Habitat Restoration Plan

Sespe Creek Rail Bridge Repair Project

ITP No. 2081-2025-078-05

Ventura County, California

Prepared by:

ALL HANDS BIOLOGICAL

WSP

On Behalf of:

VCTC

Ventura County Transportation Commission

and

RAILPROS

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Table of Contents

1.	**Introduction**	**1**
1.1	Project Location	1
1.2	Project Background and Purpose	1
1.3	Goals and Objectives	2
1.3.1	Restoration Zones	2
1.3.2	Minimization Measures	3
1.4	Regulatory Requirements	3
2.	**Existing Conditions**	**4**
2.1	Environmental Setting	4
2.2	Summary of Construction Activities	4
2.3	Environmental Setting of Restoration Areas	5
2.3.1	Zones 1 and 2 – Channel and Alluvial Areas	5
2.3.2	Zone 3 – Upland/Transitional Areas	5
2.4	Fish, Wildlife, and Sensitive Species	6
3.	**Roles and Responsibilities**	**7**
3.1	Financially Responsible Party	7
3.2	Habitat Restoration Manager	7
3.3	Restoration Specialist	7
4.	**Implementation Plan**	**8**
4.1	Site Preparation	8
4.1.1	Resource Protection	8
4.1.2	Initial Weed Control	8
4.1.3	Soil Preparation	8
4.1.4	Temporary Feature Removal and Material Management	9
4.2	Site Recontouring	9
4.2.1	Zone 1 – Active Channel/Open Alluvium	11
4.2.2	Zone 2 – Alluvial Bench/Channel Margin and Temporary Diversion Disturbance	11
4.2.3	Zone 3 – Upland/Transitional Alluvial Scrub, Access, and Laydown Areas	11
4.2.4	Temporary Feature Removal and Material Management	11
4.3	Erosion control Measures	11
4.3.1	Controlled Pre-Wetting and Fine-Sediment Management	12
4.3.2	Controlled Re-Establishment of Flow	12
4.4	Irrigation	12
4.5	Planting Plan	13
4.5.1	Seeds	13
4.5.2	Seed Installation	14
4.5.3	Container Plants	15
4.5.4	Container Plant Installation	16
4.6	Restoration Sequencing, Hold Points, and Demobilization	16
5.	**Maintenance Plan**	**17**
5.1	Maintenance Activities	17
5.1.1	Weed Control	17
5.1.1.1	Herbicides	19
5.1.2	Irrigation System Maintenance	19
5.1.3	Erosion Control Maintenance	19
5.1.4	Trash and Debris Removal	19
5.1.5	Remedial Planting and Seeding	19

TABLE OF CONTENTS (Cont.)

5.1.6	Channel and Bank Condition Maintenance	20
5.2	Maintenance Schedule	20
5.2.1	120-Day Plant Establishment Period	20
6.	**Monitoring Program**	**21**
6.1	Monitoring Schedule	21
6.2	Monitoring Methods	21
6.2.1	120-Day Plant Establishment Period Monitoring	21
6.2.2	Qualitative Monitoring	22
6.2.3	Quantitative Monitoring	22
6.2.3.1	Vegetation Transects	23
6.2.3.2	Reference Site/Baseline Data Collection	23
6.2.3.3	Georeferenced Photograph Documentation	24
6.2.4	Channel and Alluvial Monitoring	24
6.3	Performance Standards	24
6.3.1	Zones 1 and 2 – Channel and Alluvial Performance Standards	25
6.3.2	Container Plant Survival	25
6.3.3	Species Richness	26
6.3.4	Native Vegetation Cover	26
6.3.5	Non-Native Vegetation Cover	26
6.3.6	Invasive Vegetation Cover	26
6.4	Reporting	26
6.4.1	As-Built Report	26
6.4.2	120-Day Plant Establishment Report	27
6.4.3	Qualitative Monitoring Reports	27
6.4.4	Annual Quantitative Monitoring Reports	27
6.5	Adaptive Management	27
6.6	General Remedial Measures	27
6.7	Completion of Restoration	27
7.	**Literature Cited and References**	**28**

TABLES

Table 1. Conceptual Channel Recontouring Targets 10
Table 2. Proposed Revegetation Seed Mix 14
Table 3. Proposed Container Plants 15
Table 4. Non-Native Species Known to Occur on the Project Site and Immediate Vicinity 18
Table 5. Maintenance Schedule 20
Table 6. Monitoring Schedule* 21
Table 7. Performance Standards for Revegetated Areas 25

APPENDICES

Appendix A Figures
Appendix B Representative Site Photographs
Appendix C Native Plants Species List

LIST OF ACRONYMS AND ABBREVIATIONS

Acronym/Abbreviation	Definition
All Hands	All Hands Biological LLC
BMP	Best Management Practice
Cal-IPC	California Invasive Plant Council
CDFW	California Department of Fish and Wildlife
CESA	California Endangered Species Act
CIDH	Cast-and-drill
GPS	Global Positioning System
HRP	Habitat Restoration Plan
ITP	Incidental Take Permit
PEP	Plant Establishment Period
Plan	Sespe Creek Rail Bridge Repair Project Habitat Restoration Plan
Project	Sespe Creek Rail Bridge Repair Project
QAC	Qualified Applicators Certificate
RGP	Regional General Permit
USACE	U.S. Army Corps of Engineers
VCTC	Ventura County Transportation Commission
WSP	WSP USA Inc.

1. INTRODUCTION

On behalf of the Ventura County Transportation Commission (VCTC), this Habitat Restoration Plan (Plan) was prepared by All Hands Biological LLC (All Hands) and WSP USA Inc. (WSP) for the Sespe Creek Rail Bridge Repair Project (Project). This Plan has been developed in accordance with the habitat restoration requirements in the California Endangered Species Act (CESA) Incidental Take Permit No. 2081-2025-078-05 (ITP) issued by the California Department of Fish and Wildlife (CDFW) for this Project, in association with the applicable Regional General Permit (RGP) authorizations.

The Plan addresses restoration of temporary Project disturbance within the active Sespe Creek channel, adjacent alluvial/channel-margin areas, and upland access and laydown areas. It describes the physical recontouring, substrate restoration, revegetation where appropriate, maintenance, monitoring, and reporting needed to restore temporarily disturbed areas to pre-Project, or better, functional conditions consistent with the Project permits.

The ITP and U.S. Army Corps of Engineers (USACE) authorization identify approximately 1.54 acres of anticipated temporary disturbance and approximately 0.05 acre of permanent impact. Because construction remains ongoing, the 1.54-acre estimate is not treated as the final as-built restoration acreage. Current GIS calculations estimate that Zones 1,2, and 3 comprise 2.08 acres of temporary impact. Zone 3, where revegetation/planting will occur, is currently estimated at roughly 0.69 acres of temporary impact. The final temporary restoration footprint and acreage assigned to each restoration zone will be based on post-construction survey and GIS mapping and reconciled with the authorized impact limits before final restoration quantities are established. This Plan does not expand, or revise, permitted impact limits and mitigation for permanent impacts is not addressed in this Plan.

1.1 Project Location

The Project is located west of the City of Fillmore within unincorporated Ventura County, California.[1] Specifically, the Project is located over Sespe Creek, immediately upstream of the Old Telegraph Road, between Grand Avenue and Goodenough Road, at approximately 34.406298, -118.931907.[2] The bridge is part of the VCTC Santa Paula Branch Line railroad corridor. Areas temporarily disturbed during implementation of the Project will be revegetated and restored on-site.

1.2 Project Background and Purpose

The Project includes replacement of an approximately 100-foot segment of railroad bridge that was previously washed away and damaged during winter storms in 2023 and 2024. This replacement will require the installation of two bents (one fewer than the previous design) as

[1] Appendix A, Figure 1
[2] Appendix A, Figure 2

well as the rebuilding of 30 feet of the western bank. Project activities include removal of damaged/washed-out bridge elements; temporary creek diversion and dewatering; construction of diversion dams; installation of the new bridge segment; installation of two bents to support the superstructure; installation of four cast-in-drilled-hole (CIDH) piles (two CIDH piles per bent) and associated pier caps; installation of one associated abutment with wingwalls; rebuilding of the west embankment; bank stabilization; installation of 442 cubic yards of rock slope protection; installation and removal of a temporary access ramp; sediment excavation; grading; use of temporary work areas within the creek; site restoration, including erosion control; and other activities.

1.3 Goals and Objectives

The goal of this Plan is to restore temporary disturbance to pre-Project, or better, physical and biological conditions while recognizing that Sespe Creek is a dynamic alluvial system. Restoration treatments will be matched to site function rather than applied uniformly across the entire disturbance footprint. Active-channel areas will emphasize geomorphic form, substrate, drainage, aquatic habitat, and natural recruitment, while higher alluvial and upland areas will receive soil preparation and revegetation where appropriate.

The Plan establishes three restoration zones, conceptual channel recontouring controls, site preparation and erosion-control measures, planting and seeding requirements for appropriate areas, a staged flow-return sequence, maintenance and monitoring methods, performance standards, and adaptive management procedures.

VCTC is responsible for implementation of this Habitat Restoration Plan (HRP).

1.3.1 Restoration Zones

Zone 1 - Active Channel/Open Alluvium. Includes the primary Sespe Creek channel and low-flow thread within the restoration reach. Treatment will focus on channel profile and cross-section, riffle and glide-to-pool transitions, coarse substrate, bank tie-ins, removal of temporary disturbance, and natural vegetation recruitment. Active planting is not proposed as the default treatment within naturally open active-channel substrate. Invasive plant species will be removed from this Zone.

Zone 2 - Alluvial Bench/Channel Margin and Temporary Diversion Area. Includes the secondary diversion alignment, lower benches, channel margins, and alluvial transitions affected by temporary access and diversion features. Restoration will focus on eliminating Project-created preferential flow paths, restoring surrounding grades and coarse alluvial surfaces, stabilizing disturbed margins, controlling invasive plants, and allowing for natural recruitment.

Zone 3 - Upland/Transitional Alluvial Scrub, Access, and Laydown Areas. Includes disturbed upland and higher alluvial surfaces, the upper temporary access road, and laydown areas. Restoration will focus on removal of temporary construction materials, soil decompaction

or amendment where needed, erosion controls, invasive species management, and native seeding/container planting.

1.3.2 Minimization Measures

The following avoidance and minimization measures will be implemented to avoid and minimize impacts to special-status wildlife species and sensitive habitat communities that may occur within the restoration area:

- Limit soil, vegetation, and substrate disturbance to the minimum area necessary for restoration and protect stable native vegetation and undisturbed channel features where practicable.
- Conduct in-channel restoration, fish clearance, and flow re-establishment under the direction of the Designated Biologist and/or Restoration Specialist as required by the Project permits.
- Disturbed areas will be revegetated, and temporary erosion controls will be implemented (seeding, planting, etc.) to limit the potential for erosion after implementation. Maintain effective erosion and sediment controls during grading and demobilization; use wildlife-safe biodegradable materials where erosion control products are needed.
- Initial weed removal is planned to occur from September through December 2026 to avoid potential impacts to nesting birds (primarily February 1 through August 31) and avoid the main portion of the rainy season. During monitoring in the nesting bird season, qualified biologists will conduct surveys to avoid impacts to active nests.
- If feasible, work will be completed during dry conditions when no rain is forecast.
- A five-year monitoring program will be implemented to ensure the success of the revegetated areas and to ensure invasive species do not establish following Project activities.

1.4 Regulatory Requirements

Habitat restoration of temporarily disturbed areas will be implemented in accordance with §7 of the Project's ITP; the December 22, 2025 Los Angeles Regional Water Quality Control Board Notice of Applicability (No. 25-096; Project No. 4WQC40125096), which authorizes the Project under State Water Resources Control Board Water Quality Order WQ 2023-0095-DWQ, General Clean Water Act §401 Certification for projects authorized under USACE RGP 63, including applicable temporary impact restoration requirements; and §23 of the USACE authorization (SPL-2025-00510-AJS).

2. EXISTING CONDITIONS

2.1 Environmental Setting

The Project occurs within the Oxnard Plain and Valleys ecological region on the alluvial floodplain of Sespe Creek. Elevations within the Project Area historically ranged from approximately 450 feet above mean sea level at the northern limits to approximately 435 feet at the southern limits, with the ground surface generally sloping northwest to southeast.[3] The channel is an active alluvial system subject to seasonal variation in flow, sediment transport, erosion, scour, and deposition. High-flow events during the winters of 2022-2023 and 2023-2024 substantially altered the western portion of the site, including the loss of bridge infrastructure and erosion of the adjacent railroad embankment.[4]

Mapped soils in and around the Project Area include the Anacapa, Corralitos, and Garretson series, Riverwash, and Sandy Alluvial Land.[5] The active channel is dominated by unconsolidated and frequently reworked sand, gravel, cobble, boulder, and other alluvial material rather than developed upland soils. Pre-Project conditions therefore varied from active channel and open alluvium to sparsely vegetated benches, disturbed banks and terraces, and previously stabilized railroad embankment. These conditions support a restoration approach that re-establishes appropriate contours, drainage, substrate, and native vegetation where it historically occurred or can reasonably persist rather than creating a uniformly graded or vegetated landscape.

2.2 Summary of Construction Activities

Before sustaining damage during the 2023/2024 winter storms, the Sespe Creek Overflow Channel Railroad Bridge was an approximately 450-foot-long, 15-span concrete railroad bridge supported by two concrete abutments. The abutments were located 450 feet apart from each other. The 15 spans were spaced 29.83 feet apart and were 17 feet wide. The spans were supported by 14 bents spaced 25 feet apart. Following storm damage, three bridge spans, three bents, and the western abutment were destroyed. The destroyed bents were constructed of concrete bent caps, steel piles, and concrete infill walls. The damaged portion of the bridge will be replaced with two deck spans, each 48 feet 10 inches long and 19 feet wide (19 feet longer and 2 feet wider than the existing spans). Due to the increased length of the new bridge spans, only two spans are needed instead of three. This reduction in the number of bridge spans will also result in a reduction in the number of necessary bents. Instead of replacing three bents, only two bents will be installed. These changes will result in deviations from the structure's original configuration and an increase of approximately 6 feet 9 inches to the total bridge length. The two new bents will be spaced approximately 49 feet apart from each other, measured from

[3] HDR, Inc. 2024. Biological Resources Assessment and Jurisdictional Delineation Report

[4] HDR, Inc. 2024. Biological Resources Assessment and Jurisdictional Delineation Report; GHD Inc. 2024. Sespe Creek Slope Stabilization at VCTC Bridge Project

[5] HDR, Inc. 2024. Biological Resources Assessment and Jurisdictional Delineation Report

their centerlines, and will be cast in place. The new easternmost bent will be spaced 25 feet from the closest existing bent. The new bents will be placed parallel to the flow of water to adapt to the different flow regimes in Sespe Creek.

2.3 Environmental Setting of Restoration Areas

The restoration area includes the active channel, adjacent alluvial surfaces, and disturbed upland portions of the railroad corridor. Representative pre-construction and existing-condition photographs are included in **Appendix B**. The plant species list is provided in **Appendix C**.

2.3.1 Zones 1 and 2 – Channel and Alluvial Areas

Pre-construction surveys characterized much of the immediate channel as unvegetated or sparsely vegetated sandy, gravelly, cobbly, and bouldery wash, with sediment, rock, and seasonally wetted surfaces occupying most of the channel. Vegetation was concentrated on higher alluvial surfaces and channel margins. Representative native species included: scale broom, California buckwheat, California sagebrush, broadleaf cattail, three-square bulrush, willow/cottonwood species, and native annual herbs; non-native or invasive species included tree tobacco, tamarisk, giant reed, mustard, and castor bean.[6]

Within the channel restoration reach, pre-construction morphology included a broad wetted channel consisting of mostly riffle habitat and some backwater complex transitioning downstream into a narrower glide and deeper scour pool near the bridge abutment. Coarse cobbles and boulder substrate dominated the channel. These physical conditions provide the primary basis for Zone 1 and Zone 2 restoration targets.

2.3.2 Zone 3 - Upland/Transitional Areas

Higher alluvial and upland areas adjacent to the channel supported greater native vegetation cover and included disturbed railroad embankment, access areas, terraces, and transitional alluvial scrub. Dominant or common native species in the vicinity include: California buckwheat, scale broom, California sagebrush, black sage, white sage, laurel sumac, chaparral yucca, deerweed, and associated native annuals. A preliminary vegetation alliance survey, which included a species inventory and estimated relative abundance, was conducted within the upstream reference site on July 29, 2026. The survey documented a similar alluvial scrub assemblage and was used to identify dominant and characteristic native species and inform development of the proposed plant and seed palette.[7] The first spring quantitative reference site survey, described in Section 6.2.3.2, will be establish the fixed baseline values used for species richness and native vegetative cover success.

[6] HDR, Inc. 2024. Biological Resources Assessment and Jurisdictional Delineation Report; All Hands Biological, LLC. 2026b. Project-specific vegetation reference survey field data

[7] All Hands Biological, LLC. 2026b. Project-specific vegetation reference survey field data

2.4 Fish, Wildlife, and Sensitive Species

Sespe Creek and the surrounding alluvial corridor provide movement, foraging, basking, refuge, and aquatic habitat for a variety of fish and wildlife. Project surveys and monitoring have documented southwestern pond turtles, two-striped gartersnakes, native amphibians, and native fishes including Southern California steelhead, Pacific lamprey, arroyo chub, Santa Ana sucker, and partially-armored threespine stickleback. Southern California steelhead is the Covered Species under the Project's ITP. Restoration activities will continue to implement the applicable fish and wildlife protection measures under the direction of qualified biological personnel.

3. ROLES AND RESPONSIBILITIES

The roles and responsibilities of the various entities are described in the Plan pursuant to the conditions of the ITP and RGP. At all levels the Plan is designed to maximize compliance with the various requirements of those permits and to ensure that appropriate personnel are in place to facilitate the work.

3.1 Financially Responsible Party

VCTC will be the financially responsible party for site restoration and implementation of this Plan. Upon approval, this Restoration Plan will constitute a commitment that the project applicant will complete all proposed actions contained herein.

3.2 Habitat Restoration Manager

Per § 7.1 of the ITP, Brian Zitt of All Hands has been identified as the proposed Habitat Restoration Manager responsible for managing the habitat restoration in this Plan. The permittee shall notify CDFW of any subsequent changes in the Habitat Restoration Manager no later than 30 days after the change.

3.3 Restoration Specialist

Per § 7.2 of the ITP, this Plan was prepared by All Hands and WSP habitat restoration ecologists and biologists who have expertise in the restoration of habitat types in areas similar to the Project site. The Restoration Specialist will oversee the implementation layout, channel and bank recontouring, site preparation, installation, maintenance, and monitoring of the restoration areas. The Restoration Specialist will also be responsible for inspecting container plants and seeds prior to installation and will not allow installation of individuals that are in unsatisfactory condition, such as those exhibiting disease, infestation, mortality, stunted growth, or other deficiencies. As necessary, the Restoration Specialist will redirect restoration and maintenance crews to meet the goals set out in this Plan.

4. IMPLEMENTATION PLAN

Restoration of temporarily disturbed areas will occur as soon as practicable after completion of construction activities in the affected areas. The final restoration footprint will be based on the as-built limits of temporary disturbance documented by survey and GIS. Implementation will proceed by restoration zone and will include resource protection, temporary feature removal, channel and upland recontouring, substrate and soil preparation, erosion and sediment controls, staged flow return, revegetation where appropriate, and one-way equipment demobilization.

4.1 Site Preparation

Site preparation will include resource protection, removal of temporary construction materials and unsuitable fill, targeted weed control, and soil preparation appropriate to each restoration zone.

4.1.1 Resource Protection

Site resource protection will include identifying and marking resources in the vicinity of the restoration and revegetation areas to prevent damage during restoration activities. For this step, a qualified restoration specialist or biologist will identify biological resources in the restoration areas that should be protected and avoided. Resources will be marked in a highly visible manner using flagging, fencing, or similar means to help make their presence more visible and protect them from harm.

4.1.2 Initial Weed Control

Initial weed control will be conducted within the restoration areas as needed to eliminate or reduce weeds. Non-native species control may include several techniques, including hand removal, mechanical removal (e.g., string trimming or mowing), and herbicide application. The specific methods will depend on vegetation conditions in the restoration sites at the time. Site preparation will be determined by the qualified restoration specialist. Weed control methods are discussed further in § 5.1.

Ongoing weed control and site management will include control of annual and perennial invasive exotic plant species using an integrated pest management approach. Ongoing weed control is addressed in detail in § 5.1.

4.1.3 Soil Preparation

Soil preparation will be necessary in areas where excessive soil compaction occurred during bridge repair work. Excessive soil compaction will result from heavy equipment and vehicle traffic, particularly in laydown areas and on temporary access roads. Areas with excessive soil compaction and no loose soil on the surface will need to be ripped or disked to a depth of 6 inches to increase water infiltration, reduce the potential for runoff, allow for root penetration, and enable good seed-to-soil contact. Alternatively, if the soil surface cannot be ripped or disked, a 2- to 3-inch layer of topsoil can be placed over compacted areas.

4.1.4 Temporary Feature Removal and Material Management

Temporary fill, access features, fencing, posts, anchors, geotextile, debris, stockpiles, and other Project-related materials that are not part of the permanent design will be removed from the restoration footprint. Clean, native cobbles and boulders, recovered from the dismantling of the access road, diversion features, and channel restoration, will be salvaged for reuse where appropriate. Imported road base, concrete debris, asphalt, plastics, rebar, geotextile, slurry-affected material, or other unsuitable construction material will not be used within the active channel or left exposed within the restored areas.

4.2 Site Recontouring

Site recontouring will be completed by the Project Contractor under the oversight of the Restoration Specialist and in coordination with final engineering requirements. Final grading will use pre-construction survey information, documented channel conditions, remaining stable features, adjacent undisturbed grades, and post-construction survey controls. Conceptual channel targets are summarized in **Table 1**; localized deviations are appropriate where needed to reproduce natural channel roughness and morphology, provided continuous positive drainage is maintained and Project-created perched areas, isolated depressions, barriers, or concentrated scour points are not created.

Table 1. Conceptual Channel Recontouring Targets

Parameter	Conceptual Restoration Target
Restoration reach	Approximately 196 ft between upstream and downstream control points
Upstream thalweg control	Station 0+00 / Elevation 427.33 ft
Downstream thalweg control	Station 1+96 / Elevation 425.50 ft
Average longitudinal gradient	Approximately 0.94%
Primary low-flow thread	Generally < or = 3 ft where appropriate; do not confine the broader active channel
Upper reach	Broad wetted channel riffle-dominate with backwater complex and irregular cobble/boulder roughness
Lower reach	Narrower glide transitioning gradually to the existing abutment pool
Eastern bench	Match stable existing grades; approximately 1.9H:1V upstream and ~1H:1V downstream where present
Western transition/bank	Tie to final engineered toe/RSP; ~3H:1V preferred, ~2H:1V maximum for unsupported restored soil unless engineered otherwise
Active channel substrate	Approximate overall reference: 68% cobble, 25% boulder, 4% gravel, 3% sand

4.2.1 Zone 1 - Active Channel/Open Alluvium

(1) Restore the documented longitudinal profile and a natural, irregular cross-section rather than a uniformly graded trapezoidal channel.
(2) Re-establish the broader upper riffle habitat with backwater reach with a primary low-flow thread and localized low-velocity areas created by channel formed over coarse substrate; retain lateral connectivity to adjoining alluvial surfaces.
(3) Re-establish the downstream glide as a smoother, continuous transition into the existing abutment pool; avoid unnecessary boulder clustering, a drop structure, or a sediment bar at the pool entrance.
(4) Salvage and reuse clean native cobbles and boulders, where practicable. The restored active channel surface should retain the documented coarse-substrate character without extensive exposed construction-generated fines.

4.2.2 Zone 2 - Alluvial Bench/Channel Margin and Temporary Diversion Disturbance

(1) Remove or backfill the secondary low-flow cut and temporary diversion features with clean, compatible native or salvaged alluvial material; blend laterally into surrounding grades and cap with coarse alluvial substrate so the feature no longer functions as a Project-created preferential flow path.
(2) Where the eastern bench remains stable and undisturbed, match existing geometry and avoid unnecessary grading. Where disturbed, use documented bench conditions as a tie-in rather than creating a uniform engineered slope.
(3) Progressively remove the western temporary access fill and tie the restored alluvial surface into the final engineered western-bank toe and RSP configuration.
(4) Above permanent engineered protection, restore soil slopes at approximately 3H:1V or flatter where practicable; unsupported restored soil slopes should generally not exceed approximately 2H:1V unless final engineering requires otherwise.

4.2.3 Zone 3 - Upland/Transitional Alluvial Scrub, Access, and Laydown Areas

Restore disturbed upland and higher alluvial surfaces to stable grades and drainage patterns that blend with adjoining terrain and do not concentrate runoff toward Sespe Creek. Remove temporary access and stockpile features, decompact or amend soil where needed, and prepare the final surface for erosion control and revegetation.

4.3 Erosion Control Measures

Erosion and sediment controls used during construction will remain in place as needed through restoration and will be repaired, adjusted, or supplemented to protect restored surfaces until they are stable. Outside permanent engineered RSP limits, stabilization will use the minimum treatment necessary and may include partially-embedded salvaged cobble/boulder, contour roughening, and wildlife-safe biodegradable erosion-control materials. Continuous new RSP is not proposed outside areas required by final engineering.

4.3.1 Controlled Pre-Wetting and Fine-Sediment Management

After rough grading and substrate placement, but while the restoration reach remains isolated from active channel flow, the restored channel will be pre-wetted in a controlled manner to help settle placed materials and loose fines, identify preferential flow paths, erosion points, unstable banks, or stranding depressions before natural streamflow is reintroduced. Controlled watering will not be used to flush sediment downstream.

(1) Apply clean water gradually using a diffuse spray or low-energy discharge and progress generally from upstream to downstream.
(2) Maintain a temporary sediment catch, desilting basin, or equivalent containment near the downstream end of the isolated reach; allow suspended fines to settle and remove accumulated fine sediment where necessary.
(3) Repair rills, undercuts, sloughing banks, preferential flow paths, or unstable substrate identified during pre-wetting before flow return.

4.3.2 Controlled Re-Establishment of Flow

Following required fish clearance in the diversion channel, streamflow will be returned gradually under the direction of the Designated Biologist and Restoration Specialist. The following percentages are conceptual field guidance rather than permit-prescribed values; actual increments and hold periods will be based on discharge, channel response, turbidity, and biological conditions. All fish protective measures will follow the Project's permits and approved plans.

(1) Introduce approximately 10 to 20 percent of available flow, or the lowest practically controllable discharge, and inspect the restored channel, banks, and downstream tie-in.
(2) Correct observable erosion, head cutting, substrate movement, sediment plumes, or stranding areas before increasing flow.
(3) Increase to approximately 25 to 50 percent of available flow and repeat inspection and water-quality monitoring; increase to approximately 75 percent if stable, then restore full available flow after acceptable initial stability is demonstrated.

Turbidity will be monitored against the applicable upstream background location and thresholds. If an applicable threshold is exceeded, restoration or flow-return activities will pause until effective corrective measures are implemented. Inspections will also evaluate bank sloughing, scour, sediment displacement and deposition downstream, flow concentration, fish passage, and potential for isolation and/or stranding areas.

4.4 Irrigation

Supplemental irrigation will be necessary to establish installed container plants in the restoration areas. Planting and seeding efforts should be timed to occur during the late fall or winter months to take advantage of cooler temperatures and seasonal rainfall. Natural precipitation may provide sufficient moisture for seed germination and establishment of container plants; however,

supplemental irrigation will likely be required to ensure successful establishment and survival of plants during warmer, drier months or during drought conditions. Water use is expected to be highest during the first growing season, tapering off gradually over a period of three years until no supplemental water is necessary.

Supplemental irrigation should be provided by either a water truck or a temporary above-ground irrigation system. Irrigation using a water truck would include using hoses attached to the water truck to deliver sufficient water to each plant. A temporary irrigation system would include installation of an above-ground system that provides the container plants with enough water to become established and thrive. The irrigation system should use drip emitters for container plants and may include overhead sprinklers for seeded areas. An irrigation schedule will be determined by the Restoration Specialist and modified based on current weather patterns. The temporary irrigation system would be removed once the Restoration Specialist determines that the plants no longer need supplemental irrigation. Supplemental watering will be discontinued at least two years prior to the end of the five-year maintenance program.

4.5 Planting Plan

Revegetation treatments will be applied by restoration zone. Zones 1 and 2 will rely primarily on physical restoration, invasive species management, and natural recruitment. Zone 3 will receive the primary active revegetation treatment using the approved native seed mix and container palette. Final planting locations and quantities will be adjusted to the final as-built restoration acreage and CDFW-approved Plan.

Per the ITP, revegetation plant materials shall be derived from cuttings, materials salvaged from disturbed areas, and/or seeds obtained from high-quality specimen locations that exhibit healthy, sound, and viable seed from multiple populations occurring locally within the same drainage. Seed collection shall not exceed 5 percent of the seed produced by a population during any given year. If collection of plant materials is not a viable option, seed and container stock can be purchased from reputable vendors that specialize in the sale of native species for habitat restoration projects in California.

4.5.1 Seeds

The purity and germination rates for all purchased seed shall be provided by the vendor and approved by the Restoration Specialist. Seed should be packaged by the vendor in clearly labeled and sealed containers and certified as weed free. The native seed mix described in **Table 2** was selected to provide temporary erosion control until larger native species, such as shrubs, develop. The native plant palette in **Tables 2 and 3** were developed based on composition and relative abundance of the alliance-level vegetation community documented within the upstream reference site, as well as species appropriate to the existing native vegetation communities in the vicinity of the site and those generally available commercially. Species used in the reseeding effort will be based on availability; the seed mix can be adjusted with approval from the Restoration Specialist.

Table 2. Proposed Revegetation Seed Mix (Zone 3)

Scientific Name	Common Name	Pounds Pure Live Seed per Acre
Native Erosion Control Mix		
Bromus carinatus	California brome	20
Festuca microstachys	Small fescue	8
Trifolium ciliolatum	Tree clover	4
Native Habitat Mix		
Acmispon glaber	Deerweed	2
Artemisia californica	California sagebrush	2
Encelia californica	Bush sunflower	3
Eriogonum fasciculatum	California buckwheat	2
Lasthenia californica	Goldfields	2
Lepidospartum squamatum	Scale broom	2
Lupinus succulentus	Arroyo lupine	4
Salvia mellifera	Black sage	2
	Total	**51**

4.5.2 Seed Installation

Seed will be applied by hand broadcasting which involves spreading of the seed mixture over the desired revegetation areas. Adequate site preparation is recommended to allow for germination of the seed mixture. Site preparation may involve scarifying or decompacting of soils, debris removal, and/or pre-watering to aid in seed adhesion. Seeding should occur directly before or during the rainy season. Hand broadcasting will be conducted in accordance with the following guidelines:

(1) Seed will not be broadcast on a windy day (winds greater than 10 miles per hour).
(2) The seeds will be broadcast dry to soil containing residual moisture within 0.25 inch of the soil surface. If the soil does not contain residual moisture, then, if possible, the site will be watered thoroughly with a water truck prior to sowing to adequately moisten the upper layer of the soil.
(3) Hand broadcasting will be followed immediately by raking and pressing the seeds into contact with the soil, using weighted rollers or other appropriate equipment to effectively incorporate the seed into the soil. The roller may be weighed with water, depending on soil conditions.

(4) Seed will be divided into two equal parts. Half of the seed will be hand broadcasted by walking across the entire site in a north-south orientation, or another linear orientation appropriate for the site. The remaining half of the seed will then be hand-broadcast by walking across the site in an east-west orientation, or perpendicular to the direction of the first application. This method ensures even distribution of seed throughout the site.

4.5.3 Container Plants

Container stock should be grown at either a local nursery or at a non-local nursery using seed collected from areas local to the Project area. Container stock should be purchased from reputable nurseries that are experienced in growing high-quality native plants for habitat restoration projects in California. Container plants should be grown in native soil and inoculated with beneficial mycorrhizae. All container stock will be inspected and approved by the Restoration Specialist prior to being installed to ensure that they are healthy; the proper size; free of weeds, pests, or disease; and suitable for out-planting. Any plants not meeting these standards shall be rejected.

The native plant palette in **Tables 2 and 3** were developed based on composition and relative abundance of the alliance-level vegetation community documented within the upstream reference site, as well as species appropriate to the existing native vegetation communities in the vicinity of the site and those generally available commercially. Container plants will be planted at a rate of 425 plants per acre. Species used in the planting effort will be based on availability. The plant palette can be adjusted with approval from the Restoration Specialist.

Table 3. Proposed Container Plants (Zone 3)

Scientific Name	Common Name	Proposed Container Sizes	Number per Acre
Artemisia californica	California sagebrush	2”, 4”, gallon	100
Eriogonum fasciculatum	California buckwheat	2”, 4”	100
Lepidospartum squamatum	Scale broom	gallon	50
Malosma laurina	Laurel sumac	gallon	25
Salvia apiana	White sage	gallon	50
Salvia mellifera	Black sage	2”, 4”, gallon	50
Eriodictyon californicum	California yerba santa	gallon	50
		Total	**425**

4.5.4 Container Plant Installation

Plantings should be installed in a manner that mimics the natural plant distribution found in surrounding undisturbed areas of similar habitat. The following standard horticulture practices for installation of native container plants shall be followed:

(1) Dig a hole twice the width and depth of the container size;
(2) Fill the hole with water and allow to fully drain two times;
(3) Backfill the hole until the container is supported to ground level by underlying soil;
(4) Carefully remove the plant from its container and gently place it in the hole;
(5) Backfill the space around the root ball with soil and lightly tamp down;
(6) Using remaining soil, create a small basin around the plant, approximately two to three inches high, to retain water during irrigation; and
(7) Immediately following planting, water plant deeply, filling the basin multiple times to reduce transplant stress and eliminate air pockets in the soil.

In order to optimize plant establishment, planting should be performed immediately prior to or during the rainy season.

4.6 Restoration Sequencing, Hold Points, and Demobilization

Restoration will proceed using a one-way retreat sequence to minimize re-entry and disturbance into completed areas. The general approach will be to work from the eastern/far side of the channel toward the western access, followed by removal of the temporary access road. Then working north to south with the final work in the upland laydown area. Once an area has received final grade and substrate treatment, heavy equipment should not re-enter except to correct a specific deficiency. Clean, native cobble/boulder will be salvaged during access road removal for immediate restoration use, while excess or unsuitable material will be removed from the channel.

The following hold points will be coordinated before the Contractor advances to the next phase:

(1) Pre-restoration layout: verify survey controls, permanent engineering limits, restoration-zone boundaries, and areas to remain undisturbed.
(2) Rough-grade review: inspect channel contours, bench/bank tie-ins, drainage, secondary-channel backfill, and western-bank transition before final substrate placement.
(3) Pre-flow review: confirm temporary features and materials are removed, substrate and bank stabilization are complete, erosion/sediment controls are functional, and required fish-clearance measures are complete.
(4) Re-establishing flow review: staged flow re-establishment occurs only with Designated Biologist/Restoration Specialist direction and required water quality monitoring.
(5) Initial completion: complete as-built survey/GIS, final restoration zone acreages, repeat photographs, and punch list corrections before demobilization. Initial construction acceptance does not constitute long-term ecological success or agency closeout.

5. MAINTENANCE PLAN

The Plan includes a maintenance component consistent with the various Permit requirements and industry best practices. The Plan has been designed to minimize disturbance to the restored areas and impact to local wildlife where possible.

5.1 Maintenance Activities

The five-year maintenance program is designed to support the establishment of native habitat in the restoration areas by performing non-native weed removal, irrigation system maintenance, erosion control maintenance, trash and debris removal, and any remedial measures deemed necessary for the success of the restoration program (e.g., re-seeding and re-planting). Maintenance activities will be directed by the Restoration Specialist and will be conducted by qualified personnel who have experience maintaining habitat restoration projects in the southern California region.

5.1.1 Weed Control

Non-native and invasive plant species within the revegetated and channel areas will be treated in a timely manner to reduce and/or control their presence during the maintenance period. Weeds should be treated at the appropriate time for each species before they set seed. Treatment of weeds can include hand removal, mechanical removal, use of herbicides, or any combination of these methods. Weed control will be conducted by qualified personnel who are trained and have experience in distinguishing weeds from native species.

Particular attention shall be directed toward control of invasive species that tend to establish, reproduce, and spread quickly. These species include those rated as either High or Moderate by the California Invasive Plant Council.[8] These species are highly invasive pest plants that have been documented as aggressive invaders that displace natives and disrupt natural habitats. **Table 4** lists non-native and invasive species that have been observed at the Project site and immediate vicinity.

[8] California Invasive Plant Council (Cal-IPC). 2026

Table 4. Non-Native Species Known to Occur on the Project Site and Immediate Vicinity

Common Name	Scientific Name	CAL-IPC Category	Active Channel	Alluvial Scrub / Upland Areas
Castor bean	*Ricinus communis*	Limited	**X**	
Eucalyptus tree	*Eucalyptus* sp.	NA		**X**
Giant reed	*Arundo donax*	High	**X**	
Short-pod Mustard	*Hirschfeldia incana*	Moderate	**X**	**X**
Peruvian pepper tree	*Schinus molle*	Limited		**X**
Prostrate knotweed	*Polygonum aviculare*	NA	**X**	
Rabbitsfoot grass	*Polypogon monspeliensis*	Limited	**X**	
Red brome	*Bromus rubens*	Limited	**X**	
Tamarisk	*Tamarix* sp.	High	**X**	
Tree tobacco	*Nicotiana glauca*	Moderate	**X**	**X**
Tree-of-heaven	*Ailanthus altissima*	Moderate		**X**
Water beardgrass	*Polypogon viridis*	NA	***X***	
Water speedwell	*Veronica anagallis-aquatica*	NA	**X**	
Watercress	*Nasturtium officinale*	NA	**X**	
White sweetclover	*Melilotus albus*	NA	**X**	
Yellow starthistle	*Centaurea solstitialis*	High	**X**	**X**

5.1.1.1 Herbicides

Weed control may include herbicide application through spot spraying or cut-stump application. Selective herbicide application may be used to reduce target non-native invasive plants, but effort should be taken to minimize the quantity of herbicides applied to the site. Only those herbicides that are approved for aquatic use can be sprayed within wetland habitats. Spot spraying herbicide application would include using backpack sprayers, which allows specific individuals to be targeted for treatment. The cut-stump method could be used for trees and larger shrubs. This method includes cutting the shrub or tree down to or near ground level and then immediately applying an herbicide solution to cover the entire stump for small stumps or the outer 20 percent (cambium) for larger stumps.

Herbicides shall be applied in accordance with federal, state, and local laws and herbicide labels and by qualified personnel who, at a minimum, hold a California Qualified Applicators Certificate (QAC).

5.1.2 Irrigation System Maintenance

If a temporary irrigation system is installed, it will be monitored to ensure it is working properly and is providing a sufficient supply of water to all plants of the revegetated areas. If the irrigation system has been damaged or is not functioning properly, the Restoration Specialist will recommend remedial measures to repair and/or restore function to the irrigation system.

5.1.3 Erosion Control Maintenance

Erosion control measures will be repaired or replaced as needed during the maintenance period. Additional measures will be installed as needed during regular maintenance visits, or as directed by the Restoration Specialist.[9]

5.1.4 Trash and Debris Removal

All trash and debris will be removed from the restoration areas during regular maintenance visits. Trash will be either recycled or disposed of at a landfill or other appropriate location. Trash and debris removal will continue on an as-needed basis throughout the maintenance period.

5.1.5 Remedial Planting and Seeding

Areas of the restoration that are experiencing low seed germination, or low establishment of container plantings, will require supplemental seeding and/or planting under direction of the Restoration Specialist. The Restoration Specialist will decide on the species and quantities for supplemental planting and/or seeding efforts.

[9] See **Table 5**

5.1.6 Channel and Bank Condition Maintenance

During maintenance visits, Zones 1 and 2 will be reviewed for persistent Project-related erosion, channel incision and bank instability, fish passage, excessive sediment accumulation downstream, exposed unsuitable construction material, or failed stabilization measures. Corrective work will be limited to conditions attributable to Project restoration and will consider concurrent changes observed in the upstream reference reach so that natural flood-driven channel adjustment is not treated as a restoration failure by itself.

5.2 Maintenance Schedule

Maintenance will be performed as necessary to ensure that the revegetation areas ultimately become established with quality native habitat. The five-year maintenance schedule in **Table 5** serves as a guideline but may need to be adjusted depending on current weather patterns or other factors. Changes to the maintenance schedule can be made by the Restoration Specialist.

Table 5. Maintenance Schedule

Maintenance Task	PEP[1]	Years 1 – 2	Years 3 – 5
Weed Control	Monthly or as needed	Bi-Monthly[2] or as needed	Quarterly or as needed
Irrigation System	As needed	As needed	As needed
Erosion Control	As needed	As needed	As needed
Trash and Debris Removal	As needed	As needed	As needed
Remedial Planting/Seeding	As needed	As needed	As needed

[1] PEP = 120-day plant establishment period.
[2] Bi-monthly = once every two months.

5.2.1 120-Day Plant Establishment Period

The 120-day Plant Establishment Period (PEP) will begin once planting of the container plants has been completed. During the PEP, the installation contractor will be responsible for maintenance of the revegetated areas. The installation contractor will conduct, at a minimum, monthly maintenance and inspections during the PEP. At the end of the PEP, container plantings survivorship will be assessed, and all non-native species must be treated or removed from the revegetation areas. If deemed necessary by the Restoration Specialist, replacement container plants will be installed to achieve the revegetation goals prior to sign-off. Upon successful completion of the PEP, the revegetated areas will transition to Year 1 of the five-year maintenance period.

6. MONITORING PROGRAM

The purpose of the monitoring program is to assess the progress of the restoration effort toward attainment of the stated performance standards outlined in § 6.3. The monitoring program includes 120-day PEP monitoring, qualitative maintenance monitoring, and semi-annual quantitative monitoring. Qualitative and quantitative monitoring will be used to determine the success of the restoration effort and to make adaptive management decisions, if necessary. The monitoring program will be implemented and/or overseen by the Restoration Specialist.

6.1 Monitoring Schedule

The monitoring program will start with the 120-day Plant Establishment Period monitoring and then continue with maintenance and monitoring. **Table 6** summarizes the monitoring schedule.

Table 6. Monitoring Schedule*

Monitoring Task	PEP[1]	Year 1	Years 2-5
Qualitative Monitoring	Bi-weekly during first month; monthly thereafter	Bi-Monthly	Quarterly
Quantitative Monitoring	NA	Semi-Annually (Spring and Fall)	Semi-Annually (Spring and Fall)

*This schedule is a guideline, monitoring will be performed as necessary, as determined by the Restoration Specialist.
[1] PEP = 120-day plant establishment period.
Bi-weekly = once every two weeks
Bi-monthly = once every two months.
Semi-annually = twice per monitoring year.

6.2 Monitoring Methods

Monitoring will be conducted by, or overseen by, the Restoration Specialist during the monitoring program. Methods for the various types of monitoring are provided in § 6.2.1 through 6.2.4.

6.2.1 120 Day Plant Establishment Period Monitoring

The Restoration Specialist will monitor the restoration areas on a bi-weekly basis, once every two weeks, during the first month, and then monthly for the remainder of the PEP. Monitoring during the PEP will be qualitative and will include assessing the overall condition of the restored areas. Monitoring will include assessing the establishment of container plants and germination of seeds, evaluating the efficacy of weed control efforts, ensuring that the irrigation system is functioning properly, checking plants for signs of herbivory or other pest issues, assessing the

site for signs of trespass or vandalism, and documenting any other issues that could potentially hinder the restoration effort.

6.2.2 Qualitative Monitoring

Qualitative restoration monitoring will be conducted to assess the overall condition of the restoration areas and to determine the effectiveness of the seeding and planting efforts. Monitoring will focus on the germination of seeds and establishment of container plantings, the need for non-native plant species control, and general development of the target habitats toward that year's performance standards in § 6.3.

During each monitoring effort, the Restoration Specialist will survey the entire restoration project area to assess the effectiveness of the restoration effort. This will include documenting the presence of non-native and/or invasive species, identifying any issues regarding erosion control measures, or any other concerns that would potentially prevent the site from achieving the performance standards.

If non-native vegetation is detected, it will be flagged, the species will be recorded, and it will be removed. In the case of larger populations or areas of invasions, the area may be mapped using a high-resolution GPS to track area change over time. Additional planning may be required to control the populations during follow-up visits. If needed, the Restoration Specialist will determine remedial measures necessary to comply with performance standards and to address and correct problems as soon as they are discovered.

Qualitative restoration monitoring will occur bi-monthly for the first year, once every two months, and then quarterly during Years 2 through 5. The qualitative monitoring schedule can be adjusted, with approval of the Restoration Specialist if it is determined that the monitoring schedule requires a change in the frequency of monitoring.

6.2.3 Quantitative Monitoring

The purpose of monitoring is to quantitatively assess the progress of the restoration areas toward attainment of the stated performance standards in § 6.3. Success will be evaluated by specific measurements of container plant survivorship, species richness and percent cover of native vegetation relative to the approved reference-site baseline, and absolute percent cover of non-native vegetation within the restoration area. Additionally, all plant and animal species observed in the restoration areas will be documented during monitoring events and will be included in annual reports.

To determine whether performance standards are being met, quantitative monitoring will be conducted twice per monitoring year, once during the spring and once during the fall, consistent with Condition 7.3.4 of the ITP. Spring monitoring will generally be conducted during the period of peak native vegetation growth, typically between April and June, with timing adjusted as necessary based on seasonal rainfall and plant phenology. Fall monitoring will generally be conducted after the summer growing period to document seasonal vegetation condition,

container plant survival, native and non-native vegetation cover, species richness, and other applicable performance measures.

The same permanent monitoring transects, and the sampling methods described below, will be used during both seasonal monitoring events to provide repeatable comparisons throughout the monitoring period. Monitoring results will be used to assess progress toward the approved performance standards and to inform adaptive management where necessary.

Performance standards for native vegetation cover and species richness will be evaluated primarily using spring-to-spring comparisons because the approved reference site baseline will be established during the spring period of peak native vegetation growth. If a fall monitoring event demonstrates that a performance standard otherwise scheduled for evaluation during the following spring has already been achieved, then that benchmark will be considered attained at that time, otherwise spring quantitative monitoring will continue to provide the primary standardized year-to-year comparison with the reference site baseline.

6.2.3.1 Vegetation Transects

Two vegetation transects, 25-meter each, will be established in the restoration areas and used to collect data during annual monitoring events. The transects will be randomly located in the revegetated areas during, or prior to, the first annual quantitative monitoring event. Locations of transects will be marked in the field using t-posts, rebar, or wood stakes, if appropriate, and documented with a Global Position System (GPS) so they can be located during each monitoring effort.

Data will be collected along the transects using the point intercept line transect sampling method. Native and non-native species cover will be measured by recording all species intercepted at each 0.5-meter interval along the length of each transect, for a total of 50 data points per transect. Species richness will be evaluated using a 2-meter belt transect established along the point intercept transects, 1-meter on each side of the point intercept transect. All species found rooted within the belt will be recorded. Any additional species encountered that are present but not located inside the belt transect will also be noted but not included in the diversity evaluation.

6.2.3.2 Reference Site/Baseline Data Collection

An upstream area, immediately adjacent and not disturbed by the Project, is proposed as the reference/control site. The reference area was identified during prior restoration planning, and a preliminary vegetation alliance survey was conducted on July 29, 2026. Vegetation monitoring within the reference site will use methods comparable to those used in planted restoration areas, and channel monitoring will use comparable observations of profile, substrate, erosion/deposition, bank condition, and aquatic habitat. Reference locations will be documented with GPS and sampled during the same monitoring periods as the restoration areas. The initial quantitative reference site survey will establish the baseline values used to develop the fixed performance standards for species richness and native vegetation cover. Non-native and invasive vegetation cover will be evaluated against fixed performance standards established in

Table 7. Subsequent reference site monitoring will be used to document seasonal and interannual variability and to inform adaptive management decisions but will not be used to recalculate the approved performance standards.

6.2.3.3 Georeferenced Photograph Documentation

Permanent georeferenced photograph stations will be established by the Restoration Specialist in the revegetated areas and the channel area prior to the start of restoration activities to visually track the progress of the restoration effort. Station locations shall be recorded using high-resolution GPS, baseline photographs, and compass bearings for ease of replication. Photographs will be taken at an angle that provides a perspective which best captures the presence of vegetation and restoration efforts. Photographs will also be taken from locations that do not impact the project area. A minimum of four georeferenced photograph stations, two stations to represent the upland/laydown area, Zone 3, and two stations to represent the channel, Zones 1 and 2.

Photographs will be taken from each location before the start of restoration activities and during each spring and fall quantitative monitoring events. In addition, photographs will be taken along each transect from their beginning and end points in the revegetated areas. These photographs will be included in each annual report.

6.2.4 Channel and Alluvial Monitoring

Zones 1 and 2 will be monitored using repeatable survey/field observations and photographs, as applicable, to document longitudinal profile and drainage, flow types present, erosion and deposition, bank stability, invasive vegetation, and changes in Project-created flow paths. Results will be compared with pre-restoration documentation and the upstream reference/control reach to distinguish Project-related deficiencies from broader flood, drought, and sediment-transport processes.

6.3 Performance Standards

The primary goal of the restoration effort is to revegetate areas temporarily disturbed by the bridge repair Project with self-sustaining native vegetation that will provide habitat and help stabilize soils. Restoration will be considered complete when the performance standards shown in **Table 7** have been met. If these standards have not been met, the maintenance period may be extended. Performance standards for species richness and native vegetation cover are based on quantitative baseline data collected within the approved upstream reference site. Non-native and invasive vegetation cover are evaluated using fixed percent cover standards established for the restoration area in **Table 7**. The reference derived numerical standards for species richness and native vegetation cover will remain fixed throughout the five-year monitoring period. Achievement of the applicable annual benchmark may be demonstrated during either the spring or fall quantitative monitoring event, while spring monitoring will serve as the primary standardized comparison to the approved spring reference site baseline. Subsequent monitoring of the reference site will not be used to recalculate or modify the

approved performance standards but will provide contextual information regarding annual climatic, hydrologic, and ecological variability and will be considered when evaluating adaptive management needs.

Table 7. Performance Standards for Revegetated Areas

Standard	Year 1	Year 2	Year 3	Year 4	Year 5
Container Plant Survival	80%	70%	60%	60%	60%
Species Richness[1]	≥20%	≥30%	≥40%	≥50%	≥60%
Native Vegetation Cover[2]	≥30%	≥40%	≥50%	≥60%	≥70%
Non-Native Vegetation Cover[3]	≤20%	≤20%	≤15%	≤10%	≤10%
Invasive Vegetation Cover	≤10%	≤10%	≤5%	≤5%	0%

[1] Species richness is based on the approved quantitative reference site baseline and will remain fixed throughout the monitoring period.
[2] Native vegetative cover is based on the approved quantitative reference site baseline and will remain fixed throughout the monitoring period.
[3] Non-Native/invasive vegetative cover standards represent maximum absolute percent cover within the restoration-area monitoring transects.

6.3.1 Zones 1 and 2 – Channel and Alluvial Performance Standards

(1) Restored grades provide continuous positive drainage and do not create barriers, isolated depressions, or competing preferential low-flow channels.
(2) The active-channel surface retains the overall coarse cobble/boulder character of the pre-Project/reference channel and is not dominated by exposed construction-generated fines or unsuitable construction material.
(3) Restored banks and alluvial transitions do not exhibit persistent Project-related headcutting, sloughing, or erosion materially greater than comparable conditions in the reference reach.
(4) Native and non-native/invasive vegetation remain consistent with or improve upon documented baseline/reference conditions; naturally open active-channel surfaces are not required to meet upland percent-cover standards.
(5) Restored channel conditions do not create Project-related impediments to aquatic passage or persistent stranding features.

6.3.2 Container Plant Survival

Survival of container plants will be 80% of plantings initially installed at the end of Year 1, 70% for Year 2, and 60% in Years 3 through 5. If any of these standards are not met, dead plants will be replaced unless they have been replaced by natural recruitment of native species. Dead plants will be replaced by plants with the same container size and species unless the Restoration Specialist approves a change.

6.3.3 Species Richness

Species richness will be assessed relative to the approved reference site baseline. The annual species richness performance standards established from the baseline will remain fixed throughout the five-year monitoring period and will not be recalculated based on subsequent annual reference site surveys. For example, if the approved reference site baseline documents 20 species, the fixed minimum restoration site performance standards would be 4 species in Year 1, 6 species in Year 2, 8 species in Year 3, 10 species in Year 4, and 12 species in Year 5. Exceeding the minimum standard for a given year does not change the performance standards established for subsequent years. Species richness of the restoration site will be at least 20% of the approved reference baseline for Year 1, at least 30% for Year 2, at least 40% for Year 3, at least 50% for Year 4, and at least 60% for Year 5.

6.3.4 Native Vegetation Cover

Native vegetation cover will be assessed relative to the approved reference site baseline. The percentages identified in Table 7 will be applied to the baseline native vegetation cover to establish fixed numerical native vegetation cover performance standards. These standards will remain fixed throughout the five-year monitoring period and will not be recalculated based on subsequent reference site surveys. Native vegetation cover standards will be at least 30% of the approved reference baseline at the end of Year 1, at least 40% at the end of Year 2, at least 50% at the end of Year 3, at least 60% at the end of Year 4, and at least 70% at the end of Year 5.

6.3.5 Non-Native Vegetation Cover

Non-native vegetation cover will be measured as absolute percent cover within the restoration area monitoring transects. Non-native vegetation cover shall not exceed 20% in Years 1 and 2, 15% in Year 3, and 10% in Years 4 and 5.

6.3.6 Invasive Vegetation Cover

Invasive plant species cover standards are ≤10% at the end of years 1 and 2, ≤5% at the end of years 3 and 4, and 0% at the end of year 5.

6.4 Reporting

This section of the Plan outlines the reports that will be submitted during the five-year monitoring program.

6.4.1 As-Built Report

An as-built report will be produced to document the restoration implementation activities, starting with site preparation and ending with final installation activities. The report will include details of implementation activities such as dates of activities, quantity and species of plantings and seedings, significant issues and necessary changes made in the field, and photographs of

restoration activities. The as-built report will be submitted within two months following completion of installation activities.

Additionally, no later than one month following completion of authorized work in waters of the U.S., the permittee shall ensure all sites within waters of the U.S. subject to authorized, temporary impacts are restored to pre-project alignments, elevation contours, and conditions to the maximum extent practicable to ensure expeditious resumption of aquatic resource functions. Compliance with this special condition shall be included in the post-project report required under USACE RGP General Condition 26.

6.4.2 120-Day Plant Establishment Report

At the end of the PEP, a monitoring report will be prepared to document the completion of the 120-day PEP. The report will include a discussion of the maintenance activities conducted during the PEP, including weed control, irrigation maintenance, erosion control, trash removal, replacement plantings and seeding, herbivory measures, and any other maintenance actions taken during that time.

6.4.3 Qualitative Monitoring Reports

Qualitative monitoring reports will be prepared and submitted after each qualitative monitoring event. Reports will be due bi-monthly during Year 1, and quarterly thereafter. Qualitative monitoring reports will be brief reports or memoranda and will include a summary of the qualitative monitoring results, including photographs, problems encountered, and recommendations to correct any observed issues of the sites. Reports will be submitted within two weeks following qualitative monitoring events.

6.4.4 Annual Quantitative Monitoring Reports

Annual reports will be prepared by the Restoration Specialist for each year of the five-year monitoring program. Each annual report will summarize the results of both the spring and fall quantitative monitoring events conducted during that monitoring year, as well as the qualitative monitoring and maintenance activities completed during that year. The annual report will evaluate restoration progress relative to the applicable performance standards, document seasonal and year-to-year trends, identify any adaptive management or remedial measures implemented or recommended, and include the following:

(1) A list of names, titles, and organizations of all persons who prepared the content of the annual quantitative report and participated in the monitoring activities for the year;

(2) A summary of all restoration and maintenance activities during the year;

(3) Results and analysis of all qualitative and quantitative monitoring data (native, non-native, and invasive non-native plant cover; species richness, native species recruitment; plant and wildlife species observed; etc.). The analysis will be used to show if the restoration site has met the success criteria for the given year. It should be used to compare the restoration site to the approved reference site baseline and

established performance standards and compare the progress of the restoration site from year to year. Annual reference site monitoring may also be used to inform adaptive management but will not be used to recalculate the established performance standards;

(4) Representative site photographs and monitoring photographs, including photograph points and transect photographs;

(5) Discussion of remedial actions that have been implemented during the monitoring year;

(6) Description of any remedial actions that may still be required; and

(7) Any lessons learned throughout the year regarding all aspects of the restoration effort.

Annual reports will be submitted by the end of each monitoring year.

6.5 Adaptive Management

Adaptive management is a systematic process for continually improving management decisions by learning from results of implemented procedures. If monitoring activities indicate that the performance standards and/or goals of the restoration effort are not being met, then methods should be adjusted until the site is back on track and progressing toward attaining the performance standards/goals. Results from subsequent reference-site monitoring may be considered when evaluating climatic, hydrologic, or ecological factors affecting restoration performance and when determining whether adaptive-management measures are warranted.

6.6 General Remedial Measures

If any of the yearly performance standards are not met, the Restoration Specialist may recommend remedial actions, such as replanting and/or additional seeding, to achieve the following year's performance standards. If, at the end of the five-year maintenance program, the restoration fails to meet the performance standards, the maintenance and monitoring period may be extended, and a specific set of remedial measures may be implemented under the direction of the Restoration Specialist. Only areas that fail to meet performance standards will require additional work and/or additional remedial measures. This process will continue until the final performance standards have been met, or until it is determined that other measures are necessary.

6.7 Completion of Restoration

The restoration effort will be considered complete after the fifth year of monitoring, and the performance standards have been met. CDFW may request a site visit to determine if the habitat restoration portion of the ITP is deemed complete. The restoration areas should be free of trash, and any irrigation infrastructure shall be removed unless there is an acceptable justification for leaving it in place as approved by CDFW.

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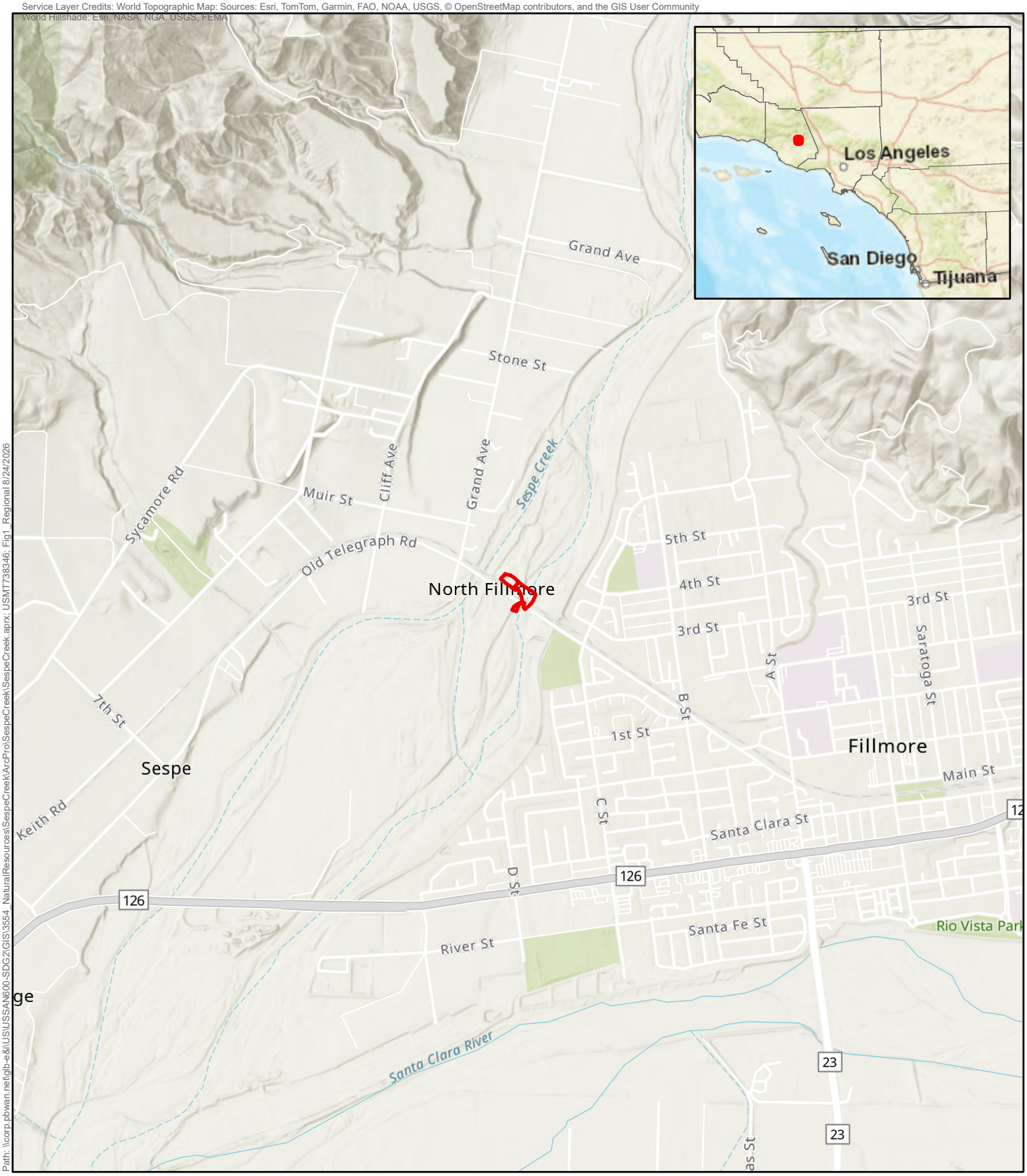
APPENDIX A – FIGURES



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Project Boundary

FIGURE 1

Regional Location
Sespe Creek Restoration
Ventura County, CA



- Reference Stations
- Project Design
- Diversion Channel
- Channel Thalweg
- Zone 1 - Active Channel/Open Alluvium
- Zone 2 - Alluvial Bench/Channel Margin and Temporary Diversion Area
- Zone 3 - Upland/Transitional Alluvial Scrub, Access, and Laydown Areas

1 inch =75 feet
0 37.5 75
Feet

FIGURE 2

Project Features
Sespe Creek Restoration
Ventura County, CA

APPENDIX B – REPRESENTATIVE SITE PHOTOGRAPHS



Photo 1. Pre-project conditions after a storm event in 2024. Aerial photograph of the Sespe Creek channel and streambed. Facing north.



Photo 2. Pre-project conditions after a storm event in 2024. View of Sespe Creek from the eastern side beneath the bridge. Facing northwest.



Photo 3. View of the Project site during initial construction activities in Sespe Creek, with vegetation present prior to temporary impacts. Facing west.



Photo 4. Close-up view of the Sespe Creek channel and streambed vegetation prior to construction activities taken in June 2024. Facing west.



Photo 5. View of the Sespe Creek channel during construction activities, showing existing vegetation and current conditions.



Photo 6. View of the Sespe Creek channel with construction activities in the background.



Photo 7. View of the temporary access road and construction staging areas within the Project site.



Photo 8. View of the temporary impact area; trees were not removed.



Photo 9. View of sparse vegetation dominated by non-native grasses, mustard, and native scalebroom within the western portion of the temporary impact area where revegetation activities will occur.

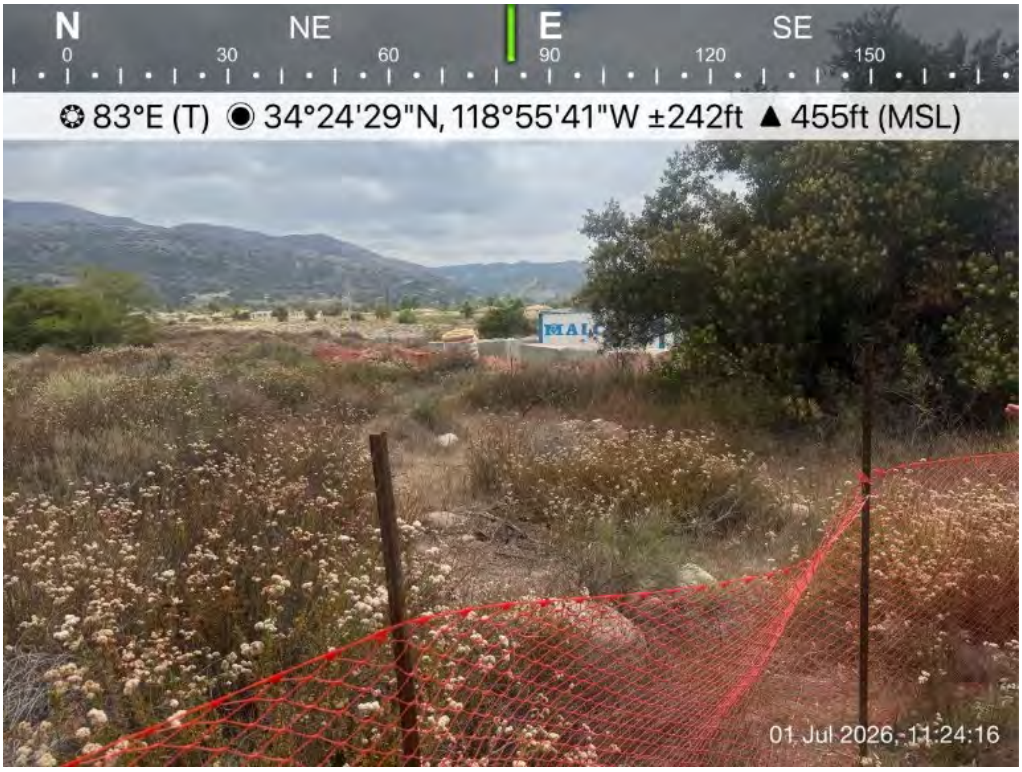

Photo 10. View of existing native vegetation dominated by California buckwheat adjacent to the temporary impact area.

APPENDIX C – NATIVE PLANT SPECIES LISTS

Active Channel – Plant Species

Common Name	Scientific Name
Annual bur-sage	*Ambrosia acanthicarpa*
Broadleaf cattail	*Typha latifolia*
California sagebrush	*Artemisia californica*
Coastal deerweed	*Acmispon maritimus*
Common knotweed	*Polygonum aviculare*
Common three-square bulrush	*Schoenoplectus pungens*
Fragrant flatsedge	*Cyperus odoratus*
Fremont cottonwood	*Populus fremontii*
Iris-leaved rush	*Juncus xiphioides*
Ragweed	*Ambrosia* sp.
Red willow	*Salix laevigata*
Sandbar willow	*Salix exigua*
Santa Barbara milkvetch	*Astragalus trichopodus*
Scale broom	*Lepidospartum squamatum*
Sticky phacelia	*Phacelia viscida*

Alluvial Scrub Habitat – Native Plant Species

Common Name	Scientific Name
Annual bur-sage	*Ambrosia acanthicarpa*
Black sage	*Salvia mellifera*
California buckwheat*	*Eriogonum fasciculatum*
California croton	*Croton californicus*
California everlasting	*Pseudognaphalium californicum*
California sagebrush	*Artemisia californica*
California yerba santa	*Eriodictyon californicum*
Ceanothus	*Ceanothus* sp.
Chamise	*Adenostoma fasciculatum*
Chaparral yucca	*Hesperoyucca whipplei*
Field suncup	*Camissonia campestris*
Hollyleaf cherry	*Prunus ilicifolia*
Laurel sumac	*Malosma laurina*
Scale broom*	*Lepidospartum squamatum*
Small wirelettuce	*Stephanomeria exigua*
Sugar bush	*Rhus ovata*
Telegraph weed	*Heterotheca grandiflora*
Western white clematis	*Clematis ligusticifolia*
White sage	*Salvia apiana*
Wright's cudweed	*Pseudognaphalium canescens*

***Dominant Species**