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Rincon Project No: 24-17044

Melissa Pasa, Supervising Water Resources Engineer
County of San Luis Obispo
Flood Control and Water Conservation District
976 Osos Street, Suite 207
San Luis Obispo, California 93408
Via email: mpasa@co.slo.ca.us

**Subject: Arroyo Grande Creek Channel Waterway Management Program
2026 Annual Vegetation Management and Sediment Removal Work Plan**

Dear Ms. Pasa:

This Annual Vegetation Management and Sediment Removal Work Plan (Work Plan) has been prepared by Wallace Group and Rincon Consultants, Inc. (Rincon) on behalf of the County of San Luis Obispo Flood Control and Water Conservation District (District) for the Arroyo Grande Creek Channel Waterway Management Program (WMP or Project). The WMP provides for flood control and habitat improvement within the lower reaches of the Los Berros Creek Diversion Channel and Arroyo Grande Creek (Project reach or Project area). The objective of the Work Plan is to outline proposed 2026 WMP activities, pursuant to requirements of the following permits:

- Regional Water Quality Control Board, Clean Water Act Section 401 Water Quality Certification, WDID No. 34012WQ01.
- National Marine Fisheries Service (NMFS), Biological Opinion, File No. SPL-2012-00317-JWM
- California Department of Fish and Wildlife, Pending Amendment of Routine Maintenance Agreement Notification No. 1600-2018-0115-R4

In accordance with permit requirements, this Work Plan includes the following elements:

- Proposed vegetation management work.
- Vegetation management objectives including the desired vegetation condition (e.g., vegetation type, density) that optimizes environmental values while still promoting the designed flood flow conveyance.
- Descriptions of additional mitigation activities including riparian planting, invasive species control, and removal of trash and pollutants from homeless encampments.
- Roughness and sediment objectives for proposed maintenance, including the assumptions and rationale used to develop the objectives.
- If feasible for necessary flood protection, sediment removal shall not exceed 20 percent of the channel length in any consecutive two-year period, which equates to a yearly maximum of 2,740 feet in Arroyo Grande Creek and 640 feet in the Los Berros Creek diversion channel.
- If feasible for necessary flood protection, no individual sediment removal site shall exceed 500 feet along the channel bed and each sediment removal site shall be separated by a distance where no sediment removal activities will occur in the same year.
- Maintenance required on established habitat features (log structures and alcoves).



Project Status

The current year, 2026, will be year 6 of the post-construction, maintenance, and monitoring phase of the Project. WMP activities completed in 2025 included routine vegetation management, sediment management, levee repairs, and revegetation.

A permanent levee repair was completed at the location of a 2023 levee breach (Breach Site) that had been previously repaired during emergency conditions in 2023. Necessary stabilization to restore the integrity of the levee and allow for restoration of the riparian buffer involved an approximate 115 linear foot section of the south levee downstream of the 22nd Street Bridge. Routine sediment removal was completed concurrently in the vicinity of the Breach Site including adjacent to the Union Pacific Railroad Bridge (50 linear feet) and the adjacent Sediment Management Zone (SMZ) 7 (190 linear feet).

Revegetation activities included post-construction hydroseeding at the Breach Site and sediment management area (SMZ 7) and installation of riparian trees along the inner levee slope at the Breach Site. Supplemental revegetation activities included installation of 353, 453, and 547 native container plants along the inner levee slopes of SMZ 7, 8, and 10, respectively. Prior to installation of container plants, the area received a broadcast herbicide treatment, followed by broadcast seeding with native seed mix.

Various aspects of the Project were monitored pursuant to the WMP permits including water quality, revegetation success, wildlife use, and California Rapid Assessment Program (CRAM) monitoring. Monitoring for revegetation success included quantitative quadrat monitoring and qualitative monitoring concurrent with other Project activities. Monitoring results were provided in annual reports provided to the permitting agencies. A total of eight overstory riparian species have been identified in the Project reach, and the number of overstory species per SMZ is on target at the majority of sites. However, one species, arroyo willow (*Salix lasiolepis*) remains the dominant overstory species.

Log structure and alcove monitoring in 2025 confirmed that conditions are relatively unchanged since 2024 surveys. In general, all log structures and alcoves were structurally intact and stable following numerous high flow events, including two above average water years in 2023 and 2024. However, the overall functionality of each structure and the resulting (aquatic) habitat conditions varied widely. In many cases, structures were either perched above or below the ordinary high-water line. Dense riparian vegetation, sediment and/or debris racks were commonly obscuring log structures (Attachment A, Photos 1 and 2). The most common observed instream habitat type associated with the log structures was a shallow, slow velocity run. Other instream habitats observed included main channel scour pool, low gradient riffle, short cascade, and isolated scour pool. Recommendations based on the 2025 monitoring events were provided to the agencies within the *Arroyo Grande Creek WMP 2025 Secondary Sediment Management Plan* on August 1, 2025.

The active channel is currently occupying secondary channel reaches within SMZs 14, 16, 17, 18, and 19. Although these secondary channel reaches commonly lack a riparian buffer on the SMZ side, the predominant north-south orientation of this reach of Arroyo Grande Creek results in the center riparian buffer providing deep shade during at least half of the day (morning or evening), thereby helping to moderate water temperatures. These locations will continue to be monitored for adaptive management needs.

Additional details of the mitigation, maintenance, and monitoring activities conducted in 2025 are included in the 2025 Annual Reports, as submitted to the individual permitting agencies.



Project Objectives

This work plan addresses the objectives, goals, and requirements defined in the Project permits and the Arroyo Grande Creek Channel Waterway Management Program Habitat Mitigation and Monitoring Plan (HMMP; SWCA 2019¹), which include the following flood control, vegetation and aquatic habitat objectives:

Flood Control Objectives

- Maintain a composite channel roughness of 0.04.
- Maintain a minimum of fifty percent of the design freeboard for 10-year capacity (i.e., no less than one foot of freeboard for a 10-year storm event).

Vegetation and Aquatic Habitat Objectives

- A continuous riparian corridor within the Arroyo Grande Creek and Los Berros Creek diversion channels;
- An increase in plant species diversity within portions of both channels by planting a diverse palette of tree species;
- The establishment of riparian and scrub vegetation in areas that are currently devoid of vegetation;
- A decrease in the overall percent cover of exotic invasive vegetation;
- Increased water quality with the removal of trash from riparian areas;
- A reduction in fine sediment erosion by vegetating buffer strips along the levee; and
- Enhance in-stream habitat using log structures and alcoves.

Proposed WMP Activities for 2026

Mitigation and maintenance activities planned for this year are described below. All activities will be conducted in compliance with project permits and approved plans. Representative photos are provided in Attachment 1.

Sediment Removal

Topographic surveys and analyses of the sediment management zones are ongoing and results of this work will be used to inform future sediment removal recommendations to maintain the channel's flood capacity as well as log structure and alcove functionality. If sediment removal or log structure maintenance is proposed for this year, a secondary 2026 Sediment Management Plan will be provided on or before August 1, 2026.

Woody Vegetation Removal

Management of woody vegetation within the riparian buffer will occur in the late summer or early fall (September 1 through October 15). Trimming of live vegetation will be limited to the minimum amount necessary to maintain channel capacity and minimize the risk of debris jams and flooding. This trimming work is essential to reduce channel roughness and maintain hydraulic capacity for flood protection.

¹ SWCA Environmental Consultants (SWCA). 2019. Arroyo Grande Creek Waterway Management Program Habitat Mitigation and Monitoring Plan



Woody vegetation removal in Arroyo Grande Creek and Los Berros Diversion Channel will adhere to the following criteria:

- All woody vegetation within 20 feet of existing bridges (i.e., Union Pacific Railroad bridge, 22nd Street bridge, and Highway 1 bridge) will be removed.
- Any fallen limbs or trees that threaten the integrity of the levee or have potential to increase flooding risk will be removed.
- Low-hanging limbs, dead or broken branches, and fallen trees will be trimmed to maintain six feet of vertical clearance above the main channel.
- All woody vegetation under four-inches DBH that has re-grown or established within SMZs will be cut within six inches of the ground.

Vegetation will be removed by hand crews using mechanized and non-mechanized hand equipment including, but not limited to, chainsaws, loppers, and pruners. In 2026, woody vegetation removal will focus on the downstream portion of the project reach from SMZ 7 downstream to SMZ 1.

The 2025 lidar and vegetation surveys indicate a composite channel roughness of 0.035 to 0.075 throughout the Project reach, with an average roughness of 0.05, which exceeds the target roughness of 0.04. Channel hydraulic capacity is a function of both roughness and channel area. Therefore, increased roughness results in a reduction in flood control capacity throughout the Project. Without decreasing roughness, the only way to increase flood capacity is to increase channel area. Given the lateral constraints of the levees, increasing channel area would require deepening the channel which could lead to an increase in channel entrenchment, characterized by channel incision, erosion, and bank instability. Given these constraints, it is important to work towards reducing channel roughness to maintain hydraulic capacity in the creek.

The composite channel roughness is primarily influenced by the width and density of the riparian buffer. Current strategies for lowering roughness values include woody debris removal, invasive species control, removal of hazard trees, and revegetation with single trunked riparian trees. Work within the buffer will continue to utilize these strategies in compliance with permit requirements.

Hazard Tree and Debris Removal

The current state of the riparian corridor can be characterized as a dense monoculture of over-mature willow with low structural diversity and poor understory development. Tree failure was observed throughout the Project reach, most commonly, broken tops and major scaffold branches (Attachment A, Photo 3). Failure of entire trees including the root zone was not commonly observed.

Tree failures impact adjacent vegetation (direct injury and/or blocking sunlight) and generate large woody debris which has the potential to damage levee slopes and cause flow obstructions. Removal of large wood and debris jams within the active channel presents a risk to aquatic species and is highly labor-intensive. Therefore, the District seeks to proactively remove damaged and failing branches from the riparian canopy before they enter the active channel in order to avoid debris mobilization during storm events which can result in infrastructure damage, flood control issues, and labor-intensive instream work (Attachment A, Photo 3 through Photo 5).

Partially failed trees (i.e., broken top or major damage to one or more major structural branches) will be identified as hazard trees and ranked for potential removal according to the greatest threats to instream resources. Hazard tree removals will proceed according to priority ranking and may take place outside the standard woody vegetation treatment window when the hazard tree poses a threat to flood control or adjacent native vegetation. Work will be conducted by an experienced tree crew with full compliance monitoring support. Woody material will be removed from the channel, and when feasible, chipped onsite and applied to mitigation plantings (see below Revegetation Activities section). When feasible, the root



zone of the hazard trees will be left intact and allowed to resprout, creating greater structural diversity. Any openings in the riparian corridor created by hazard tree removals will be planted with black cottonwood pole cuttings, or other appropriate container stock.

Revegetation Activities

Revegetation activities planned for 2026 will increase riparian tree diversity in the Project area, fill gaps in riparian canopy cover, and increase native understory plant cover. Desired species include California sycamore (*Platanus racemosa*), white alder (*Alnus rhombifolia*), and black cottonwood (*Populus trichocarpa*) based on their overall shape and structural benefits, as well as box elder (*Acer negundo*) for increased species diversity. Openings in the riparian buffer created by removal of hazard trees and/or debris will be planted with black cottonwood pole cuttings, while container plantings will be used in areas less prone to scour. Specifically, the District plans to install California sycamore container plantings adjacent to alcove (Type B) structures to help armor the adjacent levee bank, provide stream shading, and increase the potential for instream refugia provided by root wads (Attachment A, Photo 6).

Container stock will be used to supplement existing native plantings at SMZs, including 7, 8, 9, 10 and 11. Plant installation and maintenance is scheduled for spring – fall 2026 with timing dependent on water levels and precipitation. The plant palette may include the following species (dependent on availability):

- Deerweed (*Acmispon glaber*)
- Mugwort (*Artemisia douglasiana*)
- Marsh baccharis (*Baccharis glutinosa*)
- Bush monkeyflower (*Diplacus aurantiacus*)
- Western goldenrod (*Euthamia occidentalis*)
- Deer grass (*Muhlenbergia rigens*)
- Evening primrose (*Oenothera elata*)
- Pacific aster (*Symphyotrichum chilense*)
- Western vervain (*Verbena lasiostachys*)

Installation of container plantings will follow the guidelines provided in the HMMP and detailed in annual status reports. Planting locations will be grouped together in naturally spaced patches for ease of maintaining and watering newly planted container stock during the first year. Application of arborist wood chips or mulch will be used to moderate soil temperatures, retain soil moisture, and reduce non-native weeds (Attachment A, Photo 7).

Native seed mixes will be applied as needed to increase native plant cover and following vegetation management activities. The original plant palette from the HMMP has been modified slightly to incorporate locally occurring species and species that would be more successful on the drier upper levee slopes. The current seed mixes including the Transition Zone and Riparian Scrub Seed Mixes have been presented in Annual Status Reports to the resource agencies. The District, in coordination with Rincon restoration specialists, is evaluating potential modifications to existing seed mixes for improved native plant establishment on challenging sites, such as inner levee slopes.

Vegetation Management and Invasive Species Control

Certain highly invasive species, with a tendency to proliferate in riparian areas, have been identified in Project permits as target species for eradication. The following species (with California Invasive Plant Council [Cal-IPC] rankings) are known to occur in the Project area and will continue to be targeted for removal:



- Giant reed (*Arundo donax*), Cal-IPC “High”
- Poison hemlock (*Conium maculatum*), Cal-IPC “Moderate”
- Cape ivy (*Delairea odorata*), Cal-IPC “High”
- Fennel (*Foeniculum vulgare*), Cal-IPC “Moderate”
- English ivy (*Hedera helix*), Cal-IPC “High”
- Castor bean (*Ricinus communis*), Cal-IPC “Limited”
- Greater periwinkle (*Vinca major*), Cal-IPC “Moderate”

All highly invasive target species will be opportunistically removed by hand whenever encountered and disposed of properly. If necessary, remaining plant material will be treated with an aquatic-safe herbicide.

In addition to the target invasive species listed above, non-native, herbaceous species including mustards (*Brassica*, *Raphanus*, and *Hirschfeldia*), thistles (*Carduus pycnocephalus* and *Silybum marianum*) and crown daisy (*Glebionis coronaria*) are established widely throughout the Project area. Vegetation management activities will aim to reduce the non-native seed bank by treating weed species prior to seed set. Treatment schedules will also consider overall site aesthetics, and fuel reduction for fire protection. These species are managed regularly through hand removal, weed whipping, grazing, and herbicide application, as part of the standard vegetation maintenance activities for the mitigation areas (Attachment A, Photo 8).

Compliance Monitoring

Compliance support activities such as WEAP training, pre-activity surveys for special-status species and nesting birds, monitoring and handling of aquatic species will be completed by qualified biologists approved by USFWS. All qualifying maintenance activities will be preceded by pre-activity clearance surveys, and biological monitors will be on site, as needed, to monitor and provide guidance.

Special-status species of focus include California red-legged frog (CRLF; *Rana draytonii*), south-central California coast steelhead (*Oncorhynchus mykiss*), tidewater goby (*Eucyclogobius newberryi*), southwestern pond turtle (*Actinemys pallida*), least Bell’s vireo (*Vireo bellii pusillus*), tricolored blackbird (*Agelaius tricolor*), coast horned lizard (*Phrynosoma blainvillii*), California legless lizard (*Anniella pulchra*), roosting bats, and nesting birds. All pre-activity survey results are provided in the Annual Status Reports.

Trash Removal

The District will continue to monitor the Project for new encampments and will remove trash and debris from the channel for disposal of off-site. Trash and debris removal will be performed to maintain channel hydraulic capacity, support native vegetation growth, and allow for comprehensive monitoring, and will occur throughout the year as needed.

Sincerely,

Keven Ann Colgate
Rincon Supervising Biologist

Valerie Huff
Wallace Group Senior Civil Engineer

Attachments

Attachment 1 Representative Site Photos

Attachment 1

Representative Site Photos



Photos 1 and 2. Many Type A log structures are heavily laden with woody debris but remain intact and functional. Commonly observed instream habitat included small scour pools at the base of Type A structures. Woody debris on log structures will be removed where it is identified as reducing channel capacity.



Photo 3. Over-mature arroyo willow trees are prone to branch failure, broken tops, etc. Hazard trees will be identified, prioritized, and proactively removed to help prevent incorporation of these branches into the instream large wood and debris load.



Photo 4. Overhanging branches and dense woody vegetation have the potential to trap large wood and other debris during high flow events. Vegetation will be removed in compliance with permit requirements.



Photo 5. Large debris jams reduce channel capacity and can cause damage to live vegetation. Debris jams are more labor-intensive and costly to remove as compared to branches within the riparian canopy.



Photo 6. Existing California sycamore seedling growing adjacent to a Type B log structure will provide increased stability and instream habitat improvements at maturity. Additional locations will be identified for tree plantings adjacent to Type B structures.



Photo 7. New mitigation container plantings will require maintenance including weed management, addition of arborist wood chips, and potentially supplemental seeding and planting.



Photo 8. Non-native herbaceous vegetation will be managed with grazing, herbicide application, and hand removal.