



5.0 LANDSCAPE ANALYSIS

5.1 Analysis of Existing Landscaping

From a landscape standpoint, Elizabeth Learning Center lacks natural shade throughout the campus with expansive paved areas and nearly all trees located on the south east portion of the campus, leaving the remainder of the campus with no trees to reduce the heat island effect during hot days. Overall the campus lacks uniformity with only a handful of planted areas, little to no under planting throughout the campus, and neglected or undefined exterior student spaces. Aside from the main campus entrance and sport field the campus lacks a proper irrigation system which contributes to the lack of planting, health of trees and root intrusion.

Landscape Findings – Overall Site

Trees

- a. The campus tree canopy is sparsely planted with clusters of mature trees within the campus core separated by large amounts of paving. Trees are relatively healthy despite their growing conditions and lack of current irrigation.
- b. Several of the campus trees are currently located within inadequately sized tree wells. Although the tree wells may have been appropriate at the time of planting, they are currently constraining the trees. Small tree wells combined with lack of root barrier installation and lack of irrigation has caused the trees to develop large surface roots causing lifting and buckling of the adjacent paving, which may pose trip hazards in high traffic areas.
- c. Several of trees on campus showed signs of being attacked by current burrowing pest (wet trunk stains and small 1/8" diameter holes). Fortunately, the trees appear to be healthy enough to fight the pest and are not showing any decline at the time of observation. Refer to recommendations section for additional information.
- d. The redwood edging and in some cases concrete curb around tree wells cut into the asphalt paving have cracked or deteriorated. This may pose a trip hazard in instances where it is lifted above the adjacent paving.
- e. Adjacent to the classroom portables there are a handful of tree wells that are empty due to the tree being cut down. Stumps are still present in some.
- f. For campus wide tree information regarding type, size, height and health refer to "Table 1- Tree Inventory" included as a part of this document.

Mid-Level Planting

- a. Shrubs are prevalent at the school entrance along Elizabeth Street. The plant palette is a combination of evergreen shrub material, turf and a California native habitat garden created by School Yard Habitats. The evergreen shrubs and turf are doing well; however the California native habitat garden is failing due to lack of proper irrigation and sun exposure.
- b. There is minimal edge condition planting along Elizabeth Street with the main planting areas being in front of the wellness center and the main entrance. Aside from the main entrance, there is no significant "Green" or soft edge between campus and right of way. There is no campus or streetscape planting along the campus' north edge on Clara Street. The west edge of the campus



abuts adjacent housing with no planting buffer or screening. The East edge of the campus is aligned with trees and shrubs from the adjacent community park, but they offer little to no shade value to the school as this area is primarily storage and back of house for classroom portables.

- c. Planting areas within the campus core are generally void of any shrubs or other landscape material. Most of the landscape “planting areas” consists of exposed sandy soil and leaf litter from the mature tree canopy. As a result, the students use these planting areas as a path of travel, tracking soil and dust into classrooms as well as compacting the soil.
- d. There are currently no planting areas designed specifically to serve as infiltration zones for building or site runoff contributing to site flooding during rain events.
- e. The modular demonstration garden planters near the cafeteria are void of any plant material. It was unclear if this was intentional due to teaching or seasonal aspects of this outdoor educational area. Although this area provides seating for students it can be quite hot and undesirable for outdoor teaching due to lack of trees or overhead shade in that area.
- f. The central circular raised planter within the campus is planted with native species and is thriving.
- g. There is mulch in the parking lot medians; however, they are filled with Bermuda grass and weeds, no other plant material.

Groundcover

- a. With the exception of unwanted Bermuda grass that has recently grown within the staff parking lot planting islands all other planting areas within the campus are void of any groundcover and are primarily exposed soil.
- b. Bark mulch has been placed in the parking lot islands, planting area adjacent to the Wellness Center and planting areas at the main campus building entrance.

Turf

- a. The only turf present on site is located at the front entrance of the school and the sports field.
- b. The interior of the campus generally lacks turf grass with the exception of the unintentional Bermuda grass that has sprung up.
- c. The existing sport field turf was primarily green during the site visit with the exception of some areas caused by wear and tear, and improper head to head coverage, and a 15' wide oversaturated edge condition caused by the solar panel shade and improper irrigation zoning.

Irrigation

- a. Overall the campus lacks a proper irrigation system setup as well as a lack of irrigation to all trees located in tree wells or planting areas within the campus core.
- b. Irrigation controllers - There are three irrigation controllers present on campus, see diagram on the following page. Two of the three controllers are functioning but are not smart controllers required by current applicable regulations. The Plant Manager did not have an access key to the



third irrigation controller box, but due to the valves in the surrounding area not activating when manually turned on shows that the controller has been shut off and is no longer providing irrigation in those zones. A Toro controller with 24 stations is located on the backside of the gymnasium, facing Clara Street. Another Toro controller is located in the front area of the campus.

- c. Irrigation Valve Boxes
 - i. Valve boxes are not labeled-except for irrigation in the school entrance area
 - ii. There were multiple valve boxes installed incorrectly elevated above the adjacent finish grade
 - iii. Multiple valve boxes are inaccessible due to the box being buried with soil
- d. Irrigation within the soccer field requires a new layout to deter both dry and overly saturated from appearing. Turf areas that fall underneath the solar panels shadow need to be on their own system to inhibit overwatered turf
- e. California native habitat areas lack supplemental irrigation. The addition of irrigation will cause these plants to thrive in their current location



Irrigation Zoning and Point of Connections



School Agricultural Education

Raised planters, a small fruit orchard and habitat gardens all exist on the Elizabeth Learning Center campus. All of these elements are not receiving the irrigation requirements necessary to be productive and has left empty or dilapidated planters in site.

5.2 Tree Inventory and Identification of Protected Trees

The Los Angeles Unified School District (LAUSD) requested the Design Team to retain an arborist to visit the property and inventory and photograph all “protected” and “significant” trees”. A comprehensive analysis of each tree as it pertains to construction was not requested and is not a part of this study. The 55 inventoried trees are located throughout the property. This report is based on our site visit on October 20, 2017.

Protected trees comply with the City of Los Angeles Tree Preservation Ordinance #177.404 which protects Coast Live Oaks, Western Sycamores, Southern California Black Walnut and California Bay Laurel with trunks 4” or greater. They are protected because they are indigenous to the southern California region and the city wants to preserve as many existing trees of these species as possible for ecological purposes. Significant trees are all tree that have an 8” or greater tree trunk diameter at breast height (DBH). Significant tree is not protected by any ordinance, but it is preferred to keep as many of them as possible due to their mature canopies and deep root systems.

Observations

The Arborist inventoried 55 trees of various species throughout the subject property. Tree trunks were recorded in the field, from grade, using the topographical map provided.

Table 1 is a summary of the tree species comprising the 55 total trees. Captioned photographs and the exhibits in Section 11.2 of this report illustrate site context, tree locations, tree structure, and vigor. Tree locations are graphically represented on the ‘Tree Location Exhibit.’

No “protected” or “significant” trees were found on site.

Health and Structure Grade Definitions

Health and structure ratings of the trees are based on the archetype tree of the same species through a subjective evaluation of its physiological health, aesthetic quality, and structural integrity.

Overall physiological condition (health) and structural condition were rated A-F:

Health

A) Outstanding – Exceptional trees of good growth form and vigor for their age class; exhibiting very good to excellent health as evidenced by normal to exceptional shoot growth during current season, good bud development and leaf color, lack of leaf, twig or branch dieback throughout the



crown, and the absence of decay, bleeding, or cankers. Common leaf and/or twig pests may be noted at very minor levels.

B) Above average – Good to very good trees that exhibit minor necrotic or physiological symptoms of stress and/or disease; shoot growth is less than reasonably expected, leaf color is less than optimal in some areas, the crown may be thinning, minor levels of leaf, twig, and branch dieback may be present, and minor areas of decay, bleeding, or cankers may be manifesting. Minor amounts of epicormic growth may be present. Minor amounts of fire damage or mechanical damage may be present. Still healthy, but with moderately diminished vigor and vitality. No significant decline noted.

C) Average – Average, moderately good trees whose growth habit and physiological or fire-induced symptoms indicate an equal chance to either decline or continue with good health into the near future. Most of these trees exhibit moderate to significant small deadwood in outer crown areas, decreased shoot growth and diminished leaf color and mass. Some stem and branch dieback is usually present and epicormic growth may be moderate to extensive. Cavities, pockets of decay, relatively significant fire damage, bark exfoliation, or cracks may be present. Moderate to significant amounts of insect or disease symptoms may be present; the tree may be shaded or crowded in such a way that it is expected to negatively impact the lifespan of the tree. Tree may be in early decline.

D) Below Average/Poor - trees whose growth habit and physiological or fire-induced symptoms indicate significant, irreversible decline. Most of these trees exhibit significant dieback of wood in the crown, possibly accompanied by significant epicormic sprouting. Shoot growth and leaf color and mass is either significantly diminished or nonexistent throughout the crown. Cavities, pockets of decay, significant fire damage, bark exfoliation, and/or cracks may be present. Significant amounts of insect or disease symptoms may be present; the tree may be shaded or crowded in such a way that it has negatively impacted the lifespan of the tree. Tree appears to be in irreversible decline.

F) Dead or in spiral of decline – this tree exhibits very little to no signs of life.

Structure

A) Outstanding – Trees with outstanding structure for their species exhibit trunk and branch arrangement and orientation that result in a sturdy form or architecture that resists failure under normal circumstances. The spacing, orientation, and size of the branches relative to the trunk are quintessential for the species and free from defects. No outward sign of decay or pathological disease is present. Some trees exhibit naturally inherent branching defects, like multiple, narrow points of attachment from one point on the trunk, which would preclude them from achieving an “A” grade.

B) Above average - Trees with good to very good structure for their species. They exhibit trunk and branch arrangement and orientation that result in a relatively sturdy form or architecture that resists failure under normal circumstances, but may have some mechanical damage, over-



pruning, or other minor structural defects. The spacing, orientation, and size of the branches relative to the trunk are still in the normal range for the species, but they exhibit a minor degree of defects. Minor, sub-critical levels of decay or pathological disease may be present, but the degree of damage is not yet structurally significant. Trees that exhibit naturally inherent branching defects, like multiple, narrow points of attachment from one point on the trunk, would generally fall in to this category. A small percentage of the canopy may be shaded or crowded, but not in such a way that it is expected to negatively impact the structural integrity or lifespan of the tree.

C) Average - Trees with moderately good structure for their species, but with obvious defects. They exhibit trunk and branch arrangement and orientation that result in a less than sturdy form or architecture, which reduces their resistance to failure under normal circumstances. Moderate levels of mechanical damage, over-pruning, or other structural defects may be present. The spacing, orientation, and size of some of the branches relative to the trunk are not in the normal range for the species. Moderate to significant levels of decay or pathological disease may be present that increase the likelihood of structural instability. Influences such as an excessive trunk lean, slope erosion, root pruning, or other growth inhibiting factors may be present. A moderate to significant percentage of the canopy may be shaded or crowded in such a way that it is expected to negatively impact the structural integrity or lifespan of the tree. Risk of full or partial failure in the near future appears to be moderately elevated.

D) Well Below Average/Poor - Trees poor structure for their species and with obvious defects. They exhibit trunk and branch arrangement and orientation that result in a significantly less than sturdy form or architecture, significantly reducing their resistance to failure under normal circumstances. Significant levels of mechanical damage, over-pruning, or other structural defects may be present. The spacing, orientation, and size of many of the branches relative to the trunk are not in the normal range for the species. Significant levels of decay or pathological disease may be present that increase the likelihood of structural instability. Influences such as an excessive trunk lean, slope erosion, root pruning, or other growth-inhibiting factors may be present. A significant percentage of the canopy may be shaded or crowded in such a way that it is expected to negatively impact the structural integrity or lifespan of the tree. Risk of full or partial failure in the near future appears to be advanced.

F) Severely Compromised – trees with very poor structure and numerous or severe defects due to growing conditions, historical or recent pruning, mechanical damage, history of limb or trunk failures, advanced and irreparable decay, disease, or severe fire damage. Trees with this rating are in severe, irreparable decline, or are barely alive. Risk of full or partial failures in the near future may be severe.



TABLE 1 –TREE INVENTORY

Tree #	Common Name Botanical Name	DBH(s) (inches)	Height (feet)	Canopy Spread NS/EW	Health	Structure	Scenic ¹ (CEQA)	Protected
1	Jacaranda <i>Jacaranda mimosifolia</i>	25	40	50/45	B	B	No	No
2	Canary Island Date Palm <i>Phoenix canariensis</i>	BT 35'	45	20/20	B	A	No	No
3	Jacaranda <i>Jacaranda mimosifolia</i>	13	25	25/25	B	B-	No	No
4	Jacaranda <i>Jacaranda mimosifolia</i>	13	25	25/25	B	B	No	No
5	Shamel Ash <i>Fraxinus uhdei</i>	4, 6, 7	30	20/20	B	C	No	No
6	Shamel Ash <i>Fraxinus uhdei</i>	17	30	30/20	C	C	No	No
7	Shamel Ash <i>Fraxinus uhdei</i>	7, 9	30	10/10	D	D	No	No
8	Shamel Ash <i>Fraxinus uhdei</i>	17	35	30/30	B	B	No	No
9	Shamel Ash <i>Fraxinus uhdei</i>	13	30	15/15	C	D	No	No
10	Mulberry <i>Morus alba</i>	8	20	20/20	B-	B	No	No
11	Shamel Ash <i>Fraxinus uhdei</i>	29	40	35/35	B-	B	No	No
12	Fern Pine <i>Afrocarpus falcatus</i>	11	25	20/20	A	A	No	No
13	Fern Pine <i>Afrocarpus falcatus</i>	11	20	20/20	A	A	No	No
14	Fern Pine <i>Afrocarpus falcatus</i>	15	25	20/20	A	A	No	No
15	Fern Pine <i>Afrocarpus falcatus</i>	11	25	20/20	A	A	No	No
16	Fern Pine <i>Afrocarpus falcatus</i>	9	25	15/15	A	A	No	No
17	Carrotwood <i>Cupaniopsis anacardioides</i>	11	20	12/12	A	B	No	No
18	Carrotwood <i>Cupaniopsis anacardioides</i>	11	20	12/12	A	B	No	No
19	New Zealand Christmas <i>Metrosideros excelsa</i>	10	20	20/20	A-	A	No	No
20	Chinese flame <i>Koelreuteria bipinnata</i>	12	30	30/20	A	A	No	No



Tree #	Common Name Botanical Name	DBH(s) (inches)	Height (feet)	Canopy Spread NS/EW	Health	Structure	Scenic ¹ (CEQA)	Protected
21	Chinese flame <i>Koelreuteria bipinnata</i>	11	30	20/20	A	A	No	No
22	Chinese flame <i>Koelreuteria bipinnata</i>	12	30	20/20	A	A	No	No
23	Chinese flame <i>Koelreuteria bipinnata</i>	13	30	30/30	A	A-	No	No
24	Chinese flame <i>Koelreuteria bipinnata</i>	13	30	30/30	A	A	No	No
25	Chinese flame <i>Koelreuteria bipinnata</i>	15 at 2 ft	30	20/30	A	A	No	No
26	Chinese flame <i>Koelreuteria bipinnata</i>	12.5	30	25/33	A	B	No	No
27	Chinese flame <i>Koelreuteria bipinnata</i>	11	25	20/20	A	A	No	No
28	Chinese flame <i>Koelreuteria bipinnata</i>	12	25	20/20	A	A	No	No
29	Chinese flame <i>Koelreuteria bipinnata</i>	8	25	20/20	A	A	No	No
30	Chinese flame <i>Koelreuteria bipinnata</i>	8	25	20/20	A	A	No	No
31	Chinese flame <i>Koelreuteria bipinnata</i>	14	25	25/25	A	A	No	No
32	Chinese flame <i>Koelreuteria bipinnata</i>	14	30	20/35	B	B	No	No
33	Chinese flame <i>Koelreuteria bipinnata</i>	12	30	20/30	A	B	No	No
34	Chinese flame <i>Koelreuteria bipinnata</i>	14.5	30	30/40	A	B	No	No
35	Chinese flame <i>Koelreuteria bipinnata</i>	12	30	20/20	A	A	No	No
36	Chinese flame <i>Koelreuteria bipinnata</i>	10	30	20/25	A	B-	No	No
37	Chinese flame <i>Koelreuteria bipinnata</i>	10	30	20/20	A	B	No	No
38	Chinese flame <i>Koelreuteria bipinnata</i>	12	30	25/30	A	A	No	No
39	Chinese flame <i>Koelreuteria bipinnata</i>	14.5	30	30/40	A	A	No	No
40	Chinese flame <i>Koelreuteria bipinnata</i>	14.5	30	36/30	A	A-	No	No
41	Chinese flame <i>Koelreuteria bipinnata</i>	15	35	40/30	A	A	No	No



Tree #	Common Name Botanical Name	DBH(s) (inches)	Height (feet)	Canopy Spread NS/EW	Health	Structure	Scenic ¹ (CEQA)	Protected
42	Chinese flame <i>Koelreuteria bipinnata</i>	8.5	30	30/21	A	A	No	No
43	Chinese flame <i>Koelreuteria bipinnata</i>	13	30	27/30	A	A	No	No
44	Shamel Ash <i>Fraxinus uhdei</i>	18	40	36/30	A	A-	No	No
45	Shamel Ash <i>Fraxinus uhdei</i>	18	40	30/30	B-	B	No	No
46	Shamel Ash <i>Fraxinus uhdei</i>	18	35	18/20	B-	B-	No	No
47	Hollywood juniper <i>Juniperus chinensis</i> 'Torulosa'	5, 5, 5.5, 9	18	12/12	A	A	No	No
48	Hollywood juniper <i>Juniperus chinensis</i> 'Torulosa'	5.5, 6.5, 9.5	18	12/15	A	A	No	No
49	Hollywood juniper <i>Juniperus chinensis</i> 'Torulosa'	3, 4, 7	25	15/15	A	A	No	No
50	Peppermint willow <i>Agonis flexuosa</i>	9	15	20/20	A-	B	No	No
51	Queen palm <i>Syagrus</i> <i>romanzoffiana</i>	BT 15'	25	15/15	A	A	No	No
52	Queen palm <i>Syagrus</i> <i>romanzoffiana</i>	BT 15'	25	15/15	A	A	No	No
53	Queen palm <i>Syagrus</i> <i>romanzoffiana</i>	BT 15'	25	15/15	A	A	No	No
54	Queen palm <i>Syagrus</i> <i>romanzoffiana</i>	BT 20'	30	15/15	A	A	No	No
55	Holly oak <i>Quercus ilex</i>	2, 2, 3, 3, 3, 3, 3, 3, 3, 3	25	15/15	A	A	No	No

1 - A scenic tree is highly visible, prominent and possesses unique or distinctive aesthetic qualities due to its size, structure, unusual specimen, etc.



5.3 Color Photos of Unique Site Features

The following photos are a representation of the unique features and conditions on the campus. A full listing of photographs is included in Section 11.1.



School Entrance Planting



California Native Habitat Garden



Mature Tree Canopy Within Campus Core



Flagpole Planter



Cracked and Lifted Asphalt Paving



Trees Causing Uplift On Brick Pavers



Campus Interior Lacks Shade; Pavement Cracking



Planting Area Void of Mid-Level Shrub Material



5.4 Landscape Recommendations and Analysis

General Canopy

- a. Every effort should be made to preserve mature trees on campus that are in good health per the Arborist's evaluation.
- b. Additional trees should be planted to increase the canopy coverage throughout the campus.

Mid-Level Planting

- a. Where landscape areas in the campus interior lack mid-level planting, an enhancement effort is recommended to improve the campus environment.
- b. A campus-wide mid-level plant palette should be designated and used for enhancement and replacement of mid-level planting as needed. The existing native garden within the flag pole planter provides an appropriate example plant palette that could be followed and expanded due to the success of that area.
- c. Habitat Gardens to be revitalized with a new plant palette guaranteed to succeed.
- d. All new trees to install root barriers correctly to inhibit uplifting in AC paving or concrete.
- e. New redwood edging and concrete curbs to be installed near tree wells to prevent tripping hazards.
- f. Any new project will trigger low impact development and storm water management per current regulations. Additional and increased planting/ landscaped areas should be included in any campus plans to help treat and mitigate storm water run-off. Refer to civil section for additional information.

Irrigation

- a. All areas that will require a new landscape design should have a new irrigation system installed. Where existing landscape areas are to be re-designed, the existing irrigation system should be redesigned as well.
- b. A new point of connection will be required for the scope of the new project. With a new point of connection requires a new backflow, meter, master valve and flow sensor to increase irrigation efficiency.
- c. The irrigation system should be retrofitted with smart controllers to optimize water efficiency. It should be noted that doing so could require trenching through portions of the campus otherwise outside the scope of work for this project to install irrigation control wiring and plumbing.

Trees

- a. Campus shall make all attempts to protect and preserve as many mature trees as possible that are deemed healthy and structurally sound per the arborist evaluation.



- b. The campus courtyards lack natural shade and so additional trees should be planted to increase the canopy coverage throughout the campus as a part of any future projects. Increasing the internal campus tree canopy will reduce the paving heat island effect and create a nicer environment for the students.
- c. Regardless of scope of work, it is suggested by the arborist that two trees are to be removed as soon as possible, as they are a safety and health concern. The trees to be removed are as follows: #7 (Shamel Ash), and #9 (Shamel Ash)
- d. For additional tree information: Type, size, quantity, and health refer to Table 1- Tree Inventory.

Turf

- a. Under no circumstances should turf area be reduced. Bare spots in current turf areas should be re-seeded and irrigation spray heads to be laid out to accommodate the variety of sun exposure on site.

School Agriculture Education

- a. Every effort should be made to retain the agricultural and native plant educational elements. If an educational garden needs to be removed for any reason, there should be a new proposed location to replace the existing.



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Los Angeles Unified School District
Elizabeth Learning Center

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