

Standard Management Practices for Development Located in the Stream Conservation Area in San Geronimo Valley November 2022

These Standard Management Practices (SMPs) shall apply to all development located within the Stream Conservation Area in San Geronimo Valley for the protection of hydrologic processes, stream and riparian habitat, and water quality. Appropriate site specific SMPs are identified through the required site assessment to offset or avoid adverse impacts to the stream and riparian resources, unless mitigation measures identified through environmental review would result in equal or greater environmental benefit.

Please note other agencies at the local, regional, state, and federal level may require permits for work within or near a waterway.

Riparian Vegetation and Habitat.

Vegetation removal below top of bank may be subject to a <u>Creek Permit</u> from the Department of Public Works. (<u>https://publicworks.marincounty.org/documents/creek-permit-application/</u>)

Distance (Top of Bank)	Star	ndard Management Practice (SMP)
Stream channel	1.	Large Woody Debris. Retain large woody debris to protect and enhance fish habitat, except in cases where removal is essential to protect against property damage or to prevent safety hazards (CWP Policy BIO-4.1). Consultation is required with the Community Development Agency, the California Department of Fish and Wildlife, and/or the Marin Municipal Water District to determine if such removal would induce erosion or threaten public health and safety, including fire safety.
Stream Channel	2.	Protect Riparian Vegetation . Retain riparian vegetation for stabilization of streambanks, moderating water temperatures, trapping and filtering sediments and other water pollutants, allowing nutrient cycling, providing wildlife habitat, and for aesthetic purposes (CWP Policy BIO-4.7). Removal of native vegetation below top of bank is prohibited per Development Code Section 22.30.045.C.3. (Vegetation Removal Below Top of Bank).
Stream Channel	3.	Control Exotic (Non-Native, Invasive) Vegetation . Remove and replace invasive exotic plants with native plants as part of stream restoration projects. Consultation is required with the Community Development Agency, the California Department of Fish and Wildlife, and/or the Marin Municipal Water District to determine if such removal would induce erosion or threaten public health and safety, including fire safety (CWP Policy BIO-4.6).
0-15 feet	4.	Prohibit removal of riparian vegetation . Do not remove any riparian vegetation within the first 15 feet of the SCA.

0-35 feet	5.	Tree roots and stumps . Do not remove tree roots or grind stumps within the first 35 feet of the SCA.	
15 feet to outer limits of SCA	6.	Vegetation replacement . Replace areas of herbaceous riparian vegetation that have been temporarily disturbed by construction using a native seed mix comprised of San Francisco Bay Area native species. Apply native seed mix at a rate of 40 lbs/acre.	
15-35 feet	7.	Saplings or riparian shrubs . Do not remove saplings or riparian shrubs \geq 125 square feet in total canopy area.	
35 feet to limits of SCA	8.	Saplings and riparian shrubs. Do not remove saplings or riparian shrubs > 250 square feet in total canopy area.	
Entire SCA	9.	Identify vegetation . Identify all riparian vegetation important for salmonids. Include common names, scientific names, and images.	
Entire SCA	10.	Minimize removal of riparian vegetation . Retain and minimize disturbance to woody and herbaceous riparian vegetation in SCAs and adjacent areas (CWP Policy BIO-4.1 and Program BIO-4.f).	
Entire SCA	11.	Tree or Shrub Removal. Do not remove any tree or shrub if the distance from the base of the trunk to the top of stream bank is less than its overall height (a 1:1 ratio). Remove only if $x \ge y$	
Entire SCA	12.	Tree Removal . Do not remove more than two trees (not including saplings) ¹ .	
Entire SCA	13.	Reclaim damaged portions of SCAs. Restore damaged portions of the Stream Conservation Area to its natural state wherever possible. Reestablish as quickly as possible any herbaceous and woody vegetation that must be removed, replicating the structure and species composition of indigenous native riparian vegetation (CWP Policy BIO-4.8).	
Entire SCA	14.	Tree Replacement . Replace riparian trees with native riparian trees on-site at a 2:1 ratio. If on-site mitigation is not feasible, riparian trees 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.	
		 (primarily non-pyrophytic) for replanting in riparian areas include: <u>Broadleaf:</u> Bigleaf Maple (Acer macrophyllum). 	

		California Buckeye (Aesculus californica).
		White Alder (Alnus rhombifolia).
		Oregon Ash (Fraxinus latifolia).
		Coastal Live Oak (Quercus agrifolia).
		Arroyo Willow (Salix lasiolepis).
		 Red Willow (Salix laevigata); and
		 Other species of native, fast growing, shade-producing trees.
		<u>Coniferous</u> :
		Redwood (Sequola sempervirens); and
		 Douglas-fir* (Pseudotsuga menziesii).
		The hardwood and coniferous species Tanoak, California Bay Laureland and Douglas fir are considered to be pyrophytic combustible trees by Fire Safe Marin should not be considered for replanting. While tanoak is a native riparian understory species in the San Geronimo Valley, tanoak is highly vulnerable to Sudden Oak Death and can create dead and dry plant material (i.e. fuel), thereby increasing potential effects on wildfire.
		If 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 a native riparian tree, California Bay Laurel is currently considered to be a vector for Sudden Oak Death and is excluded from 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 excluded.
		 Replacement trees should be of the same species as the tree being removed: Broadleaf trees should be replaced by broadleaf trees using a #5 container. Coniferous trees should be replaced by coniferous trees using a #15 container. Willow trees should be replaced by willow trees using a 1- inch diameter, 4-foot length cutting.
		Replacement trees shall be irrigated as needed and monitored to ensure survival for a minimum of five years. Trees that do not survive for a minimum of five years shall be replaced according to the above requirements.
Entire SCA	16.	Vegetation removal . Do not use heavy equipment (i.e., bobcats, tractors, dozers, etc.) for initial clearing of vegetation, leaf litter, and other debris.

Entire SCA	17.	Revegetation . When removal of native riparian vegetation is unavoidable, replace with a variety of indigenous native trees, shrubs and ground covers on-site at a 2:1 ratio using species recommended in the <u>San Geronimo Valley Salmon Enhancement</u> <u>Plan</u> at a rate sufficient to replicate, after a period of five years, the appropriate density and structure of vegetation removed. The replacement and enhancement planting shall be monitored for no less than five years and until the restored vegetation provides for a minimum replacement or enhancement ratio of 2:1 (CWP Program BIO-4.i).	
Stormwater, Erosion and Sediment Control			
Entire SCA	18.	Permeable Surfaces . Incorporate permeable surfaces in project design, such as paver stones, turf block, and permeable asphalts and pavements for easy ways to manage runoff (CWP Policy BIO-4.18).	
Entire SCA	ntire SCA 19. Reduce Wet Weather Impacts. Avoid construction activity adjacent to and af the SCA during wet weather, or when water is flowing through streams, except emergency repairs. Disturbed surfaces shall be stabilized and replanted, and a where woody vegetation has been removed shall be replanted with suitable stability before the beginning of the rainy season (CWP Policy BIO-4.15).		
Entire SCA	20.	Erosion and Sediment Control . Incorporate MCSTOPPP's " <u>Minimum Erosion and</u> <u>Sediment Control Measures for Small Construction Projects</u> "	
Entire SCA	21.	Erosion and Sediment Control . Incorporate MCSTOPPP's " <u>Pollution Prevention: It's</u> <u>Part of the Plan</u> " guidelines.	
Entire SCA	22.	New or replaced impervious areas (e.g., roofs, paving, or hardscape) shall not drain directly to storm drains or streams (i.e., run-off must disperse across a pervious, vegetated surface).	
Entire SCA	23.	Disperse runoff from new or replaced impervious areas . Such runoff shall be dispersed in accordance with <u>Marin County Stormwater Pollution Prevention</u> <u>Program</u> requirements. If such runoff is not dispersed to pervious areas, it must be directed to a bioretention facility built to the design standard of NPDES Phase II permit Provision E.12.	
Entire SCA	24.	Water inflow and outflow. Underdrain and overflow from a bioretention facility shall be connected to an existing drainage system or dispersed downgradient using perforated pipe dissipaters. If overflow is discharged above surface, install energy dissipator at all outlets to reduce erosion.	
Entire SCA	25.	Low Impact Development . Improvements shall incorporate 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, improvements that create or replace 500 square feet or more of impervious surface shall:	

		 Complete a stormwater control plan 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 Stormwater Control Plan 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. It is also acceptable to use the bioretention sizing factor (0.04) described in Appendix C of the BASMAA
		 2014) to retain the 85th percentile, 24-hour design storm standard. Complete a stormwater control plan 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.
General R	equir	ements
Entire SCA	26.	Exterior Lighting . For new outdoor lighting, use low-wattage fixtures that should be directed downward and shielded to direct light away from vegetated riparian areas. Do not use lighting, such as globe fixtures, that directs lighting in an upward or uncontrolled direction.
Entire SCA	27.	Land Divisions . Subdivisions shall be designed so that no future development will occur within the Stream Conservation Area. Where the Stream Conservation Area buffer is determined by the size of the lot, the buffer that applies to the lot prior to any subdivision shall apply to all subsequent lots that are created (CWP Policy BIO-4.3 and Program BIO-4.h).
Entire SCA	28.	Public Access. Ensure that public access to publicly owned land within the Stream Conservation Area respects the environment, and prohibit access if it will degrade or destroy riparian habitat. Acquire public lands adjacent to streams where possible to make resources more accessible and usable for passive recreation, and to protect and enhance streamside habitat (CWP Policy BIO-4.13).
Entire SCA	29.	Locate Trails Appropriately . Situate trails at adequate distances from streams to protect riparian and aquatic habitat and wildlife corridors. Trails may occasionally diverge close to the top of bank to provide visual access and opportunities for interpretive displays on the environmental sensitivity of creek habitats (CWP Program BIO-4.k).
Entire SCA	30.	Restore Culverted Streams . Replace storm drains and culverts in Stream Conservation Areas with natural drainage and flood control channels wherever feasible. Reopening and restoring culverted reaches of natural drainages should be considered on parcels containing historic natural drainages where sufficient land area is available to accommodate both the reopened drainage and project objectives. Detailed hydrologic analysis may be required to address possible erosion and flooding implications of reopening the culverted reach, and to make appropriate design recommendations. Where culverts interfere with fish migration, but

		replacement is not possible, modify culverts to allow unobstructed fish passage (CWP Policy BIO-4.9).
Entire SCA	31.	Promote Natural Stream Function . Permitted work shall not result in alterations that directly or indirectly create barriers to fish migration near or within streams mapped as currently and/or historically supporting salmonids (CWP Policy BIO-4.4).
New Road The followidriveways.	ls (pa ing de	ved and unpaved) including Driveways sign criteria shall apply to all new roads, whether paved or unpaved, including
Entire SCA	32.	Reduce Road Impacts. Locate new roads and roadfill slopes outside the Stream Conservation Area, except at stream crossings, and consolidate new road crossings wherever possible to minimize disturbance in the SCA. Spoil from road construction shall be deposited outside the Stream Conservation Area. Stabilize all soil surfaces. Stream crossing should be channel spanning as to provide transport of bed materials, where feasible (CWP Policy BIO-4.14).
Entire SCA	33.	Surface Drainage
		a. 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.
		b. 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, crowning), rolling dips, ditch relief culverts, waterbars and other measures to disperse road surface runoff and reduce or eliminate sediment delivery to the stream.
Entire SCA	34.	Stream crossings
		 a. 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.
		 b. Stream crossings have no diversion potential (e.g., functional critical dips are in place).
		c. Culvert inlets have low plug potential (trash barriers or deflectors installed where needed).
		 d. 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. e. Class I (fish-bearing) stream crossings meet California Department of Fish and Wildlife and National Marine Fisheries Service fish passage criteria. Where

		feasible, stream crossings should be channel-spanning as to provide transport of bed material.	
Entire SCA	35.	Road fills	
		a. Unstable and potentially unstable road fills that could deliver sediment to a stream are excavated (removed) or structurally stabilized.	
		 Excavated spoil is placed in locations where eroded material will not enter a stream. 	
		c. Excavated spoil is placed where it will not cause a slope failure or landslide.	
Entire SCA	36.	Off-site retrofits. If on-site avoidance or minimization of surface runoff and sediment erosion is not feasible using the above 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 (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.	
Stream Ch	nanne	si di si	
Stream Channel	37.	Retain Hydraulic Capacity . Retain and, where possible, restore the hydraulic capacity and natural functions of stream channels. Discourage alteration of the bed or banks of the stream, including filling, grading, excavating, and installation of storm drains, French drains, and culverts. When feasible, replace impervious surfaces with pervious surfaces. In no case shall alterations that create barriers to fish migration be allowed (CWP Policy BIO-4.4).	
Stream Channel	38.	Channel Alteration for Flood Control . Alteration of channels for flood control shall be designed and constructed in a manner that retains and protects the riparian vegetation, allows for sufficient capacity and natural channel migration, and allows for reestablishment of woody trees and shrubs without compromising the flood flow capacity where avoidance of existing riparian vegetation is not possible. Alteration of natural channels for flood control shall be designed and constructed in a manner that retains and protects the riparian vegetation, allows for sufficient capacity and natural channels for flood control shall be designed and constructed in a manner that retains and protects the riparian vegetation, allows for sufficient capacity and natural channel migration, and allows for reestablishment of woody trees and shrubs without compromising the flood flow capacity where the removal of existing riparian vegetation cannot be avoided (CWP Policy BIO-4.4).	
Stream Channel	39.	Channel and Flow Alteration . Alteration of stream channels or reduction in flow volumes are only allowed after completion of environmental review, commitment to appropriate mitigation measures, and issuance of appropriate permits by jurisdictional agencies based on determination of adequate flows necessary to protect fish habitats, water quality, riparian vegetation, natural dynamics of stream functions, groundwater recharge areas, and downstream users (CWP Policy BIO-4.16).	

Stream Channel	40.	Maintain Channel Stabilit y. Improvements that would cause or exacerbate existing channel instabilities shall be coupled with a channel stabilization program that would maintain peak flows at pre-project levels, or less, in accordance with hydrological or geomorphic assessment, or comply with the mitigations generated during the required environmental review process. Mitigations shall include maintenance of peak flows at pre- and post-project levels, or less. Proposed stabilization measures shall anticipate project-related changes to the drainageway flow regime. All bank stabilization projects shall conform to FSEIR Mitigation Measure 5.1-2: Require Biotechnical Techniques and Salmonid Habitat Enhancement Elements For All Bank Stabilization Projects (CWP Policy BIO-4.19).
Stream Channel	41.	Restore and Stabilize Stream Channels. Restore streams through appropriate channel redesign where sufficient right-of-way exists that includes the following: a hydraulic design, a channel plan form, a composite channel cross-section that incorporates low flow and bankfull channels, removal and control of invasive exotic plant species, and biotechnical bank stabilization methods to promote quick establishment of riparian trees and other native vegetation. All bank stabilization projects shall conform to FSEIR Mitigation Measure 5.1-2: Require Biotechnical Techniques and Salmonid Habitat Enhancement Elements For All Bank Stabilization Projects (CWP Policy BIO-4.5).

Common Name	Scientific Name	Life Form
Lady fern	Athyrium filix-femina	Fern
California polypody	Polypodium californicum	Fern
Western sword fern	Polystichum munitum	Fern
Giant chain fern	Woodwardia fimbriata	Fern
Elk clover	Aralia californica	Shrub
Mugwort	Artemisia douglasiana	Shrub
Coyote brush	Baccharis pilularis	Shrub
Stream dogwood	Cornus sericea	Shrub
California hazelnut	Corylus cornuta	Shrub
Toyon	Heteromeles arbutifolia	Shrub
Ocean spray	Holodiscus discolor	Shrub
Twinberry	Lonicera involucrata	Shrub
Creek monkeyflower	Erythranthe guttata	Shrub
Wax myrtle	Myrica californica	Shrub
Ninebark	Physocarpus capitatus	Shrub
Coffeeberry	Rhamnus californica	Shrub
Fuchsia-flowering gooseberry	Ribes californicum	Shrub
Pink flowering currant	Ribes sanguineum	Shrub
Rose, California	Rosa californica	Shrub
Rose, Wood	Rosa gymnocarpa	Shrub
Thimbleberry	Rubus parviflorus	Shrub
Salmonberry	Rubus spectabilis	Shrub
California blackberry	Rubus ursinus	Shrub
Blue elderberry	Sambucus cerulea	Shrub
Red elderberry	Sambucus racemosa	Shrub
Snowberry	Symphorocarpus albus	Shrub
Poison oak	Toxicodendron diversilobum	Shrub
Pacific Madrone	Arbutus menziesii	Tree
Big leaf maple	Acer macrophyllum	Tree
Box elder	Acer negundo var. californicum	Tree
California buckeye	Aesculus californica	Tree
Alder, white or red	Alnus spp.	Tree
Oregon ash	Fraxinus latifolia	Tree
Coast live oak	Quercus agrifolia	Tree
California black oak	Quercus kelloggii	Tree
Valley oak	Quercus lobata	Tree Shrub-like
Arroyo willow	Salix lasiolepis	tree
Yellow willow	Salix lucida lassiandra	Tree
Coast redwood	Sequoia sempervirens	Tree

Attachment 1 Native Plants Common to Riparian Areas in Marin County

Attachment 2

RESOURCES

Marin County Stormwater Pollution Prevention Program

- <u>Creek Restoration and Permitting</u>: Permit information, restoration and design, Marin Project Coordination Meetings; and other resources.
- <u>Construction Projects</u>: Resources and Stormwater Best Management Practices for Construction Projects

Marin Watershed Program

- Creek Care: A Guide for Marin Residents.
- Go Native: Using Native Plants for Your Yard, Patio, Creek
- Marin County Guide for Creek and Wetland Permits
- <u>Slow it. Spread it. Sink it! Eco-friendly Solutions for Managing Rainwater on Your</u>
 <u>Property</u>

San Geronimo Valley Related Documents:

- San Geronimo Valley Salmon Enhancement Plan
- San Geronimo Valley Community Plan

Fire Management:

- FireSAFE Marin
- Marin County Fire <u>defensible space</u> resources
- <u>Ecologically Sound Practices for Vegetation Management</u>

Native Plants:

- Berkeley <u>CalPhoto</u>
- <u>CalFlora</u>, a nonprofit database providing information on wild California plants
- <u>California Native Plant Society</u>
- <u>Calscape</u> search for California native plants
- <u>Mostly Natives Nursery</u> in Point Reyes Station
- Go Native: Using Plants for your Yard, Patio, Creek