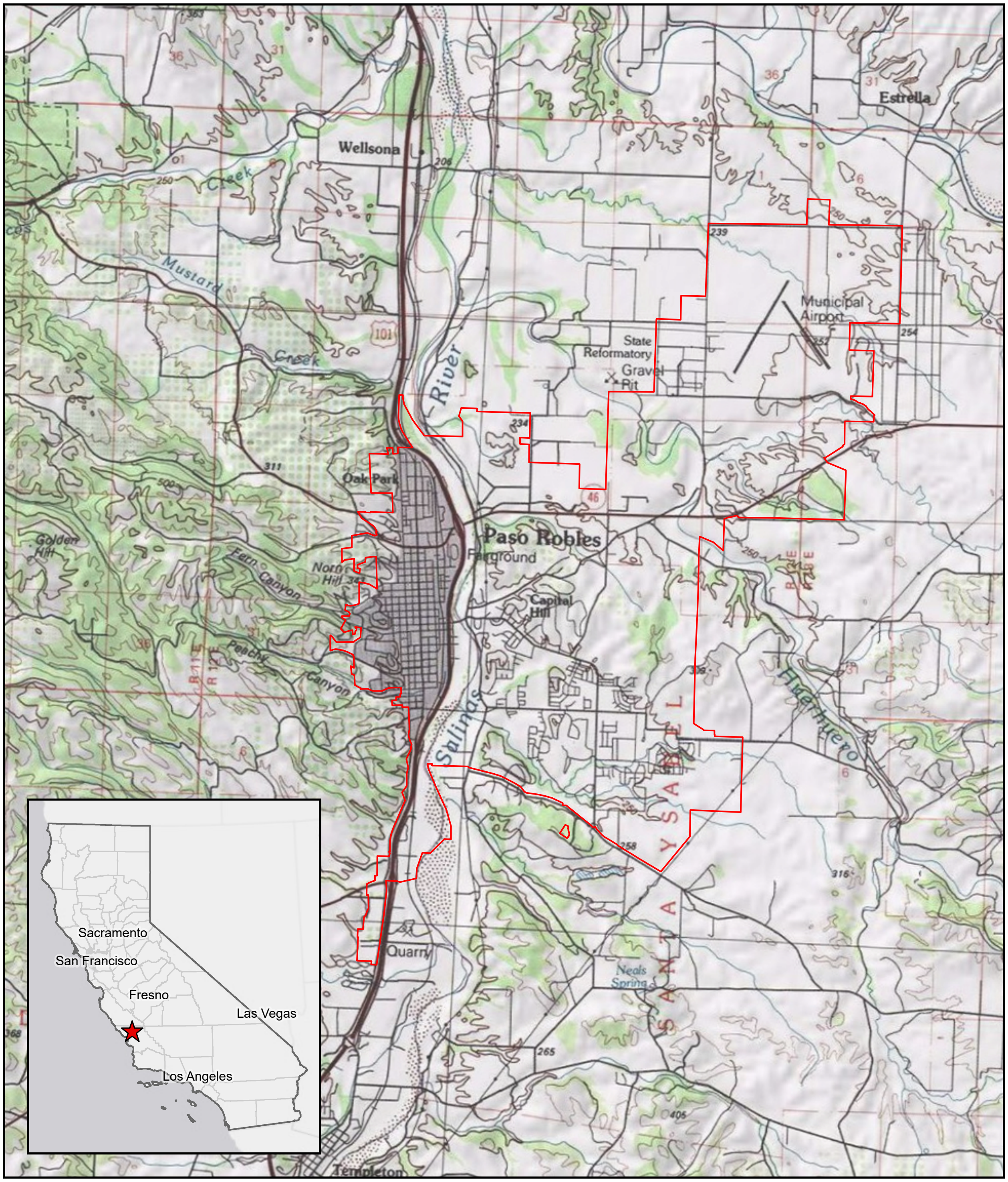
Exhibit 1: Project Vicinity Map

Figure 1. United States Geological Survey Topographic Map



Legend

★ Project Location

City of Paso Robles

USA Topo Maps

N

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

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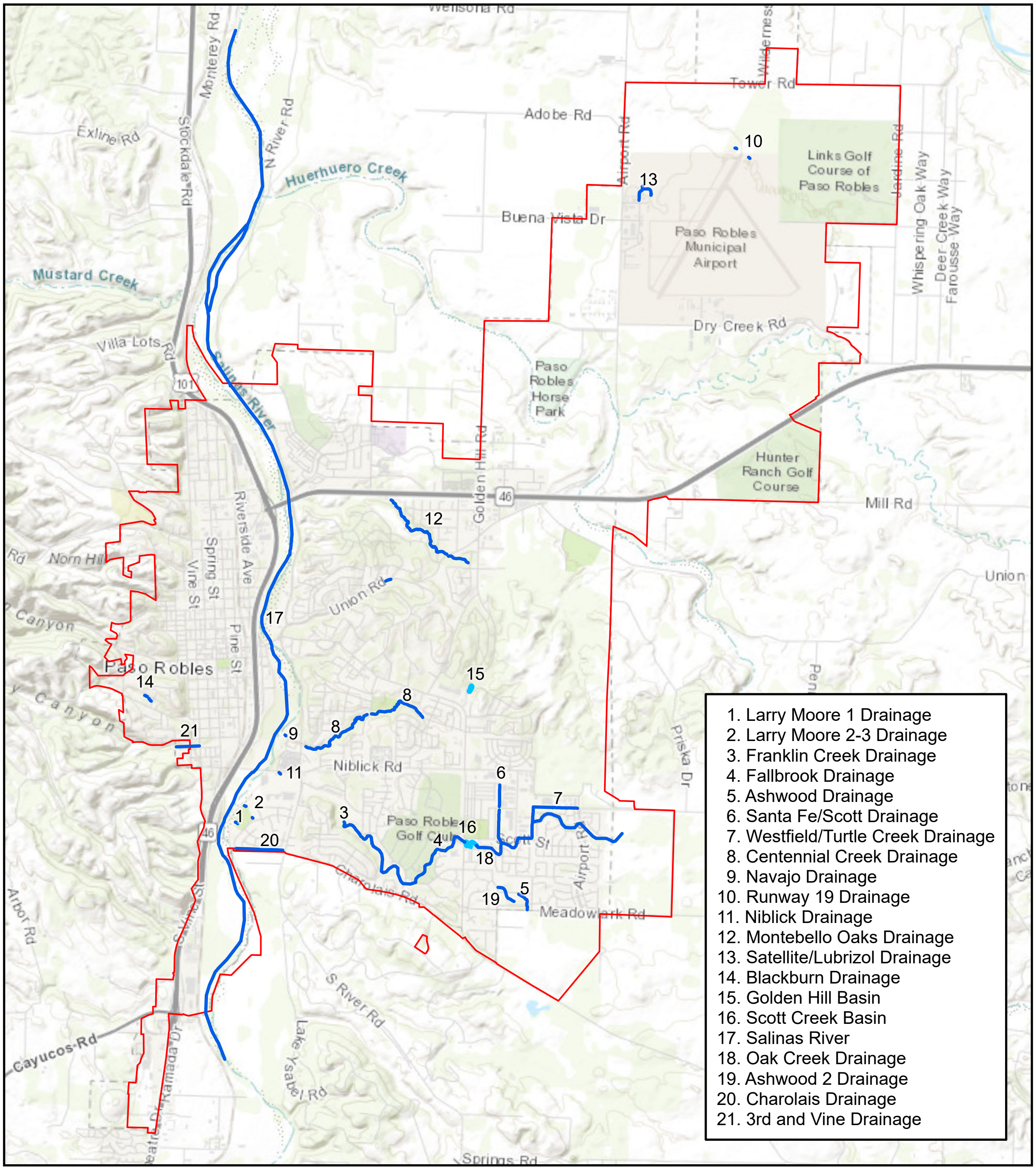
BIOLOGICAL AND ENVIRONMENTAL SERVICES

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

ALTHOUSE AND MEADE, INC.
BIOLOGICAL AND ENVIRONMENTAL SERVICES

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

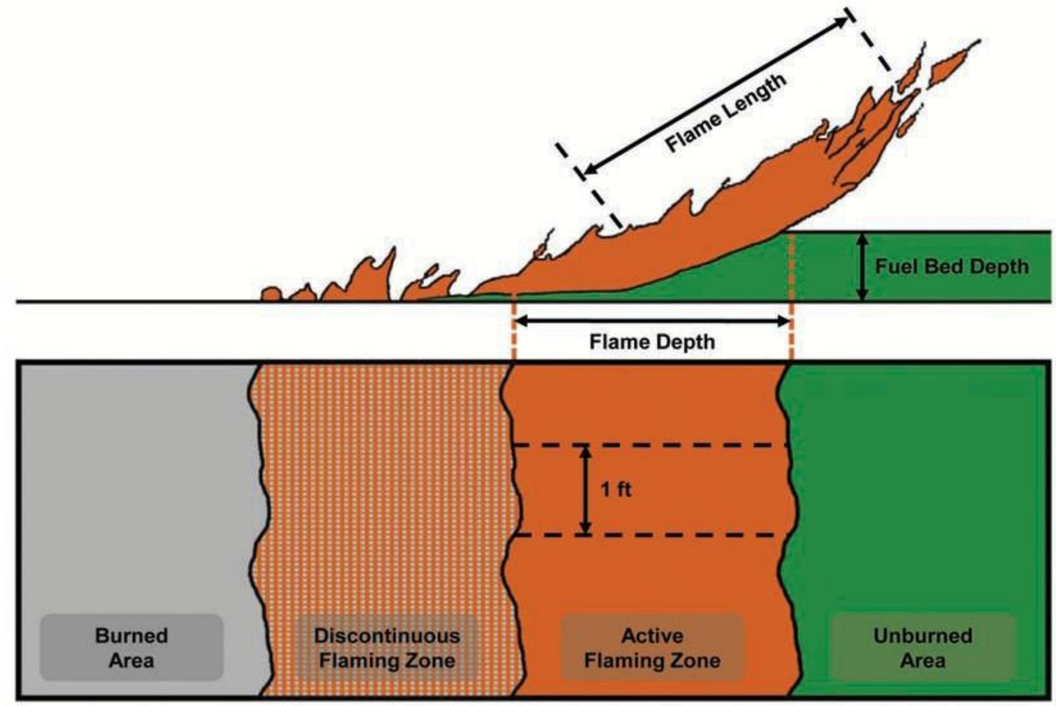
Exhibit 3: Fire Fuel Load Reduction Areas

Fire Break Area
RA 12
RA 11
RA 10
RA 9
RA 8
RA 7
RA 6
RA 5
RA 4
RA 3
RA 2
Roadside Clearing Fire Break Area
Shaded 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
810
405
0
810
Feet

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
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.

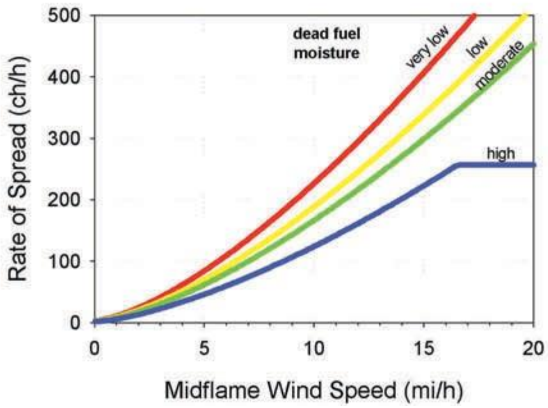
Fuel model GR4 represents the continues grass fuel bed within the Salinas River, though there are areas with a higher load than GR4, we do not feel it is enough to push it to GR7. The characteristics of fuel model GR1 are the desired conditions for these fuel beds within the project area. Reducing the 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.

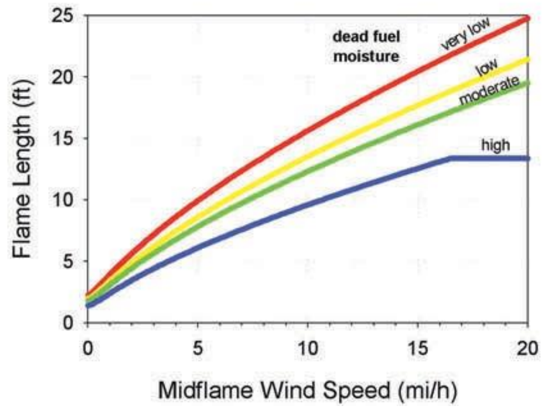
GR4 (104)

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



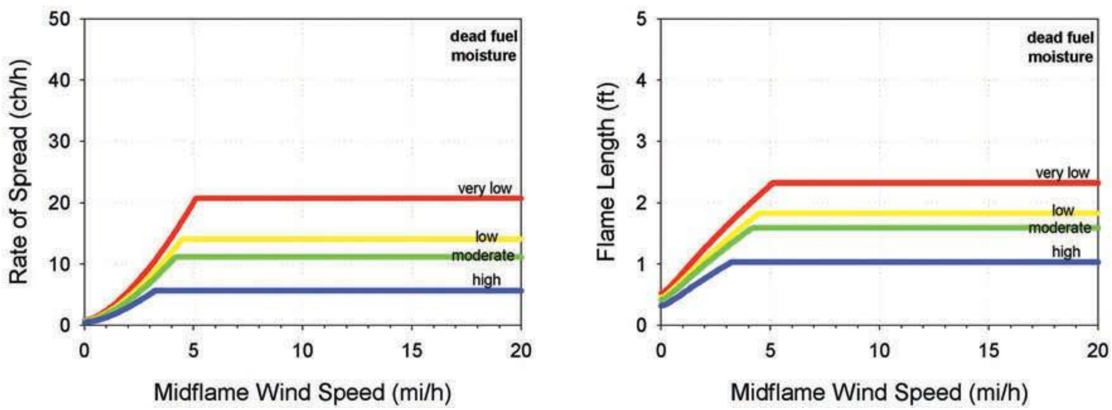


GR1 (101)

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.

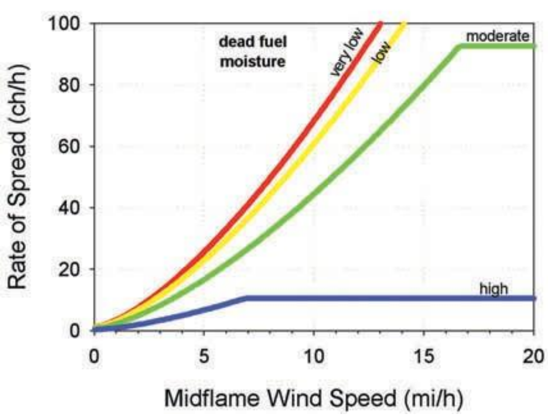
Fuel model GS2 best represents the grass-shrub fuel bed in areas of the Salinas River. Reducing the fuels to represent the characteristics of GS1 would lower the flame lengths from 10-15 feet to 8 feet or less during peak fire season. The reduction in fuels can be accomplished primarily through grazing.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

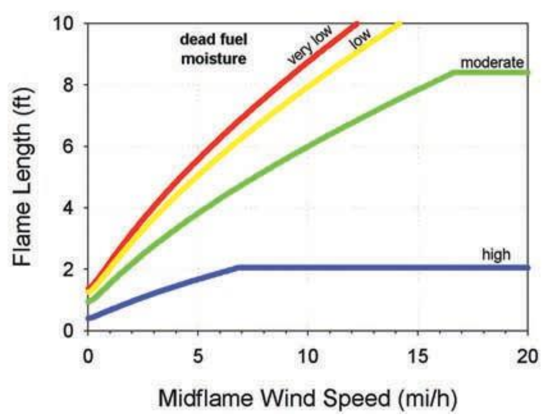
GS2 (122)

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



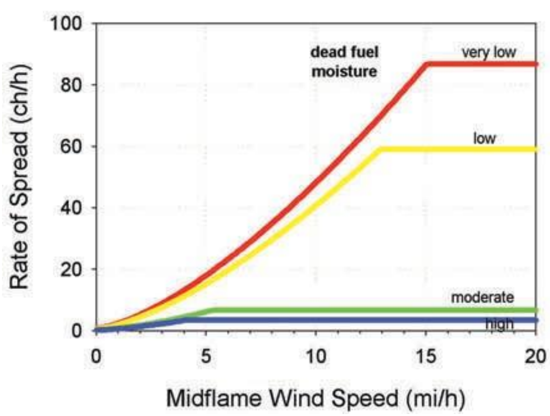


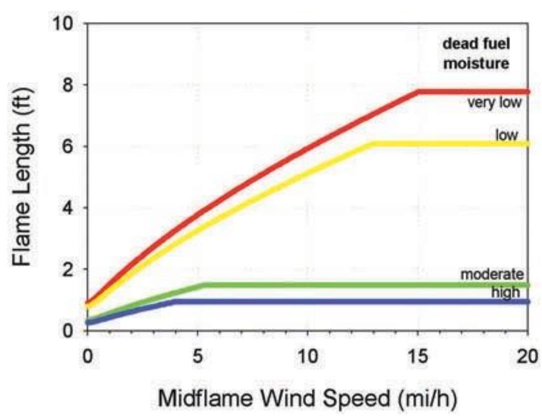
GS1 (121)

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.

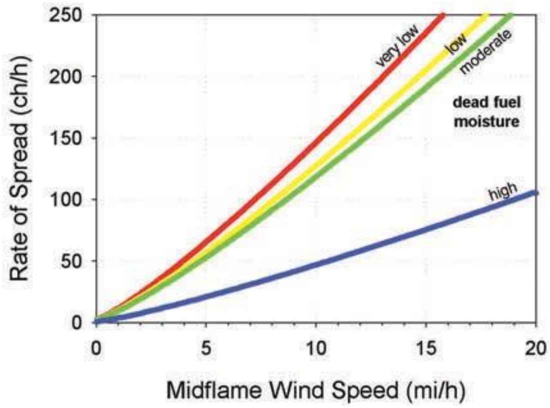
Fuel model SH5 best represents dense areas, primarily interior islands within the Salinas River and areas without tree canopy cover. Fires that become established within these fuel beds are extremely resistant to fire suppression efforts. Treating the denser areas of this fuel model, while focusing on 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.

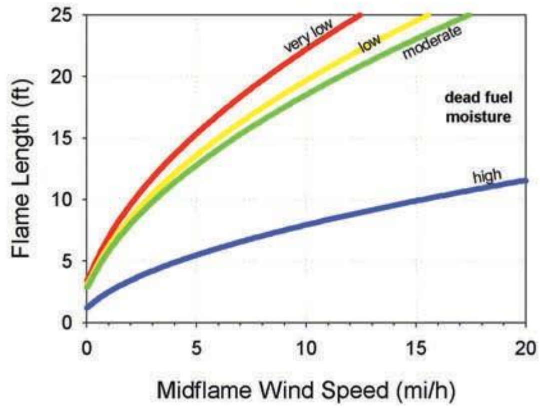
SH5 (145)

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

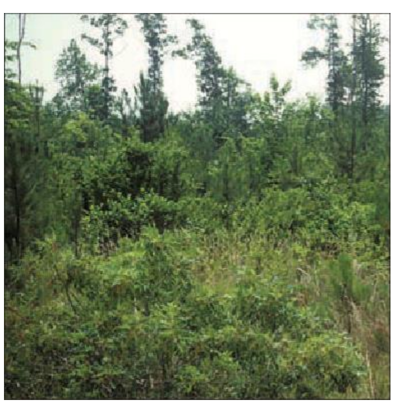




Fuel model SH8 best represents areas within the Salinas River with tree canopy cover that have dense shrub and grass understories. Fires that become established in this fuel bed move quickly through the understory, also known as latter fuel, and transition into the tree canopies. These fires are extremely 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

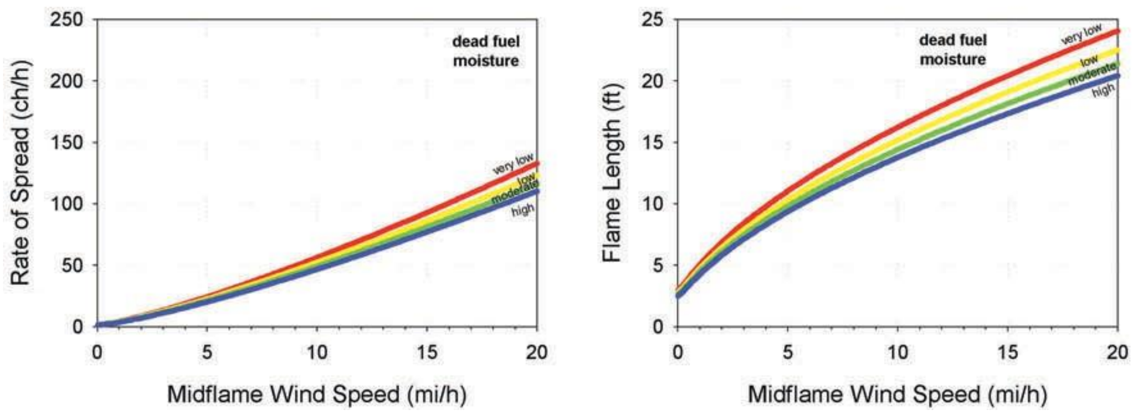


Exhibit 5: 2019 Fire Fuel Load Reduction Map

EMERGENCY FUEL BREAK PROJECT

Created: July 2, 2019
PasoRobles_SalinasRiverBrushClearing.mxd

Exhibit 6: 2020 Fire Fuel Load Reduction Map

1.6 AC
2020 Fire
RA 12
9.7 AC
MOW
RA 11
N River Road
Clubhouse Drive
Robie Court
Waterford Court
Driveway 967
Schoolhouse Circle
Experimental Station Road
Playa Circle
Black Oak Drive
Ysabel Avenue
34Th Street
33Rd Street
32Nd Street
30Th Street
29Th Street
28Th Street
26Th Street
24Th Street
23Rd Street
Park Street
Riverside Avenue
RA 10
RA 9
MOW
10.6 AC
10.3 AC
CREW/MOW
13.1 AC
MOW
15.8 AC
CREW
MOW
16.8 AC
Kleck Road
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 ilegato.

MOW
13.1 AC
15.8 AC
CREW
CREW/MOW
16.8 AC
MOW
21.1 AC
2.1 AC
CREW
5.4 AC
16.7 AC
12.1 AC
STRING
TRIMMING
2020 Fire
RA 7
RA 8
RA 5
24Th Street
23Rd Street
22Nd Street
21St Street
Gregory Avenue
20Th Street
19Th Street
18Th Street
17Th Street
16Th Street
15Th Street
14Th Street
13th Street
12Th Street
11Th Street
10Th Street
9Th Street
Spring Street
Park Street
Pine Street
Railroad Street
Riverside Avenue
Union Road
N River Road
S River Road
Creston Road
Almond Street
Via Magnolia
Via Fuchsia
Via Camelia
Via Manzanita
El Dorado Court
Encanto Court
Via Promesa Drive
Las Brisas Drive
Klenk Road
Red Cloud Road
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
270 135 0 270
Feet

16.7 AC
12.1 AC
RA 4
STRING TRIMMING
5.4 AC
2020 Fire
RA 8
0.8 AC
RA 3
CREW
9.1 AC
MOW
GRAZING
13.8 AC
21.5 AC
MOW
RA 2
Niblick Road
1st Street
Riverside Avenue
Paso Robles Street
S River Road
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

Exhibit 7: 2019 and 2020 Impacts Quantification Table

Quantification of 2019 and 2020 Impacts

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

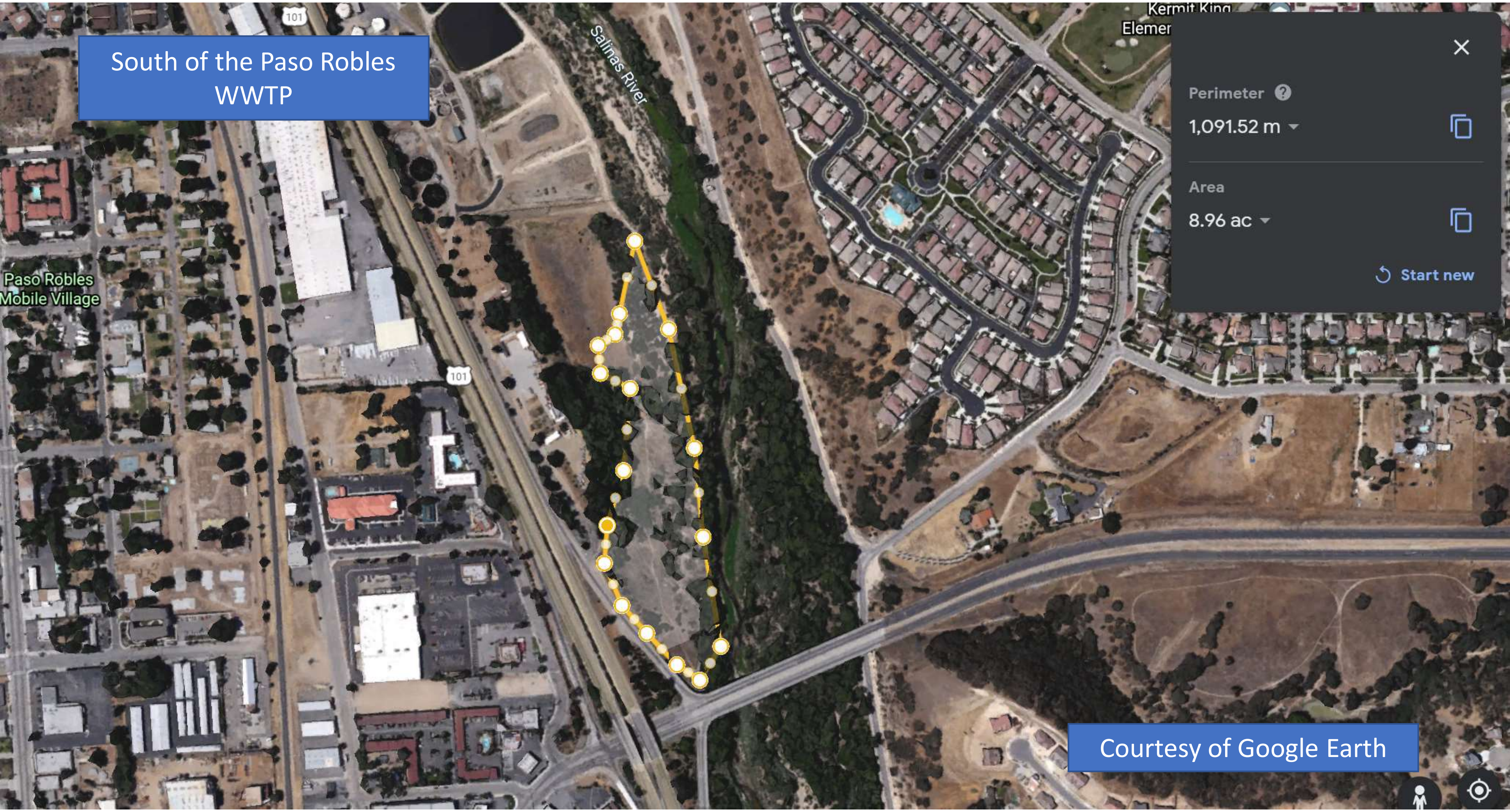
1 – Watershed boundaries may be defined by topography or existing watershed delineations, such as USGS HUC 10 boundaries.

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.

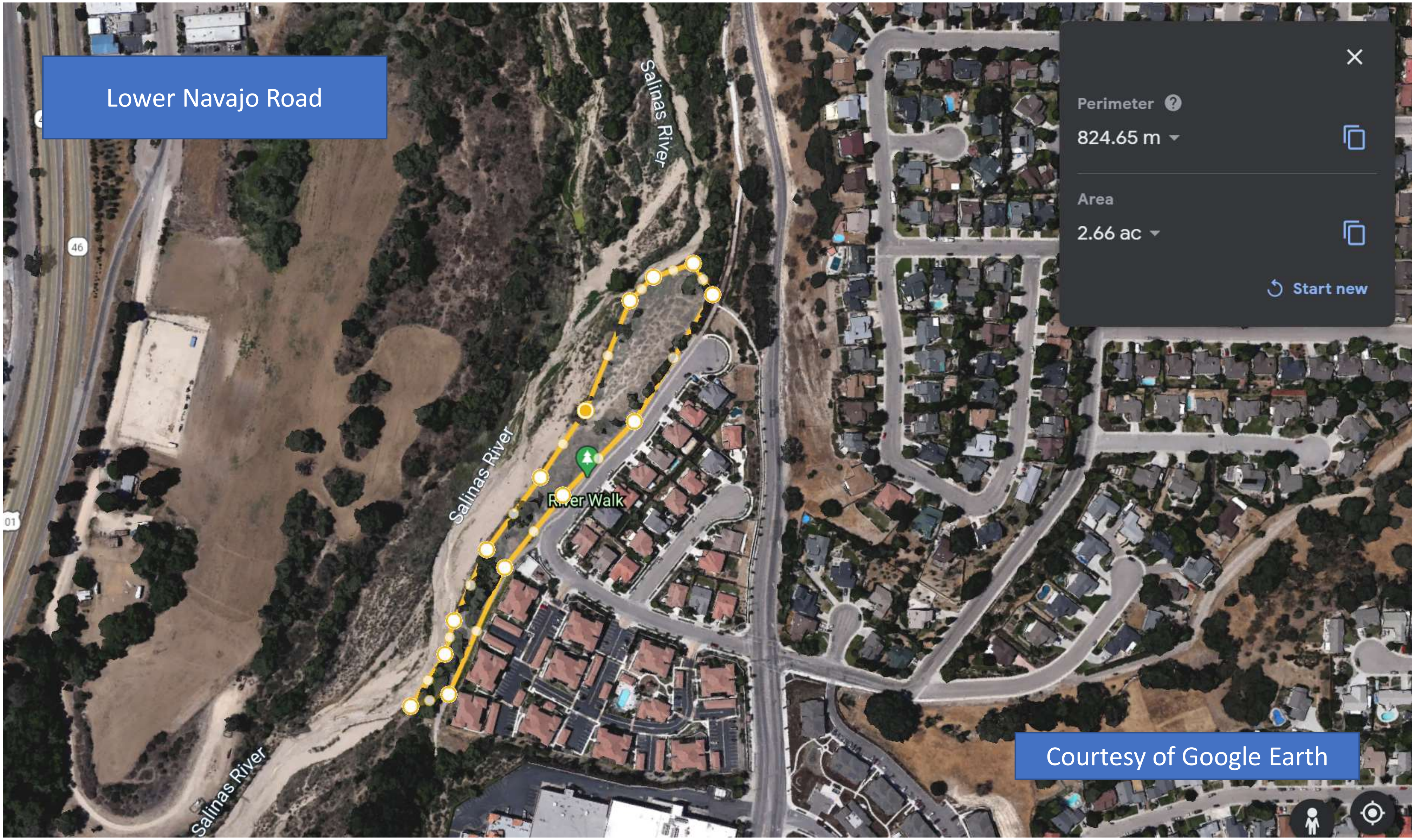
Exhibit 9: Mitigation Sites Preliminary Evaluation

Preliminary Evaluation of Mitigation Receiver Sites, Paso Robles

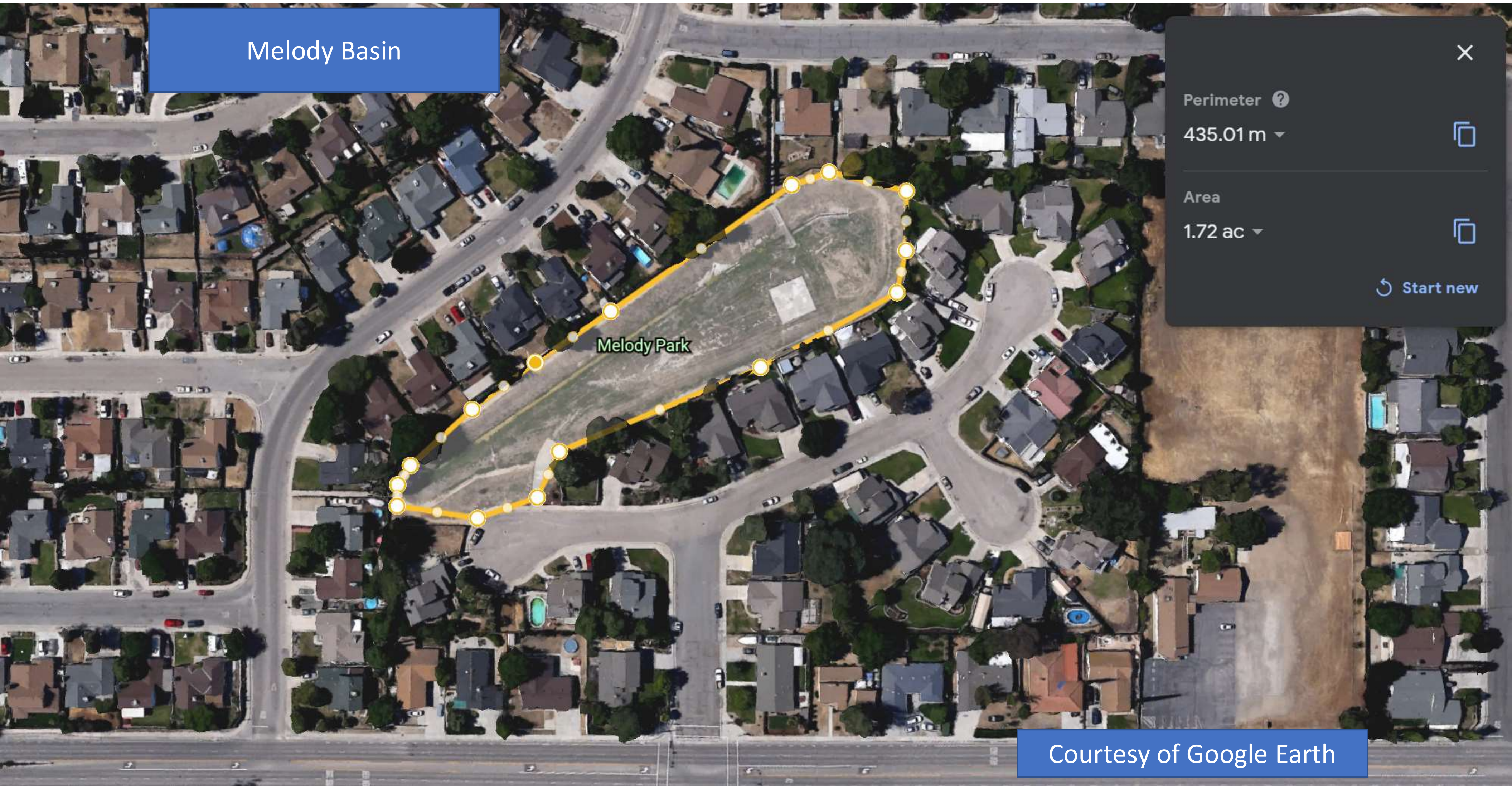
- The following figures include potential receiver site locations and their associated areas of coverage.
- The sites listed are a small selection of areas suitable for mitigation.
- The receiver site scoring rubric was used to evaluate and score each site depending on its characteristic of suitability.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

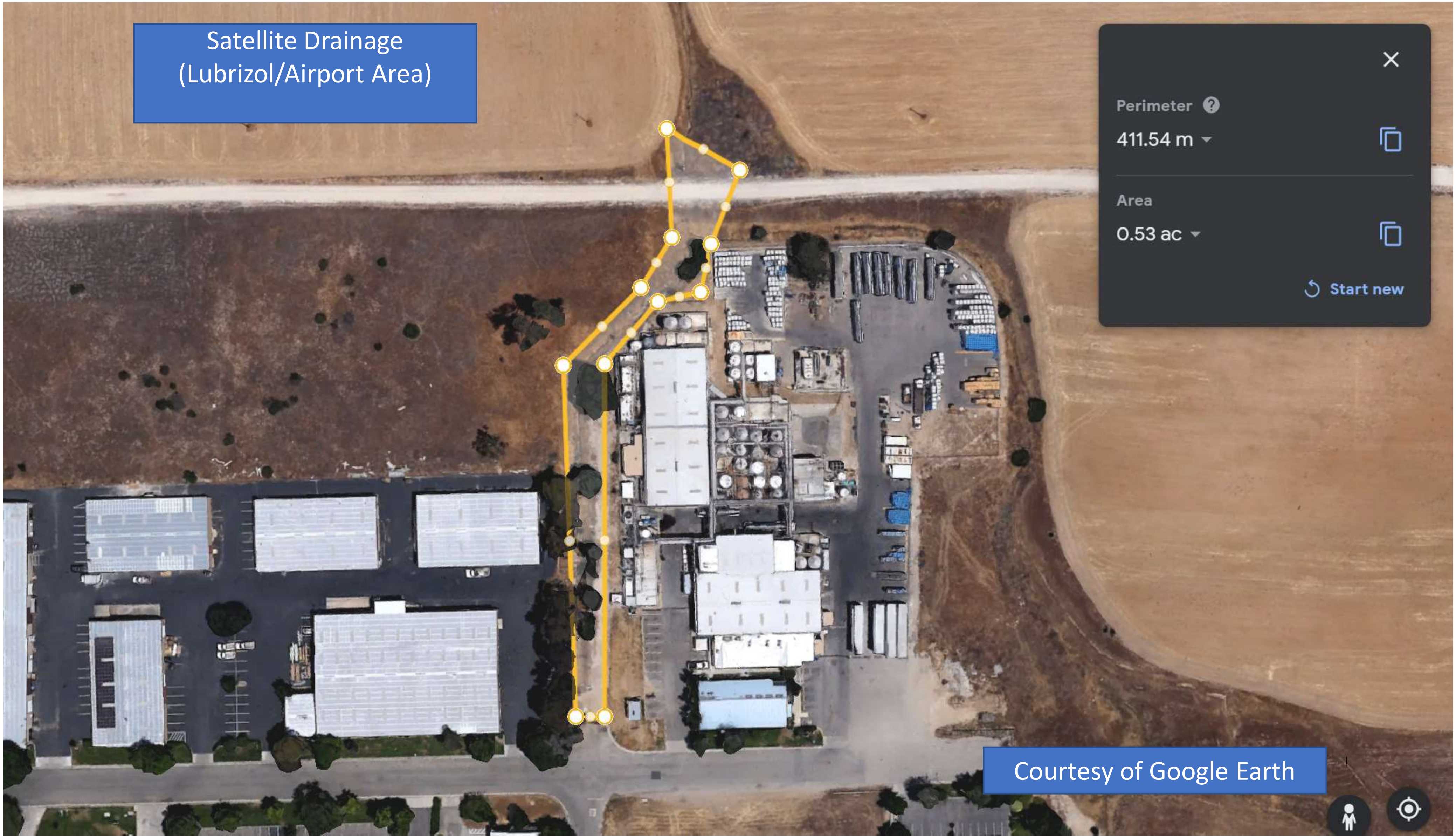

South of the Paso Robles WWTP
Salinas River
101
Paso Robles Mobile Village
Kermit King
Elemen
Perimeter
1,091.52 m
Area
8.96 ac
Start new
Courtesy of Google Earth


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


Lower Navajo Road
Salinas River
Salinas River
Salinas River
River Walk
46
Perimeter
824.65 m
Area
2.66 ac
Start new
Courtesy of Google Earth


Niblick Bridge (Old Burn Site)
101
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: Annual Drainage Maintenance Report of Waste Discharge Supplemental Information Report

Annual Drainage Maintenance Report of Waste Discharge

Supplemental Information Report

for

Individual WDR
City of Paso Robles, California

Prepared for

City of Paso 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
1602 Spring Street
Paso Robles, CA 93446
(805) 237-9626

January 2021

853.08

Table of Contents

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List of Figures

Cover Page: Dense weedy understory vegetation along the Salinas River. Taken July 26, 2019.

1 INTRODUCTION

The City of Paso Robles (City) is located in northern San Luis Obispo County, California. A reach of the Salinas River and a number of unnamed ephemeral drainages and numerous detention basins are located within City limits (Figure 1). Land use surrounding these drainages and basins is primarily residential, with some open space, commercial, and recreational facilities scattered throughout the City. Many of these drainages and basins are or are in danger of becoming densely populated with emergent and riparian vegetation while others have accumulations of sediment in the vicinity of culvert inlets and outlets. Vegetation and sediment can reduce the capacity of drainages to transport or store storm flows, thereby contributing to local flooding during heavy rain events. Vegetation in drainages within the City limits, particularly within the Salinas River corridor, has become dense and overgrown in many areas. This vegetation provides fuel for wildfires, and can increase the risk, intensity, and speed of spread of fires.

The City of Paso Robles (Public Works Department and Fire Department) plans to manage riparian and emergent vegetation to enhance channel capacity and storm water flow in drainages throughout the City, and conduct hazardous fuel reduction within the Salinas River corridor. This Supplemental Information Report provides information regarding flood protection, fire safety, and pollution prevention associated with the City's Individual Waste Discharge Requirement (WDR) permit application.

1.1 Purpose

Vegetation management within and around drainages within the City of Paso Robles is necessary for two main purposes: flood control and fire fuel reduction. Trimming riparian and emergent vegetation will increase the capacity of drainages and basins to transport and store storm flows and will reduce the risk of flooding during rain events. Trimming riparian vegetation in and around the Salinas River will reduce fuel loads and reduce the risk of fires starting in the riverbed and spreading to nearby homes, businesses, and transportation routes. A large homeless population inhabits the riverbed and is a common source of ignitions. Fires begin within encampments or on islands in the river, and then may spread rapidly in hot, dry, or windy weather. Vegetation reduction in the Salinas River corridor will mediate the risk of fire.

1.2 Project Description

1.2.1 Routine Drainage Maintenance

The City plans to trim riparian and emergent vegetation and remove accumulated sediment from selected sites to enhance channel capacity and storm water flow within the City limits. These drainages and basins were selected because they are major drainageways that run through the City and have the potential to cause localized flooding of adjacent streets and private property. To the extent possible, work would be done when sites and the surrounding area are dry and devoid of surface flow. Trees and shrubs will be pruned and may be limbed up to 6 feet high where they occur near culverts and would potentially block flow of stormwater. Dead and downed trees and limbs will be removed from drainages and basins. Invasive non-native vegetation may be controlled by hand removal. Goats and/or sheep may be used to remove low-growing vegetation that could result in compromised flows by catching debris. Accumulated sediment may be removed from ephemeral drainages near culvert inlets and outlets. See Section 2 for further information on drainage maintenance methodology.

Vegetation and sediment removal activities for the purpose of flood control have been conducted annually since 2015 and are covered by the City's existing Lake and Streambed Alteration Agreement (LSAA) (Notification No. 1600-2013-0215-R4) with the California Department of Fish and Wildlife (CDFW).

1.2.2 Salinas River Fuel Reduction

Fuels would be reduced using a variety of methods. The primary method would be vegetation removal using hand tools or mechanized tools to create a shaded fuel break where the brush, grass and downed trees would be removed. All standing, healthy, and mature trees would remain, with the trees limbed up to 6 feet to remove the ladder fuels. This is the preferred treatment method for hazardous fuel reduction projects as it maintains the vegetation in a park like setting while reducing the fires ability to travel into the tree canopies, which creates longer range spotting and/or ember cast. Other vegetation removal methods would include the use of controlled burns, especially on islands in the Salinas River, and/or grazing. See Section 2 for further information on fuel reduction methodology.

1.3 Project Locations

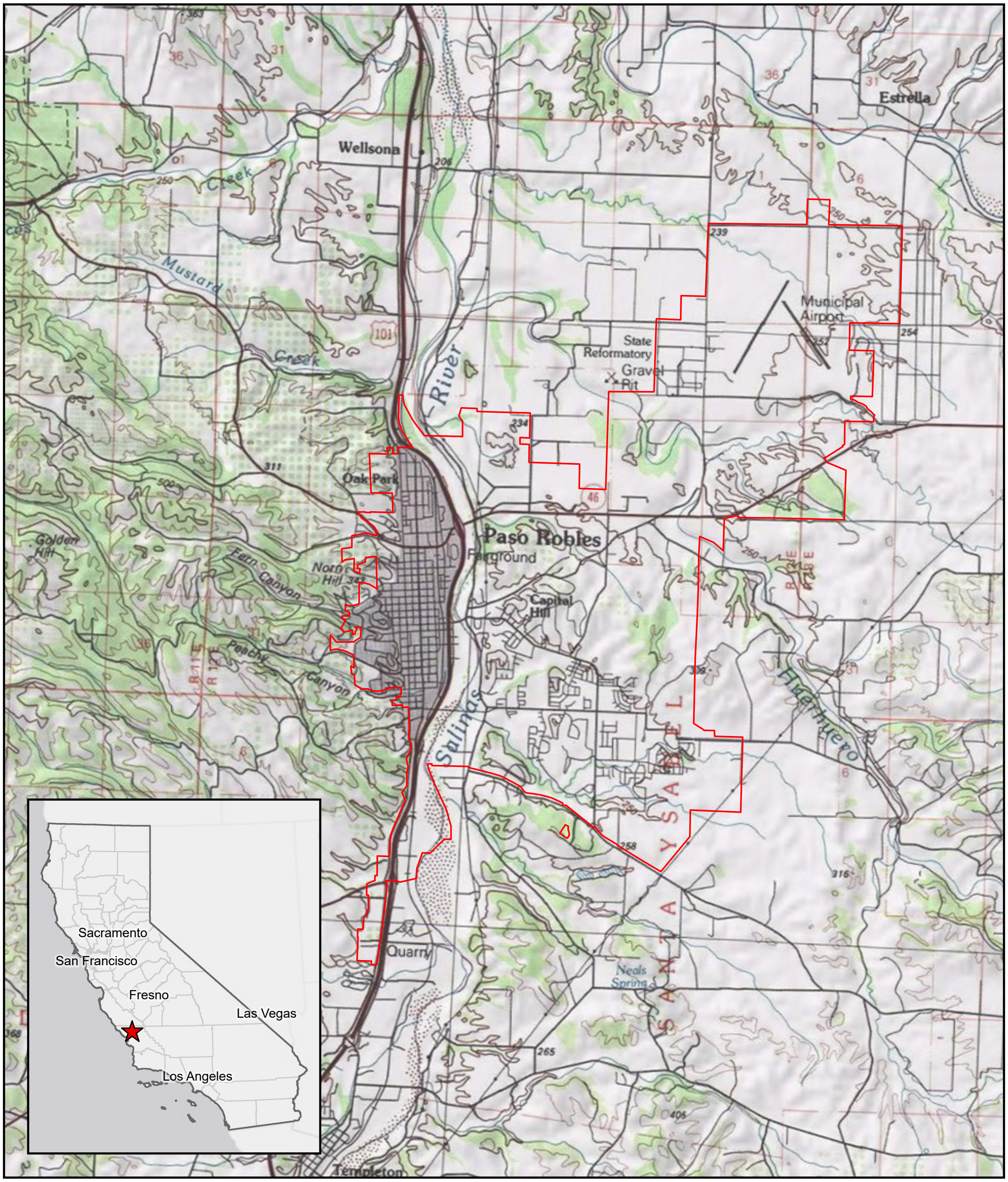
Routine drainage maintenance activities may be conducted at 19 drainages and two basins (total of 21 locations) within City limits. The names, coordinates, and length/area of each Project Site are provided in Table 1. Locations are shown in Figure 2. Annual vegetation maintenance has taken place at these locations since 2015 in accordance with the current LSAA. A list of APNs for these maintenance areas is in Appendix A.

Fuel reduction maintenance activities will be conducted in multiple locations within the Salinas River corridor. The proposed fuel reduction area is approximately 140 acres. It extends approximately 20,026 linear feet, from the intersection of North River Road and Clubhouse Drive in the north, to the southern end of Larry Moore Park at the south end of Riverbank Lane. These are areas outside the low-flow channel, and closest to the urban-wildlands interface at the edges of the riparian corridor. See Sections 3.2 and 5 for more information on areas which will be avoided. Proposed fuel reduction locations are shown in Figure 3. A list of APNs for these fuel reduction areas is in Appendix A.

TABLE 1. ROUTINE DRAINAGE MAINTENANCE LOCATIONS

Name	Length or Area	GPS Latitude	GPS Longitude
3rd and Vine Streets Drainage	2,112 lf	35.6175	-120.6933
Ashwood 2 Drainage	880 lf	35.6034	-120.6045
Ashwood Drainage	203 lf	35.6022	-120.6507
Blackburn Drainage	250 lf	35.62201	-120.69926
Centennial Park Drainage	5,754 lf	35.6196	-120.674
Charolais Drainage	1,681 lf	35.606779	-120.685149
Fallbrook Drainage	318 lf	35.6022	-120.6038
Franklin Creek	4,705 lf	35.6099	-120.6744
Golden Hill Basin	0.29 ac	35.6242	-120.6586
Larry Moore 1 Drainage	375 lf	35.609	-120.6874
Larry Moore 2 Drainage	615 lf	35.61	-120.6861
Montebello Oaks Drainage	902 lf	35.6429	-120.6685
Navajo Drainage	51 lf	35.6188	-120.6823
Niblick Road Drainage	84 lf	35.6148	-120.6828
Oak Creek	2,610 lf	35.6078	-120.6576
Runway 19 Drainage	128 lf	35.6816	-120.6262
Salinas River	29,425 lf	35.6584	-120.6936
Santa Fe to Scott Drainage	1,911 lf	35.6089	-120.6545
Satellite/Lubrizol Drainage	1,041 lf	35.6771	-120.6381
Scott Creek Basin	0.51 ac	35.6079	-120.6585
Westfield/Turtle Cr Drainage	2,990 lf	35.6109	-120.6509

Figure 1. United States Geological Survey Topographic Map



Legend

★ Project Location

City of Paso Robles

N

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

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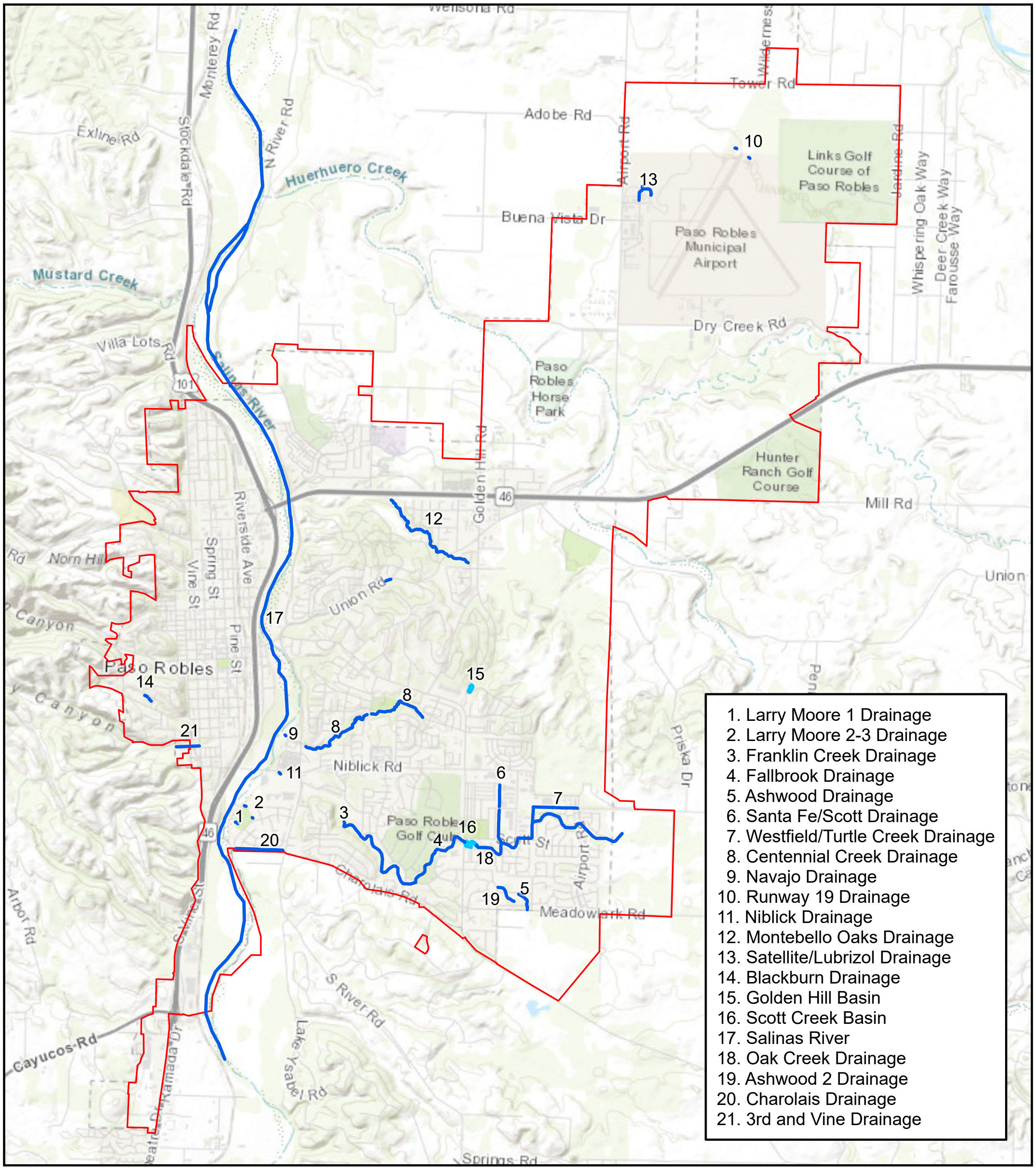
BIOLOGICAL AND ENVIRONMENTAL SERVICES

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

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

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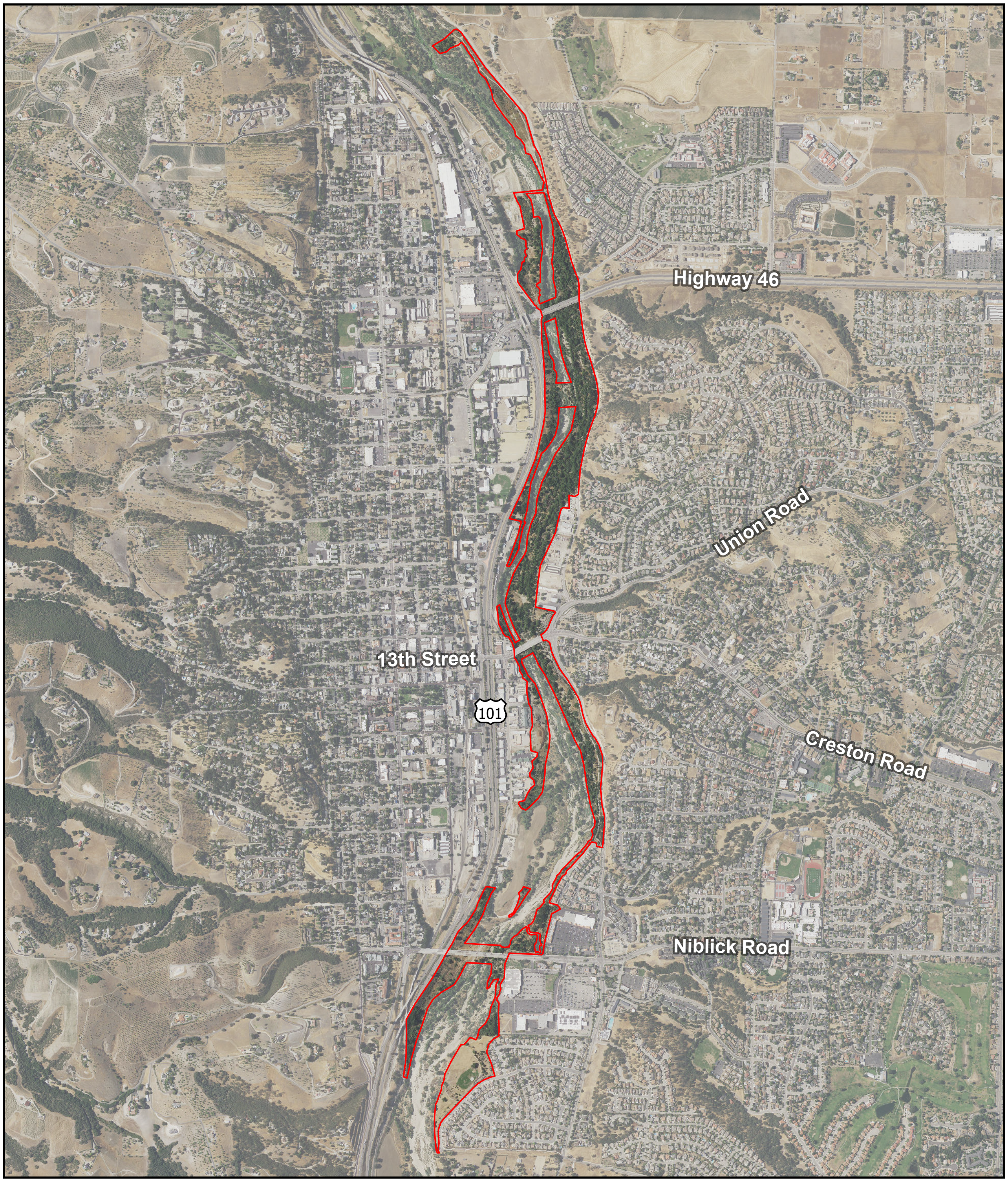
BIOLOGICAL AND ENVIRONMENTAL SERVICES

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

Figure 3. Fuel Reduction Areas



Legend

Fuel Reduction Area

N

0 2,000 4,000 Feet

City of Paso Robles -
Salinas River Fuel Break
Map Center: 120.68582°W 35.63086°N
Paso Robles, San Luis Obispo County

Imagery Source: USDA NAIP, 07/14/2018

ALTHOUSE AND MEADE, INC.
BIOLOGICAL AND ENVIRONMENTAL SERVICES

Map Updated:
July 29, 2020 03:17 PM by SAF

2 ANNUAL MAINTENANCE ACTIVITIES

Each year, City staff will conduct an assessment of drainages listed in Table 1, including the Salinas River, to determine which maintenance methods will be used that year (see Section 6.1). The City will use criteria in Section 2.1 to determine what areas need maintenance and will use maintenance methods described in in Section 2.3. These maintenance methods and the areas in which they will be used will be provided in an Annual Work Plan (see Section 6.1).

2.1 Maintenance Criteria

The City will follow the criteria below in order to determine where vegetation maintenance is required.

2.1.1 Routine Drainage Vegetation Maintenance

All sites are maintained on an annual basis. The level of maintenance depends on the amount of vegetation present, which in turn depends on the amount of rainfall received during the previous wet season. Vegetation at each drainage is classified into maintenance categories based on the amount of vegetation present. Table 2 below summarizes the vegetation conditions and required maintenance level.

TABLE 2. DRAINAGE VEGETATION MAINTENANCE CRITERIA

Vegetation Condition	Vegetation Description	Maintenance description
Red	100% vegetation blocking inlets/outlets; vegetation holding sediment blocking inlet/outlet; vegetation occludes visual observation of pipes and/or restricts drainage flow.	Trim low vegetation and groundcover to allow free flow of water through inlet/outlet or drainage. Trim up trees to a height of 6 feet.
Yellow	50% vegetation blocking inlets/outlets	Same as above
Orange	25% vegetation blocking inlets/outlets	Same as above
Green	0% vegetation blocking inlets/outlets	No maintenance required

2.1.2 Sediment Removal

Routine maintenance of vegetation allows proper scouring velocities of water which naturally carry sediment downstream; therefore, sediment removal and maintenance in drainages is uncommon. However, some basins (dependent on design) are maintained to establish their original effective function to hold sediment. Removal of sediment in these basins only occurs to ensure that volume and capacity of the basin is maintained. Culverts and storm drainpipes may also accumulate sediment. In some instances, the City can use a vacuum truck to remove sediment from the associated manhole, without any disturbance to the riparian area. In other instances, sediment removal may be necessary at the inlet/outlet.

Sediment removal would occur if any of the following conditions are met: accumulated sediment minimizes the invert level to half of its original invert level or less; accumulated sediment creates ponding within the culvert or blocks flow in the channel or pipe; sediment obstructs the flow path of water creating erosion or bank scouring near the outlet of a culvert; or there is evidence of bank scouring dude to sediment blockage in the flowline.

2.1.3 Fuel Reduction

The criteria used to determine the boundaries of the fuel treatment area are mainly based on the location of ignitions, primarily within the riverbed, and the direction of fire spread under various weather conditions. Fire is influenced primarily by terrain and wind. Typical wind direction in Paso Robles is from the northwest or southwest; these winds push fires in the river to the east where they respond to the terrain and run up drainages towards the community. The fuel reduction area is primarily located along the eastern side of the Salinas River in order to protect the neighborhoods east of North and South River Roads. However, on any given day the wind can change and come from any direction, so the City must be prepared for all conditions. Therefore, the fuel treatment area also includes some areas on the west side of the Salinas River, especially where vegetation on the west edge of the river corridor is adjacent to commercial or residential areas.

The fuels within the Salinas River are a mix of fuel models which are used to calculate fuel loading. Fuel models are classified according to the standard models described in the USFS technical report Standard Fire Behavior Fuel Models (Scott and Burgan 2005). Fuel models are selected via the following vegetation characteristics: fire-carrying fuel type (grass, shrub, timber litter, etc.); the moisture of extinction (i.e. the fuel moisture content at which fire will not spread); depth, compactness, and size of fuel; and relative amount of live vs dead vegetation. Within the proposed fuel reduction vegetation maintenance area, fuel model GS2 and GR4 make up 70-80% of the fuel bed while a mixture of SH5 and SH8 make up the remaining 20-30%. Additionally, there is an abundance of dead and downed woody materials throughout the river corridor. These areas of fuel loading are extremely resistant to fire suppression efforts. See Table 3 for a description of fuel models.

In any given year, vegetation maintenance to reduce fuels will occur in all areas within the proposed fuel treatment area where light flashy fuels such as non-native grasses are taller than 4”. This is in compliance with the City’s Hazardous Fuel Reduction Ordinance. Annual fuel reduction will be prioritized in the footprint of the 2019 emergency fuel reduction area, which was a shaded firebreak along the eastern edge of the river corridor. Annual maintenance will also be prioritized in a 100-200-foot range along the west and east edges of the river, as well as the sections that connect across the river. Currently there are five locations where firebreaks have been established across the river, connecting the east and west sides. There is a need for additional cross sections, one north of the 13th Street bridge and two between Niblick and 13th Street. These cross sections allow access points to check a fire from spreading throughout the riparian zone. Maintaining a firebreak along the edges of the river will lower the chances an ignition becomes established within it and lowers the intensity of a fire as is transitions into the treated area. Firebreaks allow firefighters a safe area to engage the fire and contain it within the riverbed.

TABLE 3. FUEL MODELS WITHIN THE SALINAS RIVER VEGETATION

Fuel Model	Description	Fire spread	Tons/Acre
GS2	Mixture of grass and shrub, up to 50 percent shrub coverage; shrubs are 1-3 feet high, moderate grass load.	Spread rate high, flame length moderate	2.1
GR4	Nearly pure grass and/or forb; moderately coarse continuous grass, average depth about 2 feet.	Spread rate very high, flame length high	2.15
SH5	Shrub cover at least 50 percent, grass sparse to nonexistent; heavy shrub load, depth 4 to 6 feet.	Spread rate very high, flame length very high	6.5
SH8	Shrub cover at least 50 percent, grass sparse to nonexistent; dense shrubs, little to no herb fuel, depth about 3 feet.	Spread rate high; flame length high.	6.4

2.2 Maintenance Frequency and Duration

Vegetation removal activities for the purpose of flood control are conducted at the drainages and basins listed in Table 1 once or twice annually per drainage or basin, depending on vegetation growth.

Vegetation removal activities for the purpose of fuel reduction will be conducted annually within the Salinas River corridor. Vegetation removal will take place every year in areas dominated by light flashy fuels (grasses and forbs).

Vegetation maintenance would occur between April 15 and October 15 each year. This conforms with the permitted work window allowed by the LSAA.

2.3 Maintenance Activity Details

A variety of vegetation management techniques will be used to maintain vegetation for the purposes of flood control and fuel reduction. In any given year, multiple techniques may be used to manage vegetation within the Salinas River corridor and in other drainages and basins within city limits.

2.3.1 Vegetation Maintenance

2.3.1.1 Use of hand tools and/or motorized equipment

Vegetation maintenance is anticipated to occur at all Project sites. To the extent possible, work would be done when sites and the surrounding areas are dry and devoid of surface flow. No grubbing or disking would occur as part of the Project. Trees or shrubs may be removed at some Project Sites. In such cases, the tree or shrub will be cut at or within 6 inches of the ground and root wads will be left in the ground to avoid destabilizing the soil. If any native trees or shrubs with a diameter at breast height (dbh) of 4 inches or greater are removed, they would be replaced in-kind and monitored to ensure adequate survival (see BR-8 in Section 3.2).

Routine Drainage Vegetation Maintenance. The City's Public Works Department plans to trim riparian and emergent vegetation from selected sites within the City limits to enhance channel capacity and storm water flow. Brushy vegetation would be thinned using pruners, loppers, and/or string trimmers. Willow shrubs located near culverts would be pruned as they have the potential to block the stormwater flow. Trees near culverts or overhanging drainages may be limbed up to 6 feet. Dead and downed trees and limbs would be removed from drainages and basins. A backhoe may be positioned along ephemeral drainages and/or basins outside the top of bank and used to pick up woody material too large to be removed by hand. Invasive non-native vegetation may be controlled by hand removal or via other methods approved by resource agencies.

Fuel Reduction in the Salinas River Corridor. Hand crews with chainsaws and tracked chippers will be used to reduce ladder fuels under tree canopies to maintain established shaded fuel breaks and clean up pockets of dead and down woody material, where terrain limits access for equipment. Mowing of annual grasses would be completed using skid-steers with mowing decks or small excavators with mowing attachments. Brushy vegetation may be thinned using pruners, loppers, and/or string trimmers. Mastication treatments may utilize skid-steers and Fecon tracked carriers with mulching heads and excavators with masticator heads. Mastication would be conducted in any given fuel reduction area as needed every 3 to 5 years. A range of equipment options are required due to terrain fluctuation and the need to limit soil disturbance. If other equipment is developed that is more efficient, cost effective, or is better suited for limiting disturbance, it may be utilized.

2.3.1.2 Low-Intensity Prescribed Burn

Prescribed burning has been recognized by western land managers as an appropriate and very productive method of fuels reduction and land management. Landscape-scale broadcast burns have been employed historically in Native American cultures as a technique for vegetation management. It is a very fast and inexpensive method that can be used repeatedly with similar results. Vegetation growing in the Mediterranean climate on the central coast tends to respond to periodic fire positively.

The City will be working with the Upper Salinas-Las Tablas Resources Conservation District (RCD) to better understand optimal conditions to employ low-intensity prescribed burning. Understanding optimal conditions may involve consultations with Cal Fire as well as the Cal Poly Wildland Urban Interface Institute (WUI). There are two methods for prescribed burning within the river, broadcast or pile burning.

Pile burning consists of hand crews with chainsaws cutting vegetation and stacking it into piles to be burned later or when conditions are favorable. Pile burning is effective in treating larger brush fuel models and cleaning up accumulations of larger dead and downed woody material.

Controlled burns would be conducted according to the Interagency Prescribed Fire Planning and Implementation Procedures Guide (NWCG 2017) and the Wildland Fire Suppression Tactics Reference Guide (NWCG 1996).

2.3.1.3 Grazing

Domestic goats and/or sheep may be also used to remove low-growing vegetation to enhance flows and reduce potential debris jams during high flows in drainages, basins, and the Salinas River channel. Grazing would be concentrated for short periods (e.g. 2 to 3 days each area) using temporary electric fences powered by solar panels or similar temporary fencing. Within grazing areas, native trees and shrubs may be protected from livestock in order to maintain suitable habitat for native wildlife. Livestock would only be used within City limits.

Grazing may also be used to reduce fuel loads within the Salinas River corridor. Under some circumstances, livestock grazing can reduce fire fuels more effectively than mechanical methods (Sharrow 2006). Grassland not grazed creates high levels of fine fire fuels which can pose fire hazards. Grazing impacts surface fuels by removing vegetation (existing fuels), but does not affect the plant roots. To have a successful fuel management program with livestock, a grazing routine should be applied every 1-2 years at the minimum to exhaust the root stock.

2.3.2 Sediment Removal

Accumulated sediment may be removed from ephemeral drainages. In some cases, sediment would be removed by crews using hand tools such as shovels; in other cases, a backhoe operated outside the top of bank would be used to reach in and remove sediment. To the extent possible, sediment would be placed directly into a dump truck or other container for disposal at an offsite location where the material cannot enter waters of the State. If stockpiling sediment is necessary for any reason, sediment control best management practices would be implemented at all stockpiles to prevent sediment loss. Stockpiles would be removed as soon as practicable.

Sediment removal may occur at the Project Sites shown in Table 1. The Scott Creek Basin would be isolated to protect water quality. At the concrete-lined portion of the Westfield Drainage, a rubber-tired or rubber-tracked skip loader would be lowered into the channel to scoop sediment from the channel and dispose of it into a dump truck or the bucket of a front-end loader extending over the channel. Sediment removal activities would occur primarily when the site is dry; however, if water is present during sediment removal activities then the City will implement best management practice BR-10 and/or B-11 identified in Section 3.2 below.

2.4 Wet Weather Preparedness Plan

The City's activities related to Fire Hazard Mitigation may occur prior to the dry season, which starts June 1 in accordance with the RWQCB requirements. In addition, the City proposes to implement the preparedness plan when rain is forecasted to yield a 25% chance or greater of at least 0.1-inches of rain in 24-hours. As such, the City will prepare a wet weather preparedness plan that will identify site-specific best management practices that are protective of water quality at proposed work locations. The preparedness plan will be included in the Annual Work Plan and will include the identification and mapping of proposed annual work locations, associated site-specific best management practices to be implemented (e.g., removal of equipment and materials from the water bodies prior to rain, sediment and erosion controls, stockpile covering, waste management, etc.), identification of staff responsible for implementing the preparedness plan, and steps for the monitoring and maintenance of best management practices at each site. The City plans to resume activities when weather conditions are preceded by at least 48-hours of dry weather conditions.

3 AVOIDANCE AND MINIMIZATION MEASURES

3.1 Avoidance and Minimization Measures for Special Status Species

BR-1. California Red-legged Frog: To reduce the potential for impacts to California red-legged frog (CRLF), any project site containing potential CRLF habitat shall be surveyed by a qualified biologist for standing water and presence of amphibians prior to work.

BR-2. Least Bell's Vireo: Project maintenance activities within suitable least Bell's vireo (LBV) habitat along the Salinas River shall not be conducted from April 1 through August 31 unless a survey for nesting LBV is completed by a qualified biologist. If a surveys is required, suitable LBV habitat shall be surveyed according to the following guidelines, taken from the United States Fish and Wildlife Service (USFWS 2001) survey guidelines:

a. Surveys shall be conducted between dawn and 11 AM and shall not be conducted during inclement weather

b. Surveyors should not survey fore than 3 linear kilometers or more than 50 hectares of LBV habitat on any given survey day.

c. All LBV detections shall be recorded and mapped and data pertaining to LBV breeding status shall be recorded.

d. The numbers and locations of all brown-headed cowbirds detected within LBV territories shall be recorded and reported.

e. Survey results shall be provided to CDFW prior to commencing any Project-related activities in the Salinas River each year. Any and all LBV detections shall be reported to USFWS as soon as possible.

If no LBV are found after the initial survey, no further action is required. If LBV are observed within the proposed work area, te following steps shall be taken:

a. If LBV are detected but nesting is not confirmed, project-related activities in potential LBV habitat shall be monitored by a qualified biologist. If a LBV is observed within the the work area, project activities shall halt and no further work shall occur within that area.
b. Further LBV surveys shall be conducted within suitable habitat according to the timing described in the USFWS protocol.
c. If any LBV nesting activity is found, nests and nest trees shall be designated an Environmentally Sensitive Area (ESA) and protected with a minimum 500-foot ESA buffer during any Project-related activities. Project activities shall not commence within the ESA buffer until the young have fledged and are no longer reliant on the nest site or parental care, as determined by a qualified biologist and confirmed in writing by CDFW.

BR-3. Rare Reptiles. To reduce the potential for impacts to silvery legless lizard, coast horned lizard, and western pond turtle, if potential work activities that could impact rare reptiles are planned, proposed work areas which contain potential habitat for rare reptiles shall be surveyed by a qualified biologist prior to starting work. The scope of the survey shall be determined by a qualified biologist and shall be sufficient to determine presence or absence of rare reptiles in the work areas. If the focused survey results are negative, no further action shall be required. Any reptiles observed within the work area shall be allowed to escape on their own volition or shall be moved out of harm's way by a qualified biologist to a suitable area well outside the work area.

BR-4. Other Sensitive Species. Pre-work surveys and site monitoring shall be conducted annually by a qualified biologist at sites with the potential to harbor rare, threatened, or endangered species. The monitor shall inspect the site as needed prior to work to determine that no impact to special status species will occur. Special status species are not likely to be present at or occur on the site; however, if endangered or threatened animal species are encountered in the work area, CDFW will be notified. Following consultation with the CDFW and/or the U.S. Fish and Wildlife Service (USFWS), if allowed, the qualified biologist will move special status animal species found within the work area to a place that is safe from work activities and is of appropriate habitat type. Species not listed as rare, threatened, or endangered may be relocated to a safe zone with similar habitat outside the Project Sites.

3.2 General Recommendations and Best Management Practices

BR-5. Pre-work Training. Pre-work training shall be conducted by a qualified biologist annually prior to the start of project activities. Training shall include a list and display of photographs illustrating special status species that could occur onsite and procedures to follow should any such species be observed at the Project Sites. Training will be provided to all city staff and associated contractors allowed to do work in the jurisdictional water ways. The annual training is documented through the use of a sign-in sheet. All participants taking the annual training are required to sign the sheet. In some cases, City staff may conduct in-field safety tailgate meetings immediately prior to work. The tailgate meetings are useful to remind work crews of avoidance requirements, communication, safety, and prohibited activities.

BR-6. Flagging Boundaries of the Work Area. Prior to the commencement of fuel reduction vegetation management activities in the Salinas River corridor, the boundaries of proposed work areas will be flagged by the Fire Department. Pre-work surveys will be conducted by qualified biologists to identify sensitive habitats such as the low-flow channel (see Section 4.2.1), riparian vegetation associated with wetted channels, wetlands, and surface water. Sensitive habitats will be flagged with biodegradable highly visible colored flagging tape that designates protective buffer boundaries beyond which vegetation clearance work will not be conducted. Flagging shall be placed so that the contiguous boundary in clearly discernable, typically every 10 to 20 feet. Specific colors will be identified to designate sensitive habitat boundaries, non-native invasive plants to be removed, and dead or dying vegetation to be removed.

BR-7. Nesting Bird Surveys. Prior to vegetation maintenance activities occurring during the period of March 1 through August 31, surveys for nesting raptors and other avian species would be conducted within a 500-foot and 250-foot radius of project sites, respectively. If active raptor or other avian species nests are found, these nests shall be protected by buffers of 500 and 250 feet, respectively. These buffers may be reduced if there is a compelling reason to do so, such as when the Project Sites would be concealed from a nest site by topography or other features, or if the nest is of any species tolerant of human activity. CDFW will be consulted prior to any Project activities being conducted within buffer areas.

BR-8. Removal of Trees and Shrubs. If native trees or shrubs measuring 4 inches diameter at breast height (DBH) will be removed, they will be replaced at a ratio of 3:1 (replaced to removed)and a revegetation plan will be prepared and submitted to RWQCB for approval. All replacement plants will be monitored and maintained for a minimum of five years to ensure a minimum survival rate of 70 percent. On the other hand, a qualified biologist will flag and identify non-native invasive plant species that need to be removed such as Arundo and Tree of Heaven. These non-native invasive plant species will be mapped and protocol will be developed to appropriately and efficiently remove these plants. Protocol for non-native invasive plant removal will be included in the Annual Work Plan.

BR-9. Water Quality. To reduce potential impacts to water quality, all fueling and maintenance of equipment shall be done at least 50 feet from the top of any channel. No heavy equipment would be used in the drainage channel or detention basin. Only handheld equipment such as chainsaws, string trimmers, mowers, and similar equipment would be used in drainages or detention basins, except that a backhoe or excavator positioned outside the top of bank may be used to reach into the drainage or basin to remove sediment or material too heavy to be removed by hand , and a small excavator occasionally may be used for fire fuel vegetation management in the Salinas River corridor. All equipment would be stored out of the channel and over drip pans.

Equipment shall not be driven through any wetted channel. If work utilizing equipment is required on both sides of a wetted channel points of entry shall be established on both sides of the channel. Care shall be exercised if any heavy equipment needs to cross dry, high-flow channels to ensure that no sediment is pushed into the channel from turning or from moving up or down banks. Specific locations for crossing dry channels shall be identified prior to commencing work.

Tree canopy adjacent to flow channels within the Salinas River corridor will be preserved to the maximum extent possible, not only for the purposes of critical nesting habitat, but also for the purposes of water quality. As discussed in BR-6, pre-work assessments will be conducted to identify and demarcate sensitive habitat, including the low-flow channel, riparian vegetation associated with wetted channels, wetlands, and surface water. Trees in these habitats will be flagged for avoidance and will not be trimmed to encourage continued canopy cover and maintain water quality. The also City plans to avoid removing any native trees or shrubs measuring 4 inches diameter at breast height (BR-8).

BR-10. Isolate Work Area at Scott Creek Basin. At the Scott Creek Basin, the basin outlet would be isolated using a silt fence or similar sediment barrier in contact with the basin bed. The barrier would be placed just outside the limits of sediment removal and would encompass the entire sediment removal area. The bottom of the barrier would be in contact with the basin bed. A qualified biologist would be on-site during installation of the sediment barrier and would capture and relocate any aquatic animals to a location in the basin but outside the sediment removal activities. A biologist would be on-site and would monitor sediment removal activities. If any aquatic animals are found during sediment removal activities, work shall immediately cease, and the animal captured and relocated to a location in the basin but outside the sediment removal activities. Upon completion of sediment removal, water within the isolated area shall remain isolated and allowed to settle for up to 24 hours prior to removal of the barrier. All material removed from the Project Site shall be disposed of at an offsite location where it cannot enter waters of the state.

BR-11. Isolate Work Area at Concrete-Lined Portion of Westfield Drainage. If water is present in the concrete-lined segment of the Westfield Drainage during sediment removal activities, this segment would be isolated by placing sandbags or other barriers in the channel. The barriers would be placed at the upstream and downstream limits of sediment removal to encompass the entire sediment removal area. The bottom of the barrier would be in contact with the basin bed. A qualified biologist would be on-site during installation of the sediment barrier and would capture and relocate any aquatic animals to a location in the Westfield Drainage but outside the sediment removal activities. A biologist would be on-site and would monitor sediment removal activities. If any aquatic animals are found during sediment removal activities, work shall immediately cease, and the animal captured and relocated to a location in the Westfield Drainage but outside the sediment removal activities. Upon completion of sediment removal, water within the isolated area shall remain isolated and allowed to settle for 24 to 48 hours prior to removal of the barrier. All material removed from the Project Site shall be disposed of at an offsite location where it cannot enter waters of the state.

BR-12.Erosion and Sediment Control in the Salinas River corridor. Soil removal or disturbance within the Salinas River corridor is not part of project activities. Vegetation management practices employed by the City will primarily utilize grazing animals and hand crews. Ingress and egress points will be few and limited to locations where sediment will not enter channels. In the unlikely event any soil is disturbed by project activities, generally accepted erosion and sediment control measures shall be installed immediately upon completion of project activities. These may include but are not limited to use of crimped straw and/or native vegetation seeds.

BR-13. Invasive Vegetation. Invasive exotic plant species shall be removed from the project site where practicable. Species such as Vinca, cape or German ivy, castor bean, tree of heaven, or Arundo shall be bagged and disposed of at a landfill. Exotic species shall not be used in composting or left otherwise exposed in or around the project site. Only suitable native riparian and upland species shall be used for mulch at the project sites.

BR-14. Equipment Cleaning. To prevent the movement of aquatic and terrestrial invasive plant and animal species, fungi, their propagules, and other biotic agents, all equipment shall be cleaned and dried prior to entering each Project Site.

BR-15. Staging Areas. The city will identify strategic locations that will be used for temporary storage of materials, equipment, stockpiling, work crew parking, and trash bins. Staging areas will be located outside of the drainage areas and will be equipped with appropriate best management practice to prevent spills, erosion, sediment tracking, etc. Staging areas will be identified on a map and will be submitted along with the Annual Work Plan.

4 IMPACT METRICS

4.1 Parameters Measured

To track habitat impacts that result from vegetation control activities the following parameters will be measured, and the following information provided for each drainage where work occurred:

- Start date, end date, and number of days of clearance activities
- Method used for each day
- Total work area for vegetation management
- Total work area for sediment removal, if any
- Volume of sediment removed, if any
- Area of vegetation trimmed within the low-flow channel of the Salinas River (see Section 4.2 below)
- Area of tree and shrub canopy trimmed within the active channel of the Salinas River (see Section 4.2 below)
- Area of tree and shrub canopy trimmed within the Salinas River floodplain above the active channel (see Section 4.2 below)
- Number and size of trees over 4 inches dbh removed, if any
- Area of disturbance to aquatic habitats, if any
- Area of disturbance to habitat within 50 feet of water or wetted channel
- Number of animals incidentally taken, if any, by species
- Area of invasive plants removed
- Estimate of net biomass removed from active channel, if any
- Estimate of net biomass removed from the riparian area and its floodplain, if any

4.2 Definitions

4.2.1 Low-flow channel

The low-flow channel is defined as the principal trunk of a river or a stream, also known as the main-stem channel. The low-flow channel pattern may shift from year to year. For this project, we used lidar data to determine the lowest elevation channel within the braided stream. Wetland habitats are most commonly associated with the low-flow channel in the Paso Robles reach of the Salinas River. The low-flow channel meets the definition of Waters of the State.

4.2.2 Active Channel

The active channel consists of a primary (low-flow or main-stem channel that contains flowing water the most frequently) and one or more secondary channels of varying sizes. Secondary channels (also known as overflow or high-flow channels) are usually topographically higher channels than the low-flow channel. The active channel area includes vegetated islands that are exposed at normal high water stage. The active channel includes the active floodplain, which is the relatively level area that is periodically flooded, as evidenced by deposits of fine sediment, wrack lines, vertical zonation of plant communities, etc. The active floodplain does not include terraces that are geomorphically disconnected from channel-forming processes. For the Paso Robles reach of the Salinas River, we define active channel as the bankfull within its braided stream condition. This extent is higher than the ordinary high water mark defined by the U.S. Army Corps of Engineers as the active floodplain (Curtis and Lichvar 2010), and includes high-flow channels, part of the active floodplain as defined by Lichvar and McColley (2008). The active channel and active floodplain meet the definition of Waters of the State.

4.2.3 Floodplain

The floodplain, also known as the flood terrace, is a strip of relatively flat land bordering a stream channel that is inundated at times of high water. For the Paso Robles reach of the Salinas River, we mapped areas beyond the active channel/active floodplain and associated riparian edge as floodplain.

4.3 Monitoring and Documentation of Activities

4.3.1 Photo Points

Photo points have been established in areas where annual drainage maintenance has been occurring since 2015. Photo points will also be established along the Salinas River at fuel reduction vegetation maintenance locations. Photos will be taken before and after vegetation maintenance and included in the annual report (see Section 5).

4.3.2 Aerial photography

Aerial photography via drone will be implemented to measure fuel reduction vegetation maintenance activities in the Salinas River. Shrub and tree canopy vegetation impacts will be quantified by before and after aerial imagery and included in the annual report. Only impacts due to project activities will be quantified; loss of canopy due to wildfires will be excluded. Tree and shrub canopy will be classified using mapping software from drone-derived point clouds using standard classification settings. Aerial photography to assess canopy impacts may not be necessary in years when impacts are limited to grazing or treatment of grasses and/or weedy forbs (see Section 5.1 below).

4.3.3 Pre-activity Survey

Prior to the start of annual fuel reduction vegetation maintenance activities along the Salinas River, a qualified biologist will assess the understory vegetation in areas proposed for vegetation maintenance, especially in areas where the understory vegetation is dense, or located under the canopy of trees. Sample transects within proposed maintenance areas will be conducted in order to assess vegetation characteristics, such as fuel loading (as per techniques described in Sikkink et al. 2009), density, percent cover, and dominant species. Photo points will also be established (see Section 4.3.1 above).

4.3.4 Post-activity Survey

After fuel reduction vegetation maintenance is completed, if any fuel treatment activities occurred in areas under dense tree canopy such that aerial drone photography could not detect the area of shrub canopy reduction (see Section 4.3.2), a qualified biologist will go out to these areas and assess them visually and via photographs along the same transects as were sampled during pre-activity surveys. Area of shrub canopy impact in these areas will be derived by comparing pre-activity and post-activity vegetation characteristics (such as percent cover and/or density; see Section 4.3.3 above).

5 COMPENSATORY MITIGATION

The City plans to avoid impacts to tree canopy and other vegetation in sensitive habitat along the Salinas River, including the low-flow channel (see BR-6 and BR-9). However, the Salinas River is a dynamic system, and as the course of the river changes from year to year, vegetation maintenance in these areas may occasionally be necessary. Therefore we include compensatory mitigation for potential impacts to vegetation within Waters of the State (low-flow channel and active channel) in addition to vegetation within the floodplain.

5.1 Mitigation Ratios

The City shall provide the following compensatory mitigation for potential project impacts to vegetation within the low-flow channel and shrub and tree canopy within the active channel and floodplain of the Salinas River, and for removal of native trees and shrubs four inches or greater in diameter at breast height. Mitigation ratios for removal of native trees are based on LSAA Notification No. 1600-2013-0215-R4 issued to the City of Paso Robles by the CDFW.

1. The City shall mitigate for impacts due to trimmed riparian vegetation within the low-flow channel of the Salinas River through riparian habitat restoration at a 1:1 ratio. (See Section 4.2 for definition of the low-flow channel).
2. The City shall mitigate for impacts to tree and shrubs (as measured by area of canopy trimmed) within the active channel of the Salinas River through the removal of non-native vegetation (i.e., tree of heaven or giant reed) and/or the removal of trash and/or habitat restoration at a 1:1 ratio. (See Section 4.2 for definition of the active channel).
3. The City shall mitigate for impacts to tree and shrubs (as measured by area of canopy trimmed) within the floodplain of the Salinas River through the removal of non-native vegetation (i.e., tree of heaven or giant reed) and/or the removal of trash and/or habitat restoration at a 0.5:1 ratio (i.e. one half-acre of non-native vegetation or trash removal or habitat restoration to one acre of tree and shrub canopy trimmed). (See Section 4.2 for definition of the floodplain.)
4. The City shall mitigate for the removal of any native trees or shrubs 4 inches or greater in diameter at breast height by replacing those trees and shrubs in kind at a 3:1 ratio (trees planted to trees removed).

Treatment of low-growing and/or herbaceous vegetation outside the low-flow channel will not be mitigated. This includes annual grasses and weedy forbs which comprise light flashy fuels, and which are most likely to be mowed or grazed. Additionally, treatment of vegetation in upland areas above the floodplain will not be mitigated. The treatment of weedy/herbaceous vegetation and upland vegetation will not adversely affect sensitive species, beneficial uses, or water quality, and therefore do not merit mitigation.

5.2 Invasive Species Removal

Within the Salinas River corridor, invasive non-native species would be removed as compensatory mitigation. These include tree of heaven (*Ailanthus altissima*), giant reed (*Arundo donax*), and black locust (*Robinia pseudoacacia*). All giant reed material would be removed from the riparian zone and disposed of at the landfill.

5.2.1 Invasive Species Removal Success Criterion

Removed non-native trees and giant reed must show no sign of resprouting three years after removal.

5.2.2 Monitoring and Maintenance

Cut stumps of non-native trees and giant reed shall be inspected annually in the spring for signs of re-sprouting for three years after cutting. If cut stumps are resprouting, herbicide may be used. 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. Herbicides may be used in the riparian zone to control weeds, if the licensed pesticide applicator has the appropriate National Pollutant Discharge Elimination System permit from the State Water Resources Control Board (under Water Quality Order 2013-0002-DWQ) or any successor permit, and the materials are approved for use in this habitat.

5.3 Trash Removal

Large amounts of trash have accumulated in and around homeless encampments in the Salinas River riparian habitat, and this trash will be removed as compensatory mitigation. Trash will be either removed by hand or hauled out. Depending on where the trash is located, a tractor with trailer may be used to haul larger items (e.g. old appliances) from the riverbed. A 20 to 40-yard roll-off dumpster would be placed in a designated staging area outside the riparian zone; this would then be hauled offsite.

In Fiscal Years 2016 through 2018, the City spent a total of $136,611 on trash removal within the Salinas River corridor, and $50,000 is budgeted for trash removal in FY 2020. From 2016-2019 the City conducted trash removal at 17 locations within the Salinas River. Through September 2020, trash removal has been conducted at 8 locations.

5.4 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 will not need to be removed in the future.

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

5.4.1 Restoration Success Criteria

Results of annual monitoring activities will be compared to success criteria presented in Table 4. An overall goal of 70 percent survival of planted and protected trees and shrubs is proposed by the end of Year 5. Survival rate of mitigation plants is the primary performance standard for this project. Additional performance standards include weed reduction and noxious weed removal. Success rates that are below the stated minimum target for each criterion indicate the need for additional revegetation, plant protection, irrigation, or weed reduction and/or noxious weed eradication.

TABLE 4. RESTORATION SUCCESS CRITERIA

Feature	Success Criteria	Assessment Method	Success Criteria by Monitoring Year				
			Year 1	Year 2	Year 3	Year 4	Year 5
Native Tree and shrub	Percent survival	Count surviving plants at each site	70%	70%	70%	70%	70%
Native tree seedling and sapling protection in place	Percent survival	Count surviving protected trees at each site	70%	70%	70%	70%	70%
Native shrub/willow seedling and sapling protection in place	Percent survival	Count surviving protected shrubs/willows at each site	70%	70%	70%	70%	70%
Weed reduction within vicinity of plantings or protected-in-place trees or shrubs	Less than 6 inches high	Measure average height	<6 in	<6 in	<6 in	<6 in	<6 in
Noxious weed removal (Arundo & Tree of Heaven)	Remove noxious weeds from mitigation sites	Presence/ Absence	absent	absent	absent	absent	absent

5.4.2 Monitoring and Maintenance

Maintain mitigation sites and monitor monthly for the first year and quarterly for Years 2 through 5. During maintenance site visits:

1. Control weeds growing within a 3-foot radius of planted trees via hand pulling or weed whacking. If herbicide use is proposed, herbicide application may only be made by a licensed herbicide applicator using materials recommended by a licensed Pest Control Advisor. Herbicides may be used in the riparian zone to control weeds, if the licensed pesticide applicator has the appropriate National Pollutant Discharge Elimination System permit from the State Water Resources Control Board (under Water Quality Order 2013-0002-DWQ) or any successor permit, and the materials are approved for use in this habitat.
2. If trees are planted in areas to be grazed, they will be protected with browse cages.
3. In Years 1 through 3, provide irrigation to container-stock trees from April through October, and during any month from November to March with below-normal precipitation. Irrigation would be reduced during winter months depending on rainfall. Irrigation shall be adjusted annually to taper watering by Year 3, or until no supplemental irrigation is required.
4. Check irrigation system regularly for proper function. Repair any leaks, plugged emitters, or other problems. Adjust watering schedule as needed to ensure survival.
5. Identify any problems with erosion, trash, or wildlife browse.

Monitoring will be conducted quarterly during the first year of monitoring, and semiannually thereafter. The revegetation sites shall be monitored until the primary performance standard is achieved (refer to Section 5.4.1).

1. Establish photo points at each revegetation site immediately after installation is complete. Take photographs from each photo point to document revegetation success.
2. Monitor sites quarterly during Year 1 and annually during Years 2 through Year 5
3. At the end of each monitoring year, count all surviving trees and shrubs. Assess height of weeds and presence of noxious weeds. Compare results to target performance standards.

Results of maintenance and monitoring will be reported in the annual report (see Section 6.2).

6 REPORTING AND DELIVERABLES

6.1 Annual Work Plan

An annual work plan shall be submitted to RWQCB by March 15 of each calendar year. The work plan will include a description of all proposed maintenance activities, including a map with habitats to be impacted, pre-activity photographs, site assessment(s), and proposed maintenance staging, ingress/egress location(s), means and methods.

Prior to completion of the work plan, City staff will conduct a pre-project assessment of drainages in the City, including the Salinas River, to determine which maintenance methods will be used that year. The work plan will describe which methods are to be used in which locations and the reasons that methodology was selected. Pre-project assessment results will be included in the Annual Work Plan. If herbicides are necessary to control resprouting of non-native trees, the type and application methodology will be described in the Annual Work Plan. However, pre-project biological surveys, typically conducted within one to two weeks prior to project activities, would be more appropriately included in the Annual Report. Pre-project biological surveys will assist City staff identify biological baseline conditions, evaluate potential post-project impacts and associated mitigation measures.

6.2 Annual Report

An annual report will be submitted to RWQCB no later than December 31 of each year, and an annual report must be submitted even in years which no work occurred. Annual reports to RWQCB shall include the following: the locations where work was done, a summary of work conducted and by whom, pre-activity biological survey results, worker training sign-in sheet, biological surveyor qualifications, photo documentation, a summary of vegetation impacts (see Section 4.1), a description of required mitigation (see Section 5.1), mitigation monitoring results, as well as conclusions and recommendations.

7 REFERENCES

Curtis, K. E. and Lichvar, R. W. 2010. Updated datasheet for the identification of the Ordinary High Water Mark (OHWM) in the arid west region of the western United States. U. S. Army Corps of Engineers. 20 p.

Lichvar, R. W. and McColley, S. M. A field guide to for the identification of the Ordinary High Water Mark (OHWM) in the arid west region of the western United States. U. S. Army Corps of Engineers. 84 p.

[NWCG] National Wildfire Coordinating Group. 1996. Wildland Fire Suppression Tactics Reference Guide.

[NWCG] National Wildfire Coordinating Group. 2017. Interagency Prescribed Fire Planning and Implementation Procedures Guide.

Scott, J. H. and Burgan, R. E. 2005. Standard fire behavior fuel models: a comprehensive set for use with Rothermel's surface fire spread model. Gen. Tech. Rep. RMRS-GTR-153. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 72 p.

Sharrow, S. 2006. Applying Targeted Grazing to Coniferous Forest Management in Western North America. In TARGETED GRAZING: A natural approach to vegetation management and landscape enhancement, A. Peischel and D. D. Henry, Jr, eds.

Sikkink, P. G., Lutes, D. C.; Keane, R. E. 2009. Field guide for identifying fuel loading models. Gen. Tech. Rep. RMRS-GTR-225. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 33 p.

8 APPENDIX A. LIST OF APNS

Routine Drainage Maintenance APNs:

008-051-004	009-313-048	009-486-005	009-750-023	009-776-013	025-365-010
008-051-026	009-313-049	009-486-051	009-750-027	009-776-014	025-367-022
008-142-007	009-313-050	009-511-002	009-750-029	009-776-015	025-390-003
008-191-013	009-313-051	009-513-051	009-750-030	009-776-016	025-392-012
008-252-013	009-313-052	009-514-049	009-750-032	009-776-017	025-392-017
008-261-002	009-313-053	009-515-001	009-750-035	009-776-018	025-402-069
008-261-006	009-314-011	009-561-049	009-750-036	009-781-051	025-408-041
008-262-006	009-314-012	009-561-050	009-750-037	009-783-067	025-409-001
008-297-003	009-314-039	009-561-051	009-751-041	009-792-054	025-409-011
008-297-005	009-314-040	009-562-032	009-751-056	009-811-003	025-450-001
009-052-001	009-314-044	009-562-033	009-751-062	009-811-004	025-452-001
009-054-002	009-314-045	009-562-041	009-753-002	009-815-013	025-452-008
009-115-001	009-314-046	009-567-014	009-753-080	009-815-019	025-541-001
009-116-008	009-314-049	009-610-066	009-756-004	009-815-020	025-601-001
009-121-059	009-314-057	009-614-017	009-756-005	009-818-019	025-603-012
009-121-071	009-314-058	009-631-001	009-756-006	009-818-020	025-603-015
009-121-073	009-315-009	009-631-002	009-756-008	009-818-021	025-603-016
009-121-076	009-461-042	009-631-003	009-761-044	018-231-006	026-104-033
009-171-004	009-461-049	009-631-004	009-761-083	018-231-007	026-104-061
009-213-004	009-464-008	009-690-016	009-775-010	018-231-008	026-104-062
009-253-006	009-464-009	009-697-029	009-775-018	018-241-010	026-141-019
009-253-007	009-464-076	009-699-001	009-775-019	020-261-022	026-141-021
009-272-011	009-464-078	009-701-086	009-775-020	020-261-023	026-141-025
009-301-001	009-466-074	009-701-087	009-775-023	020-282-002	026-141-049
009-301-002	009-466-075	009-708-001	009-775-024	020-311-010	026-141-050
009-301-003	009-469-041	009-708-032	009-775-025	020-311-014	026-431-003
009-302-001	009-469-042	009-747-022	009-775-026	020-311-015	026-431-010
009-302-001	009-469-043	009-747-023	009-775-027	020-311-016	026-431-012
009-313-041	009-469-044	009-747-025	009-775-028	020-311-017	026-431-014
009-313-042	009-484-035	009-747-026	009-775-029	020-311-018	026-431-017
009-313-043	009-485-031	009-747-038	009-775-030	020-311-019	026-431-018
009-313-044	009-485-040	009-747-058	009-776-009	020-311-023	040-091-020
009-313-045	009-485-041	009-747-059	009-776-010	020-311-026	040-091-048
009-313-046	009-485-047	009-750-001	009-776-011	020-311-033	
009-313-047	009-485-047	009-750-003	009-776-012	025-361-011	

Salinas River Fuel Reduction APNs:

008-021-008	009-054-002	009-171-005	009-511-016	009-813-008	025-501-007
008-022-002	009-054-003	009-213-004	009-511-029	009-814-008	025-501-008
008-051-002	009-054-006	009-213-005	009-513-051	009-814-011	025-501-009
008-051-004	009-113-008	009-213-009	009-515-001	009-814-013	025-501-010
008-051-026	009-113-009	009-213-010	009-515-023	020-241-056	025-501-011
008-142-007	009-113-010	009-214-002	009-761-001	025-390-003	025-501-012
008-191-013	009-114-009	009-301-001	009-761-044	025-392-003	025-501-014
008-252-013	009-115-001	009-301-002	009-766-011	025-392-005	025-501-015
008-261-002	009-116-008	009-301-003	009-766-012	025-392-012	025-501-016
008-261-006	009-117-001	009-301-005	009-775-040	025-501-001	025-501-017
008-262-006	009-161-020	009-302-001	009-811-003	025-501-002	025-541-001
008-297-003	009-161-021	009-302-001	009-811-004	025-501-003	
008-297-005	009-161-026	009-511-001	009-813-003	025-501-004	
009-052-001	009-171-004	009-511-002	009-813-004	025-501-006	