, shrubs, and herbaceous perennials and annuals from the watershed or nearby watershed under guidance from NPS-PRNS biologists.

Replanting shall be conducted using NPS standard operating procedures, such as preparation of soil conditions, use of NPS approved native plants, plant protection, irrigation or watering if necessary, and control of aggressive nonnative species.

SPAWN shall submit the pre-construction survey protocols for all special-status species and the Vegetation Monitoring and Management Plan to NPS for review and approval as part of the Special Use Permit approval.

To the extent feasible, SPAWN shall use local plant materials for revegetation of the disturbed area. The plant materials shall include local cuttings from the local watershed or from adjacent watersheds. The Vegetation Monitoring and Management Plan shall take into account that use of container plants that meet this source criteria may add additional time to the revegetation process in that the materials need to be collected and provided to a contractor well in advance before the expected planting date. This will ensure that the seeds can be collected during the appropriate season and the container plants will be of an appropriate size for out-planting. Using local cuttings can reduce the length of this phase.

*Mitigation Measure VEG-3: Invasive Plants.* The following steps will be taken to minimize the spread of invasive plants in the Lagunitas Creek watershed:

- Construction activities will be planned and laid out to avoid any existing Japanese knotweed (FAJA) as much as possible, with the goal of avoiding all existing patches (this includes any part of the site that would experience disturbance – such as equipment travel, soil movement, significant vegetation removal and rerouting of the creek).
- A 20-foot buffer will be demarcated with orange fencing around these project areas so that no travel will occur within the area of expected above and below ground FAJA growth. SPAWN to provide materials, and NPS to install fencing. A Japanese knotweed site (aka FAJA Buffer Zone) is defined as the perimeter of the 2017 extent of the site + a buffer of 20 feet. Disturbance is defined as driving across site, excavating, or anything that will render the site more vulnerable to erosion in the future.

- If sites cannot be avoided SPAWN will submit a request and rationale to NPS? for not being able to avoid the FAJA Buffer Zone. SPAWN will be responsible for any monitoring and treatment of these penetrated zones. Crane mats will be used in the area of movement within the buffer zone. No construction or travel will take place within the 2017 FAJA footprint. This includes no vegetation removal within the small footprint unless approved by the NPS FAJA point of contact.
- SPAWN will conduct a botanical survey in June for FAJA. The presence of this species will be mapped as a point and an estimation of how large the site is (square meters, % cover, numbers of stems and a column for comments, and another for an estimation whether the site can be avoided). Point data will be sent as a shapefile to NPS and the table in excel.
- Invasive species, identified below, will be treated before the migration of heavy equipment and staging within the project area. The removal of these species will be with manual equipment. The NPS may treat 2017 FAJA patches in autumn of 2018 while construction is occurring. Construction activities and equipment will avoid 2017 FAJA sites so NPS can treat the patches when appropriate. SPAWN will be responsible for the treatment of non-FAJA invasive species (include bull thistle, poison hemlock, Himalayan blackberry, and periwinkle) by manual removal. SPAWN will work to prevent these species from seeding onto the site prior to construction activities through cutting, mowing, and manual pulling. During the grubbing phase of the project, SPAWN will work with the contractor(s) to scrap the topsoil from the fill pads and carefully discard these spoils and transport the material to a landfill where the material can be capped. Removal of the seed bank of these invasive species will help prevent the recolonization of these plants following construction.
- Any patches of Japanese knotweed that cannot be avoided will be excavated to a depth of 10 feet and a perimeter of 20 feet from the edge of the population. Any excavations will be backfilled with local, native soil. Material will be buried to a depth of 15 feet and filled and compacted with native soil on site. The footprint of this activity will be scraped to a depth of 3” to skim any material dropped – or – if this is considered too onerous, an approved containment of the material during the migration process should be outlined and NPS approved three months before the start of the project.
- If there is no other option but to work within the FAJA buffer zone, SPAWN will provide written plans and justifications for not being able to adhere to this activity and how alternatives were considered. Both a NPS and SPAWN representative will replace orange fencing to accommodate this adjustment. SPAWN shall notify NPS of the construction schedule 3 weeks in advance of activity to allow NPS to observe and monitor as seen fit and. Excavation of FAJA will require a full time NPS monitoring and documentation.
- SPAWN will coordinate with NPS to have the FAJA patches within the project area treated with herbicide by NPS crews during construction activities when it is most optimal for herbicides to be effective. SPAWN should keep all contractors apprised of any herbicide activity that is planned.
- Following construction, SPAWN will coordinate post-construction monitoring with NPS and conduct surveys for Japanese knotweed along the riparian area as an element of the project’s effectiveness monitoring plan. Surveys will include the sites and the downstream areas of influence created by the new structures (minimum of ¼ river mile)
- SPAWN will participate in monthly monitoring from March to July of FAJA growth at the restoration sites as a measure of first response to FAJA colonization following

construction. This will include surveys for sprouts and documentation of their proximity to the OHWM and estimated stem count. If any new patches are found within the SPAWN project sites, SPAWN will document these with GPS and submit to NPS. If SPAWN or NPS documents new FAJA patches within the project sites that are below the OHWM, SPAWN will implement a manual treatment regime consistent with the NPS protocol of careful removal of entire root masses and lateral roots by hand and discard into black plastic garbage bags. This treatment will occur monthly. If new patches are discovered above the OHWM, NPS may apply herbicide treatment when optimal. SPAWN shall be responsible for monitoring FAJA within the project footprints and treating manually if new patches are found below the OHWM for a period of 5 years following construction.

**3. Direct impacts to wetland vegetation and indirect adverse effects on wetlands and water from impacts to water quality during construction.** Water-quality-related indirect effects to wetlands and waters will be minimized by implementation of the Stormwater Pollution Prevention Plan. Impacts to wetland vegetation will be minimized by implementation of **Mitigation Measures VEG-1, VEG-2, and VEG-3.**

#### *Cultural Resources*

**1. Impacts to archaeological resources and human remains from construction.** There are no known archaeological resources in the project area. There are no recorded instances of human remains occurring within the project area or in the immediate vicinity. While unlikely, there is the potential for the proposed project to encounter previously unidentified archaeological resources and/or human remains.

**Mitigation Measure CUL-1:** In the event of any discovery of human remains, archaeological deposits, or any other type of cultural resource during construction, work shall stop immediately and the NPS archaeological staff shall be notified within 24 hours. Construction work shall not resume until the NPS re-authorizes project construction. If it is determined that the discovery is eligible for listing in the National Register, and cannot be avoided, the NPS will follow the procedures for Post Review Discoveries 36 CFR 800.13. If human remains are discovered, SPAWN shall implement measure MM CUL-2.

**Mitigation Measure CUL-2:** In the event of discovery or recognition of any human remains during construction activities, such activities within 100 feet of the find shall cease until the Marin County Coroner has been contacted to determine that no investigation of the cause of death is required. The NPS will be notified in the event of the discovery of human remains. The NPS will follow the procedures for the inadvertent discovery of human remains outlined in 43 CFR 10.4 in compliance with the Native American Graves Protection and Repatriation Act. The Native American Heritage Commission (NAHC) will be contacted within 24 hours if it is determined that the remains are Native American. The NAHC will then identify the person or persons it believes to be the most likely descendant from the deceased Native American, who in turn would make recommendations to the NPS for the appropriate means of treating the human remains and any grave goods.

#### *Geology, Soils and Seismicity*

**1. Increased exposure to strong seismic ground shaking and landslides.** Workers could be exposed to strong seismic ground shaking or landslides during construction. This impact will be

reduced to a less than significant level by implementation of Mitigation Measure HAZ-1b (see below).

### ***Hazards/Hazardous Materials***

**1. Release of hazardous materials during construction.** Project construction will involve demolition of the remaining remnants of residential structures as well as ground excavation activities up to 12 feet deep at Sites 1 and 2. The potential exists to encounter underground facilities such as septic sewer lines and for leaks in those structures to expose workers to hazardous materials, or for contaminated soils to be found in the project area whose disturbance could expose workers and others to hazardous materials.

*Mitigation Measure HAZ-1a: Pre-Construction Hazardous Materials Assessment.* Prior to construction, the project sponsor shall ensure that a limited soil and/or groundwater investigation is performed at the proposed construction work area to characterize soil and/or groundwater quality. The project sponsor shall conduct a site assessment (the “Pre-Construction Hazardous Materials Assessment”) including potential testing of soil and/or groundwater, and if testing reveals soil and/or groundwater concentrations that exceed applicable regulatory levels, the project sponsor shall contact the County of Marin or Regional Water Quality Control Board (RWQCB), as appropriate, to secure regulatory oversight and the NPS Senior Environmental Planner shall be notified.

The Pre-Construction Hazardous Materials Assessment may include the following: analysis of subsurface soil samples within the project site for total petroleum hydrocarbons (as gasoline, diesel, and waste oil), Title 22 metals, and volatile organic compounds (VOCs) or any other chemicals of concern to evaluate the potential presence of contamination; and groundwater samples if subsurface excavations are anticipated to require dewatering. In the case of lead-based paint, the identification, removal, and disposal is regulated under Section 8 California Code of Regulations (CCR) 1532.1.

The results of the Pre-Construction Hazardous Materials Assessment shall be incorporated into the Site Health and Safety Plan prepared in accordance with Mitigation Measure HAZ-1b and the Soil and Groundwater Management Plan prepared in accordance with Mitigation Measure HAZ-1c to determine whether specific soil and groundwater management and disposal procedures for contaminated materials are required, excavated soils are suitable for reuse, and construction worker health and safety procedures for working with contaminated materials are required. If the pre-construction hazardous materials assessment identifies the presence of soil and/or groundwater contamination at concentrations in excess of applicable regulatory screening levels (Environmental Screening Levels [ESLs] or California human health screening levels [CHHSLs]) for proposed site use, project sponsor or its contractor shall complete site assessment and remedial activities required by the regulatory agency to ensure that residual soil and/or groundwater contamination, if any, shall not pose a continuing significant threat to groundwater resources, human health, or the environment. A copy of the pre-construction hazardous materials assessment shall be submitted to the NPS Senior Environmental Planner for approval.

*Mitigation Measure HAZ-1b: Health and Safety Plan.* SPAWN shall retain a qualified environmental professional to prepare a site-specific Health and Safety Plan (HASP) in accordance with federal OSHA regulations (29 CFR 1910.120) and Cal/OSHA regulations (8 CCR Title 8, Section 5192). SPAWN shall require the contractor to comply with the HASP. Because anticipated contaminants vary depending upon the location of proposed improvements in the project area and may vary over time, the HASP shall address site-specific worker health and safety issues during construction. The HASP shall include the following information:

- Results of sampling conducted in accordance with Mitigation Measure HAZ-1a.
- All required measures to protect construction workers and the general public by including engineering controls, monitoring, and security measures to prevent unauthorized entry to the construction areas and to reduce hazards outside of the construction areas. If prescribed contaminant exposure levels are exceeded, personal protective equipment shall be required for workers in accordance with state and federal regulations.
- Required worker health and safety provisions for all workers potentially exposed to contaminated materials, in accordance with state and federal worker safety regulations, and designated qualified individual personnel responsible for implementation of the HASP.

SPAWN shall require the contractor to have a site health and safety supervisor fully trained pursuant to hazardous materials regulations be present during excavation, trenching, or cut and fill operations to monitor for evidence of potential soil contamination, including soil staining, noxious odors, debris or buried storage containers. The site health and safety supervisor must be capable of evaluating whether hazardous materials encountered constitute an incidental release of a hazardous substance or an emergency spill. The site health and safety supervisor shall implement procedures to be followed in the event of an unanticipated hazardous materials release that may impact health and safety. These procedures shall be in accordance with hazardous waste operations and regulations and specifically include, but are not limited to, the following: immediately stopping work in the vicinity of the unknown hazardous materials release; notifying the County of Marin and retaining a qualified environmental firm to perform sampling, remediation, and/or disposal. SPAWN shall provide documentation that HASP measures have been implemented during construction. Submittal of the HASP to the NPS, or any review of the contractor's HASP by NPS, shall not be construed as approval of the adequacy of the contractor as a health and safety professional, the contractor's HASP, or any safety measure taken in or near the construction site. The contractor shall be solely and fully responsible for compliance with all laws, rules, and regulations applicable to health and safety during the performance of the construction work.

A copy of the HASP shall be submitted to the NPS Senior Environmental Planner for approval.

*Mitigation Measure HAZ-1c: Soil and Groundwater Management Plan.* If ground-borne hazardous materials are identified under the Pre-Construction Hazardous Materials Assessment, prepared in accordance with Mitigation Measure HAZ-1a, SPAWN shall require the construction contractor to prepare and implement a Soil and Groundwater Management Plan (SGMP), subject to review by the NPS Senior Environmental Planner. The SGMP shall specify the method for handling and disposal of contaminated soil and groundwater prior to construction. The SGMP shall include all necessary procedures to ensure that excavated materials and fluids generated during construction are stored, managed, and disposed of in a manner that is protective of human health and in accordance with applicable laws and regulations. The SGMP shall include the following information:

- Step-by-step procedures for evaluation, handling, stockpiling, storage, testing, and disposal of excavated material, including criteria for reuse and offsite disposal. All excavated materials shall be inspected prior to initial stockpiling, and spoils that are visibly stained and/or have a noticeable odor shall be stockpiled separately to minimize the amount of material that may require special handling. In addition, excavated materials shall be inspected for buried building materials, debris, and evidence of underground storage tanks; if identified, these materials shall be stockpiled separately and characterized in accordance with landfill disposal requirements. If some of the spoils do not meet the reuse criteria and/or debris is identified, these materials shall be disposed of at a permitted landfill facility.
- Procedures to be implemented if unknown subsurface conditions or contamination are encountered, such as previously unreported tanks, wells, or contaminated soils.
- Procedures for containment, handling and disposal of groundwater generated from construction activities, the method to be used to analyze groundwater for hazardous materials likely to be encountered and the appropriate treatment and/or disposal methods.

*Mitigation Measure HAZ-2:* SPAWN shall identify underground utility lines such as natural gas, electricity, and water lines that may be encountered during excavation work. Information regarding the size, type, and location of existing utilities will be confirmed by the utility service provider. If such underground utility lines are identified, a plan that outlines construction methods and protective measures to minimize impacts on aboveground and belowground utilities shall be prepared. Construction shall be scheduled to minimize or avoid interruption of utility services to customers. Disconnected utility lines shall be promptly reconnected.

### *Hydrology / Water Quality*

#### **1. Construction-related short term increases in turbidity and nutrient loading from soil disturbance, and potential for release of pollutants from construction equipment.**

Construction of the project would entail excavation, grading, and other earth-disturbing activities that would expose and disturb soils, resulting in the potential for increased erosion by wind or water, including in the flow diversion area in Lagunitas Creek. Refueling and use of construction equipment, and other activities have the potential to release pollutants such as fuel, oil and grease, or cleaning solvents that could enter nearby waterways and degrade water quality.

*Mitigation Measure HYD-1: Clear-Water Creek Diversions and Construction Flow Diversion.* The flow diversion area will encompass the minimum area necessary to perform the restoration activity. The period of flow diversion shall extend for the minimum amount of time needed to perform that maintenance activity. Where feasible and appropriate, diversions shall occur via gravity driven systems. Pumped water shall be discharged in conformance with all applicable laws and permit requirements and the channel and banks shall be returned to pre-project condition in those areas affected by diversion structures/activities.

A qualified biologist will be present to ensure that state or federally listed fish and other aquatic vertebrates are not stranded during construction and implementation of channel diversion. Prior to flow diversions, the affected area will be surveyed by a qualified biologist, and if necessary, relocation procedures will be implemented to ensure that state and federally listed fish and other aquatic invertebrates are not adversely affected (outlined in MM BIO-2 and MM BIO-5).

SPAWN shall prepare a Flow Diversion Plan to be approved by the NPS, RWQCB, USFWS, NMFS, and CDFW prior to beginning work. The flow diversion plan shall review all clear-water creek diversions and construction diversion considerations and best management practices described in the Basis of Design Report completed by ESA (2016) and/or any more recent design report completed to date. Examples of required BMPs include the following:

- Sediment disturbance shall be minimized to the extent feasible during removal of in-water debris or excavation in conjunction with creek restoration.
- Silt curtains shall be deployed around work activities that may generate significant turbidity.
- Where flow diversion pumps are required (clear-water gravity diversion shall be the preferred method), intakes shall be screened with less than 5-millimeter mesh screen to prevent other aquatic organisms from entering the pump. In addition, a filtration/settling system shall be included to reduce downstream turbidity (i.e., filter fabric, turbidity curtain). The selection of an appropriate system shall be based on the actual rate of discharge at time of construction.
- Super sacks (gravel-filled sacks) installed around the flow exclusion area (not to be installed across the entire creek channel) shall be constructed of sandbags or gravel bags secured with polyethylene plastic sheeting; water-filled bladders; interlocking sheet piling; and/or other material. Gravel bags shall be filled with clean river run gravels. Super sacks shall be covered with visqueen to minimize water infiltration. During construction, inspection shall occur daily during the work week. Any gaps, holes, or scour shall be immediately repaired.
- Water pumped from excavation areas shall not be discharged directly to surface waters without being treated to remove sediments generated during the flow diversion activities.
- Water outfalls shall be contained within folded and secured filter fabric sediment traps to minimize turbidity to outfall areas.
- When work is completed, the flow diversion structure shall be removed as soon as possible but no more than 48 hours after work is completed. Impounded water shall be released at a reduced velocity to minimize erosion, turbidity, or harm to downstream habitat. Super sacks shall be removed such that surface elevations of water impounded by the super sacks are lowered at a rate greater than one inch per hour.

**2. Release of polluted runoff during construction.** The project could result in substantial sources of polluted runoff during construction. This impact would be mitigated to a less than significant level by implementation of Mitigation Measures HAZ-1a and HAZ-1c, described above.

### ***Transportation and Traffic***

**1. Construction-related short term increases in congestion due to off hauling of sediment on Sir Francis Drake Boulevard and other area roadways.** This impact would be mitigated to a less than significant level by implementation of the measure below.

*Mitigation Measure TRAF-1: Traffic Control Plan.* SPAWN shall require the construction contractor(s) to hire a qualified traffic engineer to prepare a traffic control plan (TCP) for Sites 1, 2, and 3, in accordance with professional engineering standards, and submit the TCP to the Transportation Authority of Marin for review and approval. The TCP shall be developed on the basis of detailed design plans for the approved project, and shall include, but not necessarily be limited to, the elements listed below:

- Schedule grading and excavation activity at Sites 1 and 2 to minimize the overlap of haul truck trips from both sites;
- Schedule construction activities to minimize traffic impacts during heavy recreational use periods (e.g., weekends and holidays);
- To the extent feasible, reduce truck trips during the peak morning and evening commute hours to minimize adverse impacts on traffic flow;
- Store all equipment and materials in designated contractor staging areas;
- Comply with roadside safety protocols to reduce the risk of collisions.
- Provide “Trucks Entering Roadway” warning signs in advance of project work sites.
- Train construction personnel to apply appropriate safety measures as described in the traffic control plan.

#### **Mitigation Monitoring and Reporting Program**

Under CEQA, whenever measures are required and adopted in order to mitigate or avoid the significant effects on the environment of an approved project, the lead agency must also adopt a Mitigation Monitoring or Reporting Program (MMRP) designed to ensure compliance with the required mitigation during project implementation (CEQA § 21081.6). An MMRP for this project has been prepared and is included in Exhibit 4 to this staff recommendation.

Based on the foregoing and on the extensive analysis contained in the IS/MND, staff recommends that the Conservancy adopt the proposed CEQA findings provided in the resolution. The findings conclude that the Conservancy has undertaken an independent review of the environmental effects of the project, as required by CEQA. The project, as modified by incorporation of the mitigation measures identified in the IS/MND, will avoid, reduce, or mitigate all of the possible significant environmental effects of the project on these resource areas to a level that is less than significant. Based on the record as a whole, there is no substantial evidence that the implementation of the Lagunitas Creek Floodplain and Riparian Enhancement Project, as mitigated, will have a significant effect on the environment.

Finally, upon Conservancy adoption of the IS/MND, Conservancy staff will prepare and file a Notice of Determination.