

ARBORIST TREE ASSESSMENT REPORT

**STATE ROUTE 23
DRAINAGE RESTORATION PROJECT
VENTURA COUNTY, CALIFORNIA**

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LSA

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County of Ventura
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Cultural Heritage Board Meeting
Item 6e
Exhibit 4 – Arborist Tree Assessment Report

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ARBORIST TREE ASSESSMENT STATE ROUTE DRAINAGE RESTORATION PROJECT

INTRODUCTION

This Arborist Report documents the findings of an LSA on-site tree assessment survey of the 38 Mexican fan palms (*Washingtonia robusta*) along State Route 23 (SR-23) between Bellevue Avenue and East Guiberson Road in Ventura County (project). This Arborist Report was prepared per the request of GPA Consulting in support of the California Department of Transportation (Caltrans) review process. The results of the tree assessment will fulfill the Caltrans' requirements.

The 38 Mexican fan palms trees along Chambersburg Road (SR-23) from Guiberson Road south to Bellevue Avenue, Bardsdale, were designated as a Ventura County Landmark (No. 122) in December 1988. The approximate 100-foot-tall Mexican palm trees are the tallest visual landmark in Bardsdale and the surrounding area. There is no record of the trees' age but a descendant of the family that once owned the land recalls that the trees were there when he was in grammar school in 1905.

Table A (provided in Appendix A of this report) identifies each surveyed tree by identification number, scientific name, common name, diameter at breast height (DBH), approximate height, and condition (good, fair, or poor), including additional remarks where warranted. In addition to Table A, relevant information regarding the assessed trees is discussed below.

The project location and vicinity map are shown on Figure 1 (all figures are provided in Appendix B). Figure 2 shows the project boundary and tree locations on an aerial photograph base map at a scale of 1 inch = 75 feet. Figure 3 shows representative photographs of each tree.

STUDY AREA

The study area is the proposed drainage system restoration project on the northbound side of SR-23 between Bellevue Avenue and East Guiberson Road in Ventura County. Within the project limits, there are existing earth channels along the shoulders in both directions, to collect and convey stormwater. Based on the culvert inspection report, the Office of Maintenance has identified that the existing earthen channels have been damaged and are deteriorated due to erosion from stormwater.

SR-23 is a north-south intraregional route that originates from the city of Malibu at State Route 1 (SR-1), Pacific Coast Highway, and terminates in the city of Fillmore at State Route 126 (SR-126). The segment within the project limits is classified as a Minor Arterial. In the unincorporated agricultural community of Bardsdale, SR-23 heads east and becomes Bellevue Avenue, eventually moving north from Bellevue to become Chambersburg Road. Shortly before ending at SR-126 in the city of Fillmore, SR-23 becomes "A" Street.

This Project Initiation Report (PIR) proposes a drainage system restoration project on SR-23 between Bellevue Avenue and E Guiberson Road in Ventura County. The scope of work includes the following: regrading of the existing eroded trapezoidal earth channel and placement of rock slope protection (RSP) along the side of the roadway in the northbound (NB) direction.

METHODS

The on-site tree assessment survey was conducted on July 22, 2022, by LSA Associate Biologist Leo Simone (International Society of Arboriculture [ISA] Certified Arborist and ISA Qualified Tree Risk Assessor WE-8491A). The tree assessment data were collected by LSA using the Environmental Systems Research Institute (ESRI) ArcGIS Field Maps application with a custom arborist data collection format, as well as physical measurements taken during the field visit. The entire study area was surveyed on foot, and all 38 subject palm trees were assessed, assigned a number, and evaluated for the following attributes:

- Location (using a global positioning system [GPS] unit)
- Tree species
- Diameter at 54 inches above the lowest point where the trunk meets the soil (DBH)
- Tree height
- Condition/health (good, fair, poor)
- Other related information

DISCUSSION

The trunk locations of the 38 Mexican fan palms are represented by numbered icons on Figure 2. Appendix B provides 76 photographs of the surveyed trees. The trunks of the surveyed palms ranged from 17.5 to 22 inches DBH. The heights were not measured but estimated to be in excess of 100 feet. Table A (Appendix A) summarizes the inventory results and relevant data for the 38 surveyed palm trees.

Condition of Surveyed Trees

The condition of the 38 surveyed Mexican fan palms are as follows: 13 are in fair condition and 25 are in poor condition. The trees in poor condition have their roots exposed due to erosion of the adjacent roadside channel. The rootballs of thirteen of the palm trees (Tree Nos. 4-6, 8-12, 21-23, 26, and 27) are undercut from erosion of the adjacent roadside channel, compromising the stability of the palms. The limited soil volume is also restricting the palm roots' ability to access needed water and nutrients for healthy development.

Palm tree roots are fibrous, do not grow deeper than 36 inches, and can grow as shallow as 12 inches. The fibrous roots grow outwards in length rather than vertically in depth. Palm trees have a compact root system that lacks a taproot. Palm trees can uproot in adverse weather conditions such as strong winds and storms due to their shallow and thin roots. This can happen more easily if the roots have insufficient soil volume to support the palm.

Excessively tall palms, such as the Mexican fan palms within the survey area, have a higher likelihood of failure. This is especially true for tall palms with shallow roots and limited soil volume for a stable base to support the weight of the tree.

Potential for the Project to Affect the Health of the Palm Trees

The proposed project would regrade the existing eroded trapezoidal earth channel and place rock slope protection (RSP) along the side of the roadway in the northbound direction; the project would also replace the existing eroded trapezoidal earth channel with a concrete rectangular channel in the southbound direction. Roots of the existing palm trees in the northbound direction may need to be trimmed to accommodate the proposed drainage work.

As currently proposed, the project would further impact the stability of the affected palm trees creating a potentially hazardous condition. Root pruning these palms should be avoided. Protecting only the roadway side of the channel with RSP would potentially cause increased erosion on the opposite side of the channel, further undercutting the palm tree roots and increasing the risk of tree failure that could impact public health and safety.

Tree Protection Recommendations

The evaluated Mexican fan palms are over 100 years old. Mature trees such as the subject palms lack the resources to recover from injuries to tissue damaged by root trimming or inadvertently being struck with construction equipment. As such, any contact with the palms including the root ball should be avoided. Drainage improvements should not occur any closer than five feet from the palms including the root ball.

The palm trees' roots should be protected with RSP placed no closer than 5 feet from each of the palm's root ball with soil carefully backfilled to match the existing top of slope grade. An ISA certified arborist should be present during any construction activity occurring within the northbound channel restoration.

Cal-IPC Invasive Tree

The surveyed Mexican fan palms are classified as invasive by the California Invasive Plant Council (Cal-IPC). These invasive trees were originally introduced as ornamentals. The horticultural industry, recognizing this environmental threat, joined conservation biologists in 2001 at the national workshop "Linking Ecology and Horticulture to Prevent Plant Invasions." This workshop resulted in the Saint Louis Declaration on Invasive Plant Species, which describes voluntary codes of conduct for professionals and the gardening public.

In 2002, Cal-IPC began developing its ability to educate the California horticultural community about invasive plants. With horticultural partners, Cal-IPC developed a series of "Don't Plant a Pest" brochures offering landscaping alternatives for invasive plants that are still used as ornamentals in California. In 2004, Cal-IPC joined with Sustainable Conservation and other nongovernmental organizations, agencies, universities, and industry trade organizations to form the California Horticultural Invasives Prevention (Cal-HIP) partnership. In 2007, Cal-HIP partners established the PlantRight program, which promotes voluntary measures for avoiding invasive plants in landscaping.

Habitat loss and invasive plants are the leading cause of native biodiversity loss. Invasive plant species spread quickly and can displace native plants, prevent native plant growth, and create monocultures. Invasive plants cause biological pollution by reducing plant species diversity.

DISCLOSURE STATEMENT

I have personally inspected the property referred to in this report and have stated my findings accurately. I have no current or prospective interest in the vegetation or the property, and I have no personal interest or bias with respect to the parties involved. The analysis, opinions, and conclusions stated here are my own and are based on current scientific procedures and facts. My compensation is not contingent upon the reporting of a predetermined conclusion that favors the cause of the client or any other party or, upon the results of the assessment, the attainment of stipulated results or the occurrence of any subsequent events. My analysis, opinions, and conclusion were developed according to commonly accepted arboricultural practices.

I CERTIFY THAT THE INFORMATION IN THIS INDIGENOUS TREE REPORT AND ATTACHED EXHIBITS FULLY AND ACCURATELY REPRESENT MY WORK:

SURVEYOR:

**ISA CERTIFICATION
NUMBER:**

DATE:



WE-8491A

July 29, 2022

Leo Simone

APPENDIX A

TREE ATTRIBUTE TABLE

Table A: Tree Attributes

Tree No.	Scientific Name	Common Name	DBH (inches)	Height (feet)	Condition	Remarks
1	<i>Washingtonia robusta</i>	Mexican fan palm	17.5	100	Fair	Adjacent to roadside ditch, provide root protection
2	<i>Washingtonia robusta</i>	Mexican fan palm	19.5	100	Poor	Roots compromised by drainage ditch
3	<i>Washingtonia robusta</i>	Mexican fan palm	20	100	Poor	Exposed roots provide protection
4	<i>Washingtonia robusta</i>	Mexican fan palm	20	100	Poor	Exposed undercut roots threaten tree stability
5	<i>Washingtonia robusta</i>	Mexican fan palm	20	100	Poor	Exposed undercut roots threaten tree stability
6	<i>Washingtonia robusta</i>	Mexican fan palm	21.5	100	Poor	Exposed undercut roots threaten tree stability
7	<i>Washingtonia robusta</i>	Mexican fan palm	19.5	100	Fair	Root erosion partially protected by retaining wall
8	<i>Washingtonia robusta</i>	Mexican fan palm	22	100	Poor	Exposed undercut roots threaten tree stability
9	<i>Washingtonia robusta</i>	Mexican fan palm	22	100	Poor	Exposed undercut roots threaten tree stability
10	<i>Washingtonia robusta</i>	Mexican fan palm	20	100	Poor	Exposed undercut roots threaten tree stability
11	<i>Washingtonia robusta</i>	Mexican fan palm	22	100	Poor	Exposed undercut roots threaten tree stability
12	<i>Washingtonia robusta</i>	Mexican fan palm	19	100	Poor	Exposed undercut roots threaten tree stability
13	<i>Washingtonia robusta</i>	Mexican fan palm	21	100	Poor	Rooting compromised by drainage ditch
14	<i>Washingtonia robusta</i>	Mexican fan palm	19	100	Fair	Adjacent to roadside ditch, provide root protection
15	<i>Washingtonia robusta</i>	Mexican fan palm	19	100	Fair	Not compromised by roadside ditch erosion
16	<i>Washingtonia robusta</i>	Mexican fan palm	20	100	Poor	Roots compromised by drainage ditch
17	<i>Washingtonia robusta</i>	Mexican fan palm	22	100	Poor	Roots compromised by drainage ditch
18	<i>Washingtonia robusta</i>	Mexican fan palm	21	100	Poor	Exposed roots
19	<i>Washingtonia robusta</i>	Mexican fan palm	20	100	Fair	Not compromised by roadside ditch erosion
20	<i>Washingtonia robusta</i>	Mexican fan palm	19	100	Fair	Not compromised by roadside ditch erosion
21	<i>Washingtonia robusta</i>	Mexican fan palm	19	100	Poor	Exposed undercut roots threaten tree stability
22	<i>Washingtonia robusta</i>	Mexican fan palm	21	100	Poor	Exposed undercut roots threaten tree stability
23	<i>Washingtonia robusta</i>	Mexican fan palm	20	100	Poor	Roots compromised by drainage ditch
24	<i>Washingtonia robusta</i>	Mexican fan palm	20	100	Poor	Roots compromised by drainage ditch
25	<i>Washingtonia robusta</i>	Mexican fan palm	20	100	Poor	Roots exposed
26	<i>Washingtonia robusta</i>	Mexican fan palm	20.5	100	Poor	Exposed undercut roots threaten tree stability
27	<i>Washingtonia robusta</i>	Mexican fan palm	21	100	Poor	Exposed undercut roots threaten tree stability
28	<i>Washingtonia robusta</i>	Mexican fan palm	21	100	Poor	Exposed roots provide protection
29	<i>Washingtonia robusta</i>	Mexican fan palm	20	100	Poor	Exposed roots provide protection
30	<i>Washingtonia robusta</i>	Mexican fan palm	21	100	Poor	Exposed roots provide protection
31	<i>Washingtonia robusta</i>	Mexican fan palm	20.5	100	Fair	Adjacent to roadside ditch, provide root protection
32	<i>Washingtonia robusta</i>	Mexican fan palm	21	100	Fair	Adjacent to roadside ditch, provide root protection
33	<i>Washingtonia robusta</i>	Mexican fan palm	20	100	Poor	Roots compromised by drainage ditch
34	<i>Washingtonia robusta</i>	Mexican fan palm	21	100	Fair	Adjacent to roadside ditch, provide root protection

Table A: Tree Attributes

Tree No.	Scientific Name	Common Name	DBH (inches)	Height (feet)	Condition	Remarks
35	<i>Washingtonia robusta</i>	Mexican fan palm	20	100	Fair	Adjacent to roadside ditch, provide root protection
36	<i>Washingtonia robusta</i>	Mexican fan palm	21	100	Fair	Adjacent to roadside ditch, provide root protection
37	<i>Washingtonia robusta</i>	Mexican fan palm	21	100	Fair	Adjacent to roadside ditch, provide root protection
38	<i>Washingtonia robusta</i>	Mexican fan palm	20	100	Fair	Adjacent to roadside ditch, provide root protection

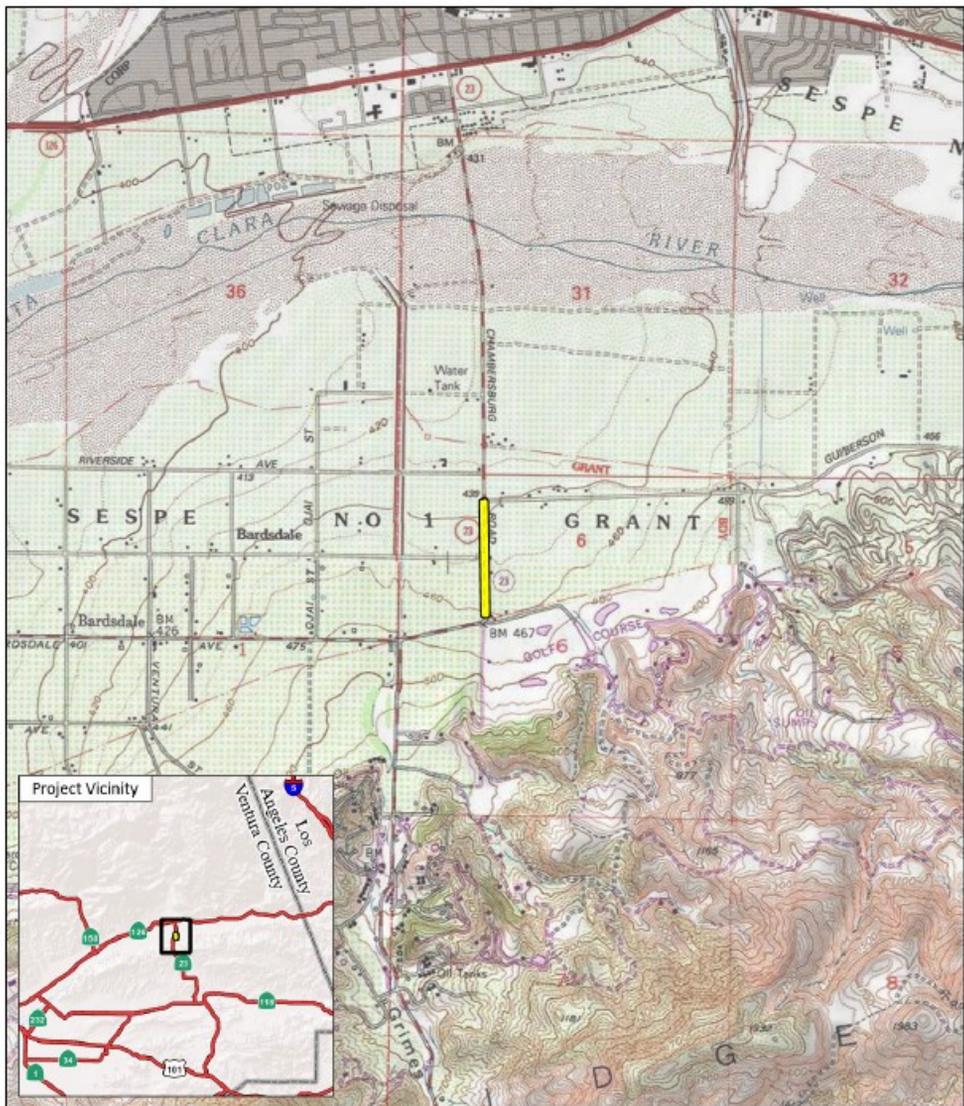
APPENDIX B

FIGURES

Figure 1: Project Location

Figure 2: Arborist Survey Results

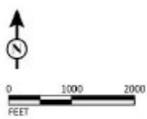
Figure 3: Representative Palm Tree Photographs



LSA

 Survey Area

FIGURE 1



SR-23 Drainage System Restoration Project
Arborist Report
Project Location

SOURCE: USGS 7.5' Quads - Fillmore (1994) and Moorpark (1974), CA
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FIGURE 2

LSA

- Survey Area
- Tree Location



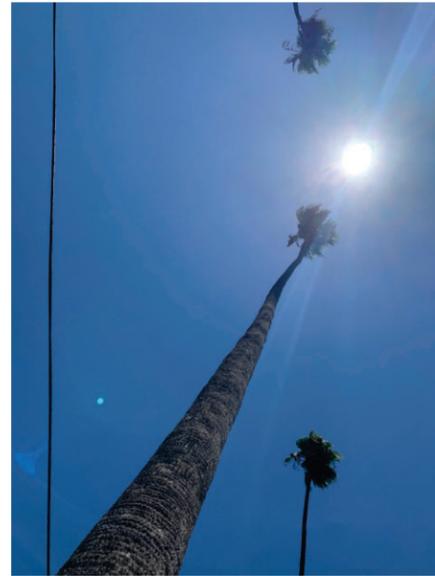
SOURCE: Google Imagery (February 28, 2021)

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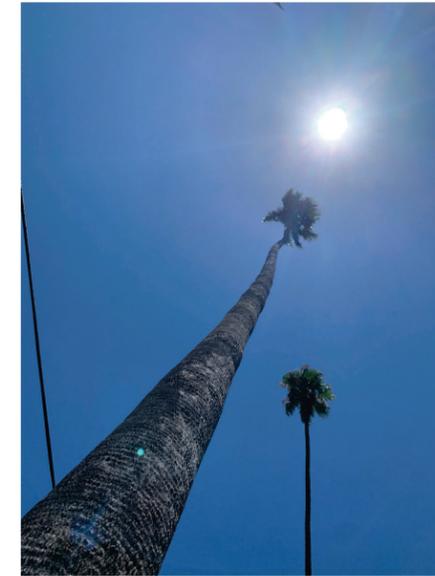
SR-23 Drainage System Restoration Project
 Arborist Report
 Arborist Survey Results



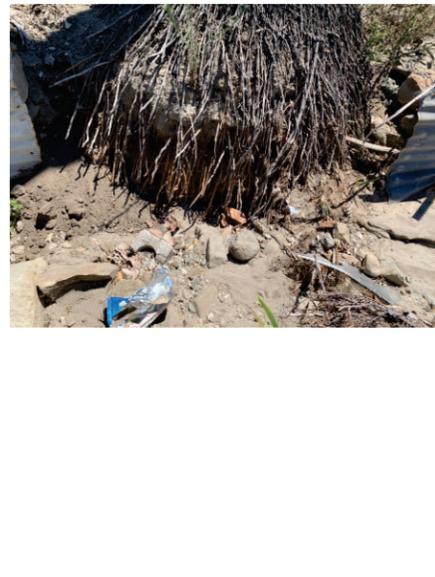
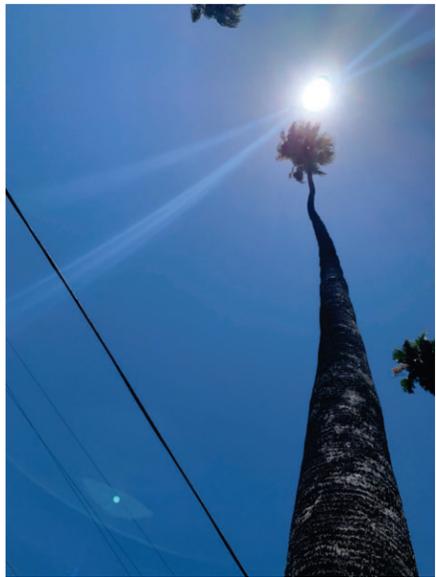
Tree 1 – Mexican fan palm in fair condition, adjacent to roadside ditch, provide root protection.



Tree 2 – Mexican fan palm in poor condition, palm tree stability compromised by roadside ditch erosion.



Tree 3 – Mexican fan palm in poor condition, palm tree stability compromised with exposed root ball by roadside ditch erosion.



Tree 4 – Mexican fan palm in poor condition, palm tree stability extremely compromised with undercutting of exposed root ball by roadside ditch erosion.



Tree 5 – Mexican fan palm in poor condition, palm tree stability extremely compromised with undercutting of exposed root ball by roadside ditch erosion.



Tree 6 – Mexican fan palm in poor condition, palm tree stability extremely compromised with undercutting of exposed root ball by roadside ditch erosion.



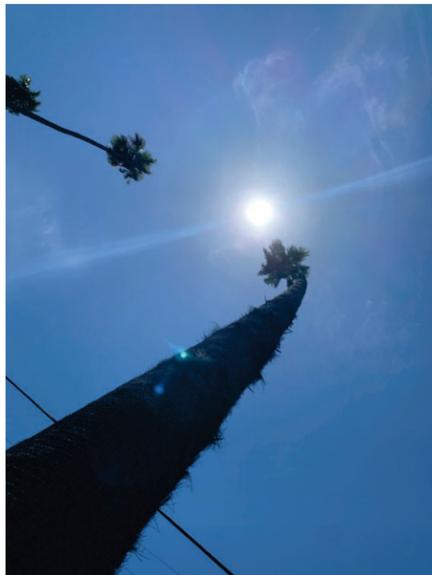
Tree 7 – Mexican fan palm in fair condition, palm tree stability may be compromised by roadside ditch erosion.



Tree 8 – Mexican fan palm in poor condition, palm tree stability extremely compromised with undercutting of exposed root ball by roadside ditch erosion.



Tree 9 – Mexican fan palm in poor condition, palm tree stability extremely compromised with undercutting of exposed root ball by roadside ditch erosion.



Tree 10 – Mexican fan palm in poor condition, palm tree stability extremely compromised with undercutting of exposed root ball by roadside ditch erosion.



Tree 11 – Mexican fan palm in poor condition, palm tree stability extremely compromised with undercutting of exposed root ball by roadside ditch erosion.



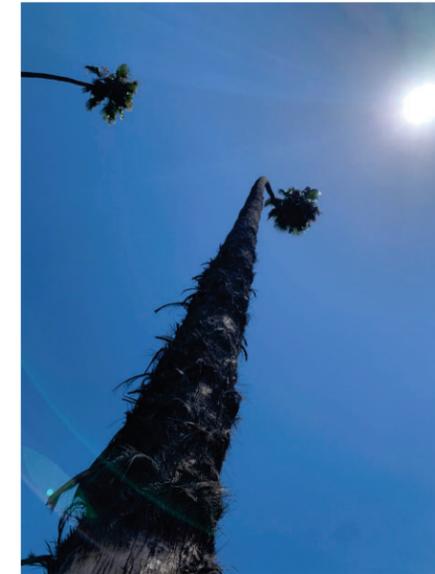
Tree 12 – Mexican fan palm in poor condition, palm tree stability extremely compromised with undercutting of exposed root ball by roadside ditch erosion.



Tree 13 – Mexican fan palm in poor condition, palm tree stability compromised by roadside ditch erosion.



Tree 14 – Mexican fan palm in fair condition, adjacent to roadside ditch, provide root protection.



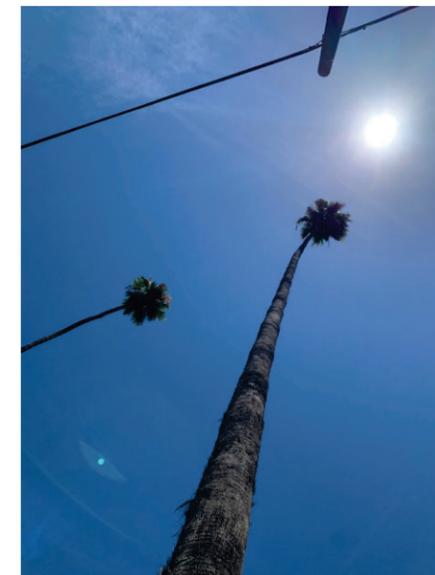
Tree 15 – Mexican fan palm in fair condition, not compromised by roadside ditch erosion.



Tree 16 – Mexican fan palm in poor condition, palm tree stability compromised by roadside ditch erosion.



Tree 17 – Mexican fan palm in poor condition, palm tree stability compromised by roadside ditch erosion.



Tree 18 – Mexican fan palm in poor condition, palm tree stability compromised with exposed root ball by roadside ditch erosion.





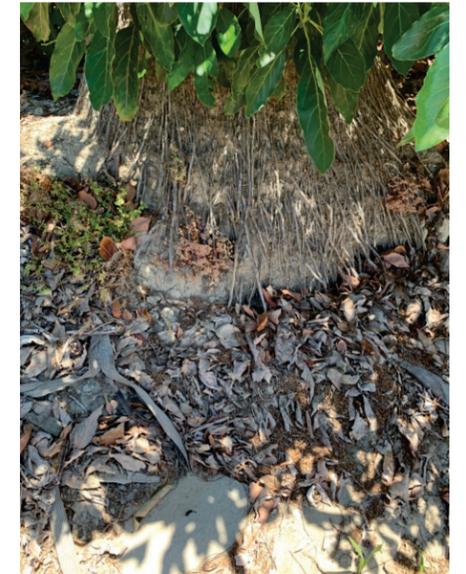
Tree 19 – Mexican fan palm in fair condition, not compromised by roadside ditch erosion.



Tree 20 – Mexican fan palm in fair condition, not compromised by roadside ditch erosion.



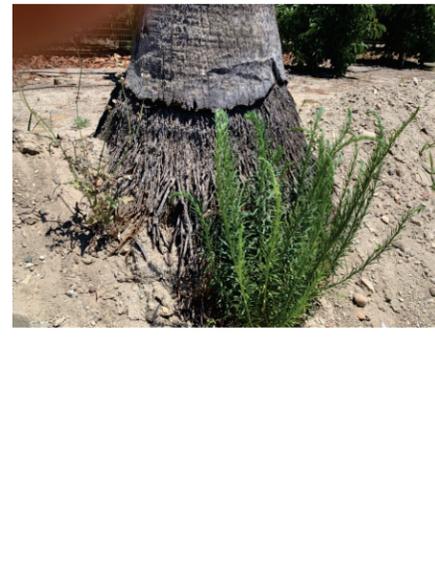
Tree 21 – Mexican fan palm in poor condition, palm tree stability compromised with exposed root ball by roadside ditch erosion.



Tree 22 – Mexican fan palm in poor condition, palm tree stability extremely compromised with undercutting of exposed root ball by roadside ditch erosion.



Tree 23 – Mexican fan palm in poor condition, palm tree stability compromised with exposed root ball by roadside ditch erosion.



Tree 24 – Mexican fan palm in poor condition, palm tree stability compromised by roadside ditch erosion.





Tree 25 – Mexican fan palm in poor condition, palm tree stability compromised with exposed root ball by roadside ditch erosion.



Tree 26 – Mexican fan palm in poor condition, palm tree stability extremely compromised with undercutting of exposed root ball by roadside ditch erosion.



Tree 27 – Mexican fan palm in poor condition, palm tree stability extremely compromised with undercutting of exposed root ball by roadside ditch erosion.



Tree 28 – Mexican fan palm in poor condition, palm tree stability compromised with exposed root ball by roadside ditch erosion.



Tree 29 – Mexican fan palm in poor condition, palm tree stability compromised with exposed root ball by roadside ditch erosion.



Tree 30 – Mexican fan palm in poor condition, palm tree stability compromised with exposed root ball by roadside ditch erosion.



Tree 31 – Mexican fan palm in fair condition, palm tree stability compromised by roadside ditch erosion.



Tree 32 – Mexican fan palm in fair condition, palm tree stability compromised by roadside ditch erosion.



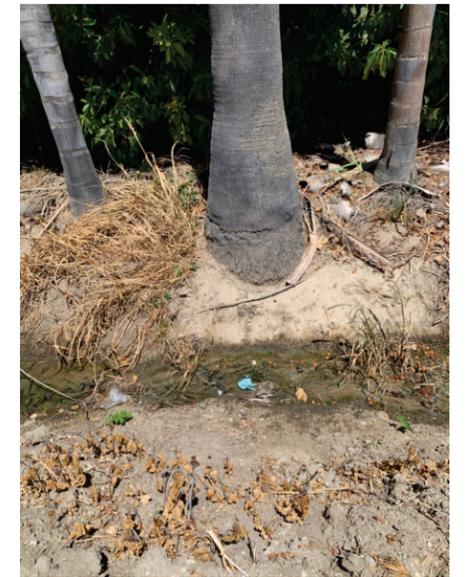
Tree 33 – Mexican fan palm in poor condition, palm tree stability compromised by roadside ditch erosion.



Tree 34 – Mexican fan palm in fair condition, palm tree stability compromised by roadside ditch erosion.



Tree 35 – Mexican fan palm in fair condition, palm tree stability compromised by roadside ditch erosion.



Tree 36 – Mexican fan palm in fair condition, palm tree stability compromised by roadside ditch erosion.



Tree 37 – Mexican fan palm in fair condition, palm tree stability compromised by roadside ditch erosion.



Tree 38 – Mexican fan palm in fair condition, palm tree stability compromised by roadside ditch erosion.