CITY of BRISBANE

Open Space and Ecology Committee Meeting Agenda

Wednesday, April 23, 2025 at 6:30 PM • City Hall 50 Park Place, Brisbane, CA 94005

The public may observe/participate in Committee meetings using remote public comment options or attending in person. Committee members shall attend in person unless remote participation is permitted by law. The Committee may take action on any item listed in the agenda.

TO ADDRESS THE COMMITTEE

IN PERSON

Location: 50 Park Place, Brisbane, CA 94005, Community Meeting Room

Masks are no longer required but are highly recommended in accordance with California Department of Health Guidelines. To maintain public health and safety, please do not attend in person if you are experiencing symptoms associated with COVID-19 or respiratory illness.

Remote Participation

Members of the public may observe/participate in the Committee Meeting by logging into the Zoom Webinar listed below. Please be advised that if there are technological difficulties, the meeting will nevertheless continue.

The agenda materials may be viewed online at www.brisbaneca.org at least 24 hours prior to a Special Meeting, and at least 72 hours prior to a Regular Meeting. Archived videos can be replayed on the City's website, brisbaneca.org/meetings.

Remote Public Comments

Remote meeting participants may address the Committee members via the Zoom Webinar or Call In Number. Meeting participants are encouraged to submit public comments in writing in advance of the meeting to mebrown@brisbaneca.org. Emails will not be monitored during the meeting.

Join Zoom Webinar: www.brisbaneca.org/osec-zoom
Meeting ID: 976 4295 0160
Call In Number: 669.900.9128
Note: Callers dial *9 to "raise hand" and dial *6 to mute/unmute.

SPECIAL ASSISTANCE

If you need special assistance to participate in this meeting, please contact Mollie Brown at mebrown@brisbaneca.org or (415) 218-1348. Notification in advance of the meeting will enable the City to make reasonable arrangements to ensure accessibility to this meeting.

CALL TO ORDER

ROLL CALL

A. Consider any request of a committee member to attend the meeting remotely under the "Emergency Circumstances" of AB 2449

ADOPTION OF THE AGENDA

ANNOUNCEMENTS

ORAL COMMUNICATIONS

APPROVAL OF THE MINUTES

B. Minutes of March 26, 2025

OLD BUSINESS

C. Consider process and possible subcommittee for OSEC Baylands Draft EIR review

NEW BUSINESS

D. Public Tree Inventory and Management Plan – Bob Sage, GIS Manager

E. Tree Canopy Goal Recommendation

STAFF UPDATES

SUBCOMMITTEE REPORTS

CALENDAR ITEMS

CHAIR AND COMMITTEE MEMBER MATTERS

NEXT MEETING: May 28, 2025

ADJOURNMENT

File Attachments for Item:

B. Minutes of March 26, 2025

CITY of BRISBANE

Open Space and Ecology Committee Meeting Minutes

Wednesday, March 26, 2025 at 6:30 P.M. • Hybrid Meeting 50 Park Place, Brisbane, CA

CALL TO ORDER – 6:31 PM

ROLL CALL

A. Consider any request of a committee member to attend the meeting remotely under the "Emergency Circumstances" of AB 2449

Committee members present: Armstrong, Atapattu, Becker, Ebel, Rogers, Walker

Staff members present: Sustainability Manager, Etherton; Deputy Director of Public Works, Kinser; Sustainability Fellow, De La Cruz

ADOPTION OF THE AGENDA

Rogers moved to adopt the agenda and Becker seconded; the motion was adopted unanimously.

ANNOUNCEMENTS – Introductions of Committee Members and their backgrounds including new arrival Atapattu.

ORAL COMMUNICATIONS – Article on geothermal networks shared with committee by former member Glenn Fieldman; Ebel mentioned this could be an opportunity for the Baylands.

Paul Bouscal, Brisbane resident, former OSEC member and previously involved with San Bruno Mountain Watch, mentioned the recent approval of the protection of the Brisbane Acres, was appreciative of OSEC and the City for work on classifying the land as open space, and is hopeful of the outcomes for wildlife and the local environment.

APPROVAL OF THE MINUTES

B. Minutes of February 26, 2025 - Ebel motioned to approve the minutes and Armstrong seconded. Becker and Atapattu abstained; the motion was otherwise adopted unanimously.

OLD BUSINESS

C. Consider process and possible subcommittee for OSEC Baylands EIR review
   - Etherton mentioned EIR will be available April 3 and comments are due in 150 days. Comments from Committee will be due to staff for compilation likely mid-August; Etherton will follow up with the proposed timeline.
   - Atapattu will focus on Socioeconomic Effects, Aesthetic Resources, and Irreversible Environmental Effects; Land Use and Planning Policy will be taken on by Ebel and Becker together; Armstrong will take over Transportation from Rogers. Growth-Inducing Impacts is left unassigned and will be revisited later.

NEW BUSINESS

D. Frog habitat update and volunteer events – Paul Bouscal

- Kinser introduced Bouscal, who is working on maintaining Crocker Trail frog habitat and would like to initiate volunteer days.
- Bouscal introduced the frog habitat (on City and private property) and gave background on the area, mentioning that the invasive grasses were removed from the channel by the city's contractor. The channel is an important space for frog habitat and biodiversity. Highlighted talks of volunteer days coordinated with Bouscal and the City, hopefully with educators from San Bruno Mountain Watch. The volunteer days would include a first light planting and habitat restoration every quarter or semiannually moving forward. Goal is to create other stewards for the habitat who will be able to in the future take charge of the project and volunteer days.

E. Tree Canopy Goal Recommendation –

- Rogers recapped a meeting with Etherton, with the outcome to recommend a goal of 23% citywide tree canopy over the next 15 years (requiring adding around 280 trees/year).
  Etherton added clarifying details about the scenario and mentioned the need to encourage or incentivize private property owners to plant trees.
- Becker expressed concerns with recommendation, as it does not address trees that need to be removed, and focus should be on quality and variety of existing trees, rather than adding trees. Becker also mentioned fire dept recommends residents remove trees from certain areas of their property.
- Rogers mentioned the concern over the costs of trees, and ensuring appropriate trees planted and suggested a partnership with San Bruno Mountain Watch or their nursery to provide acceptable trees at a low cost.
- Atapattu mentioned Title 24, Part 11 of CA Building Standards Code, aka CalGreen standard for new development, which requires paved areas to have 20% canopy, and 50% for undeveloped areas. Others suggested a 25% target across all areas except those included from the presented scenario. Etherton and Rogers will run these two additional scenarios for review next meeting.
- Bouscal mentioned Mission Blue Nursery offers contract grows and might be a viable partner and suggested the industrial park as a good area for a nursery.

STAFF UPDATES

Etherton:

- Noted the PCE contracts for the Pool Incentive and Loan as well as Local Agency grant have been signed, so we can move forward on the Brisbane Village EV charger replacement
- Will be sending an email from HR about mandatory harassment prevention training

- Outlined the results of the 2023 GHG inventory: reduced overall emissions 15.72%, with highest emissions from on-road transportation, which are around 40% commercial vehicles

SUBCOMMITTEE REPORTS AND REORGANIZATION

- Education and Outreach (Armstrong, **Rogers**, Walker) – Etherton noted the trash grabbers are available at City Hall, the Marina and the pool, not at the library
- Climate Action Planning (Ebel, Walker) – Ebel noted their review of the GHG inventory in detail, and started brainstorming funding options
- *Crocker Trail Frog Habitat (Rogers, Salmon) – Armstrong will join
- Baylands Specific Plan subcommittees – Atapattu will join Chapter 6 subcommittee

CALENDAR ITEMS – Etherton noted the April 10th compost giveaway and April 26th Earth Day Habitat Restoration events

CHAIR AND COMMITTEE MEMBER MATTERS – Rogers mentioned illegal dumping on Quarry Road

NEXT MEETING: April 23, 2025

ADJOURN – 8:30 PM

File Attachments for Item:

D. Public Tree Inventory and Management Plan – Bob Sage, GIS Manager

City of Brisbane 2024 Tree Inventory

The City of Brisbane completed an inventory of City owned trees in the spring of 2024. The inventory of approximately 5000 trees and accompanying data was collected by PlanIT Geo. In addition, a separate citywide review of the tree canopy was performed by PlanIT Geo comparing satellite data from 2010 and 2022 of tree cover across the jurisdiction's boundaries.

PlanIT Geo delivered the inventory data as a GIS shapefile, as well as summary charts and statistics. Brisbane Public Works staff reviewed the data and presents it here in this Executive Summary as well as the Brisbane Tree HubSite which provides GIS maps, data and searchable content.

Quick Stats

4720	180	12.02	96	240
Total Trees Counted	Unique Species	Average Diameter at Breast Height (DBH) (inches)	Largest Diameter at Breast Height (DBH) (inches)	Potential Planting Sites Identified

Eco Benefits

Total Eco-Benefits	
Runoff Avoided:	1331.53 (ft^3)
Interception:	19,827.89 (ft^3)
Pollutants Removed:	5923.94 (lbs)
Carbon Storage:	9,607,535.00 (lbs)
CO_2 Storage:	35,227,636.00 (lbs)
CO_2 Sequestered:	903,467.50 (lbs)

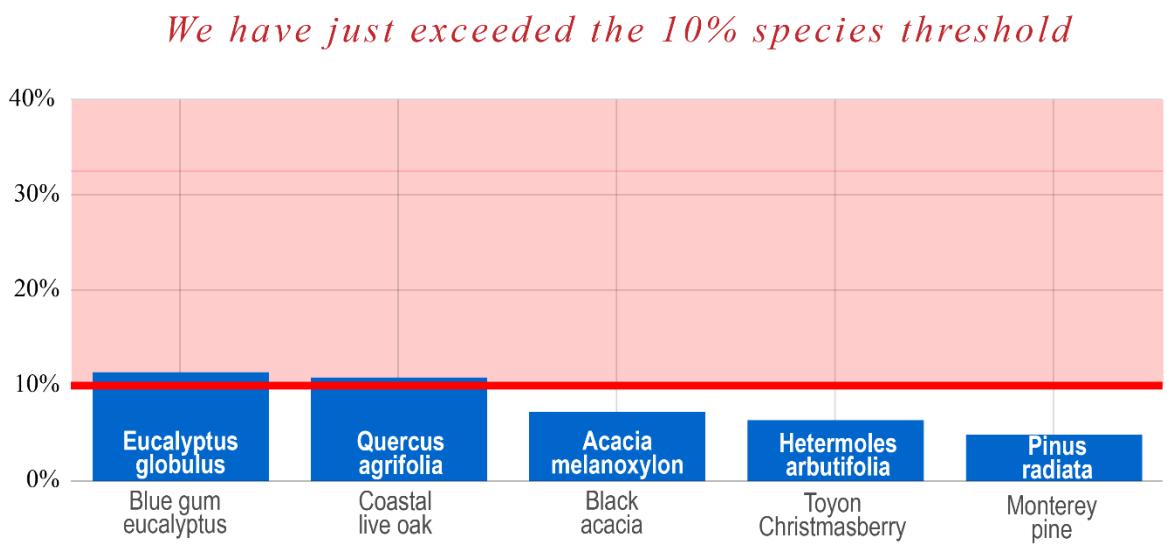
For details of the Eco Benefits, which are calculated by iTree, see planitgeo.com/library/the-new-i-tree-benefits-api-is-here/

Tree Diversity

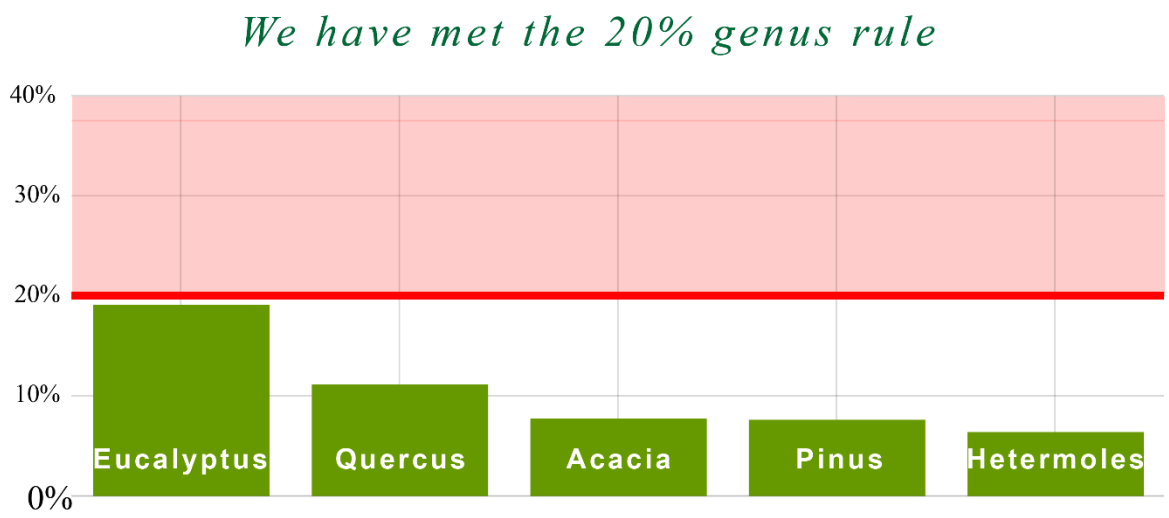
The Tree Diversity charts show the top five most common tree species, genera, and families within the inventory. The red horizontal lines demonstrate the 10-20-30 rule, which suggests an urban tree population should include no more than 10% of any one species, 20% of any one genus, or 30% of any family. Tree managers, researchers, and practitioners use these parameters first recommended by Santamour in 1990 as an industry standard to measure a tree population's resiliency to harmful tree pests and diseases and other factors. Consider establishing these thresholds on a community-wide scale and/or at smaller-scales such as by neighborhood, street corridor, block, or project.

Santamour, F.S., 1990. Trees for urban planting: diversity, uniformity and common sense. Paper Presented at the Proceedings of the 7th Conference of the Metropolitan Tree Improvement Alliance.

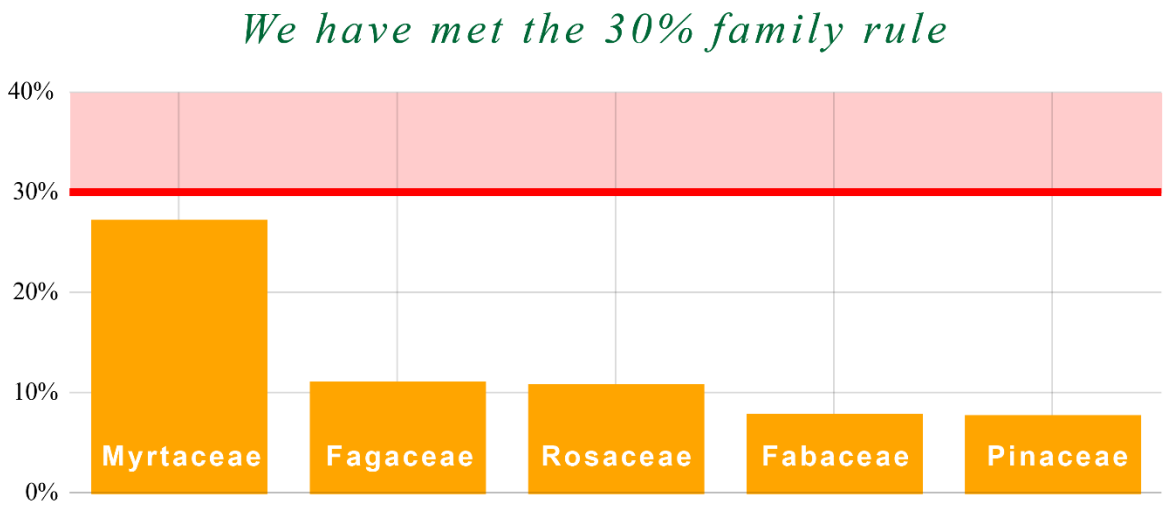
Top 5 Species



Top 5 Genera

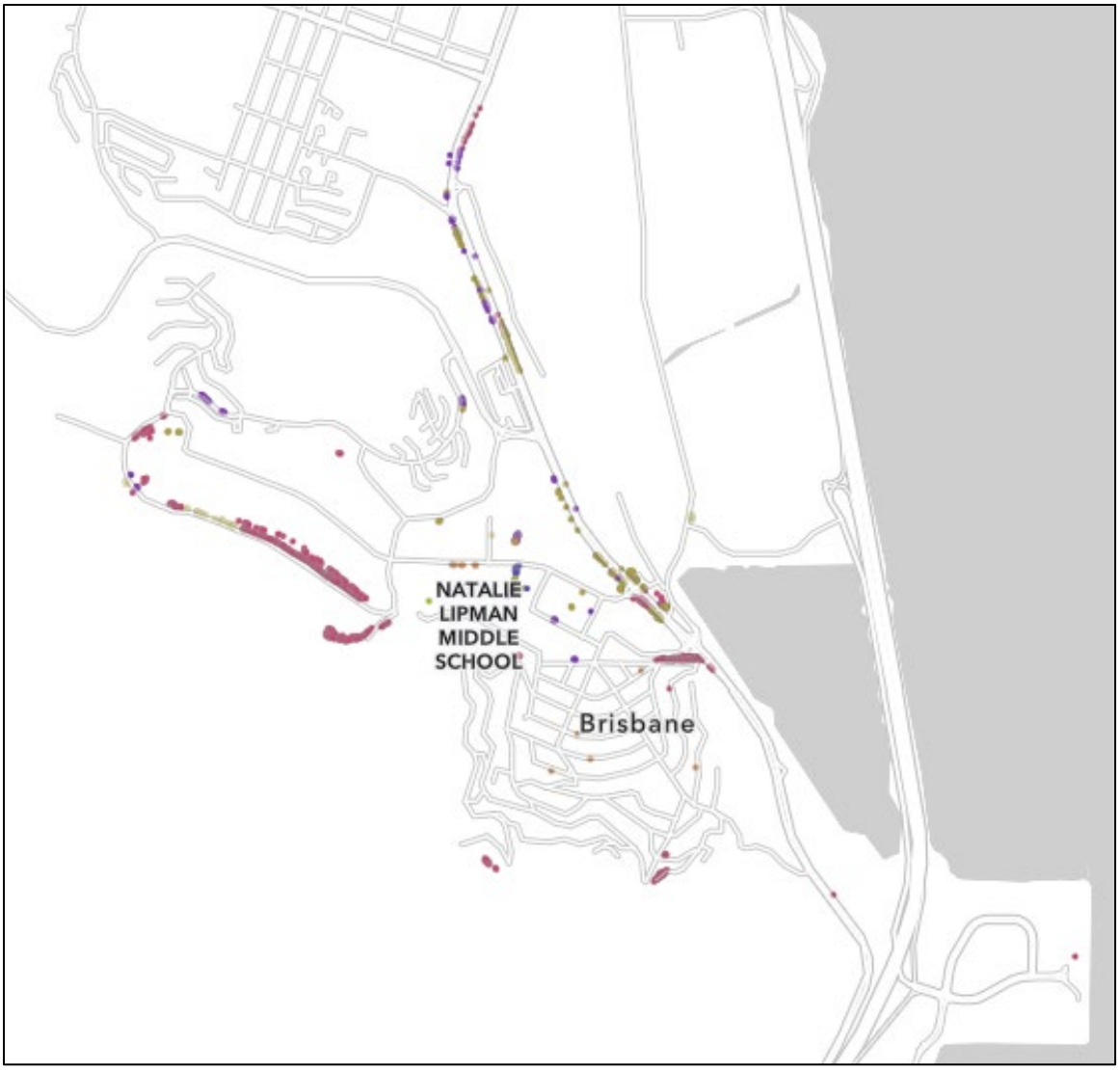


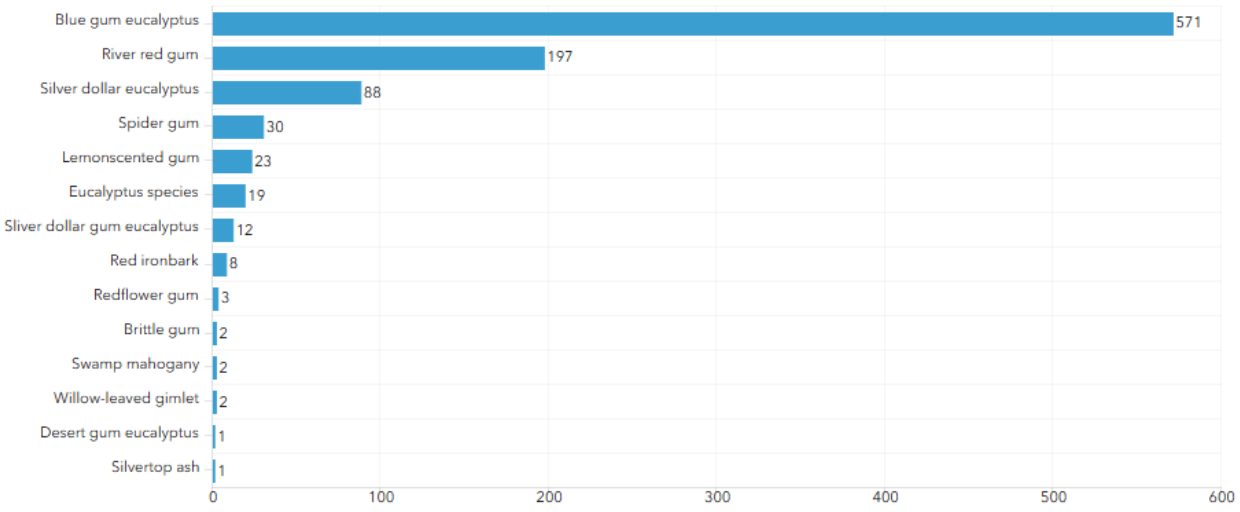
Top 5 Families



The Tree Diversity Dashboard on the Brisbane Tree HubSite includes charts showing the Top 20 Species and Top 20 Genus, and the counts of those trees in the inventory, including the ability to filter the map to identify the locations of those trees. For instance, there are 959 Eucalyptus (genus) on city-owned properties and rights of way within Brisbane:

D.


NATALIE
LIPMAN
MIDDLE
SCHOOL
Brisbane

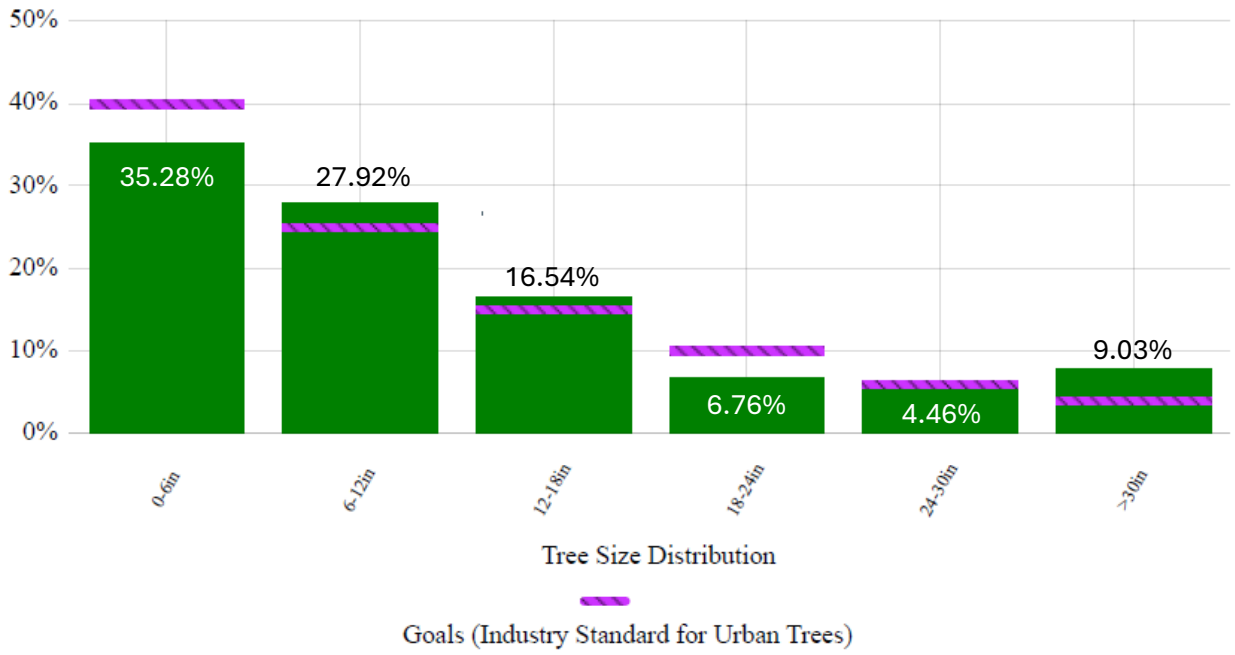

Blue gum eucalyptus 571
River red gum 197
Silver dollar eucalyptus 88
Spider gum 30
Lemonscented gum 23
Eucalyptus species 19
Sliver dollar gum eucalyptus 12
Red ironbark 8
Redflower gum 3
Brittle gum 2
Swamp mahogany 2
Willow-leaved gimlet 2
Desert gum eucalyptus 1
Silvertop ash 1
0
100
200
300
400
500
600

Tree Size Distribution

This chart displays the May 2024 recorded diameter (diameter at breast height or DBH, measured 4.5-feet above natural grade) values along with DBH goals (as defined by Richards et al. in 1983 and 1993). This information is often used to identify a tree population's structure, distribution of tree canopy cover and associated benefits, current maintenance needs, projecting potential surges in maintenance and removal needs, among other considerations in sustainably managing trees in communities. A distribution of tree size classes as indicated by the "Goal" uniformly distributes tree benefits and maintenance needs. Smaller, younger trees compared to large diameter trees aim to compensate for the loss of tree canopy cover and associated benefits that occur when large trees reach their full potential, mature, and begin to decline, requiring eventual removal (in most cases).

Richards, N. A. 1983. "Diversity and Stability in a Street Tree Population." Urban Ecology 7(2):159–171.

Richards, N.A. 1993. Reasonable guidelines for street tree diversity. Journal of Arboriculture 19:344–349.

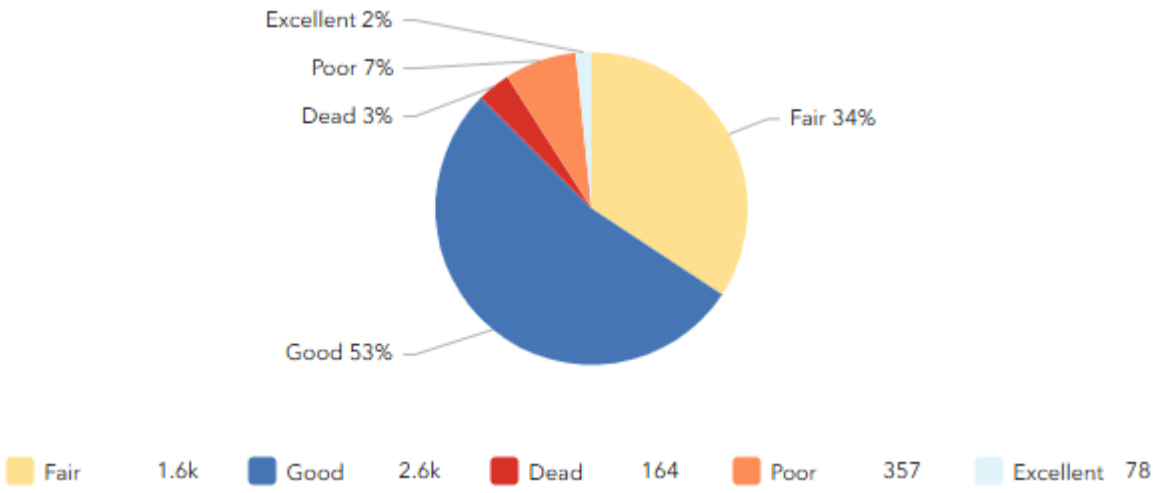


The Tree Diversity Dashboard on the Brisbane Tree HubSite includes a pie chart of the Brisbane tree size data, including the ability to filter the map to identify the locations of trees of that size.

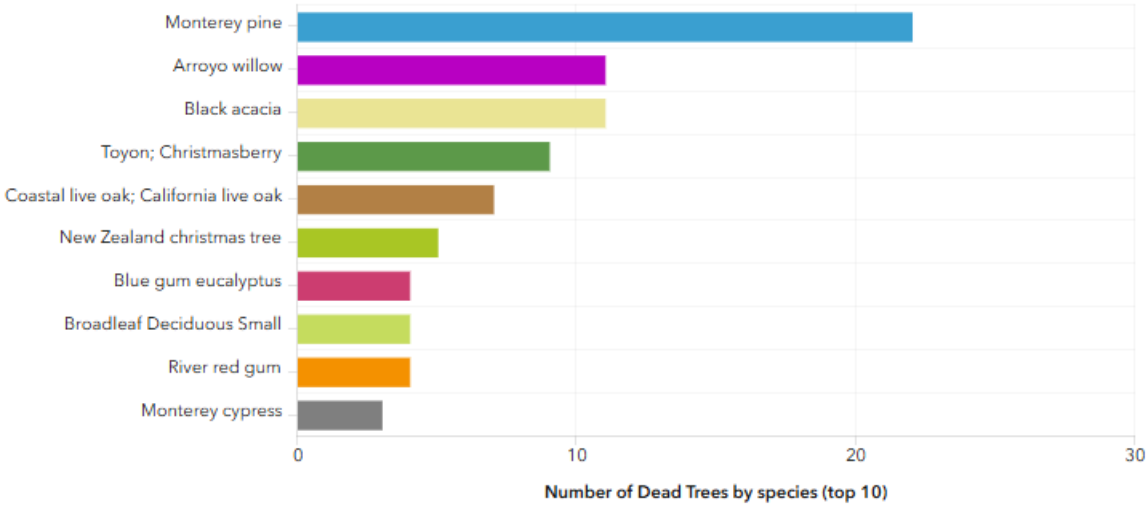
Tree Health

A key goal of inventorying city-owned trees is to understand the health of our trees and identify maintenance needs. To that end, two dashboards have been created: a Tree Health Dashboard, and a Maintenance and Risk Dashboard which identifies specific maintenance needs. Public Works Buildings and Grounds staff have reviewed and, as of mid-January 2025, have removed at least 8 trees, trimmed 17 and evaluated approximately 50 more. Where trees are dead but not posing a risk to the public, they have been left in place for ecologic and economic reasons.

Fortunately, 90% of inventoried public trees are in Excellent, Good or Fair Condition.



Unfortunately, that leaves 10% of trees in Poor Condition or Dead. Of the 164 trees PlanIT Geo identified as “Dead”, the data indicates that 53 are in fact Stumps. The Top Ten Species of Dead Trees in the inventory are:



Both the charts shown on this page are included in the publicly accessible Tree Health Dashboard, including the ability to click on a condition or species and see those tree locations in the map.

PlanIT Geo's dataset includes additional data intended to support the City's maintenance of its trees, such as Tree Work, Risk Ratings, Conflicts with Wires, Trees observed with Vines, and more.

TREE WORK	COUNT*
None Specified	3,147
Crown Cleaning	752
Prune-Clearance	452
Prune-Structural	283
Prune-Utility	267
Remove Hardware	207
Remove	198
Insects	43
Disease	26
Monitor	24
Remove-Hanger	19
Reduce	16
Prune-Restoration	13
Thin	13
Other	12
Remove-Girdling Root	7
Raise	4
Amend Mulch	1

MAINTENANCE PRIORITY	COUNT	PERCENTAGE
Low	4,546	96.3%
Medium	155	3.3%
High	19	0.4%

RISK RATING	COUNT	PERCENTAGE
None Specified	2,909	57.8%
Low	2,120	42.1%
Moderate	3	0.1%
High	1	0.0%
Extreme	0	0.0%

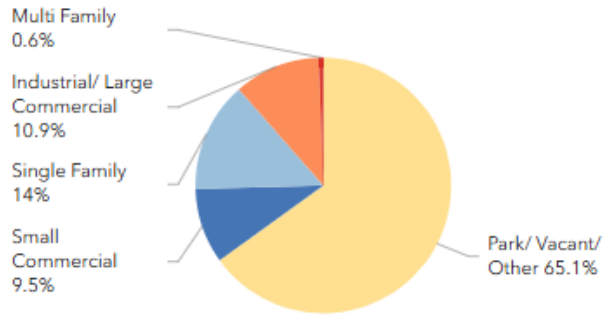
Maintenance Priorities and Risk Ratings were evaluated separately by PlanIT Geo arborists, and there are not clearly-defined overlaps between the categories. See the final page of this Executive Summary for definitions.

*Note that, aside from "None Specified," the same tree could be counted with multiple different Tree Work needs. Public Works staff will perform tree work according to Risk Rating first.

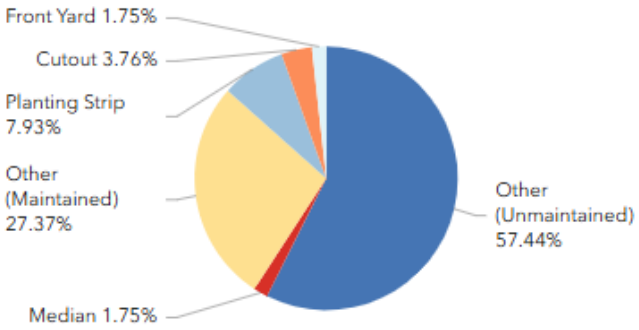
Tree and Potential Planting Site Locations

The surrounding land use of inventoried public trees was identified by PlanIT Geo, however the land use does not necessarily match the City's General Plan land use designations. The inventories also included a tree's growing space.

Land Use of City Trees

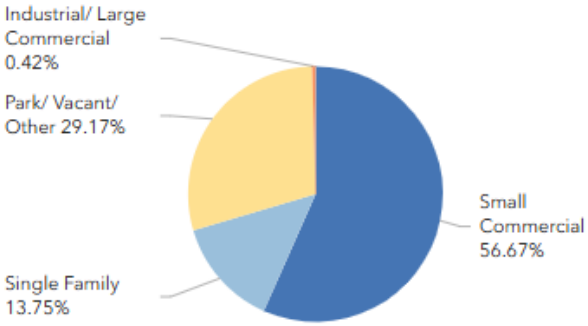


City Trees Growing Spaces

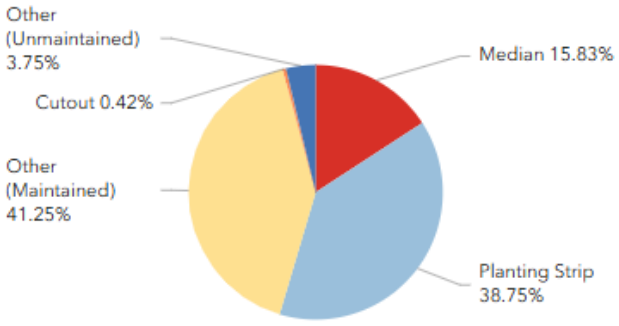


PlanIT Geo further identified 240 Potential Planting Sites, including their surrounding land use (again distinct from the City's designations) and the tree's growing space.

Potential Planting Sites Land Use



Potential Planting Sites Growing Space



These charts are available in the City Trees and Potential Planting Sites Dashboard on the Brisbane Tree HubSite, including the ability to filter the map by any given slice of the pie.

The Potential Planting Sites will need to be investigated for viability and those deemed promising could be considered for a citywide planting effort.

Public Tree Management Plan

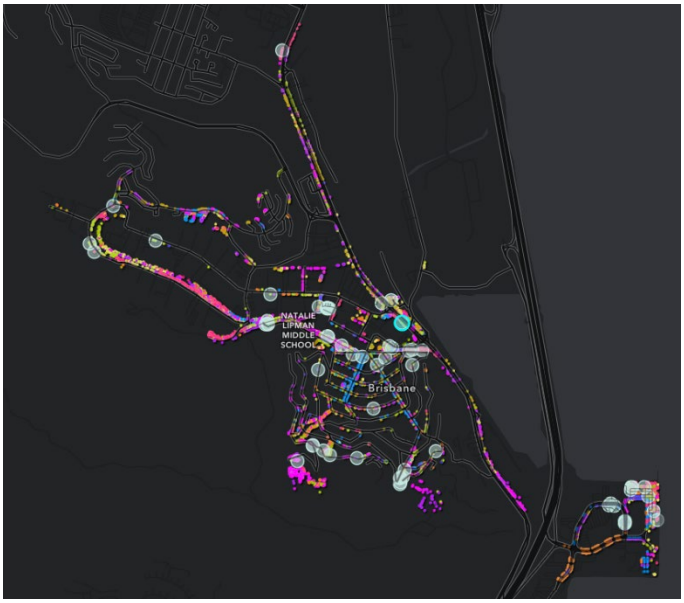
While the majority of the City's public trees are in good shape, there are maintenance needs that must be addressed to maintain public safety and the health of these important city assets. Public Works staff used the data provided by PlanIT Geo to develop and prioritize a management plan, which is outlined here and in the City Trees Management Planning App on the Tree HubSite.

Public Works staff recommend the Management Plan be considered for completion within 5 years and will make budgetary requests starting with the 2025-2026 Fiscal Year to implement the plan.

Phase 1	$129,200
Phase 2	$184,850
Phase 3	$195,700
Total cost for all phases	**$509,750**

These budget estimates do not include the cost to replant trees that are removed and currently vacant street tree locations. Planting these ~50 trees would require an additional $50,000-$100,000. These sites are in addition to the 240 potential planting sites identified by PlanIT Geo. The City has a "Tree Plant Fund" with a balance of approximately $14,200 collected from private property owners who are unable to plant a replacement tree on their property after a permitted removal which could be used to offset planting expenses.

Phase 1:



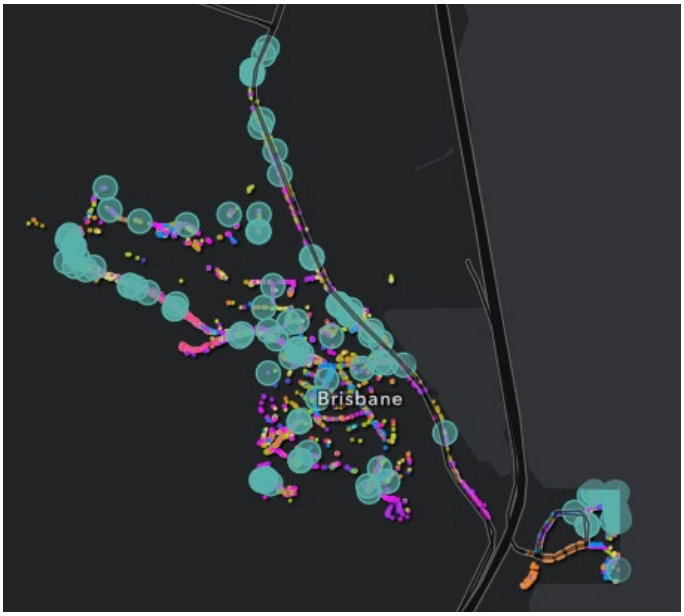
Total trees included in phase: 53

Primary work categories:

- 23 removals
- 23 crown cleaning
- 7 pruning

Estimated cost for phase: $129,200

Phase 2:



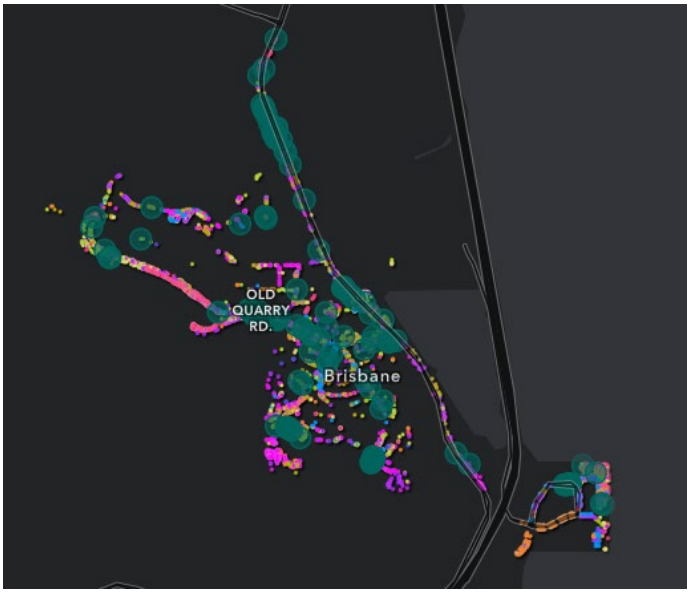
Total trees included in phase: 102

Primary work categories:

- 37 crown cleaning
- 34 removals
- 27 pruning

Estimated cost for phase: $184,850

Phase 3:



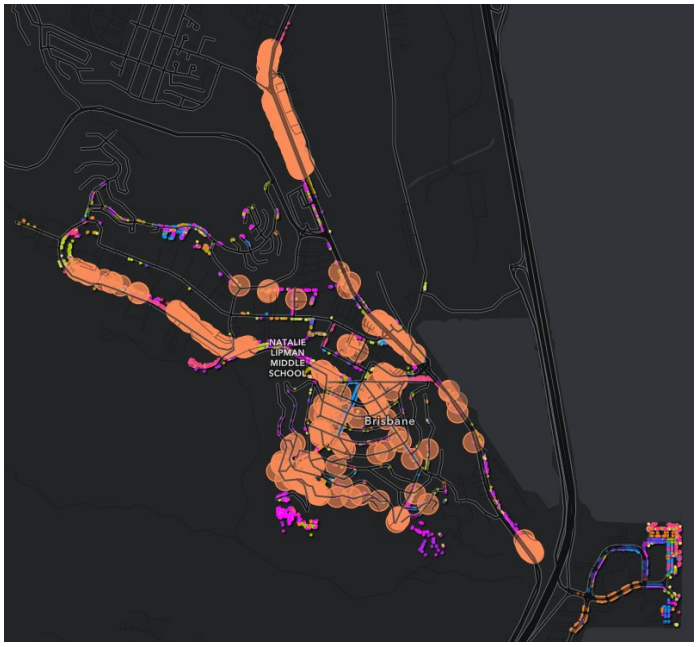
Total trees included in phase: 108

Primary work categories:

- 62 crown cleaning
- 37 pruning
- 9 removals

Estimated cost for phase: $195,700

Wires:



Approximately 267 public trees were identified as “present and conflicting with utility wires.” Public Works staff will share this dataset with PG&E to address accordingly. Some conflicts may also be addressed by pruning efforts captured in Phases 1-3.

Vines:

Approximately 318 public trees were identified with vines, which can negatively impact tree health. Removing, or cutting off at the ground to result in vines naturally dying off, is a straightforward task. The Open Space and Ecology Committee has previously called for volunteer events or efforts to address vines; staff recommends taking this approach and has developed the Vine Volunteer Management App in the Tree HubSite to facilitate this work, excluding areas within the San Bruno Mountain Habitat Conservation Plan Boundary (shown in red) where a permit and biologist supervision is required.

Next Steps

- ✓ Staff will request the City Council accept this report and approve the recommended City Tree Management Plan and Citywide Canopy 2040 Goal.
- ✓ Staff will request funds from the City Council through the budget process starting in FY25-26 to implement the City Tree Management Plan.
- ✓ Staff will share the data and map of trees conflicting with utility wires with PG&E.
- ✓ Staff and OSEC will evaluate the viability of Potential Planting Sites.
- ✓ Staff will work with the Open Space and Ecology Committee (OSEC) to implement volunteer efforts to address vines on trees.
- ✓ Staff and OSEC should use this report and Tree HubSite to recommend policies, incentives, or city-led tree planting efforts to protect and expand the canopy in support of the management plan and goals adopted by Council.
- ✓ Staff will maintain the data in the Tree HubSite on an ongoing basis as the Management Plan is implemented.
- ✓ Staff recommends evaluating the health of trees every 5-7 years, at minimum, and will make budgetary requests accordingly to support regular updates to this plan.

Definitions

For a complete list of terms used in the Tree Inventory, please refer to the PlanIT Geo Glossary.

CONDITION	Overall condition of the tree
Excellent	Trees in this category show no structural or biotic defects. They represent a tree that is 100% healthy
Good	Trees in this category show minor structural or biotic defects and represent a tree that is below 100% but above 80% healthy
Fair	Trees in this category show structural or biotic defects and represent a tree that is below 80% but above 50% healthy
Poor	Trees in this category show significant structural or biotic defects and represent a tree that is below 50% healthy often with serious decline
Dead	Trees in this category are dead and have no live growth on them

MAINTENANCE PRIORITY	A scale to categorize tree maintenance tasks based on the urgency and potential risk involved.
High	Tree work that must be addressed immediately to eliminate imminent danger to people or property
Medium	Tree work necessary to address potential safety hazards identified during a routine inspection
Low	Routine maintenance tasks and/or trees that do not require more immediate attention

RISK RATING	Risk Rating is automatically calculated based on the values present in the Likelihood and Consequences of Failures fields.
Low	Consequences are negligible and likelihood is unlikely, or consequences are minor and likelihood is somewhat likely
Moderate	Consequences are minor and likelihood is very likely or likely, or likelihood is somewhat likely and consequences are significant or severe
High	Consequences are significant and likelihood is very high or likely, or consequences are severe and likelihood is likely
Extreme	Failure is imminent with a high likelihood of impacting the target, and the consequences of the failure are severe

File Attachments for Item:

E. Tree Canopy Goal Recommendation

Canopy Goal Options

Scenario Name	Description	Resulting citywide canopy	Total Trees to Plant	Trees to Plant – Baylands & Quarry	Trees to Plant – rest of City	Trees to Plant annually – rest of City
Original 2040 Canopy Goal	Areas with existing canopy above 30%, as well as the Lagoon, waterfront, Quarry and Callippe Hill regions were left unaltered. Other areas of central Brisbane were modeled with a 30% canopy, commercial areas with a 20% canopy, and Baylands with a 25% canopy.	23%	13,033	8,813 in Baylands Quarry not modeled	4,220	280
25% w/ Exceptions	All areas were modeled with 25% canopy goal except those areas where existing canopy is above 25% already, as well as the Lagoon, waterfront, Community Park, Quarry and Callippe Hill regions.	24%	13,991	8,813 in Baylands Quarry not modeled	5,178	345
CalGreen 20/50 Scenario*	To match the most recent CA Building Code CalGreen goals of 20% in developed areas and 50% in undeveloped areas. Lagoon and waterfront were excluded, as were any areas already above the goal that best matched the census block.	32%	25,902	14,601 in Baylands 4,743 in Quarry 19,344 Combined	6,559	437

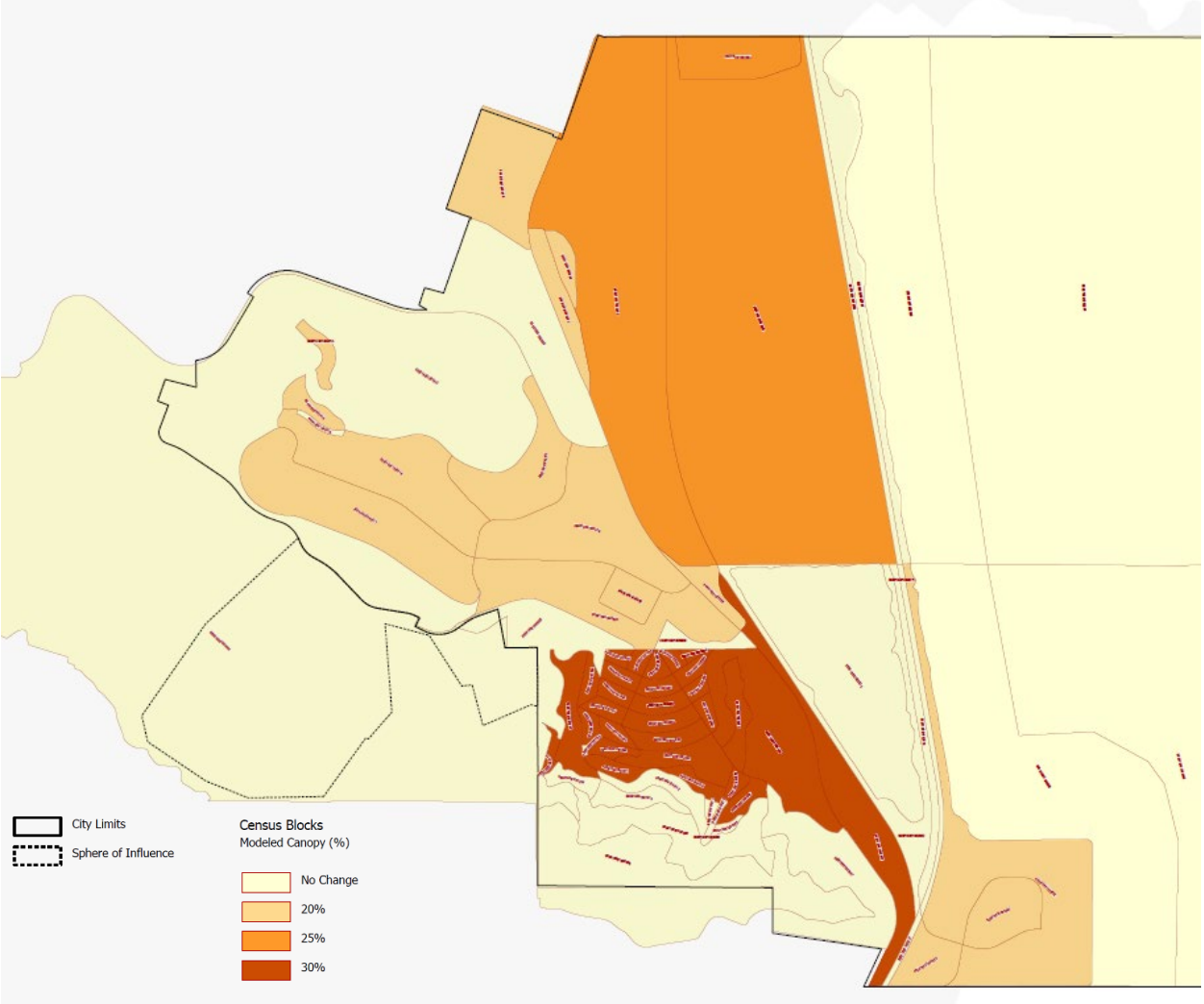
*This scenario is difficult to model with the PlanIT Geo Canopy Grow tool because many census blocks have both developed and undeveloped areas. Furthermore, the Quarry and the largest census block on the Baylands were modeled at 50% due to their current status, but that may not be appropriate or compatible with future development.

The following pages include the summary, map, ecosystem benefits as calculated by PlanIT Geo, and table with details for each census block for each scenario.

Original 2040 Canopy Goal Recommendation

As shown in the map below, areas with existing canopy above 30%, as well as the Lagoon, waterfront, Quarry and Callippe Hill regions were left unaltered (lightest yellow). Other areas of central Brisbane were modeled with a 30% canopy, commercial areas with a 20% canopy, and the Baylands with a 25% canopy. The result is a 23% citywide canopy, or 10% increase over 2022 levels, recommended by 2040.

Reaching this goal would require planting 13,033 trees with an average tree crown diameter of 30 feet and a mortality rate of 5%. Of those trees, 8,813 are in the Baylands, leaving 4,220 trees to be planted across public and private (residential and commercial) sites throughout the rest of the city over 15 years, or around 280 trees per year.



Number of Trees to Plant

Plant 13,033 Trees

MODELED ECOSYSTEM BENEFITS

OVERALL

Current	Modeled	Net
Overall Monetary Benefit $44,877	Overall Monetary Benefit $76,416	Overall Monetary Benefit $31,539

AIR QUALITY

Current		Modeled		Net	
Pollutants Removed (lb) 7,119	Air Quality Monetary Benefit $37,276	Pollutants Removed (lb) 12,122	Air Quality Monetary Benefit $63,472	Pollutants Removed (lb) 5,003	Air Quality Monetary Benefit $26,196

CARBON

Current		Modeled		Net	
Carbon Monetary Benefit $169	Carbon Sequestered (lb) 7,393	Carbon Monetary Benefit $287	Carbon Sequestered (lb) 12,588	Carbon Monetary Benefit $119	Carbon Sequestered (lb) 5,196

STORMWATER

Current		Modeled		Net	
Stormwater Monetary Benefit $7,433	Runoff Prevention (Gallons) 862,499	Stormwater Monetary Benefit $12,656	Runoff Prevention (Gallons) 1,468,641	Stormwater Monetary Benefit $5,224	Runoff Prevention (Gallons) 606,142

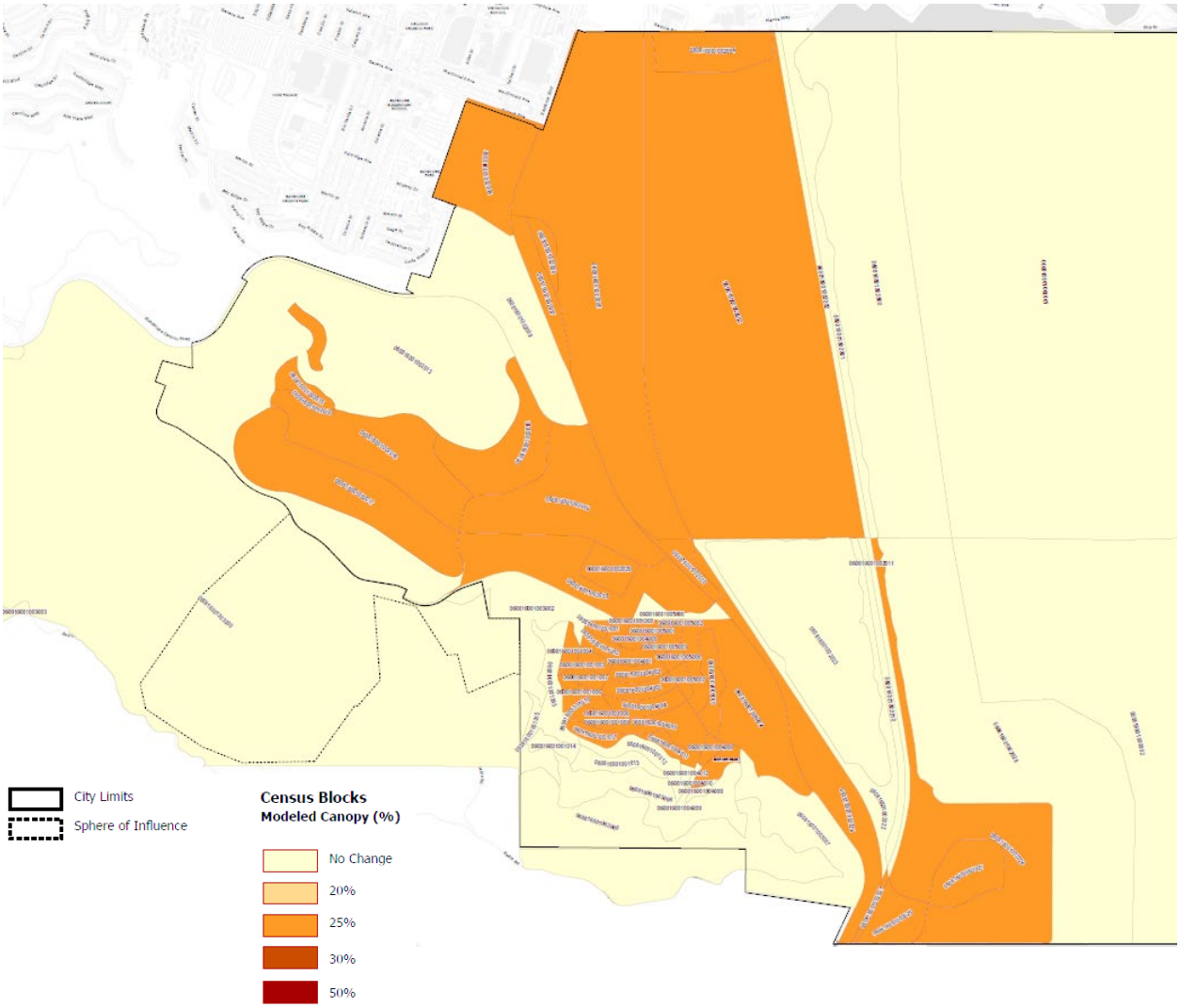
Area Name or ID	Existing Canopy (%)	Modeled Canopy (%)	Net Change Canopy (%)	No. Trees to Reach Goal	Avg Tree Size (ft.)	Mortality Rate (%)	Annual Added Eco-Benefits ($)
060816001001008	12	30	18	31	30	5	78
060816001004002	10	30	20	62	30	5	158
060816001001003	18	30	12	24	30	5	61
060816001004005	20	30	10	78	30	5	198
060816001004006	16	30	14	19	30	5	48
060816001002004	4	25	21	304	30	5	774
060816001004011	16	30	14	36	30	5	92
060816001005006	3	30	27	35	30	5	88
060816001005003	8	30	22	41	30	5	106
060816001001006	20	30	10	16	30	5	41
060816001005005	12	30	18	96	30	5	244
060816001001005	29	30	1	12	30	5	30
060816001001007	16	30	14	29	30	5	75
060816001001000	13	30	17	23	30	5	59
060816001002006	4	20	16	54	30	5	138
060816001002003	2	25	23	5,947	30	5	15,150
060816001002015	20	20	0	0	30	5	0
060816023002003	29	20	-9	-2	30	5	-5
060816001002016	10	20	10	354	30	5	902
060816001005001	1	30	29	37	30	5	93
060816001002030	16	20	4	122	30	5	311
060816001002025	16	20	4	35	30	5	89
060816001004004	14	30	16	67	30	5	171
060816001001009	11	30	19	38	30	5	96
060816001002014	1	20	19	57	30	5	145
060816001002017	19	20	1	21	30	5	52
060816001001001	8	30	22	26	30	5	65
060816001005004	22	30	8	260	30	5	664
060816001002019	11	20	9	347	30	5	885
060816001004000	10	30	20	29	30	5	75
060816001001015	28	30	2	3	30	5	7
060816001002007	18	20	2	16	30	5	42
060816001001011	25	30	5	14	30	5	36
060816001002020	20	20	0	1	30	5	3
060816001004003	11	30	19	75	30	5	192
060816001001002	9	30	21	45	30	5	115
060816001002012	11	20	9	197	30	5	502
060816001002029	11	20	9	52	30	5	131
060816001002008	4	20	16	422	30	5	1,074
060816001004001	10	30	20	44	30	5	111
060816001005007	16	30	14	22	30	5	57
060816001002005	6	25	19	2,562	30	5	6,526
060816001002027	9	20	11	135	30	5	343
060816001002026	6	20	14	807	30	5	2,056
060816001004007	24	30	6	17	30	5	44
060816001001004	19	30	11	23	30	5	57
060816001002024	15	30	15	386	30	5	985
060816001005002	10	30	20	14	30	5	35

Lines highlighted blue are Baylands

25% Canopy Goal (w/ exceptions)

This scenario would set the canopy target at 25% for all areas except those areas where existing canopy is above 25% already, as well as the Lagoon, waterfront, Community Park, Quarry and Callippe Hill regions. The result would be a citywide canopy of 24%, or an 11% increase from 2022 levels.

Reaching this goal would require planting 13,991 trees with an average tree crown diameter of 30 feet and a mortality rate of 5%. Of those trees, 8,813 are in the Baylands, leaving 5,178 trees to be planted across public and private (residential and commercial) sites throughout the rest of the city over 15 years, or around 345 trees per year.



Number of Trees to Plant

Plant 13,991 Trees

MODELED ECOSYSTEM BENEFITS

OVERALL

Current	Modeled	Net
Overall Monetary Benefit $44,877	Overall Monetary Benefit $78,735	Overall Monetary Benefit $33,858

AIR QUALITY

	Current	Modeled	Net
Pollutants Removed (lb)	7,119	12,490	5,371
Air Quality Monetary Benefit	$37,276	$65,399	$28,123

CARBON

	Current	Modeled	Net
Carbon Monetary Benefit	$169	$296	$127
Carbon Sequestered (lb)	7,393	12,970	5,578

STORMWATER

	Current	Modeled	Net
Stormwater Monetary Benefit	$7,433	$13,041	$5,608
Runoff Prevention (Gallons)	862,499	1,513,217	650,718

Area Name or ID	Existing Canopy (%)	Modeled Canopy (%)	Net Change Canopy (%)	No. Trees to Reach Goal	Avg Tree Size (ft.)	Mortality Rate (%)	Annual Added Eco-Benefits ($)
060816001001008	12	25	13	22	30	5	56
060750610003006	3	25	22	3	30	5	8
060816001004002	10	25	15	47	30	5	119
060816001001003	18	25	7	14	30	5	36
060816001004005	20	25	5	39	30	5	99
060816001004006	16	25	9	12	30	5	31
060816001002004	4	25	21	304	30	5	774
060816001004011	16	25	9	23	30	5	59
060816001005006	3	25	22	28	30	5	72
060816001005003	8	25	17	32	30	5	82
060816002001005	0	25	25	1	30	5	1
060816001003008	6	25	19	19	30	5	48
060816001001006	20	25	5	8	30	5	20
060816001005005	12	25	13	68	30	5	174
060816001001007	16	25	9	19	30	5	48
060816001002021	0	25	25	31	30	5	79
060816001001000	13	25	12	16	30	5	42
060816001002006	4	25	21	71	30	5	181
060816001002003	2	25	23	5,947	30	5	15,150
060816003002011	0	25	25	2	30	5	4
060816001002015	20	25	5	19	30	5	49
060816001002016	10	25	15	525	30	5	1,338
060816001005001	1	25	24	30	30	5	77
060816001002030	16	25	9	284	30	5	722
060816001002025	16	25	9	78	30	5	198
060816001004004	14	25	11	46	30	5	118
060816001001009	11	25	14	28	30	5	71
060750610003000	0	25	25	1	30	5	2
060816001002018	24	25	1	1	30	5	2
060816001002014	1	25	24	72	30	5	183
060816001002017	19	25	6	222	30	5	566
060816001001001	8	25	17	20	30	5	50
060816001005004	22	25	3	99	30	5	253
060816001002019	11	25	14	542	30	5	1,381
060816001004000	10	25	15	22	30	5	56
060816001002007	18	25	7	56	30	5	143
060816003002006	22	25	3	1	30	5	4
060816001001011	25	25	0	1	30	5	2
060750610003012	0	25	25	0	30	5	0
060816001002020	20	25	5	24	30	5	61
060816001004003	11	25	14	56	30	5	141
060816001001002	9	25	16	35	30	5	88
060816001002012	11	25	14	302	30	5	770
060816001002029	11	25	14	82	30	5	208
060816001002008	4	25	21	551	30	5	1,404
060816001004001	10	25	15	33	30	5	84
060816001005007	16	25	9	15	30	5	37
060816001002005	6	25	19	2,562	30	5	6,526

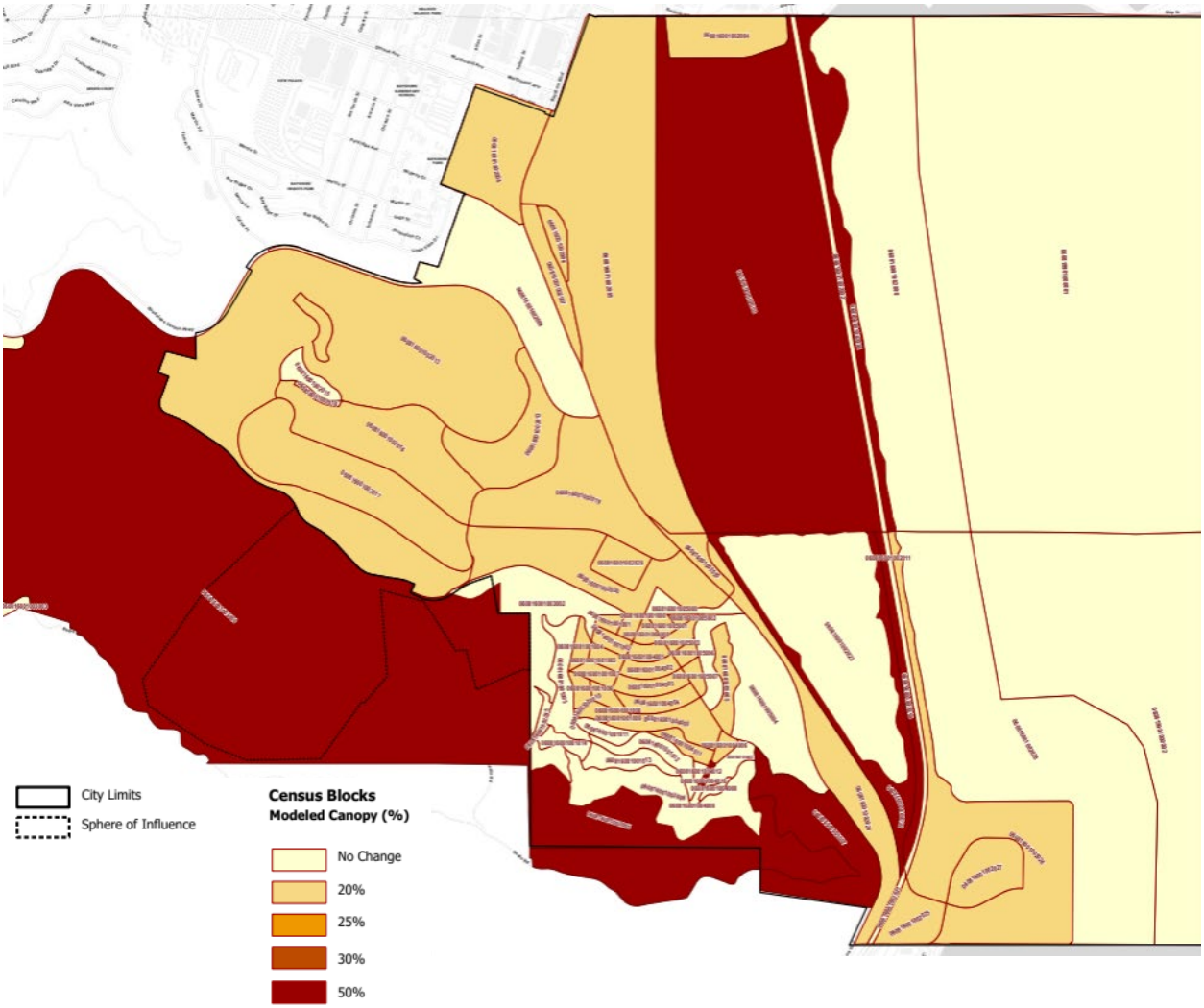
Lines highlighted blue are Baylands

CalGreen 20/50 Scenario

To match the most recent CA Building Code CalGreen goals of 20% in developed areas and 50% in undeveloped areas. Lagoon and waterfront were excluded, as were any areas already above the goal that best matched the census block.

This scenario is difficult to model with the PlanIT Geo Canopy Grow tool because many census blocks have both developed and undeveloped areas. Furthermore, the Quarry and the largest census block on the Baylands were modeled at 50% due to their current status, but that may not be appropriate or compatible with future development.

The result would be a citywide canopy of 32%, or a 19% increase from 2022 levels. Reaching this goal would require planting 25,902 trees with an average tree crown diameter of 30 feet and a mortality rate of 5%. Of those trees, 14,601 are in the Baylands and an addition 4,743 are in the Quarry, leaving 6,559 trees to be planted across public and private (residential and commercial) sites throughout the rest of the city over 15 years, or around 437 trees per year.



Number of Trees to Plant

Plant 25,902 Trees

MODELED ECOSYSTEM BENEFITS

OVERALL

Current	Modeled	Net
Overall Monetary Benefit $44,877	Overall Monetary Benefit $107,559	Overall Monetary Benefit $62,682

AIR QUALITY

Current		Modeled		Net	
Pollutants Removed (lb) 7,119	Air Quality Monetary Benefit $37,276	Pollutants Removed (lb) 17,063	Air Quality Monetary Benefit $89,340	Pollutants Removed (lb) 9,944	Air Quality Monetary Benefit $52,065

CARBON

Current		Modeled		Net	
Carbon Monetary Benefit $169	Carbon Sequestered (lb) 7,393	Carbon Monetary Benefit $404	Carbon Sequestered (lb) 17,719	Carbon Monetary Benefit $236	Carbon Sequestered (lb) 10,326

STORMWATER

Current		Modeled		Net	
Stormwater Monetary Benefit $7,433	Runoff Prevention (Gallons) 862,499	Stormwater Monetary Benefit $17,815	Runoff Prevention (Gallons) 2,067,185	Stormwater Monetary Benefit $10,382	Runoff Prevention (Gallons) 1,204,686

Area Name or ID	Existing Canopy (%)	Modeled Canopy (%)	Net Change Canopy (%)	No. Trees to Reach Goal	Avg Tree Size (ft.)	Mortality Rate (%)	Annual Added Eco-Benefits ($)
060816001001008	12	20	8	13	30	5	34
060816001004002	10	20	10	31	30	5	80
060816001001003	18	20	2	5	30	5	12
060816001004005	20	20	0	0	30	5	-1
060816001004006	16	20	4	5	30	5	14
060816001002004	4	20	16	232	30	5	592
060816001004011	16	20	4	10	30	5	25
060816001005006	3	20	17	22	30	5	55
060816001005003	8	20	12	23	30	5	58
060816001001006	20	20	0	-1	30	5	-1
060816001005005	12	20	8	41	30	5	105
060816001002001	3	50	47	836	30	5	2,129
060816001001007	16	20	4	8	30	5	21
060816001001000	13	20	7	10	30	5	24
060816001002006	4	20	16	54	30	5	138
060816001002003	2	50	48	12,469	30	5	31,762
060816001002016	10	20	10	354	30	5	902
060816001005001	1	20	19	24	30	5	61
060816001002030	16	20	4	122	30	5	311
060816001002025	16	20	4	35	30	5	89
060816001003000	17	50	33	4,743	30	5	12,082
060816001004004	14	20	6	25	30	5	64
060816001001009	11	20	9	18	30	5	47
060816001002014	1	20	19	57	30	5	145
060816001002017	19	20	1	21	30	5	52
060816001003007	42	50	8	218	30	5	555
060816001001001	8	20	12	14	30	5	35
060816001002019	11	20	9	347	30	5	885
060816001004000	10	20	10	15	30	5	37
060816001002007	18	20	2	16	30	5	42
060816001002020	20	20	0	1	30	5	3
060816001004003	11	20	9	36	30	5	91
060816001002013	11	20	9	1,440	30	5	3,668
060816001002010	30	50	20	154	30	5	391
060816001001002	9	20	11	24	30	5	61
060816001002022	1	50	49	767	30	5	1,953
060816001002012	11	20	9	197	30	5	502
060816001002029	11	20	9	52	30	5	131
060816001004010	43	50	7	3	30	5	8
060816001002008	4	20	16	422	30	5	1,074
060816001004001	10	20	10	22	30	5	57
060816001005007	16	20	4	7	30	5	17
060816001002005	6	20	14	1,900	30	5	4,840
060816001002027	9	20	11	135	30	5	343
060816001002026	6	20	14	807	30	5	2,056
060816001001004	19	20	1	3	30	5	6
060816001002024	15	20	5	121	30	5	309
060816001005002	10	20	10	7	30	5	18
060816001003005	49	50	1	38	30	5	98

Lines highlighted blue are Baylands; green is Quarry