2024 Tree Assessment Report Introduction

February 19, 2025
Planning Commission

Tiffany Speir, Planning Division Manager

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Action Items from 2022 Three Year Energy & Climate Change Work Plan

1	Establish (and regularly update) a new climate change chapter to the City's Comprehensive Plan.	Complete.
2	Develop a five-year plan for reducing greenhouse gas emissions.	Not started
3	Update the City's Non-motorized Transportation Plan (also referred to as Active Transportation Plan.)	Complete
4	Clover Creek Floodplain Engineering Alternatives Analysis.	Complete
5	Review, and as appropriate, update Lakewood Municipal Code (LMC) Title 14, Environmental Protections.	Complete.
6	Work with Pierce County and Pierce County municipalities to develop a regional approach and best practices to address climate change. One strategy: adopt revised climate change Pierce Countywide Planning Policies (CPPs.)	Ongoing
7	Develop a public engagement plan for climate change (and Comprehensive Plan periodic update.)	Complete
8	Incorporate an environmental justice assessment into the Energy & Climate Change Chapter work plan.	Complete
9	Lakewood, as a member of the South Sound Military Communities Partnership (SSMCP), advocate for improvements to the I-5 corridor the Nisqually Delta at both the state and federal levels.	Ongoing
10	Revise the Lakewood's tree preservation code.	Complete
11	Explore the feasibility of reducing the City hall footprint from three floors to two floors. (Potentially reducing energy consumption.)	Complete
12	Every two years, or as otherwise dictated by WA State, update LMC Title 15, Buildings and Construction Codes to address hazards resulting from climate change.	Ongoing
13	Support the implementation of the Tacoma-Pierce County Solid Waste Management Plan.	Complete
14	Coordinate a regional electric vehicle (EV) infrastructure strategy with neighboring cities, Pierce County and the State.	Not started
15	Develop/promote an urban forest management/ master reforestation plan.	Ongoing

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2025 Comprehensive Plan Policies re Urban Forestry

EC-5 Develop a Climate Resilient Community.

EC-5.5 Improve the Urban Tree Canopy. Enhance the quality and sustainability of the urban forest and urban tree canopy to mitigate urban heat island effects, address stormwater drainage concerns, and meet environmental quality goals.

NE-6 Maintain an urban forestry program to preserve significant trees, promote tree health, and increase tree coverage citywide.

NE-6.1 Maintain a comprehensive urban forestry program.

NE-6.2 Encourage the planting and regular maintenance of street trees to enhance urban greenery.

NE-6.3 Provide for the retention of significant trees and tree stands and the restoration of tree stands within the city.

NE-6.4 Maintain a city tree fund to preserve wooded areas, restore and enhance native trees, and provide for education and research.

NE-6.5 Work towards a citywide goal of 40% tree canopy cover by the year 2050.

NE-6.6 Consider opportunities to increase canopy and environmental equity when evaluating tree canopy distribution.

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Urban Forestry-Related Actions per State Law HB 1181

From 2023 E2SHB 1181 (GMA "Climate Change & Resiliency" Requirements)

2025-2027 (*Pending state funding approval*)

- Establish a Climate Policy Advisory Team (CPAT) to help guide policy development by providing perspectives and recommendations relating to community development, the environment, transit, education, business, and more. CPAT members will be engaged periodically to review and comment on work products and guide public engagement.
- Update the Land Use Element to:
  - include green spaces, urban and community forests. Give special consideration to achieving environmental justice in the element's goals and policies

2027-2029 (*Pending state funding approval*)

- Develop an Urban Heat Resilience Strategy.
- Develop Native & Climate-Resilient Planting Plans for Municipal Projects.
- Update the City's Urban Forest Management/Master Reforestation Plan.

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Urban Forestry Program Funding

Currently Identified Funding

- City ARPA Funds: $190,000 (must be spent by 12/31/26)
- City Tree Fund: $474,096.37 as of 2/10/25 (no deadline to spend)
  - Future balance will be funded through permit fees over time

TOTAL: $664,096.37

Planned Future Funding through 6/30/29

- HB 1181 Grant Funding (pending future state approvals)
  - 2025-2027: $25,000
  - 2027-2029: $160,000

TOTAL: $185,000.00

GRAND TOTAL through 6/30/29: $849,096.37

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2024 Tree Assessment Report

- Foundational data to launch Lakewood Urban Forestry Program



Urban Forest Assessment Report

CITY OF LAKEWOOD

2024

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6

Lakewood Urban Forest Assessment

February 19, 2025

City of Lakewood

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Project Purpose

To support and inform…

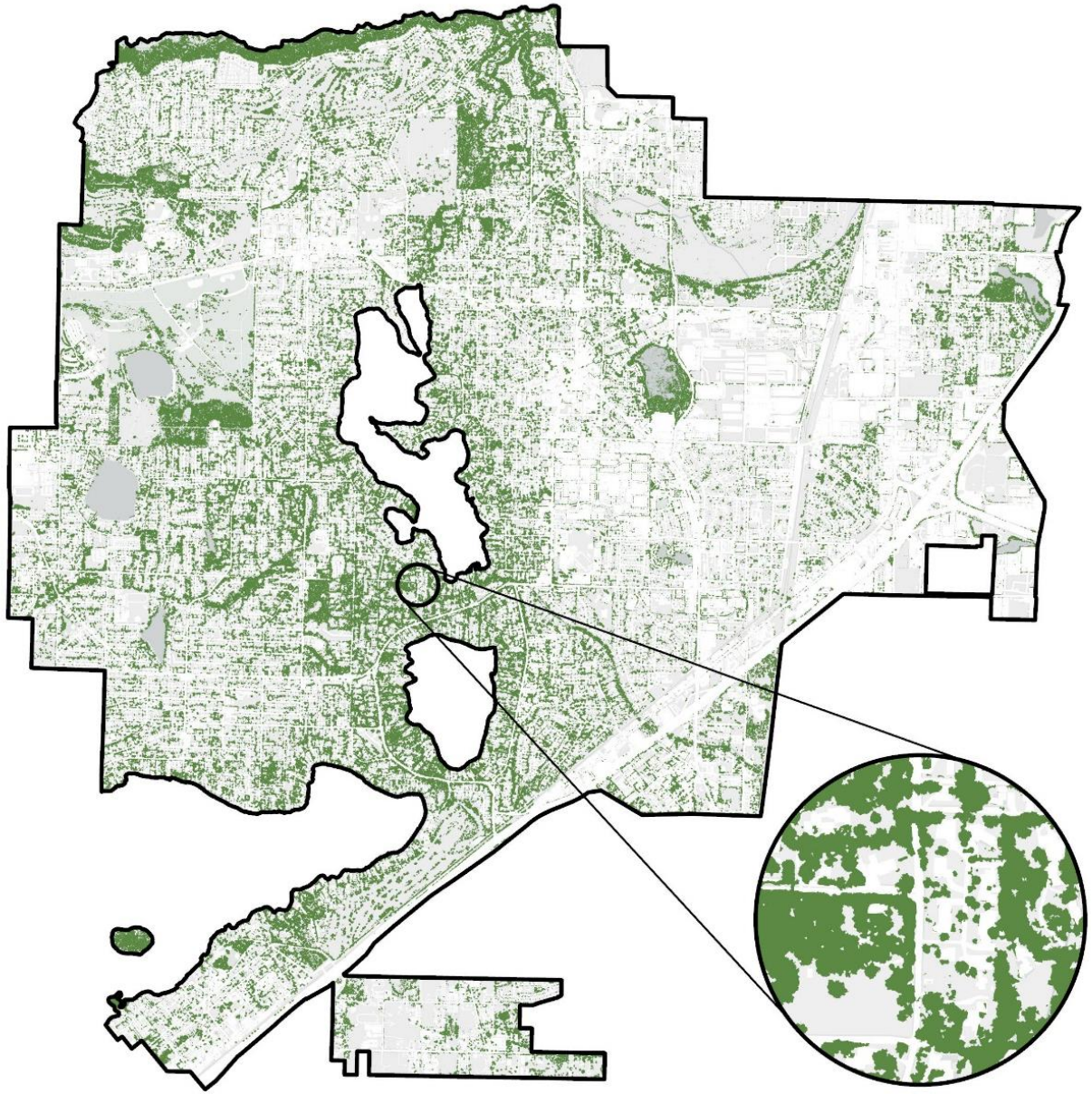
- The City's Comprehensive Plan goal to achieve 40% tree canopy by 2050.
- Development of an urban forestry program.
- Updates to the City's land use policies.
- Future funding decisions for urban forestry and climate change and resilience activities.
- Ongoing and future partnerships with agencies, utilities, residents, and businesses.

Photo credit: SDOT

Approach

Data collection at various scales and across land ownership

1. GIS
    - Urban tree canopy assessment
    - Potential planting site analysis
    - Canopy Height Model
2. Field inventory
    - City ROWs and Parks
    - Public Institutional grounds
    - JBLM North Clear Zone
3. Forest and natural area assessment (FLAT)



Urban Tree Canopy (UTC)

- Based on WADNR latest LiDAR data for Pierce County (2020).
- Lakewood tree canopy cover is **24.4%**
- Comparable with other Pierce County cities which average 28% UTC.
- Assessed by land use zones and census blocks

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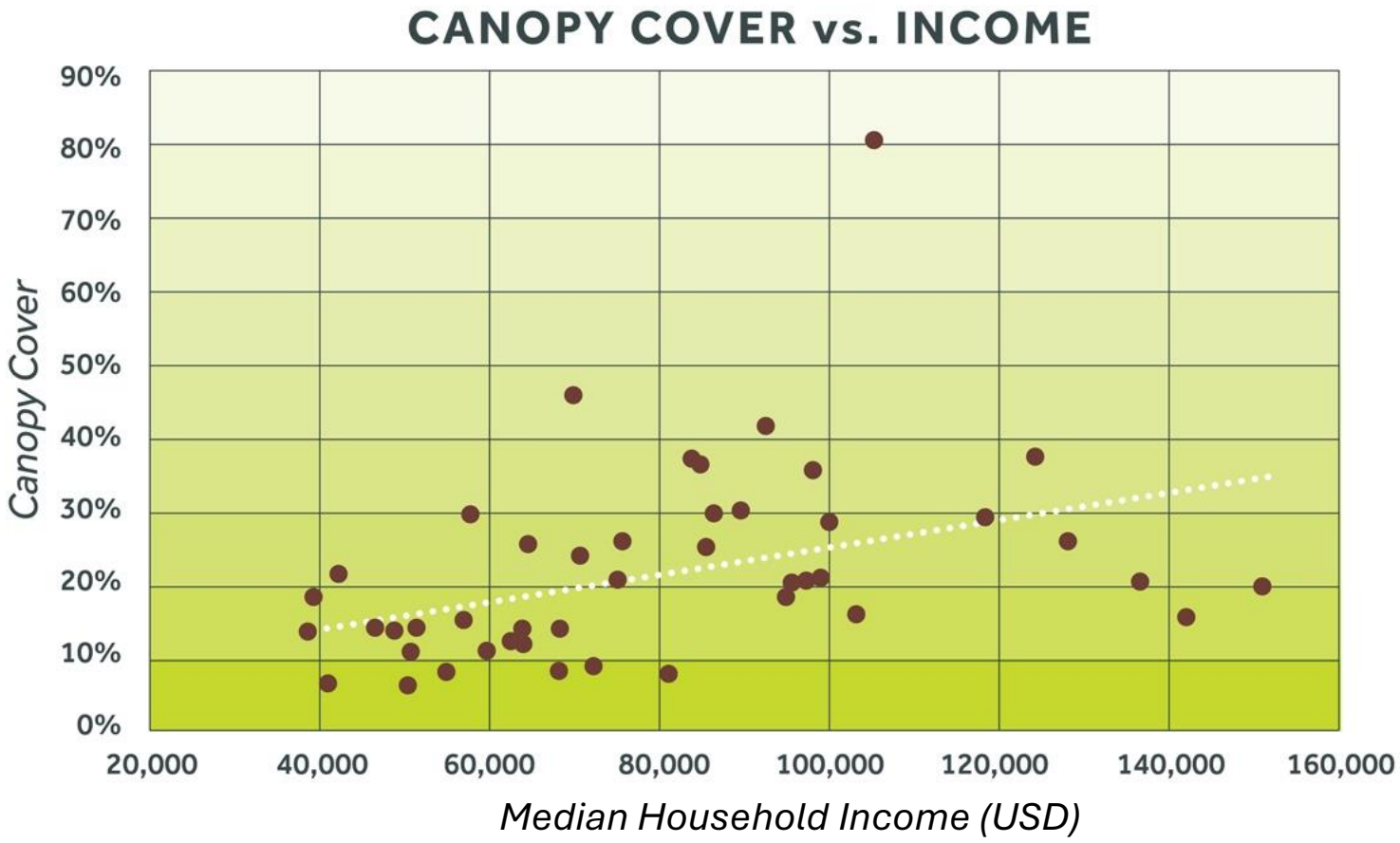
Census blocks - UTC

- Census tract and block group level
- 42 out of 53 census blocks have less than 35% UTC
- Economic equity: Positive correlation between income and canopy cover



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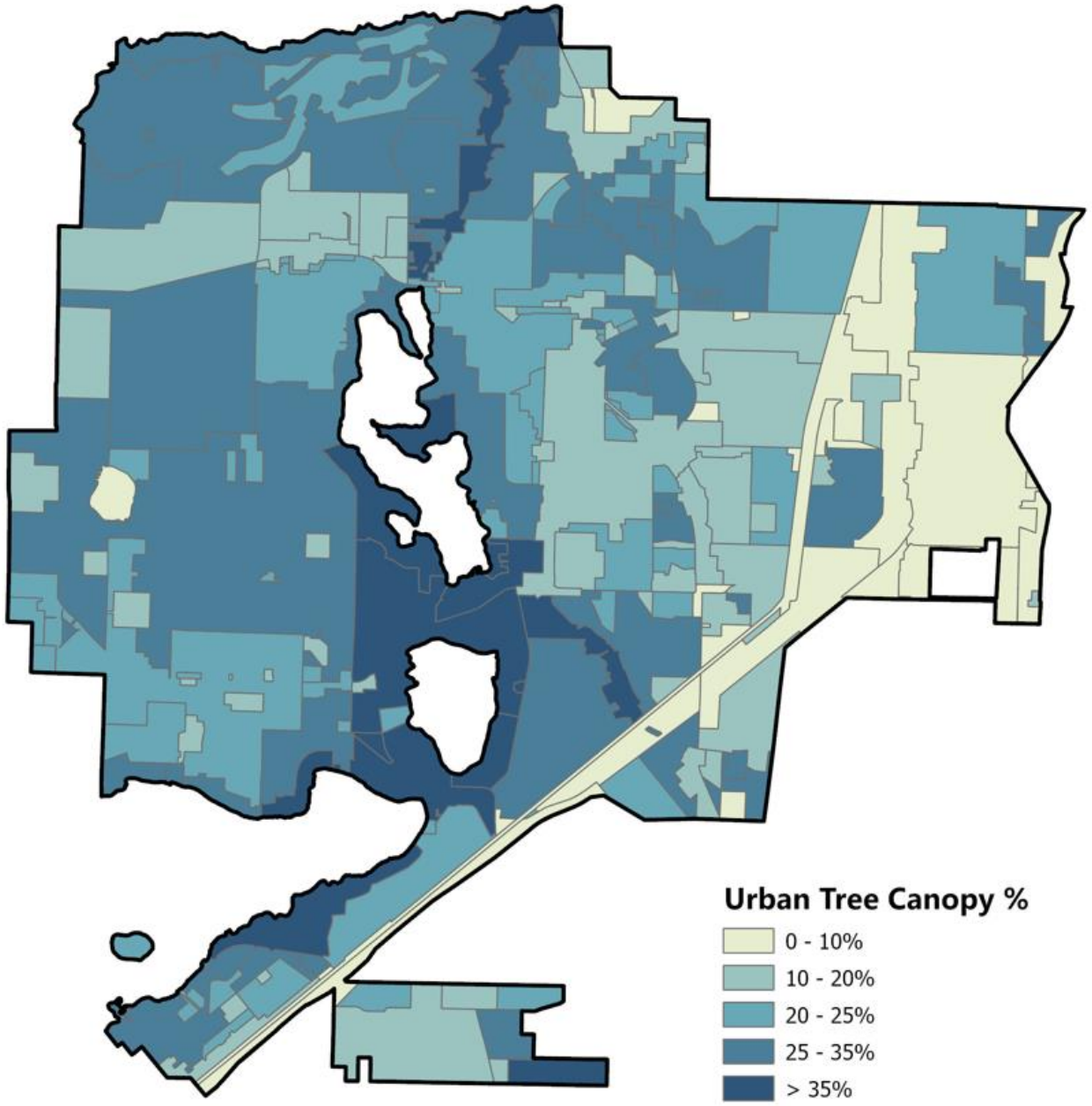

Zoning

- Residential zones vary between 23% to 48% UTC (Accounts for 59% of Lakewood's tree canopy)
- Open space and recreation zones account for 17% of the total UTC.
- Commercial and Industrial represent 11.3%

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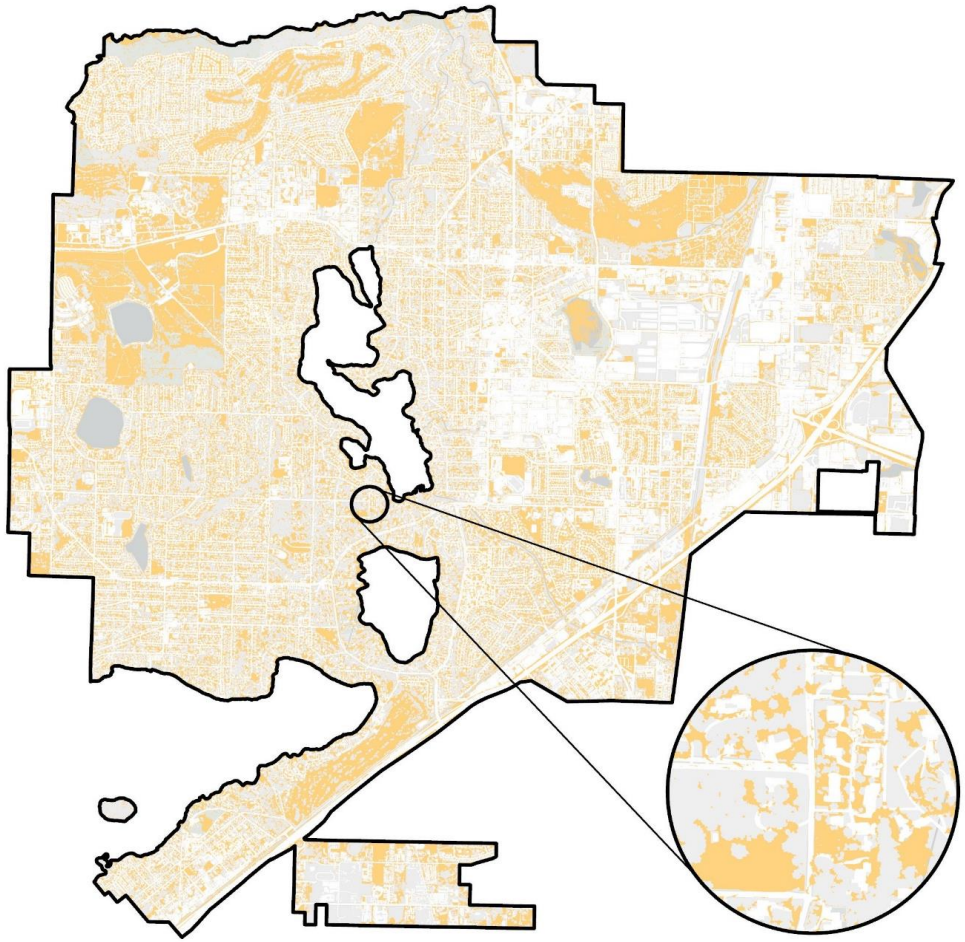
Plantable Area Analysis



Contextual- Level

- City-scale analysis at the census block and zoning district level
- 3,400 acres of plantable area, 31.4% of the city.
- Includes lands constrained by other land uses and infrastructure.
- Approximately half of all plantable areas would need trees to reach the 15.6% increase necessary to achieve canopy cover goals.

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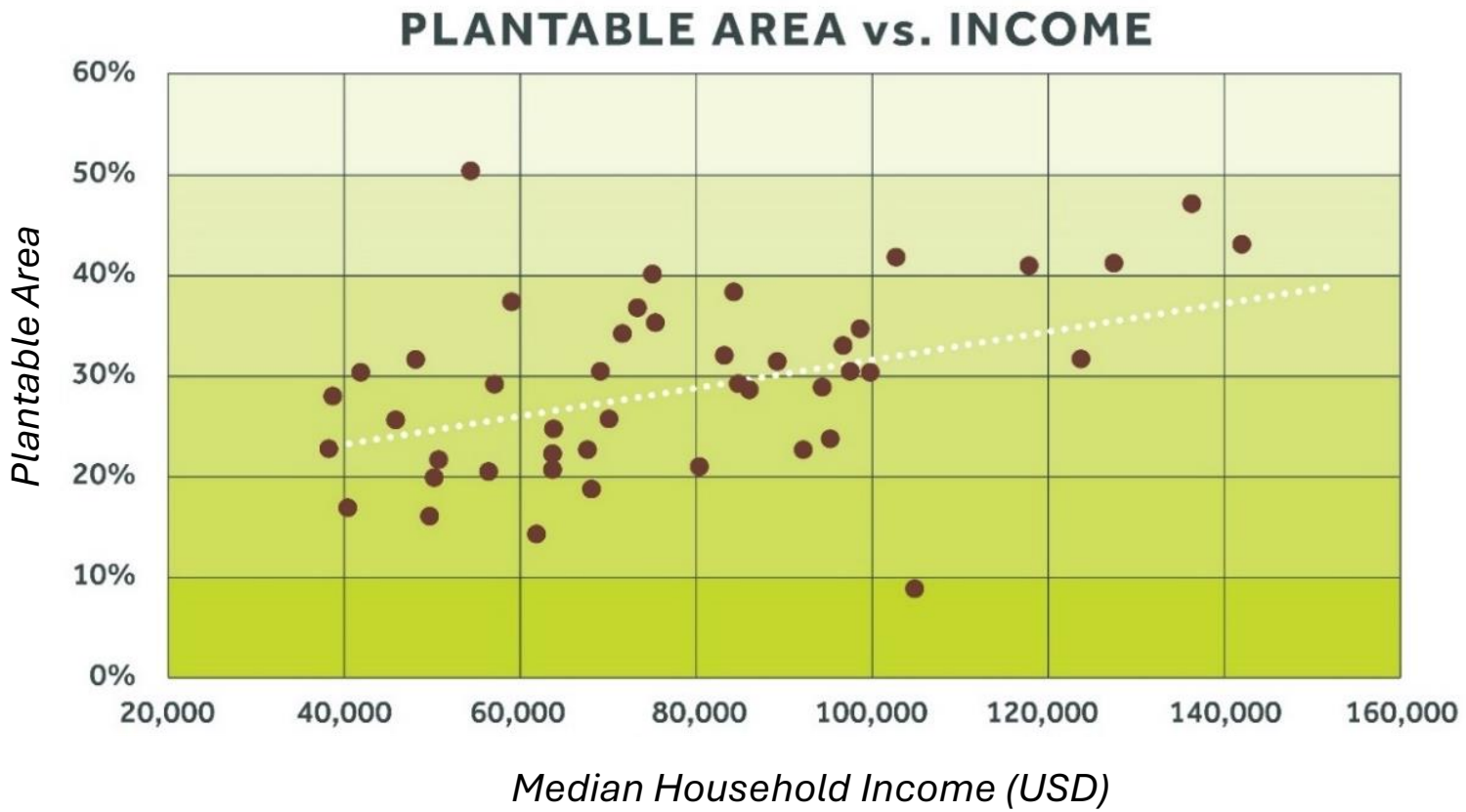
Census blocks – Plantable Area

- Census tract and block group level
- Economic equity: Positive correlation between income and plantable area.



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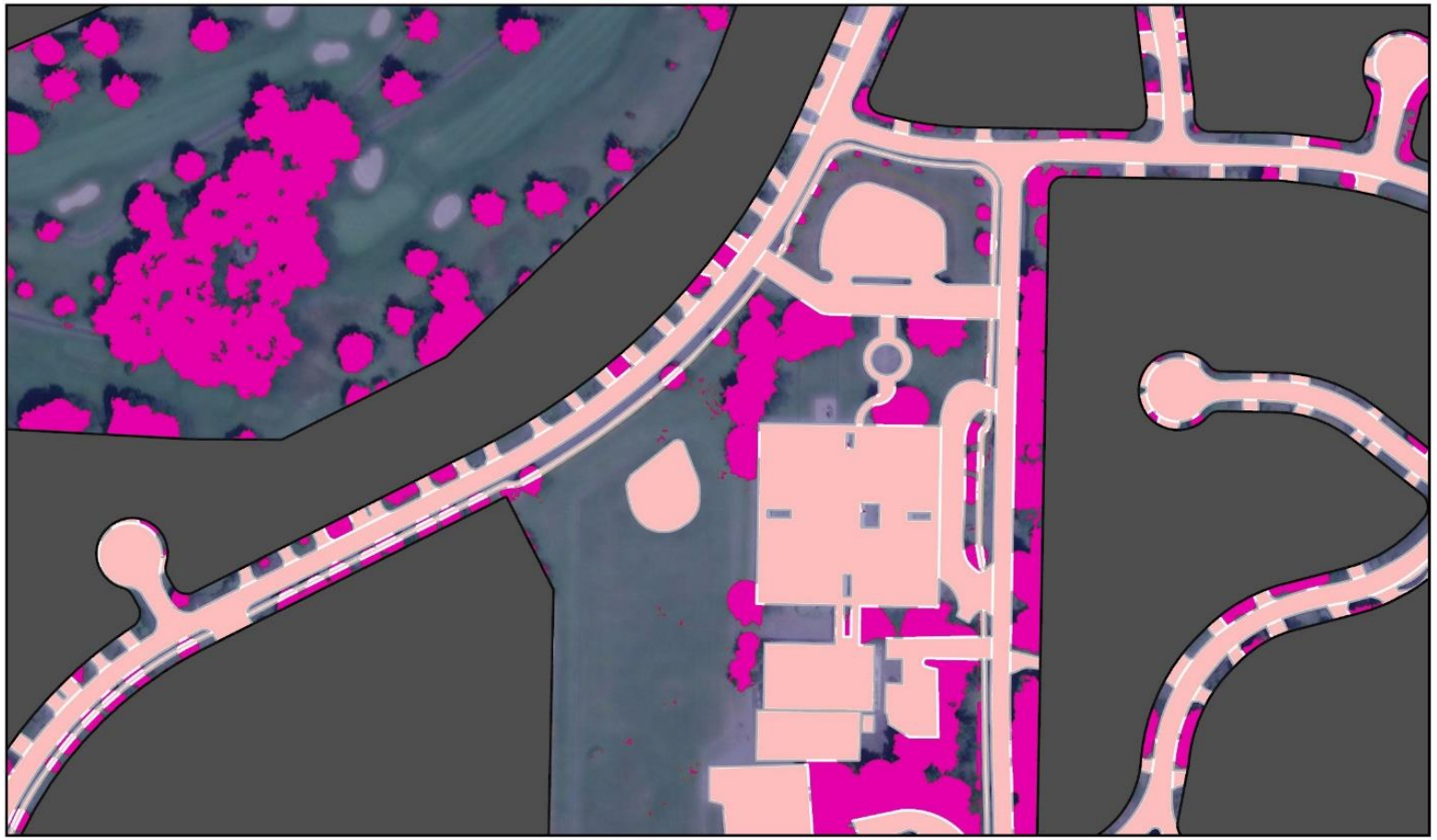
Plantable Area Analysis

Site-Level Analysis

- Objective was to assess plantable space on City-managed lands, such as public parks and ROW.
- Developed using canopy and planimetric data as well as visual observation to identify impervious surfaces.



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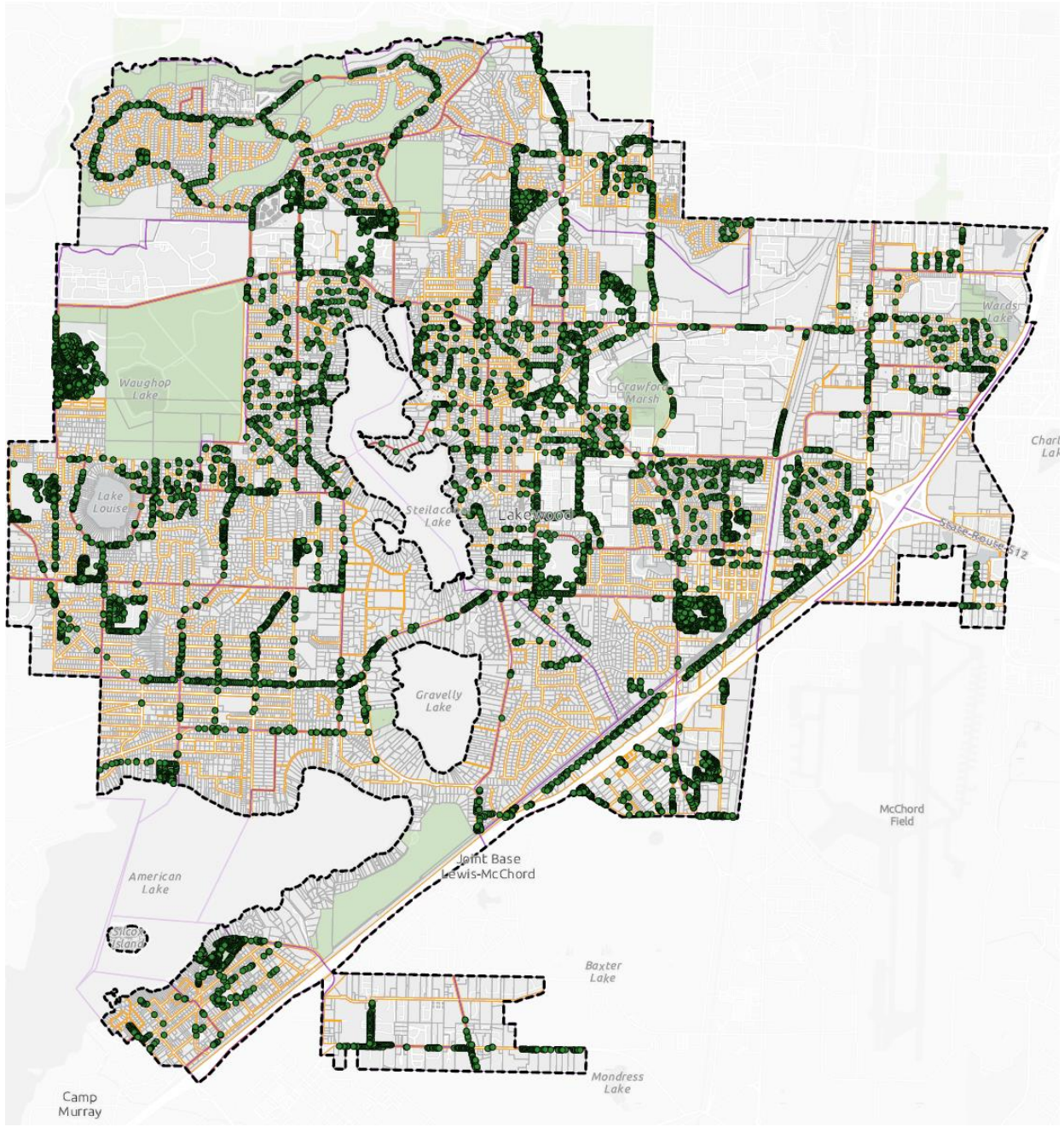

Tree Inventory

Field Assessment of 11,782 trees

- Size
- Species
- Condition
- Tree Infrastructure Conflicts
- Maintenance Needs

Study Area

- City-owned ROW
- Developed Parks
- Select Public Institutional Grounds

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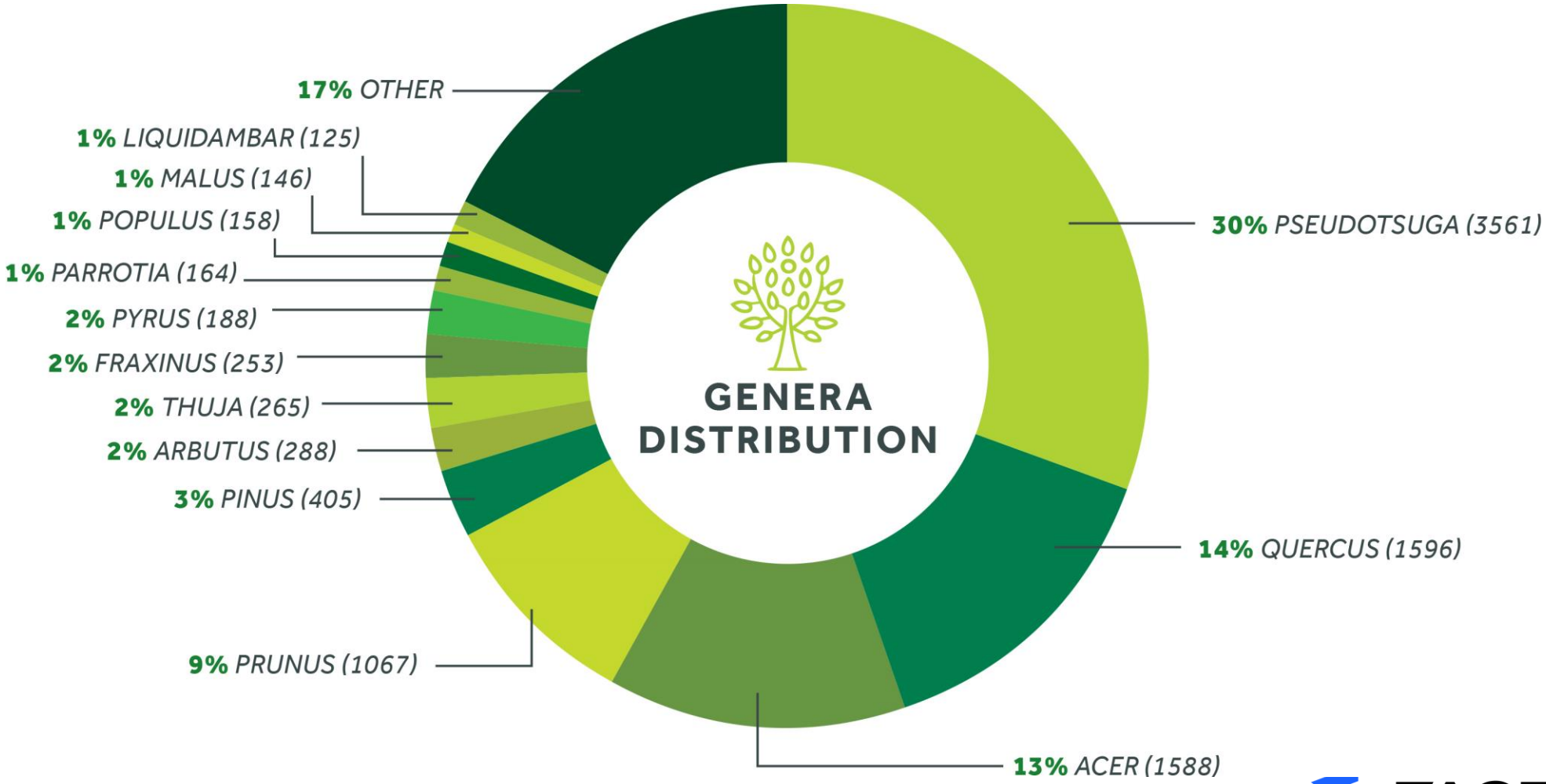
Tree Inventory Findings



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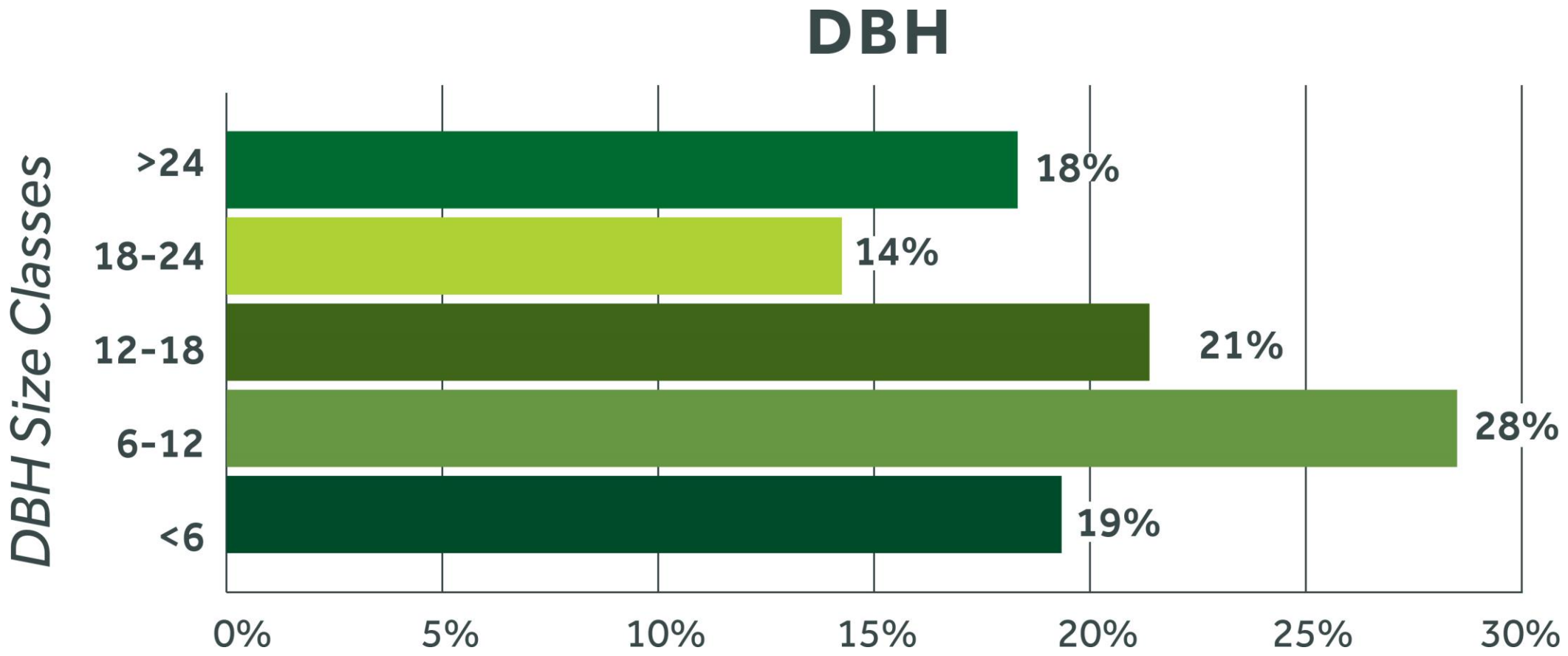
Tree Inventory Findings



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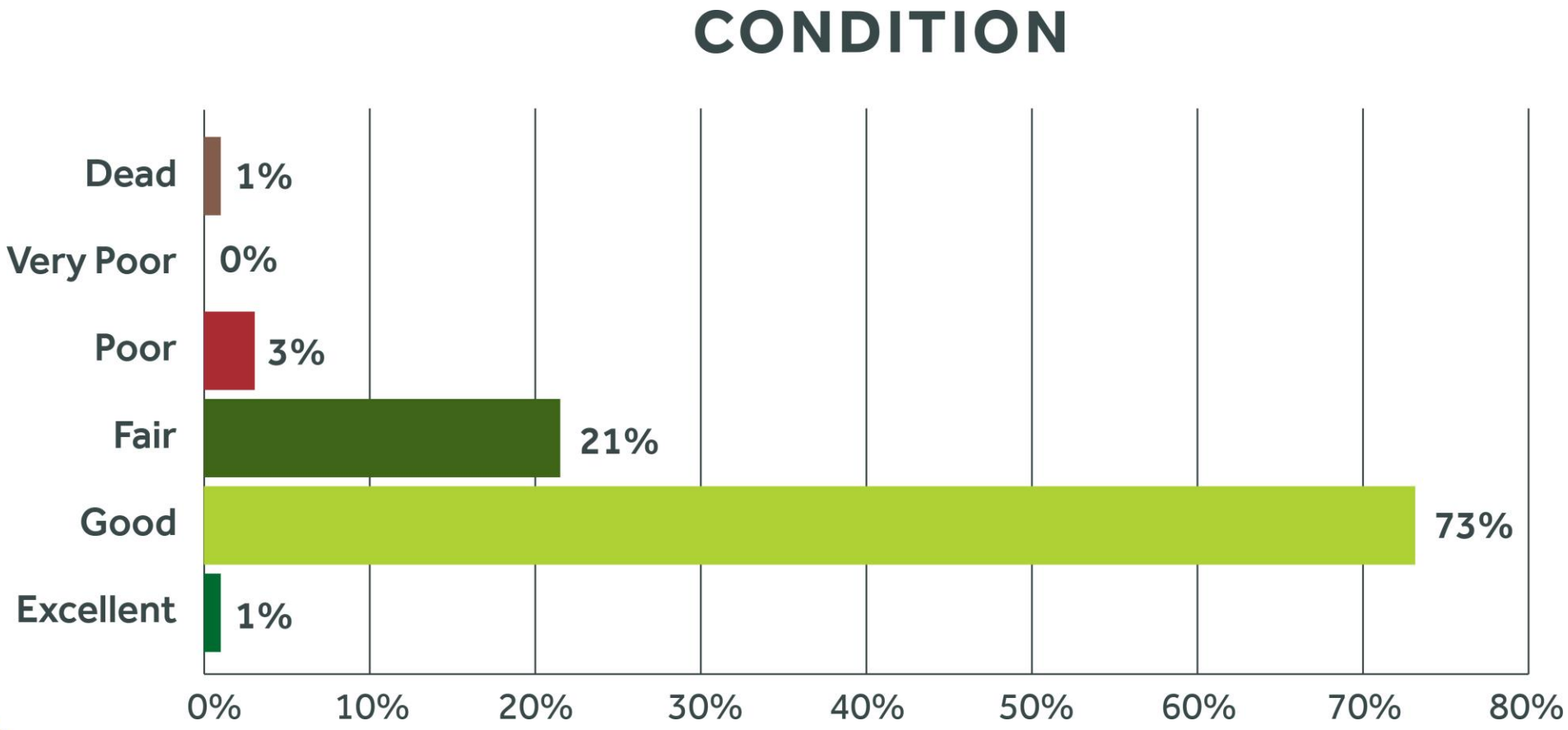
Tree Inventory Findings



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Public Tree Maintenance Considerations

- Trees within the public ROW and city owned/managed parks
- Maintenance needs identified during the tree inventory on roughly 21% of trees.

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Public Tree Maintenance Considerations

Maintenance Type	ROW	Parks	Description
Raise canopy & clearance prune	483	14	Prune to clear ROW over sidewalks or roads.
Remove deadwood	258	109	Remove dead limbs.
Remove tree	154	34	Trees may be dead or in critical condition.
Training prune	56	0	Young trees need pruning to improve structure and future growth.
Side trim	25	0	Prune to clear ROW for sidewalks or roads.
Thin canopy	69	0	Prune to thin interior and competing limbs.
Grind stump	18	4	Grind the stump of a previously removed tree.
Other	514	68	New trees needing stakes removed or other recommendations with details included in the notes.

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Forest Landscape Assessment Tool (FLAT)

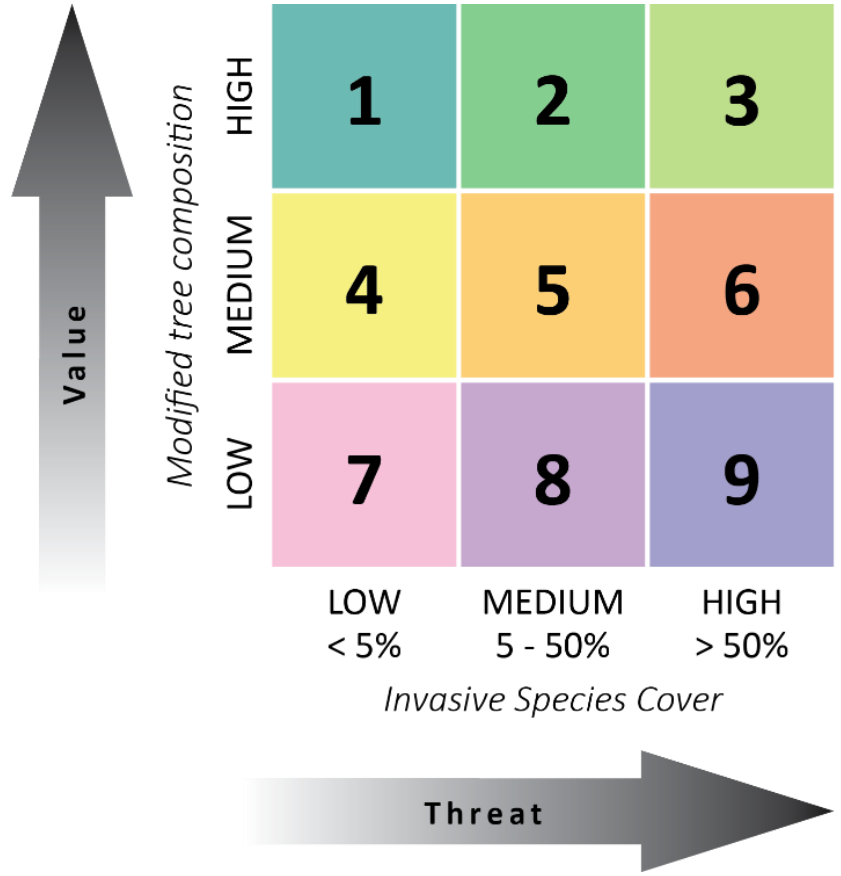
What is Tree-iage?

Rapid ecological assessment of:

- Canopy Composition (Value) and
- Level of Invasive Species Cover (Threat)

Sites:

- Fort Steilacoom Park
- Wards Lake Park
- Seeley Lake Park
- South Puget Sound Wildlife Area



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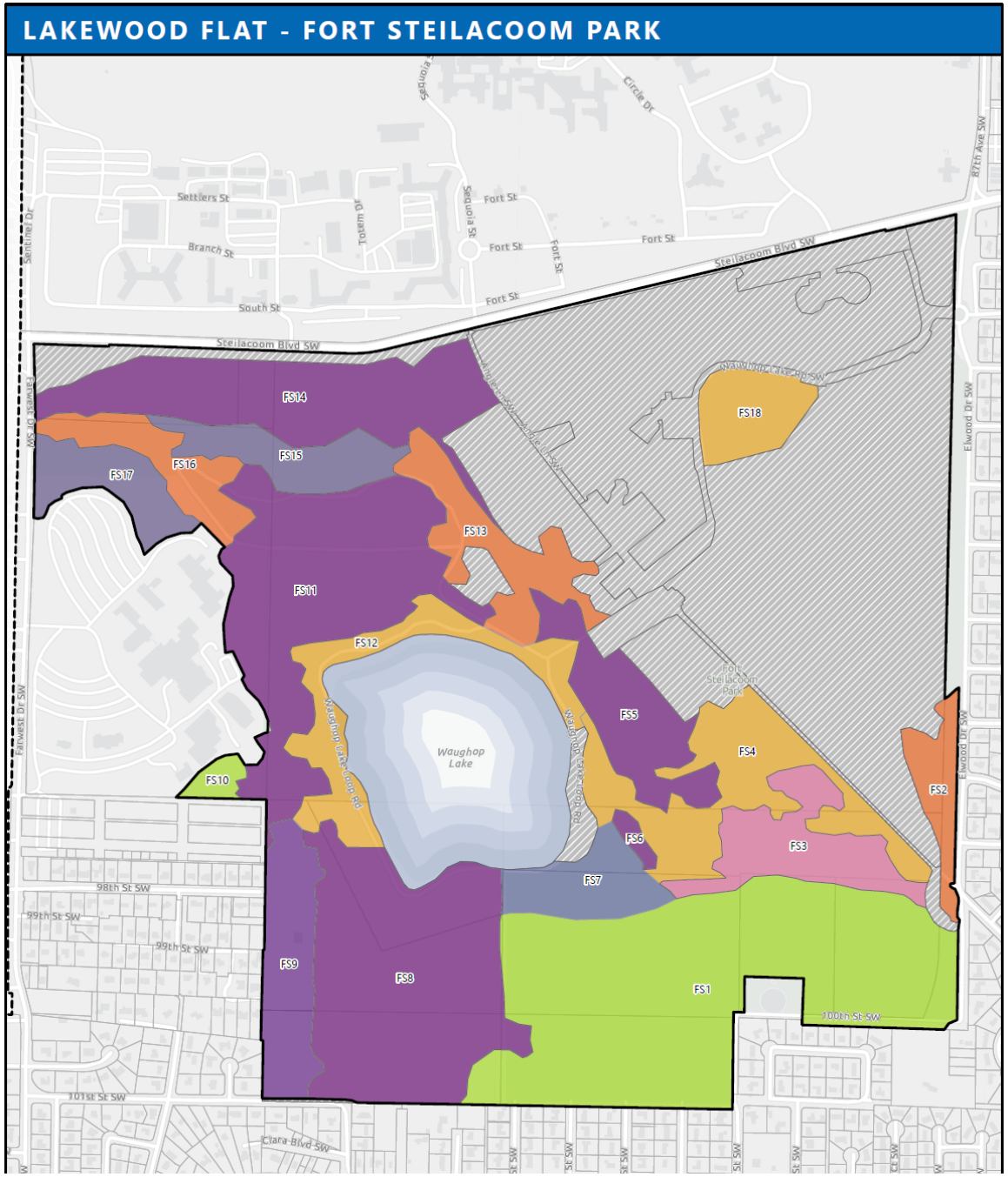
FLAT

- Sites divided into **Habitat Management Units** based on GIS land cover and forest stand analysis.
- **Forest metrics:**
  - Land cover
  - Overstory species, size, and age class
  - Stocking
  - Understory species and cover
  - Condition/pests/pathogens
  - Regeneration species and stocking class
  - Invasive species
- Assigned a Tree-iage Value.
- Shown here: a tree-iage map of Fort Steilacoom Park showing HMUs and tree-iage value.



FLAT Findings

- Tree-iage results shown for all four sites here.
- Represents number of Habitat Management Unit Acres in each category.

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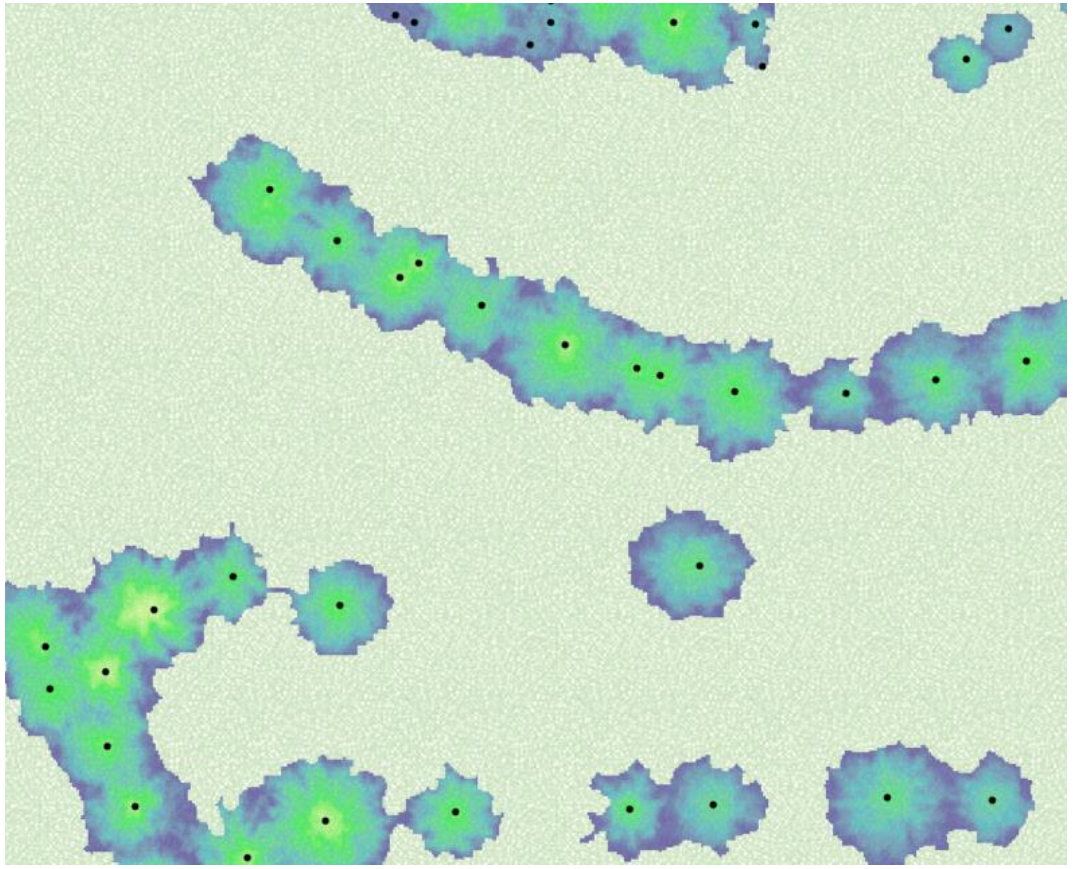
Canopy Height Model

Used to assess trees on those sites where field assessment was not feasible due to time and budget constraints.

- **Large-acreage properties**
  - Fort Steilacoom Disc Golf Parcels
  - Oakbrook Golf Course
  - Western State Hospital
  - Lakewold Gardens
  - Tacoma Golf and Country Club
  - Meadow Park Golf Course
  - Camp Murray
- **Census block groups with under 35% UTC**



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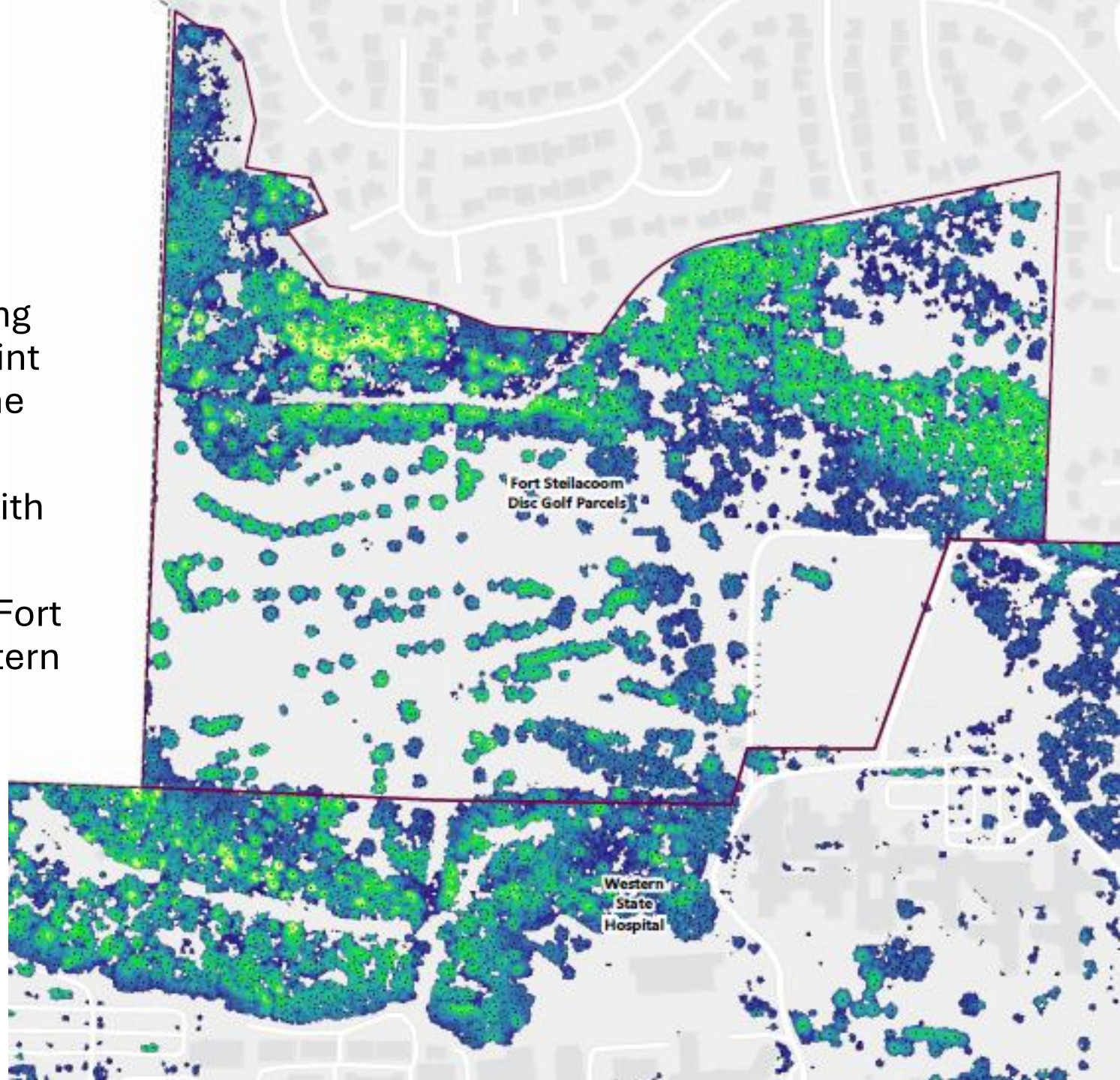
Canopy Height Model

- Developed using LiDAR - remote sensing technology that generates a digital “point cloud” or 3D image of tree cover and the elevation to bare ground.
- Creates a tree population point layer with canopy height attribute values.
- Image shown here shows the CHM for Fort Steilacoom Disc Golf Course and Western State Hospital.



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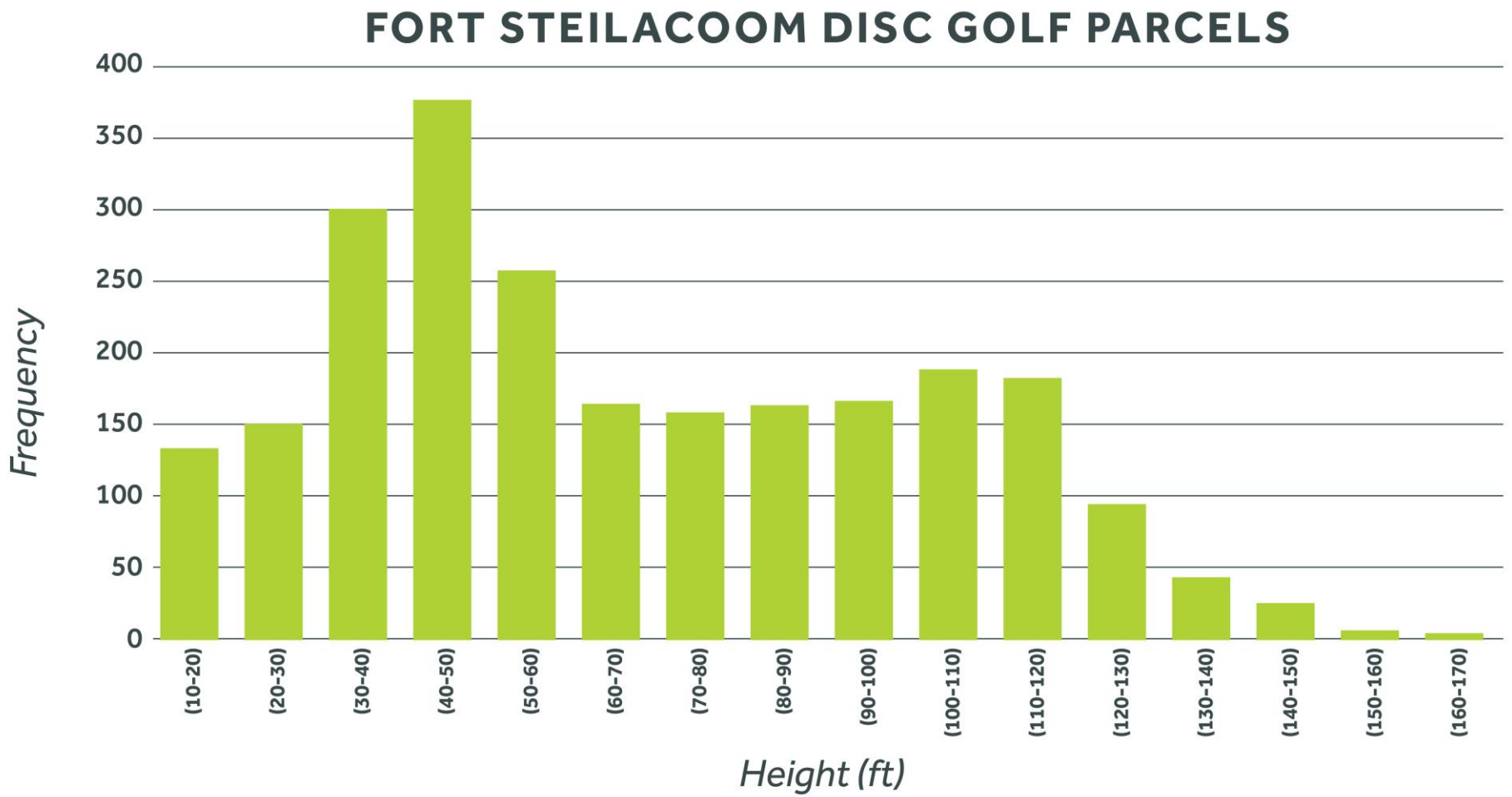

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Asset Management Consultation

Purpose: To provide guidance and information on tree asset management approaches and resources as the City works to build its urban forestry program.

Discussion topic areas:

- Public tree management
- Staffing
- Funding/budget
- Current asset management approach

See Appendix G of the Urban Forest Assessment Report for memorandum describing outcomes and resources.

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Asset Management Consultation

Why track public trees as an asset?

- Public trees as green infrastructure assets that provide a wide range of community benefits.
- The value of trees appreciates over time.
- The cost of deferred maintenance to both trees and infrastructure (e.g. sidewalks etc.) is costly.
- Asset management provides critical data for departments tasked with on-the-ground tree maintenance, budget development, and program management.

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Asset Management Consultation

Resources and Approaches

- Integrate your public individual tree data directly into a maintenance management system (MMS) such as Hansen, Cityworks, or PubWorks.
- In addition to location, the **maintenance status and needs** are tracked.
- Stand-alone tree management software options are available with features such as:
  - distributing workloads and
  - removal, inspections, and other activities to meet certain management objectives.
  - online public data presentation

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QUESTIONS
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Photo credit Taylor Griggs