Urban Tree Canopy Assessment
Sacramento, CA

2018

City of SACRAMENTO

DAVEY Resource Group

Urban Tree Canopy Assessment Sacramento, CA

2018

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Executive Summary

The amount and distribution of leaf surface area (tree canopy) is the driving force behind the urban forest's ability to produce benefits for the community (Clark et al, 1997). As canopy cover increases, so do the benefits contributed by leaf area. These benefits, which include energy savings, air quality, water quality, stormwater interception, aesthetic and other socioeconomic benefits can be quantified for their value to the community. Understanding the location and extent of tree canopy is key to developing and implementing sound management strategies that promote sustainable growth of Sacramento's urban forest resource and the benefits it provides.

To acquire this information, the City of Sacramento contracted with Davey Resource Group (DRG) in 2017 to conduct an Urban Tree Canopy (UTC) Assessment using high-resolution aerial imagery and remote sensing software. The assessment resulted in Geographic Information Systems (GIS) maps which detail the location and extent of existing tree canopy (public and private). The GIS maps also display other primary landcover classifications, including impervious surfaces, pervious surfaces (grass/low-lying vegetation), bare soils, and water. The assessment identifies and summarizes the current overall landcover classification as:

- 19.1% Tree Canopy Cover
- 46.4% Impervious Surfaces
- 32.4% Pervious surfaces (bare soils and low-lying vegetation

Land Cover

The City of Sacramento encompasses 99.7 square miles (63,784 acres), of which 19 square miles (12,198 acres) are tree canopy. Excluding impervious surface (29,494 acres) and open water (1,384 acres), Sacramento contains 45.2 square miles (28,940 acres) with the potential to support tree canopy. The following characterizes land cover within Sacramento:

- 12,198 acres (19.1%) tree canopy, including trees and woody shrubs.
- 29,494 acres (46.4%) impervious surface, including roads, parking lots, and structures.
- 5,993 acres of tree canopy in parks, an average of 27.4% canopy cover.
- 76.9% of the urban forest canopy is in fair or better condition.
- 45.4% potential canopy[1]
- 1.5 million tons of carbon (CO_2) is stored in the woody and foliar biomass of Sacramento's urban forest (public and private), valued at more than $51.2 million.
- Since 2004, tree canopy has increased by 3,342.8 acres (37.8%) and the percentage of tree canopy cover has increased from 13.8% to 19.1%.

[1] Canopy cover potential includes existing canopy and potential plantable area, including bare soil. Undeveloped sites will eventually include a mix of infrastructure and use that may further reduce the canopy potential.

- Since 2004, tree canopy in parks has increased by 962.3 acres (37.3%) and the percentage of tree canopy cover has increased from 23.1% to 27.3%.

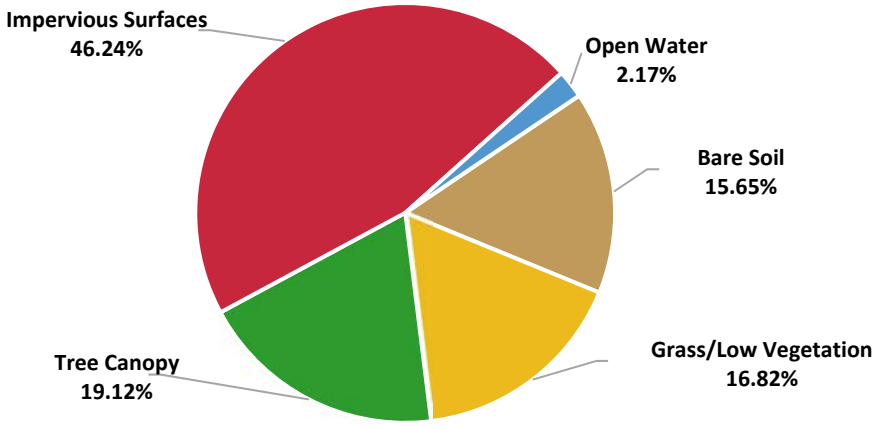


Figure 1: Sacramento Land Cover Classes

Environmental Benefits

To determine the environmental benefits from the urban forest (public and private trees), Sacramento's land cover was analyzed with i-Tree *Canopy* (v6.1). This analysis found that the trees in Sacramento provide air quality and stormwater benefits worth nearly $2.5 million annually (Table 1, Figure 2) by:

- Removing 392.4 combined tons of air pollutants from: carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), sulfur dioxide (SO_2), and particulate matter (PM_{10}), valued at $1,883,084.
- Reducing stormwater runoff by over 58 million gallons, valued at $466,890.
- In addition, this resource removes (sequesters) an additional 73,541 tons of CO_2 annually, valued at over $2.5 million.

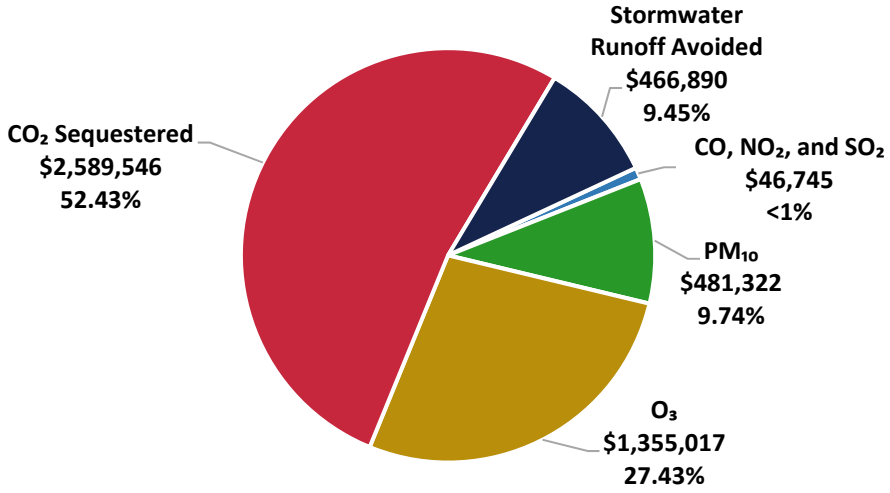


Figure 2: Annual Benefits Summary for Sacramento

Table 1: Annual Environmental Benefits Summary

Item	*Value ($)*	*% of Total Benefits*
CO, NO_2, and SO_2	46,745	0.95%
PM_{10}	481,322	9.74%
O_3	1,355,017	27.43%
CO_2 Sequestered	2,589,546	52.43%
Stormwater Runoff Avoided	466,890	9.45%
Total	***$4,939,520***	***100%***

Management Applications

Understanding the location and extent of tree canopy is key to developing and implementing sound management strategies that promote the sustainability of the urban forest resource for Sacramento and its many benefits. The data, combined with existing and emerging urban forestry research, enables managers to balance urban growth and tree preservation, and aid in identifying and assessing urban forestry opportunities. Especially important is the spatial understanding of tree canopy, which is a valuable tool to help management align urban forestry practices with the community's vision for the urban forest in Sacramento. Identifying the priority planning areas that yield the most return on investment is especially important.

Sacramento has an existing tree canopy cover at 19.1%, with the potential for a maximum tree canopy cover of 45.4%. To help identify the most beneficial sites for canopy expansion, potential sites were mapped and then prioritized based on weighted regional factors. These maps are valuable tools to guide tree canopy expansion strategies. Recommendations for maintaining canopy growth include:

- Remove and replace failing trees as they are identified.
- Use priority planting site analyses to identify new tree planting locations to reduce erosion and soil degradation.
- Use the canopy health map to identify and explore locations where environmental factors like soil and/or water conditions may be impacting tree or species health.
- Promote species diversity for greater resilience and pest resistance.
- Plant large-stature shade trees where space and design allow.
- Promote tree planting on private property, particularly in high and very high priority planting areas.

Sacramento has 19.1% existing canopy, including trees and woody shrubs (12,198 acres).

Introduction

Sacramento, the capital of California and the oldest city in California, is located at the junction of the Sacramento River and the American River. The average summer temperature is 75.5°F and average winter temperature is 46.4°F. The average annual precipitation is 18.5 inches, primarily falling during the winter months.

Individual trees play an essential role in the community of Sacramento by providing numerous benefits, tangible and intangible, to residents, visitors, and neighboring communities. Research demonstrates that healthy urban trees can improve the local environment and lessen the impact resulting from urbanization and industry (Center for Urban Forest Research, 2017). Trees improve air quality, reduce energy consumption, help manage stormwater, reduce erosion, provide critical habitat for wildlife, and promote a connection with nature.

The trees in the urban forest in Sacramento play a significant role in maintaining this favorable and healthy environment. The urban forest includes all trees located within the city limits. Every tree, private and public, is a component of the urban forest and the urban tree canopy.

Urban Tree Canopy and Geographic Information Systems

Urban Tree Canopy is the layer of leaves, branches, and stems that cover the ground when viewed from above. Since trees provide benefits to the community that extend beyond property lines, the assessment includes all tree canopy within the borders of the community and does not distinguish between publicly-owned and privately-owned trees. To place tree canopy in context and better understand its relationship within the community, the assessment included other primary landcover classifications, including impervious surfaces, pervious surfaces, bare soils, and water.

As more communities focus attention on environmental sustainability, community forest management has become increasingly dependent on geographic information systems (GIS). GIS is a powerful tool for urban tree canopy mapping and analysis. Understanding the extent and location of the existing canopy is key to identifying various types of community forest management opportunities, including:

- Future planting plans
- Stormwater management
- Water resource and quality management
- Impact and management of invasive species
- Preservation of environmental benefits
- Outreach and education

High-resolution aerial imagery and infrared technology remotely mapped tree canopy and land cover (Figure 3). The results of the study provide a clear picture of the extent and distribution of tree canopy within Sacramento. The data developed during the assessment becomes an important part of the City's GIS database and provides a foundation for developing community goals and urban forest policies. The primary purpose of the Assessment was to establish benchmark values,

which will enable managers to understand recent changes in the urban forest and measure the success of long-term management objectives over time. With this data, managers can determine:

- Sacramento's progress towards local canopy goals.
- Changes in tree canopy over time and in relation to growth and development.
- The location and extent of canopy at virtually any level, including neighborhood, land use, zoning, parking lots and parcels.
- The location of available planting space to develop strategies for increased canopy in underserved areas.

In addition to quantifying existing urban tree canopy, this assessment illustrates the potential for increasing tree canopy across Sacramento. The data, combined with existing and emerging urban forestry research and applications, can provide additional guidance for determining a balance between growth and preservation and aid in identifying and assessing urban forestry opportunities.

Figure 3: Land Cover Mapping

High-resolution aerial imagery (left) is used to remotely identify existing land cover. infrared technology delineates living vegetation including tree canopy (middle). Remote sensing software identifies and maps tree canopy and other land cover (right).

Benefits of Urban Tree Canopy

Urban forests continuously mitigate the effects of urbanization and development and protect and enhance the quality of life within the community. The amount and distribution of leaf surface area are the driving force behind the ability of the urban forest to produce benefits for the community (Clark et al, 1997). Healthy trees are vigorous, often producing more leaf surface area each year. Trees and urban forests benefit the community in the following ways:

Air Quality

Urban trees improve air quality in five fundamental ways:

- Reducing particulate matter (dust)
- Absorbing gaseous pollutants
- Providing shade and transpiration
- Reducing the need for electricity and related power plant emissions
- Increasing oxygen levels

Urban trees protect and improve air quality by intercepting particulate matter (PM_{10}), including dust, ash, pollen, and smoke. The particulates are filtered and held in the tree canopy. Trees and forests also absorb harmful gaseous pollutants like ozone (O_3), nitrogen dioxide (NO_2), and sulfur dioxide (SO_2). Shade and transpiration reduce the formation of O_3, which is created during higher temperatures. In fact, scientists are now finding that some trees may absorb more volatile organic compounds (VOC's) than previously thought (Karl, T. et al; Science NOW, 2010). VOC's are a class of carbon-based particles emitted from automobile exhaust, lawnmowers, and other human activities. By reducing energy needs, trees also reduce emissions from the generation of power. Also, through photosynthesis, trees and forests increase oxygen levels.

Annually, in Sacramento, trees remove 392 tons of air pollutants for a total value of $1,883,084, including: carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), sulfur dioxide (SO_2), and particulate matter (PM_{10}).

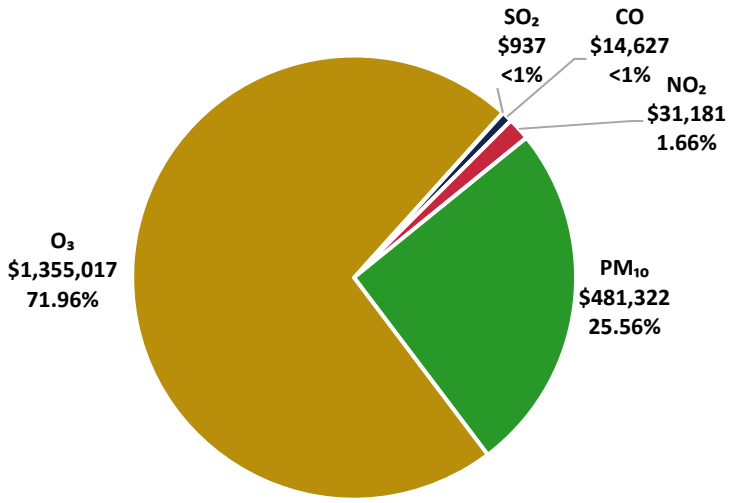


Figure 4: Air Pollutant Benefits Summary

Carbon Reduction

Trees and forests directly reduce CO_2 in the atmosphere through growth and sequestration of carbon as woody and foliar biomass. When trees die and decay, they release much of the stored carbon back to the atmosphere. In urban environments, most trees that die are removed and chipped or disposed of as firewood, releasing stored carbon. Thus, carbon storage is an indication of the amount of carbon that can be lost if trees are allowed to die and decompose. Indirectly, trees and forests reduce CO_2 by lowering the demand for energy and reducing the CO_2 emissions from the consumption of natural gas and the generation of electric power.

In 2006, California adopted the Global Warming Solutions Act (AB32) which commits California to reduce its greenhouse gas emissions to 1990 levels by 2020. Beginning in 2013, a statewide cap on greenhouse gases places a mandatory limit on large businesses that emit more than 25,000 metric tons of CO_2. The limit is set to decline 2-3% each year and to expand the scope of businesses and industries that are regulated. Companies that are regulated must obtain an allowance (or permit) for each ton of carbon they emit. These allowances have value and can be traded on the open market.

Purchasing emission allowances (offsets) has led to the acceptance of carbon credits as a commodity that can be exchanged for financial gain. Thus, some communities are exploring the concept of planting trees to develop a carbon offset (or credit). UESPD and USDA Forest Service recently led the development of Urban Forest Greenhouse Gas Reporting Protocol (McPherson et al, 2008/2010). The protocol establishes methods for calculating reductions and provides guidance for accounting and reporting. These methods guide urban forest managers in developing tree planting and stewardship projects that could be registered for greenhouse gas reduction credits.

The urban forest in Sacramento is currently storing 1.5 million tons of carbon (CO_2) in its biomass, valued at over $51.2 million. Furthermore, annually, Sacramento trees sequester 73,451 tons of carbon valued at $2.6 million.

Stormwater Reduction

Trees and forests improve and protect the quality of surface waters, such as creeks, rivers, and lakes, by reducing the impacts of stormwater runoff through:

- Interception
- Increasing soil capacity and rate of infiltration
- Reducing soil erosion

Trees intercept precipitation in their canopy, which acts as a mini-reservoir (Xiao et al, 1998). During storm events, this interception reduces and slows runoff. In addition to catching stormwater, canopy interception lessens the erosive impact of raindrops on bare soil. Root growth and root decomposition increase the capacity and rate of soil infiltration by rainfall and snowmelt (McPherson et al, 2002). Each of these processes greatly reduces the flow and volume of stormwater runoff, avoiding erosion and preventing sediments and other pollutants from entering local creeks and waterways.

Surface runoff is a cause for concern in many urban areas as it contributes to the pollution and flooding of streams, wetlands, rivers, lakes, and oceans. Figure 5 illustrates the benefits of trees to reducing stormwater runoff. When rain falls on impervious surfaces it cannot permeate into the soil. Instead, it collects into flows and runoff. The runoff picks up sediment, trash, oil, bacteria, and other contaminants from paved surfaces and carries this non-point source pollution to bodies of water. Along with pollutants, stormwater runoff can produce flows with large volumes of water in a short period of time, causing flooding and erosion.

During precipitation events, some portion of the precipitation is intercepted by vegetation (trees, shrubs, grass, other vegetation). Some of the water is temporarily held by leaves and bark and later evaporates or gradually infiltrates the soil, which slows the movement of water off site. The portion of the precipitation that reaches the ground and does not infiltrate into the soil or falls on impervious surfaces, becomes surface runoff (Hirabayashi, 2012). In urban areas, the large extent of impervious surface increases the amount of surface runoff and the cost of infrastructure a community must invest to manage stormwater for the safety of residents and property.

Annually, the urban forest in Sacramento reduces stormwater runoff by 220,922 gallons valued at $466,890. This constitutes 9.5% of the environmental benefits provided by Sacramento's urban forest.

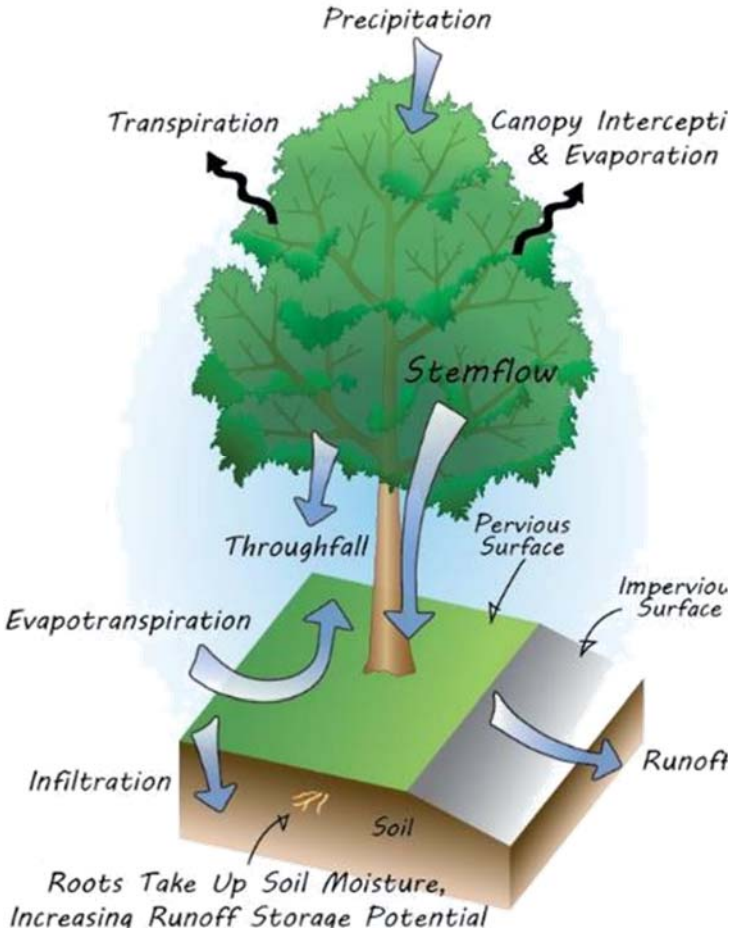


Figure 5: Stormwater Runoff Diagram

Energy Savings

Urban trees and forests modify climate and conserve energy in three principal ways:

- Shading dwellings and hardscape
- Transpiration
- Wind reduction

Shade from trees reduces the amount of radiant energy absorbed and stored by hardscapes and other impervious surfaces, thereby reducing the heat island effect, a term that describes the increase in urban temperatures in relation to surrounding locations. Transpiration releases water vapor from tree canopies, which cools the surrounding area. Through shade and transpiration, trees and other vegetation within an urban setting modify the environment and reduce heat island effects. Temperature differences of more than 9°F (5°C) have been observed between city centers without adequate canopy cover and more vegetated suburban areas (Akbari et al, 1997).

Trees reduce wind speeds relative to their canopy size and height by up to 50%. Trees also influence the movement of warm air and pollutants along streets and out of urban canyons. By reducing air movement into buildings and against conductive surfaces (e.g., glass and metal siding), trees reduce conductive heat loss from buildings, translating into potential annual heating savings of 25% (Heisler, 1986). Reducing energy needs has the bonus of reducing carbon dioxide (CO_2) emissions from fossil fuel power plants.

Aesthetics, Socioeconomics, and Wildlife Habitat

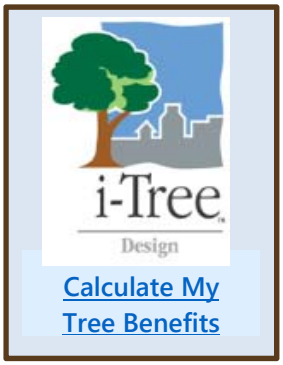
While perhaps the most difficult to quantify, the aesthetic, socioeconomic, and wildlife habitat benefits from trees may be among their greatest contributions, including:

- Beautification, comfort, and aesthetics
- Shade and privacy
- Wildlife habitat and ecosystem health
- Opportunities for recreation
- Creation of a sense of place and history
- Human health

Many of these benefits are captured as a percentage of property values, through higher sales prices where individual trees and forests are located.

Calculating Tree Benefits

While all these tree benefits are provided by the urban forest, it can be useful to understand the contribution of just one tree. Individuals can calculate the benefits of individual trees to their property by using the *National Tree Benefit Calculator* or with *i-Tree Design* (design.itreetools.org).



Land Cover in Sacramento

Overall Canopy

Sacramento encompasses 99.7 square miles (63,784 acres), of which 19 square miles (12,198 acres) are tree canopy (Figure 6 and Map 1). In addition to tree canopy, Sacramento's land cover includes 46.2% impervious surface, 15.7% bare soil, and 2.2% open water.

When impervious surface, open water, and unsuitable land use is excluded, Sacramento has 45.2 square miles (28,940 acres) available for tree planting and canopy growth, allowing for a maximum potential UTC of 45.4%.

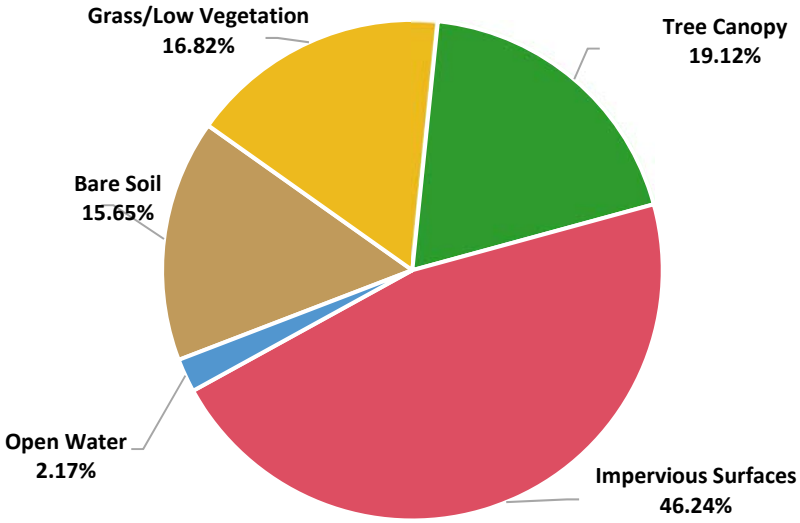
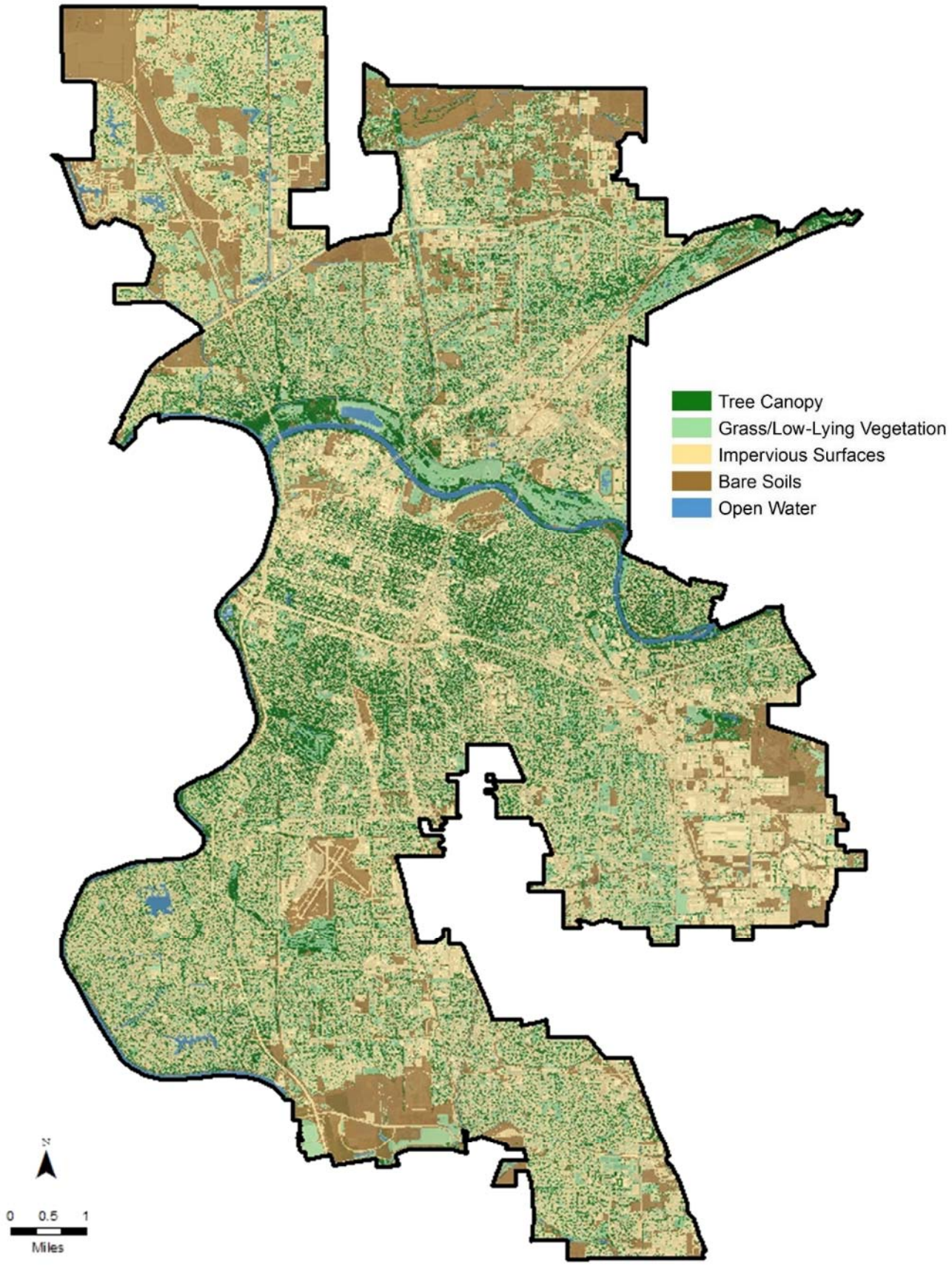


Figure 6: Sacramento Land Classification Summary

Table 2: Sacramento Land Classification Summary

Land Cover Class	*Acres*	*% of Land Cover*
Bare Soil	9,979	15.65
Grass/Low Vegetation	10,728	16.82
Tree Canopy	12,199	19.12
Impervious Surfaces	29,494	46.24
Open Water	1,384	2.17
Total	***63,784***	***100%***



Map 1: Sacramento Land Cover Class

Tree Canopy Health

Canopy health can be determined using near-infrared imagery and Normalized Difference Vegetation Index (NDVI) transformation. NDVI values are averaged over time to establish normal growing conditions in a region. Further analysis can then characterize the health of vegetation relative to the established normal condition. This allows identification of where plants are in very good condition, and where they are in decline.

In Sacramento, 76.9% of the tree canopy is in fair to very good condition. Healthy trees are vigorous, often producing more leaf surface area each year. Approximately, 21.9% of tree canopy is in very good condition, 32.7% is in good condition, and 21.9% is in fair condition. The remaining 18.7% is in poor, dead, or dying condition, and some areas (4.3%) could not be classified due to shadows, or unclear images. The data can be used as a comparison should emerging urban forest pests become an issue.

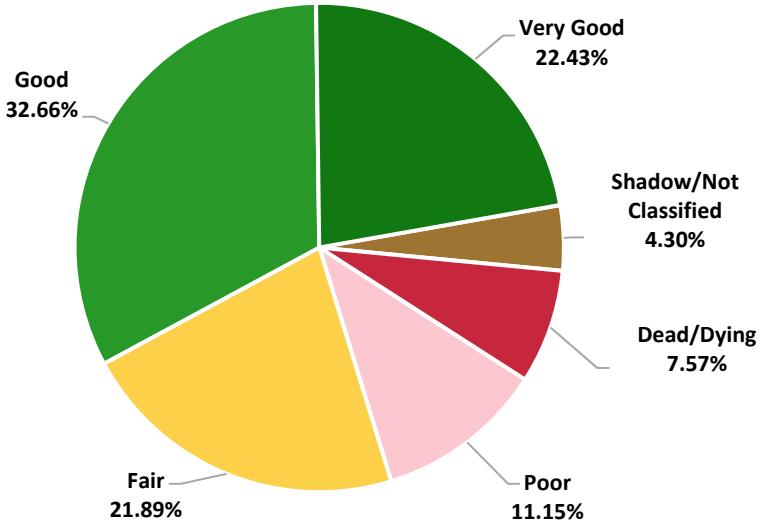
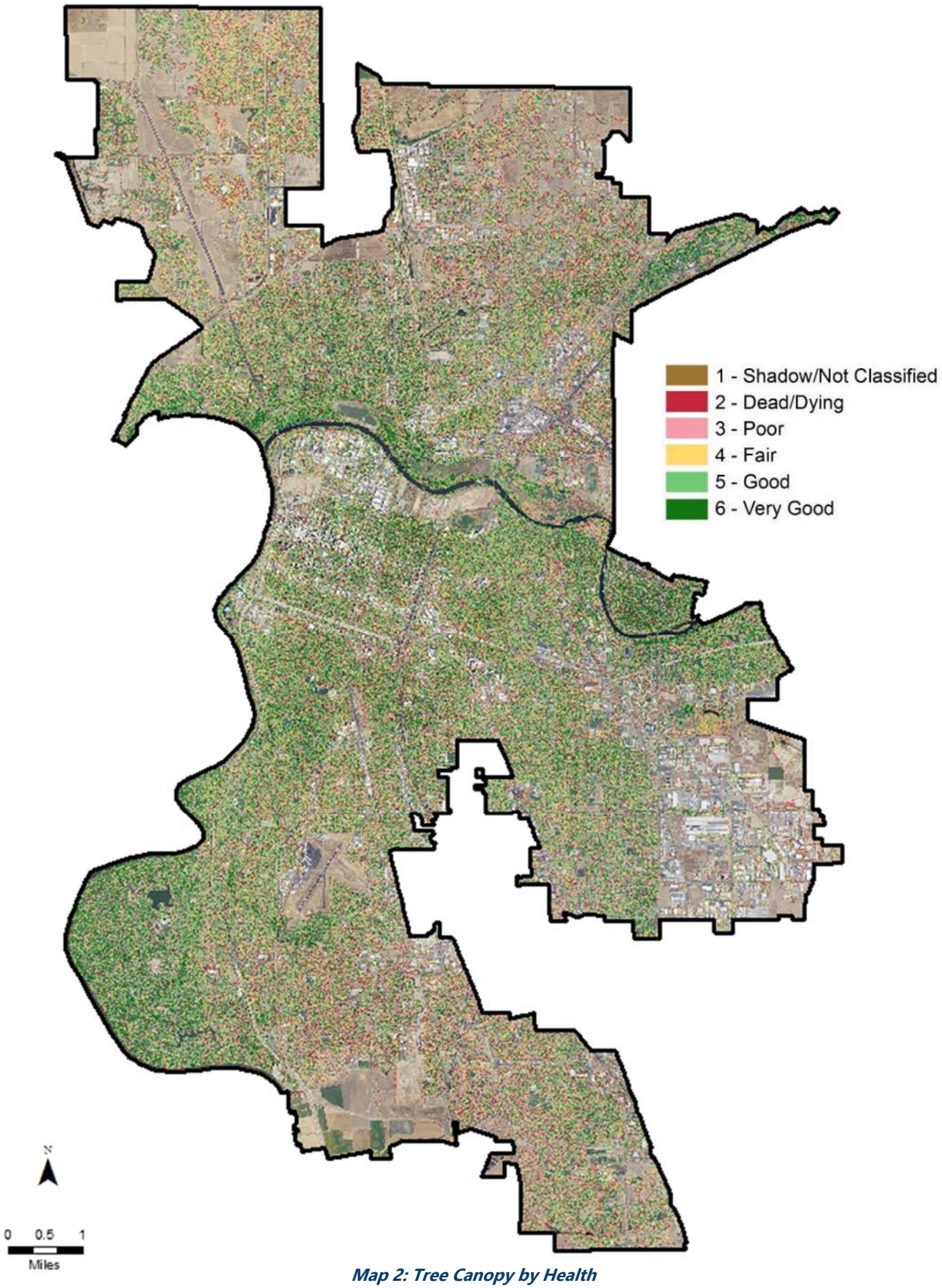


Figure 7: Summary of Canopy Health

Table 3: Tree Canopy by Health

Health Rating	*Acres*	*Percentage*
Very Good	2,736	22.43%
Good	3,985	32.66%
Fair	2,670	21.89%
Poor	1,360	11.15%
Dead/Dying	923	7.57%
Shadow/Not Classified	524	4.30%
Total	***9,462***	***100%***



Map 2: Tree Canopy by Health

Community Plan Areas

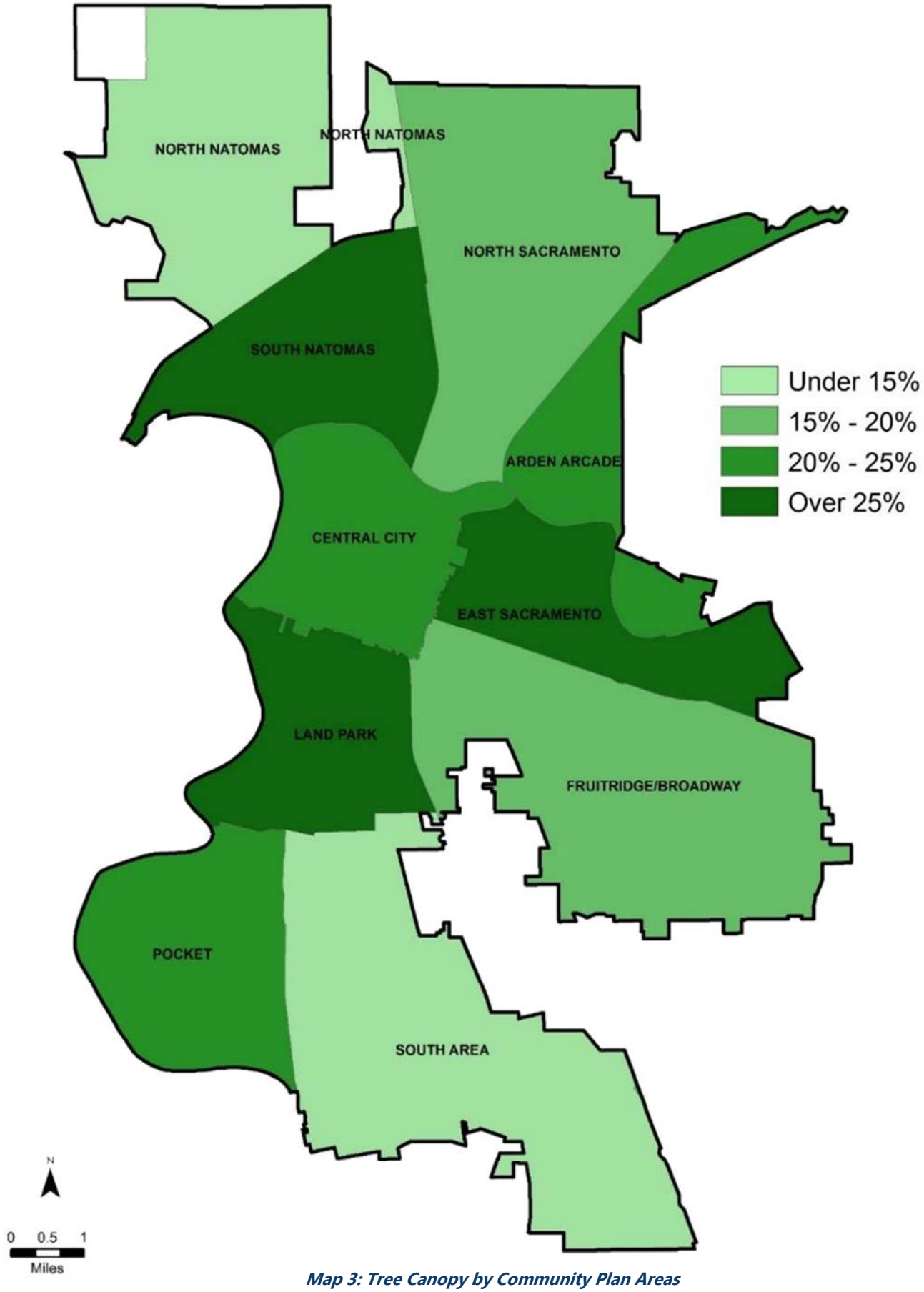
Sacramento's General Plan divides the city into community plan areas, with community plans for the different communities within Sacramento. Exploring canopy distribution in these areas can help guide investment and engagement opportunities for expanding the urban forest.

The average canopy cover for the community plan areas is 21.3%. The Land Park Community Plan Area has the greatest canopy cover at 31.7%. North Natomas, an area with more recent development and many young trees, has the lowest canopy cover of 11.2% (Table 5).

Table 4: Tree Canopy by Community Plan Areas

Community Plan Area	*Acres*	*Canopy Acres*	*Canopy %*	*Impervious Acres*	*Grass / Low Veg. Acres*	*Bare Soil Acres*	*Water Acres*	*Preferred Plantable Acres*	*Potential UTC*
South Area	10,550.80	1,557.70	14.76	4,966.90	1,891.05	2,095.48	39.67	2,989.91	43.10
Fruitridge/Broadway	9,768.51	1,511.83	15.48	5,306.39	1,432.17	1,498.58	19.55	2,168.87	37.68
North Sacramento	8,682.82	1,386.43	15.97	3,380.91	1,683.96	2,159.47	72.06	3,230.99	53.18
North Natomas	7,436.56	830.51	11.17	3,369.27	1,114.56	1,939.25	182.97	2,820.13	49.09
Pocket	5,076.34	1,140.08	22.46	2,560.06	897.84	131.49	346.87	955.74	41.29
South Natomas	4,996.79	1,268.87	25.39	1,914.92	1,057.18	551.07	204.75	1,397.13	53.35
Central City	4,394.51	957.30	21.78	2,385.57	465.54	406.38	179.71	631.60	36.16
Land Park	4,343.87	1,378.32	31.73	1,993.21	674.13	163.27	134.95	670.65	47.17
East Sacramento	4,243.31	1,299.29	30.62	2,050.14	634.21	184.42	75.26	688.51	46.85
Arden Arcade	3,640.48	865.12	23.76	1,527.09	874.36	248.86	125.03	583.67	39.80

The average canopy cover for the community plan areas is 21.3%.



Map 3: Tree Canopy by Community Plan Areas

Tree Canopy by City Council District

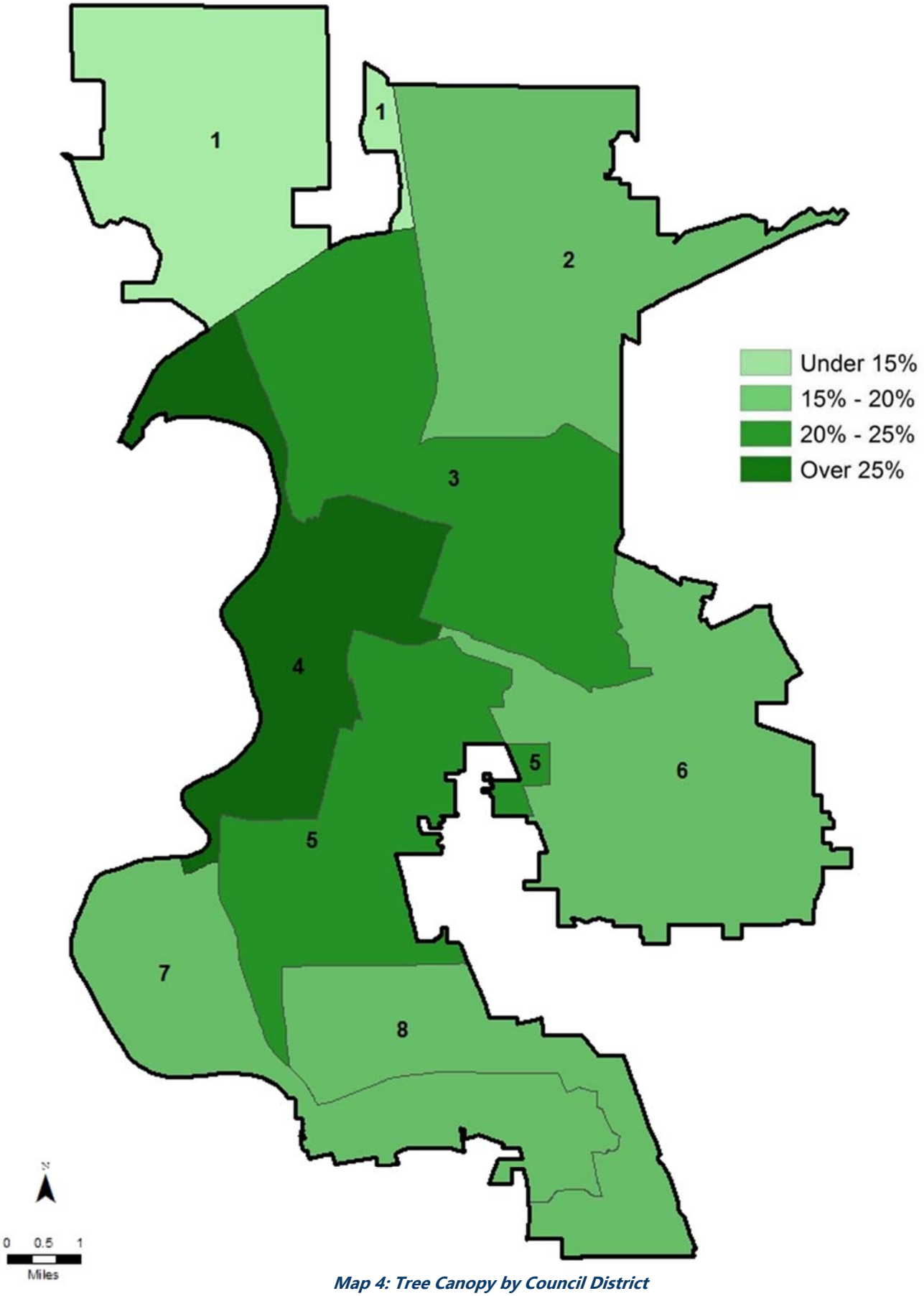
City Council district boundaries are also used to better understand tree canopy, as they tend to reflect geographies that are well understood by community members and elected officials. Exploring canopy distribution and socioeconomic indicators at this level can help facilitate outreach and education activities as well as develop a deeper understanding of tree canopy at a meaningful scale.

Sacramento is divided into eight council districts with an average canopy cover of 19.3% (Map 3). District 4 has the greatest canopy cover with 31.2% (2,062 acres) and District 1 has the lowest canopy cover at 10.3% (3,392 acres) Council District 7 has the greatest potential canopy of 52.6%.

Table 5: Tree Canopy by Council District

Council District	Acres	Canopy Acres	Canopy %	Impervious Acres	Grass/Low Vegetation Acres	Bare Soil Acres	Water Acres	Preferred Plantable Acres	Potential UTC
District 1	8,061	832.24	10.32	3,392	1,117	2,534	185.18	3,409	47.17
District 2	9,864	1,633	16.56	4,033	1,886	2,273	38.55	3,257	45.01
District 3	10,007	2,414	24.12	4,126	2,134	955.25	377.99	2,411	49.58
District 4	6,609	2,062	31.20	3,099	839.88	286.14	322.34	912.69	48.21
District 5	7,052	1,568	22.23	3,715	1,115	653.72	0.52	1,136	37.82
District 6	10,099	1,642	16.26	5,370	1,459	1,539	89.37	2,178	38.34
District 7	6,821	1,166	17.10	2,966	1,264	1,067	357.42	2,051	52.61
District 8	5,270	881.51	16.73	2,792	912.60	671.19	13.07	1,326	41.88

The average potential UTC for all eight districts is 45.1%.



Map 4: Tree Canopy by Council District

Tree Canopy by Zoning

Zoning reflects the community's plan for growth in specific areas (Map 5). Canopy cover can vary significantly between different Zones. The American River Parkway-Flood Zone has the greatest canopy cover at 32.3% and Manufacturing R & D has the lowest with 4.5%.

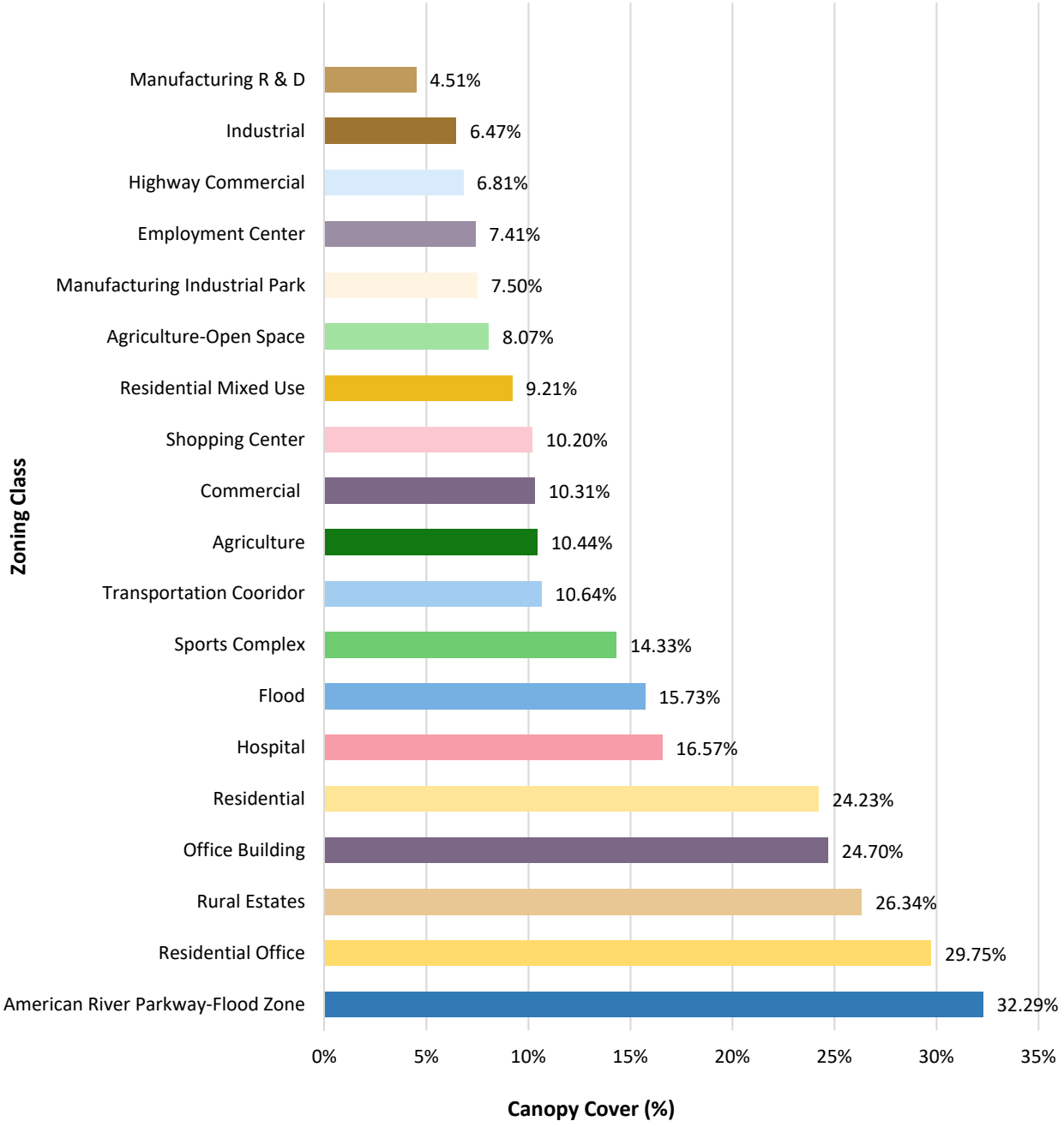
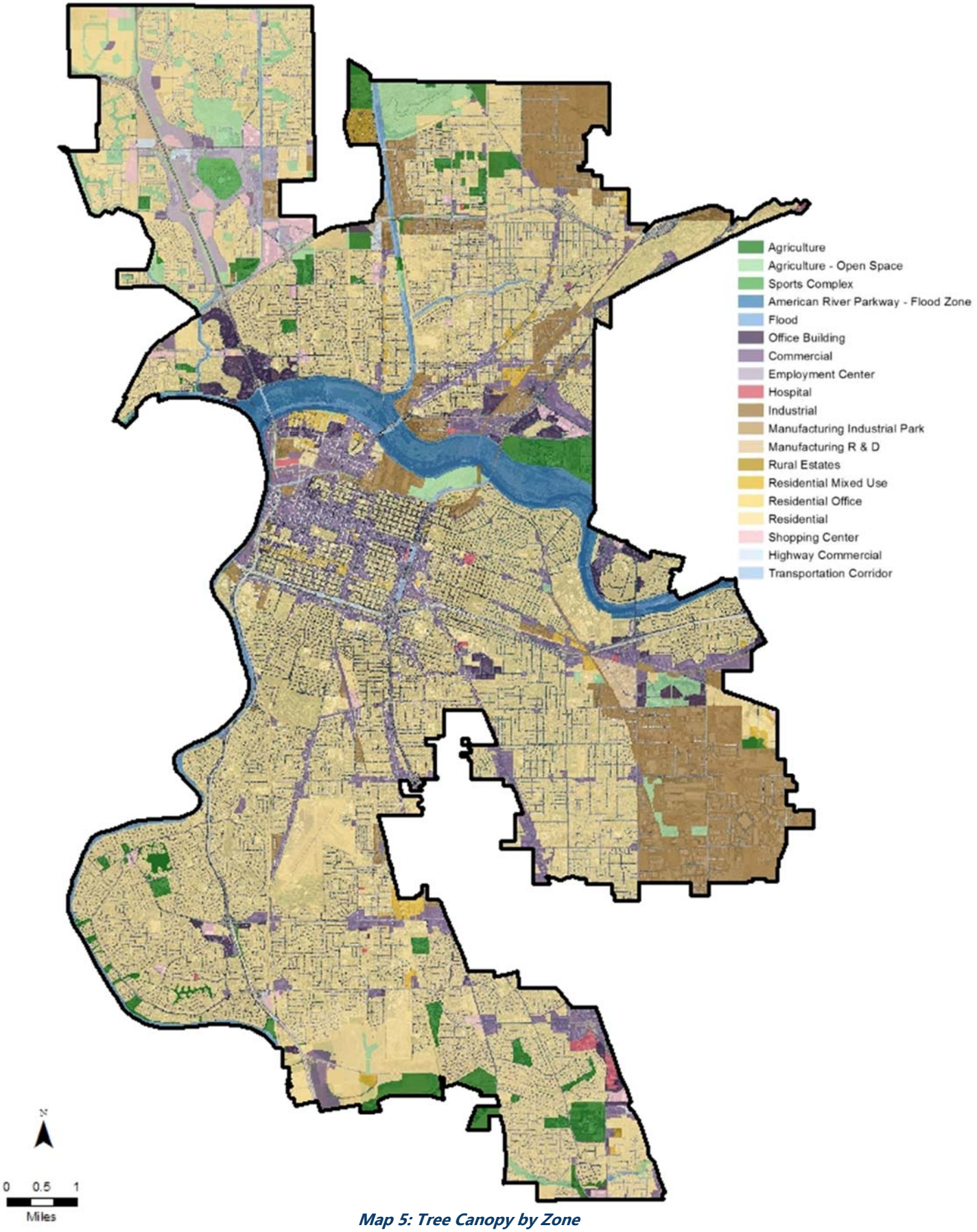


Figure 8: Tree Canopy by Zone



Map 5: Tree Canopy by Zone

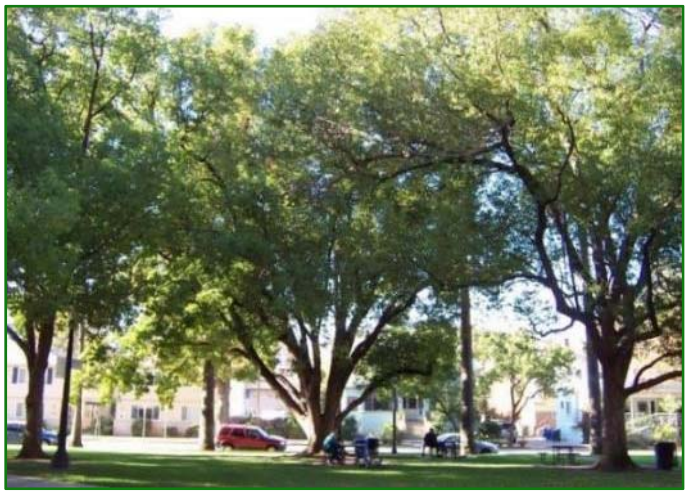
Tree Canopy by Park

There are 278 existing and planned parks and open space areas within the city limits (including those managed by Sacramento County, State of California, or other organizations) cover 5,993 acres with an average tree canopy of 27.4%. Among the top 10 largest parks (Table 6), the county-managed American River Parkway has the greatest canopy cover (37.1%). Sutter's Landing Regional Park (a former landfill) has the lowest tree canopy cover at 1.8%.

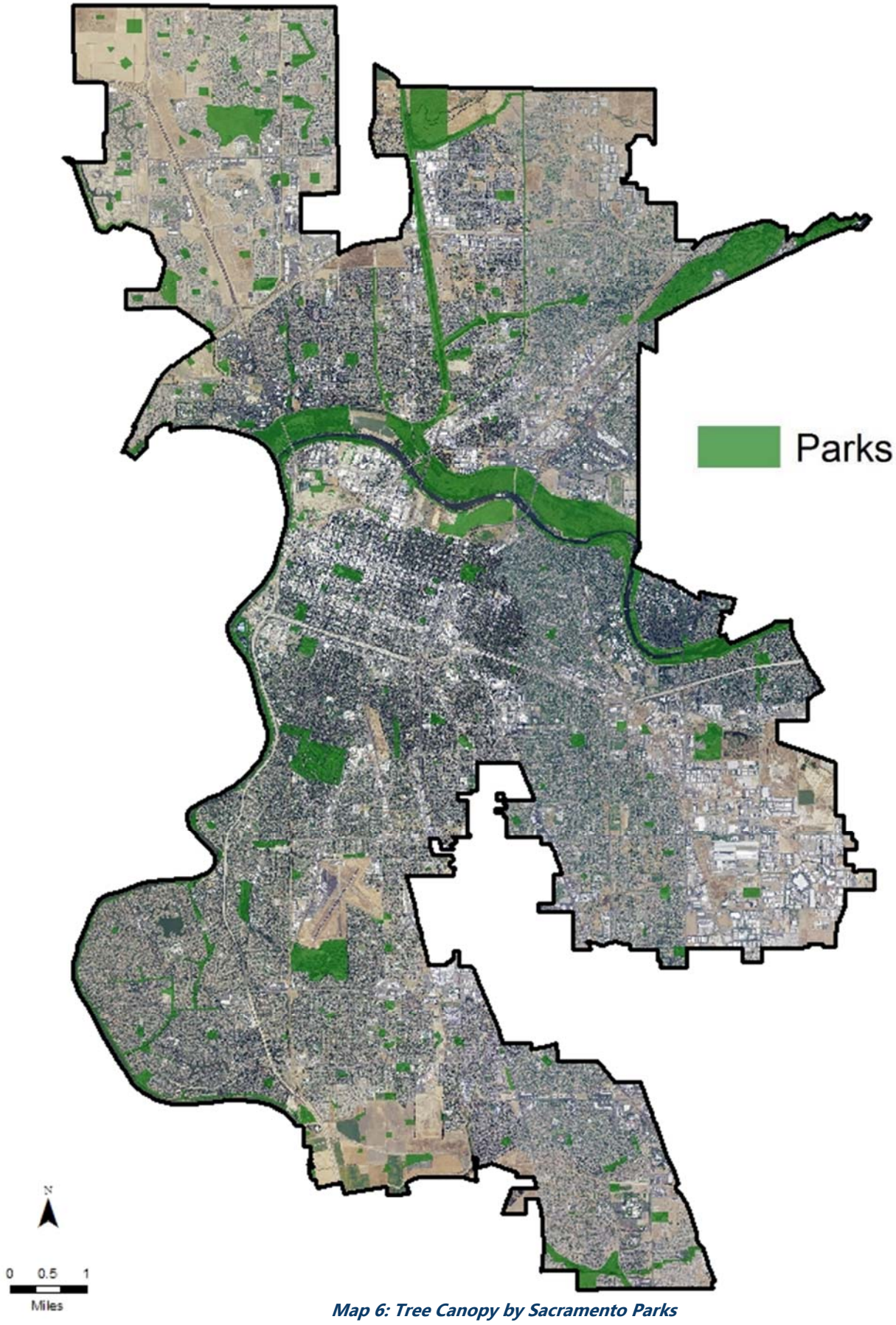
The assessment identified an additional 1,959 acres of possible planting sites within parks and open space areas for canopy potential of 60.0%. Many of these parks contain or are planned for active recreational facilities such as sports fields and aquatic facilities, which could reduce the canopy cover potential.

Table 6: Tree Canopy by Top 10 Largest Parks

Park	*Acres*	*Canopy Acres*	*Canopy %*	*Impervious Acres*	*Grass/Low Vegetation Acres*	*Water Acres*	*Bare Soil Acres*	*Preferred Plantable Acres*	*Potential UTC*
American River Parkway	1,459	542	37.11	89	637	94	97	585	77.20
Del Paso Regional Park	596	195	32.72	36	270	2	93	40	39.43
Walter S. Ueda Parkway	455	75	16.40	45	148	21	167	260	73.68
Hansen Ranch Regional Park	266	13	4.98	2	32	7	211	27	15.10
North Natomas Regional Park	213	6	3.03	12	33	13	148	169	82.58
Bing Maloney Golf Course	175	50	28.49	8	102	0	15	2	29.75
Sutter's Landing Regional Park	161	3	1.83	35	16	0	107	5	5.09
North Laguna Creek Wildlife Area	121	20	16.16	4	28	6	63	90	90.29
William Land Regional Park	115	77	67.08	6	30	0	1	3	69.55
Sacramento River Parkway (Future)	100	34	34.37	16	17	6	26	43	77.62
All other parks	2,331	624	26.76	282	888	76	461	735	58.27
All Parks Total	***5,993***	***1,639***	***27.35%***	***537***	***2,202***	***225***	***1,390***	***1,959***	***60.04%***



Parks and open space areas have the potential to support 60.0% tree canopy cover in Sacramento.



Map 6: Tree Canopy by Sacramento Parks

Tree Canopy by Neighborhoods

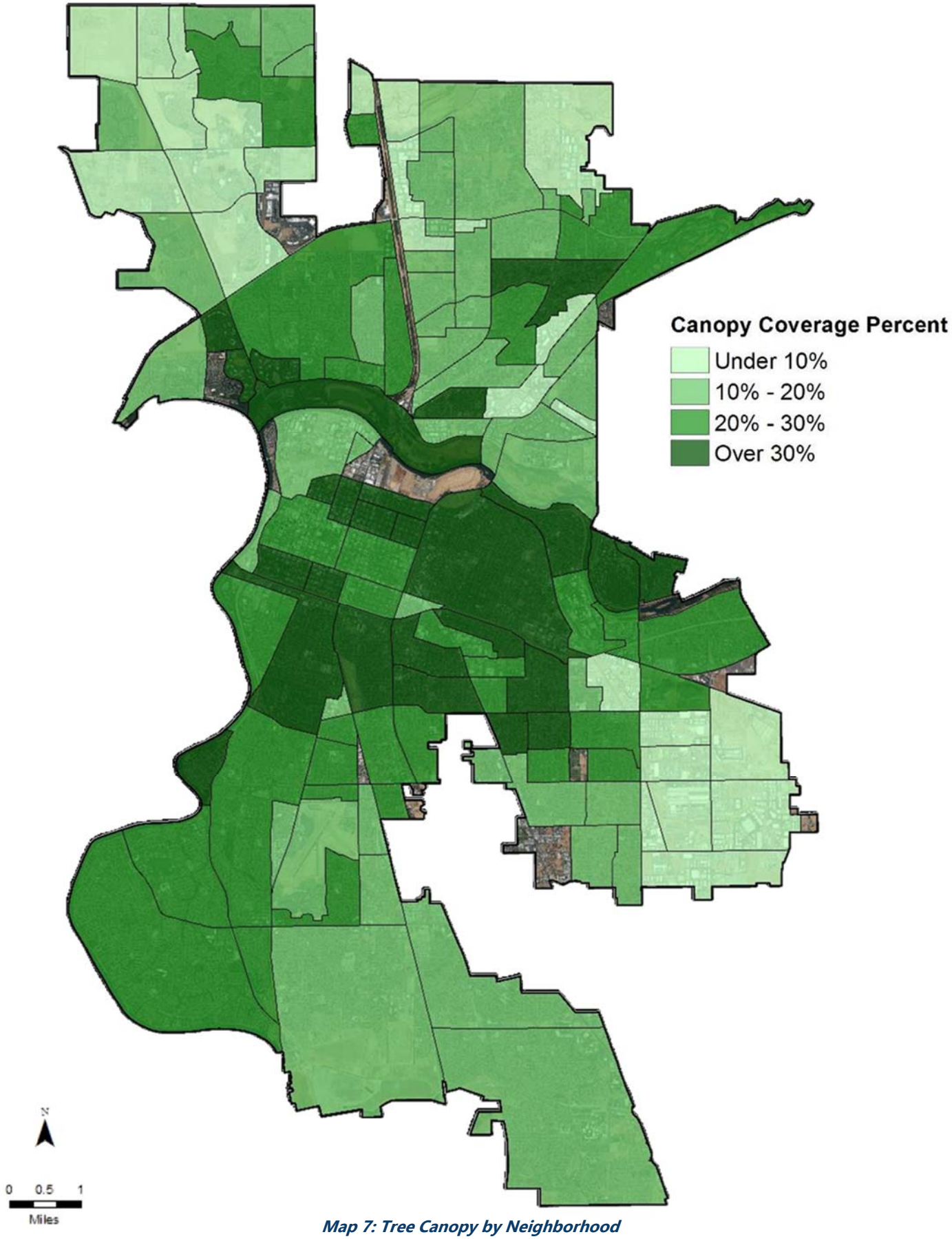
Neighborhood boundaries are often used to understand tree canopy as they tend to reflect geographies that are well understood by community members and social institutions. Exploring canopy distribution and socioeconomic indicators at this level can help facilitate outreach and education activities as well as develop a deeper understanding of tree canopy at a meaningful scale.

Sacramento has identified a total of 129 neighborhoods with an average of 19.7% canopy cover. Among the top 10 largest neighborhoods (Table 7), Land Park has the greatest canopy cover at 42.8%.

Table 7: Tree Canopy by Top 10 Neighborhoods

Neighborhood	*Acres*	*Canopy Acres*	*Canopy %*	*Impervious Acres*	*Grass/Low Vegetation Acres*	*Bare Soil Acres*	*Water Acres*	*Preferred Plantable Acres*	*Potential UTC*
Valley Hi / North Laguna	3,534	579	16.38	1,887	623	432	12	875	41.13
Meadowview	3,496	433	12.38	1,232	685	1,124	21	1,578	57.51
Pocket	2,850	629	22.05	1,403	514	60	245	544	41.12
East Sacramento	2,149	711	33.08	1,050	313	74	1	340	48.89
South Natomas	1,903	409	21.50	863	376	251	4	542	49.99
South Land Park	1,810	481	26.58	971	307	39	12	309	43.64
Robla	1,482	192	12.98	361	231	688	10	742	63.03
Parkway	1,372	220	16.05	824	210	112	6	259	34.94
Land Park	1,137	487	42.81	424	193	19	15	111	52.58
Raley Industrial Park	1,071	66	6.17	316	62	617	10	650	66.84
All other neighborhoods	40,419	7,595	18.79	19,147	6,793	6,040	845	10,170	43.95
Neighborhood Total	***61,223***	***11,802***	***19.28%***	***28,478***	***10,307***	***9,455***	***1,181***	***16,118***	***45.60%***

Sacramento's neighborhoods have an average of 19.7% canopy cover.



Map 7: Tree Canopy by Neighborhood

Tree Canopy by Parking Lots

Enacted in 1983, City Code 17.612.040 in the Planning and Development Code established tree shading requirements for parking lots. It establishes standards for the planting, maintenance, protection, removal, and replacement of trees for the construction of parking lots based on these standards. Many existing parking lots pre-dated 1983 and the application of these standards. The Parking Lot Tree Shading Design and Maintenance Guidelines provide standards and recommendations to encourage achievement of the City's 50% shading requirement for parking facilities in the City (2003).

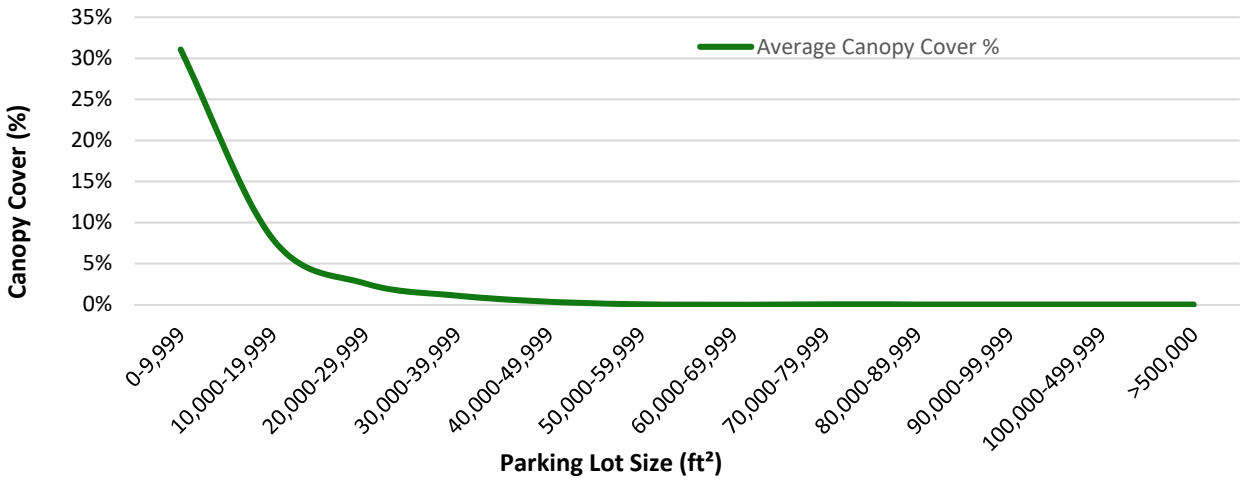
In 2017, DRG sampled 648 randomized parking lots in Sacramento and found that the average canopy of the sampled lots was 15.3% (Table 8). Only 5.9% of parking lots achieved a minimum of 50% canopy coverage. Because the dataset was created using heads up digitizing on aerials instead of as-built plans, some of the sampled lots may have been constructed prior to 1983. As a result, the shade requirement may not be applicable to all of the sampled parking lots; however, it does provide some information on existing shading effectiveness in parking lots.

Table 8: Summary of Statistical Findings for Sample of Parking Lots in Sacramento

Highest canopy cover %	89.37%
Lowest canopy cover %	0.00%
Average %	15.31%
Standard Deviation	16.82%
Percent Compliance	5.85%
Percent Non-Compliance	94.14%

Figure 9 summarizes the percentage of sampled parking lots represented by every canopy cover class. Of the 648 parking lots sampled, over 37% had less than 5% canopy cover and less than 5% of the sampled parking lots were meeting the target coverage of 50.0% or more canopy cover. Figure 10 summarizes the canopy cover acreage and percentage for sample parking lots by size class. While some parking lots may be meeting the 50.0% canopy goals of the parking lot shade ordinance, nearly 95% of parking lots do not meet the shading standard of 50%.

Figure 9: Average Tree Canopy Cover by Sample Parking Lots



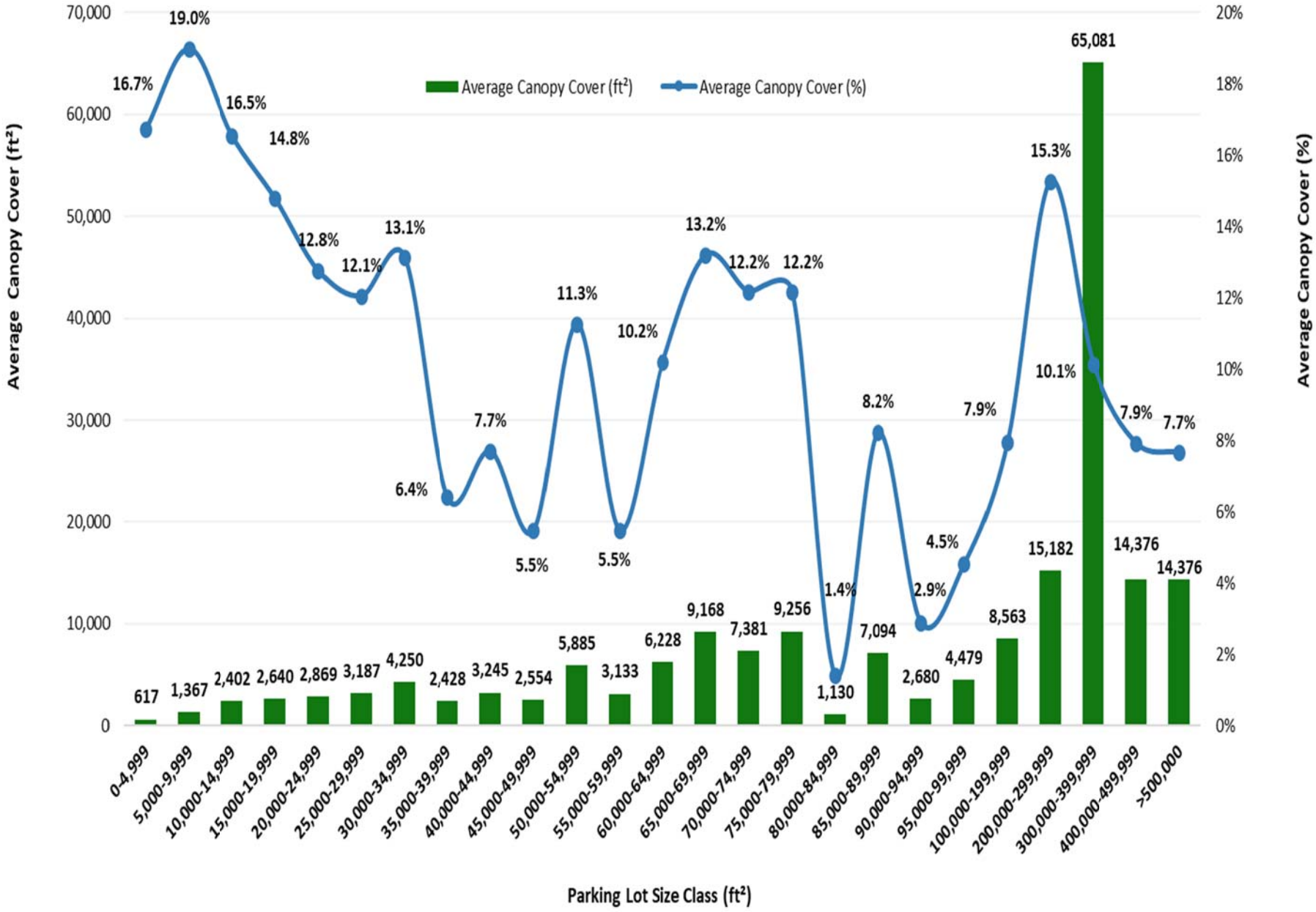


Figure 10: Average Tree Canopy by Sample Parking Lots

Historic Change

Historical change in tree canopy was assessed through a change analysis using two different time periods of imagery; 2004 and 2016. Image sources were 2016 one-meter 4-band NAIP imagery and 2004 one-foot imagery provided by the City of Sacramento. Both images were acquired over the summer during full leaf-on conditions. Tree canopy extractions were performed for both years using semi-automated feature extraction procedures with Feature Analyst software.

Tree canopy layers were summarized at the city level as well as other geographies, such as council districts, neighborhoods, parks, census block groups, subdivisions, and zoning. Tree canopy acreages and percentages were calculated for all features in their given spatial data layers for both years. To assess change, three change metrics were utilized: difference in acres, percent change, and absolute change.

Sacramento encompasses nearly 100 square miles (63,784 acres) with a tree canopy that currently covers 12,199 acres or 19.1% of the overall land cover. In 2004, the tree canopy was 8,856 acres, which at the time was 13.9% of the land cover. The change in canopy acreage from 2004 to today is 3,342.8 acres or a 37.8% increase in canopy cover.

Table 9: Sacramento Historic Canopy Cover

	Canopy Acres	*Canopy %*
Current Canopy	12,199	19.12
2004 Canopy	8,856	13.88

Canopy acreage has increase by 3,342.8 acres, since 2004.

Since 2004, Sacramento's canopy cover has increased from over 7,307 acres to nearly 10,200 acres, a 39.6% increase (Figure 14). The average canopy cover increased from 7.3% to 10.4%. Employment Center zoning class experienced the greatest increase in canopy acreage of all zones, increasing by over 54 acres (26.2%).

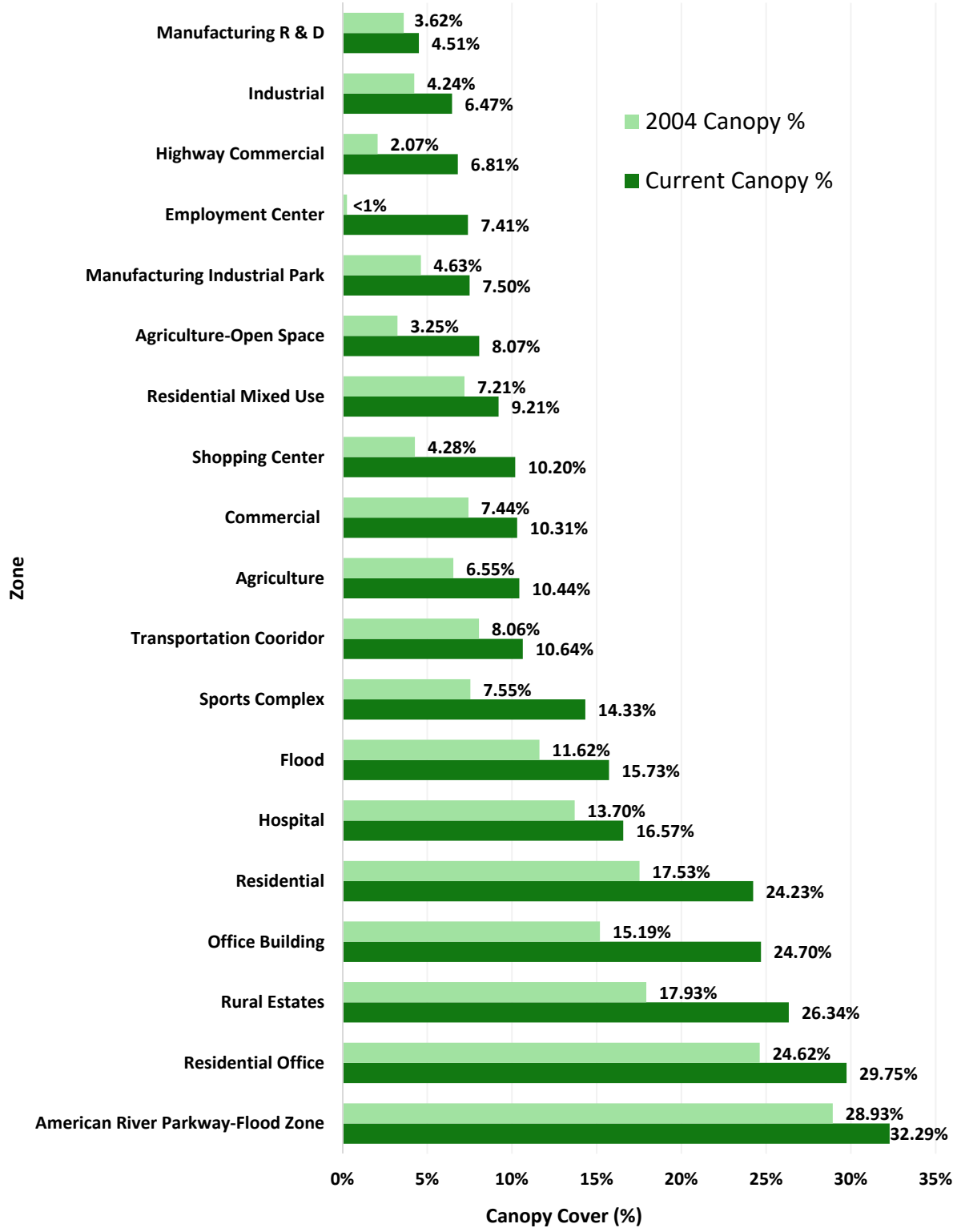


Figure 11: Historic Canopy Cover by Zone

Sacramento Community Plan Areas all experienced gains in canopy cover, since 2004. North Natomas experienced the greatest increase in canopy cover going from just over 100 acres to nearly 845 acres, since 2004.

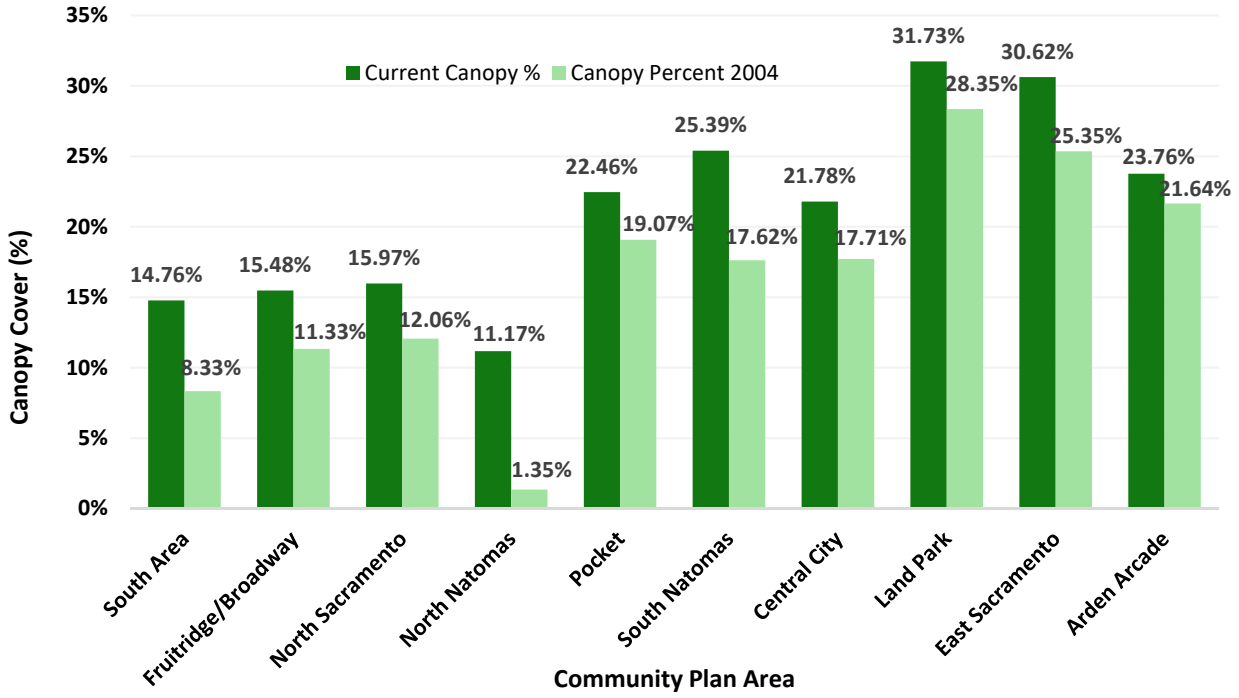


Figure 12: Historic Canopy Cover by Community Plan Area

By comparison all of Sacramento's council districts also experienced increases in canopy cover. The average canopy cover for council districts in 2004 was 13.9%, while today the average is 19.3% (Figure 12). On average, council districts increased canopy cover by 417.9 acres.

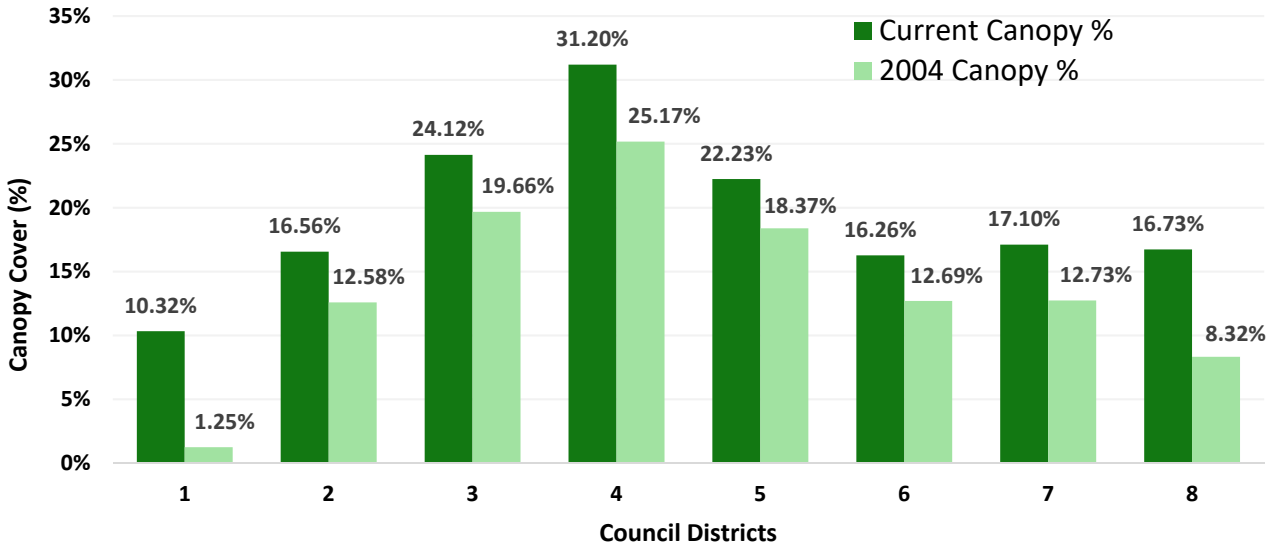


Figure 13: Historic Canopy Cover by Council District

Sacramento's top 10 largest parks, since 2004, have increased in canopy cover from 23.1% to 27.3% (Figure 14). Walter S. Ueda Parkway experienced a 14.9% increase in canopy cover, an increase of over 70 acres.

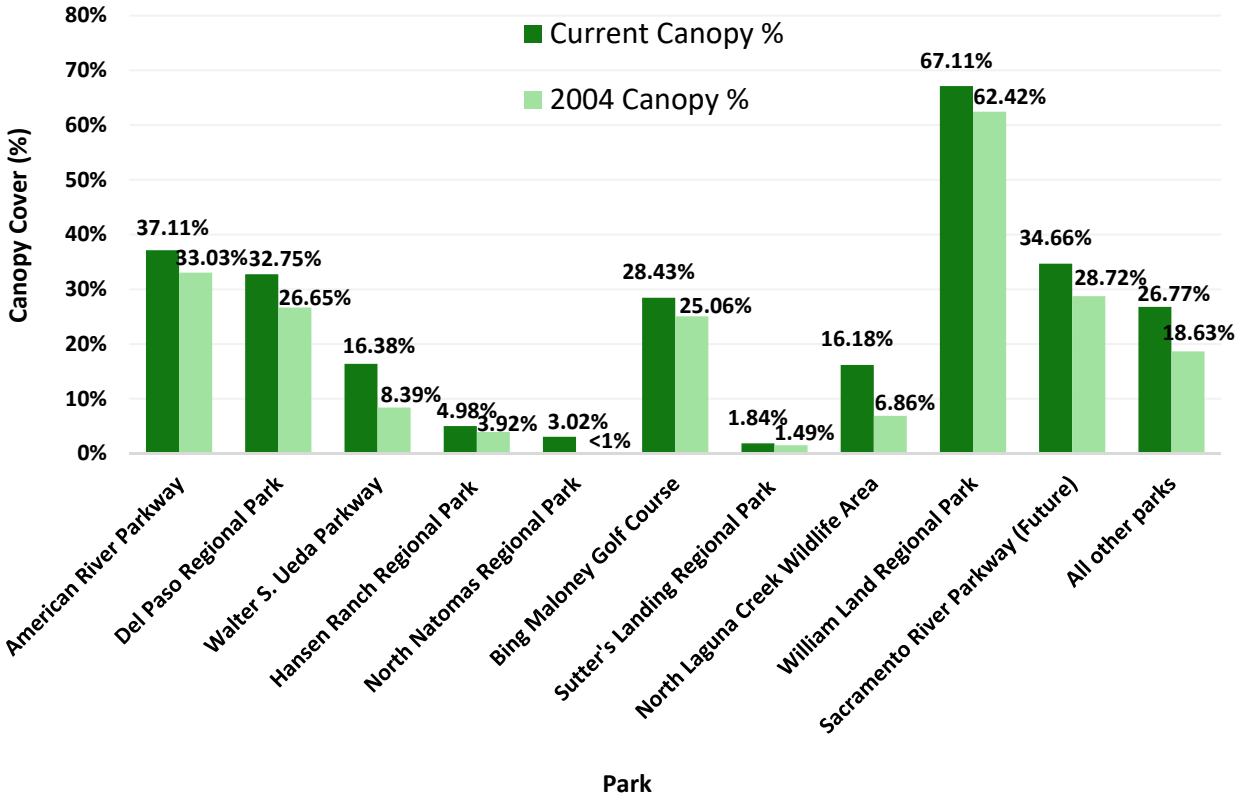
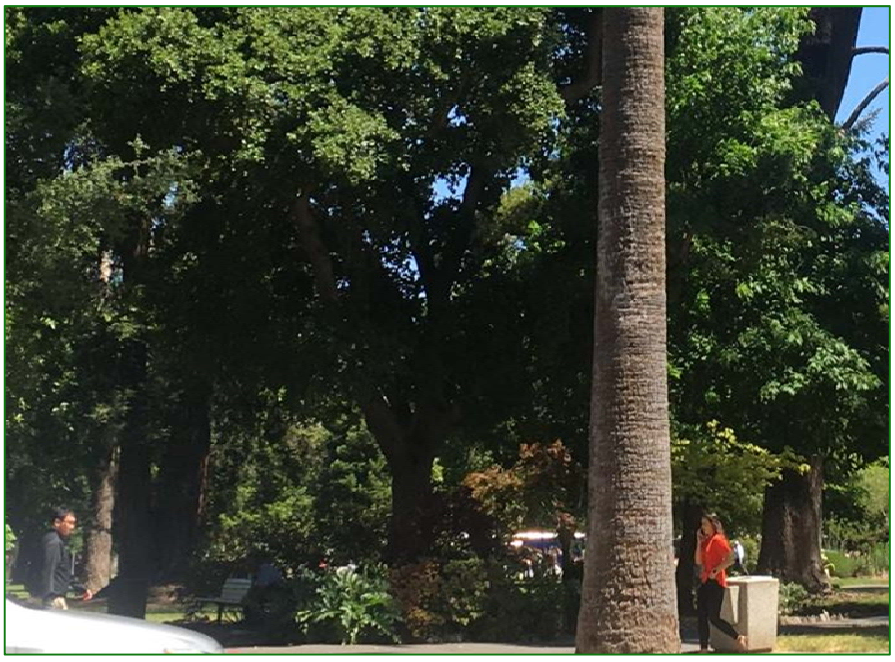


Figure 14: Historic Canopy Cover by Parks



Parks have increased in canopy cover by 23.1% to 27.3%, since 2004.

Priority Planting

To identify and prioritize planting potential, DRG assessed environmental features to identify and prioritize the risk potential for soil loss and degradation from storm and flood events. Weighted consideration was provided for proximity to hardscape and canopy, soil permeability, location within a floodplain, slope, population density, road density, and a soil erosion factor (K-factor) (Table 10). Each feature was assessed using a separate grid map. A value between zero (0) and four (4) (with zero (0) having the lowest risk potential) was assigned to each feature/grid assessed. Overlaying these grid maps and averaging the values provided the risk potential at any given point. A priority ranging from very low to very high was assigned to areas on the map based on the calculated average.

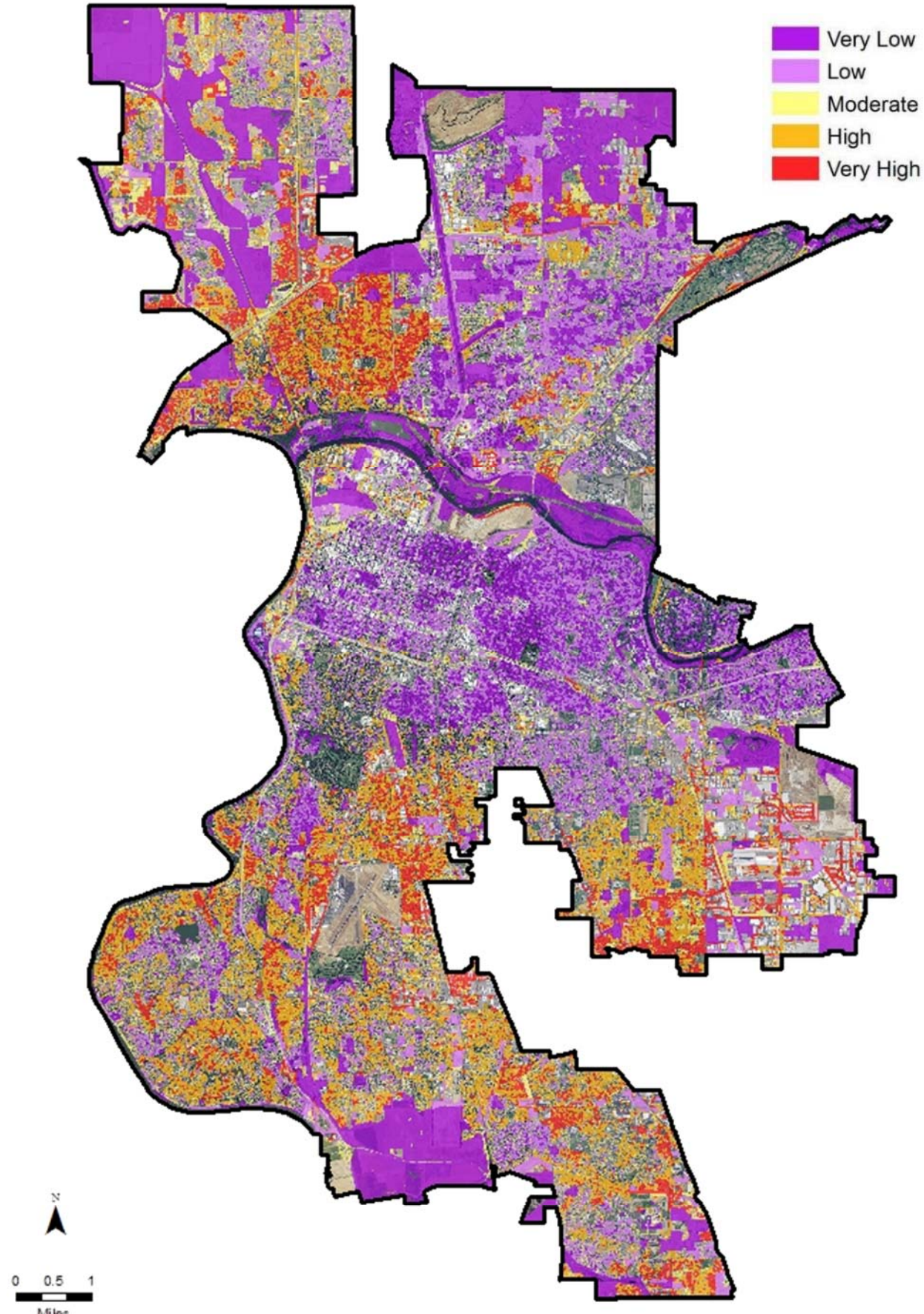
While available planting sites may ultimately be planted over the next several decades, the trees that are planted in the next several years, should be planned for areas of greatest need, and where they will provide the most benefits and return on investment.

The analysis identified the following acres of planting:

- Very Low–7,825 acres
- Low–2,096 acres
- Moderate–4,641 acres
- High–1,147 acres
- Very High–803 acres

Table 10: Stormwater Factors Used to Prioritize Tree Planting Sites

Dataset	*Source*	*Weight*
Proximity to hardscape	Urban Tree Canopy Assessment	0.3
Slope	National Elevation Dataset	0.1
Floodplain proximity	National Hydrologic Dataset	0.2
Soil Permeability	Natural Resource Conservation Service	0.15
Soil Erosion (K-factor)	Natural Resource Conservation Service	0.15
Canopy Fragmentation	Urban Tree Canopy Assessment	0.1



Map 8: Planting Priority for Sacramento

Conclusion

Because the urban forest is a dynamic, growing, and ever-changing resource it will require sound and proactive management to fully realize its maximum potential. Since 2004, overall tree canopy has increased citywide by 3,342.8 acres (37.8% increase). Tree canopy cover has expanded in all eight of Sacramento's council districts, as well as in all of Sacramento's zoning classes.

The UTC Assessment establishes a baseline for monitoring overall tree canopy cover throughout the community and augments the City's GIS database with a landcover layer that identifies the location and extent of existing canopy. This data layer that can be used in conjunction with other infrastructure layers to prioritize planting sites and increase canopy cover strategically by neighborhood, park, or land use. This assessment establishes a baseline for developing urban forest management strategies and measuring the success of those strategies over time.

With an average overall canopy of 19.1% and a potential UTC of 45.4%, Sacramento has ample opportunity to expand the urban forest and community participation and support will be needed to reach this goal. Based on this assessment, urban forest managers have the following opportunities:

- Considering that 46.4% of the community is covered by impervious surfaces and that the current canopy cover is 19.1% with 16.8% coverage by grass and low-lying vegetation and 15.7% by bare soil, the potential UTC is 45.4%. Many areas that could potentially support trees have been approved for urban development, which could reduce the ability to achieve the maximum potential canopy cover.
- Prioritized maps provide a basis for a strategically focused planting plan to increase trees and canopy that will support stormwater management, preserve soil, and complement the existing urban infrastructure for the greatest impact and return on investment.
- Among the top 10 largest parks in Sacramento, all have a potential UTC over 50%, which could be a great opportunity for adding large-stature shade trees; however, the ability to achieve the maximum potential canopy cover might be limited by future infrastructure and land use.
- Promote tree planting on private property, particularly in high and very high priority planting areas.

Since 2004, overall tree canopy has increased city-wide by 3,342.8 acres (37.8% increase).

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Trees shade a Sacramento Park.

Appendix B: Methodology

Calculating Benefits

Air Quality

The i-Tree Canopy v6.1 Model was used to quantify the value of ecosystem services for air quality. i-Tree Canopy was designed to give users the ability to estimate tree canopy and other land cover types within any selected geography. The model uses the estimated canopy percentage and reports air pollutant removal rates and monetary values for carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), sulfur dioxide (SO_2), and particulate matter (PM) (Hirabayashi, 2014).

Within the i-Tree Canopy application, the U.S. EPA's BenMAP Model estimates the incidence of adverse health effects and monetary values resulting from changes in air pollutants (Hirabayashi, 2014; US EPA 2012). Different pollutant removal values were used for urban and rural areas. In i-Tree Canopy, the air pollutant amount annually removed by trees and the associated monetary value can be calculated with tree cover in areas of interest using BenMAP multipliers for each county in the United States.

To calculate ecosystem services for the study area, canopy percentage metrics from UTC land cover data performed during the assessment were transferred to i-Tree Canopy. Those canopy percentages were matched by placing random points within the i-Tree Canopy application. Benefit values were reported for each of the five listed air pollutants.

Carbon Storage and Sequestration

The i-Tree Canopy v6.1 Model was used to quantify the value of ecosystem services for carbon storage and sequestration. i-Tree Canopy was designed to give users the ability to estimate tree canopy and other land cover types within any selected geography. The model uses the estimated canopy percentage and reports carbon storage and sequestration rates and monetary values. Methods on deriving storage and sequestration can be found in (Nowak et al, 2013).

To calculate ecosystem services for the study area, canopy percentage metrics from UTC land cover data performed during the assessment were transferred to i-Tree Canopy. Those canopy percentages were matched by placing random points within the i-Tree Canopy application. Benefit values were reported for carbon storage and sequestration.

Stormwater

The i-Tree *Hydro* v5.0 Model was used to quantify the value of ecosystem services for stormwater runoff. i-Tree *Hydro* was designed for users interested in analysis of vegetation and impervious cover effects on urban hydrology. This most recent version (v5.0) allows users to report hydrologic data on the city level rather than just a watershed scale giving users more flexibility. For more information about the model, consult the i-Tree *Hydro* v5.0 manual (http://www.itreetools.org).

To calculate ecosystem services for the study area, land cover percentages derived for the project area were used as inputs into the model. Precipitation data from 2005-2012 was modeled within

i-Tree *Hydro* to best represent the average conditions over an eight-year time period. Model simulations were run under a Base Case as well as an Alternate Case. The Alternative Case set tree canopy equal to 0% and assumed that impervious and vegetation cover would increase based on the removal of tree canopy. Impervious surface was increased 6% based on the amount of impervious surface under tree canopy and the rest was added to the vegetation cover class. This process was completed to assess the runoff reduction volume associated with tree canopy since i-Tree *Hydro* does not directly report the volume of runoff reduced by tree canopy. The volume (in cubic meters) was converted to gallons to retrieve the overall volume of runoff avoided with the current tree canopy.

Through model simulation, it was determined that tree canopy decreases the runoff volume in the project area by over 58 million gallons per year using precipitation data from 2005-2012. This equates to approximately 4,784 gallons per acre of tree canopy (58,361,311 gals/12,198.56 acres).

To place a monetary value on storm water reduction, the cost to treat a gallon of storm/waste water was taken from McPherson et al 1999. This value was $0.008 per gallon. Tree canopy was estimated to contribute roughly $466,890 to avoided runoff annually to the project area.

Priority Planting Analysis

The planting location polygons were created by taking all grass/open space and bare ground areas and combining them into one dataset. Non-feasible planting areas such as agricultural fields, recreational fields, major utility corridors, airports, etc. were removed from consideration. The remaining planting space was consolidated into a single feature and, then, exploded back out to multipart features creating separate, distinct polygons for each location. Using zonal statistics, the priority grid raster was used to calculate an average value for each planting location polygon. The averages were binned into five (5) classes with the higher numbers indicating higher priority for planting. These classes ranged from very low to very high.

Land Cover Extraction and Accuracy Assessment

Davey Resource Group utilized an object-based image analysis (OBIA) semi-automated feature extraction method to process and analyze current high-resolution color infrared (CIR) aerial imagery to remotely-sensed data to identify tree canopy cover and land cover classifications. The use of imagery analysis is cost-effective and provides a highly accurate approach to assessing your community's existing tree canopy coverage. This supports responsible tree management, facilitates community forestry goal-setting, and improves urban resource planning for healthier and more sustainable urban environments.

Advanced image analysis methods were used to classify, or separate, the land cover layers from the overall imagery. The semi-automated extraction process was completed using Feature Analyst, an extension of ArcGIS®. Feature Analyst uses an object-oriented approach to cluster together objects with similar spectral (i.e., color) and spatial/contextual (e.g., texture, size, shape, pattern, and spatial association) characteristics. The land cover results of the extraction process were post-processed and clipped to each project boundary prior to the manual editing process in order to create smaller, manageable, and more efficient file sizes. Secondary source data, such as planimetric (buildings, roads, other impervious), hydrology, and parks provided by Sacramento,

and custom ArcGIS® tools were used to aid in the final manual editing, quality checking, and quality assurance processes (QA/QC). The manual QA/QC process was implemented to identify, define, and correct any misclassifications or omission errors in the final land cover layer.

Classification Workflow

1) Prepare imagery for feature extraction (resampling, rectification, etc.), if needed.
2) Gather training set data for all desired land cover classes (canopy, impervious, grass, bare soil, shadows). Water samples are not always needed since hydrologic data are available for most areas. Training data for impervious features were not collected because the City maintained a completed impervious layer.
3) Extract canopy layer only; this decreases the amount of shadow removal from large tree canopy shadows. Fill small holes and smooth to remove rigid edges.
4) Edit and finalize canopy layer at 1:2000 scale. A point file is created to digitize-in small individual trees that will be missed during the extraction. These points are buffered to represent the tree canopy. This process is done to speed up editing time and improve accuracy by including smaller individual trees.
5) Extract remaining land cover classes using the canopy layer as a mask; this keeps canopy shadows that occur within groups of canopy while decreasing the amount of shadow along edges.
6) Edit the impervious layer to reflect actual impervious features, such as roads, buildings, parking lots, etc. to update features.
7) Using canopy and actual impervious surfaces as a mask; input the bare soils training data and extract them from the imagery. Quickly edit the layer to remove or add any features. Davey Resource Group tries to delete dry vegetation areas that are associated with lawns, grass/meadows, and agricultural fields.
8) Assemble any hydrological datasets, if provided. Add or remove any water features to create the hydrology class. Perform a feature extraction if no water feature datasets exist.
9) Use geoprocessing tools to clean, repair, and clip all edited land cover layers to remove any self-intersections or topology errors that sometimes occur during editing.
10) Input canopy, impervious, bare soil, and hydrology layers into Davey Resource Group's Five-Class Land Cover Model to complete the classification. This model generates the pervious (grass/low-lying vegetation) class by taking all other areas not previously classified and combining them.
11) Thoroughly inspect final land cover dataset for any classification errors and correct as needed.
12) Perform accuracy assessment. Repeat Step 11, if needed.

Automated Feature Extraction Files

The automated feature extraction (AFE) files allow other users to run the extraction process by replicating the methodology. Since Feature Analyst does not contain all geoprocessing operations that Davey Resource Group utilizes, the AFE only accounts for part of the extraction process. Using Feature Analyst, Davey Resource Group created the training set data, ran the extraction, and then smoothed the features to alleviate the blocky appearance. To complete

the actual extraction process, Davey Resource Group uses additional geoprocessing tools within ArcGIS®. From the AFE file results, the following steps are taken to prepare the extracted data for manual editing.

1. Davey Resource Group fills all holes in the canopy that are less than 30 square meters. This eliminates small gaps that were created during the extraction process while still allowing for natural canopy gaps.
2. Davey Resource Group deletes all features that are less than 9 square meters for canopy (50 square meters for impervious surfaces). This process reduces the amount of small features that could result in incorrect classifications and also helps computer performance.
3. The Repair Geometry, Dissolve, and Multipart to Singlepart (in that order) geoprocessing tools are run to complete the extraction process.
4. The Multipart to Singlepart shapefile is given to GIS personnel for manual editing to add, remove, or reshape features.

Table 11: Classification Matrix

	Classification Data							
Reference Data	**Classes**	**Tree Canopy**	**Impervious**	**Grass/ Veg.**	**Bare Soils**	**Water**	**Row Total**	**Producer's Accuracy**	**Errors of Omission**
	Tree Canopy	193	3	10	0	0	206		
	Impervious	0	434	10	1	0	445	93.69%	6.31%
	Grass & Low-Veg.	2	2	153	2	0	159	97.53%	2.47%
	Bare Soils	0	2	2	163	0	167	96.23%	3.77%
	Water	0	0	0	0	23	23	97.60%	2.40%
	Column Total	195	441	175	166	23	1,000	100.00%	0.00%
	User's Accuracy	98.97%	98.41%	87.43%	98.81%	100%		**Overall Accuracy**	96.66%
	Errors of Commission	1.03%	1.59%	12.57%	1.81%	0.00%		**Kappa Coefficient**	0.95

Accuracy Assessment Protocol

Determining the accuracy of spatial data is of high importance to Davey Resource Group and our clients. To achieve the best possible result, Davey Resource Group manually edits and conducts thorough QA/QC checks on all urban tree canopy and land cover layers. A QA/QC process was completed using ArcGIS® to identify, clean, and correct any misclassification or topology errors in the final land cover dataset. The initial land cover layer extractions were edited at a 1:1500 quality control scale utilizing the most current high-resolution aerial imagery to aid in the quality control process.

To test for accuracy, random plot locations were generated throughout the project area and verified to ensure that the data meet the client standards. Each point was compared with the most current NAIP high-resolution imagery (reference image) to determine the accuracy of the final

land cover layer. Points were classified as either correct or incorrect and recorded in a classification matrix. Accuracy was assessed using four metrics: overall accuracy, kappa, quantity disagreement, and allocation disagreement. These metrics were calculated using a custom Excel® spreadsheet.

Land Cover Accuracy

The following describes Davey Resource Group's accuracy assessment techniques and outlines procedural steps used to conduct the assessment.

1. ***Random Point Generation***—Using ArcGIS, 1,000 random assessment points are generated.
2. ***Point Determination***—Each point is carefully assessed by the GIS analyst for likeness with the aerial photography. To record findings, two new fields, CODE and TRUTH, are added to the accuracy assessment point shapefile. CODE is a numeric value (1–5) assigned to each land cover class (Table 1) and TRUTH is the actual land cover class as identified according to the reference image. If CODE and TRUTH are the same, then the point is counted as a correct classification. Likewise, if the CODE and TRUTH are not the same, then the point is classified as incorrect. In most cases, distinguishing if a point is correct or incorrect is straightforward. Points will rarely be misclassified by an egregious classification or editing error. Often incorrect points occur where one feature stops and the other begins.

3. ***Classification Matrix***—During the accuracy assessment, if a point is considered incorrect, it is given the correct classification in the TRUTH column. Points are first assessed on the NAIP imagery for their correctness using a "blind" assessment—meaning that the analyst does not know the actual classification (the GIS analyst is strictly going off the NAIP imagery to determine cover class). Any incorrect classifications found during the "blind" assessment are scrutinized further using sub-meter imagery provided by the client to determine if the point was incorrectly classified due to the fuzziness of the NAIP imagery or an actual misclassification. After all random points are assessed and recorded; a classification (or confusion) matrix is created. The classification matrix for this project is presented in Table 13. The table allows for assessment of user's/producer's accuracy, overall accuracy, omission/commission errors, kappa statistics, allocation/quantity disagreement, and confidence intervals (Table 14).
4. Following are descriptions of each statistic as well as the results from some of the accuracy assessment tests.

Overall Accuracy – Percentage of correctly classified pixels; for example, the sum of the diagonals divided by the total points ((137+441+79+309+28)/1,000 = 97.40%).

User's Accuracy – Probability that a pixel classified on the map actually represents that category on the ground (correct land cover classifications divided by the column total [137/143 = 95.80%]).

Producer's Accuracy – Probability of a reference pixel being correctly classified (correct land cover classifications divided by the row total [137/140 = 97.86%]).

Kappa Coefficient – A statistical metric used to assess the accuracy of classification data. It has been generally accepted as a better determinant of accuracy partly because it accounts for random chance agreement. A value of 0.80 or greater is regarded as very good agreement between the land cover classification and reference image.

Errors of Commission – A pixel reports the presence of a feature (such as trees) that, in reality, is absent (no trees are actually present). This is termed as a false positive. In the matrix below, we can determine that 4.20% of the area classified as canopy is most likely not canopy.

Errors of Omission – A pixel reports the absence of a feature (such as trees) when, in reality, they are actually there. In the matrix below, we can conclude that 2.14% of all canopy classified is actually classified as another land cover class.

Allocation Disagreement – The amount of difference between the reference image and the classified land cover map that is due to less than optimal match in the spatial allocation (or position) of the classes.

Quantity Disagreement – The amount of difference between the reference image and the classified land cover map that is due to less than perfect match in the proportions (or area) of the classes.

Confidence Intervals – A confidence interval is a type of interval estimate of a population parameter and is used to indicate the reliability of an estimate. Confidence intervals consist of a range of values (interval) that act as good estimates of the unknown population parameter based on the observed probability of successes and failures. Since all assessments have innate error, defining a lower and upper bound estimate is essential.

Table 12: Confidence Intervals

95% Confidence Intervals

Landcover Assessment

Class	Acreage	Percentage	Lower Bound	Upper Bound
Tree Canopy	12,198.5	19.1%	19.0%	19.3%
Impervious	29,493.7	46.2%	46.0%	46.4%
Grass/ Vegetation	10,728.3	16.8%	16.7%	17.0%
Bare Soils	9,979.1	15.6%	15.5%	15.8%
Water	1,384.5	2.2%	2.1%	2.2%
Total	**63,784.0**	**100.00%**		

Statistical Metrics Summary:

Overall Accuracy =	**96.6%**
Kappa Coefficient =	**0.9519**
Allocation Disagreement =	**1%**
Quantity Disagreement =	**2%**

Accuracy Assessment

Class	User's Accuracy	Lower Bound	Upper Bound	Producer's Accuracy	Lower Bound	Upper Bound
Tree Canopy	99.0%	98.3%	99.7%	93.7%	92.0%	95.4%
Impervious	98.4%	97.8%	99.0%	97.5%	96.8%	98.3%
Grass/Vegetation	87.4%	84.9%	89.9%	96.2%	94.7%	97.7%
Bare Soils	98.2%	97.2%	99.2%	97.6%	96.4%	98.8%
Water	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 13: Tree Canopy by Zones

Zoning	*Zoning Code*	*Acres*	*Canopy acres*	*Canopy %*	*Impervious Acres*	*Pervious Acres*	*Preferred Plantable Acres*	*Potential UTC*
Agriculture	A	2,093.49	218.58	10.44	596.77	523.86	826.85	49.94
Agriculture-Open Space	A-OS	2,186.21	176.39	8.07	234.27	410.44	1,022.96	54.86
American River Parkway-Flood Zone	ARP-F	2,139.65	690.86	32.29	126.27	758.09	684.80	64.29
Commercial	C-1, 2, & 3	3,708.78	382.35	10.31	2,527.11	281.44	733.96	68.45
Employment Center	EC-30, 40, 50, 65, & 85	760.06	56.29	7.41	225.21	107.20	464.00	35.70
Flood	F	1,056.38	166.14	15.73	63.01	137.65	285.48	42.75
Hospital	H	159.54	26.44	16.57	91.85	14.57	41.25	42.43
Highway Commercial	HC	77.53	5.28	6.81	25.17	7.36	47.08	67.53
Industrial	M-1, 1S, 2, & 2S	5,834.37	377.33	6.47	3,278.15	428.07	1,705.57	35.70
Manufacturing Industrial Park	MIP	57.48	4.31	7.50	39.26	4.65	8.21	21.78
Manufacturing R & D	MRD, MRD-20	206.17	9.29	4.51	99.97	23.33	96.75	51.4
Office Building	OB	947.86	234.08	24.70	491.73	106.34	208.84	46.73
Residential	R-1, 1A, 1B, 2, 2A, 2B, 3, 3A, 4, 4A, 5	31,507.88	7,634.83	24.23	12,858.65	6,940.09	8,733.52	51.95
Rural Estates	RE, RE-1/.5, 1/1, 1/2	128.53	33.85	26.34	21.19	36.89	68.26	79.44
Residential Mixed Use	RMX	535.06	49.30	9.21	301.69	56.54	144.60	36.24
Residential Office	RO	61.74	18.37	29.75	32.44	7.67	10.92	47.44
Shopping Center	SC	752.06	76.70	10.20	358.21	54.64	307.30	51.06
Sports Complex	SPX	183.59	26.31	14.33	100.99	26.39	54.06	43.77
Transportation Corridor	TC	124.45	13.24	10.64	73.36	13.15	24.97	30.70

Table 14: Land Cover by Parks

Park	Acres	Canopy Acres	% Canopy	Impervious Acres	Pervious Acres	Water Acres	Bare Soil Acres	Preferred Plantable Acres	% Preferred Plantable Acres	Potential UTC %
24th Street Bypass Park	7.41	0.39	5.27	0.52	2.48	0.00	4.02	6.50	87.76	93.02
4-Way Parklets	2.89	0.19	6.56	0.00	0.40	0.00	2.29	2.69	93.40	99.96
7th Street Promenade	1.07	0.26	24.51	0.73	0.07	0.00	0.00	0.08	7.63	32.14
Adventure Park Site	3.51	0.01	0.36	0.00	0.05	0.00	3.44	3.49	99.68	100.04
Airfield Park Site	9.19	0.00	0.00	0.00	0.00	0.00	9.19	9.19	99.95	99.95
Airport Little League Park	10.02	0.52	5.22	1.31	3.90	0.00	4.28	0.39	3.90	9.12
Alan And Helen Post Park	0.69	0.05	7.31	0.28	0.07	0.00	0.28	0.35	51.57	58.88
Albert Winn Park	2.56	1.48	57.67	0.25	0.83	0.00	0.00	0.84	32.78	90.45
Alder Park	2.03	0.44	21.74	0.18	1.21	0.00	0.20	1.42	69.76	91.50
American River Parkway	1,459.16	541.56	37.11	89.25	636.85	94.47	97.04	584.95	40.09	77.20
Anthony Park	1.66	0.41	24.85	0.10	0.61	0.00	0.54	1.14	68.41	93.26
Argonaut Park	8.57	0.98	11.45	3.63	3.86	0.00	0.09	0.07	0.80	12.25
Army Depot Park	19.50	0.24	1.24	2.70	3.61	0.24	12.70	1.58	8.12	9.36
Artivio Guerrero Park	2.51	0.04	1.62	1.09	1.38	0.00	0.00	0.14	5.59	7.21
Autumn Meadow Park	6.07	0.23	3.73	0.85	5.00	0.00	0.00	1.84	30.33	34.06
Bannon Creek Park & Parkway	18.94	16.17	85.41	0.48	2.24	0.00	0.05	1.88	9.95	95.36
Bannon Creek Preserve	5.52	5.36	97.11	0.00	0.16	0.00	0.00	0.16	2.84	99.96
Bartley Cavanaugh Golf Course	0.11	0.08	75.75	0.00	0.03	0.00	0.00	0.01	8.31	84.06
Belle Cooledge Community Center Park	10.20	3.37	33.04	1.30	5.53	0.00	0.00	5.50	53.98	87.01
Belle Cooledge Park	8.68	4.09	47.09	1.37	3.14	0.00	0.08	3.21	37.02	84.11
Bercut Richards Plaza Site	0.21	0.13	60.81	0.07	0.02	0.00	0.00	0.02	9.02	69.83
Bertha Henschel Park	2.55	0.82	32.08	0.31	1.33	0.00	0.09	0.33	13.12	45.20
Bicycle Easement	1.04	0.01	1.17	0.28	0.11	0.00	0.64	0.75	72.12	73.28
Bill Bean Jr Memorial Park at Colonial Manor	4.33	0.96	22.24	0.48	2.83	0.00	0.07	2.89	66.63	88.87
Bill Conlin Youth Sports Complex	21.63	1.94	8.96	2.58	10.48	0.00	6.64	3.12	14.42	23.38
Bing Maloney Golf Course	175.31	49.95	28.49	8.32	102.06	0.00	14.98	2.20	1.25	29.75
Blackbird Park Site	10.18	0.09	0.84	0.37	0.99	0.00	8.74	9.74	95.61	96.45
Blue Oak Park	0.98	0.36	37.06	0.12	0.50	0.00	0.00	0.50	50.97	88.03
Brockway Park	0.93	0.91	98.17	0.00	0.01	0.00	0.00	0.01	1.43	99.60
Brooks Truitt Park	0.89	0.01	1.64	0.11	0.21	0.00	0.56	0.77	86.34	87.98
Burberry Community Park	11.76	1.48	12.60	1.72	8.43	0.00	0.13	6.10	51.86	64.46
C.K. McClatchy Park	15.41	6.61	42.86	2.89	5.10	0.00	0.82	2.84	18.42	61.28

Park	Acres	Canopy Acres	% Canopy	Impervious Acres	Pervious Acres	Water Acres	Bare Soil Acres	Preferred Plantable Acres	% Preferred Plantable Acres	Potential UTC %
California Lilac Park	3.23	0.77	23.71	0.50	1.54	0.00	0.43	1.97	60.80	84.51
Camellia Park	2.01	0.47	23.33	0.35	1.19	0.00	0.00	0.16	7.73	31.07
Campus Commons Golf Course	23.36	4.59	19.67	0.84	17.85	0.01	0.08	0.06	0.27	19.94
Cannery Plaza	0.22	0.01	6.04	0.20	0.00	0.00	0.00	0.00	0.00	6.04
Capitol Park	36.01	20.28	56.31	7.05	8.66	0.00	0.03	8.69	24.14	80.45
Carl Johnston Park	24.28	3.10	12.78	1.62	17.41	0.00	2.14	1.86	7.68	20.46
Central Shops Plaza	3.04	0.00	0.14	2.26	0.15	0.00	0.63	0.78	25.68	25.82
Cesar E. Chavez Plaza	2.54	1.59	62.59	0.52	0.43	0.00	0.00	0.43	16.86	79.45
Charles Robertson Park	9.05	2.11	23.27	2.38	3.95	0.00	0.62	4.57	50.45	73.72
Charlie Jensen Park	2.81	1.02	36.26	0.28	1.33	0.00	0.17	1.51	53.87	90.13
Charter Pointe Park	4.89	2.68	54.73	0.08	2.04	0.01	0.08	0.01	0.18	54.92
Chicory Bend Park	11.01	8.44	76.65	1.29	0.91	0.19	0.19	1.10	9.96	86.61
Chuckwagon Park	1.80	0.72	40.29	0.00	1.07	0.00	0.00	1.07	59.59	99.88
Coloma Park	3.04	1.09	35.73	1.61	0.35	0.00	0.00	0.34	11.32	47.05
Colonial Park	2.15	0.60	27.96	0.22	1.08	0.00	0.24	0.12	5.67	33.62
Commerce Station Park Site	4.02	0.00	0.00	0.00	0.00	0.00	4.02	4.02	100.00	100.00
Cool Wind Way Park	1.15	0.48	41.22	0.04	0.64	0.00	0.00	0.63	54.84	96.06
Cosumnes River College Park	8.09	0.02	0.31	1.24	6.82	0.00	0.00	0.17	2.12	2.42
Cottonwood Park	4.99	1.04	20.89	0.26	3.50	0.00	0.19	0.02	0.31	21.20
Crocker Park	2.58	1.93	74.82	0.00	0.65	0.00	0.00	0.65	25.29	100.12
Danny Nunn Park	12.34	2.25	18.26	1.81	8.28	0.00	0.00	1.10	8.91	27.17
Del Paso Regional Park	596.43	195.15	32.72	36.23	270.22	1.63	93.21	40.02	6.71	39.43
Depot Park	1.49	0.06	3.94	0.22	0.71	0.00	0.49	1.20	80.98	84.92
Discovery Park	55.64	33.04	59.38	7.52	11.93	3.15	0.00	11.93	21.43	80.81
Dixieanne Tot Lot	0.15	0.11	69.71	0.02	0.03	0.00	0.00	0.03	17.63	87.34
Dogwood Park	3.02	0.00	0.00	0.64	2.32	0.00	0.07	2.38	78.76	78.76
Earl Warren Park	5.02	0.87	17.34	0.60	3.55	0.00	0.00	3.55	70.64	87.98
East Lawn Children's Park	0.33	0.22	65.56	0.00	0.12	0.00	0.00	0.09	26.76	92.31
East Portal Park	7.35	3.19	43.36	0.17	3.76	0.00	0.24	0.00	0.02	43.38
Edward Kemble Park	1.74	0.14	7.86	0.27	1.32	0.00	0.01	1.34	77.47	85.32
Edwin Z'berg Park	2.48	0.60	24.37	0.31	1.56	0.00	0.00	1.57	63.18	87.54
Egret Park	4.93	0.50	10.08	0.54	3.89	0.00	0.00	3.88	78.70	88.79
Egret Park Open Space	3.59	0.40	11.25	0.38	2.75	0.00	0.06	2.80	77.95	89.20
Eileen Dutra Park	0.41	0.31	76.66	0.01	0.09	0.00	0.00	0.09	21.21	97.87
Elderberry Park	2.19	0.24	10.95	0.40	1.56	0.00	0.00	0.71	32.45	43.40
Emil Bahnfleth Park	6.33	1.67	26.44	0.04	4.62	0.00	0.00	0.75	11.79	38.23
Emiliano Zapata Park	0.95	0.54	56.94	0.11	0.29	0.00	0.01	0.30	31.71	88.65
Fisherman's Lake Parkway & Open Space	33.39	2.16	6.47	4.76	3.48	0.04	22.95	26.33	78.86	85.32

Park	Acres	Canopy Acres	% Canopy	Impervious Acres	Pervious Acres	Water Acres	Bare Soil Acres	Preferred Plantable Acres	% Preferred Plantable Acres	Potential UTC %
Five Star Park	0.35	0.03	8.57	0.12	0.21	0.00	0.00	0.20	57.49	66.06
Fourth Avenue Park	1.07	0.33	30.35	0.01	0.03	0.00	0.71	0.75	70.04	100.39
Frank Seymour Park	43.60	26.82	61.51	2.27	14.43	0.00	0.09	13.73	31.48	92.99
Franklin Boyce Community Park	9.80	0.06	0.65	0.71	3.91	0.21	4.91	8.82	90.03	90.68
Fredrick Miller Regional Park	38.68	19.54	50.52	12.03	5.85	0.48	0.79	6.63	17.15	67.67
Freeport Park	3.96	0.97	24.37	0.03	1.98	0.00	0.99	2.98	75.04	99.41
Fremont Community Garden	0.46	0.04	9.16	0.23	0.18	0.00	0.00	0.18	39.37	48.54
Garcia Bend Park	19.71	6.25	31.69	3.74	8.04	0.95	0.73	2.89	14.65	46.34
Garden Highway Bikeway	24.41	18.82	77.08	1.79	1.42	2.08	0.30	1.42	5.81	82.89
Gardenland Park	6.03	1.64	27.14	0.66	3.59	0.00	0.15	1.97	32.69	59.83
Gateway Park	5.02	0.75	14.90	0.00	3.97	0.00	0.30	4.26	84.93	99.83
George Sim Park	13.92	1.71	12.26	4.45	7.03	0.11	0.62	3.46	24.83	37.10
Glenbrook Park	17.64	3.94	22.34	1.10	11.47	0.00	1.13	0.28	1.59	23.93
Glenbrook River Access	4.03	0.52	12.86	0.46	0.27	0.00	2.78	0.01	0.17	13.03
Glenn Hall Park	8.13	2.55	31.43	1.62	3.91	0.00	0.04	0.00	0.03	31.46
Golden Poppy Park	2.03	0.28	13.86	0.72	1.03	0.00	0.00	1.03	50.67	64.53
Governor's Mansion	0.79	0.36	46.07	0.29	0.13	0.00	0.00	0.13	17.12	63.18
Granite Regional Park	83.70	19.95	23.83	7.79	26.14	2.07	27.75	39.56	47.27	71.10
Greenfair Park	0.61	0.48	78.00	0.00	0.13	0.00	0.00	0.13	21.47	99.47
Hagginwood Park	15.43	4.95	32.05	2.81	7.50	0.00	0.17	1.33	8.61	40.66
Hampton Park	6.16	0.48	7.81	0.88	3.06	0.00	1.73	4.78	77.60	85.41
Hansen Ranch Regional Park Site	265.95	13.24	4.98	1.94	32.34	7.21	211.23	26.93	10.12	15.10
Harrier Park	0.74	0.19	25.72	0.22	0.28	0.00	0.04	0.32	43.68	69.40
Heron Park	3.95	1.12	28.24	0.12	2.72	0.00	0.00	0.59	14.88	43.12
Hite Park	4.99	0.97	19.38	0.19	3.73	0.00	0.11	0.20	4.00	23.38
Hummingbird Park	4.32	0.37	8.47	0.50	2.21	0.00	1.25	3.44	79.59	88.06
J. Neely Johnson Park	0.97	0.74	76.45	0.09	0.14	0.00	0.00	0.14	14.46	90.91
Jacinto Creek Park	11.74	1.73	14.70	1.42	7.82	0.00	0.77	1.62	13.79	28.49
Jacinto Creek Parkway	14.62	1.74	11.91	1.97	3.24	0.04	7.62	10.73	73.41	85.32
Jack Rea Park	0.34	0.09	26.52	0.06	0.19	0.00	0.00	0.19	54.70	81.22
James Mangan Park	8.19	2.19	26.74	1.03	4.73	0.00	0.24	0.06	0.74	27.48
James W. Marshall Park	2.51	1.47	58.55	0.55	0.49	0.00	0.00	0.50	19.83	78.38
John Cabrillo Park	5.63	0.90	15.92	1.03	3.63	0.00	0.07	0.08	1.45	17.37
John Fremont Park	2.57	1.23	47.68	0.21	1.13	0.00	0.00	1.13	44.01	91.68
John Mackey Memorial Park at Kenwood Oaks	11.56	1.03	8.92	0.04	7.33	0.00	3.16	10.46	90.43	99.35
John Muir Children's Park	2.50	1.48	59.34	0.07	0.94	0.00	0.01	0.95	37.79	97.14
John Reith Park	1.27	0.29	22.78	0.06	0.92	0.00	0.00	0.05	3.76	26.54

Park	Acres	Canopy Acres	% Canopy	Impervious Acres	Pervious Acres	Water Acres	Bare Soil Acres	Preferred Plantable Acres	% Preferred Plantable Acres	Potential UTC %
Joseph Reichmuth Park	43.49	27.26	62.69	1.97	13.53	0.00	0.73	3.10	7.12	69.81
Kaiser Promenade	0.77	0.04	4.88	0.01	0.00	0.00	0.73	0.73	94.54	99.42
Kokomo Park	7.01	0.48	6.85	0.81	5.72	0.00	0.00	0.04	0.51	7.36
Lawrence Park	5.08	1.76	34.57	0.21	2.42	0.00	0.69	0.00	0.00	34.57
Leland Stanford Mansion State Historic Park	0.60	0.20	33.17	0.27	0.13	0.00	0.00	0.13	21.71	54.88
Leland Stanford Park	2.76	0.46	16.80	0.05	2.25	0.00	0.00	2.24	81.17	97.97
Lewis Park	3.31	1.69	51.06	0.32	1.16	0.00	0.14	1.31	39.49	90.55
Linden Park	4.91	1.47	29.92	0.22	3.11	0.00	0.12	3.22	65.47	95.39
Mae Fong Park	8.26	0.26	3.20	1.17	1.17	0.00	5.65	0.21	2.50	5.70
Magnolia Park	6.42	0.40	6.28	1.13	4.15	0.00	0.74	4.88	75.94	82.22
Magoichi Oki Park	15.04	3.64	24.21	0.58	5.77	0.00	5.05	1.77	11.75	35.96
Manuel Barandas Park	13.02	2.67	20.52	0.28	3.15	0.00	6.91	0.26	1.98	22.49
Manuel E. Silva Park	3.15	0.11	3.62	0.58	1.79	0.00	0.67	0.02	0.53	4.15
Maple Park	1.07	0.19	17.51	0.47	0.26	0.00	0.15	0.41	38.04	55.55
Margarette "Mama" Marks Park	4.80	0.94	19.70	0.51	3.24	0.00	0.10	3.35	69.76	89.46
Mark Hopkins Park	6.36	0.59	9.26	0.65	4.78	0.00	0.35	5.11	80.32	89.58
Market Plaza	0.65	0.00	0.08	0.57	0.00	0.00	0.08	0.08	13.00	13.08
Martin Luther King Jr Community Garden	0.30	0.08	27.79	0.06	0.14	0.00	0.01	0.15	49.58	77.37
Martin Luther King, Jr. Park	1.49	0.32	21.25	0.33	0.75	0.00	0.08	0.83	56.07	77.32
Matsui Waterfront Park (Robert T.)	6.79	0.54	7.95	2.04	4.05	0.05	0.10	4.16	61.19	69.14
Max Baer Park	4.10	0.79	19.21	0.52	2.80	0.00	0.00	0.01	0.26	19.48
Meadows Community Park Site	11.15	0.01	0.05	0.02	0.00	0.00	11.12	11.11	99.67	99.72
Meadowview Park	8.26	1.49	17.99	0.31	5.73	0.00	0.74	6.46	78.27	96.26
Mesa Grande Park	6.30	1.44	22.79	0.59	4.14	0.00	0.14	0.38	5.97	28.76
Michael Himovitz Park	0.09	0.00	0.00	0.02	0.00	0.00	0.07	0.07	79.28	79.28
Mls Promenade	0.68	0.01	1.81	0.00	0.40	0.00	0.27	0.67	98.53	100.00
Museum Plaza	5.65	0.01	0.24	4.54	0.18	0.00	0.92	1.12	19.79	20.03
Natomas Oaks Park	13.02	10.15	77.97	0.31	2.56	0.00	0.00	2.56	19.66	97.63
Ninos Park	4.20	1.10	26.19	0.22	2.88	0.00	0.00	0.44	10.42	36.61
Ninos Parkway	46.73	3.72	7.96	3.22	14.50	0.24	25.05	2.89	6.17	14.13
North Laguna Creek Park	21.45	5.43	25.29	2.96	12.50	0.44	0.13	1.32	6.16	31.45
North Laguna Creek Wildlife Area	120.82	19.52	16.16	3.67	28.44	5.76	63.44	89.57	74.13	90.29
North Natomas Community Park	35.33	3.41	9.65	3.67	23.66	0.00	4.59	10.02	28.35	38.01
North Natomas Park Nature Area	7.09	1.82	25.62	0.73	0.42	1.10	3.02	3.44	48.56	74.18
North Natomas Regional Park	212.82	6.45	3.03	12.33	32.90	12.72	148.41	169.30	79.55	82.58

Park	Acres	Canopy Acres	% Canopy	Impervious Acres	Pervious Acres	Water Acres	Bare Soil Acres	Preferred Plantable Acres	% Preferred Plantable Acres	Potential UTC %
North Point Way River Access	5.10	1.70	33.30	1.31	0.91	0.05	1.13	2.04	39.96	73.26
North Pointe Park	1.73	0.63	36.27	0.07	1.03	0.00	0.00	1.04	59.88	96.15
Northborough Park	4.01	0.84	20.98	0.58	2.48	0.00	0.12	2.59	64.65	85.63
Northgate Park	15.88	4.75	29.90	1.23	9.64	0.00	0.26	0.12	0.75	30.66
Nuevo Park	6.80	1.00	14.65	0.36	5.08	0.00	0.36	5.45	80.08	94.73
Oak Park	8.45	2.40	28.36	3.70	2.21	0.00	0.14	0.55	6.46	34.82
Oak Park Open Space	1.95	0.10	4.95	0.59	1.08	0.00	0.18	0.17	8.79	13.74
Oakbrook Park	4.75	0.24	4.98	0.04	0.20	0.00	4.27	4.47	94.16	99.14
Old Sacramento State Historic Park	6.24	0.53	8.52	4.64	0.38	0.05	0.65	1.02	16.40	24.92
O'Neil Field	5.44	0.83	15.19	0.50	3.98	0.00	0.14	0.12	2.28	17.47
Orchard Park	11.91	2.09	17.58	1.01	8.67	0.00	0.13	0.66	5.52	23.10
Pannell/Meadowview Community Center Park	11.92	1.85	15.55	4.46	5.05	0.00	0.56	1.39	11.62	27.17
Park Es 3	0.68	0.00	0.00	0.53	0.07	0.00	0.08	0.15	22.64	22.64
Park Es 4	0.13	0.00	0.00	0.00	0.00	0.00	0.13	0.13	97.87	97.87
Park Plaza	1.62	0.82	50.60	0.15	0.65	0.00	0.00	0.65	40.37	90.97
Park Site 15a	22.50	0.00	0.02	0.00	0.00	0.00	22.50	22.48	99.87	99.89
Park Site 15b	10.11	0.00	0.00	0.00	0.00	0.00	10.11	10.11	100.00	100.00
Park Site 15c	2.53	0.00	0.00	0.00	0.00	0.00	2.53	2.53	99.85	99.85
Park Site 15d	3.00	0.01	0.34	0.00	0.00	0.00	2.99	2.97	98.84	99.18
Park Site 2d (Basin 8b)	5.07	0.04	0.84	0.32	0.06	0.00	4.65	4.70	92.65	93.49
Park Site Ns1	2.50	0.00	0.00	0.00	0.00	0.00	2.50	2.51	100.00	100.00
Park Site Ns2	5.16	0.00	0.00	0.00	0.00	0.00	5.16	5.15	99.91	99.91
Park Site P1	2.93	0.00	0.00	0.00	0.03	0.00	2.89	0.03	0.96	0.96
Park Site P2	5.96	0.85	14.23	0.15	2.60	0.00	2.37	0.00	0.00	14.23
Park Site P3	5.10	0.00	0.00	0.00	0.00	0.00	5.10	4.47	87.73	87.73
Park Site P4	2.07	0.00	0.00	0.00	0.00	0.00	2.07	2.07	100.00	100.00
Park Site P5	1.89	0.00	0.00	0.02	0.00	0.00	1.86	1.87	98.87	98.87
Park Site P6	4.80	0.00	0.00	0.00	0.00	0.00	4.80	4.80	100.0	100.00
Park Site P7	4.25	0.01	0.22	0.55	0.05	0.00	3.64	3.69	86.88	87.10
Park Site P8	5.32	0.08	1.44	0.00	0.00	0.00	5.24	5.22	98.12	99.56
Park Site P9	26.59	0.00	0.00	0.12	0.79	0.00	25.68	26.44	99.42	99.42
Park Site Sn2	3.93	0.38	9.72	0.15	1.28	0.00	2.12	0.33	8.41	18.13
Park Site Sn4	0.23	0.11	47.25	0.00	0.04	0.00	0.08	0.13	53.59	100.00
Parkway Oaks Park	8.98	5.29	58.95	0.17	3.52	0.00	0.00	0.02	0.18	59.12
Peach Paseo	0.50	0.00	0.00	0.00	0.00	0.00	0.50	0.50	100.00	100.00
Pear Paseo	0.42	0.00	0.00	0.00	0.00	0.00	0.42	0.42	100.00	100.00
Peregrine Park	8.23	1.13	13.68	1.48	4.64	0.00	0.99	0.74	8.98	22.67
Persimmon Paseo Site	0.19	0.00	0.00	0.00	0.00	0.00	0.19	0.18	99.34	99.34
Phoenix Green	1.78	0.44	24.96	0.16	1.09	0.00	0.08	0.03	1.73	26.68
Pioneer Landing Park	1.49	0.03	1.97	1.13	0.20	0.00	0.13	0.34	22.79	24.76

Park	Acres	Canopy Acres	% Canopy	Impervious Acres	Pervious Acres	Water Acres	Bare Soil Acres	Preferred Plantable Acres	% Preferred Plantable Acres	Potential UTC %
Plaza Cervantes	0.64	0.28	44.01	0.00	0.36	0.00	0.00	0.36	56.19	100.19
Plover School Park	0.52	0.05	9.22	0.27	0.20	0.00	0.00	0.20	38.94	48.16
Pocket Canal Parkway	52.06	10.12	19.45	14.21	6.70	20.52	0.51	7.19	13.80	33.25
Pollack Ranch Park	7.17	2.14	29.84	0.34	4.68	0.00	0.01	0.05	0.73	30.57
Portuguese Community Park	3.19	1.51	47.21	0.12	1.57	0.00	0.00	1.56	48.93	96.15
Quail Park	5.21	0.56	10.70	0.57	4.08	0.00	0.00	0.02	0.35	11.05
R. Burnett Miller Park	1.01	0.00	0.00	0.15	0.00	0.00	0.87	0.87	85.44	85.44
Red Tail Hawk Park	5.00	0.56	11.28	0.57	3.77	0.00	0.11	0.02	0.43	11.71
Redbud Park	1.38	0.28	20.70	0.18	0.85	0.00	0.06	0.90	65.79	86.49
Redwood Park	3.61	0.54	14.92	0.75	2.03	0.00	0.29	0.11	3.16	18.08
Regency Community Park	42.06	3.39	8.07	4.84	32.61	0.00	1.22	21.36	50.78	58.85
Reginald Renfree Park	6.69	2.71	40.55	0.08	3.75	0.00	0.14	0.97	14.46	55.01
Richard Marriott Park	7.58	5.44	71.74	0.12	2.02	0.00	0.00	2.01	26.49	98.23
Richardson Village Park	8.88	0.39	4.41	0.25	6.79	0.00	1.45	1.24	13.97	18.38
Richfield Park	3.15	0.19	5.95	0.37	1.79	0.00	0.81	1.28	40.77	46.71
River Birch Park Site	20.54	1.31	6.36	1.73	4.25	8.00	5.25	9.52	46.38	52.73
River Otter Park	2.10	0.31	14.57	0.19	1.26	0.00	0.35	1.62	77.03	91.60
River Park	1.58	0.49	31.21	0.16	0.82	0.00	0.10	0.04	2.37	33.58
River View Park	5.19	1.10	21.25	0.29	3.74	0.00	0.06	1.32	25.49	46.74
Riverfront Park	1.07	0.03	2.43	0.51	0.53	0.00	0.00	0.52	48.96	51.39
Robla Community Park	17.82	1.31	7.34	1.81	12.15	0.00	2.55	14.73	82.70	90.04
Rocket Park Site	5.09	0.00	0.00	0.00	0.00	0.00	5.09	5.10	100.00	100.00
Roy Nielsen Park	8.09	2.43	30.09	0.56	4.82	0.00	0.28	0.00	0.00	30.09
Sacramento Historic Old City Cemetery	31.29	10.69	34.15	2.63	17.97	0.00	0.00	0.06	0.20	34.35
Sacramento Northern Parkway	60.04	17.47	29.10	10.43	17.72	0.04	14.37	31.85	53.05	82.15
Sacramento River Parkway (Central Area)	11.52	3.75	32.54	2.60	2.94	1.22	1.01	3.96	34.34	66.89
Sacramento River Parkway (Future)	100.03	34.38	34.37	16.12	17.31	6.16	26.06	43.26	43.24	77.62
Sacramento River Parkway (Land Park Area)	39.41	13.34	33.84	9.08	1.70	3.14	12.15	13.86	35.17	69.01
Sacramento River Parkway (Pocket Area)	7.70	2.51	32.59	1.42	1.10	1.12	1.55	2.63	34.12	66.72
Saint Rose of Lima Park	0.51	0.24	46.16	0.25	0.03	0.00	0.00	0.03	5.28	51.44
Sally Hudson Park	0.61	0.50	81.70	0.03	0.02	0.00	0.06	0.08	13.21	94.91
San Juan Reservoir Park	32.86	1.93	5.87	2.70	3.27	2.26	22.70	25.97	79.05	84.93
Sand Cove Park	9.39	6.90	73.45	0.54	1.80	0.00	0.16	0.25	2.63	76.07

Park	Acres	Canopy Acres	% Canopy	Impervious Acres	Pervious Acres	Water Acres	Bare Soil Acres	Preferred Plantable Acres	% Preferred Plantable Acres	Potential UTC %
Shasta Community Park	18.68	2.28	12.23	5.85	9.99	0.00	0.56	0.69	3.72	15.95
Shore Park	2.37	1.34	56.44	0.05	0.98	0.00	0.00	0.98	41.24	97.68
Shorebird Park	2.35	0.62	26.37	0.35	1.20	0.00	0.18	1.37	58.27	84.64
Sierra 2 Park	2.67	1.31	48.84	0.05	1.31	0.00	0.00	1.32	49.27	98.10
Skylark Park	2.53	0.00	0.00	0.06	0.06	0.00	2.41	2.47	97.57	97.57
Sojourner Truth Park	6.04	0.60	9.89	0.17	5.27	0.00	0.00	0.09	1.55	11.45
South Natomas Community Park	24.19	5.44	22.49	4.24	13.24	0.00	1.27	0.08	0.31	22.80
Southside Community Garden	0.79	0.29	36.83	0.04	0.46	0.00	0.00	0.45	57.83	94.66
Southside Park	19.53	9.36	47.92	1.85	3.92	4.06	0.34	4.26	21.83	69.75
Sparrow Community Garden	0.13	0.00	0.00	0.13	0.00	0.00	0.00	0.00	0.00	0.00
Sparrow Park	1.75	0.27	15.52	0.13	1.04	0.00	0.31	1.35	76.82	92.34
Steve Jones Park	6.73	0.26	3.88	0.63	5.64	0.00	0.20	5.83	86.68	90.56
Strauch Park	3.21	0.91	28.34	0.14	2.16	0.00	0.00	0.26	8.10	36.45
Strawberry Manor Park	1.29	0.14	10.92	0.46	0.69	0.00	0.00	0.70	54.04	64.96
Sundance Park	2.01	0.20	10.14	0.46	1.34	0.00	0.00	1.35	67.13	77.27
Sutter's Fort & State Indian Museum	6.15	2.04	33.27	1.64	2.22	0.24	0.00	2.21	35.97	69.24
Sutter's Landing Regional Park	161.43	2.96	1.83	35.30	15.95	0.00	107.22	5.25	3.25	5.09
Swainson's Hawk Park	5.71	0.28	4.90	1.30	4.05	0.02	0.06	4.12	72.21	77.10
Sycamore Park	5.29	0.51	9.63	1.02	3.54	0.00	0.23	0.11	2.08	11.71
Tahoe Park	17.92	6.12	34.18	1.29	9.81	0.00	0.69	0.41	2.26	36.44
Tahoe Tallac Park	6.78	0.91	13.45	0.56	4.66	0.00	0.65	0.04	0.60	14.05
Tanzanite Community Park (Basin 6a)	31.90	3.50	10.97	3.09	13.17	7.32	4.82	11.11	34.83	45.79
Tbd	27.05	5.66	20.93	11.86	6.19	0.17	3.16	9.05	33.46	54.38
Temple Avenue Park	1.03	0.42	41.16	0.11	0.45	0.00	0.05	0.50	48.54	89.70
Theodore Roosevelt Park	2.55	0.51	19.89	0.21	1.66	0.00	0.17	1.83	71.87	91.76
Thomas Jefferson Park	5.67	2.16	38.13	0.41	2.95	0.00	0.15	0.10	1.72	39.85
Tiscornia Park	14.36	1.95	13.56	1.18	2.18	8.52	0.53	2.69	18.75	32.31
Tony Court Park	0.89	0.41	46.65	0.00	0.47	0.00	0.00	0.46	52.21	98.86
Township 9 Park Site	15.27	3.93	25.71	2.44	1.72	4.52	2.67	4.38	28.70	54.41
Triangle Park	1.20	0.02	1.69	0.01	1.04	0.00	0.14	0.00	0.29	1.98
Two Rivers Park	3.03	0.55	18.08	0.17	2.28	0.00	0.03	0.20	6.69	24.77
Ulysses S. Grant Park	2.34	0.53	22.54	0.18	1.38	0.00	0.25	0.03	1.33	23.87
Under I-5 Experience	2.70	0.00	0.00	1.91	0.39	0.00	0.40	0.79	29.32	29.32
University Park	3.72	1.33	35.72	0.11	2.28	0.00	0.00	0.01	0.35	36.07
Valley Hi Community Park	16.19	4.45	27.47	1.56	9.70	0.00	0.48	0.57	3.51	30.98
Valley Oak Park	8.69	0.17	2.00	1.42	6.67	0.00	0.43	7.08	81.39	83.39

Park	Acres	Canopy Acres	% Canopy	Impervious Acres	Pervious Acres	Water Acres	Bare Soil Acres	Preferred Plantable Acres	% Preferred Plantable Acres	Potential UTC %
Victory Park	0.82	0.00	0.00	0.45	0.00	0.00	0.36	0.37	44.80	44.80
Victory Promenade	0.26	0.00	0.00	0.01	0.00	0.00	0.24	0.24	94.97	94.97
Victory Promenade Site	0.49	0.00	0.00	0.01	0.00	0.00	0.47	0.47	97.51	97.51
Vista Connector To 4-Way	0.42	0.01	3.52	0.00	0.30	0.00	0.11	0.41	96.25	99.77
Vista Park	9.27	0.22	2.33	0.01	0.79	0.00	8.26	9.03	97.45	99.78
Walter S. Ueda Parkway	454.76	74.59	16.40	44.81	147.98	20.86	166.52	260.45	57.27	73.68
Washington Park	1.58	0.52	32.94	0.12	0.94	0.00	0.00	0.94	59.36	92.29
Westhampton Park	4.31	0.49	11.33	0.70	3.12	0.00	0.01	3.12	72.28	83.61
Westlake Community Park	10.35	1.25	12.06	1.60	5.68	0.00	1.82	0.67	6.49	18.55
Wild Rose Park	8.63	0.51	5.92	1.67	5.90	0.00	0.56	6.45	74.77	80.69
William Chorley Park	31.18	17.54	56.26	0.87	8.83	0.00	3.94	5.65	18.12	74.38
William Curtis Park	18.80	12.11	64.43	0.68	5.97	0.00	0.04	6.00	31.94	96.37
William Land Golf Course	91.06	43.77	48.07	1.55	42.80	2.46	0.49	0.00	0.00	48.07
William Land Regional Park	115.27	77.32	67.08	6.25	30.10	0.15	1.45	2.85	2.47	69.55
William McKinley Park	31.09	15.20	48.89	3.75	11.35	0.78	0.00	2.49	8.02	56.91
Willow Park	2.50	0.49	19.79	0.48	1.53	0.00	0.00	1.53	61.05	80.84
Winner's Circle Park	1.87	0.28	14.81	0.38	1.18	0.00	0.03	1.23	65.88	80.69
Witter Ranch Park	9.01	1.30	14.45	0.68	6.79	0.00	0.25	0.03	0.38	14.82
Witter Ranch State Historic Park	24.09	0.24	0.99	0.48	0.01	0.00	23.37	1.10	4.57	5.56
Wood Park	5.56	1.85	33.35	0.53	3.10	0.00	0.08	3.16	56.93	90.27
Woodbine Park	6.48	2.60	40.08	0.37	3.37	0.00	0.15	0.06	0.98	41.06
Woodlake Park	6.16	2.57	41.79	0.72	2.87	0.00	0.00	1.09	17.66	59.44
Zacharias Park	6.12	2.58	42.15	0.29	3.06	0.00	0.18	0.45	7.30	49.44
Grand Total	***5,993.23***	***1,639.07***	***27.35%***	***536.62***	***2,202.35***	***224.87***	***1,390.33***	***1,959.35***	***32.69%***	***60.04%***

Table 15: Land Cover by Neighborhood

Neighborhood	Acres	Canopy Acres	Canopy %	Impervious Acres	Grass/ Low Veg. Acres	Bare Soil Acres	Water Acres	Preferred Plantable Acres	Potential UTC
Airport	851.97	96.55	11.33	290.73	138.27	326.41	0.00	21.45	13.85
Alhambra Triangle	88.92	14.31	16.10	64.86	4.04	5.71	0.00	9.74	27.06
Alkali Flat	89.25	27.77	31.11	49.66	7.71	4.11	0.00	11.80	44.33
American River Parkway	1,041.94	362.76	34.82	96.30	387.00	30.60	165.28	335.31	67.00
Arden Fair	78.45	4.95	6.30	71.13	1.78	0.60	0.00	2.38	9.33
Avondale	307.59	43.89	14.27	146.94	96.58	20.19	0.00	104.64	48.29
Belvedere	315.25	10.17	3.23	236.33	15.43	53.31	0.00	68.75	25.03
Ben Ali	242.87	40.11	16.52	151.58	38.40	12.78	0.00	50.12	37.15
Boulevard Park	154.68	68.34	44.18	72.86	13.07	0.41	0.00	13.35	52.81
Brentwood	201.29	29.19	14.50	128.09	29.25	14.75	0.00	37.19	32.98
Cal Expo	846.21	168.71	19.94	226.27	291.19	80.95	79.09	212.18	45.01
Campus Commons	404.83	177.69	43.89	159.22	53.93	9.99	4.01	40.63	53.93
Cannon Industrial Park	195.24	15.93	8.16	128.39	22.54	28.38	0.00	50.57	34.06
Carleton Tract	120.18	24.37	20.28	77.23	17.22	1.36	0.00	18.58	35.74
Central Oak Park	396.90	126.69	31.92	202.32	58.80	9.10	0.00	60.78	47.23
College Town	200.43	48.65	24.27	95.97	22.09	10.69	23.03	29.80	39.14
College/Glen	964.87	232.26	24.07	550.42	153.53	28.59	0.08	136.24	38.19
Colonial Heights	178.45	61.46	34.44	90.12	24.99	1.88	0.00	25.63	48.80
Colonial Manor	346.01	71.71	20.72	187.07	73.76	13.47	0.00	86.98	45.86
Colonial Village	214.21	45.77	21.37	124.16	43.96	0.33	0.00	43.45	41.65
Creekside	489.26	25.21	5.15	172.04	56.46	235.55	0.00	286.21	63.65
CSUS	402.11	104.70	26.04	207.74	62.85	11.76	15.07	46.40	37.58
Curtis Park	658.83	216.59	32.88	317.99	69.75	54.49	0.00	112.83	50.00
Del Paso Heights	407.48	64.67	15.87	200.49	108.71	33.61	0.00	112.88	43.57
Del Paso Park	820.42	235.57	28.71	170.26	303.10	109.86	1.63	85.91	39.19
Depot Park	496.67	21.03	4.23	306.33	37.80	128.67	2.84	151.65	34.77
Dos Rios Triangle	52.12	8.57	16.44	30.86	12.47	0.21	0.00	12.69	40.78
Downtown	530.44	123.40	23.26	355.21	48.32	3.50	0.00	49.84	32.66
East Del Paso Heights	550.07	117.24	21.31	266.24	116.55	50.03	0.00	160.62	50.51
East Sacramento	2,148.80	710.91	33.08	1,050.12	313.45	73.54	0.78	339.65	48.89
Elder Creek	146.33	4.78	3.27	125.82	6.39	8.76	0.58	15.15	13.62
Elmhurst	225.29	91.40	40.57	107.55	25.20	1.14	0.00	26.34	52.26

Neighborhood	Acres	Canopy Acres	Canopy %	Impervious Acres	Grass/ Low Veg. Acres	Bare Soil Acres	Water Acres	Preferred Plantable Acres	Potential UTC
Erikson Industrial Park	270.15	13.80	5.11	213.22	18.74	24.39	0.00	39.61	19.77
Fairgrounds	151.58	32.10	21.18	87.25	23.63	8.60	0.00	20.47	34.69
Florin Fruitridge Industrial Park	757.71	42.63	5.63	544.08	37.69	130.19	3.12	167.87	27.78
Freeport Manor	177.27	25.76	14.53	119.56	24.46	7.49	0.00	27.92	30.28
Fruitridge Manor	453.19	71.28	15.73	268.26	91.16	22.49	0.00	76.04	32.51
Gardenland	389.13	82.09	21.10	162.41	118.81	25.81	0.00	141.61	57.49
Gateway Center	134.20	42.78	31.88	56.12	19.24	16.07	0.00	34.14	57.32
Gateway West	762.85	77.00	10.09	359.75	146.94	161.07	18.09	261.28	44.34
Glen Elder	269.58	44.19	16.39	128.58	92.16	4.03	0.62	84.72	47.82
Glenwood Meadows	343.50	53.62	15.61	179.78	85.49	24.60	0.00	110.09	47.66
Golf Course Terrace	388.42	89.96	23.16	209.94	83.88	4.63	0.00	79.21	43.55
Granite Regional Park	320.67	82.68	25.78	77.90	63.48	87.53	9.08	136.45	68.33
Greenbriar	640.58	2.84	0.44	25.99	1.69	608.02	2.03	609.72	95.63
Greenhaven	1,014.76	213.79	21.07	529.37	165.90	9.95	95.74	149.89	35.84
Hagginwood	595.60	203.66	34.19	217.58	132.26	40.51	1.59	162.74	61.52
Hansen Park Golf Course Site	288.34	19.01	6.59	3.04	35.73	223.04	7.53	35.14	18.78
Heritage Park	294.92	46.38	15.73	166.23	34.21	44.12	3.97	78.34	42.29
Hollywood Park	268.10	66.05	24.64	148.09	50.49	3.47	0.00	46.47	41.97
Johnson Business Park	188.83	28.03	14.84	111.19	22.61	25.20	1.80	47.81	40.16
Johnson Heights	141.22	20.43	14.47	22.74	33.33	64.72	0.00	96.53	82.83
Land Park	1,137.38	486.88	42.81	423.56	192.83	19.37	14.73	111.19	52.58
Lawrence Park	163.11	31.66	19.41	103.11	24.11	4.23	0.00	22.62	33.27
Little Pocket	273.85	89.84	32.81	95.18	40.14	3.77	44.92	40.04	47.43
Mangan Park	105.83	21.21	20.04	66.90	17.67	0.05	0.00	17.72	36.79
Mansion Flats	132.41	43.76	33.05	77.35	10.86	0.44	0.00	11.01	41.37
Marshall School	108.27	55.37	51.14	44.81	8.09	0.00	0.00	8.09	58.62
Meadowview	3,495.54	432.87	12.38	1,231.78	685.30	1,124.48	21.11	1,577.50	57.51
Med Center	230.19	51.26	22.27	145.65	27.94	5.35	0.00	24.39	32.87
Metro Center	185.46	63.35	34.16	86.54	19.37	15.33	0.87	25.24	47.77
Midtown / Winn Park / Capital Ave	422.38	122.52	29.01	262.87	33.93	2.81	0.24	35.63	37.44
Morrison Creek	671.80	26.31	3.92	390.70	61.17	193.62	0.00	253.01	41.58
Natomas Corporate Center	160.77	65.04	40.45	64.04	31.45	0.24	0.00	28.96	58.47

Neighborhood	Acres	Canopy Acres	Canopy %	Impervious Acres	Grass/ Low Veg. Acres	Bare Soil Acres	Water Acres	Preferred Plantable Acres	Potential UTC
Natomas Creek	312.92	23.73	7.58	161.74	34.08	93.38	0.00	126.90	48.14
Natomas Crossing	673.40	44.24	6.57	273.50	114.05	218.97	22.64	324.04	54.69
Natomas Park	1,029.16	225.73	21.93	588.84	158.98	46.40	9.21	135.63	35.11
New Brighton	748.71	24.99	3.34	145.62	53.21	524.27	0.62	101.01	16.83
New Era Park	168.15	65.25	38.80	83.36	18.40	1.15	0.00	17.05	48.94
Newton Booth	234.68	64.34	27.42	147.66	17.36	5.31	0.00	22.41	36.96
Noralto	292.52	57.23	19.56	109.24	68.92	57.13	0.00	119.36	60.37
North City Farms	406.22	82.28	20.26	230.89	56.35	36.70	0.00	92.96	43.14
North Oak Park	348.98	116.50	33.38	186.65	37.70	8.12	0.00	45.82	46.51
Northgate	340.18	60.08	17.66	174.74	91.06	13.86	0.43	74.03	39.42
Northpointe	122.82	19.48	15.86	69.56	25.64	8.15	0.00	33.79	43.37
Norwood I-80	45.42	3.83	8.43	29.79	5.68	5.13	1.00	10.80	32.21
Norwood Tech	68.09	9.94	14.60	47.56	8.84	1.04	0.71	9.88	29.11
Oak Knoll	161.31	15.01	9.30	63.23	31.19	50.98	0.89	79.78	58.76
Old North Sacramento	436.87	62.30	14.26	289.22	59.94	25.42	0.00	83.69	33.42
Old Sacramento	139.38	16.32	11.71	76.50	7.91	8.79	29.85	16.70	23.70
Parker Homes	43.81	12.42	28.36	20.45	6.51	4.42	0.00	10.85	53.13
Parkway	1,371.93	220.15	16.05	824.23	209.69	111.80	6.06	259.18	34.94
Pell/Main Industrial Park	227.01	11.40	5.02	178.11	24.92	12.58	0.00	31.88	19.06
Pocket	2,850.30	628.63	22.05	1,403.10	513.50	60.34	244.73	543.51	41.12
Point West	390.56	77.02	19.72	225.26	74.68	10.28	3.33	79.20	40.00
Power Ridge	323.83	9.67	2.99	246.25	17.94	49.96	0.00	67.90	23.96
Raley Industrial Park	1,070.83	66.11	6.17	316.44	61.88	616.54	9.84	649.66	66.84
Ramona Village	326.58	18.75	5.74	231.21	30.31	46.30	0.00	62.39	24.85
Regency Park	362.95	46.68	12.86	198.16	78.90	29.18	10.03	75.12	33.56
Richardson Village	139.31	17.07	12.26	58.99	48.17	15.06	0.01	28.14	32.45
Richmond Grove	143.32	50.10	34.96	79.00	12.25	1.97	0.00	14.21	44.88
River Gardens	173.71	42.61	24.53	77.13	49.51	4.46	0.00	44.04	49.88
River Park	491.99	176.37	35.85	181.76	96.01	12.91	24.94	101.22	56.42
Robla	1,481.68	192.32	12.98	360.65	230.78	687.81	10.12	741.61	63.03
RP - Sports Complex	931.99	84.72	9.09	355.36	104.35	372.24	15.32	450.58	57.44
SCC	71.85	7.77	10.81	50.97	11.14	1.97	0.00	3.50	15.67
Sierra Oaks	248.55	77.71	31.26	142.82	26.04	1.99	0.00	14.61	37.14
South City Farms	132.99	32.03	24.09	67.71	27.06	6.18	0.00	31.80	48.00

Neighborhood	Acres	Canopy Acres	Canopy %	Impervious Acres	Grass/ Low Veg. Acres	Bare Soil Acres	Water Acres	Preferred Plantable Acres	Potential UTC
South Hagginwood	435.83	105.85	24.29	196.07	91.77	41.40	0.73	131.22	54.39
South Land Park	1,810.41	481.22	26.58	971.27	307.15	38.70	12.07	308.86	43.64
South Natomas	1,903.27	409.12	21.50	862.77	375.83	251.14	4.41	542.32	49.99
South Oak Park	367.94	80.92	21.99	187.78	76.25	22.98	0.00	74.17	42.15
Southeast Village	338.31	43.56	12.88	187.93	85.35	20.26	1.21	96.07	41.27
Southern Pacific / Richards	789.88	79.28	10.04	418.39	81.43	169.85	40.92	250.06	41.70
Southside Park	214.16	76.23	35.60	108.05	24.47	1.34	4.06	25.82	47.65
Strawberry Manor	231.68	28.64	12.36	96.35	67.71	35.51	3.48	100.56	55.76
Sundance Lake	796.26	50.00	6.28	359.57	93.35	241.43	51.91	330.70	47.81
Swanston Estates	301.21	55.06	18.28	187.52	49.64	8.99	0.00	55.15	36.59
Tahoe Park	409.35	128.10	31.29	197.60	81.84	1.82	0.00	70.54	48.53
Tahoe Park East	171.76	20.30	11.82	111.10	29.94	10.42	0.00	16.44	21.39
Tahoe Park South	201.75	60.90	30.18	94.36	45.62	0.87	0.00	46.49	53.23
Tallac Village	183.16	43.83	23.93	92.72	39.94	6.67	0.00	46.61	49.38
Upper Land Park	643.75	179.18	27.83	269.60	97.87	26.91	70.18	93.68	42.39
Valley Hi / North Laguna	3,533.70	578.83	16.38	1,887.42	623.27	431.73	12.45	874.63	41.13
Valleyview Acres	145.01	11.12	7.67	13.12	34.21	86.50	0.05	119.24	89.90
Village 12	121.15	17.83	14.72	77.83	18.20	7.29	0.00	19.42	30.74
Village 14	121.29	32.92	27.14	22.43	30.88	35.07	0.00	65.94	81.51
Village 5	313.11	27.60	8.81	111.28	26.37	127.23	20.63	135.84	52.20
Village 7	162.74	4.75	2.92	71.29	44.83	41.88	0.00	86.12	55.83
Village Green	51.84	9.80	18.91	28.51	11.30	2.23	0.00	9.33	36.91
West Del Paso Heights	322.90	60.60	18.77	121.03	91.71	49.10	0.47	140.80	62.37
West Tahoe Park	136.05	39.11	28.74	76.88	18.91	1.16	0.00	20.07	43.49
Westlake	446.27	44.93	10.07	214.36	61.53	107.27	18.18	161.92	46.35
Willowcreek	597.13	109.75	18.38	240.93	75.34	139.33	31.80	188.18	49.89
Wills Acres	119.66	19.31	16.14	51.89	42.65	5.80	0.00	27.23	38.89
Woodbine	346.74	47.27	13.63	187.34	62.89	49.24	0.00	75.94	35.53
Woodlake	230.76	71.67	31.06	94.29	42.73	21.55	0.51	58.71	56.50
Youngs Heights	44.81	8.23	18.37	22.02	8.21	6.36	0.00	14.56	50.87
Z'berg Park	314.20	69.38	22.08	137.09	63.13	44.07	0.52	107.21	56.20
Neighborhood Total	***61,223.08***	***11,801.65***	***19.28%***	***28,478.39***	***10,306.59***	***9,455.28***	***1,181.17***	***16,118.27***	***26.33%***