



## COMMUNITY DEVELOPMENT AGENCY

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March 2, 2021

Marin County Board of Supervisors  
301 Civic Center Drive  
San Rafael, CA 94903

**SUBJECT:** Status of the Expanded Stream Conservation Area Ordinance for the San Geronimo Valley.

Dear Board Members,

**RECOMMENDATION:** Receive informational report on the status of the Expanded Stream Conservation (SCA) Ordinance for the San Geronimo Valley.

### **SUMMARY:**

On February 11, 2020, your Board approved a work program to develop an Expanded SCA Ordinance (SCA Ordinance) with a focus on the San Geronimo Valley. The development of the SCA Ordinance would not only implement Marin Countywide Plan (CWP) riparian protection policies and programs but would also fulfill a legal mandate to comply with mitigation measures from the Final Supplement to the 2007 Countywide Plan Final Supplemental Environmental Impact Report (FSEIR) with a Focus on Potential Cumulative Impacts to Salmonids in San Geronimo Valley, which your Board adopted in 2019 (Attachment 1). The FSEIR mitigation measures are intended to achieve compliance with the California Environmental Quality Act (CEQA) regarding potential cumulative impacts on threatened anadromous salmonids and their habitat from development in the San Geronimo Valley. These measures mandate the SCA Ordinance address specific elements intended to avoid or reduce impacts on salmonids.

The envisioned SCA Ordinance would also build upon concepts from the Interim SCA Ordinance adopted in 2013 (2013 Ordinance), which did not take effect as a result of litigation. The 2013 Ordinance utilized a two-tiered permitting structure for ministerial (Tier 1 SCA Permit) and discretionary review (Tier 2 SCA Permit) to account for differences in various development activities and associated stream impacts. Updated information on salmonids and operational lessons learned through the County's funding of the Marin Resource Conservation District's Urban Stream Coordinator program would also inform the ordinance.

As work on the SCA Ordinance progressed, it has become clear that developing an ordinance that not only complies with the FSEIR Mitigation Measures, but which also substantially conforms with the CWP riparian protection policies, will result in an ordinance that looks significantly different from the 2013 Ordinance familiar to Valley residents and stakeholders, and which deviates from the framework originally scoped in the work program. A summary of key variations is provided in the discussion section below.

**BACKGROUND:**

The envisioned SCA Ordinance incorporates SCA setbacks that have been a feature of the CWP since 1973. The application of land use restrictions to protect streams is not unique to Marin - it is a common practice used throughout the nation, as well here in the Bay Area for Napa, Santa Cruz and Sonoma Counties. This is because riparian habitats are irreplaceable, vital biological systems that provide critical functions for water purification, flood control, fish and wildlife movement, and native habitat. However, large portions of existing riparian systems have been eliminated by past stream channelization and urban development.

The ordinance focus on the San Geronimo Valley is in recognition of the importance of Lagunitas Creek, which supports one of the largest remaining runs of coho salmon south of Fort Bragg. These coho are part of the “Central California Coast Ecological Significant Unit” and are listed as threatened at both federal and state levels. Lagunitas Creek also supports threatened steelhead trout and a fall run of Chinook salmon.

**DISCUSSION:**

On December 2020, the Board of Supervisors’ Subcommittee (Board Subcommittee), comprised of Board President Sears and Supervisor Rodoni, determined the forthcoming ordinance should remain consistent with the CWP policies and the FSEIR analysis to avoid additional CEQA review. Given the Board Subcommittee’s direction, the following table provides an overview of what the forthcoming SCA Ordinance may look like. A brief discussion of each element follows.

Expanded SCA Ordinance for the San Geronimo Valley: Generally maintains CWP but implements more specific FSEIR mitigations	
Maintains BIO-4.1 restrictions with allowance for modest additions as evaluated in the FSEIR:	<ul style="list-style-type: none"> <li>• Allows modest additions of up to 500 square feet to existing structures.</li> <li>• Limits new development on vacant lots unless strict criteria are met.</li> </ul>
Maintains site assessment requirements for all incursions in the SCA:	<ul style="list-style-type: none"> <li>• Requires environmental review (and potential initial study) for most projects regardless of scope</li> <li>• Incorporates FSEIR standards regarding preparer qualifications.</li> <li>• Relies primarily on Urban Streams Coordinator to prepare site assessments.</li> </ul>
Requires discretionary review and CEQA compliance for all projects:	<ul style="list-style-type: none"> <li>• Uniform application of permit requirements across all zoning districts per FSEIR.</li> <li>• Many exempt activities would now be subject to permit requirements.</li> </ul>
Implements more rigorous erosion control and low impact development practices throughout the watershed per FSEIR.	
Maintains ephemeral stream criteria.	<ul style="list-style-type: none"> <li>• Site assessment required to confirm ephemeral status and presence of special-status species/sensitive natural communities</li> </ul>

### 1. Maintain BIO-4.1 restrictions with allowance for modest additions as evaluated in FSEIR

One of the overall goals of the CWP is to protect and restore riparian systems. This goal is achieved in part through CWP BIO-4.1, which restricts activities within the SCA to a very limited set of allowable uses. For example, the policy only allows for ordinary repair and maintenance to an existing structure provided the repair does not enlarge or expand the structure. This policy also limits new development proposed on vacant lots unless strict criteria are met. Meanwhile, Program BIO-4.a, which implements Policy BIO-4.1, allows for modest additions of up to 500 square feet of floor area.

Given concerns raised during the FSEIR review process regarding socioeconomic impacts to homeowners being overlooked for the sake of protecting the salmon, the forthcoming SCA Ordinance would maintain Policy BIO-4.1 restrictions while allowing for modest additions provided for in Program BIO-4.a. These program provisions were evaluated in the FSEIR and would not entail further CEQA review.

### 2. CWP Site Assessment Requirements Require Discretionary Review

Policy BIO-4.1 defines the SCA and land use controls within its boundary. According to the policy, a site assessment is required for any incursion in the SCA or where full compliance with SCA criteria would not be met. The CWP defines a site assessment as an analysis of a property's environmental setting, including sensitive wildlife habitats, sensitive resources, and special-status species and species of concern, among others. More importantly, the site assessment may also determine whether any adverse direct or indirect impacts on riparian resources would occur as a result of proposed development and, if so, identify mitigation options. This language has significant implications on the ordinance framework.

As defined by the CWP, the site assessment is discretionary. This means conforming to the policy's site assessment requirements would essentially limit options for ministerial review. Ministerial permits are granted to a project after applying fixed, objective standards with little or no subjective evaluation as to the wisdom or manner of carrying out the project. These types of permits do not require a public hearing, are not appealable, and do not trigger environmental review in conformance with the California Environmental Quality Act (CEQA). Discretionary permits involve the exercise in judgement or deliberation prior to making a decision, are noticed, may require a public hearing, and must comply with CEQA. Amending the CWP policy standards to allow for ministerial review may require additional environmental review since this was not considered in the FSEIR impact analysis.

### 3. FSEIR mitigation measures require uniform application of permit requirements

FSEIR Mitigation Measure 5.1-2, Provision 2, requires consistent permit requirements across planned and conventional zoning districts within the San Geronimo Valley in recognition that land use impacts across all zoning districts impact salmonid health. Under existing regulations, unless Design Review or another discretionary permit is triggered, development activities on conventionally zoned properties within the SCA would not be subject to the SCA policies. The change is intended to resolve inconsistent treatment of properties based on zoning and would apply to all zoned land in the San Geronimo Valley.

The FSEIR also mandates the envisioned ordinance expand the number of development activities that require a discretionary permit and site assessment to include activities in the SCA that require vegetation clearing, increase impermeable area, increase surface runoff, result in exposed soil, or alter the bed, bank, or channel of any stream (Mitigation Measure 5.1-1, Provision 1). This means that many activities that currently do not require a building permit, such as sitework that does not increase lot coverage and does not exceed 18 inches above grade (decks, platforms, driveways) vegetation removal (except native tree and heritage trees), and erosion control structures would no longer be exempt from permit requirements and may potentially be subject to discretionary review.

Finally, the FSEIR imposes more rigorous erosion control and LID practices. First, Mitigation Measure 5.1-1, Provision 5, lowers the threshold that triggers compliance with the Marin County Stormwater Pollution Prevention Program from projects that create or replace 2,500 square feet of impervious surface to 500 square feet. Second, Mitigation Measure 5.2-1 requires that the same stormwater, LID, erosion and sediment control measures required inside of the SCA also apply outside of the SCA. Both measures would apply throughout the watershed.

Subsequent implementation of these measures would result in more stringent permit requirements unique to the San Geronimo Valley. While these more rigorous permitting requirements would protect salmonids from additional land disturbance, increased impervious area, and storm runoff, they may result in increased costs of development activities in the SCA and throughout the watershed. In addition, maintaining separate permitting requirements for the Valley may also result in confusion for residents and require additional staff training.

#### 4. Environmental review required for all discretionary permits in the SCA

CWP Policy BIO-4.2 requires environmental review where incursion into an SCA is proposed and a discretionary permit is required. Typically, many projects may qualify as categorically or statutorily exempt and, thus, not require further action under CEQA. However, because Policy BIO-4.1 requires the site assessment to consider options for alternative mitigation, projects that might normally be exempt must instead undergo further environmental review regardless of scope to determine if there is a possibility that the project may have a significant effect on the environment. While this feature does not represent a change from the 2013 Ordinance, it is noteworthy since this requirement is unique to the SCA and imposes more rigorous standards on those living within the SCA than those outside.

#### 5. Ephemeral Streams

Ephemeral streams, which only flow during and immediately after periods of rain, are often the smallest channels in a watershed and often represent the headwaters of a stream. Ephemeral streams comprise the vast majority of a watershed's stream network and play a critical role in maintaining water quality and overall watershed function. Policy BIO-4.1 subjects an ephemeral stream to SCA policies if it: a) supports riparian vegetation for a length of 100 feet or more, and/or b) supports special-status species and/or sensitive natural community type, such as native grasslands, regardless of the extent of riparian vegetation associated with the stream. A minimum setback of 20 feet is required for those ephemeral streams that do not meet this standard.

The envisioned SCA Ordinance would maintain this language, which would also align with the FSEIR analysis. Meanwhile, staff confront practical challenges when

administering this particular directive due to vague language. For example, problems arise when staff must determine what constitutes 100 feet or more of riparian vegetation. Does this apply anywhere on the stream (upstream or downstream from the portion that traverses the project site), or within or directly contiguous to the proposed project? Does the extent of riparian vegetation need to be contiguous? What if there is 50 feet of vegetation on one side of the watercourse and 50 feet on the other side, or 50 feet upstream and 50 feet downstream? This results in uncertainty for applicants. The latter half of the ephemeral criteria states that a watercourse is subject to the SCA if it supports special-status species and/or sensitive natural community type, such as grasslands, regardless of the extent of riparian vegetation associated with the stream. This is problematic because “sensitive natural communities” is broadly defined. Refining the language for specificity would provide improved clarity and minimize the need for applicants to hire a consulting biologist to conduct a site assessment. However, such language changes would likely trigger the need for additional environmental review.

Finally, ephemeral streams are not yet mapped. As defined, perennial and intermittent streams are mapped; ephemerals are not. Consistent with the CWP, the envisioned SCA Ordinance would apply to all ephemerals, whether mapped or not. As mentioned above, ephemerals are typically the most common stream within a watershed’s stream network. Moreover, there are no reliable maps that show their location. Currently, staff rely on GIS data and on-site evaluation to determine stream status. If staff cannot reliably make a determination, then a site assessment – prepared by a qualified consultant – is required.

Meanwhile, the Golden Gate National Parks Conservancy – through OneTam -- is managing the effort to develop a fine scale vegetation map and landscape database for Marin County. This dataset will include a more spatial accurate map of the stream network with stream hydrography, improved consistency in stream level of detail, enhanced accuracy of feature attribution, and improved documentation and metadata. This will assist informing future work to identify the most effective measures to protect stream functions on a watershed-level basis.

### **CONCLUSION:**

The CWP demonstrates a strong regulatory approach towards stream protection. The envisioned SCA Ordinance for the San Geronimo Valley would maintain this conservative approach while furthering the FSEIR mandates. and would not require substantive CWP amendments nor result in further environmental review. While the County has discretionary authority to reconcile inconsistencies within the CWP, a conservative approach most protective towards the fish, coupled with targeted policy amendments to address any ambiguities, is considered the most appropriate means to achieve a more legally defensible ordinance without triggering amendments to the CWP.

Staff anticipates a second work phase will address various state general plan mandates, state housing law, and SCA regulations for the remainder of unincorporated Marin outside the San Geronimo Valley. This work program could undertake broader evaluation of CWP stream policies to refine language for clarity and consistency.

**EQUITY IMPACT:**

As this is only a progress report, and no decision or direction is being requested, no equity impacts are being created at this point. However, as part of this planning effort going forward, staff will be working to ensure that development of the Stream Conservation Area Ordinance includes participation of diverse stakeholders and does not exacerbate racial inequity or result in unintended consequences on underserved populations.

**FISCAL/STAFFING IMPACT:**

No impact on the general fund since this is only a progress report.

**REVIWEVED BY:**

<input type="checkbox"/> Department of Finance	<input checked="" type="checkbox"/> N/A
<input checked="" type="checkbox"/> County Counsel	<input type="checkbox"/> N/A
<input type="checkbox"/> Human Resources	<input checked="" type="checkbox"/> N/A
<input type="checkbox"/> County Administrator	<input checked="" type="checkbox"/> N/A

**SIGNATURE:**



Kristin Drumm, AICP  
Senior Planner

CC: Tom Lai, Interim Director  
Jack Liebster, Planning Manager  
Jeremy Tejirian, Planning Manager  
Brian Case, County Counsel

**Attachments:**

1. Mitigation Monitoring and Reporting Program, 2007 Marin Countywide Plan Supplemental EIR with a Focus on Potential Impacts to Salmonids in San Geronimo Valley



**MITIGATION MONITORING AND REPORTING PROGRAM  
2007 MARIN COUNTYWIDE PLAN  
SUPPLEMENTAL EIR WITH A FOCUS  
ON POTENTIAL IMPACTS TO  
SALMONIDS IN SAN GERONIMO  
VALLEY (2019)**

**INTRODUCTION**

The California Environmental Quality Act (CEQA) requires a public agency to adopt a reporting or monitoring program when approving a project or changes to a project, in order to mitigate or avoid significant effects on the environment (Public Resources Code section 21081.6). The program is based on the findings and the required mitigation measures presented in an Environmental Impact Report (EIR) that has been prepared on the project and certified by the lead agency. The reporting or monitoring program must be designed to ensure compliance during project implementation.

Pursuant to the *State CEQA Guidelines*, a Mitigation Monitoring and Reporting Program (MMRP) must cover the following:

- The MMRP must identify the entity that is responsible for each monitoring and reporting task, be it Marin County (as lead agency), other agency (responsible or trustee agency), or a private entity (i.e., the project sponsor).
- The MMRP must be based on the project description and the required mitigation measures presented in the environmental document prepared for the project and certified by the lead agency.
- The MMRP must be approved by the lead agency at the same time of project entitlement action or approvals.

MMRP's are typically designed in chart and checklist format for ease of monitoring and reporting.

**LOCATION AND CUSTODIAN OF DOCUMENTS**

Consistent with the California Environmental Quality Act, the 2007 Marin Countywide Plan Supplemental EIR has been prepared in accordance with the decision of the Court of Appeal of the State of California First Appellate District Division Three, to set aside the County's certification of the 2007 Countywide Plan EIR with respect to San Geronimo Valley watershed only, pending preparation of a supplemental EIR with respect to the San Geronimo Valley watershed only, that analyzes potential cumulative impacts in conformity with Guidelines section 15130, subdivision (b) and the Court's opinion, and that describes mitigation measures in conformity with State CEQA Guidelines section 15126.4 the Court's opinion or makes other findings in conformity with State CEQA Guidelines section 15091. This document, entitled *2007 Marin Countywide Plan Supplemental EIR with a Focus on Potential Impacts to Salmonids in San Geronimo Valley* consists of three volumes (Draft SEIR dated April 2017, Final SEIR and Response to Comments dated July 2018, and Amendment to 2007 Marin Countywide Plan Supplemental EIR dated July 2019), and is on file with the Marin County Community Development Agency, along with all the other documents which constitute the record of proceedings.

## **PURPOSE AND USE OF THE MONITORING AND REPORTING PROGRAM**

The purpose of the monitoring and reporting program is to provide Marin County with a simple set of procedures to ensure that the mitigation measures required under the Final SEIR are implemented properly.

Each required mitigation measure is presented in a monitoring and reporting table that is attached to this report. The chart provides the following information and direction for use.

- 1) The required mitigation measures are listed in the first column, corresponding to the list of measures provided in the Final SEIR.
- 2) The second column lists the agency or entity responsible for implementing the mitigation measure.
- 3) The third column lists the timing when the mitigation measure is to be implemented.
- 4) The fourth column provides guidance on monitoring and reporting actions to ensure that implementation procedures are followed.

California Government Code section 65400 provides that after adoption of a plan (such as a county General Plan) planning agencies (such as Marin County) provide an annual report on the status of the plan and progress in its implementation, including the progress in meeting its share of regional housing needs.

The *State CEQA Guidelines* (section 15097) state in part where the project at issue is the adoption of a general plan, the monitoring plan shall apply to policies and any other portion of the plan that is a mitigation measure or adopted alternatives. The monitoring plan may consist of policies included in plan-level documents. The annual report on general plan status required pursuant to the Government Code is one example of a reporting program for adoption of a city or county general plan.

As listed in the fourth column of each of the attached tables, this MMRP relies on the county's General Plan Annual Report to report on the status of the policies and programs adopted in response to the Final SEIR mitigation measures.

Citations included in the attached tables are provided in the *2007 Marin Countywide Plan Supplemental EIR with a Focus on Potential Impacts to Salmonids in San Geronimo Valley*.



Mitigation Measure	Implemented By	When Implemented	Monitoring or Reporting Action
<b>Mitigation Measure 5.1-1: Expanded SCA Ordinance</b>			
<p>The County shall adopt an Expanded SCA Ordinance consistent with Goal BIO-4 and associated Implementing Programs under the Proposed Project. The County shall commence with development of the Expanded SCA Ordinance following certification of the Final SEIR and, barring unforeseen delays caused by continuing, new, or threatened litigation related to the SEIR process and/or the Ordinance, shall complete the Expanded SCA Ordinance within five years of Final SEIR certification. The County shall report on progress toward completing the Expanded SCA Ordinance to the Marin County Board of Supervisors no less than twice annually, and shall provide public noticing of the forthcoming Marin County Board of Supervisors meeting within 10 days prior to the meeting.</p> <p>The Expanded SCA Ordinance shall incorporate provisions that would:</p> <p><i>Provision 1</i></p> <p>Expand the set of development activities that require a discretionary permit and site assessment to include activities within the SCA that require vegetation clearing, increase impermeable area, increase surface runoff, result in exposed soil, or alter the bed, bank, or channel of any stream, with the following exemptions:</p> <p><b>Exemption 1:</b> Dead, invasive, or exotic vegetation, including leaf-litter, may be removed without a permit. Consistent with Policy BIO-4.4 of the Marin CWP (2007) and the San Geronimo Valley Salmon Enhancement Plan (SEP)<sup>1</sup>, woody debris located below the streamside top of bank is not exempt. Prior to removal of such woody debris, consultation is required with Marin County<sup>2</sup>, the California Department of Fish and Wildlife (CDFW), and/or Marin Municipal Water District (MMWD) to determine its potential to induce erosion or threaten health and safety (including fire safety), and thus whether a permit is needed to remove it. Top of bank shall be determined through a site inspection.</p>	Marin County Board of Supervisors	Adopted as a part of the 2007 Marin Countywide Plan with respect to the San Geronimo watershed only.	<p>Community Development Agency (CDA) would be responsible for monitoring implementation of program.</p> <p>CDA shall report on the implementation of this program as a part of the County's General Plan Annual report.</p>

<sup>1</sup> Diameters and lengths defined in Table 1 (pp. 11) of Prunuske Chatham and SWS (2010).

<sup>2</sup> The current contact for woody debris consultation is Sarah Phillips – Marin Resource Conservation District Urban Streams Coordinator: <mailto:sarah@marinrcd.org>; phone: (415) 663-1170. For fire-related health and safety, contact the Marin County Fire Department Fire Marshall, Scott Alber: (415) 473-6566 or Fire Safe Marin: (415) 570-4FSM (4376).

Mitigation Measure	Implemented By	When Implemented	Monitoring or Reporting Action
<p><b>Exemption 2:</b> Removal or trimming of pyrophytic<sup>3</sup> combustible live trees and/or vegetation consistent with Title 16–Provision 16.16.040 does not require a permit.</p> <p><b>Exemption 3:</b> Planting of non-pyrophytic native vegetation is exempt.</p> <p><b>Exemption 4:</b> Repairs or replacements of septic systems<sup>4</sup> that incorporate applicable Marin County Stormwater Pollution Prevention Program (MCSTOPPP) minimum erosion control, sediment control, and good housekeeping BMPs<sup>5</sup> are exempt.</p> <p><b>Exemption 5:</b> Landowners who partner with the Marin Resource Conservation District to voluntarily restore creeks on their property shall not be required to obtain a discretionary permit for work within the SCA, or a Creek Permit<sup>6</sup> for work below the streamside top of bank, providing that the proposed work is consistent with and authorized under the Marin Resource Conservation District’s Permit Coordination Program (<a href="http://www.marinrcd.org/pcp/">http://www.marinrcd.org/pcp/</a>) and the Resource Conservation District takes full responsibility for the work. Top of bank shall be determined through a site inspection.</p> <p><i>Provision 2</i></p> <p>Enact consistent permit and site assessment requirements for development in planned zoning districts and conventional zoning districts.</p> <p><i>Provision 3</i></p> <p>Require site assessments to be conducted by a qualified professional with at least five years of field experience assessing potential impacts to stream ecology, riparian ecology, and hydrology in coastal California, and the potential for impacts to anadromous salmonids from changes to these processes and conditions.</p>			

<sup>3</sup> For the purposes of Exemption 2, pyrophytic combustible trees and/or vegetation are defined as fire-prone plants listed on the FIRESafe MARIN website: <http://www.firesafemarin.org/plants/fire-prone>. The hardwood and coniferous riparian species Tanoak, California Bay Laurel, and Douglas-fir are considered to be pyrophytic combustible trees and thus are included in this exemption. However, these trees are California native species and their potential to contribute to wildfire may be reduced through appropriate fuel management, including trimming, thinning and removal of branches and shoots to reduce the amount of woody material in the understory, such that the trees themselves may not need to be removed in all cases. While tanoak is also a native riparian and understory species in the San Geronimo Valley, tanoak is highly vulnerable to Sudden Oak Death and therefore can create dead and dry plant material (i.e., fuel), thereby increasing potential effects on wildfire (Forrestel et al. 2015).

<sup>4</sup> Septic system is defined as an on-site sewage disposal system consisting of a septic tank, and a soil infiltration leach field, evapotranspiration mound, or other approved disposal facility. This captures all individual sewage disposal systems as defined in Title 18 of the Marin County Municipal Code of Ordinances.

<sup>5</sup> For information regarding MCSTOPPP, please see: <https://www.marincounty.org/depts/pw/divisions/creeks-bay-and-flood/mcstoppp>

<sup>6</sup> For information regarding Creek Permits, please see: <https://www.marincounty.org/depts/pw/divisions/creeks-bay-and-flood/mcstoppp/creek-permit-checklist>

Mitigation Measure	Implemented By	When Implemented	Monitoring or Reporting Action
<p><i>Provision 4</i></p> <p>Require Standard Management Practices (SMPs) to be incorporated into all development activities within the SCA, as defined in Provision 1, for the protection of hydrologic processes, stream and riparian habitat, and water quality. SMPs shall be reviewed and approved by CDFW or NMFS to ensure the SMPs are adequate to avoid or minimize impacts to salmonids.</p> <p>The SMPs will include, at a minimum, the following information:</p> <p><i>For Riparian Vegetation and Habitat:</i></p> <p>Identification (common names, scientific names, and images) of riparian vegetation important for salmonids;</p> <p>Requirements for replacement of riparian trees removed in association with development activities, including:</p> <ul style="list-style-type: none"> <li>– Riparian trees removed shall be replaced with native riparian trees on-site at a 2:1 ratio or, if on-site mitigation is not feasible, shall be replaced off-site at a 3:1 ratio in a functionally equivalent riparian area of San Geronimo Creek or its major tributaries (North Fork San Geronimo Creek, Woodacre Creek, Montezuma Creek, Arroyo/Barranca/El Cerrito Complex, Larsen Creek) within reaches accessible to anadromous salmonids.</li> <li>– Allowable woody riparian tree species (primarily non-pyrophytic) for replanting in riparian areas include: <ul style="list-style-type: none"> <li>▪ Broadleaf – Bigleaf Maple (<i>Acer macrophyllum</i>), California Buckeye (<i>Aesculus californica</i>), White Alder (<i>Alnus rhombifolia</i>), Oregon Ash (<i>Fraxinus latifolia</i>), Coastal Live Oak (<i>Quercus agrifolia</i>), Arroyo Willow (<i>Salix lasiolepis</i>), Red Willow (<i>Salix laevigata</i>), and other species of native, fast-growing, shade-producing trees.</li> <li>▪ Coniferous – Redwood (<i>Sequoia sempervirens</i>), Douglas-fir (<i>Pseudotsuga menziesii</i>)*.</li> </ul> </li> </ul> <p>* Douglas-fir is a California native species and is considered to be a fire-prone plant, as listed on the FIRESafe MARIN website <a href="http://www.firesafemarin.org/plants/fire-prone">http://www.firesafemarin.org/plants/fire-prone</a>. Where planted, Douglas-fir should be set back from structures in compliance with Title 16 of the Marin County Municipal Code and the California Public Resources Code. Additionally, its potential to contribute to wildfire may be reduced through appropriate trimming, thinning, and removal of branches and shoots to reduce the density of woody plant material in the understory. While tanoak is also a native riparian and understory species in the San Geronimo Valley, tanoak is highly vulnerable to Sudden Oak Death and therefore can increase the amount of dead and dry plant material (i.e., fuel) and the potential for wildfire (Forrestel et al. 2015). The native riparian tree California Bay</p>			

Mitigation Measure	Implemented By	When Implemented	Monitoring or Reporting Action
<p>Laurel is currently considered to be a vector for Sudden Oak Death and is thus not included on the list of allowable woody riparian tree species for replanting in the SCA. Other tree species that may be native or non-native to the region but do not naturally occur in the riparian corridor and are pyrophytic-combustible, such as Monterey pine (<i>Pinus radiata</i>), Eucalyptus (<i>Eucalyptus globulus</i>), and Ghost pine (<i>Pinus sabiniana</i>), are also not included on the list of allowable woody riparian tree species for replanting in the SCA.</p> <ul style="list-style-type: none"> <li>– Replacement trees should be of the same category as the tree being removed: <ul style="list-style-type: none"> <li>▪ Broadleaf trees should be replaced by broadleaf trees using a #5 container.</li> <li>▪ Coniferous trees should be replaced by coniferous trees using a #15 container.</li> <li>▪ Willow trees should be replaced by willow trees using a 1- inch diameter, 4-foot length cutting.</li> </ul> </li> <li>– Replacement trees shall be irrigated as needed and monitored to ensure survival for a minimum of two years.</li> <li>– Trees that do not survive for a minimum of two years shall be replaced according to the above requirements. Allowable vegetation removal and replacement techniques; and</li> </ul> <p>Allowable seasonal timing for vegetation removal.</p> <p><i>For Water Quality and Hydraulic Capacity:</i></p> <p>Drainage requirements for new or replaced impervious areas;</p> <p>Runoff dispersal requirements from new or replaced impervious areas;</p> <p>Bioretention facility design standards; and</p> <p>Bioretention facility underdrain and overflow requirements.</p> <p><i>For Pollution Prevention during Construction Phase:</i></p> <p>Erosion and sediment control requirements, such as MCSTOPPP “Minimum Erosion and Sediment Control Measures for Small Construction Projects” (2015); and</p> <p>Seasonal restrictions for construction activities.</p>			

Mitigation Measure	Implemented By	When Implemented	Monitoring or Reporting Action
<p><i>Provision 5</i></p> <p>Require that discretionary permits for development projects<sup>7</sup> within the SCA include low impact development (LID) practices and designs that are demonstrated to prevent offsite discharge from events up to the 85th percentile 24-hour rainfall event. This requirement applies to retention of the entire volume of each day's rainfall that does not achieve this total volume, and the first increment of rain up to this volume for those 24-hour periods whose rainfall exceeds this volume. Specifically:</p> <ul style="list-style-type: none"> <li>– Small projects, including single-family homes and driveways, that create or replace 500 ft<sup>2</sup> or more of impervious surface shall be required to complete a stormwater control plan (SCP) that achieves retention of the 85th percentile, 24-hour design storm for the newly created or replaced impervious surface, or for an equivalent area of previously unretained impervious surface on the same site. It is acceptable for the SCP to use the existing runoff reduction measures as described in Appendix C of the Bay Area Stormwater Management Agencies Association (BASMAA) Post-Construction Manual (BASMAA 2014) to retain the 85th percentile, 24-hour design storm standard.</li> <li>– Regulated projects shall be required to complete a stormwater control plan (SCP) that achieves retention of the 85th percentile, 24-hour design storm for the newly created or replaced impervious surface, or for an equivalent area of previously unretained impervious surface on the same site. It is acceptable for the SCP to use the bioretention sizing factor (0.04) described in Appendix D of the BASMAA Post-Construction Manual (BASMAA 2014) to retain the 85th percentile, 24-hour design storm standard.</li> <li>– New roads (paved and unpaved, including driveways) shall also be required to meet the following design criteria: <ul style="list-style-type: none"> <li>▪ Surface drainage: <ul style="list-style-type: none"> <li>• Road surfaces and ditches are hydrologically "disconnected" from streams and stream crossing culverts, with a maximum allowable hydrologic connectivity of 25% of the total new road surface and compacted shoulder area (paved and unpaved). To be considered disconnected, road surface runoff is dispersed, rather than collected and concentrated, and does not return to a connected ditch farther downstream.</li> <li>• Fine sediment contributions from roads, cutbanks and ditches are minimized by utilizing seasonal closures and installing a variety of surface drainage techniques including berm removal, road surface shaping (i.e., outsloping, insloping,</li> </ul> </li> </ul> </li> </ul>			

<sup>7</sup> Includes paper streets (Marin County Municipal Code 24.04.627) and/or improvements to existing unpaved roads.

<b>Mitigation Measure</b>	<b>Implemented By</b>	<b>When Implemented</b>	<b>Monitoring or Reporting Action</b>
<p>crowning), rolling dips, ditch relief culverts, waterbars and other measures to disperse road surface runoff and reduce or eliminate sediment delivery to the stream.</p> <ul style="list-style-type: none"> <li>▪ Stream crossings: <ul style="list-style-type: none"> <li>• Stream crossings have a drainage structure designed to pass the 100-year flood flow including appropriate sizing and configuration to accommodate predicted loads of woody debris and sediment.</li> <li>• Stream crossings have no diversion potential (e.g., functional critical dips are in place).</li> <li>• Culvert inlets have low plug potential (trash barriers or deflectors installed where needed).</li> <li>• Approaching road surfaces and ditches are disconnected from streams and stream crossing culverts to the extent feasible, with a maximum allowable hydrologic connectivity of 25% of the total new road surface and compacted shoulder area, using road shaping and road drainage structures.</li> <li>• Class I (fish-bearing) stream crossings meet California Department of Fish and Wildlife and National Marine Fisheries Service fish passage criteria.</li> </ul> </li> <li>▪ Road fills: <ul style="list-style-type: none"> <li>• Unstable and potentially unstable road fills that could deliver sediment to a stream are excavated (removed) or structurally stabilized.</li> <li>• Excavated spoil is placed in locations where eroded material will not enter a stream.</li> <li>• Excavated spoil is placed where it will not cause a slope failure or landslide.</li> </ul> </li> <li>▪ Off-site retrofits <ul style="list-style-type: none"> <li>• If on-site avoidance or minimization of surface runoff and sediment erosion is not feasible using the above Provision 5 criteria, off-site retrofit of existing impaired sites (e.g., stream crossings currently diverted or with diversion potential, culverts likely to plug or undersized culverts), would occur at a 2:1 ratio for total runoff area in a functionally equivalent riparian area of San Geronimo Creek or its major tributaries</li> </ul> </li> </ul>			

*Mitigation Monitoring and Reporting Program  
Marin CWP SGV Supplemental EIR*

<b><i>Mitigation Measure</i></b>	<b><i>Implemented By</i></b>	<b><i>When Implemented</i></b>	<b><i>Monitoring or Reporting Action</i></b>
(North Fork San Geronimo Creek, Woodacre Creek, Montezuma Creek, Arroyo/Barranca/El Cerrito Complex, Larsen Creek) within reaches accessible to anadromous salmonids. If functionally equivalent off-site mitigation opportunities cannot be identified within these locations, then opportunities can be selected elsewhere in San Geronimo Valley and/or in the downstream Lagunitas Creek watershed using existing site-specific sediment source assessments (e.g., San Geronimo Valley Non-County Maintained Roads Erosion Assessment and Implementation, Marin County, California, 2010; Lagunitas Creek Watershed Unpaved Roads Sediment Source Site Assessment, 2013).			



Mitigation Measure	Implemented By	When Implemented	Monitoring or Reporting Action
<b>Mitigation Measure 5.1-2: Require Biotechnical Techniques and Salmonid Habitat Enhancement Elements for All Bank Stabilization Projects</b>			
<p>Marin County shall require that biotechnical techniques and salmonid habitat enhancement elements be included for all bank stabilization projects. Biotechnical techniques provide structural and surface erosion protection through the use of vegetation and wood to reproduce elements of the natural system, thus providing beneficial ecosystem functions and habitat features (Wells 2002, WDFW 2003). Specific criteria, design specifications, and guidelines for individual bank stabilization and instream habitat enhancement projects shall be developed in coordination with and approved by CDFW, with input from agencies such as NMFS and other willing participants, as appropriate for project permitting.</p> <p>Bank stabilization projects shall adhere to the following provisions:</p> <ul style="list-style-type: none"> <li>All stream bank stabilization work shall include biotechnical techniques, such as those described in Appendix H of the Salmonid Enhancement Plan (PCI 2010) and the Creek Bank Restoration and Repair Guidance available at: <a href="https://www.marincounty.org/depts/pw/divisions/creeks-bay-and-flood/mcstoppp/general-public/creeks-and-watersheds">https://www.marincounty.org/depts/pw/divisions/creeks-bay-and-flood/mcstoppp/general-public/creeks-and-watersheds</a></li> <li>Stream bank stabilization structures that involve riprap, rock, or other structural components used to prevent localized stream erosion, sediment transport, or movement shall be used only in unusual circumstances and shall require justification in order to receive a permit. However, rock used to facilitate natural stream processes and dynamics with the purpose of achieving stream equilibrium between erosional and depositional processes shall be allowed, providing the proposed design is justified and approved by the appropriate resource agencies.</li> <li>All stream bank stabilization work shall also incorporate salmonid habitat enhancement elements such as anchored tree or branch bundles, overhanging woody vegetation, cobble/boulder substrate, or other features that improve the shelter complexity rating of each affected stream habitat unit by at least 20% or by a percentage equal to half the affected percentage of the bank length of each habitat unit, whichever is greater<sup>8</sup>. Habitat units and instream shelter complexity ratings shall be identified and determined before initiation of bank stabilization work and after completion of the work, and shall be identified and determined by a qualified professional according to the protocols described in the California Salmonid Stream Habitat Restoration Manual (Flosi et al. 2010, or most recent edition). The qualified</li> </ul>	Marin County Board of Supervisors	Adopted as a part of the 2007 Marin Countywide Plan with respect to the San Geronimo watershed only.	<p>Community Development Agency (CDA) would be responsible for monitoring implementation of program.</p> <p>CDA shall report on the implementation of this program as a part of the County's General Plan Annual report.</p>

<sup>8</sup> For example, a bank stabilization project that affects 60% of the bank length of a given stream habitat unit (e.g., a pool, riffle, or run) must provide instream habitat enhancement that increases the shelter complexity rating of the affected habitat unit by 30% (i.e., half of 60%). A project that affects 25% of the bank length of a given habitat unit must provide instream habitat enhancement that increases the shelter complexity rating of the affected habitat unit by 20%.

Mitigation Monitoring and Reporting Program  
Marin CWP SGV Supplemental EIR

<b>Mitigation Measure</b>	<b>Implemented By</b>	<b>When Implemented</b>	<b>Monitoring or Reporting Action</b>
<p>professional conducting the identification of habitat units and instream shelter complexity ratings will possess field experience assessing potential impacts to stream ecology, riparian ecology, and hydrology in coastal California, and the potential for impacts to anadromous salmonids from changes to these processes and conditions.</p> <ul style="list-style-type: none"> <li>Habitat enhancement elements incorporated into bank stabilization projects must be stable (non-mobile) in the channel and provide instream shelter for salmonids at summer baseflow and bankfull flow, as determined by a qualified professional (see above) using protocols described in the California Salmonid Stream Habitat Restoration Manual (Flosi et al. 2010, or most recent edition).</li> </ul>			

<b>Mitigation Measure</b>	<b>Implemented By</b>	<b>When Implemented</b>	<b>Monitoring or Reporting Action</b>
<b><u>Mitigation Measure 5.2-1: Control and Reduce Production and Delivery of Fine Sediment to Streams</u></b>			
<p>The provisions of the Expanded SCA Ordinance described under Mitigation Measure 5.1-1 will avoid or minimize the hydrologic effects and stream sedimentation associated with potential future development in the SCA, helping reduce the potential for redd scour and degradation of salmonid winter rearing habitat.</p> <p>In addition, the County shall adopt changes to existing stormwater, LID, erosion and sediment control requirements within the San Geronimo watershed and outside of the SCA consistent with the following:</p> <ul style="list-style-type: none"> <li>• Development projects requiring a permit shall be required to adhere to LID practices and designs specified in Mitigation Measure 5.1-1.</li> <li>• Projects subject to a grading permit (Marin County Municipal Code 23.08.025, 23.08.026) shall not be conducted during the rainy season (October 15–April 15). No exceptions to this requirement shall be given by the Director of Marin DPW or by other parties except in cases of imminent threat to life or property.</li> <li>• New roads (paved and unpaved) shall be required to adhere to design criteria specified in Mitigation Measure 5.1-1.</li> </ul> <p>These actions would occur in addition to ongoing implementation of measures to control and reduce production and delivery of fine sediment to streams from existing development, including applicable waste discharge requirements (WDRs) or waiver of WDRs, in keeping with the requirements of the Basin Plan Amendment (SFBRWQCB 2014b) which establishes the TMDL for fine sediment in the Lagunitas Creek watershed.</p>	Marin County Board of Supervisors	Adopted as a part of the 2007 Marin Countywide Plan with respect to the San Geronimo watershed only.	<p>Community Development Agency (CDA) would be responsible for monitoring implementation of program.</p> <p>CDA shall report on the implementation of this program as a part of the County's General Plan Annual report.</p>