Historic and Specimen Tree Drought Action Plan

August 14, 2014

CITY OF SANTA BARBARA
Parks & Recreation
Enriching People's Lives

Introduction

The Parks and Recreation Department (Department) developed the following action plan for City designated historic and specimen trees in response to current drought conditions. These trees represent an important piece of Santa Barbara's horticultural heritage, plus provide significant environmental and social benefits to the community. The action plan establishes current tree health and grow space conditions, constraints associated within their growing environment, and action steps and opportunities that can be implemented to support the health of the tree. Actions may include water management, pest and disease management, and improvement to other growing conditions as feasible. The Department will also seek tree monitoring and watering assistance from adjacent property owners. In addition to the above stated actions, no new trees will be planted while drought conditions persist.

Inspections have been ongoing for some trees and will begin in August for others. All trees will be monitored through routine visual inspections of overall tree vigor, foliage health, signs of pests, and any defects to the roots, collar, and branches. Initially, inspections will occur bi-monthly. The Department will also take action to trim or remove any trees that become unsafe or present other hazards. If a trees conditions remain stable by fall, then the City may reduce the inspection frequency as appropriate. This plan will also be revised, as needed, as long as the drought persists.

Historic and specimen trees are designated by City Council upon recommendation by the City Parks & Recreation Commission. Historic trees can also be recommended by the Historic Landmarks Commission. Chapters 15.20 and 15.24 provide for the designation of historic and specimen trees by the City Council. Both Chapters protect the removal of these and define specimen and historic trees.

Chapter 22.22.040 provides the criteria for designating landmarks and structures of merit which includes natural features, like trees. Historic and specimen trees have been designated for a variety of reasons, including their location amongst other historic/landmark structures, association with a particular person or time, value to an area as a prominent and established visual feature, or unique location, among other considerations. Specimen trees are designated as such by virtue of their age, size, rarity, and condition of species.

Concurrent with implementation of this plan, the Urban Forest Management Plan (2014) provides a number of actions that may impact currently designated trees as well as those considered for designation. These include, but are not limited to: review and revision to the definition of historic and specimen trees to better guide the designation process, as well as the maintenance and replacement of designated trees; revisions to the Street Tree Master Plan street designation; and enhancements to street parkway growing conditions where feasible.

Historic Trees

1. Moreton Bay Fig Tree (*Ficus macrophylla*)
Corner of Chapala St. at Montecito St. – City owned.

Current Conditions: The City Arborist has been monitoring the condition of this tree bi-monthly by visual inspection and has taken monthly soil moisture samples since 2008 due to the presence of Phytopthora Root Rot. The disease has caused a thin canopy, reduced leaf size, and dieback at the ends of branches. These symptoms occur most prevalently in the top and eastern portions while the lower canopy and the western portions exhibit good health.

Management of the disease includes disease suppressing soil injections and management of water. Soil injections were implemented in February, May and August of 2013 in partnership with Bartlett Tree Care Experts. The soil injection treatment appears to have arrested this decline. Inspections of the tree indicate that the tree is thinning at a reduced rate, new foliage has come back larger than in previous years and root inspections indicate new feeder roots free of the disease.

Irrigation decisions are based on the moisture level of the soil. The City Arborist checks moisture levels monthly to determine when the irrigation is needed.

Constraints: Much of the root system of this tree is located under Chapala Street and Montecito Street. During construction of the 101 freeway an irrigation system was installed under Chapala and Montecito Streets to provide the tree roots with a source of water. While the irrigation system is functioning well, the roadways limit access to check soil moisture levels and inspect roots for the disease.

Action: Water will be administered based on the needs of the tree while not creating an environment that contributes to the disease. Between the months of July 2013 and June 2014, an average of 17,800 gallons of irrigation was applied per month. In addition, as part of the Lower Mission Creek Flood Control Project, the City of Santa

Barbara Public Works Department will be providing improvements around this tree in the fall of 2014. Improvements include extending the chain and post barrier and installing mulch out to the drip line. These combined measures are expected to provide benefits to the tree through decreased evaporation and reduced soil compaction from foot traffic.

2. Moreton Bay Fig Tree (*Ficus macrophylla*)
320 West Pueblo Street – Private Property, Cottage Hospital

Current Conditions: This tree is located in an irrigated planter on the property of Cottage Hospital. The tree's current health condition is good.

Constraints: Space exists for deep watering and proper tree care. No known constraints exist.

Action: Parks and Recreation staff will meet with Cottage Hospital maintenance staff to provide tree preservation information and help establish appropriate tree care. City staff will work to ensure that they understand preservation requirements as specified in Santa Barbara Municipal Code Chapters 15. 24 and 28.00, can identify signs of the tree stress and or disease, and develop appropriate irrigation practices.

3. City Hall Pepper (*Schinus molle*)
De La Guerra Plaza entrance to City Hall – City owned

Current Conditions: This tree is currently not showing signs of water stress and is in good condition.

Constraints: This tree is located in an oblong planter that cannot be significantly enlarged due to accessibility constraints. Much of the absorbing roots exist under the surrounding hardscape, making watering difficult.

Action: Staff will monitor its health on a bi-monthly basis. Deep probe watering will be utilized if the tree begins to show signs of drought stress in the planters nearby as well as in the adjacent lawn.

In order to provide more water to the roots of this tree the following opportunities could be pursued: removal of pavement adjacent to the tree at locations near the drip line of the tree canopy to provide access ports for watering; and installing permeable pavers or other type of permeable surfaces surrounding the tree and/or within the De La Guerra Plaza roadway.

4. Cota Sycamores (*Platanus racemosa*)
Mission Santa Barbara at Los Olivos St. & Alameda Padre Serra (APS) – City owned

Current Conditions: These two trees exist in a dirt parkway that varies in width from 3 to 9 feet. One of the two trees was removed down to a stump in 2004 due to hazards it presented to the public. The stump has sprouted and is still alive. The large tree is in healthy condition and not currently showing signs of water stress. Though it is leaning slightly, it is not endangering public safety.

Constraints: Most of the absorbing roots for these trees exist outside areas the City can access.

Action: Staff will monitor the tree's health on a bi-monthly basis. Staff will provide water in the parkways as deemed necessary, provide mulch where room exists within the parkway, and work with Old Mission Santa Barbara to provide information on how they can assist with irrigation on their property if it becomes necessary.

5. Doremus Stone Pines (*Pinus pinea*)
300-800 Blocks E. Anapamu St. – 79 original trees – City owned

Current Conditions: The historic Stone Pines include many of the trees spanning the 300 to 800 blocks of East Anapamu Street. Three trees died in recent years and were replaced with new trees. Based on a recent inspection of the 300 – 800 blocks, four trees are currently dead having succumb to pest infestation and are awaiting removal, 12 are in poor health, 24 are in fair health, 26 are in good health, and 19 are in excellent health (See attached Health Conditions Map). Tree health varies due to the growing conditions in which they are located, root pruning practices that have been conducted on them in the past, effects of the drought as well as attacks by insects. These trees have the potential to succumb to beetle infestations if vigor becomes too low for the tree to ward off the pest. Staff has monitored their health on a bi-monthly basis since 2013 by visual assessment and watered these trees on various occasions since 2008. To date, staff has applied a total of 5,778 gallons of water within the parkways between the trees.

Constraints: The trees were planted in two batches in 1908, and from 1919 – 1921, when Anapamu Street was a dirt roadway and did not include improved sidewalks. Since then, the street and parkway hardscape was installed constraining the growing space of these trees and decreasing the trees access to water and air. They now exist within parkways that range in width between 3 - 6 ½ feet. Several sites exist where the planter space is small and confined by hardscape on all sides. Because of this, there is a history of root pruning for hardscape and underground utility repairs. In addition,

some tree roots have grown above grade and fill the parkway space, making deep probe watering difficult. Most of the absorbing roots for these trees exist outside areas the City can access.

Life expectancy of these trees varies upon their environment. Britain's Kew Gardens has one record of an Italian Stone Pine reaching 300 years and another specimen over 160 years. Cal Poly's Urban Forest Ecosystems Institute estimates average longevity of the trees between 50 and 150 years[1]. Santa Barbara's Anapamu Street Stone Pines live within that range.

Although these trees can suffer from beetle infestations, the treatment techniques may not be utilized due to the potential affect on overall tree health. Treatment for beetle infestation includes an injection of pesticide into the trees cambium layer, killing it for a distance around the injection site. The injection may cause enough dieback so as to cause further decline or possible death.

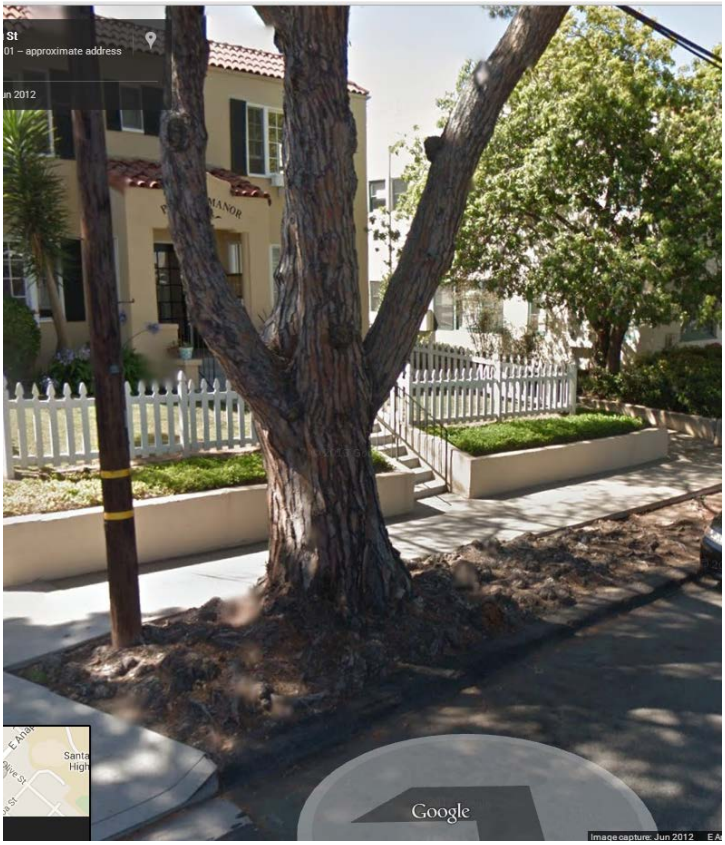
Action: The Department's initial step will include removing dead trees to avoid spreading the pest infestation to nearby trees. Trees that are in poor health will receive water. Providing water to these trees requires extensive resources. During the recent water application (5,778 gallons) it took 2 staff, 60 hours, the water truck and water trailer to provide water to 71 trees. Additional resources will be needed to maintain a monthly watering schedule. It is recommended that these trees receive monthly watering applications for best results. Bi-monthly assessments will be conducted to monitor tree health along this corridor, provide mulch where space exists, as well as explore opportunities to remove hardscape. The Department will also implement a door-to-door outreach campaign to solicit neighbor participation in tree watering. The outreach will include an information mailer, door hangers, and one-on-one meetings.

In order to provide more water to the roots of these trees the following options/opportunities may be pursued: removal of pavement and/or bricks adjacent to locations near the drip line of the tree canopy (attached Health Conditions Map illustrates locations where opening the parkway is available); installing mulch where parkways can retain it; exploring the feasibility of installing permeable pavers or other type of permeable surface along the side walk and/or street; and expanding planters at strategic locations to reduce root pruning and hardscape conflicts.

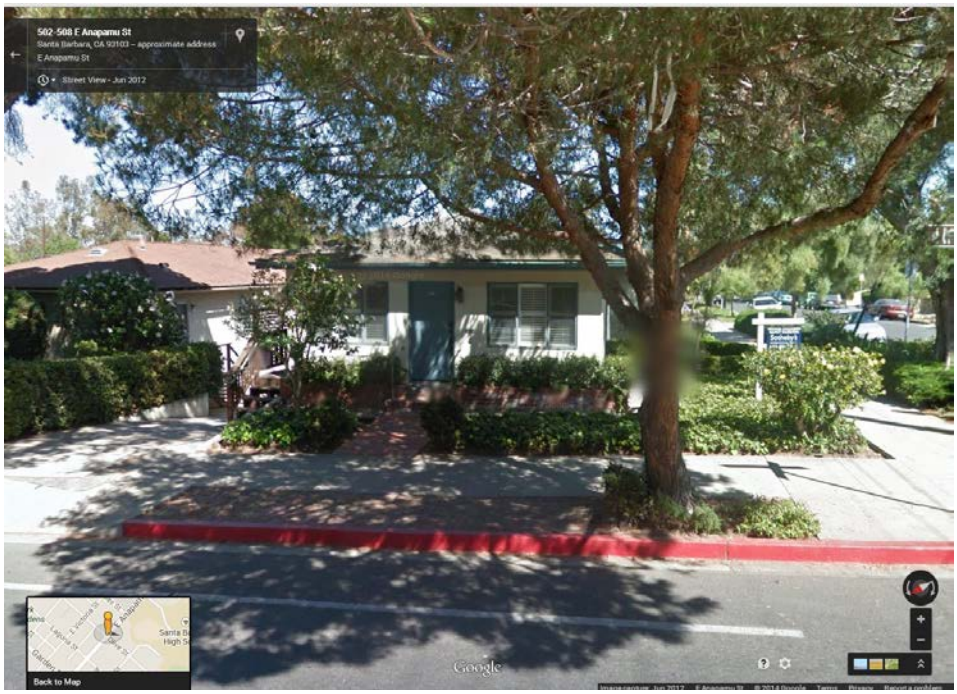
The pictures below illustrate some of the challenges and opportunities along East Anapamu Street.

[1] Reynolds, Laura. *Life Expectancy of an Italian Stone Pine*. http://homeguides.sfgate.com/.

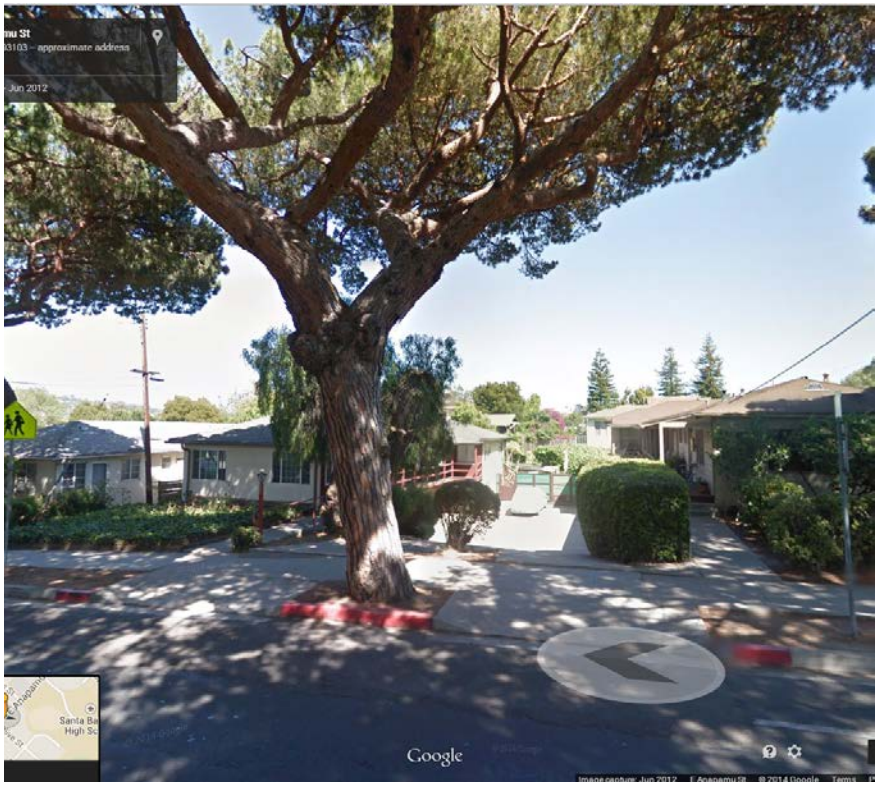
318 East Anapamu showing confined growing space. Opportunities to remove the surrounding cement at this location may improve root access to water.



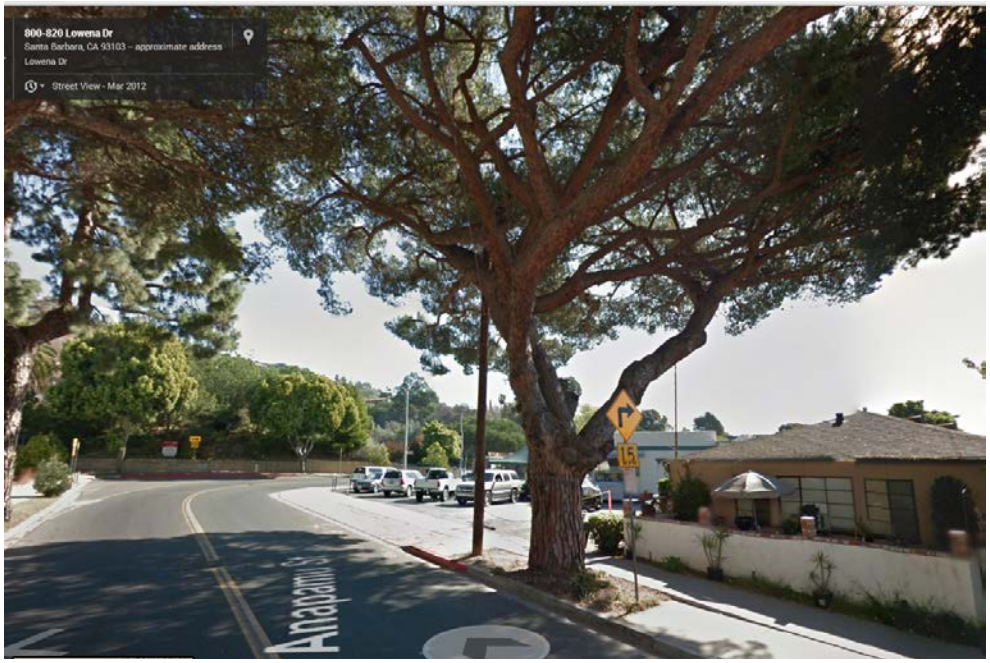
425 E Anapamu showing root structure and potential difficulty watering within parkway.



Corner of E Anapamu and Olive Street showing parkway filled in with bricks.

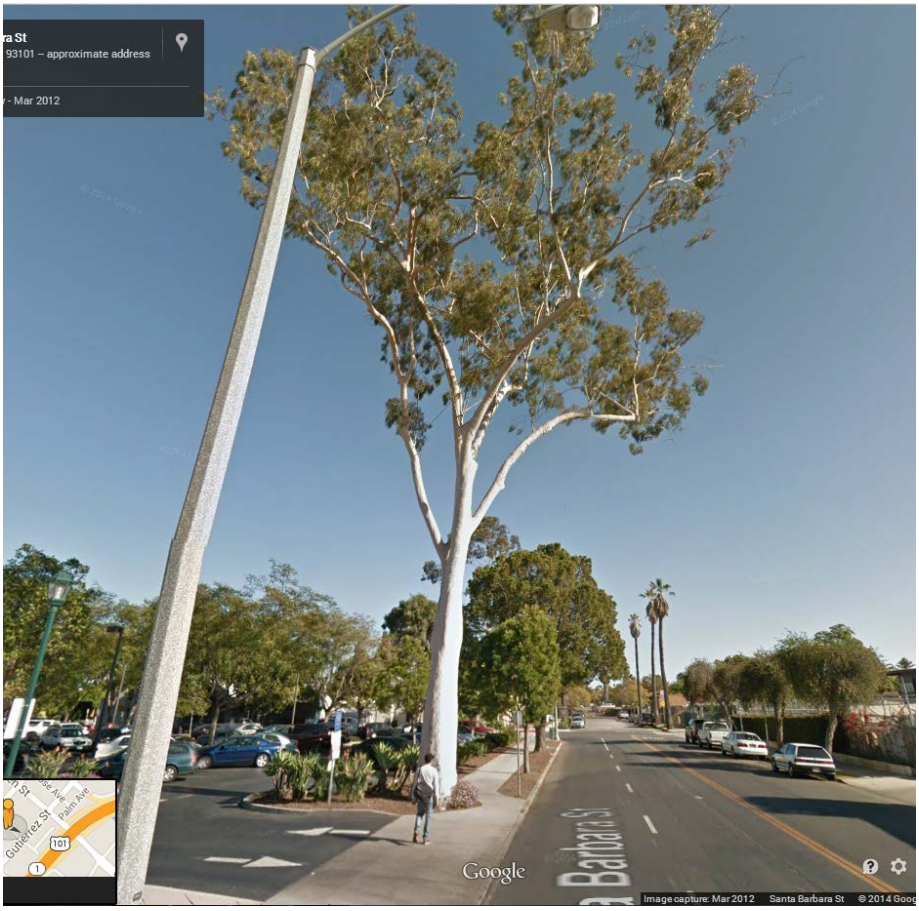


500 Block- Picture showing small planter space between two driveways



800 Block- Several small grow spaces exist within the 700-800 block section making watering difficult.

6. "Fernald Eucalyptus" (*Corymbia citriodora*)
400 Blk. Santa Barbara St. (Smart & Final entrance) – City owned



Current Conditions: This tree exists partially within the road right-of-way along Santa Barbara Street. It is adjacent to a driveway entrance in an extended planter that is privately owned. The tree's current health is good but the tree could become susceptible to pests should vigor become low.

Constraints: Even though much of the absorbing root structure is under hardscape, opportunities exist to water the tree within the privately owned planter and an adjacent parkway.

Action: Staff will monitor tree health on a bi-monthly basis. Staff will provide water in the parkways plus work with the land owner to access the private planter space if it becomes necessary.

7. Franceschi Flame Tree (*Brachychiton acerifolium x populneum*)
11-15 W. Gutierrez St. – City Parking Lot 12 – City owned

Current Conditions: This tree exists in a planter within City Parking Lot 12. The tree has had a number of health issues related to a white rot decay to its trunk that cannot be treated. As a result of this white rot, the trunk has decayed to the point that the tree supports itself on sections of live wood in a fashion resembling four stilts. In 2013, City staff developed a treatment and propagation plan as a last attempt to save the tree while also reducing risk to the public safety from the tree falling over. The tree, formerly reaching 50 feet in height, has been reduced to about 15 feet with the intent of promoting new vegetative growth that can be trained into a new, smaller tree. Should the white rot show signs of worsening, thus weakening the tree further, then removal may be necessary. The tree has sprouted new growth and is showing signs of stability since the 2013 pruning.

Constraints: In response to the drought, the landscape irrigation in Parking Lot 12 has been turned off. Water has to be supplied manually to this tree within the available planter area.

Action: Parks staff monitors the tree's health on a bi-monthly basis and provides water as necessary. Staff will also continue to implement the Flame Tree treatment and propagation plan. Part of the plan calls for propagation of viable branchlets through grafting by Bruce Van Dyke. If successful, once the drought is over, at least one will be planted in the parking lot planters where space is currently available. When safety

hazards dictate that the Franceschi Flame Tree must be removed, an additional one will be planted in that location. Staff has inspected the grafted stock and indicates that several are performing well.

Opportunities may exist to install permeable pavers or other permeable surface material within the parking lot.

8. "Tree of Light" (*Araucaria heterophylla*)
100 W. Carrillo St. (NW corner of Chapala St. at Carrillo St - Ralphs Market)
Privately owned

Current Conditions: This tree exists within a private parking lot surrounded by hardscapes. The tree's current health is good and it is not showing signs of stress.

Constraints: This tree is privately owned and maintained with most of the absorbing root structure under hardscape.

Action: Staff will provide tree care information to the owner and their grounds maintenance contractor to ensure they understand preservation requirements as

specified in Chapters 15.24 and 28, can identify signs of tree stress and or disease, and develop appropriate irrigation practices.

9. Main Library Lemon Scented Eucalyptus (*Corymbia citriodora*)
40 E Anapamu Street– 5 Trees – City owned

Current Conditions: Three of these trees exist within a planter in front of the Main Library entrance. The other two are adjacent to the rear entrance and are completely surrounded by bricks and other hardscapes. Tree health is good for all five trees.

Constraints: Trees are located in small planters with the majority of the absorbing root structure located under hardscape.

Action: Staff will monitor their health on a bi-monthly basis and provide water where space is available as it becomes needed.

Specimen Trees

1. **American Elm (*Ulmus americana*)**
   1210 Carpinteria St., near property line – City owned but adjacent to private property.

Current Conditions: This tree is owned and maintained by the City but exists partially on private property. Elms are native to the eastern North America and wetter climates. Given this, the tree's health is good but showing its age (yr).

Constraints: The parkway along this section has been filled with hardscape making the only area available to provide water on private property.

Action: This tree will be monitored bi-monthly to determine the level of care necessary for the tree. Staff will work with the private land owner to see if deep probe watering on their property is available.

Opportunities may exist to provide tree roots with more access to water by removing the brick hardscape that has been installed in the parkway or installing permeable pavers or other permeable surface material within the side walk and/or street.

2. Two Australian Fan Palms (*Livistona australis*)
131 E. Anapamu St., front setback -- County owned

Current Conditions: These trees exist within the landscaped areas of the Santa Barbara County Courthouse grounds in the great courtyard near Anapamu Street and are maintained by the Santa Barbara County Parks staff. Their current condition is good.

Constraints: Ample space is available to provide water and overall tree care.

Action: Parks and Recreation staff will meet with County Parks maintenance staff to provide tree care information. ensure that they understand preservation requirements as specified in Santa Barbara Municipal Code Chapters 15. 24 and 28.00, can identify signs of the tree stress and or disease, and develop appropriate irrigation practices.

3. Indian Laurel Fig (*Ficus microcarpa var.nitida*)
100 E. Constance Ave. (SE corner Constance at Anacapa St.) – Privately owned, City maintained

Current Conditions: This tree exists within an approximate 200 square foot planter between the public sidewalk and a wall. A planter exists under the canopy on the other side of the wall and in private property that the tree roots can access for water. The current condition of this tree is good.

Constraints: The majority of the tree's absorbing roots are under the public street or within the adjacent private property making watering by the City difficult. Although water can be applied within the parkway, it is limited.

Action: Staff will monitor the health of this tree on a bi-monthly basis and provide water within the parkway. Staff will work with land owners to solicit their participation in tree watering as well as to see if access to their property is available for watering.

Historic and Specimen Tree Health Assessment Details

Bi-monthly inspections will be completed per tree. These duties will be split between the City Arborist and the Street Tree Supervisor. The inspection will assess signs of overall tree vigor and potential risks associated with a decline in tree health. The inspection will include the following:

Vigor- an assessment of overall tree health to be classified as poor, good, or excellent:

> **Poor**- tree is weak, growing slowly, and/or under stress
> **Good**- tree has average vigor for its species and the site conditions.
> **Excellent**- tree is growing well and appears to be free of significant health stress factors.

Foliage- size and color are indications of tree health as compared with a healthy specimen of the same species for the area under normal conditions.

> **None (stressed)** - a tree that has dropped its leaves because it is stressed.
> **Normal** - foliage size and color are normal for the species in the area or missing for seasonal reasons.
> **Chlorotic** - yellowish-green to yellow leaves. May indicate insects or nutrient deficiency, not necessarily drought.
> **Necrotic** - partially dead, or dead leaves in part of or the entire crown.
> **Dieback** - leaves, twigs, lateral branches.

Trunk/Main Stems- cracks, fungal growths, galls, cankers, decay are all signs of declining tree health.

> **Dead or missing bark** - indicates dead cambium where new bark and wood is not currently being produced.
> **Abnormal bark texture/color/growth patterns** - may indicate a fungal or structural problem with the trunk.
> **Cracks**- separation in the bark and possibly wood in either a longitudinal or transverse direction which may indicate a safety hazard.
> **Bleeding or seeping sap –** Can indicate disease or internal decay.
> **Canker**- localized diseased areas on the branch; often sunken or discolored.
> **Conks/Mushrooms**- indicators of decay; not always indicative of a structural threat or defect.

Root/Root Collar- girdling, dead roots, cracks, decay, mushrooms and other signs can indicate weakness in the structural support or indicate other defects.

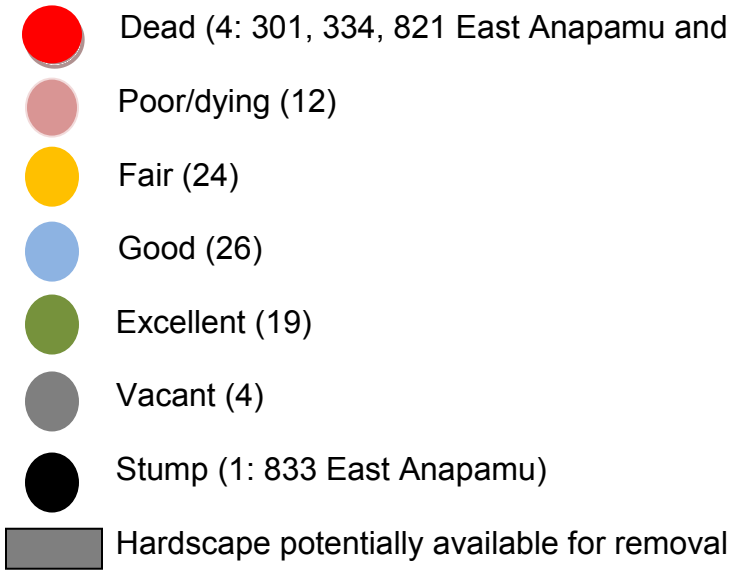
> **Stem girdling**- restriction or destruction of the trunk or buttress roots.
> **Dead**- if one or more structural support roots are dead.
> **Decay**- note if any.
> **Bleeding or seeping sap –** Can indicate disease or internal decay.
> **Conks/Mushrooms**- indicators of decay; not always indicative of a threat or defect.

Cavity- indicator of heartwood decay and may be a safety issue.

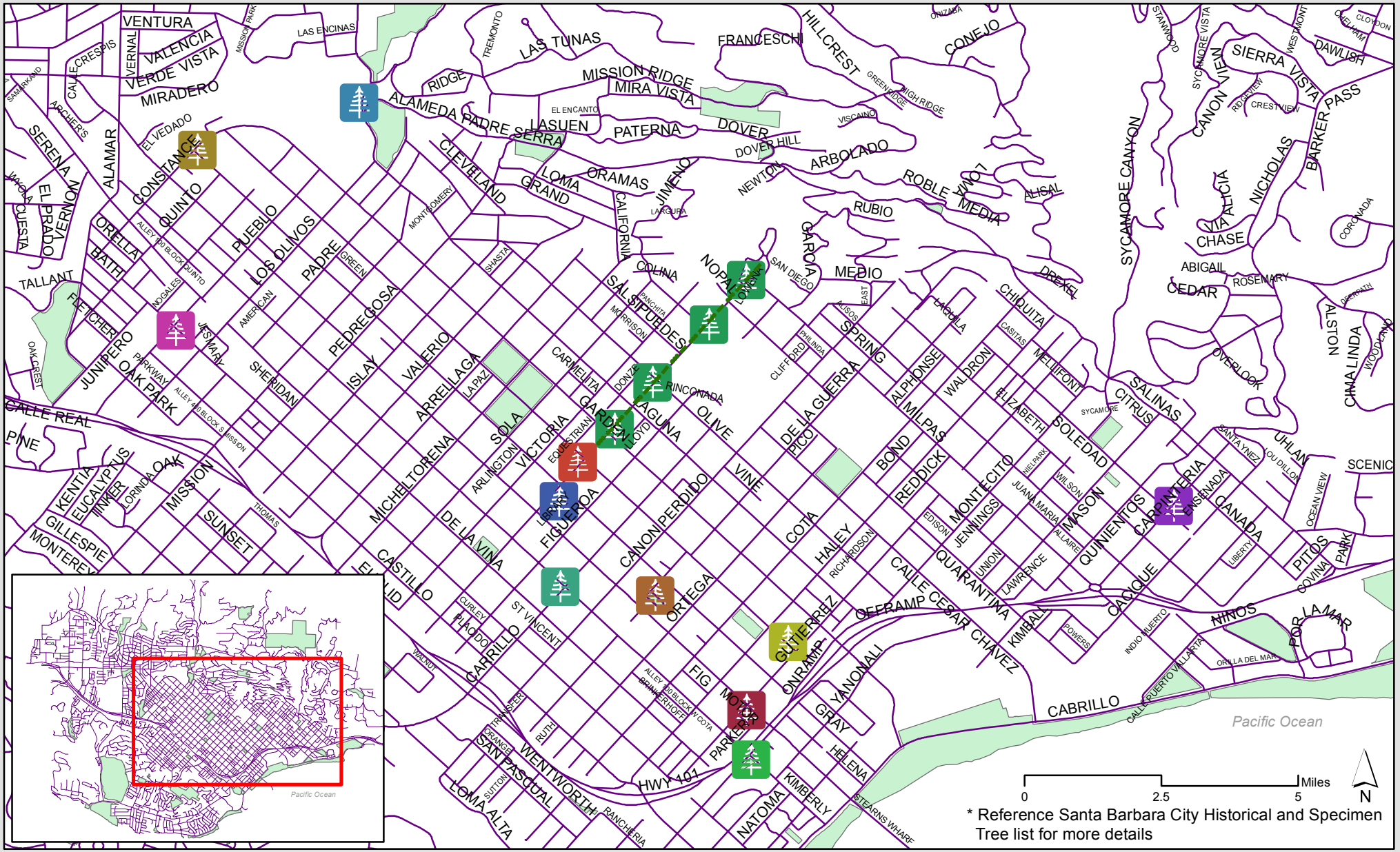
East Anapamu Street Health Condition Map

The following maps illustrate 1. the location of historic and specimen trees, and 2. the health condition of the Italian Stone Pines from 300 to 800 blocks of East Anapamu Street as well as locations within the parkway where hardscape exists, but may be taken out.

Due to limitations with the City MAPS program, the legend has been included here.



City of Santa Barbara Historic Landmark and Specimen Trees



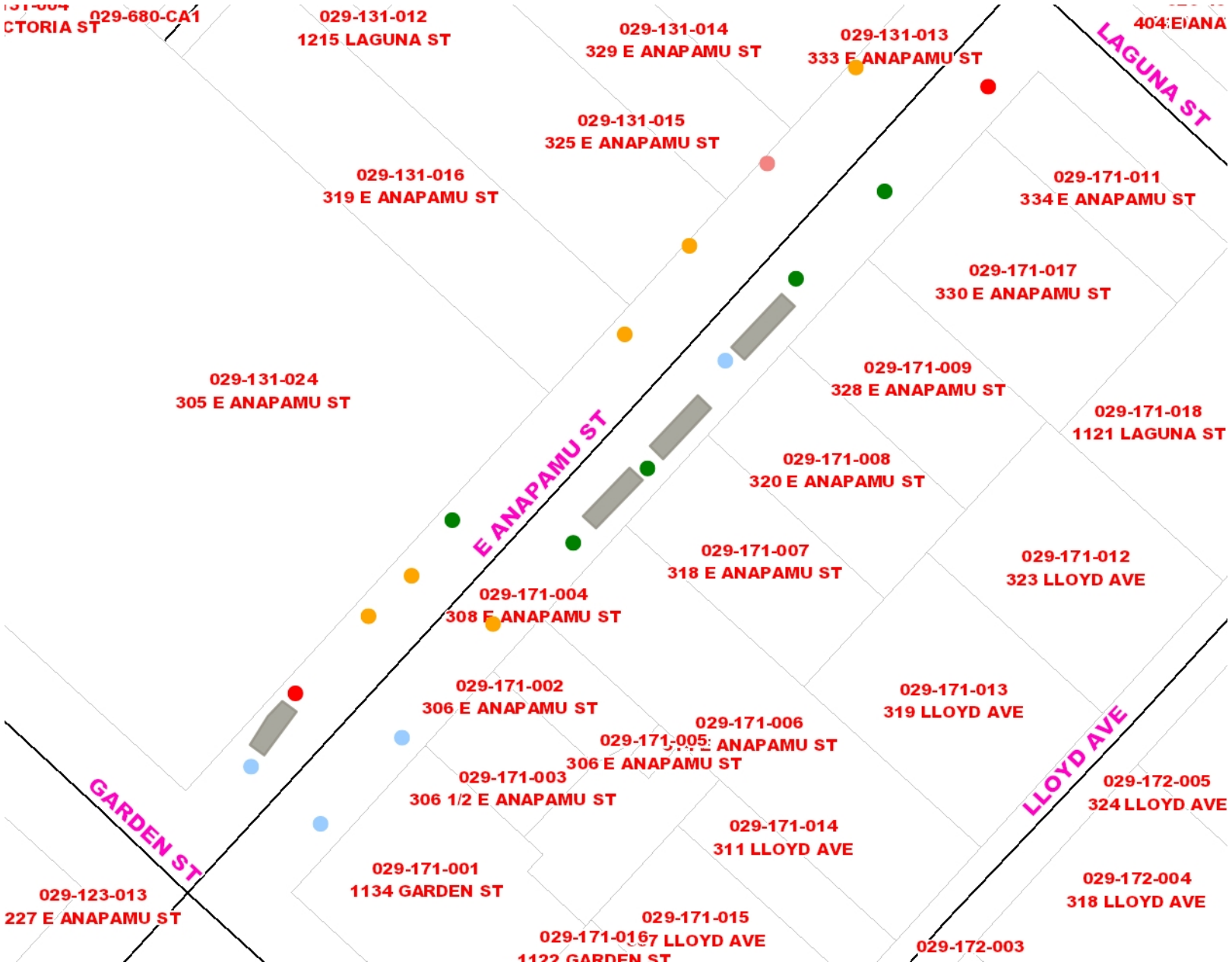
Historic and Specimen Trees

Reference Number*, Common Name

- H1, Moreton Bay Fig
- H2, Moreton Bay Fig
- H3, City Hall Pepper
- H4, Platanus racemosa
- H5, Doremus Stone Pine
- H6, Fernald Eucalyptus
- H7, Franceschi Flame Tree
- H8, Tree of Light
- H9, Lemon Scented Eucalyptus
- S1, American Elm
- S2, Australian Fan Palms
- S3, Indian Laurel Fig

Coordinate System: NAD 1983
State Plane California V FIPS 0405 Feet
Projection: Lambert Conformal Conic
Datum: North America 1983
Map Scale: 1: 153,500

300 Blk E Anapamu- Garden to Laguna St



Legend

- City Limits
- Parks
- Assessor's Parcels - City
- Pacific Ocean
- Street Centerlines

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MAP DISCLAIMER

Notes

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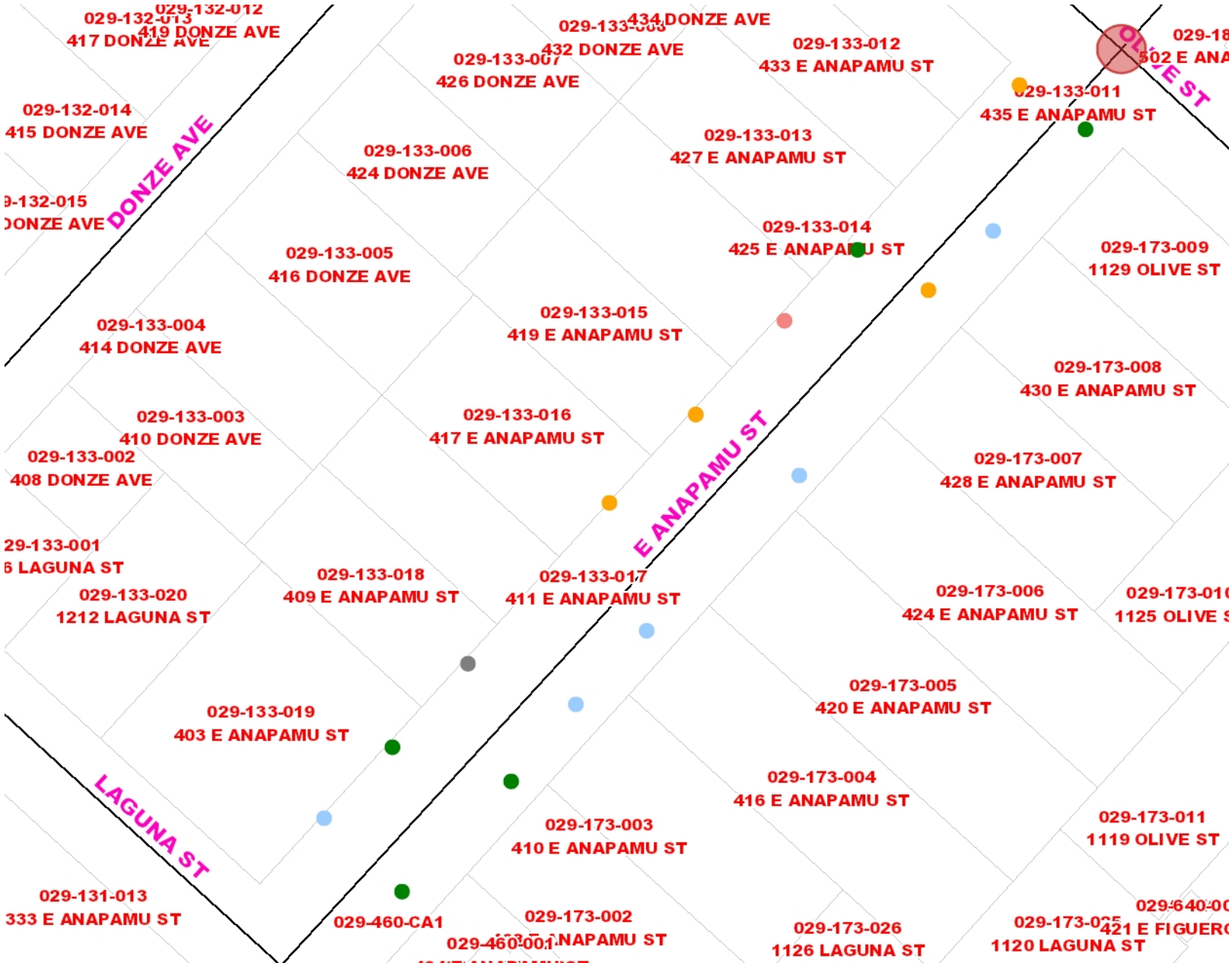
400 Block E. Anapamu- Laguna St to Olive



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Notes

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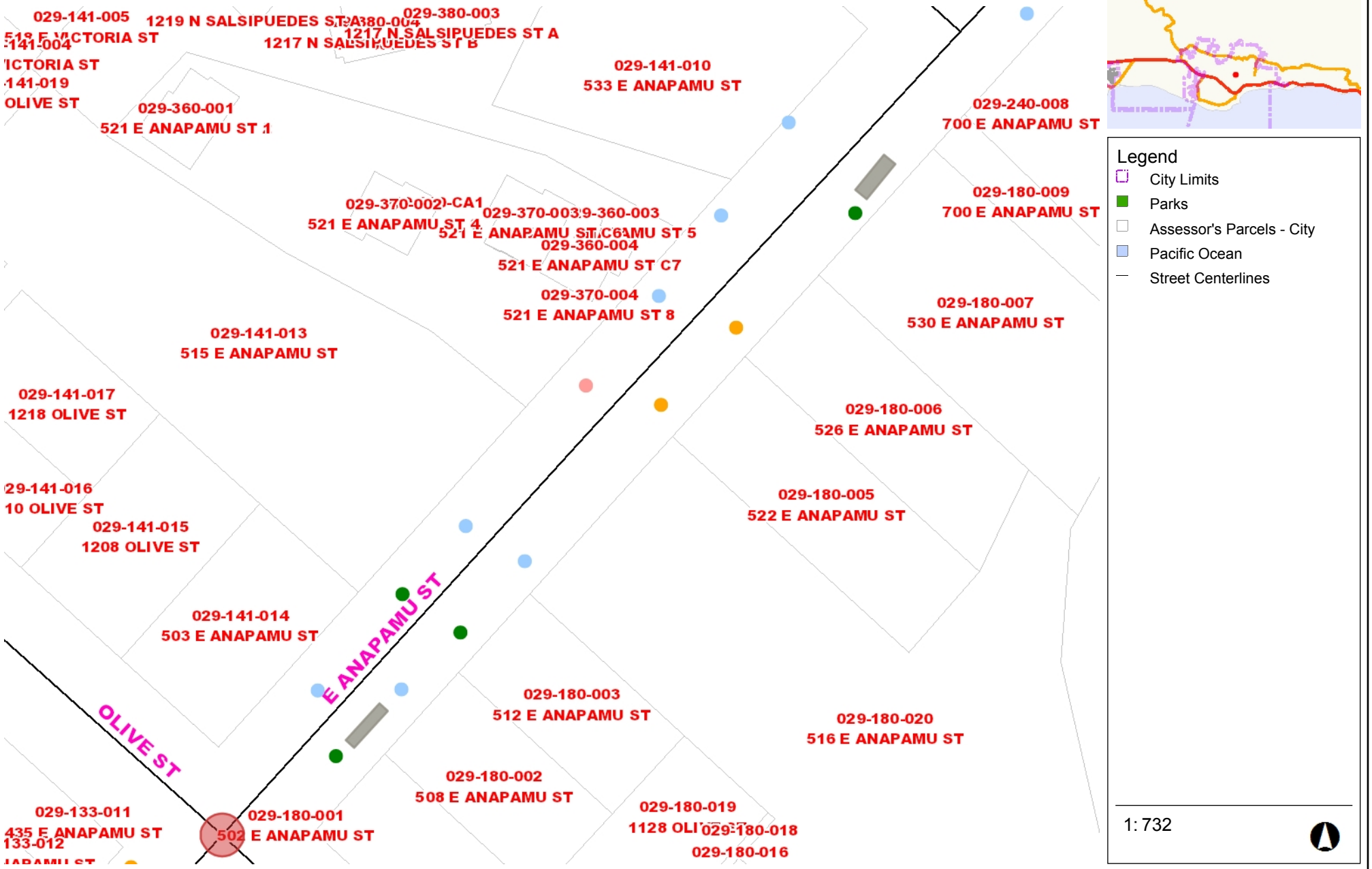
500 Block E. Anapamu- Olive to Alta Vista



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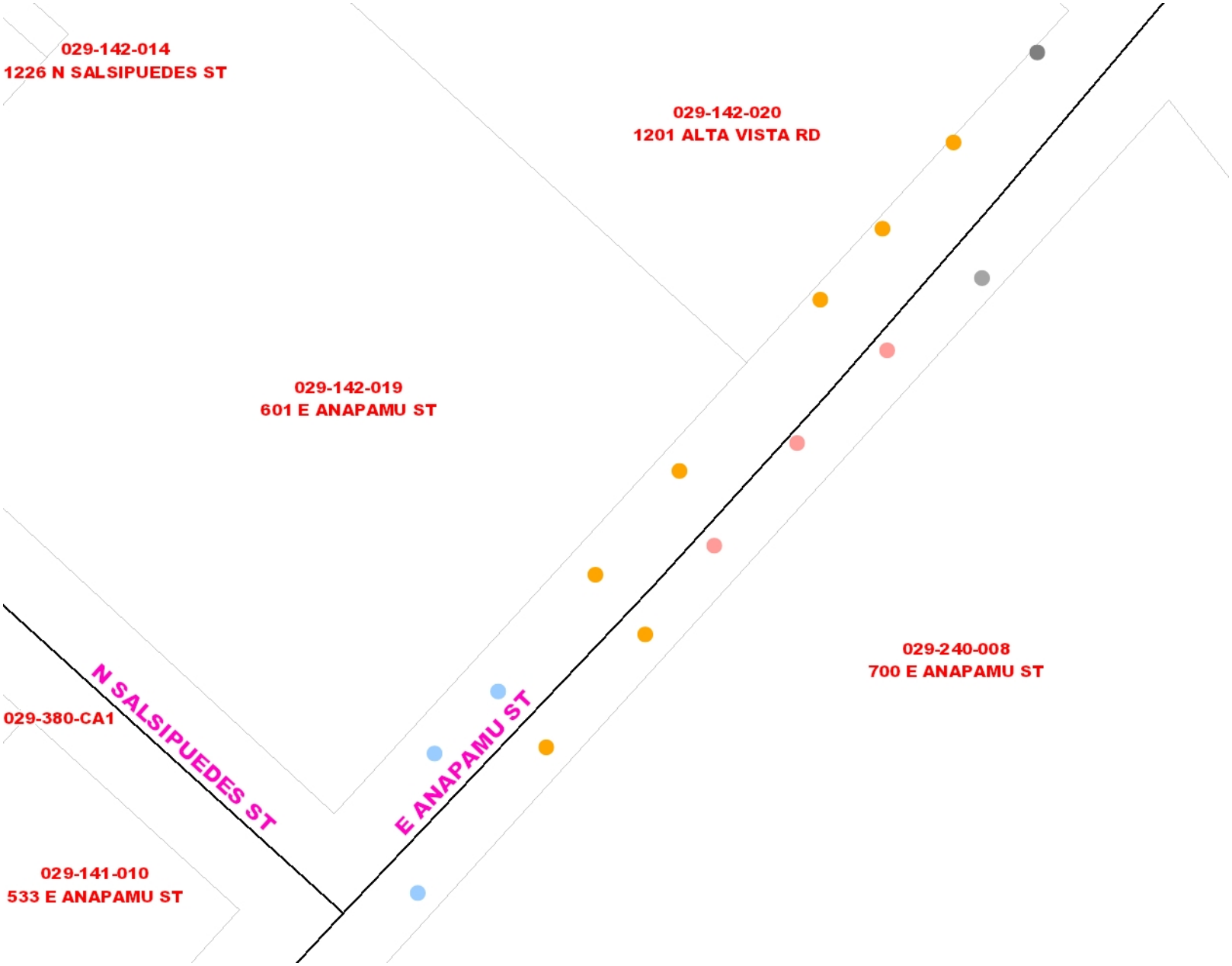
600 Block E. Anapamu- Salsipuedes to Alta Vista



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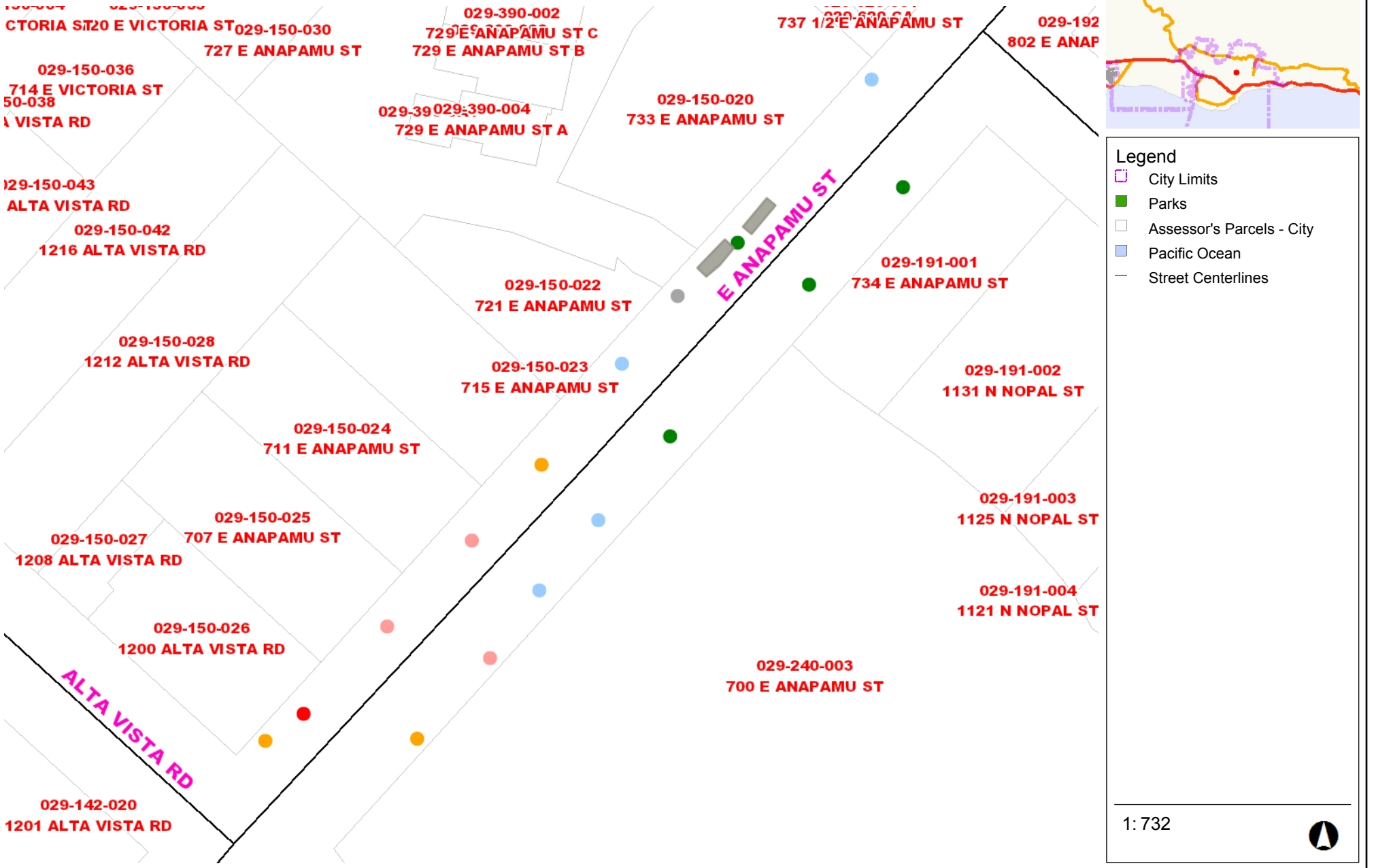
700 Block E. Anapamu- Alta Vista to Nopal St.



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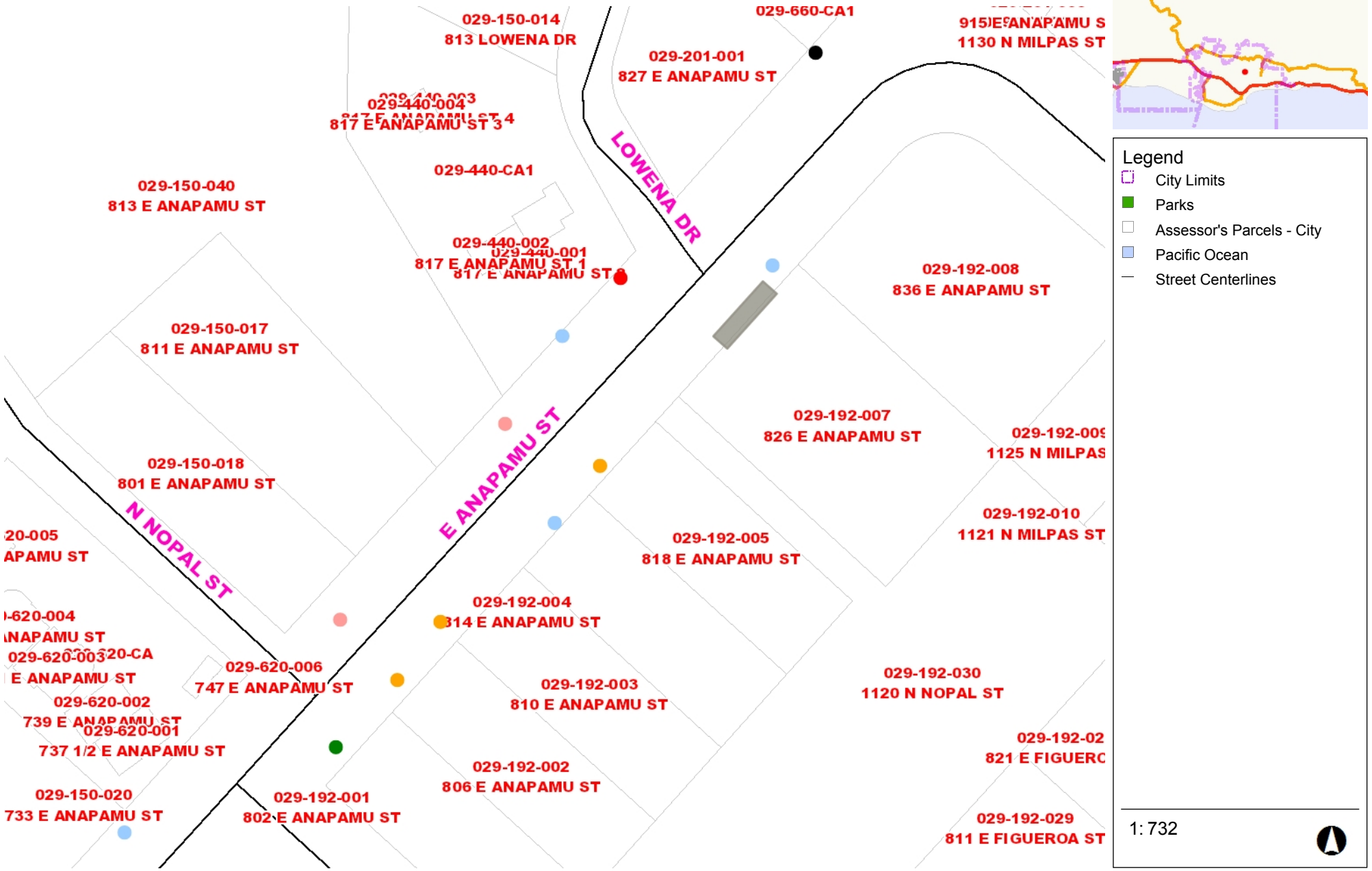
800 Block E. Anapamu - Nopal to Milpas St.



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