



SUSTAINABLE AND EQUITABLE URBAN FOREST MANAGEMENT PLANNING

A presentation by PlanIT Geo and the City of Renton, WA




WA State Planning Directors Conference

September 8, 2022

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Chris Peiffer

Director of Urban Forestry
Consulting Services



Urban Forestry Planner
ISA Certified Arborist PD-2070AM
38 urban forestry projects since 2014

TREE INVENTORY & CANOPY ANALYSIS

ASSESS
Greenspace Equity & Public Health
Mapping & Visualization

PLAN
DATA DRIVEN PLANS
Strategy, Policy, & Climate Action

IMPLEMENT
MAP & MANAGE
Tree Care Operations

MONITOR
ADVANCED SOFTWARE & TECHNOLOGY
Work Reporting
SUPPORT & INTEGRATION

The PlanIT Geo URBAN FORESTRY HUB

2

Matthew Herrera

Current Planning Manager



City Of Renton
Community and Economic Development
Planning Division



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Agenda

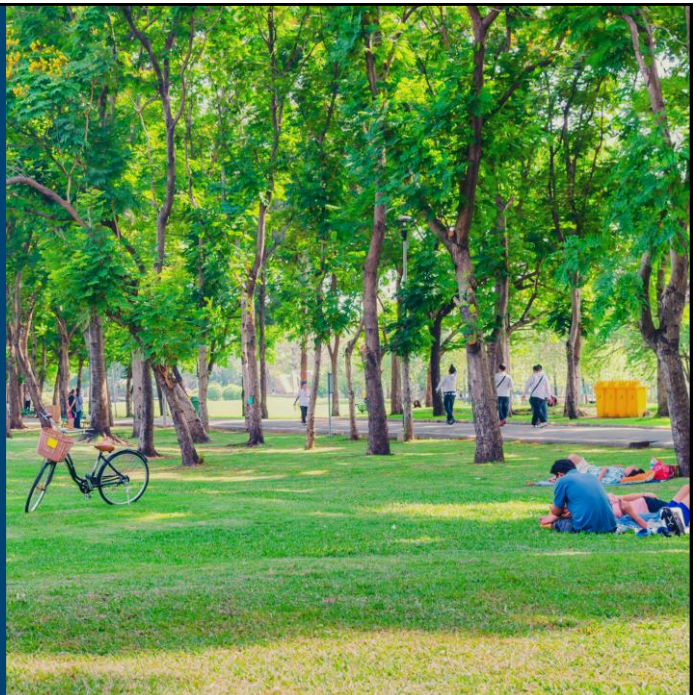
- 01** Background

- 02** Planning the Urban Forest

- 03** A Closer Look at Strategies

- 04** Future of Urban Forestry

- 05** Take Home Message



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Background: What is an Urban Forest?



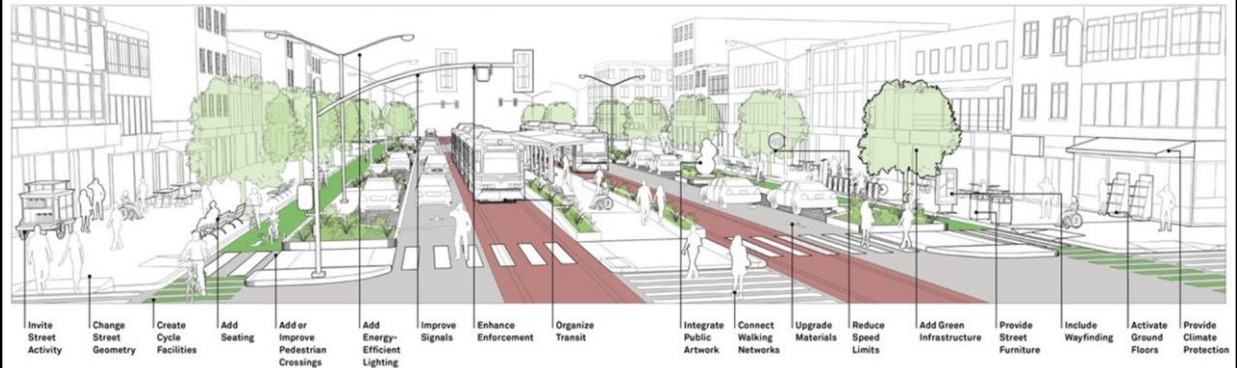
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Background: What is an Urban Forest?



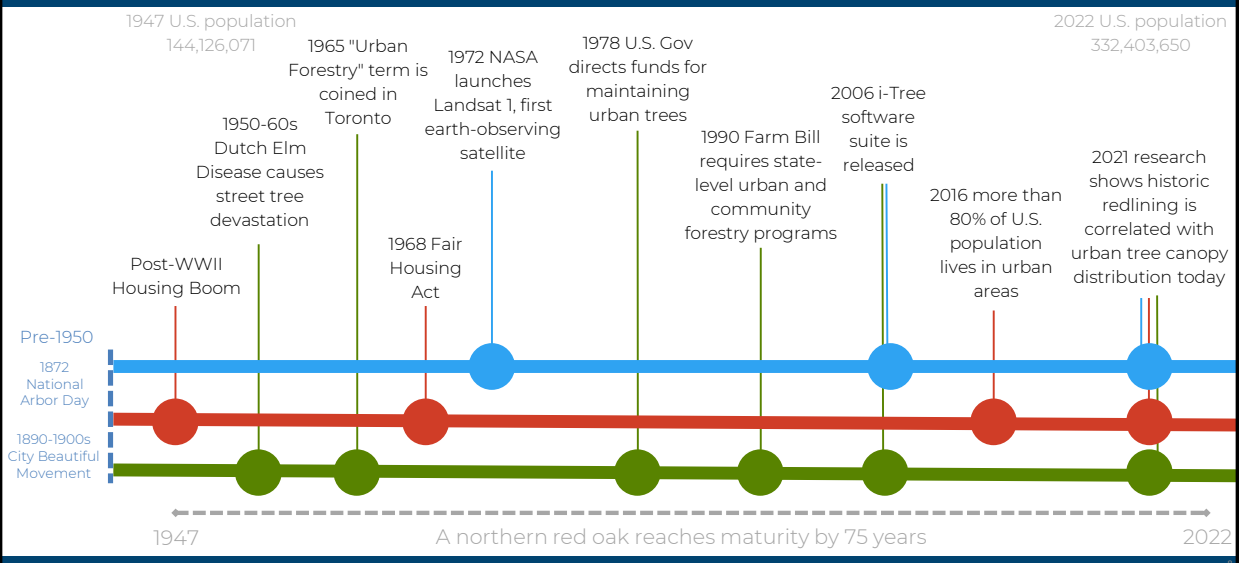
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Background: What is an Urban Forest?



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Background: History of Urban Forestry



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Background: Urban Forest Benefits


 <p>Cleaner air and water</p>	 <p>Stress reduction and improved quality of life</p>	 <p>Safer communities</p>	 <p>Energy savings</p>
 <p>Increased property values</p>	 <p>Increased climate resiliency and sustainability</p>	 <p>Wildlife protection and ecosystem restoration</p>	 <p>Boosted local and regional economies</p>


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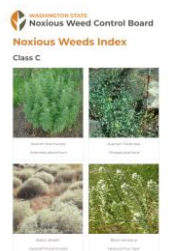
Background: Challenges Facing Urban Forests


Risks, Threats, and Challenges


- ❖ Changing Climate
- ❖ Pests & Diseases
- ❖ Invasive Plant Species
- ❖ Poor Pruning (Topping)
- ❖ Conflicts for Space
- ❖ Public Perceptions
- ❖ Resource Limitations
- ❖ Inequitable Distribution
- ❖ Lack of Planning




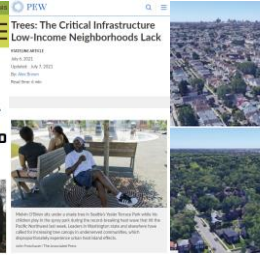








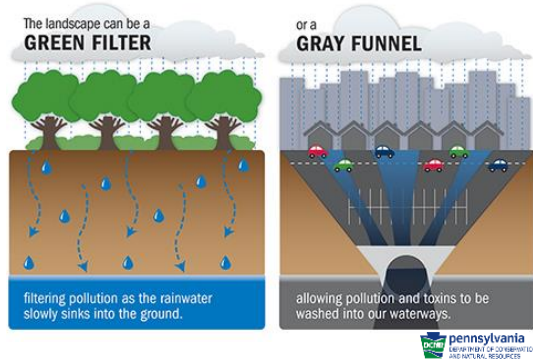




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Background: The Urban Forest Asset

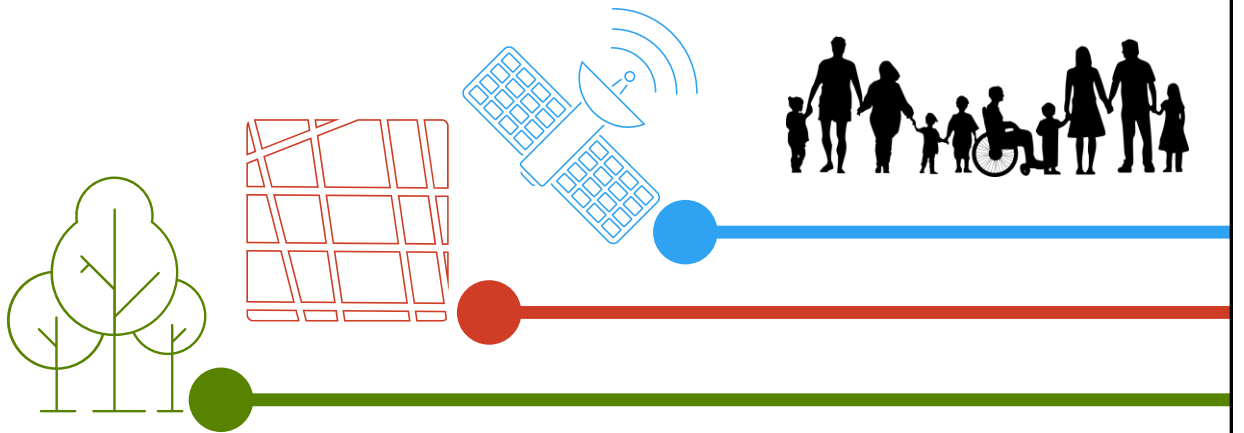
Green & Gray Infrastructure



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Background: Urban Forest Equity

Planners have a responsibility to bridge the gap between urban forestry, planning, and equity.



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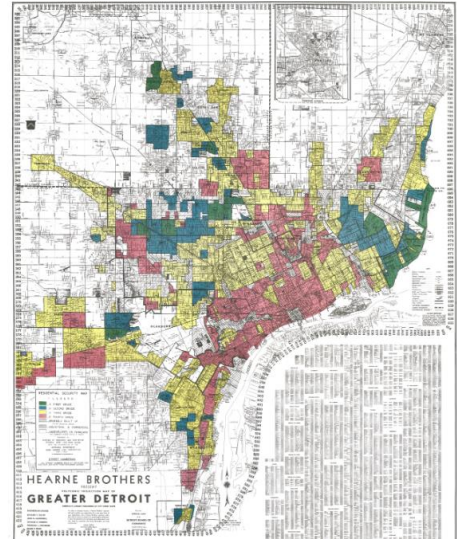
Background: Urban Forest Equity

Residential Housing Segregation and Urban Tree Canopy in 37 US Cities

Tree canopy distribution today is correlated with historic redlining and housing segregation practices of the past

HOLC Grade	General Description	Canopy Today (%)
A (Best)	Always upper- or upper-middle-class White neighborhoods, minimal risk for banks	43.44
B (Still Desirable)	Nearly or completely White, U.S. -born neighborhoods, "still desirable," sound investments for lenders	34.35
C (Declining)	Working-class and/or 1st-2nd generation European immigrants, often lacked utilities, older housing stock.	26.61
D (Hazardous)	Areas often "infiltrated" with "undesirable populations" such as Jewish, Asian, Mexican, and Black families, close to industrial areas, older housing stock.	22.65

[Locke, D.H., Hall, B., Grove, J.M., Pickett, S., Ogden, L., Aoki, C., Boone, C., O'Neil-Dunne, J.P., \(2020\). Residential housing segregation and urban tree canopy in 37 US Cities. npj Urban Sustain. 10.1038/s42949-021-00022-0](#)



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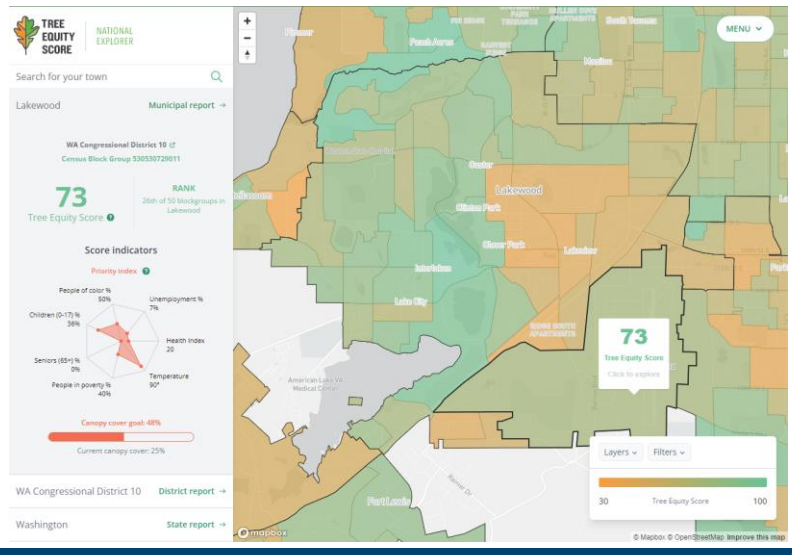
Background: Urban Forest Equity

American Forests Tree Equity Score

A Tree Equity Score is a metric that helps cities assess how well they are delivering equitable tree canopy cover to all residents. The score combines measures of tree canopy cover need and priority for trees in urban neighborhoods (defined as Census Block Groups). It is derived from tree canopy cover, climate, demographic and socioeconomic data.



<https://treeequityscore.org>



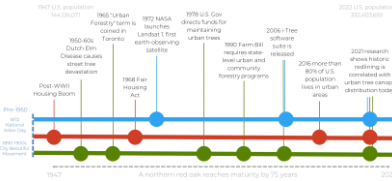
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Background: Summary

DEFINITION



HISTORY



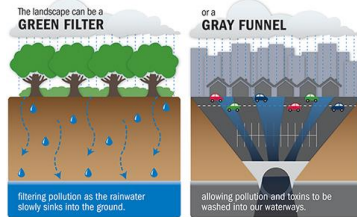
BENEFITS

- Cleaner air and water
- Increased property values
- Stress reduction and improved quality of life
- Increased climate resiliency and sustainability
- Safer communities
- Wildlife protection and ecosystem restoration
- Energy savings
- Boosted local and regional economies

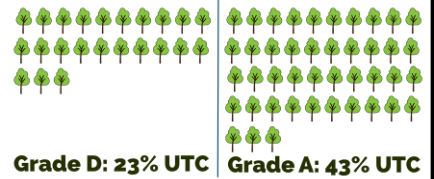
CHALLENGES



GREEN ASSET



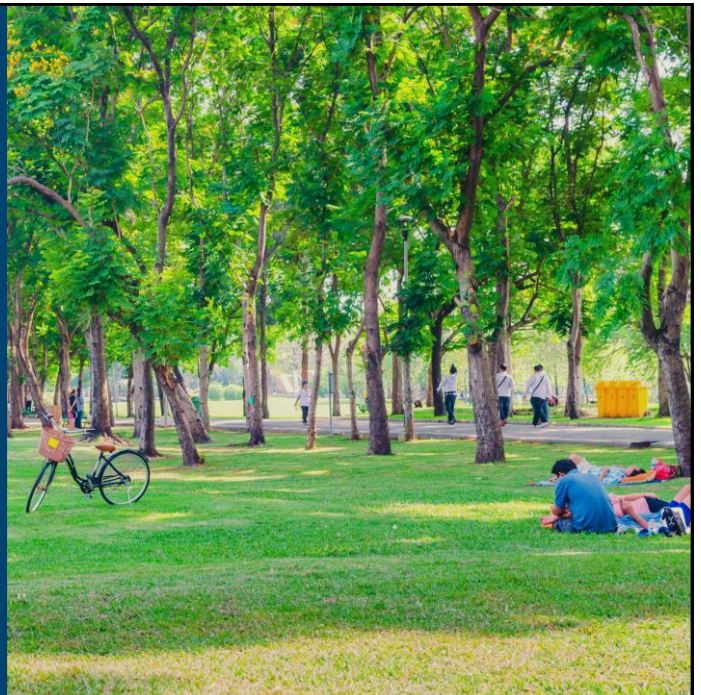
TREE EQUITY



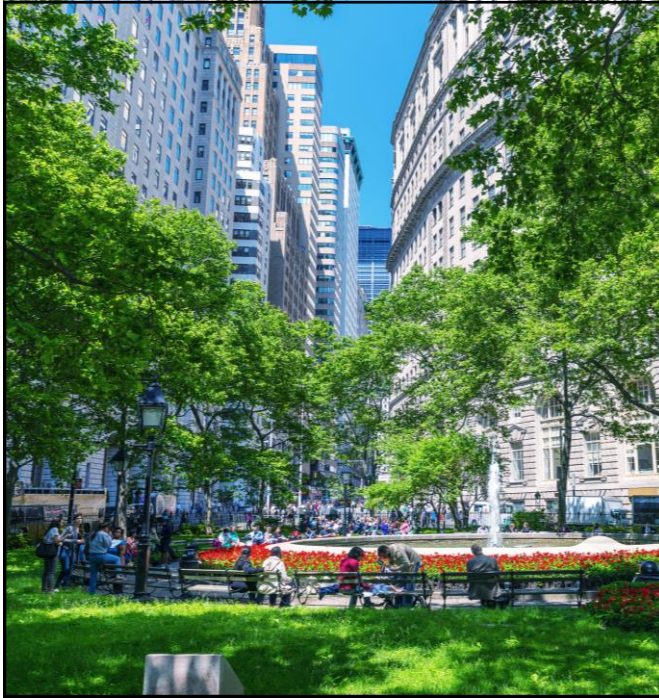
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- 01 Background
- 02 Planning the Urban Forest
- 03 A Closer Look at Strategies
- 04 Future of Urban Forestry
- 05 Take Home Message



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"Urban trees and forests are considered integral to the sustainability of cities as a whole. Yet, sustainable urban forests are not born, they are made. They do not arise at random, but result from a community-wide commitment to their creation and management."

CLARK ET AL.: A MODEL OF URBAN FOREST SUSTAINABILITY, 1997

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Planning the Urban Forest: Purpose

Purpose / Importance

- ❖ Maximize Benefits
- ❖ Public Safety
- ❖ Tree Equity
- ❖ Sustainability
- ❖ Levels of Service
- ❖ Efficiencies
- ❖ Resourceful
- ❖ Transparency
- ❖ Support
- ❖ Funding
- ❖ Roadmap



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Planning the Urban Forest: Types of Plans

Outreach Plans,
Planting Plans,
Maintenance Plans

**Management &
Master Plans**

Risk Management Plans,
Pest Management Plans,
Storm Response Plans



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Planning the Urban Forest: Supporting Studies

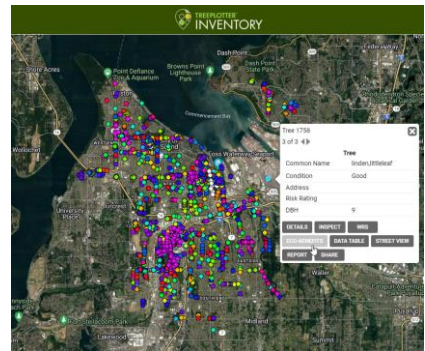
CANOPY ASSESSMENTS



TREE INVENTORIES



MANAGEMENT SOFTWARE



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Planning the Urban Forest: Key Players

CITY STAFF & BOARDS



STAKEHOLDERS



COMMUNITY



ORGANIZATIONS



AGENCIES



EXTENSIONS



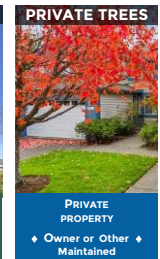
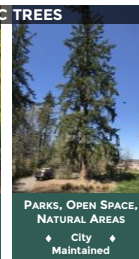
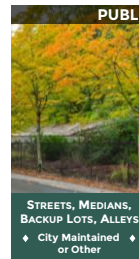
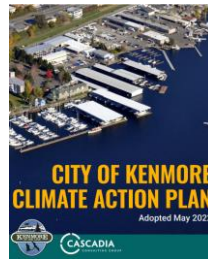
CONSULTANTS



Planning the Urban Forest: Considerations

Considerations

- ❖ Existing Plans
- ❖ Extent
- ❖ Planning Horizon
- ❖ In-house or Contracted
- ❖ Intended User
- ❖ Scope
- ❖ Timing
- ❖ Policies
- ❖ Team
- ❖ Community Voice



PUBLIC TREES

STREETS, MEDIANS,
BACKUP LOTS, ALLEYS
◆ City Maintained
or Other ◆

PARKS, OPEN SPACE,
NATURAL AREAS
◆ City
Maintained ◆

PRIVATE
PROPERTY
◆ Owner or Other
Maintained ◆

Planning the Urban Forest: Process

Planning Process



- RESEARCH & INFORMATION GATHERING
- CONSULTATIONS FOR WORKFLOWS, PRIORITIES
- DATA ANALYSES OF CONDITIONS, CHALLENGES, OPPS
- BENCHMARKING RESEARCH
- COMMUNITY OUTREACH & ENGAGEMENT
- URBAN FOREST AUDIT, GAP ANALYSIS
- RECOMMENDATIONS, METRICS, STRATEGIES
- DRAFT AND FINAL PLANS

Planning the Urban Forest: Examples

Example Plans



Planning the Urban Forest: Innovation

Innovation

PROJECT WEBSITES

TREE STORIES

NATUREQUANT NATURE SCORE

www.naturequant.com/naturescore

3-30-300 RULE

Cecil Konijnendijk - Nature Based Solution Institute

STORY MAPS

CANOPY AS A SERVICE

TREE EQUITY SCORES

Key Metrics

Explore Renton's TreePlanter Data

- 350 PARK TREES
- 8624 TOTAL TREES
- 8274 STREET TREES

TOP & MOST COMMON SPECIES

- 8% Red oak
- 7% Red maple
- 7% Redbud
- 6% Sycamore
- 4% Ornamental pear

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Planning the Urban Forest: Summary

Summary

PURPOSE

CONSIDERATIONS

PROCESS

INNOVATION

TYPES OF PLANS & EXAMPLES

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Agenda

01 Background

02 Planning the Urban Forest

03 A Closer Look at Strategies

04 Future of Urban Forestry

05 Take Home Message



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A Closer Look At Strategies: Types of Analyses

Needs of the Urban Forest, the Programs, & the People



- Findings Determine:**
- Existing Conditions
 - Shared Priorities
 - Public Interests
 - Strengths
 - Opportunities



- Expected Outcomes:**
- Sustainability
 - Resiliency
 - Equity
 - Shared Vision
 - Levels of Service

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A Closer Look At Strategies: Types of Analyses

Analyses to Develop Strategies

CANOPY ASSESSMENTS



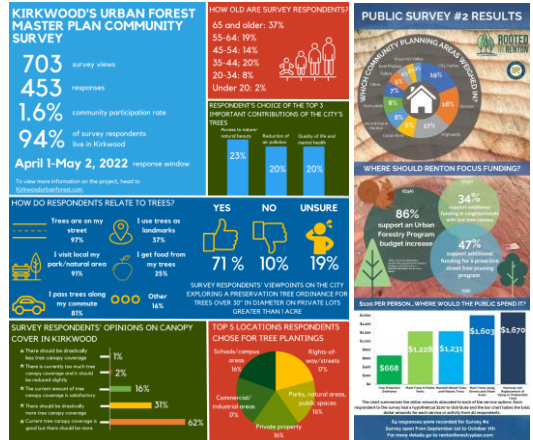
■ Tree Canopy
■ Possible Vegetative Planting Area
■ Possible Impervious Planting Area
■ Unsuitable Impervious Water

INVENTORIES



Species	Target tpi (1.00)
Callery pear	0.30
Red maple	1.14
Pin oak	1.07
Freeman maple	1.24
Hedge maple	0.96
Japanese zelkova	1.02
Norway maple	0.74
Littleleaf linden	1.05
Kwanzan cherry	1.01
Sugar maple	0.84

PUBLIC INPUT & FEEDBACK



A Closer Look At Strategies: Types of Analyses

Analyses to Develop Strategies

STAFF CONSULTATIONS



BENCHMARKING

2019 Tree City USA - RENTON	2019 Tree City USA - REGIONAL
\$925k (Urban) Forestry budget	\$800k Average forestry budget
\$9.06 Per capita forestry budget	\$10.42 Average per capita budget
\$647k Tree planting, initial care, maintenance, and removal budget	\$630k Average tree planting, initial care, maintenance, and removal budget
\$278k Program management budget	\$121k Average program management budget
357 Trees pruned	1,025 Average trees pruned
298 Trees removed	130 Average trees removed
129 Trees planted	1,695 Average trees planted

AUDITS, GAP ANALYSIS

Element	Subcategory	Description or Criteria for Evaluation	Assigned Status
101	Climate Change (Sustainability)	With reference to urban trees, address the long-term health and productivity of the natural resource.	Not Practiced
102	No Net Loss	Can refer to trees, basal area, or canopy.	Not Practiced
103	Risk Management	Should reference ANSI A300 Part 9, ISA BMP and prioritization funding mechanisms.	Not Practiced
104	Tree Canopy Goals	Overall, community/campus goal, or by designated 'zone'.	Not Practiced

1) Policy and Ordinances	54%
2) Capacity and Training	69%
3) Funding and Accounting	58%
4) Decision and Management Authority	100%
5) (Tree) Inventories	85%
6) (Tree) Plans	58%
7) Risk Management	56%
8) Disaster Planning	43%
9) Standards and Best Practices	68%
10) Community	86%
11) Green Asset Evaluation	75%

A Closer Look At Strategies: Maintenance

Priorities, Cycles, Structure, Costs

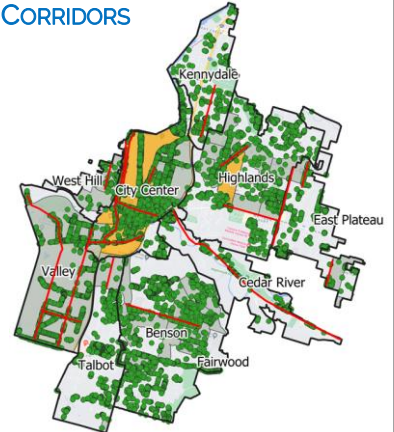
MAINTENANCE NEEDS

Street (3,578 Trees)	
Clearance Prune	22%
Structural Prune	19%
Thinning Prune	18%
Other Maintenance	40%
Park (2,777 Trees)	
Crown Cleaning	28%
Thinning Prune	18%
Add Mulch	16%
Other Maintenance	38%

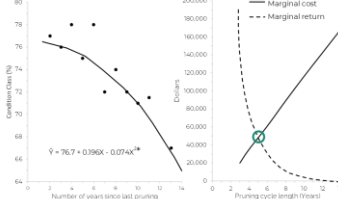
PRUNING CYCLES

Public Street, Park, and Golf Course Trees (2021)		
Total Tree Count	Annual Budget	Tree Count
27,456 trees	\$134,000	750
Current Cycle (-37 Years)	per year \$247,104	trees per year 1,373
20-Year Cycle	\$113,104 more cost	623 more trees
10-Year Cycle	\$494,208 more cost	2,746 more trees
7-Year Cycle	\$706,011 more cost	3,922 more trees per year
2 FTE In-House Arborist Crew (7.5-Year Cycle)	4,176 hours (2,088 each)	3,654 trees per year
Cycle Gap between 37-Year & 7-Year Cycle	\$572,011 more per year	3,172 more trees

PRIORITY MAINTENANCE CORRIDORS



COSTS OF DEFERRED MAINTENANCE



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A Closer Look At Strategies: Maintenance

Priorities, Cycles, Structure, Costs

PRIORITIES & SCHEDULE

MAINTENANCE COSTS

STRUCTURE & COSTS

Estimated Costs for Each Activity	Year 1	Year 2	Year 3
Priority 1: Extreme or High-Risk Removals (addressed in first 3 years)	36	32	32
Priority 2: Extreme or High-Risk Prune (addressed in first 3 years)	36	32	32
Recommended Removal (Not Extreme or High-Risk, addressed during maintenance cycle)	36	32	32
Activity Totals	108	96	96

Management Activity Costs	Duration	Year 1	Year 2	Year 3
Priority 1 Removals & Stump	Years 1-3	\$20,975	\$14,425	\$7,800
Priority 2 High Risk Prune	Years 1-3	\$23,035	\$22,750	\$18,400
Priority 3 Recommended Removals & Stump Removal	Years 1-8	\$48,700	\$48,700	\$48,700
Priority 4 Routine Large Tree Prune	Years 1-8	\$275,131	\$275,131	\$275,131
Priority 5 Young Tree Training Prune	Years 1-8	\$19,138	\$19,138	\$19,138
Existing Stump Removals	Years 4-8	\$0	\$0	\$0
Annual Totals		\$386,979	\$380,144	\$369,169

Recommended Staff	Hours per Staff	Cost per Hr	# of New Staff	Total Cost	Estimated Cost per Staff
B) Arborist	2,088	\$40.23	2	\$168,000	\$84,000
Subtotal			2	\$168,000	\$84,000
Equipment	Hours	Cost/Unit	# of Units	Total Cost	Annual Cost
F350 or equivalent pickup with stump bucket, bush cut, extended cab, HD low lift	1	\$60,000	1	\$60,000	---
F350 Pickup hours (O&M)	1,000	\$16.94	1,000	---	\$16,940
Vermeer 1800 brush chipper with winch	1	\$55,000	1	\$55,000	---
Terex High Ranger bucket truck	1	\$250,000	1	\$250,000	---
Truck with 80+ foot boom length bucket truck hours (O&M)	1,000	\$16.94	1,000	---	\$16,940
Mid-size Vermeer stump grinder	1	\$30,000	1	\$30,000	---
SC 550 or equivalent Stump grinder hours (O&M)	1,000	\$16.94	1,000	---	\$16,940
Heavy duty equipment trailer	1	\$10,000	1	\$10,000	---
Equipment trailer hours (O&M)	1,000	\$16.94	1,000	---	\$16,940
Palettized or low-behind, with pump and hose reels	1	\$2,000	1	\$2,000	---
Watering rig hours (O&M)	1,000	\$16.94	1,000	---	\$16,940
Subtotal				\$410,000	\$101,640
Other	Hours	Cost/Unit	# of Units	Total Cost	Annual Cost
PPE	---	\$200	2	\$400	\$200
Uniforms	---	\$250	2	\$500	\$188
Chainsaw	---	\$800	2	\$1,600	\$400
Rake	---	\$25	2	\$50	\$13
Shovel	---	\$25	2	\$50	\$13
Brush Bucket	---	\$40	2	\$80	\$20
Cart	---	\$50	2	\$100	\$25
Other (e.g. blower)	---	\$500	2	\$1,000	\$250
Subtotal			16	\$3,780	\$1,058
TOTAL COST				\$581,780	\$270,698
ANNUAL COST					\$270,698

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A Closer Look At Strategies: Programming

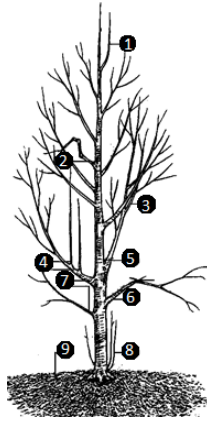
Urban Forestry Program

- Structure
- Operations
- Best Practices
- Tree Ordinances
- Procedures & Practices
- Community Engagement

TREE PLANTING INITIATIVE



BEST PRACTICES



TREE ORDINANCES

EXAMPLE TREE SIZES – GARRY OAKS/ OREGON WHITE OAK

Municipality	Code Language
Polk County	4' All trees, 50 percent of significant trees on site shall be retained, preferably reflective of the diversity of species and age within the stand, up to the minimum tree density requirements. All trees exceeding 6 inch diameter at breast height (d.b.h.) at time of development shall be retained and incorporated into the buffer. If determined by a professional forester that retention of a tree will create a hazard or that the tree is not viable, then the tree may be removed. Note: Additional requirements may apply when Oregon White Oak trees are present. See Chapter 10C.06.010. Code Link
Washington County	12' A tree protection area extending a minimum of five feet beyond the drip-line of smaller trees located within or greater in diameter than the analysis shall exist above the ground, grade of trees, and Oregon white oak shall be established and protected from disturbance during the development. The approval authority may require that the protection area be extended for oak trees. If necessary to ensure the tree's survival, based upon a recommendation of an arborist or urban forester. Code Link
Portland, OR	12' Harvest practice and limited at least 1/3 of the non-avenue trees that are 12 inches and larger in diameter located completely or partially on your site. Any tree at least 4 inches but less than 12 inches in diameter that is an Oregon white oak, Garry oak, Pacific madrone, Pacific rose, ponderosa pine or Western hemlock dispersed doesn't add to the total number of trees. But this may be retained towards meeting the tree preservation requirements. Code Link



COMMUNITY ENGAGEMENT



A Closer Look At Strategies: Planting

Planting Prioritization & Strategies

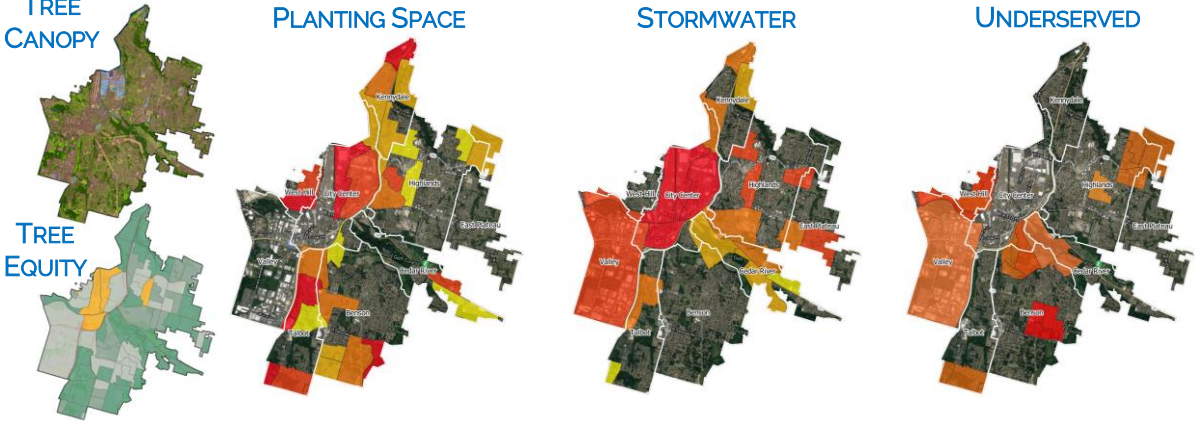
TREE CANOPY

TREE EQUITY

PLANTING SPACE

STORMWATER

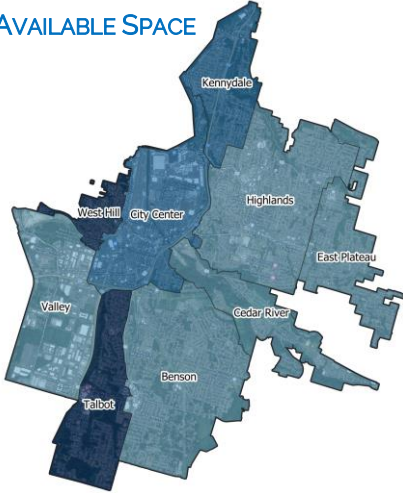
UNDERSERVED



A Closer Look At Strategies: Planting

Planting Prioritization & Strategies

AVAILABLE SPACE



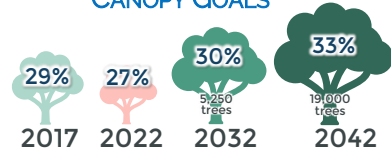
PLANTING TARGETS

Community Planning Area	Total Possible Planting Area (%)	% of Total Possible Planting Area to be Planted	Modeled Canopy % (% of Total PPA)	Number of Trees to Reach Goal	Annual Added (Net) Eco-Benefits (\$)
Benson	19%	15%	33%	2,868	\$32,525
Cedar River	17%	15%	49%	1,094	\$12,407
City Center	22%	20%	18%	2,933	\$33,262
East Plateau	18%	20%	33%	1,666	\$18,891
Highlands	17%	15%	28%	2,470	\$28,011
Kennydale	24%	20%	38%	1,795	\$20,360
Talbot	26%	20%	44%	2,578	\$29,233
Valley	19%	20%	33%	2,570	\$29,148
West Hill	33%	20%	38%	877	\$9,947
TOTAL			33%	18,852	\$213,783

CONSIDERATIONS

- City vs public plantings
- Size of trees
- No net loss
- Mortality assumptions
- Timing, horizon

CANOPY GOALS



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A Closer Look At Strategies: Canopy & Equity

Artificial Intelligence-Driven Assessments

Tree Canopy Data

PlanIT Geo & EarthDefine

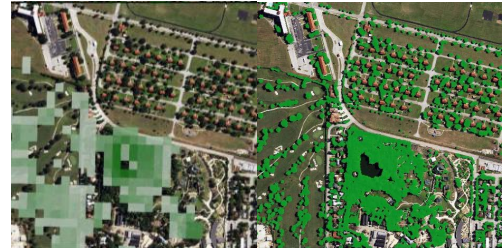
Resolution = 60cm in select areas

- Compared to:
 - EarthDefine standard: 1m
 - National Land Cover Database: 30m

Accuracy = 96.6% via EarthDefine



Comparison 30m resolution vs. 60cm resolution

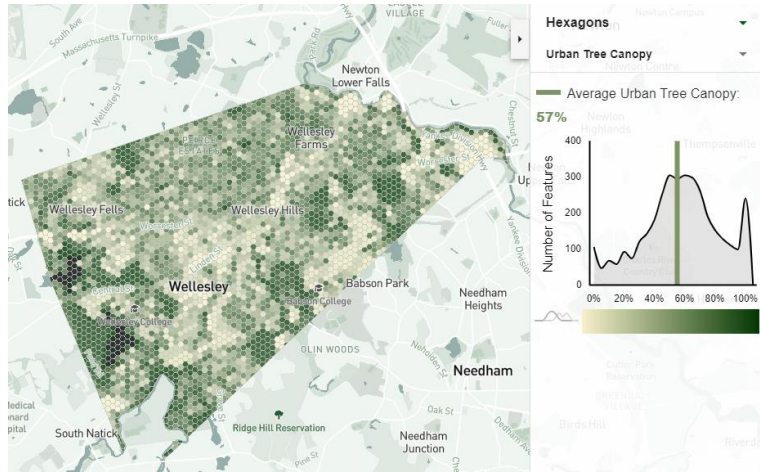


<https://www.earthdefine.com/treemap>

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A Closer Look At Strategies: Canopy & Equity

Example UTCs

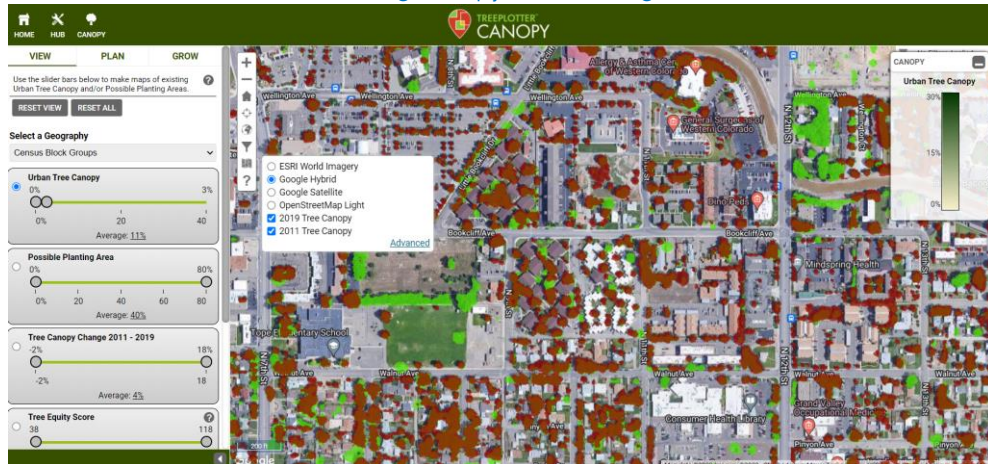


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A Closer Look At Strategies: Canopy & Equity

Example UTCs

Tracking Canopy Cover Change

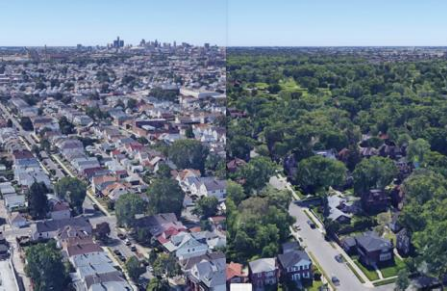


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A Closer Look At Strategies: Canopy & Equity

Example Tree Equity Scores

ABOUT

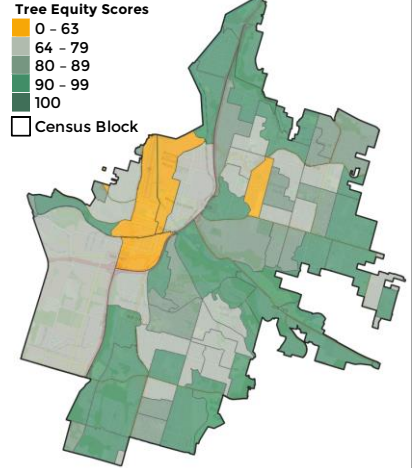


"A map of tree cover in any city in the United States is too often a map of race and income. This is unacceptable."

DATASETS

- Existing tree canopy
- Population density
- Surface temperature
- Race
- Income
- Employment
- Age
- Health

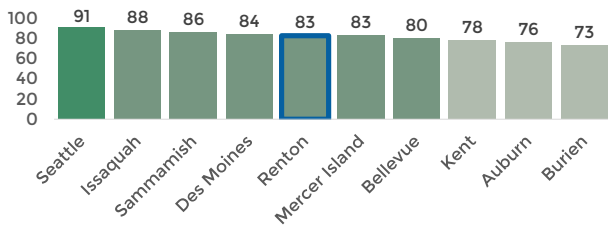
RENTON TES



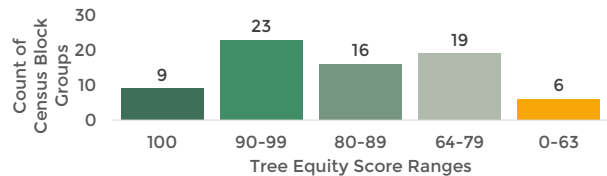
A Closer Look At Strategies: Canopy & Equity

Example Tree Equity Scores

TREE EQUITY SCORE COMPARISONS



DISTRIBUTION OF TREE EQUITY SCORES AMONG RENTON'S CENSUS BLOCK GROUPS



The screenshot shows a web browser window with the URL pg-cloud.com/KingCD-Cities/. The page is titled "TREEPLOTTER CANOPY" and is for "King County, WA". It displays a map of the Seattle area with orange location pins for various cities. A legend on the right lists 20 cities: Algona, Auburn, Bellevue, Black Diamond, Bothell, Burien, Covington, Des Moines, Issaquah, Kenmore, Kent, Kirkland, Maple Valley, Mercer Island, Newcastle, Normandy Park, Renton, SeaTac, Tukwila, and Woodinville. The page also includes a "HOME HUB" navigation bar and a "CANOPY LEARN MORE" button over a cityscape image.

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The screenshot shows the "TREE EQUITY SCORE" website. The main heading is "Find your score and help create Tree Equity in cities and towns across America." The page features logos for "TREE EQUITY SCORE" and "American Forests". There is a search bar with the placeholder text "Search for your town" and a "MAP" button. The background image shows children playing on a large tree trunk. At the bottom, there is a section titled "FEATURED PLACES" with six small map thumbnails showing different geographic areas.

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Canopy Data Informing Equitable Policies

Urban Planning Tools

- Comprehensive plan
- Zoning ordinance + land development codes
- Integrating with other planning efforts

Urban Forestry Tools

- Tree Canopy Goals
- Urban Forestry Plans


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A Closer Look At Strategies: Canopy & Equity

Canopy Goal-Setting Process

Tree canopy targets should be localized and consider obstacles:

- Development densities
- Land use patterns
- Ordinances
- Climate
- Community



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A Closer Look At Strategies: Canopy & Equity

Canopy Goal Example City of Tacoma, WA

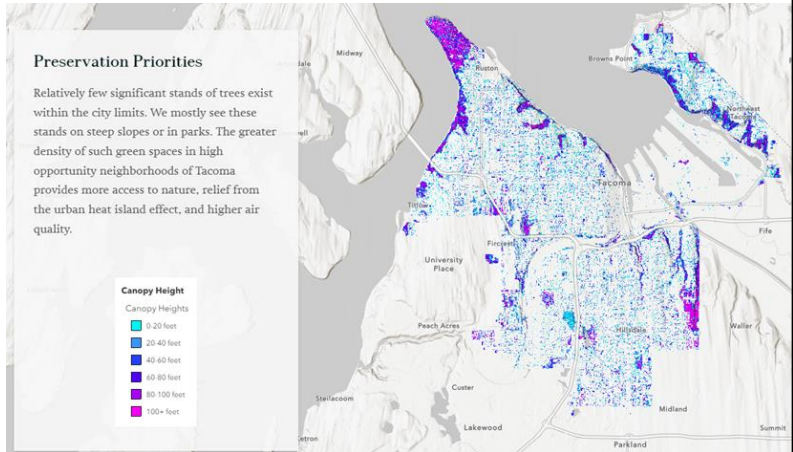
2016 Canopy results = 20% UTC

Comprehensive Plan

- Urban Forest Policy 30% tree canopy cover goal by the year 2030, "30 by 30".

Tacoma Municipal Code

- Requires % canopy per site (up to 30%) in residential development standards section 13.06.020.F.8
- Use of UTC height data to identify preservation areas and potential new "Landmark Trees"



Preservation Priorities

Relatively few significant stands of trees exist within the city limits. We mostly see these stands on steep slopes or in parks. The greater density of such green spaces in high opportunity neighborhoods of Tacoma provides more access to nature, relief from the urban heat island effect, and higher air quality.

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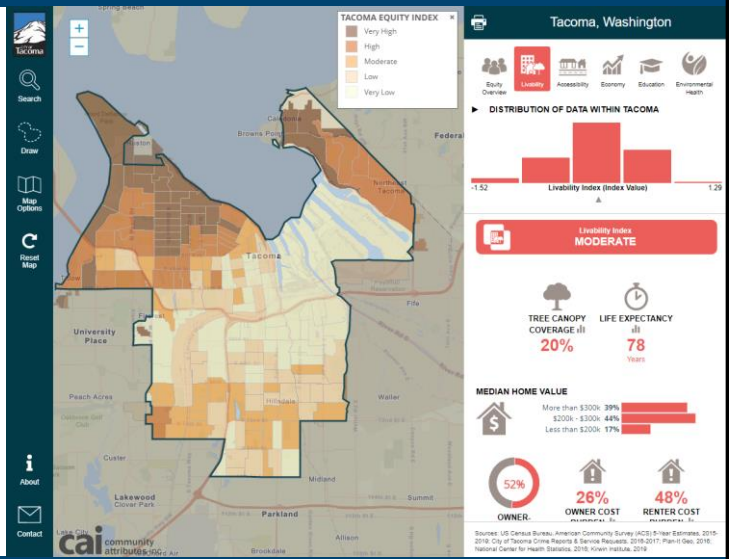
A Closer Look At Strategies: Canopy & Equity

Canopy Goal Example City of Tacoma, WA

Urban Forest Management Plan

- www.TacomaTreePlan.com
- Community surveys, 6 languages
- Engaged partners, implement UFMP
- Tacoma Equity Index

<https://tacomaequitymap.caimaps.info/CAILive/>



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A Closer Look At Strategies: Canopy & Equity

Canopy Goal Example City of Renton, WA

23,306 trees will be needed to get all block groups to a score of 75. See the significant benefits to the community this will create.

Sources: i-Tree Landscape, American Forests. For more details, review our [methodology](#).



CANOPY GOALS FOR TREE EQUITY

Get all block groups to a Tree Equity Score of 75

13 of 73 have a Tree Equity Score below 75.

Total Canopy Added	Annual Ecosystem Service Value	Jobs Supported
1.5 %	\$397,556	170.0

Annual Service Benefits

Carbon Sequestered 335.4 tons	Carbon Monoxide 0.2 tons	Nitrogen Dioxide 1.6 tons
Sulfur Dioxide 0.2 tons	PM10* Pollution 2.7 tons	PM2.5 Pollution 0.2 tons
Ozone 4.1 tons	Runoff Avoided 100,231 m ³	Rain Interception 143,076 m ³

A Closer Look At Strategies: Summary

Summary

ANALYSES

Activity	Target (FY 2025)
Canopy cover	1.5%
Red maple	1.5%
Pine	1.5%
Firehawk maple	1.5%
Red maple	1.5%
Red maple	1.5%
Red maple	1.5%
Red maple	1.5%
Red maple	1.5%
Red maple	1.5%
Red maple	1.5%

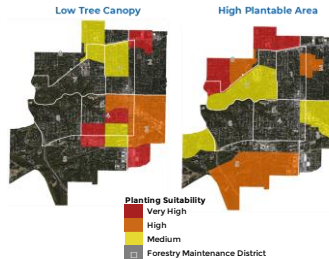
PROGRAMMING



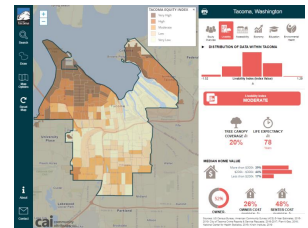
CANOPY GOALS



PLANTING



EQUITY & POLICY



MAINTENANCE

Activity	Cost	Hours	Material	Equipment	Personnel	Notes
Planting 1" diameter or high risk	\$1.00	1.00	\$1.00	1.00	1.00	
Planting 2" diameter or high risk	\$1.50	1.50	\$1.50	1.50	1.50	
Planting 3" diameter or high risk	\$2.00	2.00	\$2.00	2.00	2.00	
Planting 4" diameter or high risk	\$2.50	2.50	\$2.50	2.50	2.50	
Planting 5" diameter or high risk	\$3.00	3.00	\$3.00	3.00	3.00	
Planting 6" diameter or high risk	\$3.50	3.50	\$3.50	3.50	3.50	
Planting 7" diameter or high risk	\$4.00	4.00	\$4.00	4.00	4.00	
Planting 8" diameter or high risk	\$4.50	4.50	\$4.50	4.50	4.50	
Planting 9" diameter or high risk	\$5.00	5.00	\$5.00	5.00	5.00	
Planting 10" diameter or high risk	\$5.50	5.50	\$5.50	5.50	5.50	
Planting 11" diameter or high risk	\$6.00	6.00	\$6.00	6.00	6.00	
Planting 12" diameter or high risk	\$6.50	6.50	\$6.50	6.50	6.50	
Planting 13" diameter or high risk	\$7.00	7.00	\$7.00	7.00	7.00	
Planting 14" diameter or high risk	\$7.50	7.50	\$7.50	7.50	7.50	
Planting 15" diameter or high risk	\$8.00	8.00	\$8.00	8.00	8.00	
Planting 16" diameter or high risk	\$8.50	8.50	\$8.50	8.50	8.50	
Planting 17" diameter or high risk	\$9.00	9.00	\$9.00	9.00	9.00	
Planting 18" diameter or high risk	\$9.50	9.50	\$9.50	9.50	9.50	
Planting 19" diameter or high risk	\$10.00	10.00	\$10.00	10.00	10.00	
Planting 20" diameter or high risk	\$10.50	10.50	\$10.50	10.50	10.50	
Planting 21" diameter or high risk	\$11.00	11.00	\$11.00	11.00	11.00	
Planting 22" diameter or high risk	\$11.50	11.50	\$11.50	11.50	11.50	
Planting 23" diameter or high risk	\$12.00	12.00	\$12.00	12.00	12.00	
Planting 24" diameter or high risk	\$12.50	12.50	\$12.50	12.50	12.50	
Planting 25" diameter or high risk	\$13.00	13.00	\$13.00	13.00	13.00	
Planting 26" diameter or high risk	\$13.50	13.50	\$13.50	13.50	13.50	
Planting 27" diameter or high risk	\$14.00	14.00	\$14.00	14.00	14.00	
Planting 28" diameter or high risk	\$14.50	14.50	\$14.50	14.50	14.50	
Planting 29" diameter or high risk	\$15.00	15.00	\$15.00	15.00	15.00	
Planting 30" diameter or high risk	\$15.50	15.50	\$15.50	15.50	15.50	
Planting 31" diameter or high risk	\$16.00	16.00	\$16.00	16.00	16.00	
Planting 32" diameter or high risk	\$16.50	16.50	\$16.50	16.50	16.50	
Planting 33" diameter or high risk	\$17.00	17.00	\$17.00	17.00	17.00	
Planting 34" diameter or high risk	\$17.50	17.50	\$17.50	17.50	17.50	
Planting 35" diameter or high risk	\$18.00	18.00	\$18.00	18.00	18.00	
Planting 36" diameter or high risk	\$18.50	18.50	\$18.50	18.50	18.50	
Planting 37" diameter or high risk	\$19.00	19.00	\$19.00	19.00	19.00	
Planting 38" diameter or high risk	\$19.50	19.50	\$19.50	19.50	19.50	
Planting 39" diameter or high risk	\$20.00	20.00	\$20.00	20.00	20.00	
Planting 40" diameter or high risk	\$20.50	20.50	\$20.50	20.50	20.50	
Planting 41" diameter or high risk	\$21.00	21.00	\$21.00	21.00	21.00	
Planting 42" diameter or high risk	\$21.50	21.50	\$21.50	21.50	21.50	
Planting 43" diameter or high risk	\$22.00	22.00	\$22.00	22.00	22.00	
Planting 44" diameter or high risk	\$22.50	22.50	\$22.50	22.50	22.50	
Planting 45" diameter or high risk	\$23.00	23.00	\$23.00	23.00	23.00	
Planting 46" diameter or high risk	\$23.50	23.50	\$23.50	23.50	23.50	
Planting 47" diameter or high risk	\$24.00	24.00	\$24.00	24.00	24.00	
Planting 48" diameter or high risk	\$24.50	24.50	\$24.50	24.50	24.50	
Planting 49" diameter or high risk	\$25.00	25.00	\$25.00	25.00	25.00	
Planting 50" diameter or high risk	\$25.50	25.50	\$25.50	25.50	25.50	
Planting 51" diameter or high risk	\$26.00	26.00	\$26.00	26.00	26.00	
Planting 52" diameter or high risk	\$26.50	26.50	\$26.50	26.50	26.50	
Planting 53" diameter or high risk	\$27.00	27.00	\$27.00	27.00	27.00	
Planting 54" diameter or high risk	\$27.50	27.50	\$27.50	27.50	27.50	
Planting 55" diameter or high risk	\$28.00	28.00	\$28.00	28.00	28.00	
Planting 56" diameter or high risk	\$28.50	28.50	\$28.50	28.50	28.50	
Planting 57" diameter or high risk	\$29.00	29.00	\$29.00	29.00	29.00	
Planting 58" diameter or high risk	\$29.50	29.50	\$29.50	29.50	29.50	
Planting 59" diameter or high risk	\$30.00	30.00	\$30.00	30.00	30.00	
Planting 60" diameter or high risk	\$30.50	30.50	\$30.50	30.50	30.50	
Planting 61" diameter or high risk	\$31.00	31.00	\$31.00	31.00	31.00	
Planting 62" diameter or high risk	\$31.50	31.50	\$31.50	31.50	31.50	
Planting 63" diameter or high risk	\$32.00	32.00	\$32.00	32.00	32.00	
Planting 64" diameter or high risk	\$32.50	32.50	\$32.50	32.50	32.50	
Planting 65" diameter or high risk	\$33.00	33.00	\$33.00	33.00	33.00	
Planting 66" diameter or high risk	\$33.50	33.50	\$33.50	33.50	33.50	
Planting 67" diameter or high risk	\$34.00	34.00	\$34.00	34.00	34.00	
Planting 68" diameter or high risk	\$34.50	34.50	\$34.50	34.50	34.50	
Planting 69" diameter or high risk	\$35.00	35.00	\$35.00	35.00	35.00	
Planting 70" diameter or high risk	\$35.50	35.50	\$35.50	35.50	35.50	
Planting 71" diameter or high risk	\$36.00	36.00	\$36.00	36.00	36.00	
Planting 72" diameter or high risk	\$36.50	36.50	\$36.50	36.50	36.50	
Planting 73" diameter or high risk	\$37.00	37.00	\$37.00	37.00	37.00	
Planting 74" diameter or high risk	\$37.50	37.50	\$37.50	37.50	37.50	
Planting 75" diameter or high risk	\$38.00	38.00	\$38.00	38.00	38.00	
Planting 76" diameter or high risk	\$38.50	38.50	\$38.50	38.50	38.50	
Planting 77" diameter or high risk	\$39.00	39.00	\$39.00	39.00	39.00	
Planting 78" diameter or high risk	\$39.50	39.50	\$39.50	39.50	39.50	
Planting 79" diameter or high risk	\$40.00	40.00	\$40.00	40.00	40.00	
Planting 80" diameter or high risk	\$40.50	40.50	\$40.50	40.50	40.50	
Planting 81" diameter or high risk	\$41.00	41.00	\$41.00	41.00	41.00	
Planting 82" diameter or high risk	\$41.50	41.50	\$41.50	41.50	41.50	
Planting 83" diameter or high risk	\$42.00	42.00	\$42.00	42.00	42.00	
Planting 84" diameter or high risk	\$42.50	42.50	\$42.50	42.50	42.50	
Planting 85" diameter or high risk	\$43.00	43.00	\$43.00	43.00	43.00	
Planting 86" diameter or high risk	\$43.50	43.50	\$43.50	43.50	43.50	
Planting 87" diameter or high risk	\$44.00	44.00	\$44.00	44.00	44.00	
Planting 88" diameter or high risk	\$44.50	44.50	\$44.50	44.50	44.50	
Planting 89" diameter or high risk	\$45.00	45.00	\$45.00	45.00	45.00	
Planting 90" diameter or high risk	\$45.50	45.50	\$45.50	45.50	45.50	
Planting 91" diameter or high risk	\$46.00	46.00	\$46.00	46.00	46.00	
Planting 92" diameter or high risk	\$46.50	46.50	\$46.50	46.50	46.50	
Planting 93" diameter or high risk	\$47.00	47.00	\$47.00	47.00	47.00	
Planting 94" diameter or high risk	\$47.50	47.50	\$47.50	47.50	47.50	
Planting 95" diameter or high risk	\$48.00	48.00	\$48.00	48.00	48.00	
Planting 96" diameter or high risk	\$48.50	48.50	\$48.50	48.50	48.50	
Planting 97" diameter or high risk	\$49.00	49.00	\$49.00	49.00	49.00	
Planting 98" diameter or high risk	\$49.50	49.50	\$49.50	49.50	49.50	
Planting 99" diameter or high risk	\$50.00	50.00	\$50.00	50.00	50.00	
Planting 100" diameter or high risk	\$50.50	50.50	\$50.50	50.50	50.50	

Agenda

- 01 Background

- 02 Planning the Urban Forest

- 03 A Closer Look at Strategies

- 04 Future of Urban Forestry

- 05 Take Home Message



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The Future of Urban Forestry: Trends

Growing Trends

- Trees and human health
- Trees and reduced health care costs
- Tree Cities of the World
- Trees and Climate Change, Heat Reduction
- Forest Bathing
- "Earthing" or "Grounding"
- Vibrant Cities Lab
- SFI Urban & Community Forestry Standard
- Job Training, Workforce Development
- 3-30-300, NatureScore, CaaS
- Tree Equity
- UFMP Implementation Tracker
- PG hires UF Climate Consultant



2013 Green industry output - \$196B and 2M jobs



CONSERVATION FINANCE NETWORK

Menu [in](#) [tw](#) [f](#) [rss](#) [q](#)

Urban Forests Prune Health Care Costs

May 22, 2017

Kat Friedrich

Topics: [Forest](#) [Cities](#) [Public Funding](#) [Public Policy](#) [Climate](#) [Habitat](#)

Benjamin Thompson • 111
Urban Forestry Program Manager at Washington State Department of Nat...

Come join my team at the Washington State Department of Natural Resources! As manager of the State Urban & Community Forestry Program, I am excited to announce that we are currently recruiting for FIVE new positions. Applicants can contact me at ben.thompson@dnr.wa.gov with any questions, or message me [here](#).

[#recruiting](#) [#urbanforestry](#) [#washingtonstate](#)

Evergreen Communities Coordinator: <https://lnkd.in/gwX0-5wv>

Urban Forest Inventory Specialist: https://lnkd.in/g7W4k_c

Urban Forestry Technician: <https://lnkd.in/gGandyf>

Urban Forestry Technician (2 positions):

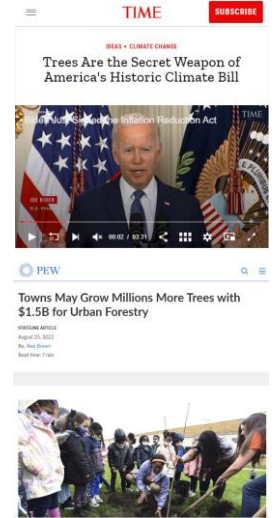
careers.wa.gov **UCF Technician** NRS3
governmentjobs.com • 4 min read

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Future of Urban Forestry: Funding

Funding

- WA 2008 Evergreen Communities Act Reinstated in 2021
 - HB 1216
 - \$550k for 2022 compared to \$82k in 2021
- ARPA Funds
- Inflation Reduction Act
- Build Back Better Framework
- Carbon Offsets
- CA: \$29M in 2022, \$85M+ in 2023
- CA Legislation
 - CA AB 2251 – 10% Increase in Canopy by 2035
 - CA AB 2566 – Conduct School Greening
- CA Climate Investments



Future of Urban Forestry: Role of Planners

City Planners

- Development design and plans
- Tree ordinances
- Recommended tree species
- Standards & BMPs for nursery stock, planting, maintenance
- Align long-range plans, land use, goals with UFMPs
- Street design, sidewalk / curb & gutter repair
- Code enforcement
- Comprehensive plans, neighborhood plans, subarea plans, downtown plans

City General Plan & UFMP Alignment				
Chapter	Goal/Element	Policy/Recommendation	Discussion	UFMP Strategy
Chapter 1: Sustainability	Urban Forest	<ul style="list-style-type: none"> • Improve policies to expand the urban forest. • Continue to enforce the Tree Ordinance. • Policies to encourage and assist residents and community groups to plant and care for trees. 	The UFMP provides guidance for strengthening tree-related policies and regulations and recommends strategies to enhance community tree plantings and stewardship.	A1 A3 B1 B2 C2 D1 D2 E1 E2 E3
	Goal 2-3: Complete Neighborhoods	<ul style="list-style-type: none"> • Policy 2-3.6 Connectivity: street trees to calm traffic and create walkable neighborhoods • Policy 2-3.7 Green Neighborhoods: improve visual quality and access to nature by integrating street trees and landscaping into neighborhood design 	The UFMP identifies opportunities for new tree plantings, the types of species to achieve desired function, and the management necessary to maximize associated benefits.	B1 B2 C2 D1

Agenda

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Take Home Message: Resources



FROM CANOPY TO POLICY

How To Turn Tree Canopy Data Into Effective Tree Policy



New
PlanIT Geo
eBook!

<https://planitgeo.com/library/from-canopy-to-policy/>

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Renton's Tree Ordinance



Balancing tree preservation with growth

- 30% minimum retention in all zones
 - Previously variable rate ranging from 10% - 30%
- Retention based on developable area
- Three (3) tier priority order of retention
 - Landmark and continuous canopy highest
 - Alders/Cottonwoods lowest
- Work early with applicant on site planning
- Flexible setbacks and lot sizes
- Preferred retention in tree protection tracts



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Replanting and Minimum Tree Cover



Trees for every lot!

- Replacement in-lieu of retention may be considered in limited circumstances
- Each lot is subject to new tree credit system (30 credits per net acre)
- Credit value weighted toward larger protected trees and replacement large species trees
- Fee-in-Lieu considered if replacement or supplement is not practical



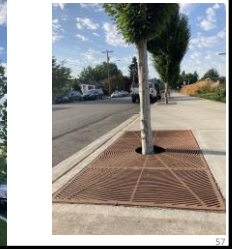
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Street Trees in the Urban Forest



Street trees for all!

- All street classifications in the city have street trees
- Planter strips are minimum 8-feet in width
 - Shared driveway tract easement also includes an 8-foot wide planter strip
- Trees in grates on pedestrian-oriented retail streets
- Flexibility in street design
- City approved street tree list
- Partnership with City Arborist key to making street tree planning work!!



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Penalties



You removed that beautiful tree??!!

- Penalties of up to \$2,000 per tree
- Topping is removal!!
- Replacement based on tree credit value of tree(s) removed
- Fee-in-lieu considered if all replacement trees cannot be accommodated onsite
- Drip line in perpetuity for unauthorized removal during construction



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THANK YOU!

Chris Peiffer

Director of Urban Forestry Consulting
PlanIT Geo, Inc.

www.PlanITGeo.com

ChrisPeiffer@PlanITGeo.com



Matthew Herrera

AICP, Current Planning Manager
City of Renton, WA

MHerrera@RentonWA.gov

