



# SCAPPOOSE *Oregon*

**MONDAY, JUNE 5, 2023 - CITY COUNCIL  
WORK SESSION - TREE CANOPY STUDY 6:00 PM  
COUNCIL CHAMBERS  
33568 EAST COLUMBIA AVENUE  
SCAPPOOSE, OREGON 97056**

Mayor Backus called the work session to order at 6:00 p.m.

**Present:** Mayor Joe Backus; Council President Megan Greisen; Councilor Pete McHugh; Councilor Tyler Miller; Councilor Jeannet Santiago; Councilor Andrew Lafrenz; City Manager Alexandra Rains; Assistant to City Manager Isaac Butman; Community Development Director Laurie Oliver Joseph; City Engineer Chris Negelspace; Associate Planner NJ Johnson; and Legal Counsel Peter Watts.

**Remote:** Councilor Kim Holmes.

**Excused:** City Recorder Susan M. Reeves.

Jack Heffernan, MPP Candidate '23, Portland State University, is here tonight to present the Tree Canopy findings. He went over the staff report. The City of Scappoose is developing its 50-Year Plan, which will include recommended alterations to the Scappoose Development Code. The request for proposals to develop the plan states, "The City requests that an urban tree canopy study be completed, with recommendations on needed updates to Chapter 17.104 – Street Trees and 17.140 – Public Land Tree Removal, and/or recommendations on potential new Code sections addressing the tree canopy." The tree canopy study was included in the 50-Year Plan scope of work at the request of a former City Councilor in order to understand the percentage of tree canopy coverage that the City currently has and to know what benefits an increased canopy coverage might bring. During the Scappoose Bay Watershed Council's June 2022 meeting, they discussed the benefits of a robust tree canopy coverage. The benefits include protecting biodiversity, managing stormwater, street cooling, particle filtering, stress reduction, and increased neighborhood property values. At that same meeting, arborist Todd Prager, who has conducted tree assessments in cities throughout the Pacific Northwest, outlined three steps when conducting urban forestry planning. Prager recommended that a community take stock of existing conditions, which can be accomplished through efforts like a tree canopy survey. He then recommended developing goals and desired changes, such as recommended development code alterations; and, finally, specific steps to achieve those goals through tools such as regulatory requirements and grants. This assessment responds to the first step. The assessment featured i-Tree technology, which was recommended by Prager. The i-Tree tool, offered by the United States Department of Agriculture Forest Service, allows users

to define reference areas or use preset boundaries before defining various coverage types such as grass areas, parking lots, water, and tree canopy. After classifying a coverage type, the user adds another location point, and the application then directs the user to another random point within the boundary for the user to classify. Like opinion polls, the application collects the overall sample to provide coverage estimates. If the user classifies 500 points, the expected error rate is 2.2 percent. For 1,000 points, users can expect an error rate of 1.5 percent. This assessment consisted of 1,289 points. In addition to types of areas, the application can provide data points about economic benefits of types of carbon sequestration as well as air pollution benefits and hydrological benefits specific to Scappoose's natural environment. The Council heard a presentation of the project during a work session on March 6, 2023. Analysis: Trees provide 17.05 percent canopy coverage within the 3.42 square miles that encompass the Scappoose City Limits. The project identified 220 of the 1,289 points as trees. Exhibit A of the staff report lists the coverage percentage and total number of points for each coverage class: shrub/grass/herbaceous (34.42 percent), soil/bare ground (18.22 percent), tree (17.05 percent), impervious buildings (10.39 percent), impervious other (5.35 percent), parking lots (4.11 percent), sidewalks (1.4 percent), and water (.23 percent). Coverage in Scappoose provides a total of \$2,449,798 in savings (see Exhibit C in the staff report). This includes \$69,449 in carbon sequestered annually in trees and \$2,205,367 stored in trees (non-annual). In the context of carbon, sequestration refers to the process of removing carbon from the air and storing it. Storage is the quantity of carbon stored at a given time. Between the sequestration and storage, trees in Scappoose sequester 391.62 tons of carbon each year and store a total of 12,435.89 tons. For comparison, based on the average carbon footprint of a household in the U.S., as determined by researchers at the University of Michigan, Scappoose's 2,889 households emit roughly 140,000 tons of carbon dioxide each year. Notably, this reference does not account for carbon emissions from other uses such as vehicles, air flight, or agriculture, so a rate of overall carbon offset cannot be calculated at this time. Not many cities in Oregon or Washington have completed a tree canopy coverage study; however, Exhibit D of the staff report does include a short list of comparables. The largest tree coverage for the cities identified for comparison is Lake Oswego, a 10.78-square-mile city with 47.1 percent tree canopy coverage. The city with the most similar tree canopy to Scappoose is Tacoma, a 49.71-square-mile city with 19 percent coverage. Milwaukie is the identified city that is the most similar to Scappoose in size, with 4.98 square miles covered by a 26-percent tree canopy. The assessment also includes a change-over-time analysis. This analysis employs the Google Earth application, which allows users to compare past satellite images with the classification in i-Tree and adjust as needed. This assessment compared the city's current coverage with 2013. The tree canopy coverage in 2013, at 17.71 percent, was slightly higher than the current canopy coverage (see Exhibits A and B of the staff report). The Scappoose tree canopy coverage is well below the typically recommended coverage for a city. American Forests, a national nonprofit conservation organization founded in 1875, set a recommendation in 1997 of 40 percent tree canopy coverage. It was based on a large study and has provided a guide for many cities. But the organization has recently offered a more nuanced approach, advising that cities optimize canopy coverage by weighing desired benefits against associated costs. Community-specific goals may depend on several circumstances, such as climate, geography, specific environmental concerns, local preferences, desired ecosystem services, land cover and land use patterns, and

resources, among other factors. American Forests lists numerous cities nationally, along with their current coverages and coverage goals. On the low end of the goal range are San Francisco and Las Vegas, each of which have canopies under 15 percent at the time of assessments and with goals of 20 percent. On the high end is Fort Bragg, North Carolina, with 67.1 percent coverage and a goal of 70 percent.

Recommendation: Prior to developing goals and desired changes, the city may wish to conduct a tree inventory analysis, which would identify the quantity of each type of tree located within city limits and optimize the benefits of canopy coverage. Then, after developing goals, the city may identify changes such as development code alterations. The city would then be able to plan specific steps, such as regulatory requirements and grants, to achieve those steps.

EXHIBIT A

Tree Canopy Coverage Breakdown

Coverage Class	Points (out of 1,000)	Coverage percentage	More or less coverage than 2013
Tree	220	17.05	
Shrub/Grass/Herbaceous	444	34.42	
Impervious Buildings	134	10.39	
Impervious Other	69	5.35	
Impervious Road	104	8.06	
Parking lots	53	4.11	
Soil/ bare ground	235	18.22	
Sidewalks	18	1.4	
Water	3	.23	Equivalent

Coverage Breakdown (2013)

Coverage Class	Points (out of 1,000)	Coverage percentage
Tree	228	17.71
Shrub/Grass/Herbaceous	456	35.43
Impervious Buildings	129	10.02
Impervious Other	66	5.13
Impervious Road	103	8.00
Parking lots	49	3.81
Soil/ bare ground	236	18.34
Sidewalks	17	1.32
Water	3	.23

EXHIBIT B

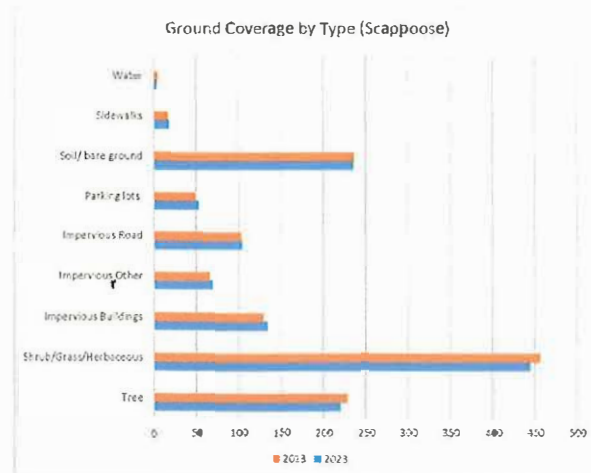


EXHIBIT C

Tree Benefit Estimates Breakdown

1. Carbon

Description	Carbon (Tons)	CO <sub>2</sub> Equivalent (Tons)	Value
Sequestered Annually in Trees	407.20	1,493.07	\$69,449
Stored In Trees (non-annual)	12,930.86	47,413.14	\$2,205,367

2. Air Pollution

Description	Amount (lbs.)	Value
Carbon Monoxide Removed Annually	593.43	\$396
Nitrogen Dioxide Removed Annually	2,522.88	\$387
Ozone Removed Annually	11,340	\$14,183
Sulfur Dioxide Removed Annually	853.73	\$35
Particulate Matter less than 2.5 microns removed annually	691.80	\$50,401
Particulate Matter greater than 2.5 microns and less than 10 microns removed annually	4,747.07	\$14,878
Total Air Pollutants Removed	20,748.91	\$80,280

3. Hydrological

Description	Amount (Mgal)	Value
Avoided Runoff	10.60	\$94,702

Total Savings from Trees:

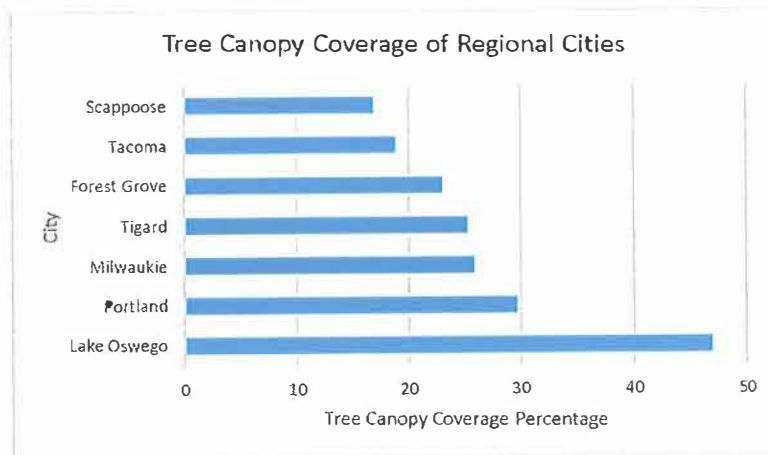
\$2,449

*Note: Estimates of air pollution removal, carbon sequestration, and hydrologic impacts are based on the area of tree cover. Estimates of carbon storage and annual sequestration are based on national and state data and methods from the U.S. Department of Agriculture. Estimates of avoided runoff, transpiration, and rainfall interception are based on the area of tree cover and local weather data.*

# EXHIBIT D

## Tree Canopy Coverage of Regional Cities

City	Tree Canopy Coverage (Percent)	Coverage Goal (Percent)	Year Assessed	Target Date	Goal Duration (Years)	Area (Square miles)	Population
Lake Oswego	47.1	40	N/A	N/A	N/A	10.78	40,731
Portland	29.8	33	Ongoing	Ongoing	Ongoing	133.45	652,503
Milwaukie	26.0	40	2014	2040	36	4.98	21,119
Tigard	25.4	40	2009	2047	38	12.67	54,539
Forest Grove	23.2	40	2016	2035	19	5.83	26,784
Tacoma	19.0	30	2010	2030	20	49.71	219,346
Scappoose	17.05	N/A	2023	N/A	N/A	3.43	8,010



*Note: The list of comparable cities above is based on a non-exhaustive list of cities in the Pacific Northwest region that have recently completed a survey of their tree canopy.*

Councilor Holmes would like to look into what are the best practices when planning for growth and how other communities achieve their tree canopy goals.

Legal Counsel Peter Watts gave an overview of what other cities that he has worked with do.

Mayor Backus asked about older developments that don't have trees.

Community Development Director Laurie Oliver Joseph replied we haven't gotten into that realm of looking at this yet, but that would be a follow up discussion.

There was a discussion on how this would affect the timeline if it was incorporated into the 50-year plan.

Council President Greisen talked about the tree inventory analysis on a Council goal.


Councilor Holmes talked about extending this to residential and how when she lived in Portland Friends of Trees would come around and ask if they would like residents to plant a tree. She stated if there is a way to earmark some money to support our residential expansion for that relationship. This is something to consider for goal setting.

Legal Counsel Peter Watts explained Friends of Trees will come to other cities. He stated that he doesn't know if Jack has any more capacity on this project or whether he wants to but if he downloaded the data that he gathered to Friends of Trees, he could very easily see them come to Scappoose.

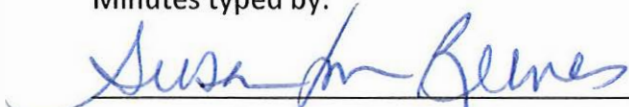
Council thanked Jack for all of his work on this.

### **Adjournment**

Mayor Backus adjourned the work session at 6:42pm.

  
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Mayor Joseph A. Backus

Minutes typed by:

  
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City Recorder Susan M. Reeves, MMC