BonTerra PSOMAS

Balancing the Natural and Built Environment

August 6, 2015

Jemellee Cruz, P.E.
Los Angeles County Flood Control District
Flood Maintenance Division
900 South Fremont Avenue, 2nd Floor, Annex Building
Alhambra, California 91803

VIA EMAIL
jcruz@dpw.lacounty.gov

Subject: Field Survey of Vegetation along Soft Bottom Channel Reach 114, Los Angeles County, California

Dear Ms. Cruz:

This Letter Report presents the results of surveys for trees, shrubs, and woody vegetation along Soft Bottom Channel Reach 114 in Los Angeles County, California. Reach 114 consists of a soft-bottom/riprap-sided levee portion of the Los Angeles River in the City of Long Beach. Exhibits 1 and 2 provide the location of this Reach. The side levees are flood-control structures that were constructed by the U.S. Army Corps of Engineers (USACE), while the Los Angeles County Department of Public Works (LACDPW) is charged with levee maintenance.

The purpose of these surveys is to identify native trees and shrubs within the jurisdictional boundaries of the California Department of Fish and Wildlife (CDFW) to comply with the existing Streambed Alteration Agreement (1600-1999-0076-R5 Amendment) and Section 401 Water Quality Certification (File No. 15-038). In addition, woody vegetation with roots that are ½ inch in diameter or greater were documented at the request of CDFW Environmental Scientist Matt Chirdon to determine if the proposed project is in compliance with the California Environmental Quality Act (CEQA) and to identify vegetation that the LACDPW may need to remove for levee maintenance. The CDFW jurisdictional boundaries include the bottom of the river and the river banks up to the top to the side levee structure. The USACE boundaries consist of the CDFW jurisdictional area but also extend to the landward portion of the side levees plus an additional 15 feet from the toe of the landward slope. The USACE areas for this report exceed the boundaries for "waters of the U.S." in order to identify vegetation growing on or immediately adjacent to the levee structure that has the potential to compromise the stability of the levee structure.

SURVEY METHODS

BonTerra Psomas Certified Arborist Trevor Bristle (International Society of Arboriculture [ISA] Certificate Number WE-10233A) and Biologists Nathan Moffett, Katie Gallagher, and Lindsay Messett conducted an inventory of trees, shrubs, and woody vegetation at Reach 114 on June 30, July 1, and July 2, 2015.

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California Department of Fish and Wildlife Jurisdictional Areas

All tree and shrub species with a two-inch or greater diameter at breast height (dbh) were documented within CDFW jurisdictional areas, as noted above. Tree and shrub species were identified in the field or collected for subsequent identification either using the keys in Baldwin et al. (2012) for native plant species or using other available resources for non-native ornamental species (Brenzel 2007; Ritter 2011). Taxonomy follows Baldwin et al. (2012) for native trees, but otherwise follows miscellaneous authorities for non-native ornamental vegetation.

The following data were collected for each tree and shrub species within CDFW jurisdictional areas during the survey: dbh, height, canopy diameter, and qualitative ratings on aesthetics and overall health. Trees and shrubs were not tagged in the field. Collected data are included in Attachment A.

Mapping

Each tree and shrub that was surveyed was mapped on a 100-scale (1 inch = 100 feet) aerial photograph in the field.

Diameter

Using a diameter tape, measurements were taken at four and one-half feet above mean natural grade; multiple trunks were measured separately. The diameter of the largest two trunks was combined to determine the total diameter of each tree, and the total number of trunks was recorded. The diameter was estimated for trees that were not accessible (e.g., surrounded by a fence or located on a steep slope).

Height and Canopy

The height of each tree and shrub was estimated from mean natural grade to the highest branch. Also, the diameter of each tree's and shrub's canopy was estimated at its widest point.

Aesthetics

Each tree and shrub assessed was inspected and compared to an archetype tree or shrub (considered excellent on all points mentioned below) of the same species. Tree and shrub aesthetics were evaluated with respect to overall form and symmetry, crown balance, branching pattern, and broken branches.

The trees were rated on a scale of 1 to 5, as follows:

1: Very Poor

2: Poor

3: Fair

4: Good

5: Excellent

Overall Health

The health of each tree and shrub was assessed based on visual evidence of vigor, such as the amount of foliage; leaf color and size; presence of branch or twig dieback; severity of insect infestation; the presence of disease; heart rot; fire damage; mechanical damage; amount of new growth; appearance of bark; and rate of callous development over wounds. The structural integrity of trees and shrubs was also evaluated

with respect to branch attachment, branch placement, root health, and stability. In addition, the health assessment considered such elements as the presence of decay, weak branch attachments, and the presence of exposed roots due to soil erosion. The trees and shrubs were rated on the 1 to 5 scale, noted above.

U.S. Army Corps of Engineers Jurisdictional Areas

All woody vegetation with roots that are ½ inch in diameter or greater were documented within USACE jurisdiction, as described above. Woody vegetation species within both CDFW and USACE jurisdiction were identified in the field or collected for subsequent identification either using the keys in Baldwin et al. (2012) for native plant species or using other available resources for non-native ornamental species (Brenzel 2007; Ritter 2011). Taxonomy follows Baldwin et al. (2012) for native trees, but otherwise follows miscellaneous authorities for non-native ornamental vegetation.

The following data were collected for woody vegetation species within CDFW and USACE overlapping jurisdiction: dbh, height, canopy diameter, and qualitative ratings on aesthetics and overall health. Collected data are included in Attachment A. Woody vegetation inside of USACE jurisdiction and outside CDFW jurisdiction with roots ½ inch in diameter or greater were mapped on an aerial photograph (Exhibits 3a–3e).

RESULTS

California Department of Fish and Wildlife Jurisdictional Areas

All trees and shrubs that are subject to regulation by the CDFW were documented within Reach 114. This included only one tree, a Southern California black walnut (*Juglans californica*), with two trunks that totaled ten inches in trunk diameter. Additionally, four scattered mule fat (*Baccharis salicifolia*) shrubs were also encountered during the survey. Because these shrubs are not clustered together, they were not recorded as a separate vegetation type that may have been subject to CDFW regulation.

U.S. Army Corps of Engineers Jurisdictional Areas

To comply with USACE regulations, described above, all woody vegetation that is expected to have root diameters of at least ½ inch were mapped and recorded. Polygons of such woody vegetation were mapped on the side levees to assist with field crew identification. In addition to the single Southern California black walnut tree and scattered mule fat plants that are described above on the channel side of the levee, the following non-native vegetation was also observed: 2 tree of heaven (*Ailanthus altissima*), 1 blue gum (*Eucalyptus globulus*), 11 evergreen ash (*Fraxinus uhdei*), and 2 tree tobacco (*Nicotiana glauca*). Woody vegetation in this area is generally scattered.

On the landward side of the levee, outside CDFW jurisdiction and inside USACE jurisdiction, vegetation polygons shown on Exhibits 3a through 3e consist of species including: blue gum, red ironbark (*Eucalyptus sideroxylon*), western sycamore (*Platanus racemosa*), arroyo willow (*Salix lasiolepis*), and Aleppo pine (*Pinus halepensis*). Various other ornamental shrubs are present in these areas. The vast majority of this woody vegetation appear to be planted windrows, which are located mainly at the toe of the landward slope within USACE jurisdiction.

Representative site photographs can be viewed in Exhibits 4a and 4b.

BonTerra Psomas appreciates the opportunity to assist on this project. If you have any comments or questions, please call Marc Blain or Trevor Bristle at (626) 351-2000.

Sincerely,
BonTerra Psomas

Marc T. Blain
Biological Resources Manager

Trevor Bristle
Certified Arborist

Attachments: Exhibit 1 – Regional Location
Exhibit 2 – Local Vicinity
Exhibit 3 – Tree Inventory Results
Exhibit 4 – Site Photographs
Attachment A – Field Data

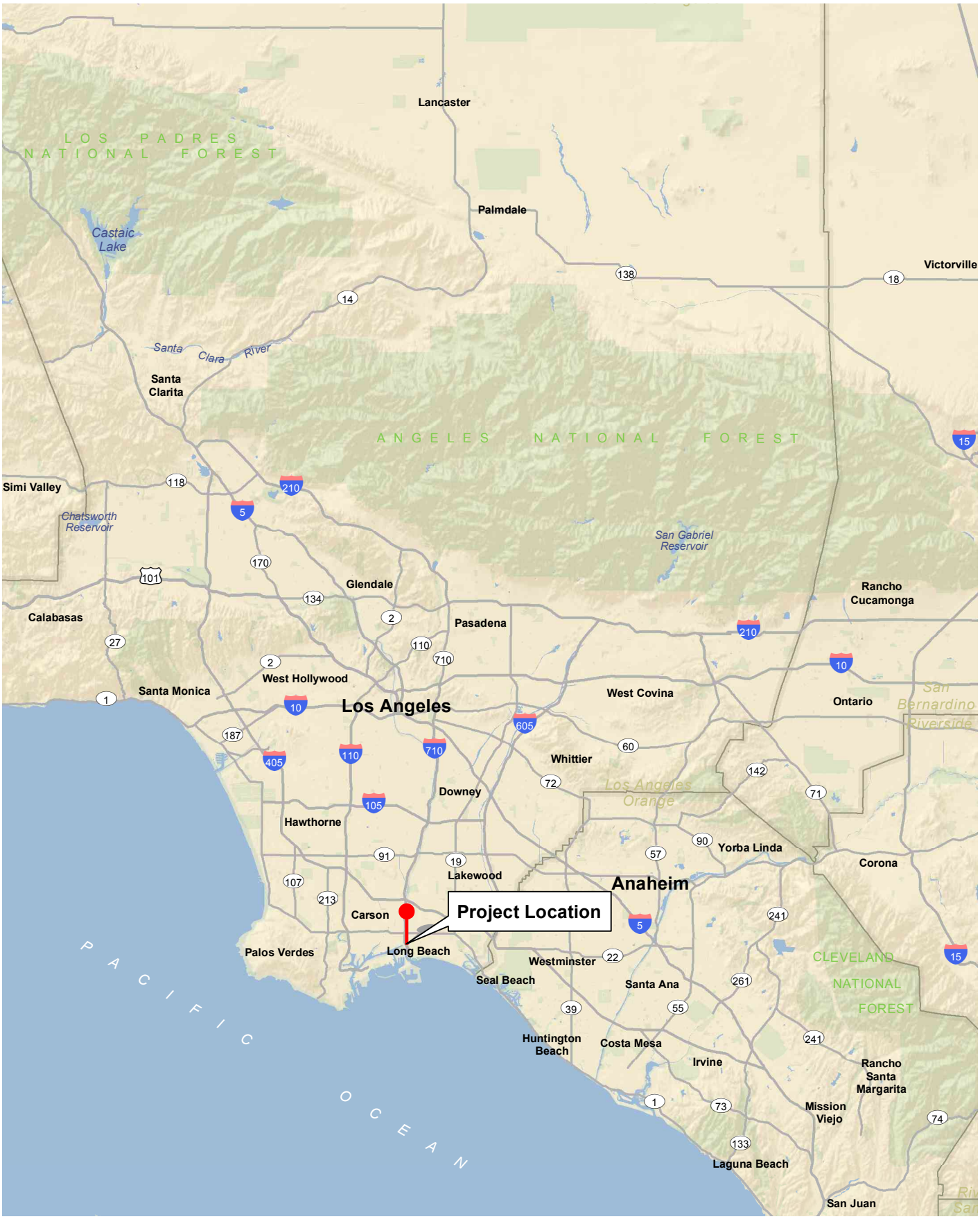
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REFERENCES

Baldwin, B.G., et al. (Eds.). 2012. *The Jepson Manual: Vascular Plants of California* (Second ed.). Berkeley, CA: University of California Press.

Brenzel, K.N. (Ed.), 2007. *Sunset Western Garden Book* (Eighth ed.). Menlo Park, CA: Sunset Publishing Corporation.

Ritter, M. 2011. *A Californian's Guide to the Trees Among Us*. Berkeley, CA. Heyday Books.



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Regional Location

Exhibit 1

Woody Vegetation for Reach 114

N W E S

10 5 0 10 Miles

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Local Vicinity

Exhibit 2

Woody Vegetation for Reach 114

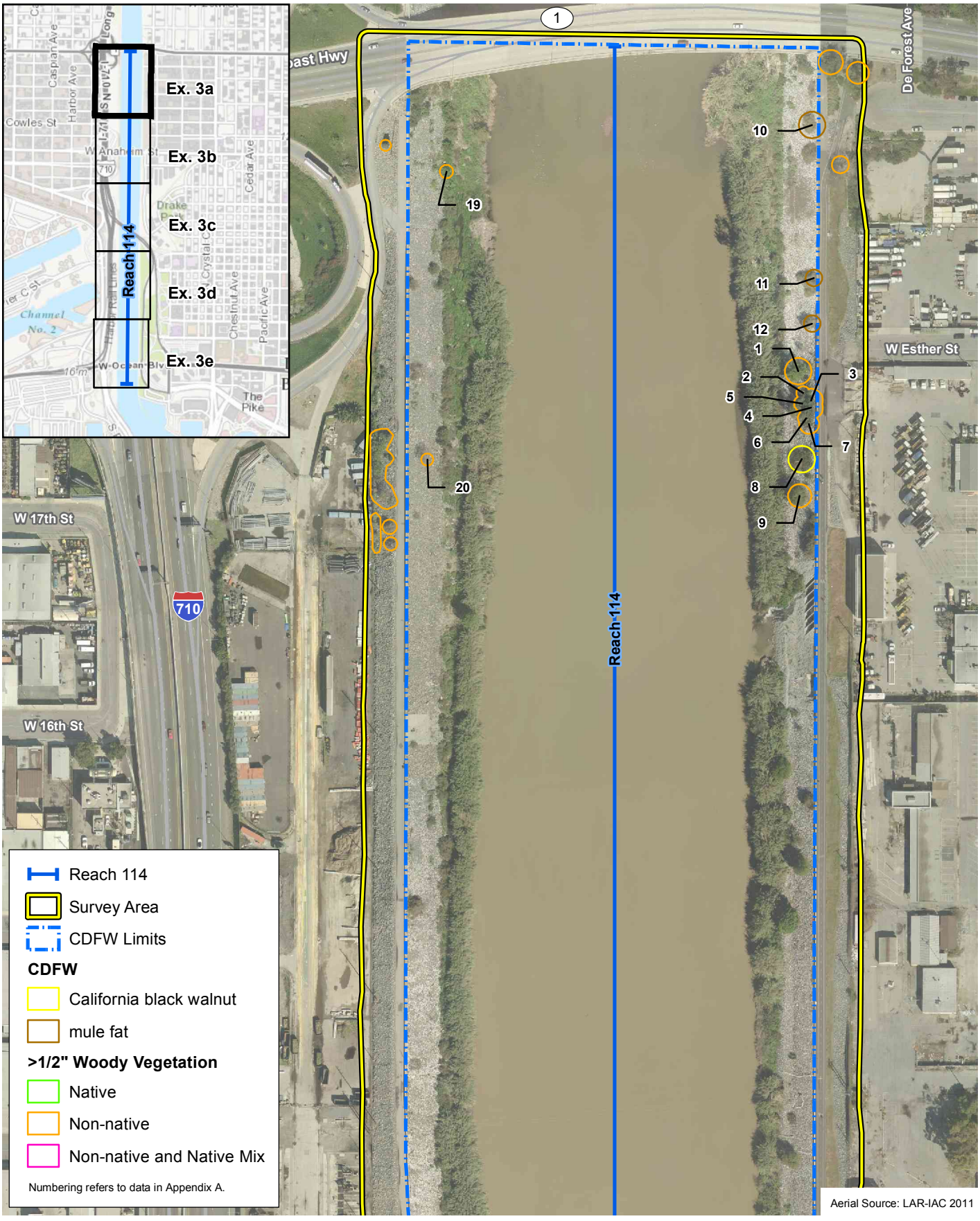
N W E S

2,000 1,000 0 2,000

Feet

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Reach 114 – Woody Vegetation Results

Exhibit 3a

Woody Vegetation for Reach 114

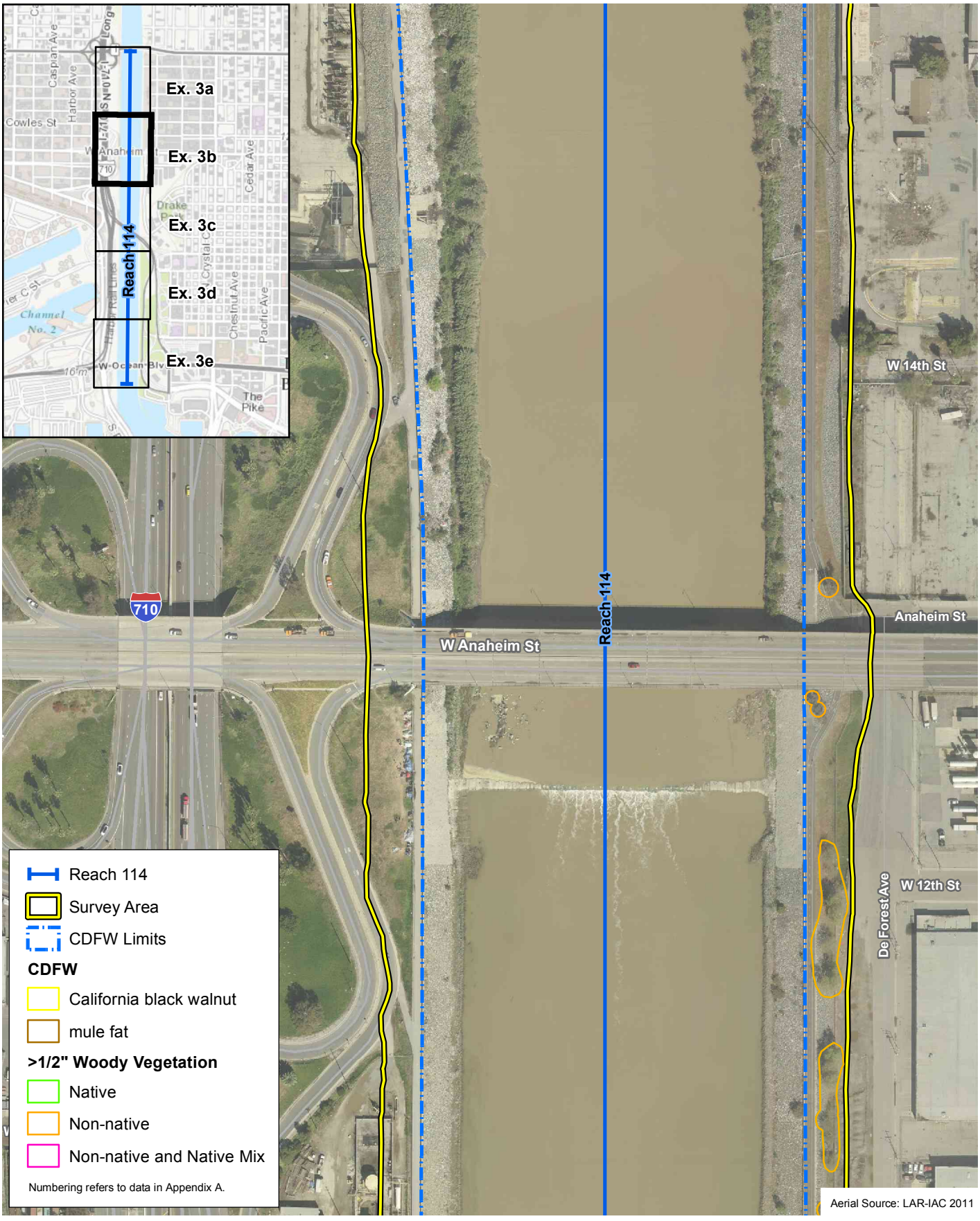
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Feet

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Reach 114 – Woody Vegetation Results

Exhibit 3b

Woody Vegetation for Reach 114

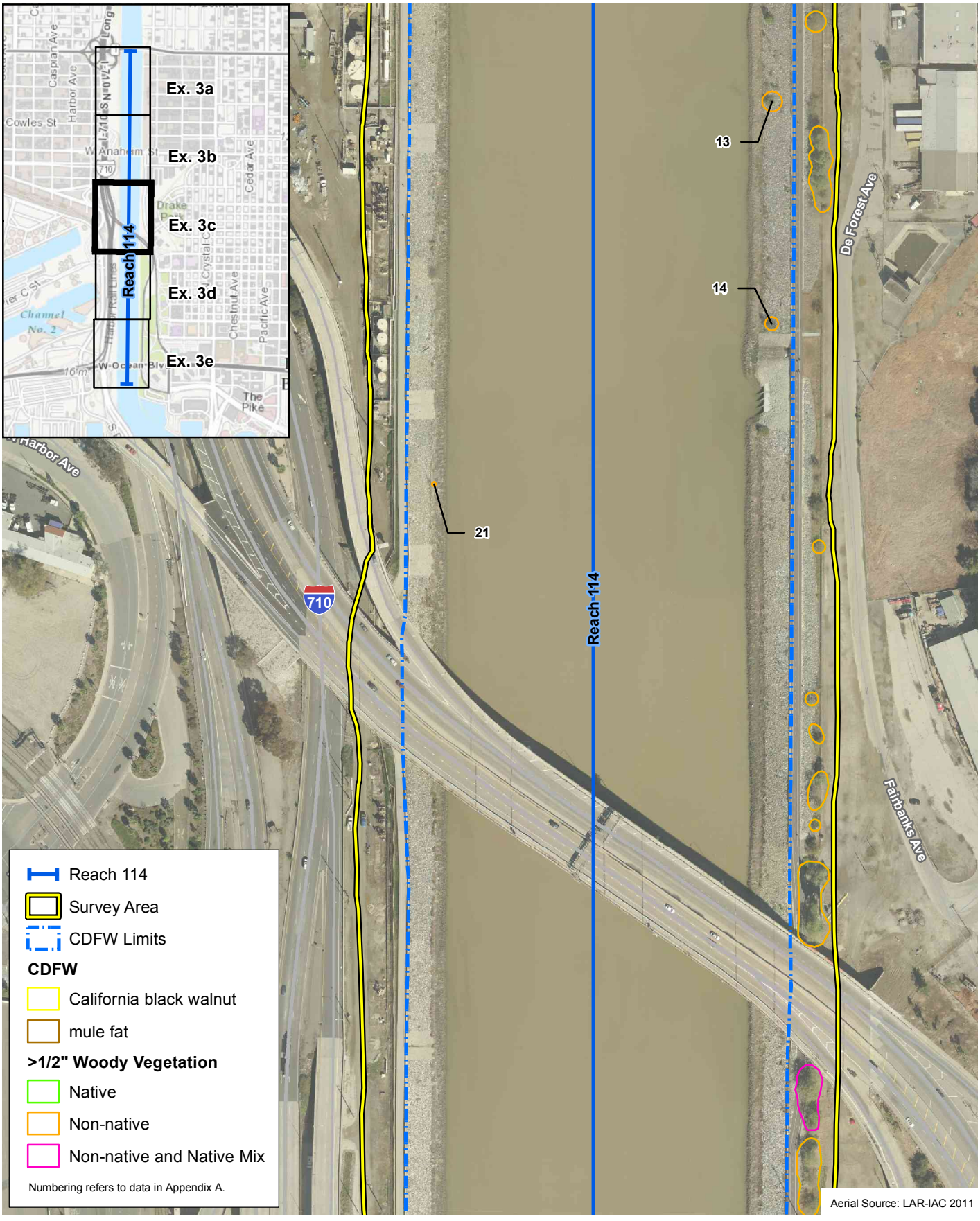
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Feet

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Reach 114 – Woody Vegetation Results

Exhibit 3c

Woody Vegetation for Reach 114

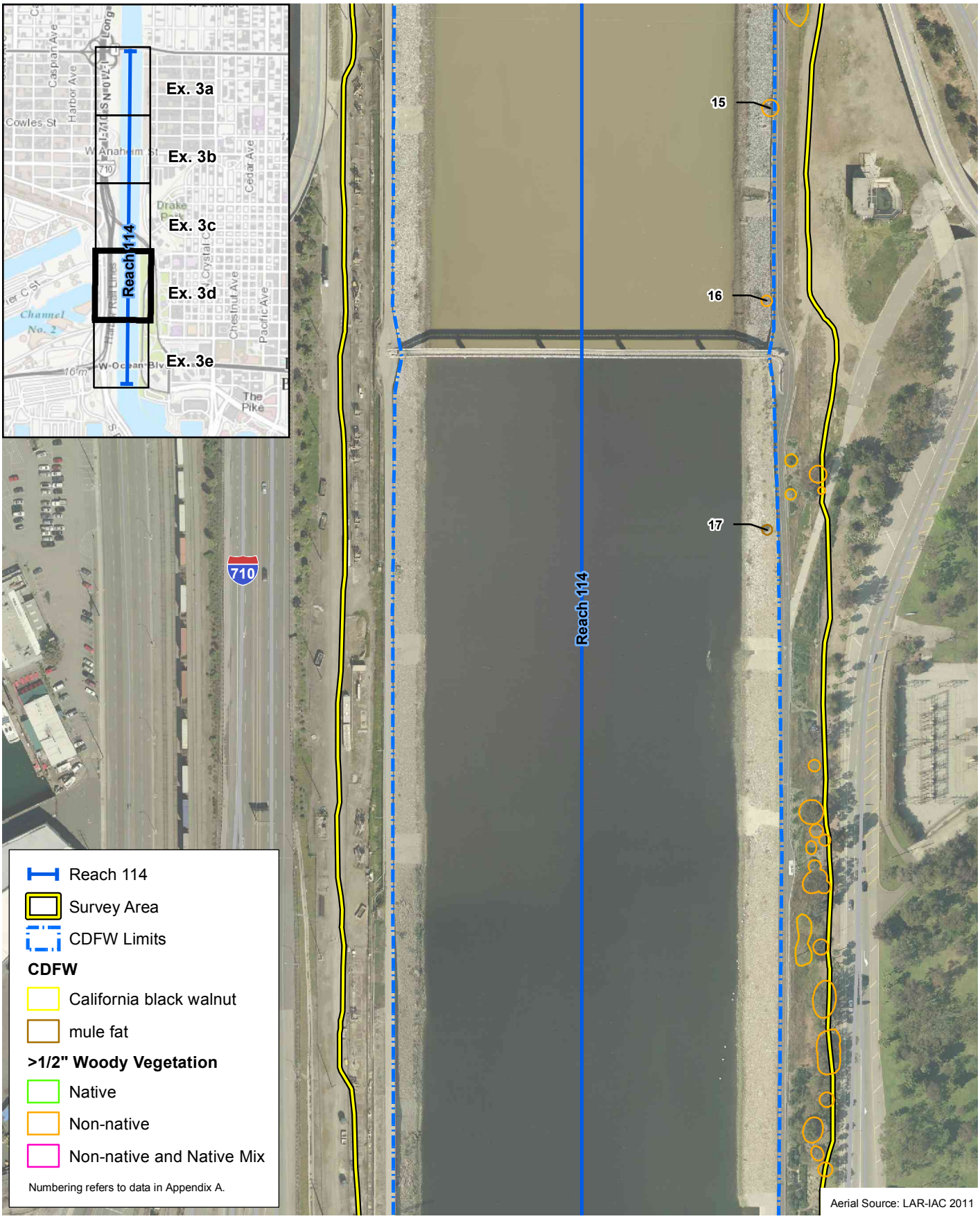
N W E S

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Feet

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Reach 114 – Woody Vegetation Results

Exhibit 3d

Woody Vegetation for Reach 114

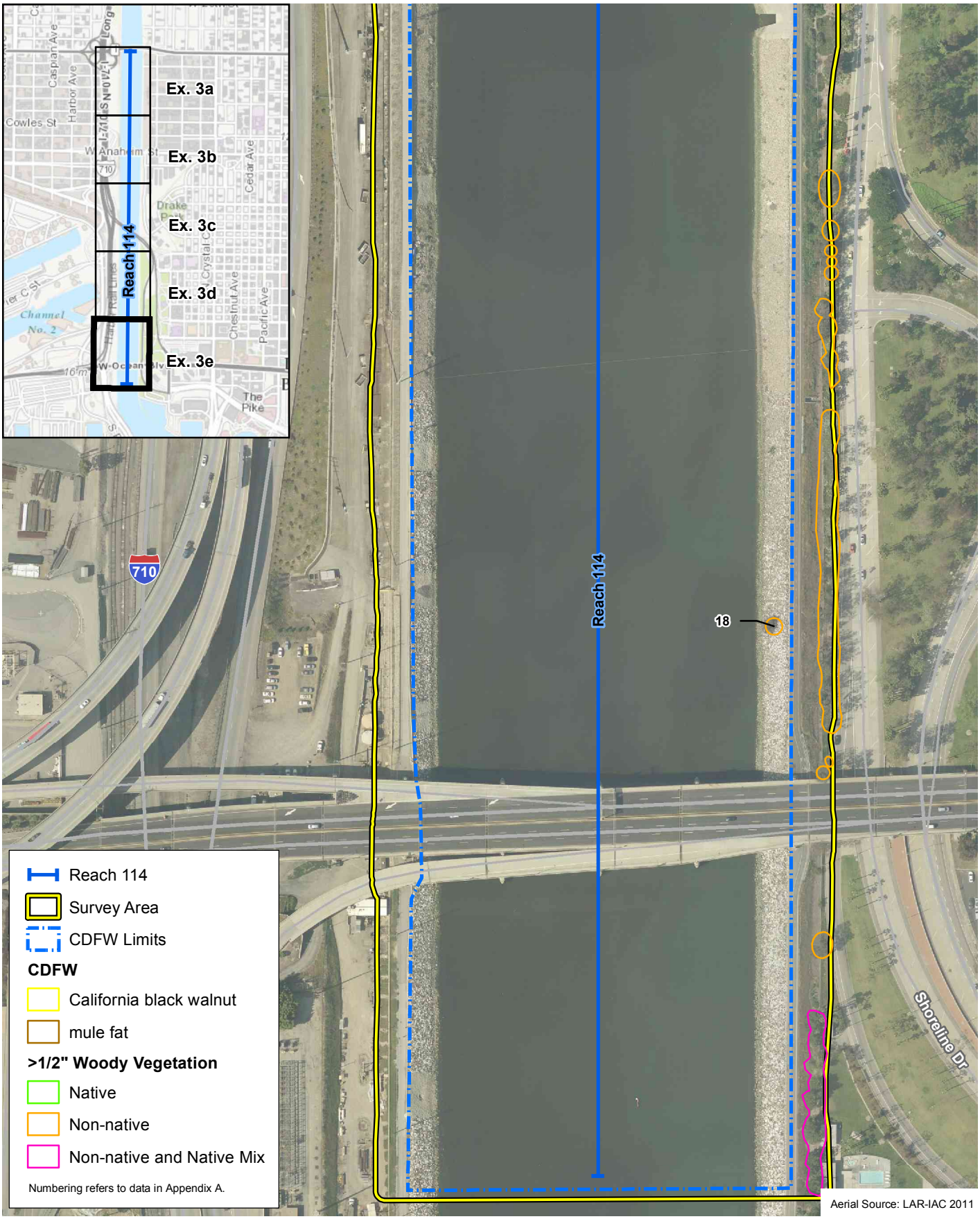
N W E S

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Feet

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Reach 114 – Woody Vegetation Results

Exhibit 3e

Woody Vegetation for Reach 114

N W E S

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Feet

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June 30, 2015: View upstream showing mule fat (*Baccharis salicifolia)* in Reach 114.



June 30, 2015: View upstream showing evergreen ash (*Fraxinus uhdei)* in Reach 114.

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Site Photographs

Exhibit 4a

Woody Vegetation for Reach 114

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July 2, 2015: View upstream from the west bank of Reach 114, North of Anaheim Bridge.



July 2, 2015: View downstream from the west bank of Reach 114, North of Anaheim Bridge.

Site Photographs

Exhibit 4b

Woody Vegetation for Reach 114

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ATTACHMENT A

FIELD DATA

Tree #	Scientific Name	Common Name	# Main Trunks	dbh (in)		Total dbh (in)	Height (ft)	Canopy Diameter (ft)	Health Rating	Aesthetic Rating	CDFW Regulated (Y/N)	Notes
				1st Trunk	2nd Trunk							
1	*Fraxinus uhdei*	evergreen ash	6	6.5	6.0	12.5	35	40	3	3	Y	
2	*Fraxinus uhdei*	evergreen ash	2	2.0	2.0	4.0	22	20	3	3	Y	
3	*Fraxinus uhdei*	evergreen ash	4	6.5	6.5	13.0	40	35	3	3	Y	
4	*Fraxinus uhdei*	evergreen ash	5	6.5	6.0	12.5	40	35	3	2	Y	
5	*Fraxinus uhdei*	evergreen ash	2	7.0	6.0	13.0	25	25	3	2	Y	1 trunk leaning northeast
6	*Fraxinus uhdei*	evergreen ash	1	7.0	x	7.0	25	25	2	2	Y	1 trunk leaning south-southeast
7	*Fraxinus uhdei*	evergreen ash	1	9.0	x	9.0	30	30	3	3	Y	homeless encampment
8	*Juglans californica*	Southern California black walnut	2	5.0	5.0	10.0	40	40	2	2	Y	
9	*Fraxinus uhdei*	evergreen ash	3	8.0	7.0	15.0	35	35	4	3	Y	
10	*Baccharis salicifolia*	mule fat	4	2.0	2.0	4.0	40	40	3	3	Y	
11	*Baccharis salicifolia*	mule fat	2	2.0	2.0	4.0	25	25	3	3	Y	
12	*Baccharis salicifolia*	mule fat	2	2.0	2.0	4.0	25	25	2	1	Y	
13	*Fraxinus uhdei*	evergreen ash	1	9.5	x	9.5	30	30	3	3	Y	
14	*Fraxinus uhdei*	evergreen ash	1	6.0	x	6.0	20	20	2	2	Y	
15	*Nicotiana glauca*	tree tobacco	2	2.5	2.0	4.5	25	25	2	2	N	
16	*Nicotiana glauca*	tree tobacco	1	3.5	x	3.5	16	16	2	2	N	
17	*Baccharis salicifolia*	mule fat	1	2.0	x	2.0	15	15	3	3	Y	
18	*Eucalyptus globulus*	blue gum	1	7.0	x	7.0	25	25	3	2	Y	homeless encampment
19	*Ailanthus altissima*	tree of heaven	3	6.5	6.0	12.5	20	20	3	3	Y	
20	*Ailanthus altissima*	tree of heaven	3	7.0	5.0	12.0	18	18	2	2	Y	
21	*Fraxinus uhdei*	evergreen ash	1	2.0	x	2.0	6	6	3	3	Y	
Aesthetics/Health Rating: 1=Very Poor, 2=Poor, 3=Fair, 4=Good, and 5=Excellent												