# Administrative Report

**To**:            **PUBLIC WORKS AND SUSTAINABILITY COMMISSION**

**From**:          DEPARTMENT OF PUBLIC WORKS

## TITLE
DISCUSSION ON STRATEGIES FOR INCREASING THE CITY'S TREE CANOPY

## EXECUTIVE SUMMARY
The Strategic Plan of the City Council includes an objective to "Inventory the City's tree canopy and present a discussion item to the City Council to determine the best strategies to enhance the tree canopy in the future".  The City has recently adopted a tree protection ordinance to protect existing trees, but the objective asks what more could be done to increase the tree canopy in the City.  Staff is seeking input from the public and the Public Works and Sustainability Commission (PWSC) on this topic in preparation for presentation of a report to the City Council.

## BACKGROUND
The benefits of a healthy tree canopy in urban areas are becoming increasingly understood and appreciated.  Documented benefits include cleaner air, heat island effect reduction, improved wildlife habitat, aesthetic value, economic value of property, stormwater quality improvements and mental health benefits.  In 2021, the City Council directed the Public Works Department to begin exploration of potential changes to the City's Municipal Code to protect and potentially enhance the City's urban forest.  Staff presented information and collected feedback from three of the City's commissions and reported back to the City Council.  In the end, the City Council adopted ordinance changes that address protection of City trees (those in parks and in the public right of way).  A summary of the activities of staff and the recommendations and actions of the various commissions and the Council are included as Attachment 1.

Determining goals and policies for the trees that are owned by the City and under its control is relatively straightforward.  However, potential ordinances to address removal of, or requirements to install trees on private property can be much more controversial.  Drastic improvements to the City tree canopy coverage will be difficult to achieve without addressing trees on private property, which describes about 73% of the City's land area.  Therefore, an important area for strategy discussion is how to address tree canopy improvement on private property, given the various interests and concerns of the residents, businesses and institutions in the City.

## DISCUSSION
The topic of tree canopy development is an important topic in California and is receiving considerable attention at the local, state and Federal levels.  Several good resources on tree canopy management and master planning exist.  These resources range from practical guides of best practices to a deep exploration of cultural values, social and economic benefits and needs for partnership and funding.

The topic is usually a component of a larger Climate Action Plan or developed in light of similar high-level plans to address the changing environment and our ability to live sustainably within it.  Several agency examples include:

- LA County's Community Forest Management Plan
  <https://cfmp.lacounty.gov/>

- City of Claremont Urban Forest Management Plan
  <https://www.claremontca.gov/City-Services/Trees>

- City of Garden Grove Urban Forest Management Plan
  <https://ggcity.org/sites/default/files/UFMP-Final-Plan.pdf>

The most thoroughly developed plan model is typically referred to as an Urban (or Community) Forest Management Plan (UFMP).  This model yields a strategic, data-driven, and community-informed action plan for an agency to sustainably manage and grow its urban tree canopy.  It includes steps like establishing a shared vision, conducting tree inventories and health assessments, developing strategic goals and actionable plans for planting and maintenance, and monitoring progress over time.  The plan aims to provide quantifiable benefits such as improved public health, environmental protection from climate change, increased biodiversity, and enhanced community well-being.

Development of a UFMP is meant to provide guidance for agency activity and review for a period of decades, as the realities of tree canopy development include those evident in the natural growth timelines of trees.  However, more short term and less involved projects have been done as first and more expedient steps.  For instance, several agencies that are members of the nearby Gateway Cities Council of Governments recently developed a much smaller document, as part of an Urban Tree Canopy Community Prioritization Project, see this link for the *Final Report <https://cms3.revize.com/revize/gatewaycitiescouncilofgovernments/Documents/Initiatives% 20Projects/Climate%20Air%20Quality/Urban%20Tree%20Canopy%20Project/California% 20Resilience%20Challenge%20-%20Urban%20Tree%20Canopy%20Final%20Report% 20December%202022.pdf>* produced by this effort.  From the executive summary, the project goals were explained as:

> *"…this project intended to provide insight into improving the tree canopy in these cities in a deliberate and thoughtful manner that prioritized the needs and desires of the residents within these communities and to invest in areas that have been historically excluded from accessing necessary resources and funding. The project sought to lay the groundwork for cities to bring about the benefits associated with increasing urban tree canopy, such as improved air quality, the mitigation of extreme heat, aesthetic value, and increased property values, by providing maps, data, and reports that can help guide the cities' urban forestry strategies for the future."*

This project does not intend or express itself to be a 40-year guidance document.  Rather it provides important mapping to get the process started, as first steps to identify tree canopy deficiencies and address the reasons for them, in those cities.  A similar effort to provide data related to existing inventory, develop community informed priorities and settle on locally applicable policies and practices to preserve and enhance both City-owned and privately owned tree canopy would be of

value.  Such a project would include similar phases that might include:
1. Develop a parcel level assessment of existing and potential tree canopy based on high-resolution imagery and LiDAR date
2. Conduct a data-driven and collaborative prioritization process through surveys, public outreach and input from established experts and standards
3. Produce analyses, reports, maps and tools to inform and empower the community and City to implement best practices for short- and long-term outcomes

The City's Urban Forester and Arborist has some experience with this with a previous employer in San Diego County.  His recommendations, captured in email correspondence included as Attachment 2, include a program that follows a similar outline.

In general, similarities of any good program include exploration of City priorities and identifying policy over three basic areas.  These include:
1. Assessing and measuring current inventory and establishing improvement benchmarks over an appropriate schedule
2. Developing practice and policy guidance to educate, direct, incentivize and regulate urban forest management for both agency controlled and privately controlled trees and space for trees
3. Establishing monitoring and review processes to continue to improve the program as conditions change and to inform funding level required to achieve desired results

The City's current tree canopy is reported as 8.3% coverage on the statewide database ( <https://www.fs.usda.gov/r05/state-tribal-forestry/californias-urban-tree-canopy>) prepared by the US Department of Agriculture (USDA), parent agency of the US Forest Service.  The data is provided by census tract, allowing one to explore how canopy coverage varies form that average throughout the City.  Some portions of the City, especially near the waterfront have canopy coverage percentages in the low single digits, while others in certain single family neighborhoods have coverage levels in the mid-teens.

While this resource gives a good comparative measure of tree canopy within Redondo Beach and among other California cities, caution must be used to understand that number in an absolute sense. Often the algorithms used to measure the coverage carve out certain types of land use, based on the objectives of their measurement.  For instance, the LA County U/CFMP discounts naturally occurring forested areas at one end and large developments where trees are unwanted, such as LAX.  This is because the County's purpose is to understand what can be done to improve the County's canopy in the developed and populated parts of its land area.

A second example for caution can be taken from the USDA database mentioned above.  The USDA database shows a marked and alarming decrease in canopy - exceeding 20% reduction in many census tracts - in the four-year period between 2018 and 2022.  Taking note that some less developed and forested areas may have been affected by wildfire to account for such a drop, reductions of this magnitude are also seen in Redondo Beach numbers, where no massive fire or other catastrophic tree destroying events have taken place.  Closer examination reveals changes to methodology, resolution of aerial imagery or interpretation of those images is likely to account for the change, more than changes in the field.  Figure 1 shows a comparison of polygons (dark green vs lighter green) identified as tree canopy between 2018 and 2022, which suggests changes to techniques rather than true loss of canopy.  Both of these examples emphasize the need for a better

understanding of the City's tree canopy by a commissioned and specific study.

**Figure 1 - Tree Canopy Comparison 2018 to 2022 - USDA Viewer**



The current inventory of City owned trees includes over 11,300 trees made up of over 200 species. The diversity of species, an important element of a health canopy is represented in Table 1. The top ten most common species are identified but another 216 species are included in the "Other" category. While none of these "other' species make up more than 2% of the inventory, together this broad diversity represents over 40% of the City's trees.

**Table 1 - Diversity of City Owned Trees - By Rank**

| Botanical | Common | Total | Pct. |
|---|---|---|---|
| Washingtonia robusta | MEXICAN FAN PALM | 1,986 | 17.48% |
| Magnolia grandiflora | SOUTHERN MAGNOLIA | 1,874 | 16.49% |
| Ulmus parvifolia | CHINESE ELM | 652 | 5.74% |
| Metrosideros excelsa | NEW ZEALAND CHRISTMAS TREE | 599 | 5.27% |
| Archontophoenix cunninghamiana | KING PALM | 315 | 2.77% |
| Lagerstroemia indica | CRAPE MYRTLE | 284 | 2.50% |
| Schinus terebinthifolius | BRAZILIAN PEPPER | 238 | 2.09% |
| Cupaniopsis anacardioides | CARROTWOOD | 236 | 2.08% |
| Melaleuca quinquenervia | CAJEPUT TREE | 227 | 2.00% |
| Lophostemon confertus | BRISBANE BOX | 223 | 1.96% |
| Other | OTHER | 4,730 | 41.62% |
| **Total Trees** | | 11,364 | 100% |

Another measure of the City controlled inventory is diversity in tree maturity, using trunk diameter as a proxy metric.  An ideal distribution to ensure a growing canopy in the future would likely have most of the tree stock in the younger, smaller diameter trunks.  This emphasis accounts for the fact that many of these will not reach full, broad canopy, maturity.  From Chart 1, it can be seen that the City's inventory is heavily biased towards the mature trees.  This indicates it will be difficult to increase canopy coverage without planting many more young trees, and that increase in canopy will come only as trees mature.  The trunk size distribution also indicates the vulnerability the City has to its canopy by removal of or natural demise of its mature trees.

**Chart 1 - Redondo Beach Tree Diameter Distribution**
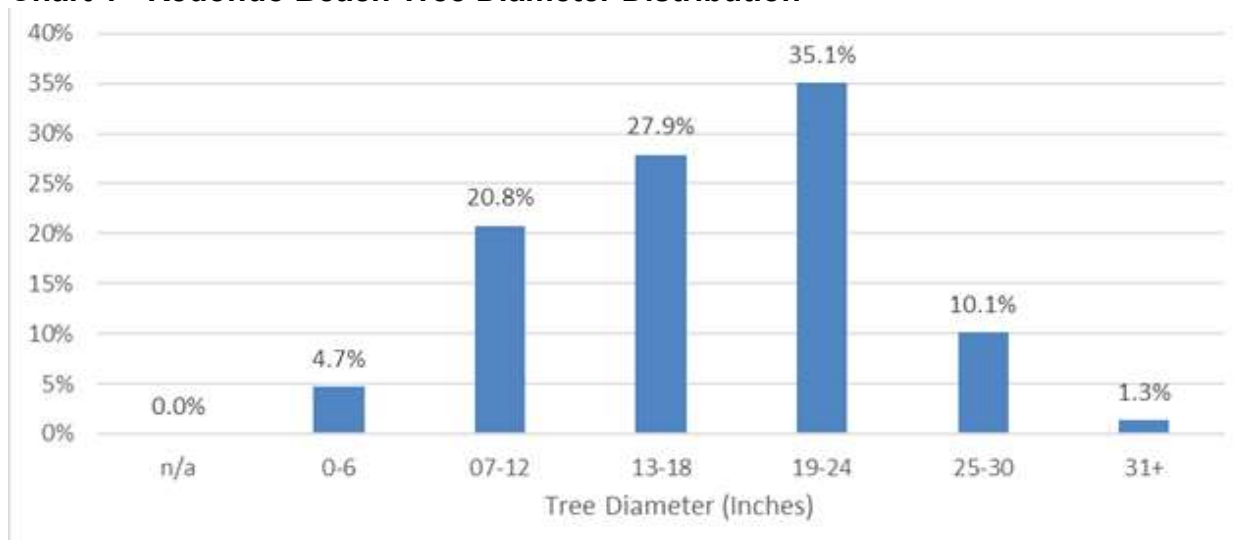


This accounting of City owned trees by definition does not include trees on private property, which makes up nearly three quarters of the City's land area.  Information, such as count, type and maturity for the portion of the City's urban forest made up by privately owned trees is not currently available.

The City's tree canopy resource, made up of both privately and publicly owned trees provide a crucial and often overlooked benefit to the residents and visitors to the City.  Efforts for the City to manage it will require a comprehensive data driven assessment of existing conditions, a well thought out and collaborative policy and value apparatus, and resources to implement the practical implications of these policies.

Best practices include master planning using a UFMP model, a smaller scale prioritization model (similar to the Gateway Cities COG), practices conducted by City staff for City owned trees, and regulatory or incentive programs to influence what happens on private property.

Staff is seeking response and input from the Commission and the public to identify priorities, community shared values, and recommendations on strategies to enhance the tree canopy to provide to Council.

**COORDINATION**
Coordination of this report took place with the Community Development Department and the Public Works Department.

**ATTACHMENTS**
1 - Summary of City's Tree Ordinance discussion and adoption, 2021 to date
2 - Information on Increasing Canopy Cover - City's Urban Forester