BonTerra PSOMAS

Balancing the Natural and Built Environment

May 28, 2014

Jemellee Cruz, P.E.
Flood Maintenance Division
Department of Public Works
County of Los Angeles
900 South Fremont Avenue, 2nd Floor Annex
Alhambra, California 91802-1460

EMAIL
jcruz@dpw.lacounty.gov

Subject: Results of Tree Inventory Survey at Reach 117, Centinela Creek, Los Angeles County, California

Dear Ms. Cruz:

This letter report presents the results of a tree inventory survey at Reach 117, Centinela Creek, in Marina del Rey in Los Angeles County (Exhibit 1). Soft-bottom channel (SBC) Reach 117 extends about 500 feet upstream of its confluence with the Ballona Creek Channel (Exhibit 2). The purpose of these surveys is to provide the Los Angeles County Department of Public Works (LACDPW) with the biological information (specifically, tree and root details) in support of vegetation removal and levee repair activities required by the U.S. Army Corps of Engineers (USACE) Levee Certification Project.

SBC Reach 117 is in the process of being added to the LACDPW's existing California Department of Fish and Wildlife (CDFW), USACE, and Regional Water Quality Control Board (RWQCB) channel maintenance permits. The biological information collected during this survey will complement previous biological survey findings (BonTerra 2012). Survey results are being used to support the LACDPW's request to include SBC Reach 117 in the existing regulatory permits.

SURVEY METHODS

BonTerra Psomas Senior Biologist Jennifer Pareti and Biologists Jason Mintzer, and Kristin Smith conducted a tree inventory survey on March 13, and March 20, 2014. The maintenance boundary of the project site (survey area) included the channel, the channel-facing slopes of the levees, the access road/bike path on top of the levees, the landward slopes of the levees, and an additional 15' buffer from the toe of the landward slopes. If there was no landward slope, a 15' buffer from the edge of the access road/bike path was surveyed. The survey area included areas that were accessible and authorized (i.e. non-private properties) as well as private properties. Private properties were only assessed visually from authorized areas.

225 South Lake Avenue
Suite 1000
Pasadena, CA 91101

Tel 626.351.2000
Fax 626.351.2030
www.BonTerraPsomas.com

All trees found within the survey area boundaries that had estimated root diameter of ½ inch or greater were given a unique identifying number and mapped in the field. Trees with estimated ½ inch root diameter or less were identified and mapped in the field if the biologist determined the presence of the root system extensive enough to note. Tree species were identified in the field or collected for subsequent identification either using the keys in Baldwin et al. (2012) for native 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. During the survey the following data were collected: tree diameter at breast height (DBH), tree height, and canopy width, estimated root extent, qualitative ratings on aesthetics and overall health. In addition, a note was made in the field if the tree was likely to fall within the jurisdiction of California Department of Fish and Wildlife (CDFW). Trees were not tagged in the field. Collected data are included in Appendix A.

Mapping

Each tree that was surveyed was mapped on a 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. In addition, 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 was estimated from mean natural grade to the highest branch. Also, the diameter of each tree's canopy was estimated at its widest point.

Aesthetics

Each tree assessed was inspected and compared to an archetype tree (considered excellent on all points mentioned below) of the same species. Tree 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

Health

The health of each tree 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 tree's structural integrity 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 were rated on the 1 to 5 scale, noted above.

Root Structures

Estimates related to the depth and extent of tree roots were based on a brief examination of the tree size (e.g., trunk diameter and canopy dripline) and the location of the tree. Given that the trees are growing at the top of the levee adjacent to the asphalt access road, it was difficult to directly observe any indications of root extent; as a result, general estimates were made. In a natural setting, roots can reach well beyond the outer dripline of a tree with roots reaching depths of three feet or more (Day and Wiseman 2009). However, given the developed nature of the project site (e.g. concrete), the extent and depth of roots is assumed to be affected by soil compaction, physical obstructions, and access to available water and nutrients. Tree size is assumed to be directly correlated to root extent, as larger trees will have more extensive root systems than smaller trees. The depth of tree roots is dependent on many factors, such as the tree's genetics, available oxygen (related directly to soil texture and saturation), and soil compaction (Perry 1989). Therefore, the general character of the substrate was taken into account when determining root extent, as was the nearest available water.

It is assumed that the soil where these trees are growing is highly compacted, which would discourage root penetration into the soil, as the depth of the root zone is limited by the ability of oxygen to reach roots more than one foot deep. Though roots may find cracks to exploit deep root growth on the levees, most roots should be encountered in the top 12 inches of soil and not to exceed the diameter of the canopy.

RESULTS

A total of 3 trees with ½ inch or greater root diameter were documented in the survey area. These trees are located in the southern portion of the survey area adjacent to the access road at the top of the levee (Exhibit 3). No trees with ½ inch or greater root diameter were documented within the channel or on the channel-facing slope of the levee. Field data is included as Attachment A.

Tree species documented during the survey include the following:

- Western sycamore *(Platanus racemosa)*
- Unknown non-native ornamental tree

The unknown non-native ornamental tree is likely of the *Acacia* genus.

RECOMMENDATIONS

Trees documented during the survey fall under the jurisdiction of the County of Los Angeles. The County of Los Angeles Tree Ordinance (Ord. No. 177,404) protects all native oak trees. No native oak trees were documented during the survey. No trees were documented that fall under the jurisdiction of the USACE, RWQCB, or CDFW.

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

Sincerely,
BonTerra Psomas

Joan Patronite Kelly, AICP
Corporate Director of Environmental Planning and Resource Management

Marc T. Blain
Senior Project Manager

Enclosures: Exhibit 1 – Regional Location
Exhibit 2 – Local Vicinity
Exhibit 3 – Tree Inventory Results
Attachment A – Field Data

R:\Projects\CoLADPW\J250\Reach 117 Tree Report_052814.docx

REFERENCES

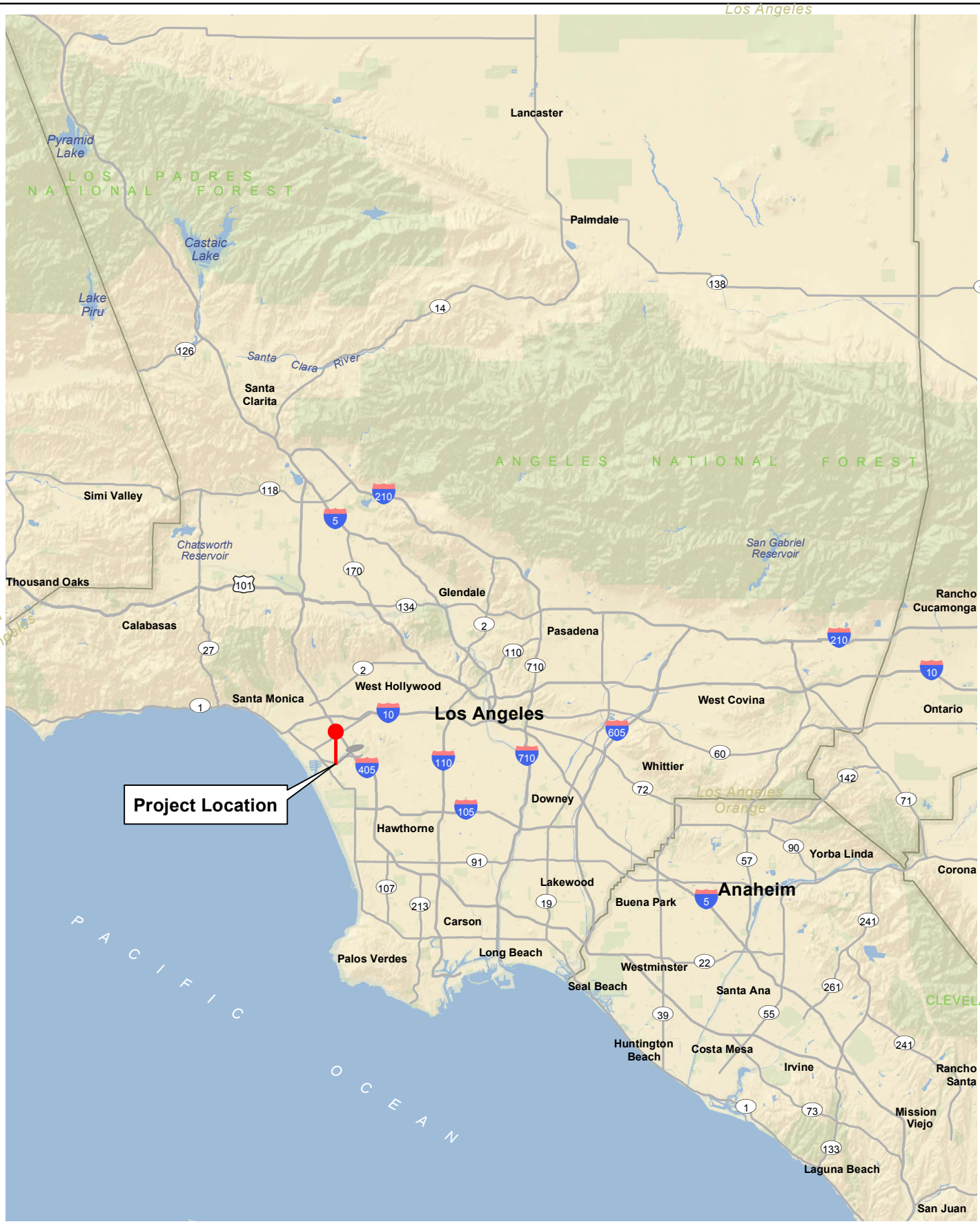
Baldwin, B.G., et al. (Eds.), 2011. *The Jepson Manual: Vascular Plants of California* (Second ed.). Berkeley, CA: University of California Press. http://ucjeps.berkeley.edu/jepsonmanual/review/ on July 1, 2011.

BonTerra Consulting. 2012 (July). *Results of Biological Inventory Surveys of Centinela Creek, Los Angeles County, California. Pasadena, CA. BonTerra Consulting.*

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

Day, S.D. and P.E. Wiseman. 2009. At the Root of it. *Arborist News.* 18(4): 20–22. Champaign, IL: International Society of Aboriculture.

Perry, T.O. 1989. Tree Roots: Facts and Fallacies. *Arnoldia* 49(4): 3–29. Boston, MA: the Arnold Arboretum of Harvard University.



D:\Projects\COLADPW\J250\mxd\Reach117\ex_RL.mxd

Regional Location

Exhibit 1

Centinela Soft-Bottom Channel – Reach 117

BonTerra PSOMAS

(Rev: 5-21-2014 JAZ) H:\Projects\CoLADPW\J250\Graphics\Reach117\ex1_RL.pdf

D:\Projects\CoLADPW\J250\mxd\Reach117\ex_LV.mxd

Local Vicinity

Exhibit 2

Centinela Soft-Bottom Channel – Reach 117

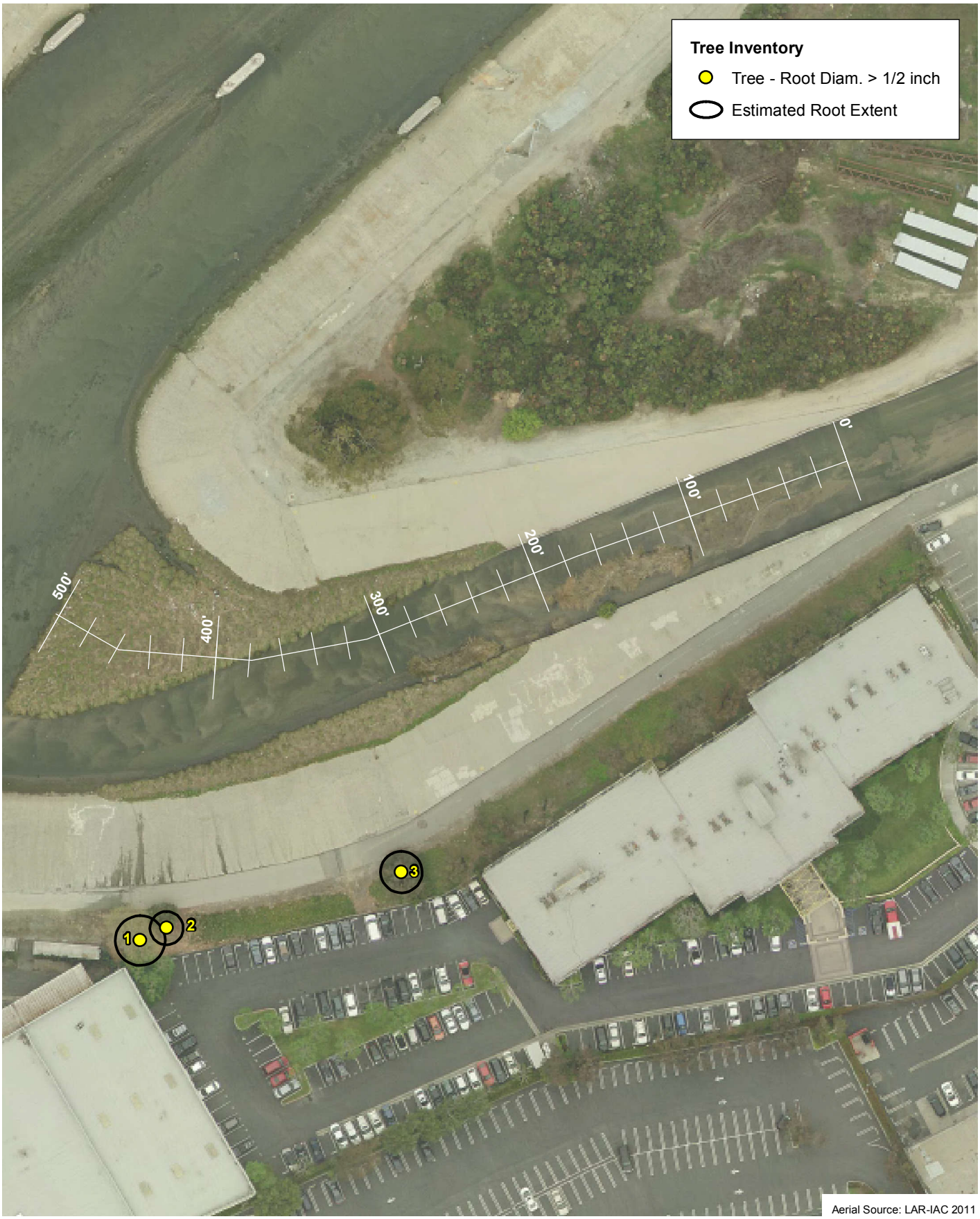
N W E S

1,000 500 0 1,000

Feet

BonTerra PSOMAS

(Rev: 5-21-2014 JAZ) D:\PAS_R_Temp\Projects\CoLADPW\J250\Graphics\Reach117\ex2_LV.pdf



Aerial Source: LAR-IAC 2011

D:\Projects\COLADPW\J250\mxd\Reach117\ex_TreeInventory_v002.mxd

Tree Inventory Results

Exhibit 3

Centinela Soft-Bottom Channel – Reach 117

N
W E
S

80 40 0 80 Feet

BonTerra PSOMAS

(Rev: 5-28-2014 JAZ) H:\Projects\CoLADPW\J250\Graphics\Reach117\ex3_TreeLocations.pdf

ATTACHMENT A

FIELD DATA

Reach 117 Tree Inventory Survey Data

ID	Date_	Srvyr	Species	trunk_num	trunk1	trunk2	trunk_totl	height	canopy	aesthetic	health	root_n	root_s	root_e	root_w	cdfw	field_note	field_ID
0001	3/20/2014	JM/KS	Platanus racemosa	1	20	X	20	40	30	3	3	SAC	SAC	SAC	SAC	N	-	2
0002	3/20/2014	JM/KS	unknown	2	5	4	9	20	20	3	3	SAC	SAC	SAC	SAC	N	-	1
0003	3/20/2014	JM/KS	unknown	5	4	3	7	10	25	3	3	SAC	SAC	SAC	SAC	N	-	0