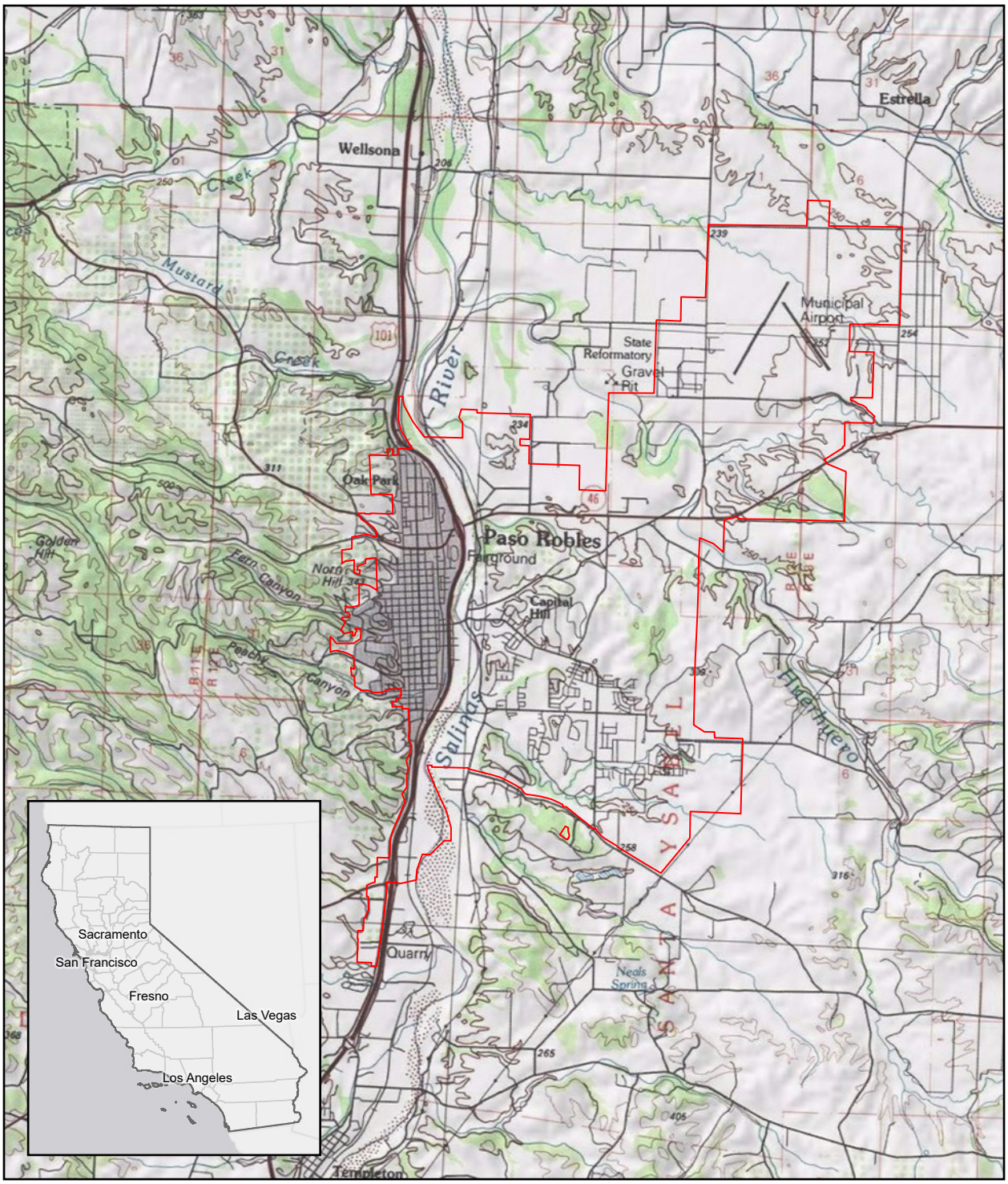
Exhibit 1: Project Vicinity Map

Figure 1. United States Geological Survey Topographic Map



Legend

Project Location — City of Paso Robles

USA Topo Maps

0 1 2 Miles

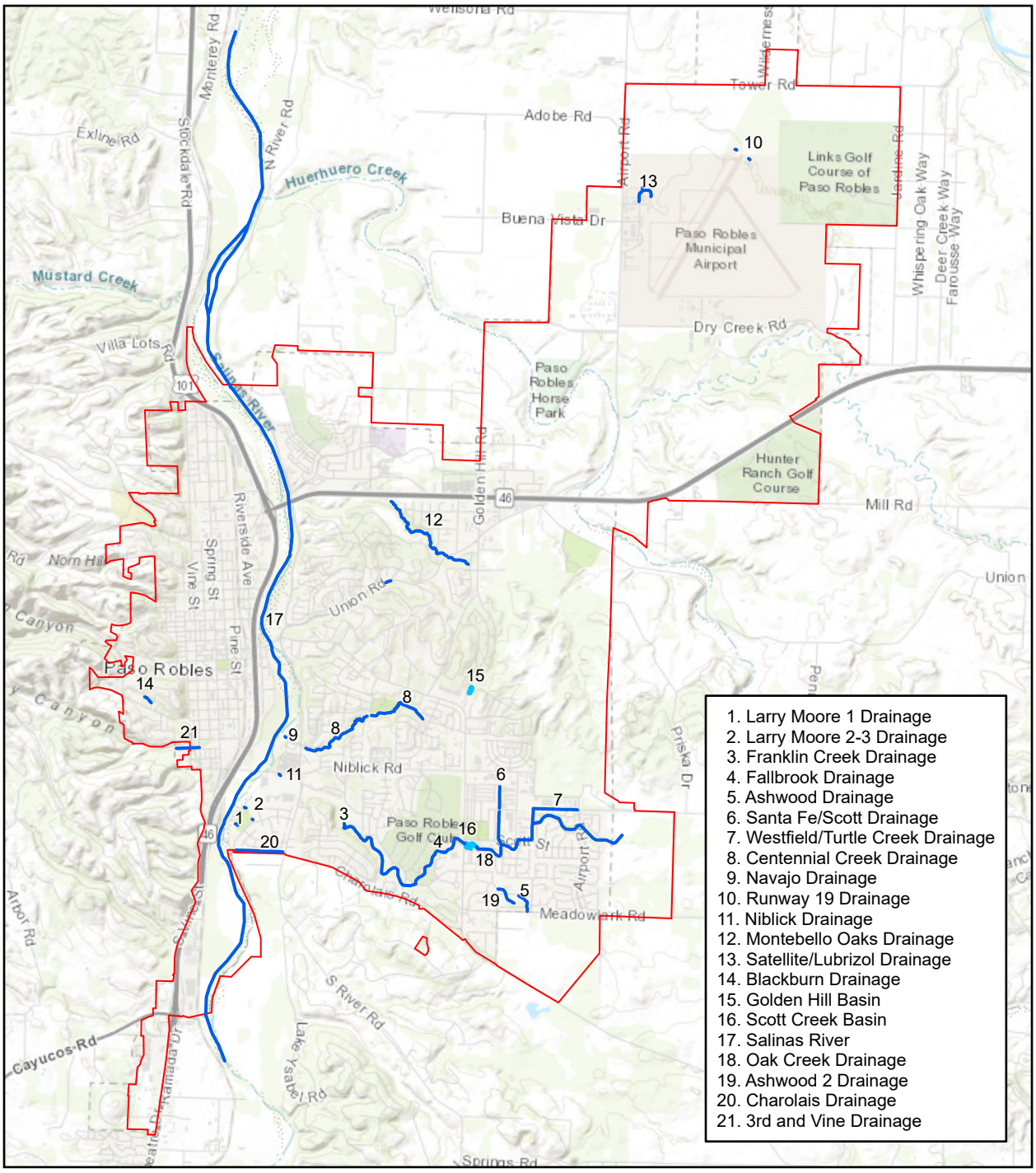
City of Paso Robles
Routine Vegetation Maintenance Project
Map Center: 120.67625°W 35.63282°N
Templeton, San Luis Obispo County

USGS Quadrangle: Paso Robles and Templeton

Map Updated:
December 11, 2020 03:06 PM by SAF

Exhibit 2: Flood Control Locations

Figure 2. Routine Maintenance Locations



Legend

City of Paso Robles

CDFW Jurisdictional Waterway

CDFW Jurisdictional Basin

N

0 1 2 Miles

City of Paso Robles
Routine Vegetation Maintenance Project
Map Center: 120.6529°W 35.63525°N
Paso Robles, San Luis Obispo County

Basemap: World Topographic

Map Updated:
December 11, 2020 02:08 PM by SAF

Exhibit 3: Fire Fuel Load Reduction Areas

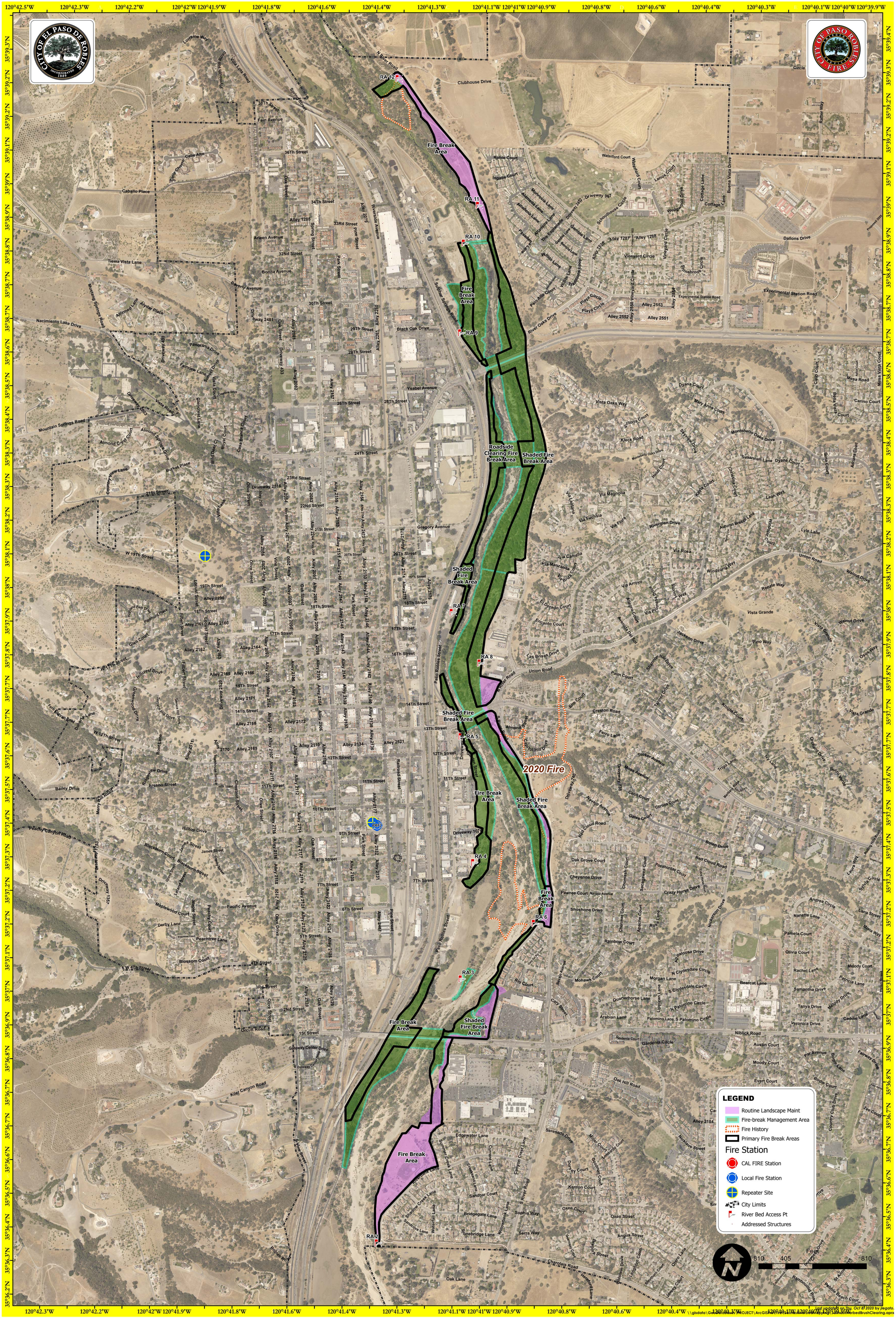
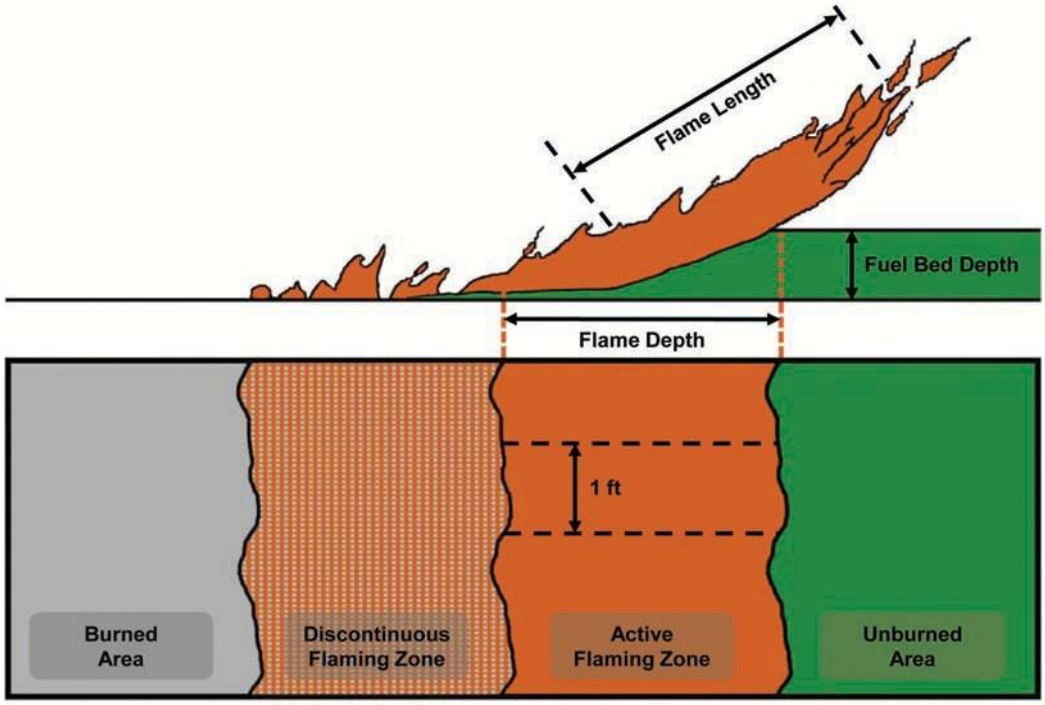

CITY OF EL PASO DE ROBLES
INCORPORATED 1889
CITY OF PASO ROBLES FIRE DEPARTMENT
RA 12
RA 11
RA 10
RA 9
RA 7
RA 8
RA 5
RA 4
RA 6
RA 3
RA 2
Fire Break Area
Roadside Clearing Fire Break Area
Shaded Fire Break Area
2020 Fire
LEGEND
Routine Landscape Maint
Fire-break Management Area
Fire History
Primary Fire Break Areas
Fire Station
CAL FIRE Station
Local Fire Station
Repeater Site
City Limits
River Bed Access Pt
Addressed Structures
Feet
810
405
0
810
Last updated on Tue, Oct 6 2020 by jlegato.
\\gisdata\GeoDatabase\PROJECT\ArcGISPro\FireFuelsMaster\BeamMapping\SalinasRiverbedBrushClearing.aprx

Exhibit 4: Desired Conditions for Fuel Beds within the Salinas River Fuels Reduction Project

Desired Conditions for Fuel Beds within The Salinas River Fuels Reduction Project

The diagram and chart below are from “How to Generate and Interpret Fire Characteristics Charts for Surface and Crown Fire Behavior” and the fuel models are from “Standard Fire Behavior Fuel Models: A Comprehensive Set for Use with Rothermel’s Surface Fire Spread Model”. We included this information to show the importance of the relationship between flame lengths and fire suppression efforts. By reducing the tons per acre to the desired levels listed, we can significantly lower flame lengths within the given fuel beds throughout the Salinas River, create a safer environment for firefighters to engage fire, and increase the probability of success when suppressing fires to the riverbed before they transition into the inhabitable portions of the community.



The diagrams illustrate the relationship between flame length and fireline intensity. A side view of a wind-driven fire shows that flame length is measured from midway in the active flaming zone to the average tip of the flames. The overhead view illustrates that fireline intensity is the heat energy release per unit time from a foot (or meter) wide section of the fuel bed extending from the front to the rear of the active flaming zone

Table 1—Relationship of surface fire flame length and fireline intensity to suppression interpretations.

Flame length		Fireline intensity		Interpretation
ft	m	Btu/ft/s	kJ/m/s	
< 4	< 1.2	< 100	<350	• Fires can generally be attacked at the head or flanks by persons using hand tools. • Hand line should hold the fire.

4 – 8	1.2 – 2.4	100 – 500	350 – 1700	• Fires are too intense for direct attack on the head by per- sons using hand tools. • Hand line cannot be relied on to hold the fire. • Equipment such as dozers, pumpers, and retardant aircraft can be effective.
8 – 11	2.4 – 3.4	500 – 1000	1700 – 3500	• Fires may present serious control problems—torching out, crowning, and spotting. • Control efforts at the fire head will probably be ineffective
> 11	> 3.4	> 1000	> 3500	• Crowning, spotting, and major fire runs are probable. • Control efforts at head of fire are ineffective.

Grass Fuel Type Models (GR)

The primary carrier of fire in the GR fuel models is grass. Grass fuels can vary from heavily grazed grass stubble or sparse natural grass to dense grass more than 6 feet tall. Fire behavior varies from moderate spread rate and low flame length in the sparse grass to extreme spread rate and flame length in the tall grass models.

The effect of live herbaceous moisture content on spread rate and intensity is strong.

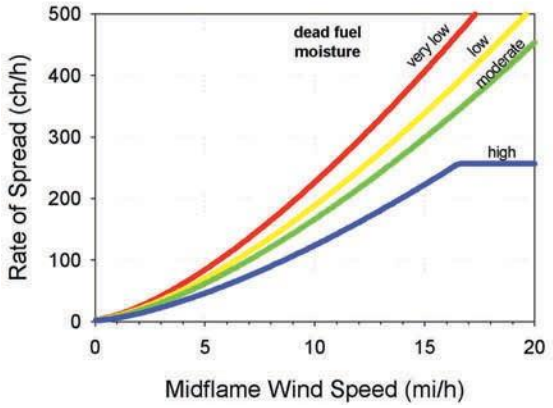
Fuel model GR4 represents the continues grass fuel bed within the Salinas River, though there are areas with a higher load than GR4, we do not feel it is enough to push it to GR7. The characteristics of fuel model GR1 are the desired conditions for these fuel beds within the project area. Reducing the tons per acre below .5 lowers the flame length to less than three feet during peak fire season. As a general rule, fires with flame lengths of four feet or less can be suppressed by ground personnel and limits the need for heavy equipment and aircraft.

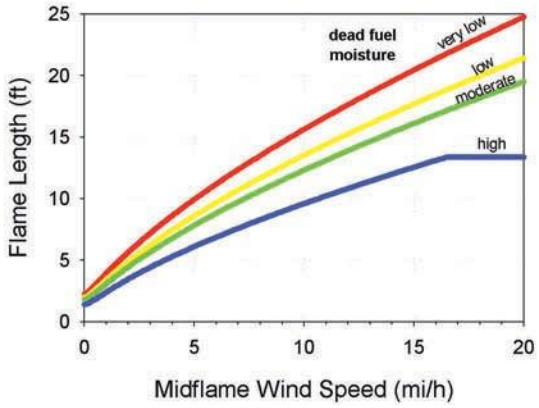
GR4 (104)

Moderate Load, Dry Climate Grass (Dynamic)

Description: The primary carrier of fire in GR4 is continuous, dry-climate grass. Load and depth are greater than GR2; fuelbed depth is about 2 feet.

Fine fuel load (t/ac)	2.15
Characteristic SAV (ft-1)	1826
Packing ratio (dimensionless)	0.00154
Extinction moisture content (percent)	15



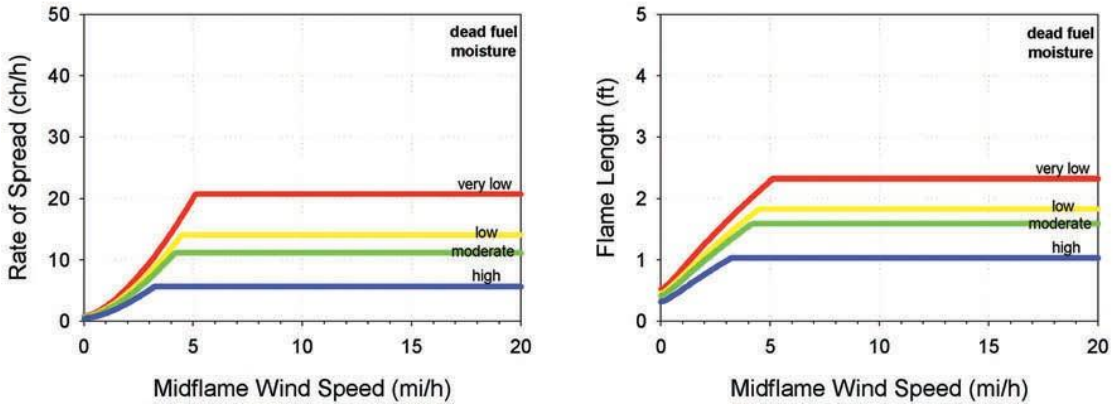


GR1 (101)

Short, Sparse Dry Climate Grass (Dynamic)

Description: The primary carrier of fire in GR1 is sparse grass, though small amounts of fine dead fuel may be present. The grass in GR1 is generally short, either naturally or by grazing, and may be sparse or discontinuous. The moisture of extinction of GR1 is indicative of a dry climate fuelbed, but GR1 may also be applied in high-extinction moisture fuelbeds because in both cases predicted spread rate and flame length are low compared to other GR models.

Fine fuel load (t/ac)	0.40
Characteristic SAV (ft-1)	2054
Packing ratio (dimensionless)	0.00143
Extinction moisture content (percent)	15



Grass-Shrub Fuel Type Models (GS)

The primary carrier of fire in the GS fuel models is grass and shrubs combined; both components are important in determining fire behavior.

The effect of live herbaceous moisture content on spread rate and intensity is strong and depends on the relative amount of grass and shrub load in the fuel model.

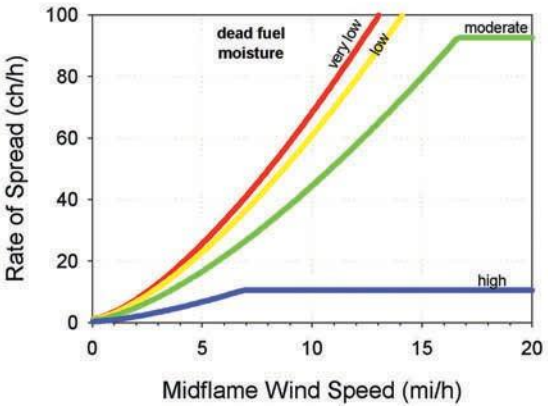
Fuel model GS2 best represents the grass-shrub fuel bed in areas of the Salinas River. Reducing the fuels to represent the characteristics of GS1 would lower the flame lengths from 10-15 feet to 8 feet or less during peak fire season. The reduction in fuels can be accomplished primarily through grazing. Fires with flame lengths of 8 feet or less can generally be effectively suppressed using heavy equipment, aircraft, and ground personnel.

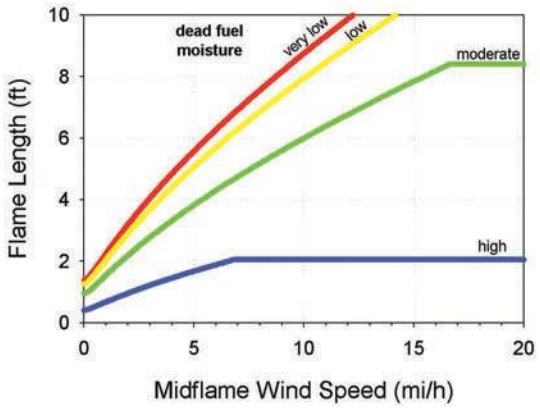
GS2 (122)

Moderate Load, Dry Climate Grass-Shrub (Dynamic)

Description: The primary carrier of fire in GS2 is grass and shrubs combined. Shrubs are 1 to 3 feet high, grass load is moderate. Spread rate is high; flame length moderate. Moisture of extinction is low.

Fine fuel load (t/ac)	2.1
Characteristic SAV (ft-1)	1827
Packing ratio (dimensionless)	0.00249
Extinction moisture content (percent)	15



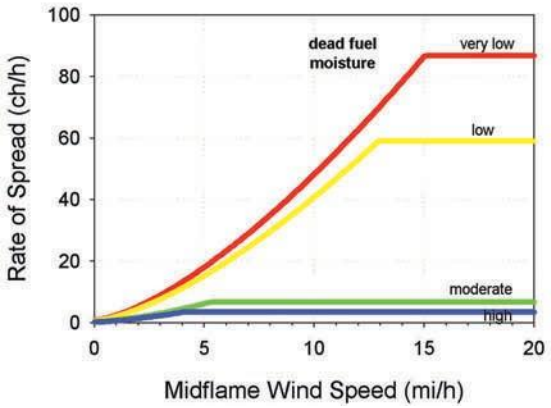


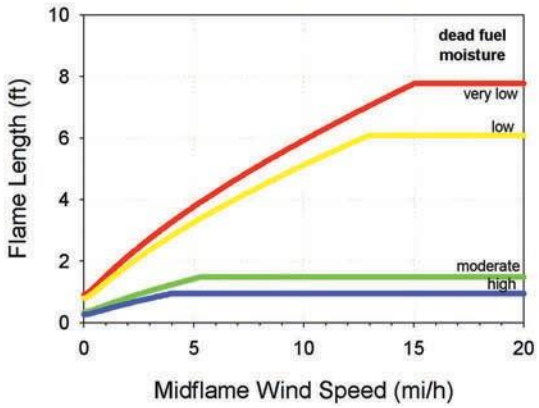
GS1 (121)

Low Load, Dry Climate Grass-Shrub (Dynamic)

Description: The primary carrier of fire in GS1 is grass and shrubs combined. Shrubs are about 1 foot high, grass load is low. Spread rate is moderate; flame length low. Moisture of extinction is low.

Fine fuel load (t/ac)	1.35
Characteristic SAV (ft-1)	1832
Packing ratio (dimensionless)	0.00215
Extinction moisture content (percent)	15





Shrub Fuel Type Models (SH)

The primary carrier of fire in the SH fuel models is live and dead shrub twigs and foliage in combination with dead and down shrub litter. A small amount of herbaceous fuel may be present, especially in SH1 and SH9, which are dynamic models (their live herbaceous fuel load shifts from live to dead as a function of live herbaceous moisture content). The effect of live herbaceous moisture content on spread rate and flame length can be strong in those dynamic SH models.

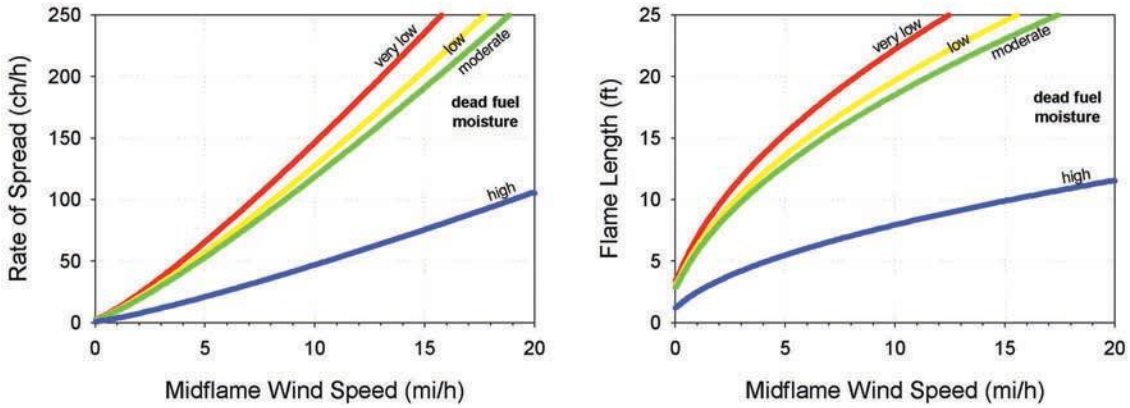
Fuel model SH5 best represents dense areas, primarily interior islands within the Salinas River and areas without tree canopy cover. Fires that become established within these fuel beds are extremely resistant to fire suppression efforts. Treating the denser areas of this fuel model, while focusing on the fuel reduction of the vegetation that exhibits a higher dead to live fuel ratio, will reduce fire intensity and spotting potential. There is not a current fuel model that best represents the conditions we are striving to achieve within the project area for this fuel model. The desired conditions within this fuel model is a reduce fuels loading by 50% to three tons per acre. We seek to achieve this objective mainly by removing the high concentrations of dead fuels while leaving a mosaic fuel bed with a higher concentration of live vegetation.

SH5 (145)

High Load, Dry Climate Shrub

Description: The primary carrier of fire in SH5 is woody shrubs and shrub litter. Heavy shrub load, depth 4-6 feet. Spread rate very high; flame length very high. Moisture of extinction is high.

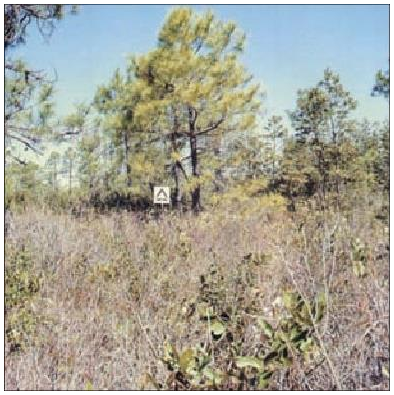
Fine fuel load (t/ac)	6.5
Characteristic SAV (ft-1)	1252
Packing ratio (dimensionless)	0.00206
Extinction moisture content (percent)	15



Fuel model SH8 best represents areas within the Salinas River with tree canopy cover that have dense shrub and grass understories. Fires that become established in this fuel bed move quickly through the understory, also known as latter fuel, and transition into the tree canopies. These fires are extremely resistant to fire suppression efforts by both ground and air resources and produce fires with long range spotting. By reducing the latter fuels beneath the tree canopy, we can reduce tree mortality among the larger trees due to fire and reduce flame lengths. By reducing the latter fuels reaching from the ground to the canopy there will be a reduction of spotting. This reduction in spotting will equate to a safer and more effective fire response. The desired condition is to reduce the tons per acre in this fuel model to less than two tons per acre.

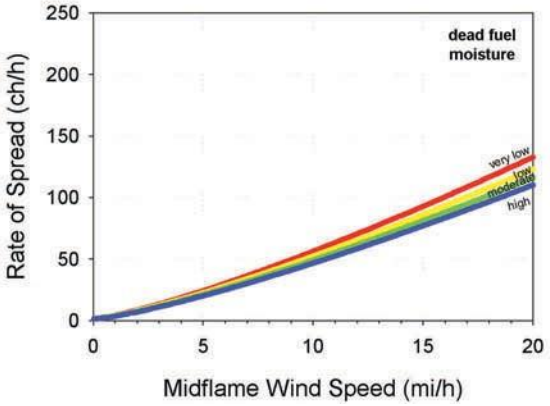
SH8 (148)

High Load, Humid Climate Shrub



Description: The primary carrier of fire in SH8 is woody shrubs and shrub litter. Dense shrubs, little or no herbaceous fuel, fuelbed depth about 3 feet. Spread rate is high; flame length high.

Fine fuel load (t/ac)	6.4
Characteristic SAV (ft-1)	1386
Packing ratio (dimensionless)	0.00509
Extinction moisture content (percent)	40



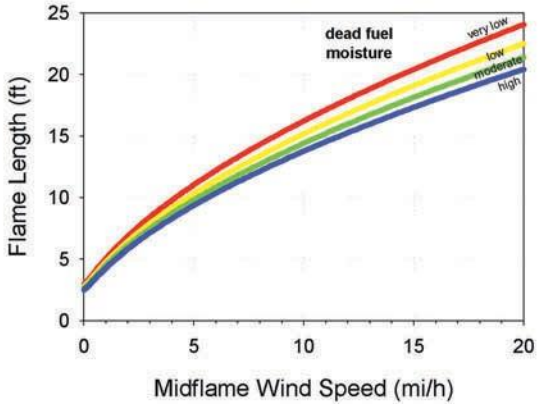
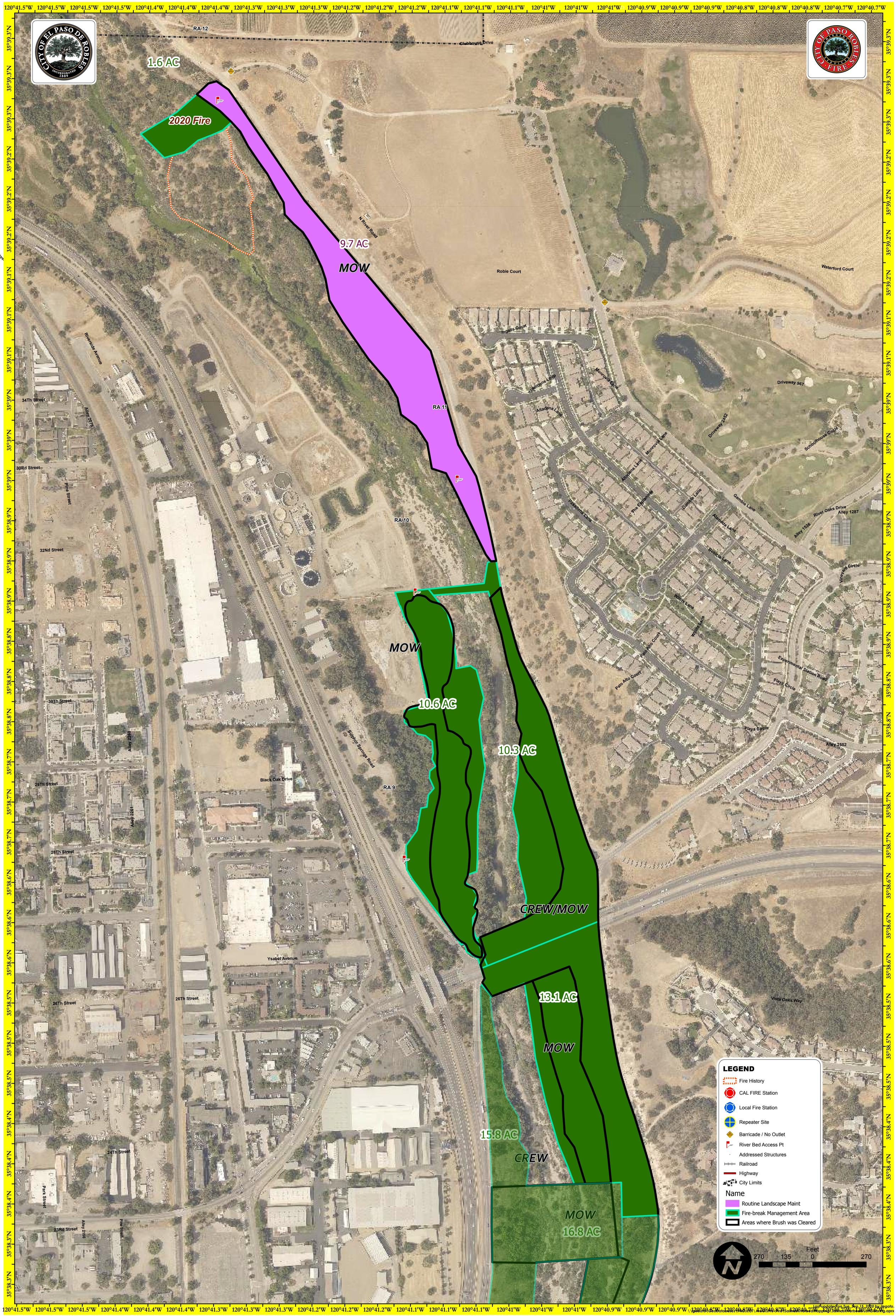


Exhibit 5: 2019 Fire Fuel Load Reduction Map

EMERGENCY FUEL BREAK PROJECT

Created: July 2, 2019
PasoRobles_SalinasRiverBrushClearing.mxd

Exhibit 6: 2020 Fire Fuel Load Reduction Map


RA 12
Clubhouse Drive
1.6 AC
2020 Fire
9.7 AC
MOW
N River Road
Robie Court
Waterford Court
Ingalls Court
Riverside Avenue
34Th Street
Alley 2079
33Rd Street
Pine Street
32Nd Street
RA 11
RA 10
Kreitlons Loop
Monrovia Lane
Altadena Lane
Driveway 967
Driveway 2452
Schoolhouse Circle
Pasadena Lane
The Esplanade
Gamble Lane
Alameda Lane
Bonita Lane
River Oaks Drive
Alley 1287
Alley 1536
Vineyard Circle
Willis Lane
Palo Alto Court
Experimental Station Road
Playa Circle
Alley 2552
MOW
10.6 AC
10.3 AC
Stuphur Springs Road
30Th Street
Alley 2260
29Th Street
Alley 2261
28Th Street
Black Oak Drive
RA 9
CREW/MOW
13.1 AC
MOW
Vista Oaks Way
Ysabel Avenue
26Th Street
26Th Street
15.8 AC
CREW
24Th Street
Park Street
23Rd Street
Alley 2156
Pine Street
MOW
16.8 AC
Alley 2157
LEGEND
Fire History
CAL FIRE Station
Local Fire Station
Repeater Site
Barricade / No Outlet
River Bed Access Pt
Addressed Structures
Railroad
Highway
City Limits
Name
Routine Landscape Maint
Fire-break Management Area
Areas where Brush was Cleared
Feet
270
135
0
270
Last updated on Tue, Sep 15, 2020 by jlegato
\\gisdata\GeoDatabases\PROJECT\ArcGISProjects\Mapping\Standard\VerbeadBrushClearing.aprx

MOW

13.1 AC

15.8 AC

CREW

CREW/MOW

16.8 AC

MOW

21.1 AC

RA 8

2.1 AC

CREW

RA 5

2020 Fire

5.4 AC

16.7 AC

12.1 AC

STRING TRIMMING

LEGEND

- Fire History
- CAL FIRE Station
- Local Fire Station
- Repeater Site
- Barricade / No Outlet
- River Bed Access Pt
- Addressed Structures
- Railroad
- Highway
- City Limits

Name

- Routine Landscape Maint
- Fire-break Management Area
- Areas where Brush was Cleared

Feet 270 135 0 270

Last updated on Tue, Sep 15 2020 by jpegg.
\\gisdata\cedbuilder\PROJECT\ArcGIS Online\Sandhill\FireBreakMapping\SulphurVerbenaBrushClearing.aprx

PRF1

Driveway 1076

16.7 AC

9Th Street

12.1 AC

RA 4

2020 Fire

STRING TRIMMING

5.4 AC

RA 6

0.8 AC

RA 3

CREW

9.1 AC

MOW

GRAZING

13.8 AC

21.5 AC

MOW

RA 2

8Th Street

7Th Street

6Th Street

5Th Street

4Th Street

3Rd Street

2Nd Street

1St Street

Alley 2132

Alley 2131

Alley 2130

Alley 2122

Alley 2124

Alley 2126

Alley 2129

Alley 2487

Velta Circle

Park Street

Oak Street

Spring Street

Pine Street

Paso Robles Street

Riverside Avenue

Navajo Avenue

Vista Del Rio Court

Rio Court

Cary Street

Mohawk Court

Cheyenne Drive

Pawnee Court

Shoshone Drive

Mollick Road

Oak Hill Road

S River Road

Serenade Drive

Edgewater Lane

Riverbank Lane

Canyon Crest Lane

Creekbend Lane

Current Lane

Summer Creek Lane

Miller Court

Dorsey Court

Shadow Creek Lane

Sandbar Court

Stillwater Court

Bridgegate Lane

Waterfall Lane

Sandcove Lane

Stonebridge Lane

Willowbank Lane

Sophia Way

Serra Way

Kenton Court

Angus Street

Center Drive

Alley 2119

Alley 2121

Alley 2123

Alley 2125

S Vine

Gate

Gate

LEGEND

- Fire History
- CAL FIRE Station
- Local Fire Station
- Repeater Site
- Barricade / No Outlet
- River Bed Access Pt
- Addressed Structures
- Railroad
- Highway
- City Limits

Name

- Routine Landscape Maint
- Fire-break Management Area
- Areas where Brush was Cleared

Feet 270 135 0 270

Last updated on Tue, Sep 15, 2020 by jlgoto

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Exhibit 7: 2019 and 2020 Impacts Quantification Table

Salinas River Parameters	2019	2020
Start date, end date, and number of days of clearance activities	Start: August 21, 2019 End: September 30, 2019 Number of work days: 23	Start: June 22, 2020 End: August 30, 2020 Number of work days: 38
Method used for each work period	Masticator/brush clearing; mowing; string-trimming/weed whipping; chipping in place	Masticator/brush clearing; mowing; string-trimming/weed whipping; chipping in place; grazing
Total work area for vegetation management	64 acres	102 acres
Total work area for sediment removal, if any	none	none
Total volume of sediment removed, if any	none	none
Area of riparian vegetation trimmed within the low-flow channel	none	none
Area of tree and shrub canopy trimmed within the active channel	none	
Area of tree and shrub canopy trimmed within the floodplain above the active channel	Cumulative 2019-20: 10.5 acres	
Number and size of trees over 4 inches dbh removed, if any	none	none
Number of animals incidentally taken, if any, by species	none	none
Area of disturbance to aquatic habitats, if any	none	none
Area of disturbance to habitat within 50 feet of water or wetted channel	none	none
Area of invasive plants removed	Cumulative 2019-20: 1.4 acres	

Quantification of 2019 and 2020 Impacts

Salinas River Parameters	2019	2020
Estimate of net biomass removed from active flow channel, if any	none	none
Estimate of net biomass removed from Salinas River riparian area and its floodplain, if any	none	none

Exhibit 8: Mitigation Receiver Site Selection

Mitigation Receiver Sites

The City proposes potential mitigation receiver sites to fulfill mitigation required for stormwater and vegetation management in riparian zones. As discussed previously, the City is in the process of developing its Paso Robles Watershed Plan (The Plan). The plan is the City's attempt to add greater flexibility to apply the Central Coast Regional Water Quality Control Board Post-Construction requirements for off-site mitigation of stormwater. As a result, 25 separate off-site locations were identified. Initially, the City planned to use this list as a list of potential mitigation receiver sites for the purpose of mitigating impacts from work within the Salinas River. The difficulty with providing the list is that the 25 off-site mitigation locations have not yet been evaluated for appropriateness and for meting mitigation requirements. As such, the City would like to propose a criteria-based selection process for mitigation receiver sites. The selection will be based on 4 different criteria that focus on habitat functionality rather than like for like replacement. The following criteria

1. **Proximity to Waterbody:** Mitigation sites will be based on treatment potential and its proximity to the waterbody. The City has multiple tributaries to Salinas River that offer a high potential for revegetation, bank stabilization, and overall rehabilitation for urbanized waterways. A site that can demonstrate a higher ability to accept revegetation associated with a channel will have a higher score:

Proximity to Waterbody (feet)[1]	Scoring
0 to 20	4
21 to 39	3
40 to 50	2
Greater than 50	1

1-Ability to implement a mitigation project proximity to the waterbody, wetted channel, dry channel, etc. Mitigation project may include revegetation, bank stabilization, wetland establishment, flood control, etc.

2. **Vegetation Type/Function:** Mitigation sites will be assessed for ability to accept similar vegetation type or vegetation function (shading, habitat for nesting, velocity control, water quality treatment, etc.). The following table demonstrates the assessment and scoring to determine optimal locations.

Vegetation Parameter	Scoring
Vegetation Function[1]	4
Vegetation Type[2]	3
Vegetation Replacement[3]	2
Revegetation Planting[4]	1

1 – Vegetation function meets or achieves a functional equivalent for sediment removal, habitat improvements, velocity control, and/or water quality treatment.

2 – Vegetation species match removed vegetation and have similar function, e.g., canopy for bird nesting, habitat shading, shelter, and/or food resources. These plant species may include trees, shrubs, etc.

3 – Vegetation Replacement of like for like vegetation that has been impacted. The City plans to align the California Department of Fish and Wildlife requirements, which prescribe a 3:1 replacement ratio for riparian trees and shrubs that are damaged or removed with a four (4) inches DBH or greater.

4 – Vegetation planting does not match impacted habitat with respect to vegetation type, species, or function.

3. **Overall Improvements to Water Quality:** Mitigation sites will be selected using a water quality function parameter such as sediment removal, shading, velocity reduction, pollutant removal, etc. These water quality parameters are only weighted higher if the existing conditions of the received site would benefit from implementation of a targeted functional improvement. This selection process will be done subjectively depending on the needs of the receiver site. For example, if the receiver site conditions indicate that significant scouring erosion is occurring due to a lack of bank stabilization, then the City will identify a combination of stabilization methods, such as planting, erosion control blankets, seeding, etc.

Water Quality Purpose	Score
Mitigation receiver site improves water quality to existing waterways	2
Mitigation receiver site does not significantly improve water quality to existing waterways	1

4. **Watershed Nexus:** The City will select locations that benefit overall watershed health. Overall watershed health includes, but is not limited to a combination of groundwater replenishment, water quality improvements, and/or habitat improvements. The City is currently working with the Upper Salinas-Las Tablas Resources Conservation district (RCD) to develop a process and plan to identify off site mitigation receiver sites. Since the local RCD connects with multiple landowners within the immediate area the opportunity exists to look outside City boundaries. In addition, the City would like to consider that since watershed boundaries do not align with the City's jurisdictional boundaries, mitigation sites outside of City boundaries should be considered. Mitigation sites located outside of City boundaries will still be the burden of the City to achieve long term success. This could be done through a cooperative agreement with the landowner and the RCD. However, these, details have not been defined at this time.

Watershed[1] Nexus	Score
Within the Watershed boundaries	2
Outside the Watershed boundaries	1

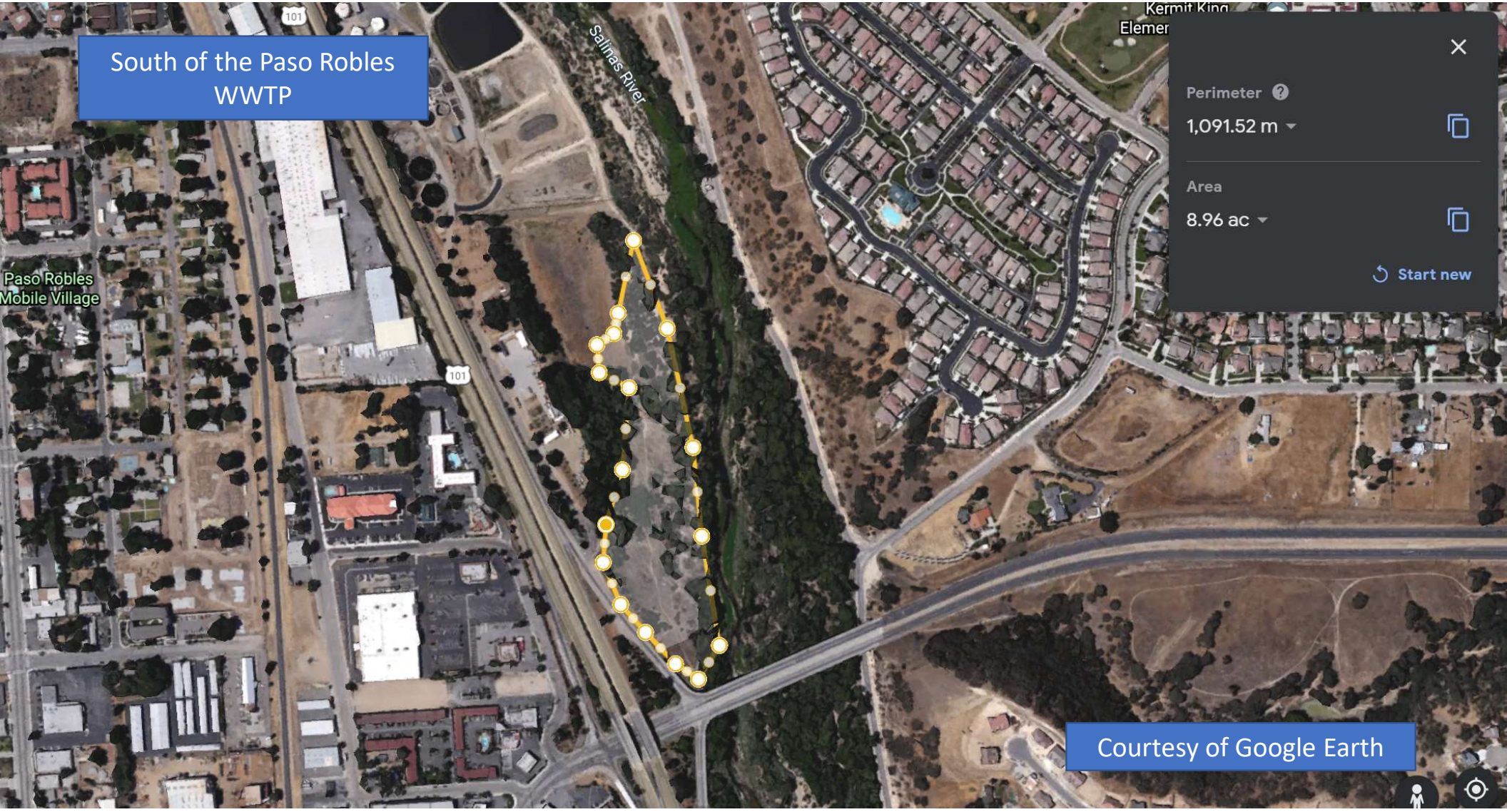
1 – Watershed boundaries may be defined by topography or existing watershed delineations, such as USGS HUC 10 boundaries.

Timeline (cumulative impacts): If sufficient area is available at one location, the City suggests implementing one mitigation project for all impacts over a 5-year period. As opposed to multiple mitigation receiver sites, implementation of a single site mitigation project would allow for greater efficiency for monitoring, mitigation costs, and adaptive management to achieve water quality goals at the mitigation site.

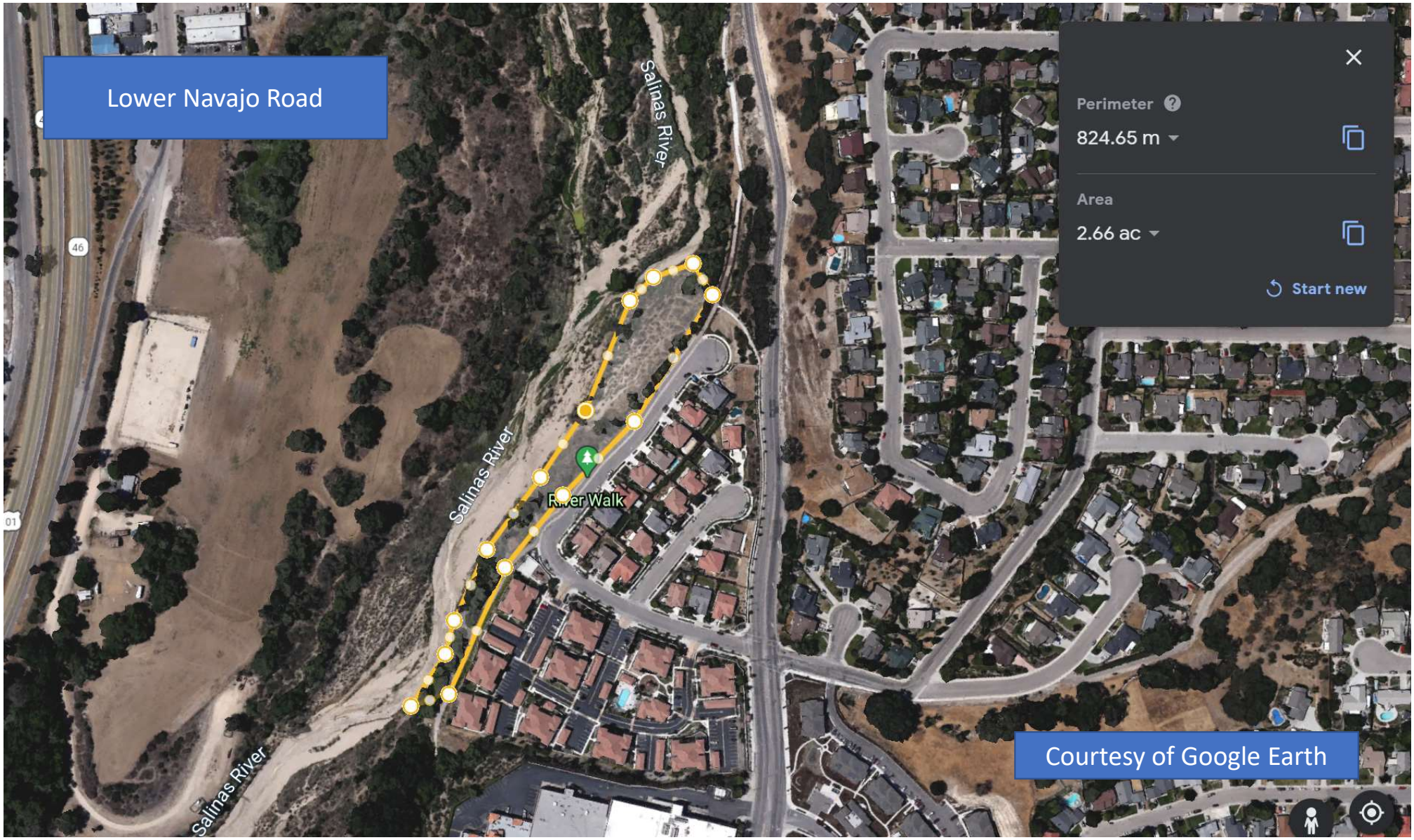
Exhibit 9: Mitigation Sites Preliminary Evaluation

Preliminary Evaluation of Mitigation Receiver Sites, Paso Robles

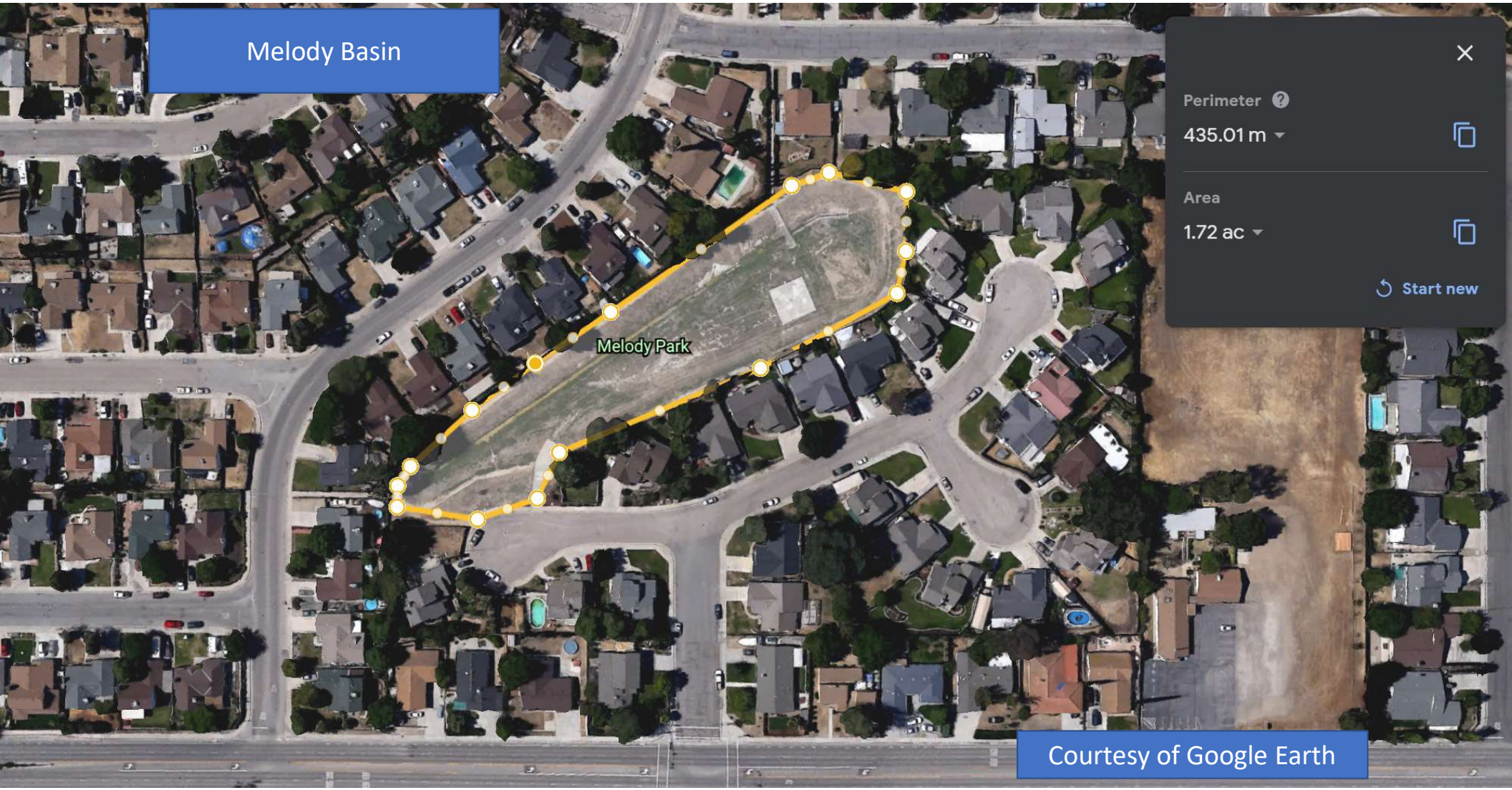
- The following figures include potential receiver site locations and their associated areas of coverage.
- The sites listed are a small selection of areas suitable for mitigation.
- The receiver site scoring rubric was used to evaluate and score each site depending on its characteristic of suitability.
- It should be noted that this is a preliminary evaluation; therefore, polygons are estimates and demonstrate the general location.

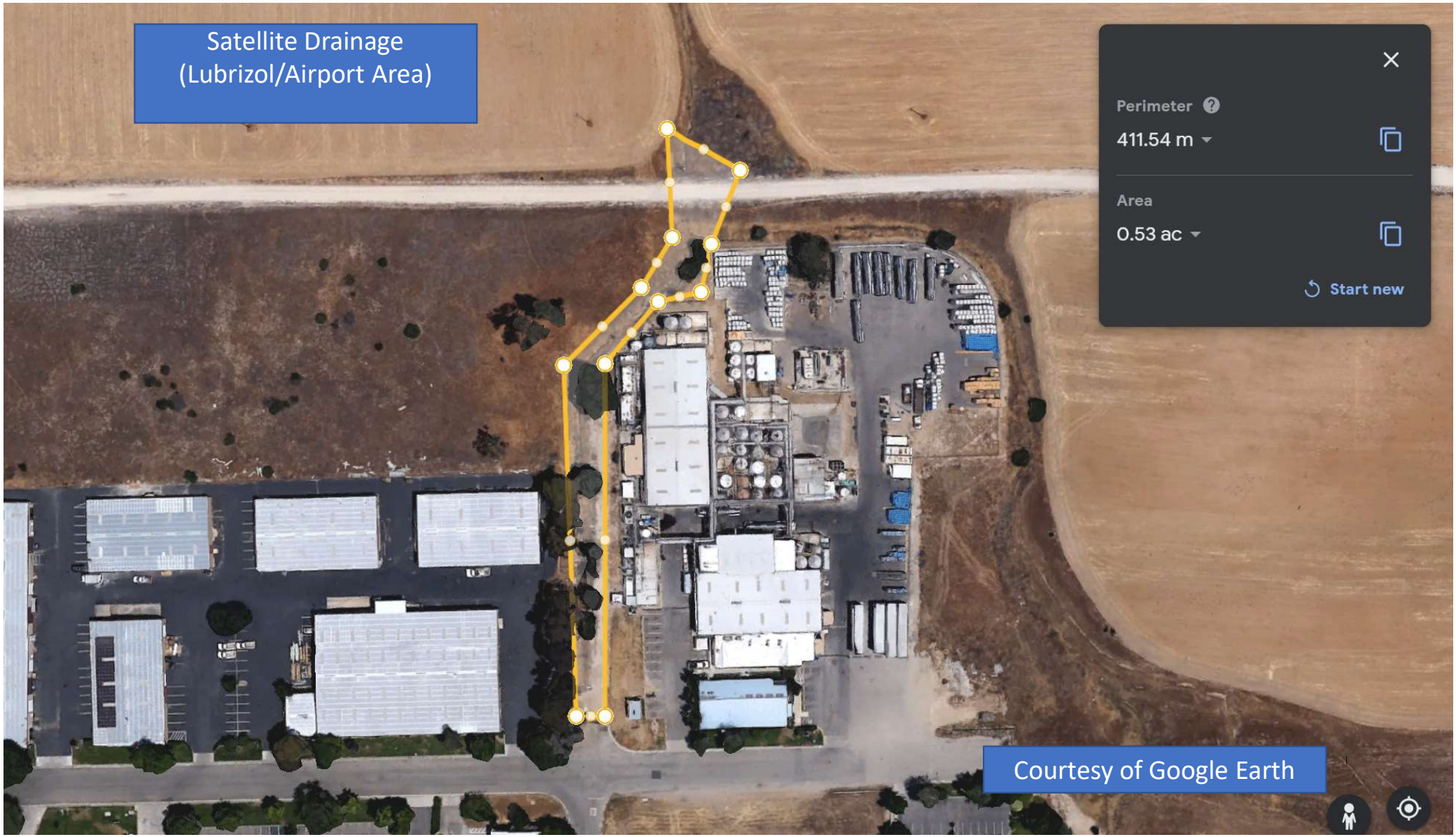

South of the Paso Robles WWTP
Salinas River
Paso Robles Mobile Village
101
Perimeter
1,091.52 m
Area
8.96 ac
Start new
Courtesy of Google Earth


Southeast of 13th Street Bridge (Old Burn Site)
Perimeter
686.33 m
Area
2.84 ac
Start new
North Coast Engineering, Inc
St. Rose of Lim
Catholic Churc
Salinas River
101
Courtesy of Google Earth


Lower Navajo Road
Salinas River
Salinas River
Salinas River
River Walk
Perimeter
824.65 m
Area
2.66 ac
Start new
Courtesy of Google Earth


Niblick Bridge (Old Burn Site)
Salinas River Walk
Salinas River
Salinas River
Perimeter
1,273.77 m
Area
5.91 ac
Start new
Kennedy Club Fitness
Courtesy of Google Earth
3D


Melody Basin
Melody Park
Perimeter
435.01 m
Area
1.72 ac
Start new
Courtesy of Google Earth


Satellite Drainage
(Lubrizol/Airport Area)
Perimeter
411.54 m
Area
0.53 ac
Start new
Courtesy of Google Earth

Receiver Site Scoring Matrix

Receiver Site Location	Riparian River Location	Vegetation Parameter	Water Quality Purpose	Watershed Nexus	Total Score
South WWTP	2	3	1	2	8
13th Street Bridge	3	3	2	2	10
Navajo Road	2	3	2	2	10
Niblick Bridge	3	3	2	2	10
Melody Basin	1	1	1	1	4
Satellite Drainage	4	3	2	1	10

**Secondary factors associated with receiver site feasibility include water availability, land ownership, environmental permit, location accessibly.

Exhibit 10: Section 7 of the Annual Flood Control and Fire Fuel Reduction Project, Report of Waste Discharge, Supplemental Information Report

7 HABITAT RESTORATION AND ENHANCEMENT

Mitigation sites will be located on City property and/or properties protected from development in perpetuity, and will be located along the Salinas River, its floodplain, and/or its tributaries. Sites may also be identified based on accessibility and availability of purple-pipe water. Mitigation sites may be planted with new native trees, shrubs, and forbs as part of habitat restoration. In addition, native seedlings and saplings already growing in mitigation areas may be protected in place from herbivory and/or have weeds reduced around them; this would provide habitat enhancement.

Potential habitat restoration and enhancement areas overlap some of the areas treated for invasive species removal. Native trees, shrubs, and forbs may be planted in areas where invasive species are removed. Areas with low tree cover on the floodplain may be restored to include oak woodland and riparian species, as appropriate. Tributary drainages within and adjacent to the City of Paso Robles may be restored with native trees and shrubs. The City of Paso Robles Fire Department will be consulted on mitigation receiver locations, restoration species, and protected-in-place trees and shrubs to ensure that habitat restoration and enhancement does not contribute to fire risk and would not need to be removed in the future.

Habitat mitigation will improve native habitat structure, improve vegetation cover quality, and improve structural and age diversity. It will also increase habitat for native wildlife, including habitat for nesting birds.

7.1 Maintenance and Monitoring

Maintain mitigation site and monitor for problems according to the maintenance and monitoring schedule (Table 6), or until the primary performance standards are achieved, whichever is longer. The restoration ecologist may reduce maintenance and monitoring visits quarterly in Years 3 through 5 if weed management is under control and more frequent visits are not necessary. The installation/maintenance contractor(s) will complete maintenance requests from the restoration ecologist within 14 days of any written request or monitoring report.

TABLE 6. MAINTENANCE AND MONITORING SCHEDULE

Reporting	Maintenance and Monitoring Activities
Year 1	Monthly maintenance and monitoring, weekly monitoring during installation.
Year 2	Quarterly maintenance and monitoring
Year 3	Quarterly maintenance and monitoring
Year 4	Quarterly maintenance and monitoring
Year 5	Quarterly maintenance and monitoring

7.1.1 Maintenance Plan

The mitigation site shall be maintained regularly by the contract landscapers with oversight from City representatives and the restoration ecologist. Mitigation sites shall be inspected to evaluate the establishment of planted trees from year to year and to provide weed abatement, supplemental planting, and modifications as needed. The contract landscaper will consult with the restoration

ecologist to solve problems as they arise. The contract landscaper shall be responsible for controlling non-native plant species, irrigation, trash, and signs described by the following:

1. Non-native plant control

a. **Hand Crews**. Herbaceous vegetation within the mitigation sites will require weeding to promote native species dominance and to reduce plant species competition for resources. Vegetation management will primarily consist of manual weeding techniques with oversight by a qualified restoration ecologist. Mechanical weeding (i.e., weed whacking) may be used during appropriate times of year if approved by the restoration ecologist. Herbicides or similar methods may be required to address large weed infestations that may recruit into the mitigation site. Most herbicides are restricted within wetland areas and require a setback from waterways. Wetland herbicides are acceptable if approved by the restoration ecologist and are applied at the appropriate times of year (i.e., during the dry season). Herbicides may not be used within the critical root zone (CRZ) of oak and mitigation trees.

   Trimming of tree and shrub canopy in the mitigation site would trigger 0.5:1 mitigation ratio following the mitigation requirements described in the Order #40(c), which states:

   Mitigation shall be implemented [for] rehabilitation or enhancement implemented within the Salinas River channel where future fire fuel load reduction will be managed by grazing for control of grasses only, minimum required rehabilitation or enhancement to impact ratio for the impacts categorized as trimming of tree and shrub canopy within the floodplain is 0.5:1.

b. **Grazing**. Livestock grazing may be allowed in the mitigation site during the 5-year monitoring period with implementation of protective measures approved by City representative and restoration ecologist that will ensure oak and mitigation tree survival and to avoid grazing on immature oaks or saplings. Protective measures may include electric fencing or other deer browse protection installed around planted oaks and mitigation trees. Livestock grazing may be used to address invasive weed infestations or as a fuel reduction measure if thatch or other build up is noted in the Annual Work Plan. Grazing must be timed appropriately to avoid disturbing the mitigation site, and during periods where target species are most palatable to livestock. Grazing management techniques within the mitigation site will require prior approval from City representatives in coordination with the restoration ecologist or a rangeland manager.

2. **Irrigation**

a. Check irrigation system regularly for proper function. Repair any leaks, plugged emitters, or other problems. Adjust watering schedule as needed to ensure survival.

b. Provide irrigation to container-stock during Years 1 through 3 from April through October, and during any month from November to March with below-normal precipitation. Irrigation will be reduced during winter months depending on rainfall. If irrigation is provided, it will be adjusted annually to taper watering by Year 3, or until no supplemental irrigation is required.

c. If needed, supplemental water will be brought in from a water truck for hand watering and container plants/live stakes will be seasonally timed to coincide with forecasted rain as appropriate.

3. **Trash**. All trash and debris that accumulates in the mitigation site will be removed regularly (on a monthly basis or quarterly basis, at minimum) and disposed of properly as part of ongoing maintenance.
4. **Signs**. Signage may be used to keep the mitigation site clear of public use. Language used on signs may state "Riparian Conservation Area Please Do Not Disturb," or something to the like. Signs may include background information on sensitive resources within the mitigation site for viewers to learn about their environment and understand the need to protect natural resources. Signage can be developed with the restoration ecologist or qualified biologists to help promote community awareness of the importance of conservation. Weathered, degraded, or vandalized signs shall be repaired or replaced as needed for continued protection of the mitigation site.

7.1.2 Monitoring Plan

Monitoring will be conducted weekly during the installation phase and monthly for the rest of the year, quarterly during Year 2 and thereafter. The mitigation site shall be monitored until the primary performance standard is achieved (refer to Section 4.0).

1. Establish photo points at each mitigation site immediately after installation is complete. Take photographs from each photo point to document revegetation success.
2. Monitor sites monthly for survival during Year 1 and quarterly during years 2 through 5
3. At the end of each monitoring year, count all surviving trees and live stakes planted for this project in mitigation site and compare results to target survival rates.

7.2 Performance Standards

Results of annual monitoring activities would be compared to success criteria presented in Table 7. An overall goal of 70 percent survival of container stock and live stakes is proposed by the end of Year 5. The survival rate of mitigation plants is the primary performance standard for this project. Success rates that are below the stated minimum target for each criterion indicate the need for additional revegetation, plant protection, irrigation, or non-native plant removal. An adaptive management strategy for failure to meet the performance standards will be provided in the Annual Reports (Section 8.2).

TABLE 7. SUCCESS CRITERIA

Feature	Success Criteria	Assessment Method	Success Criteria by Monitoring Year				
			Year 1	Year 2	Year 3	Year 4	Year 5
Tree and shrub container stock (mitigation site)	Percent survival	Count surviving plants at each site	70%	70%	70%	70%	70%
Live stakes (project and mitigation site)	Percent survival	Count surviving live stakes at each site	70%	70%	70%	70%	70%

Exhibit 11: Revegetation Plan for Annual Flood Control and Fire Fuel Load Reduction Project

Revegetation Plan

for

Annual Flood Control and Fire Fuel Load Reduction Project
Order No. R3-2021-0012

City of Paso Robles, San Luis Obispo County

Prepared for

City of El Paso de Robles
Department of Public Works
c/o David LaCaro
1000 Spring Street
Paso Robles, CA 93446

by

ALTHOUSE AND MEADE, INC.
BIOLOGICAL AND ENVIRONMENTAL SERVICES
1650 Ramada Drive, Suite 180
Paso Robles, CA 93446
(805) 237-9626

~~**December 2023**~~ **Revised April 2024**

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Cover photo: East of secondary channel of Salinas River riparian corridor south of 13th Street, west of River Walk Trail and S. River Road after grazing activities, June 22, 2023.

1 INTRODUCTION

In 2021 the City of Paso Robles (City) obtained Order No. R3-2021-0012 (Order) with the Regional Water Quality Control Board (RWQCB) to conduct annual vegetation maintenance activities for flood control and fire fuel load reduction purposes throughout the City (Attachment A). Consistent with the mitigation measures prescribed in the Order, this Revegetation Plan (Plan) has been prepared to the satisfaction of the RWQCB for riparian habitat mitigation related to the City's Annual Flood Control and Fire Fuel Load Reduction (Project).

This Plan provides the final selected mitigation site pursuant to **Order #41** (page 21) and describes an environmental baseline, work plan, performance standards, and reporting requirements over the course of five years. Any unmet performance standards would be re-evaluated, and adaptive management strategies would be implemented until the performance standards are achieved.

Table 1 identifies Project contact information.

TABLE 1. CONTACT INFORMATION

City Representatives	
City of Paso Robles, Department of Public Works c/o David LaCaro 1000 Spring Street Paso Robles, CA 93446 805-237-3865 Dlacaro@prcity.com	City of Paso Robles Fire Department c/o Jay Enns and Paul Patti 900 Park Street Paso Robles, CA 93446 805-227-75605 jenns@prcity.com, Ppatti@prcity.com
Biological Consultant	**Responsible Agency**
Althouse & Meade, Inc. c/o Valerie Mattos 1650 Ramada Dr., Ste.180 Paso Robles, CA 93446 (805) 237-9626 Valeriem@althouseandmeade.com	Central Coast RWQCB c/o Kathleen Hicks 895 Aerovista Pl, Ste 101 SLO, CA 93401 (805) 549-3458 Kathleen.hicks@waterboards.ca.gov

1.1 Project Summary

The Project includes maintenance activities that take place annually from April 15 to October 14 for flood control and fire fuel load reduction purposes within permitted maintenance locations summarized by the following:

1. The **flood control component** consists of manual vegetation treatment, and mechanical and manual sediment removal, which will enhance channel capacity and stormwater flow in 21 locations throughout the City of Paso Robles.
2. The **fire fuel load reduction component** consists of mechanical and manual vegetation treatment, low-intensity prescribed burns, and livestock grazing, to reduce hazardous fire fuels within the Salinas River stream extent in the City of Paso Robles.

1.2 Mitigation Site Locations and Plan Purpose

The mitigation site is within the City of Paso Robles, California on City-owned property in the Paso Robles United States Geological Survey (USGS) 7.5-minute topographic quadrangle (Figure 1). For annual flood control the selected mitigation site is Franklin Creek. For fire fuel load reduction the selected mitigation site is within the Salinas River riparian corridor, south of 13th Street bridge. Alternative mitigation sites were provided in Exhibit 9 of the Order. The selected mitigation site was chosen primarily because it has existing irrigation lines along the existing pathway. Other reasons are because the site burned previously/is disturbed/exposed, the site is contiguous and adjacent to the Salinas River, and the site is not surrounded by private landholdings. Pursuant to the Order, mitigation shall be implemented according to specified ratios outlined in **Order #40a- f** (page 21), further described in the following sub-sections.

1.2.1 Franklin Creek

One red willow tree greater than 4-inches diameter breast height (DBH) was removed in 2022 because it was compromising and in front of a box culvert, causing the area in front of the culvert to erode. Cuttings were harvested and planted in the Franklin Creek area, north of Sleepy Hollow Road and south of Alamo Creek Terrace (Figure 2). Althouse and Meade, Inc. (A&M) will continue to monitor planted cuttings/saplings and if needed will replant new cuttings, in-kind, and within the same drainage feature; per the requirement in **Order #40e** (page 21), which states:

> *Mitigation shall be implemented according to the following ratios … [the] Discharger shall mitigate for the removal of native trees or shrubs four inches or greater in diameter at breast height by replacing in kind at a 3:1 ratio.*

1.2.2 Salinas River Riparian Corridor

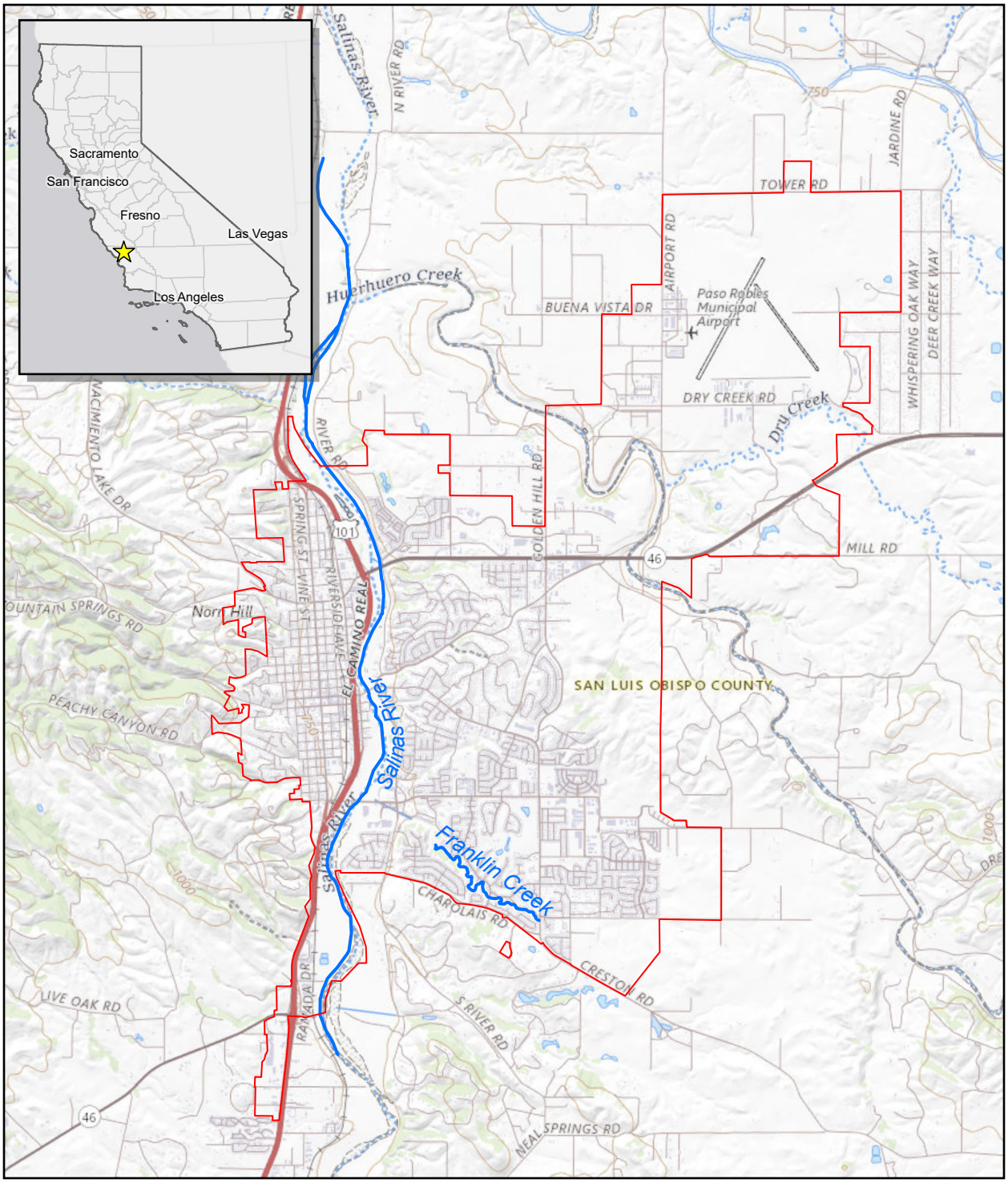
Table 2 provides an impact and mitigation summary for each year fuel reduction activities took place within the Salinas River corridor, from 2019 through 2023. As shown, the amount of mitigation required is based on prescribed mitigation ratios and credit totaling 4.65 acres. The selected mitigation site is east of a secondary channel along the Salinas River riparian corridor, south of 13th Street, west of River Walk Trail and S. River Road (Figure 3).

TABLE 2. CUMULATIVE IMPACT AND MITIGATION SUMMARY

Year	Vegetation Impacts (ac.)	Mitigation Ratio	Mitigation Req'd (ac.)
2019-2020	10.50	0.5:1	5.25
2021	0.00	--	0.00
2022	0.03	0.5:1	*0.02
2023	0.00	--	0.00
Sub-Total	**10.93**		**5.27**
Trash removal credit, Order #39.		2022	** -0.50
Not to exceed 25% of 5.27 acres (=1.32 acres)		2023	-0.12
~~Tree of heaven removal~~		~~2023~~	~~-0.05~~
TOTAL			**4.65**

*0.015-acre rounded to 0.02-acre
**0.50-acre of trash removed in the low flow/active channel (2022; Figure 4).
0.12-acre of trash was removed in low-flow/active channel (2023; Figure 4).

Figure 1. United States Geological Survey Topographic Map



Legend

City of Paso Robles — State Jurisdictional Waterway

N

0 1 2 Miles

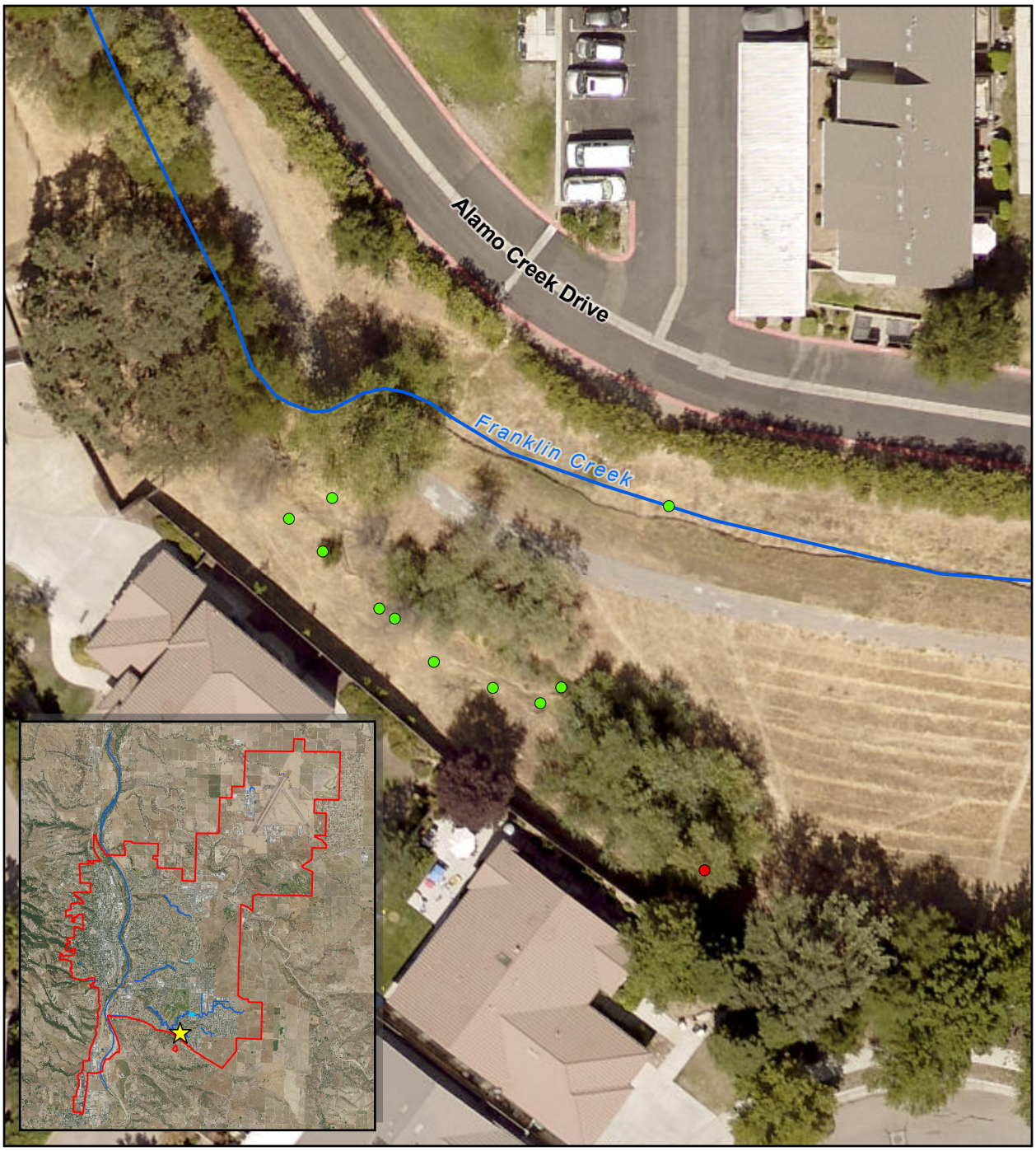
City of Paso Robles
Revegetation Plan for Annual Flood Control and Fire Fuel Load Reduction Project
Map Center: 120.6643°W 35.64047°N
Paso Robles, San Luis Obispo County

USGS Quadrangle: Paso Robles and Templeton

ALTHOUSE AND MEADE, INC.
BIOLOGICAL AND ENVIRONMENTAL SERVICES

Map Updated:
November 07, 2023 02:11 PM by SAF

Figure 2. Flood Control Mitigation Site



Legend

- Revegetation Site Location
- City of Paso Robles
- State Jurisdictional Basin
- State Jurisdictional Waterway
- Red Willow Cuttings
- Red willow (*Salix laevigata*) Removed

N

0 25 50 Feet

City of Paso Robles
Revegetation Plan for Annual Flood Control and Fire Fuel Load Reduction Project
Map Center: 120.66222°W 35.60216°N
Paso Robles, San Luis Obispo County

Imagery Source: San Luis Obispo County, 08/23/2021

Figure 3. Fire Fuel Load Reduction Mitigation Site

Legend

Fuel Reduction Area

Revegetation Area (4.65 acres)

N

0 0.5 1 Mile

City of Paso Robles
Revegetation Plan for Annual Flood Control and Fire Fuel Load Reduction Project

Map Center: 120.68807°W 35.63413°N
Paso Robles, San Luis Obispo County

Imagery Sources: USDA NAIP, 05/13/2022, San Luis Obispo County 08/23/2021

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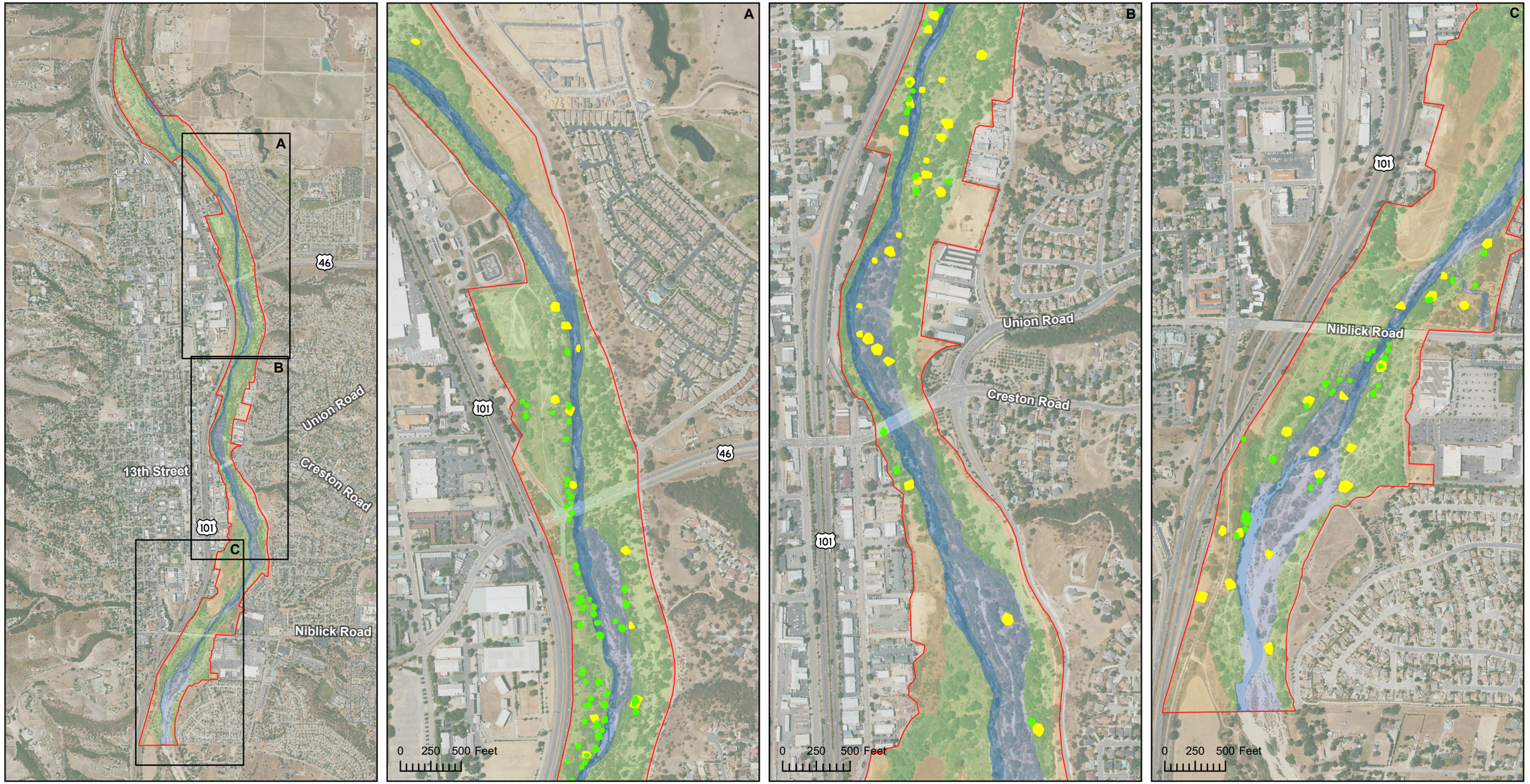
BIOLOGICAL AND ENVIRONMENTAL SERVICES

Map Updated:
April 18, 2024 08:34 AM by SAF

Figure 4. 2022 and 2023 Trash Removal Locations



Legend

Fuel Reduction Area
2022 Trash Removal Sites (2.2 acres)
2023 Trash Removal Sites (1.0 acre)
Channel
Low-Flow Channel
Floodplain
Upland

N

0 0.5 1 Mile

City of Paso Robles
Revegetation Plan for Annual Flood Control and Fire Fuel Load Reduction Project
Map Center: 120.68805°W 35.63412°N
Paso Robles, San Luis Obispo County

Imagery Source: USDA NAIP, 05/13/2022

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Map Updated:
January 10, 2024 03:18 PM by SAF

1. **Year 2019-2020**

   a. Impacts to 10.5 acres of tree and riparian canopy for 2019 and 2020 emergency vegetation management work is prescribed in **Order #26** (page 9) which states:

   During 2019 and 2020, the Discharger conducted unauthorized emergency vegetation management work for fire fuel load reduction in the Salinas River channel and floodplain. Mitigation for the impacts to beneficial uses resulting from this work is also required by this order. These impacts are quantified in the 2019 and 2020 impacts Quantification Table, Exhibit 7. In 2019, 64 acres of total work area were impacted in 2020, 102 acres of total work area were impacted. Cumulative impacts to tree and riparian canopy for 2019 and 2020 combined was 10.5 acres. Mitigation for impacts from the 2019 and 2020 emergency work is required by this order, according to the mitigation ratios specified herein. The Discharger is required to mitigate for impacts only once for impacts occurring until 2025. Repeat maintenance activities that occur within the footprint of previous maintenance activities of the same type do no require additional mitigation, provided that mitigation was provided for the initial impact.

   b. Mitigation for 10.5 acres of tree and riparian canopy impacts for emergency work in 2019 and 2020 is at a 0.5:1 mitigation ratio (determined in **Order #40c**, page 21), which states:

   Mitigation shall be implemented [for] rehabilitation or enhancement implemented within the Salinas River channel where future fire fuel load reduction will be managed by grazing for control of grasses only, minimum required rehabilitation or enhancement to impact ratio for the impacts categorized as trimming of tree and shrub canopy within the floodplain is 0.5:1.

2. **Year 2021** - No impact; vegetation maintenance activities included livestock grazing of annual grasses and weedy forbs followed by vegetation trimming by hand crews. No live canopy trees or shrubs were removed over 4 inches DBH.

3. **Year 2022**

   a. Impacts to 0.03-acre of tree and riparian canopy occurred in 2022, where hand crews incidentally removed box elder trees (*Acer negundo*).

   b. Mitigation for approximately 0.03-acre of tree and riparian canopy impacts in 2022 is a 0.5:1 mitigation ratio (determined in **Order #40b**, page 20) for non-recurring, incidental impact) which states:

   Mitigation shall be implemented [for] rehabilitation or enhancement implemented in areas that will not be subject to future fire fuel load reduction activities the minimum required rehabilitation or enhancement mitigation to impact ratio for the impacts categorized as trimming of tree and shrub canopy within the floodplain is 0.5:1.

   c. Trash removal activities took place in 2022, where approximately 2.2 acres of trash was removed along the Salinas River corridor, with 0.50-acre in the low flow/active channel. Equal mitigation credit would be received for the amount of trash removed (in acres), where mitigation credit received for the amount of trash removed in the low flow/active channel is 1:1. The cumulative mitigation credit will not exceed 25 percent of the required mitigation total (credit not to exceed 1.32 acres), determined in **Order #39** (page 20), which states:

Mitigation [credit] shall be achieved by a combination of removal of non-native vegetation, removal of trash, and habitat rehabilitation and enhancement. Removal of trash must occur from within the low-flow and active channel to count towards mitigation and may only compose a maximum of 25 percent of the required mitigation area. Mitigation shall achieve success criteria described in the Mitigation Plan for the fifth year following mitigation installation. If mitigation measures do not meet their interim or final success criteria, the discharger shall implement remedial measures until such time the interim or final success criteria are met.

4. **Year 2023** – No impact; vegetation maintenance activities included removal of dead and down woody material contributed by the flows from January 2023 storms and grazing of domestic goats and/or sheep. No standing trees or brush were targeted for removal and no live canopy trees or shrubs were removed over 4 inches DBH.

   a. Trash removal activities took place in 2023 along the Salinas River corridor and within the low flow channel, ~~;~~ where approximately 1.0 acre of trash was removed along the Salinas River corridor, with 0.12-acre in the low flow/active channel.~~however the data is not yet received~~. ~~The total acres accounted for as mitigation has not accounted for this 2023 credit.~~

   ~~b. Additionally, a small area of tree of heaven (*Ailanthus altissima*) was removed west of the Salinas River at the eastern terminus of 11th Street, accounting for approximately 0.05 acre of non-native vegetation removal credit (Figure 5; Table 2), prescribed in **Order #39** (page 20; cited above in italics).~~

~~**FIGURE 5. TREE OF HEAVEN REMOVAL LOCATION**~~

2 EXISTING CONDITIONS

2.1 Franklin Creek

An unnamed, intermittent tributary to the Salinas River locally referred to as Franklin Creek is within a watershed encompassing much of the southeastern portion of the City limits. Franklin Creek meanders through an oak woodland surrounded by blue and coast live oaks (*Quercus douglasii, Q. agrifolia*). Annual grasses, western poison oak (*Toxicodendron diversilobum*), red willow (*Salix laevigata*), and Fremont cottonwood (*Populus fremontii*) occur closer to the channel along the bed and bank. However, the bed is mostly unvegetated, with sand, cobble, rocks and debris with occasional coyote brush (*Baccharis pilularis* subsp. *consanguinea*), cocklebur (*Xanthium strumarium*), narrowleaf milkweed (*Asclepias fascicularis*), and *Phlaris* sp. growing in and around the channel bottom. Franklin Creek has a defined bed and bank that ranges from narrow and channelized (less than 10 feet wide), to over 20 feet wide.

2.2 Salinas River Riparian Corridor

The Salinas River corridor extends approximately 22,100 feet from the south end of Larry Moore Park at the south end of Riverbank Lane up to approximately 1.4 miles north of the Highway 46 bridge. The portion of the Salinas River that flows through Paso Robles is characterized by several stretches of braided channel, where smaller channels are divided by vegetated islands. The river flows annually. In summer, surface water often recedes and the river flows underground, leaving large stretches of dry riverbed.

Mature riparian habitat occurs where overstory species are dominated by river-dwelling trees, such as Fremont cottonwood (*Populus fremontii*) and red willow (*Salix laevigata*), where the canopy is approximately 30 percent absolute cover. Midstory shrubs, such as sandbar willow (*Salix exigua*) and mulefat (*Baccharis salicifolia*) may occur under emergent trees or stand alone as the dominant vegetation. Nonnative species such as white sweetclover (*Melilotus albus*) and annual grasses occur in the understory and in the margins where established shrubs do not grow. Mature Riparian habitat typically occurs where frequent disturbance, either through human activity or strong water flow, is uncommon. Much of the Salinas River stream extent is suitable for Mature Riparian habitat and it accounts for approximately 60 percent of the mapped habitat. Many unhoused encampments and trash piles noted during surveys were located in mature riparian habitat, indicating that this habitat is disproportionately affected by activities of unhoused people living in the riverbed.

Mature riparian most closely conforms to **Fremont cottonwood forest and woodland** (*Populus fremontii-Fraxinus velutina-Salix gooddingii* Forest and Woodland Alliance; Manual California of Vegetation; Sawyer et al 2009[1]), which is described as dominated or co-dominated by Fremont cottonwood (*Populus fremontii*) in the tree canopy with a mix of other tree species such as box elder (*Acer negundo*), Northern California black walnut (*Juglans hindsii*), western sycamore (*Plantanus racemosa*), coast live oak (*Quercus agrifolia*), and willows (*Salix exigua, S. laevigata*, and *S. lasiolepis*, among others). This habitat classification is typically less than 25 meters in the tree canopy height that is continuous to open, with a shrub layer that is intermittent to open, and a herbaceous layer that is variable.

[1] Sawyer J, Keeler-Wolf T, Evens J. 2009. A manual of California vegetation. 2nd ed. Sacramento (CA): California Native Plant Society Press 1300p.

3 WORK PLAN

This Plan is targeted specifically for the mitigation site at the fire fuel load reduction component and shall be implemented in four phases: (1) plant materials and live-stake propagation, (2) site preparation, (3) site implementation, and (4) maintenance and monitoring. The following sections describe each phase.

3.1 Phase 1: Plant Materials and Live-stake Propagation

Live procurement of riparian trees, including live-stake willow cuttings will be implemented by the contracted landscape crew with oversight by the restoration ecologist and timed to propagate cuttings up to two weeks prior to live-stake planting. Container transplants and live stakes will be installed in fall or winter, to allow for winter rains to facilitate establishment. Live stakes shall be preserved in water (preferably sourced from Salinas River) to promote root growth prior to planting. Live-stake propagation will follow the protocol provided in Attachment B excerpted from the California Salmonid Stream Habitat Restoration Manual (CDFW 2003[2]).

3.2 Phase 2: Site Preparation

Pre-project photographs will be taken at the revegetation site prior to mitigation implementation. Each area will be surveyed and staked outlining the boundaries of the revegetation site. Prior to any equipment operating on mitigation sites, pre-construction surveys will be implemented to ensure avoidance of wildlife.

3.2.1 Weeding/ Non-Native Plant Removal

Weed control efforts will be timed (to the extent practicable) to avoid seed set. For weed species that have set seed, weed seed heads will be carefully placed in trash bags to prevent incidental dispersal during control efforts. Controlled grazing and/or contracted landscape workers will remove weeds using hand tools, under the supervision of a qualified restoration ecologist. Supplemental herbicide application may be utilized, if deemed necessary, following the recommendation of a California licensed pest control advisor and all federal/state regulations will be adhered to (i.e., approved for use in or within 50 feet of wetlands/waterways).

A list of potential non-native species to be targeted for removal is provided in Table 3 and includes Cal-IPC rating.

TABLE 3. TARGET NON-NATIVE PLANTS KNOWN FROM THE VICINITY OF MITIGATION SITE

Scientific Name	Common Name	Cal-IPC Rating[3]
Management Level 1 – Eradicate		
Arundo donax	Giant reed	High
Bromus madritensis subsp. *rubens*	Red brome	High
Centaurea solstitialis	Yellow star-thistle	High

[2] [CDFW] California Department of Fish and Wildlife. 2003. California Salmonid Stream Habitat Restoration Manual. Part XI Riparian Habitat Restoration. October 2003.
[3] California Invasive Plant Council (Cal-IPC) rating definitions accessed at https://www.cal-ipc.org/plants/inventory/.

Scientific Name	Common Name	Cal-IPC Rating[3]
Management Level 2 – Control		
Ailanthus altissima	Tree of heaven	Moderate
Nicotiana glauca	Tree tobacco	Moderate
Avena barbata	Slender wild oat	Moderate
Centaurea melitensis	Tocalote	Moderate
Cirsium vulgare	Bull thistle	Moderate
Conium maculatum	Poison hemlock	Moderate
Hirschfeldia incana	Summer mustard	Moderate
Management Level 3 – Manage		
Bromus hordeaceus	Soft chess brome	Limited
Polypogon monspeliensis	Annual beardgrass	Limited
Stipa miliacea var. *miliacea*	Smilo Grass	Limited
Silybum marianum	Milk thistle	Limited

Table 3 categorizes non-native plant species and dictates the level of management. Management levels include, (1) non-native plants to eradicate within the mitigation site, (2) weeds to control within the mitigation site, and (3) weeds to be managed if causing adverse habitat effects within the mitigation site. Invasive species surveys identified species designated within all three levels of management.

If trees are removed, they shall be cut at or within 6 inches of ground level and the roots shall be left in place to maintain soil stability. Cut stumps of non-native trees and giant reed shall be inspected annually in the spring or late summer for signs of re-sprouting for three years after cutting. If cut stumps are resprouting, herbicide may be used. Herbicide treatment would be reapplied in subsequent years if resprouting occurs (See Attachment C. Protocol for Non-Native Invasive Plant Removal). Herbicide use will be specified in the Annual Work Plan, prior to application. Herbicide application may only be made by a licensed herbicide applicator using materials recommended by a licensed Pest Control Advisor (PCA). Herbicides will be applied to cut stumps using a localized spot-treatment method (spraying cut stumps using a wand applicator or painting cut stumps using a brush applicator) and applied in a manner that will eliminate drift onto native plants. In all such cases, the minimum amount required to kill the target species and limit adverse effects to sensitive species and habitats will be used. Since herbicide type and amounts needed are dependent on species, site condition, weather and season, a licensed PCA will be consulted prior to herbicide use. For portions of the project that occur within 30 meters of standing water, the PCA will use herbicides approved by the Environmental Protection Agency (EPA) for use near wetlands and streams, such as the glyphosate-based Rodeo®.

3.2.2 Irrigation Plan

Recycled irrigation water (purple pipe) is not available at the mitigation site; however, an existing below ground water line with water meters are located along the paved public pathway. Waterlines may be connected to a hard pipe with a minimum schedule of 40 irrigation lines for each planting area. Water emitters may be drip, bubbler, or low-water equivalent and valves may be set close to

the roads and existing public pathway for easy access and maintenance. Although public waterlines are available, the mitigation site is susceptible to vandalism. Hand watering plants using a water truck and temporary hose is a viable alternative to water supplementation in the summer, or as needed, until the plants are established.

3.3 Phase 3: Site Implementation

Following site preparation removal efforts, native plants will be installed by the contract landscaper within the mitigation site at appropriate spacing. Container stock species are recommended in addition to live-stake planting (procured onsite). The mitigation site may be seeded to facilitate faster plant establishment and provide additional soil stabilization. Seed may be drill seeded wherever feasible, and/or hand broadcast/raked into soil within less accessible areas.

3.3.1 Ground Cover

A seed mix shall be available and applied to exposed slopes. The seed mix shall contain a minimum of three locally-native grass species and may contain one or two sterile non-native grasses not to exceed 25 percent of the total seed mix by count. Table 4 lists the proposed seed mix to be used to stabilize exposed slopes. Seeding shall be completed no later than November 15. All exposed areas where seeding is considered unsuccessful after 90 days shall receive a second application or seeding, sterile straw, or mulch as soon as is practical.

TABLE 4. SEED MIX

Scientific Name	Common Name	Lbs./acre
Wildflowers		
Lupinus bicolor	Miniature lupine	0.5
Lupinus microcarpus	Chick lupine	0.5
Lupinus nanus	Sky lupine	0.5
Trifolium gracilentum var. *gracilentum*	Pinpoint clover	0.5
Grasses		
Bromus carinatus	California brome	5
Hordeum vulgare	Dwarf barley (UC603)	25
Elymus triticoides	Creeping wildrye	7
Poa secunda	One-sided bluegrass	2
Stipa cernua	Nodding needlegrass	3
Stipa pulchra	Purple needlegrass	3

3.3.2 Container Stock

Plants must be sourced from California and ideally from the Central Coast. Amount of container stock trees were calculated by A&M to determine appropriate spacing that would span the 4.6556- acre mitigation site according to average canopy spread at maturity, using representative the MCV's membership rules for Fremont cottonwood forest and woodland canopy values derived

from A&M's digital elevation model (area above 10 feet) that was acquired from a 2022 drone flight along the Salinas River. Figure 5 shows the actual representative canopy percentage as 47 percent. As shown in Figure 5 we did not include the 2020 fire scar within that representative canopy area. We calculated the amount of trees needed from the existing condition, with the mature canopy cover target at ~~30~~ 46 percent absolute cover for mature trees after 70 percent survival. The total quantity of trees to be planted at implementation would be approximately 66~~43~~ percent absolute cover to account for 30 percent mortality. Native trees proposed for mitigation include, but are not limited to, the species and quantities listed in Table 5 and shown in the conceptual planting plan (Figure 5).

TABLE 5. PLANT PALETTE FOR FREMONT COTTONWOOD FOREST AND WOODLAND

Species	Common name	Approx. container size	*Ave. canopy spread at maturity (ft.)	Target quantity of trees after 70% survival	Total Quantity of trees to be planted at implementation (100% survival)
Acer negundo	Box elder	1 to 15 gal	35	~~11~~17	~~16~~24
Populus fremontii	Cottonwood	1 gal	40	~~16~~25	~~23~~36
*Salix laevigata***	Red willow	Live stakes, or treepots[4]	25	64~~42~~	~~60~~91
*Quercus lobata****	Valley oak	1 to 15 gal	50	~~8~~6	~~9~~12

*SelecTree: A Tree Selection Guide (selectree.calpoly.edu)
**Two red willows may be substituted with one western sycamore (*Platanus racemosa*), box elder (1), cottonwood (1), or three blue elderberries (*Sambucus mexicanus*) depending on availability
***May be substituted with coast live oak (*Quercus agrifolia*), blue oak (*Q. douglasii*), or black walnut (*Juglans hindsii*) depending on availability.

Planting Recommendations:

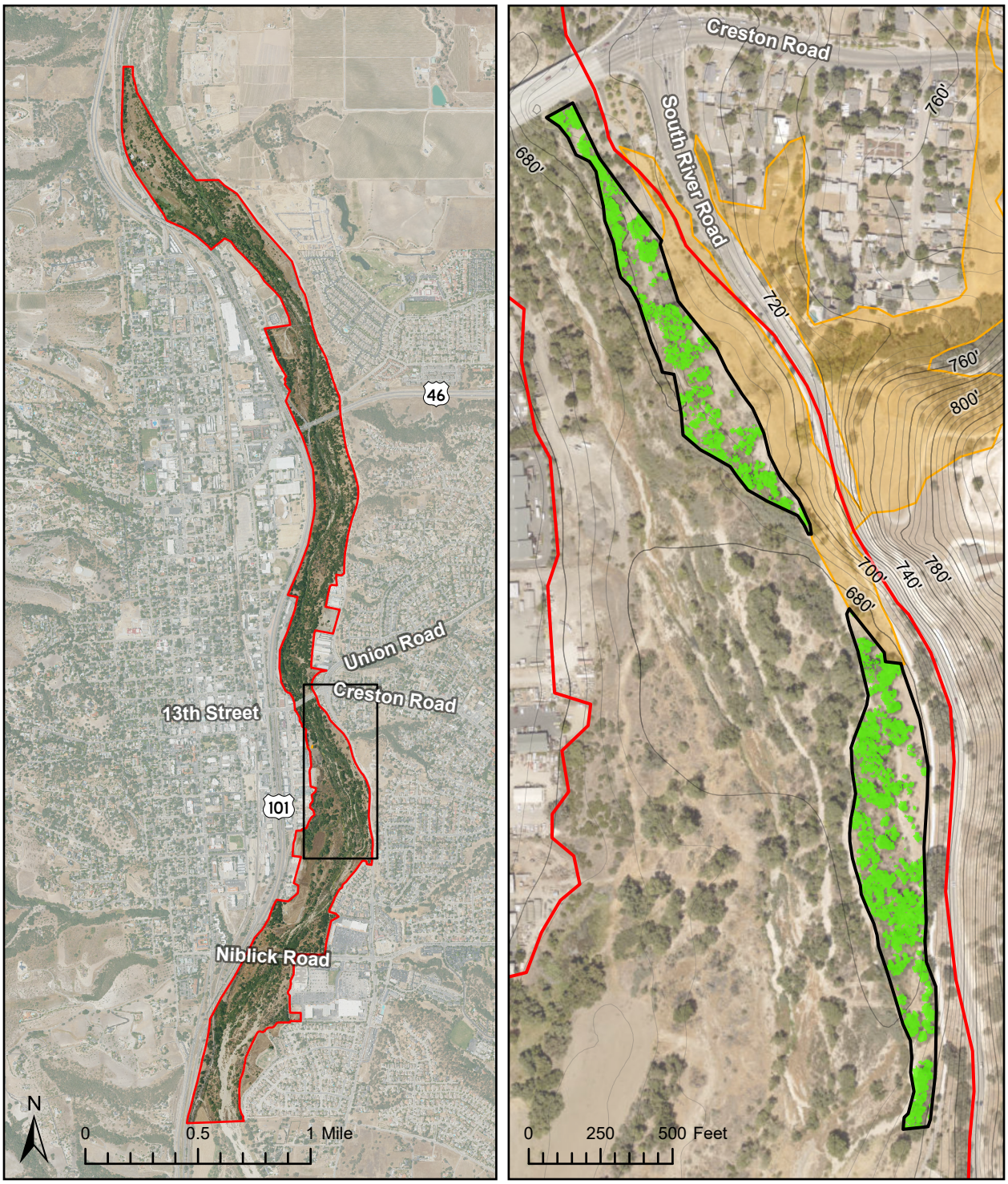
1. Planting locations will be flagged and mapped.
2. Order plant material 9 to 12 months prior to anticipated delivery. Plant material should be sourced from California Central Coast genetic material.
3. Dig holes a minimum of twice the diameter and same depth as the container.
4. Plant or fill holes each day to prevent small mammal entrapment or trip hazard.
5. Place root protection barriers in the holes, and plant trees according to recommendations from U.C. Cooperative Extension[5].
6. Ensure all trees are protected from rodent damage and deer/people damage with below- and above-ground protection devices. We recommend aviary wire cages below-ground, and tree

[4] Treepot such as Stuewe TP430 30inch tall, 4 inches wide (or equivalent).
[5] Hickman, Gary W. and Pavel Svihra. 2001. Planting Landscape Trees; Publication 8046. University of CA Agriculture and Natural Resources. Available at https://anrcatalog.ucanr.edu/pdf/8046.pdf

tubes or screen cage to protect young trees, and location surrounded by twisted- or chicken-wire cage.

7. Provide each planting area with a 4-ft-diameter 3-inch-thick mulch ring that begins a minimum of 3 inches from the stem of each planting location (approximately 3 cubic feet per planting location).

Figure 5. Canopy Cover Analysis



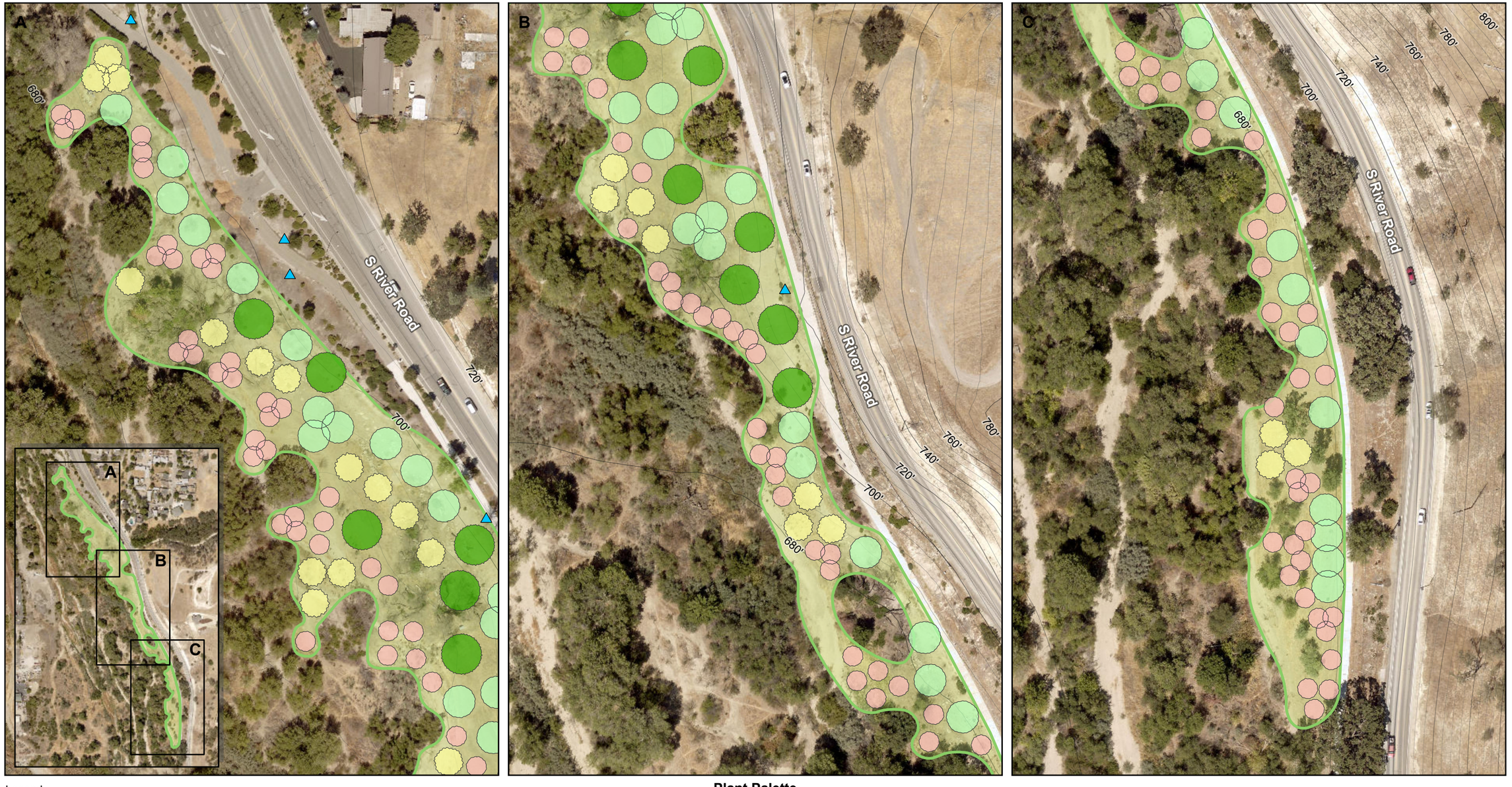
Legend

- Fuel Reduction Area
- Canopy Survey Area (7.9 acres)
- Canopy (3.7 acres)
- Fire Boundary (July 2020)

City of Paso Robles
Revegetation Plan for Annual Flood Control and Fire Fuel Load Reduction Project
Map Center: 120.68226°W 35.62478°N
Paso Robles, San Luis Obispo County

Imagery Source: USDA NAIP, 05/13/2022

Figure 6. Conceptual Planting Plan



Legend

Fuel Reduction Area

Revegetation Area (4.65 acres)

Irrigation Points

N

0 100 200 Feet

Plant Palette

Tree	Species	Common Name	Container	Habitat	Quantity
	Acer negundo	Box elder	1 to 15 gal	Riparian, Oak Woodland	24
	Populus fremontii	Cottonwood	1 gal	Riparian	36
	Quercus lobata	Valley oak	1 to 15 gal	Riparian, Oak Woodland	12
	Salix laevigata	Red willow	Live stakes or treepots	Riparian	91

City of Paso Robles
Revegetation Plan for Annual Flood Control and Fire Fuel Load Reduction Project
Map Center: 120.68283°W 35.62696°N
Paso Robles, San Luis Obispo County

Imagery Source: San Luis Obispo County 08/23/2021

ALTHOUSE AND MEADE, INC.
BIOLOGICAL AND ENVIRONMENTAL SERVICES

Map Updated:
April 15, 2024 11:51 AM by SAF

3.4 Phase 4: Maintenance and Monitoring

Maintain mitigation site and monitor for problems according to the maintenance and monitoring schedule (Table 6), or until the primary performance standards are achieved, whichever is longer. The restoration ecologist may reduce maintenance and monitoring visits quarterly in Years 3 through 5 if weed management is under control and more frequent visits are not necessary. The installation/maintenance contractor(s) will complete maintenance requests from the restoration ecologist within 14 days of any written request or monitoring report.

TABLE 6. MAINTENANCE AND MONITORING SCHEDULE

Reporting	Maintenance and Monitoring Activities
Year 1	Monthly maintenance and monitoring, weekly monitoring during installation.
Year 2	Quarterly maintenance and monitoring
Year 3	Quarterly maintenance and monitoring
Year 4	Quarterly maintenance and monitoring
Year 5	Quarterly maintenance and monitoring

3.4.1 Maintenance Plan

The mitigation site shall be maintained regularly by the contract landscapers with oversight from City representatives and the restoration ecologist. Mitigation sites shall be inspected to evaluate the establishment of planted trees from year to year and to provide weed abatement, supplemental planting, and modifications as needed. The contract landscaper will consult with the restoration ecologist to solve problems as they arise. The contract landscaper shall be responsible for controlling non-native plant species, irrigation, trash, and signs described by the following:

1. Non-native plant control

a. **Hand Crews**. Herbaceous vegetation within the mitigation sites will require weeding to promote native species dominance and to reduce plant species competition for resources. Vegetation management will primarily consist of manual weeding techniques with oversight by a qualified restoration ecologist. Mechanical weeding (i.e., weed whacking) may be used during appropriate times of year if approved by the restoration ecologist. Herbicides or similar methods may be required to address large weed infestations that may recruit into the mitigation site. Most herbicides are restricted within wetland areas and require a setback from waterways. Wetland herbicides are acceptable if approved by the restoration ecologist and are applied at the appropriate times of year (i.e., during the dry season). Herbicides may not be used within the critical root zone (CRZ) of oak and mitigation trees.

Trimming of tree and shrub canopy in the mitigation site would trigger 0.5:1 mitigation ratio following the mitigation requirements described in Order #40(c), which states:

Mitigation shall be implemented [for] rehabilitation or enhancement implemented within the Salinas River channel where future fire fuel load reduction will be managed by grazing for control of grasses only, minimum required rehabilitation or enhancement to impact

ratio for the impacts categorized as trimming of tree and shrub canopy within the floodplain is 0.5:1.

b. **Grazing**. Livestock grazing may be allowed in the mitigation site during the 5-year monitoring period with implementation of protective measures approved by City representative and restoration ecologist that will ensure oak and mitigation tree survival and to avoid grazing on immature oaks or saplings. Protective measures may include electric fencing or other deer browse protection installed around planted oaks and mitigation trees. Livestock grazing may be used to address invasive weed infestations or as a fuel reduction measure if thatch or other build up is noted in the Annual Work Plan. Grazing must be timed appropriately to avoid disturbing the mitigation site, and during periods where target species are most palatable to livestock. Grazing management techniques within the mitigation site will require prior approval from City representatives in coordination with the restoration ecologist or a rangeland manager.

2. **Irrigation**

   a. Check irrigation system regularly for proper function. Repair any leaks, plugged emitters, or other problems. Adjust watering schedule as needed to ensure survival.

   b. Provide irrigation to container-stock during Years 1 through 3 from April through October, and during any month from November to March with below-normal precipitation. Irrigation will be reduced during winter months depending on rainfall. If irrigation is provided, it will be adjusted annually to taper watering by Year 3, or until no supplemental irrigation is required.

   c. If needed, supplemental water will be brought in from a water truck for hand watering and container plants/live stakes will be seasonally timed to coincide with forecasted rain as appropriate.

3. **Trash**. All trash and debris that accumulates in the mitigation site will be removed regularly (on a monthly basis or quarterly basis, at minimum) and disposed of properly as part of ongoing maintenance.

4. **Signs**. Signage may be used to keep the mitigation site clear of public use. Language used on signs may state “Riparian Conservation Area Please Do Not Disturb,” or something to the like. Signs may include background information on sensitive resources within the mitigation site for viewers to learn about their environment and understand the need to protect natural resources. Signage can be developed with the restoration ecologist or qualified biologists to help promote community awareness of the importance of conservation. Weathered, degraded, or vandalized signs shall be repaired or replaced as needed for continued protection of the mitigation site.

3.4.2 Monitoring Plan

Monitoring will be conducted weekly during the installation phase and monthly for the rest of the year, quarterly during Year 2 and thereafter. The mitigation site shall be monitored until the primary performance standard is achieved (refer to Section 4.0).

1. Establish photo points at each mitigation site immediately after installation is complete. Take photographs from each photo point to document revegetation success.

2. Monitor sites monthly for survival during Year 1 and quarterly during years 2 through 5
3. At the end of each monitoring year, count all surviving trees and live stakes planted for this project in mitigation site and compare results to target survival rates.

4 PERFORMANCE STANDARDS

Results of annual monitoring activities will be compared to success criteria presented in Table 7. An overall goal of 70 percent survival of container stock and live stakes is proposed by the end of Year 5. The survival rate of mitigation plants is the primary performance standard for this project. Success rates that are below the stated minimum target for each criterion indicate the need for additional revegetation, plant protection, irrigation, or non-native plant removal. An adaptive management strategy for failure to meet the performance standards is provided in Section 6.0.

TABLE 7. SUCCESS CRITERIA

Feature	Success Criteria	Assessment Method	Success Criteria by Monitoring Year				
			Year 1	Year 2	Year 3	Year 4	Year 5
Tree and shrub container stock (mitigation site)	Percent survival*	Count surviving plants at each site	70%	70%	70%	70%	70%
Live stakes (project and mitigation site)	Percent survival*	Count surviving live stakes at each site	70%	70%	70%	70%	70%

*Percent of trees planted at implementation (see Table 5, last column).

5 REPORTING REQUIREMENTS

Brief reports will be sent via email after each maintenance activity to the City representative, with recommendations and updates on habitat conditions related to meeting performance standards. Results of maintenance and monitoring will be included in the Annual Report for a minimum of five (5) years by December 31 of each year. The mitigation site will be documented annually to assess site condition issues such as trash, erosion, invasive vegetation, or pests. The Waterboard requires reporting to include the following information (**MRP, #8g, page 6; Attachment D**):

a. *Date of initiation of mitigation installation and date mitigation installation was completed;*

b. *If mitigation installation was completed, confirmation that mitigation was installed according to the requirements of this Order and as described in the Mitigation Plan;*

c. *Analysis of monitoring data collected in the field;*

d. *Quantification of growth, survival, general health and stature, signs of resprouting of non-native trees and giant reed and documentation of progress toward achieving all mitigation performance criteria;*

e. *Qualitative and quantitative comparisons of current mitigation conditions with preconstruction conditions and previous mitigation monitoring results;*

f. *Any remedial or maintenance actions taken or needed;*

g. *Any additional information specified in the Mitigation Plan; and*

h. *Annual photo-documentation representative of all mitigation areas, taken from vantage points from which the Central Coast Water Board can identify changes in size and cover of plants. The Discharger must compare photos of installed mitigation with photos of the mitigation areas prior to installation.*

The Year 5 Final Monitoring Report shall summarize all data collected during the previous monitoring periods. If Year 5 performance standards are met, the final monitoring report shall include a notice of project completion.

If the mitigation sites do not meet the required performance standards by Year 5, an adaptive management plan shall be prepared and annual monitoring of the sites will continue until success standards are achieved.

6 ADAPTIVE MANAGEMENT

Monitoring shall be conducted as needed throughout the year to ensure survival of all mitigation plants. Weed removal, supplemental irrigation, and fertilization may be implemented as needed to enhance survival. All replacement plants shall be inspected in the fall of each year to evaluate their condition. The revegetated site shall be monitored annually until the primary performance standards are met.

Pursuant to Order #39,

> *Mitigation shall achieve success criteria described in the Mitigation Plan by the fifth year following mitigation installation. If mitigation measures do not meet their interim or final success criteria, the discharger shall implement remedial measures until such time the interim or final success criteria are met.*

If performance standards are not met during any year, the annual monitoring report shall indicate the source(s) of the problem(s) and recommend remediation. If replacement tree/shrub survival criteria are not met, additional plantings will be installed, until the interim or final success criteria are met. The cause of the problem would determine remediation actions beyond installation of additional plantings. If replacement tree/shrub survival does not meet the performance standard due to excessive weed problems, frequency of weeding will be increased, and either additional mulch may be added around plantings, or weed mats may be installed. If survival criteria are not met due to drought, frequency of watering will be increased, and/or the period of supplemental irrigation may be extended.

In the event of failure due to a catastrophic event, the Discharger could submit an amended Plan as described in Order # 43 which states:

> *If at any time during the implementation and establishment of planted or graded mitigation areas and prior to verification of meeting success criteria, a catastrophic natural event (e.g., fire, flood) occurs and impacts the mitigation area, the Discharger is responsible for implementing mitigation so that no net loss of aquatic resource habitat or beneficial uses occurs as a result of Project activities. The Discharger may pursue alternative compliance by submitting an amended Mitigation Plan for written approval from the Central Coast Water Board Executive Officer.*

7 ATTACHMENTS

- **Attachment A. Order No R3-2021-0012 (4/16/2021)**
- **Attachment B. Dormant Willow or Cottonwood Sprig Installation (CDFW 2003)**
- **Attachment C. Protocol for Non-Native Invasive Plant Removal**
- **Attachment D. Monitoring and Reporting Program for Order No. R3-2021-0012**

Attachment A (Order R3-2012-0012)

of

Exhibit 11 (Revegetation Plan for Annual Flood Control and Fire Fuel Load Reduction Project)

available at:

https://www.waterboards.ca.gov/centralcoast/board_decisions/adopted_orders/2021/orderr320210012.pdf

ATTACHMENT B. DORMANT WILLOW OR COTTONWOOD SPRIG INSTALLATION (CDFW 2003)

Dormant Willow or Cottonwood Sprig Installation

Willows and cottonwoods are in the willow family (*Salicaceae*) and are generally adapted to bankfull channel environments. Species in this family form specialized roots along their stems, allowing for vegetative reproduction in riparian corridors. This feature makes them good candidates for installation as sprigs or dormant cuttings. In general, willows need significant amounts of light and a year-round source of moisture. They are good candidates for revegetation as long as their root zone remains moist during the summer. Because of their ability to withstand flood flows, they are often a good choice for bank stabilization projects in bankfull channel areas. There are many varieties of willow and cottonwood in California. Some (such as the curly willow and Lombardy poplar) are not native and should never be planted in riparian areas. They may not supply the same habitat values as the native plants, and may hybridize with them. Cuttings should be harvested from a variety of parent plants in order to avoid out-planting genetically identical material. These techniques result in a more successful project, will ensure genetic diversity, and do the least damage to the collection site.

Sharp, clean loppers produce high quality sprigs and cuttings

Typical dimensions for willow and cottonwood sprigs

Steps required to install dormant willow and cottonwood cuttings:

- Harvest cuttings during the winter months when plants are dormant (usually December-January). Although willows and cottonwoods will grow from cuttings at other times of the year, dormant cuttings are more resistant to disease, have higher survival rates, and do not require irrigation if planted in the appropriate location. Sprigs may be harvested using sharp, clean loppers, hand shears, or a chainsaw. The cuttings

Store cuttings in a moist environment

may be collected at a range of sizes (i.e., ½ inch to 4 inches diameter and up to 8 feet long). It is important to select material that has not become too woody, and that has several viable buds along the stem.

- Cuttings may be used immediately, stored on-site in the stream, or stored off-site in a bucket of cool water. Ideally, material should be harvested and installed the same day.

- Sprigs should be installed with buds pointing up, with approximately ¾ of the cutting in the soil, and ¼ exposed. Holes may be dug with a pick, with a piece of rebar, with an auger, or a backhoe (for large material). In areas with soft soil, you may avoid digging a hole by cutting the bottom at an angle and pounding it into the ground with a small sledge hammer. If the top is damaged by the hammer, cut off the top of the sprig to allow for clean healing or place a driving shield over the top to drive in the sprig.

Auger used for planting holes

Small sledge hammer for installing sprig

Clean, sharp loppers cut off damaged top of sprig

ATTACHMENT C. PROTOCOL FOR NON-NATIVE INVASIVE PLANT REMOVAL

- Tree of heaven (TOH) would be removed by hand with chainsaws and/or loppers. A tracked chipper may be used to break down cut material onsite. Many tree of heaven plants have resprouted as young sapling/shoots (Photo 1).

Photo 1. Tree of heaven saplings growing in the Salinas River floodplain, west of River Road, October 2021.

- The roots would be left in the ground to avoid destabilizing the soil. To prevent the unintentional propagation of invasive species, cut material would be removed from the riparian zone and disposed of at a landfill.
- TOH would be cut when mature seeds are not on the trees, to avoid spreading seeds. Small cut shoots would be left to decompose naturally on ground surface.
- Access to TOH removal areas will be achieved using existing routes and parking areas, since all mapped sites are within the floodplain, no bed, bank, or river crossing would be warranted.
- Herbicide application would be applied directly and immediately after cut.
- Rain predictions would be checked for pre- and post- removal conditions. If a 25 percent or more chance of rain is forecasted within 24 hours of scheduled removal, then removal activities will be rescheduled to avoid any potential soil contamination.
- Cut stumps of TOH shall be inspected annually in the spring or late summer for signs of re-sprouting for three years after cutting. If cut stumps are resprouting, herbicide may be used. Herbicide treatment would be reapplied following inspection if resprouting occurs.
- Herbicide application may only be made by a licensed herbicide applicator using materials recommended by a licensed Pest Control Advisor (PCA). Herbicides will be applied to cut stumps using a localized spot-treatment method (spraying cut stumps using a wand applicator or painting cut stumps using a brush applicator) and applied in a manner that will eliminate drift onto native plants. In all such cases, the minimum amount required to kill the target species and limit adverse effects to sensitive species and habitats will be used. Since herbicide type and amounts needed are dependent on species, site condition, weather, and season, a

licensed PCA will be consulted prior to herbicide use. For any portions that may occur within 30 meters of standing water, the PCA will use herbicides approved by the Environmental Protection Agency (EPA) for use near wetlands and streams, such as glyphosate-based Rodeo®.

- The contractor must have a pest control business license which requires that at least one individual employed by the business be in possession of a qualified applicator's license. All licenses must be issued by the State of California and be of current status. If a qualified applicator is not present during the herbicide treatment, all applicators must have undergone documented herbicide application training. Personnel must wear all protective clothing required by law and follow all label directions and precautions. All re-entry times specified on an herbicide label will be observed and posted. The applicator must comply with all state and local regulations regarding the application of herbicides. Weed control personnel shall be provided with protective equipment including gloves and face masks.

Attachment D (Monitoring and Reporting Program for Order R3-2012-0012)

of

Exhibit 11 (Revegetation Plan for Annual Flood Control and Fire Fuel Load Reduction Project)

available at:

https://www.waterboards.ca.gov/centralcoast/board_decisions/adopted_orders/2021/mrpr320210012.pdf