



Seattle

QUICK FACTS

WHO

Seattle Department of Transportation Street Use and Urban Forestry Division

STAFF

34 staff members, including an urban forestry manager, senior landscape architect, city arborist, operations manager, administrative specialist, administrative staff analyst, arboriculturists, tree crew supervisor, lead tree trimmers, tree trimmers, landscape supervisor, senior gardeners, gardeners and irrigation specialists

CANOPY

Approximately 150,000 street trees; 40,000 actively maintained with 110,000 regulated but privately maintained

KEY FORESTRY TASKS

Street tree and landscape maintenance, landscape architectural design and plan review, emergency services, permitting, regulation enforcement, volunteer management and education

PARTNERS

Seattle Parks and Recreation, Seattle City Light, Seattle Public Utilities, Department of Planning and Development, Fleets and Administrative Services, Seattle Center, Office of Sustainability, Forterra, Plant Amnesty and Seattle Audubon





KEY TOPICS

- Citywide Greening Initiative
- Neighborhood Improvement Projects
- Public-Private Partnership
- Public-Public Partnership
- Stormwater and Watershed Management
- Tree-care Training Program
- Urban Forest Management Plan

SEATTLE, Washington, sits on a narrow strip of land between Puget Sound on the west and Lake Washington on the east with the Olympic and Cascade Mountains looming in the distance. This orientation gives the city a mild marine climate, ideally suited for vegetation to thrive. In addition, in 1902, the city hired the famed Olmsted Brothers landscape architecture firm to prepare a plan for the city's parks and parkways, which was adopted by the City Council in 1903.¹ Despite these foundations for a vibrant, healthy urban forest, Seattle saw its tree canopy coverage decrease from 40 percent in the 1970s to 18 percent in 2007.² In the last decade, Seattle has been trying to transform itself into a model green city.

PARTNERSHIPS FOR THE URBAN FOREST

Seattle's emergence into the national spotlight for green initiatives is often linked to former-Mayor Greg Nickels, who in 2005 began a campaign to encourage mayors across the country to adopt the climate change goals of the Kyoto Protocol on a city level. Just two years later, the 500th mayor signed onto the Nickels-led U.S. Conference of Mayors Climate Protection Agreement.³ In reality, though, Seattle's sustainability efforts began earlier, notably under Nickels' predecessor, Mayor Paul Schell, whose background was city planning and development. Schell and others started the ball rolling for Nickels to solidify. As Jill Simmons with the city's Office of Sustainability and Environment told a *Seattle Met* reporter in 2008, "The city has been committed to sustainability for a long time. It's not like Seattle magically began looking at climate change in February 2005. But the mayor's Climate Protection initiative really gave everything a kick in the butt."⁴ Over the next few years, the city would institute a number of management plans designed to enhance Seattle's greenspaces.

→ KEY POINT

With three-quarters of Seattle's land privately owned, it's important to get community involvement in urban forestry initiatives.



In 2004, under prompting from Nickels, the city of Seattle and the nonprofit Forterra (then-known as Cascade Land Conservancy) joined together to create the Green Seattle Partnership. This public-private partnership is based around a 20-year strategic plan to create "a healthy, livable city with a sustainable urban forest." The plan identifies 2,500 acres of greenspace managed by Seattle Parks and Recreation — Seattle has more than 6,000 acres of parkland in total — for restoration by 2025 and will focus specifically on addressing invasive plant issues plaguing the city and planting a sustainable, near-native forest for the future. It's estimated that without management, 70 percent of Seattle's forested land will be ecologically dead in 20 years due to invasive plants.⁵

Kory Kramer, Forterra's Green Cities program manager, describes how Green Seattle's restoration work plan began with habitat "Treeiage," developed by Seattle Parks and Recreation, which involves breaking down the 2,500 identified acres

Student Conservation Association volunteers on Green Seattle Day

into small units for individual management strategies. These strategies are then built around four key phases of restoration work — removing invasives, doing a second sweep for invasives while conducting planting activities, short-term maintenance and long-term maintenance. The important next step is to assign costs to each stage and type of area, creating a funding target. The success of the Green Seattle Partnership has not only spurred five other Puget Sound communities to adopt the Green City model, but New York City has also used the partnership as a model.

One of the most interesting things about this work is that it's being conducted mainly by volunteers. "If we want to look at what's unique about the Green Cities program — and we hear it over and over again from our city partners — its biggest strength is getting the community involved in this work," says Kramer. "The Green Seattle Partnership last year had well more than 80,000 volunteer hours dedicated to restoration work on the parks." Adds Mark Mead, senior urban forester for Seattle Parks and Recreation, "Another measure of our success is that through direct donations, grants and outside sources, the citizens and nonprofit partners have matched Parks funding at a two-for-one level. This is truly an amazing program."

Mead attributes the success of the program to the direct application of the Urban Forest Sustainability Model that was presented in the January 1997 issue *Journal of Arboriculture* by leading urban foresters. The model outlines the three elements essential for a sustainable, beneficial urban forest: a healthy forest and other vegetation, community-wide support and a comprehensive management approach. It also emphasizes the need for periodically assessing the status of each of the elements to ensure that sustainability goals are achieved.⁶ "The model emphasizes that a successful urban forestry program must know the science behind what is happening in the forest, or our Treeiage; it must

know who is managing the forest with what resources; and it must fully engage the community in the work and advocacy. The Green Seattle Partnership works on all three of these elements at the same time, assuring its success."

While planting projects are included in the Green Seattle plan, these volunteers are also helping plant trees as part of Seattle reLeaf. Seattle reLeaf is a city program devised as a way to help Seattle achieve the canopy goals set forth in its first-ever urban forest plan, the 2007 Urban Forest Management Plan. In the plan, Seattle identifies that by 2037, the canopy cover in the city should reach 30 percent through the addition of an estimated 649,000 new trees on private property, in parks, on commercial property and industrial sites and more.⁷

With approximately 74 percent of Seattle's land privately owned, the city identified a need to engage residents in planting efforts outside of the park work happening with Green Seattle. Since 1996, the city's Department of Neighborhoods has provided more than 17,000 trees to more than 600 neighborhood groups for planting through its Neighborhood Matching Fund's Tree Fund program.⁸ After the release of the Urban Forest Management Plan, this program morphed into Seattle reLeaf's Trees for Neighborhoods, which provides free trees to Seattle residents each fall for planting on private property.

The Trees for Neighborhoods program works hand-in-hand with Seattle's Tree Ambassador program, which trains residents in the basics of urban forestry, leadership and community organizing with the goal that they will engage their individual communities around urban forest work, such as invasives removal, tree plantings and pruning. Kramer relates that Seattle's more than 130 Forest Stewards and 40 Tree Ambassadors contribute thousands of valuable volunteer hours to urban forestry work every year.

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MARK MEAD
Senior Urban Forester
City of Seattle

80,000

volunteer hours
dedicated to park
restoration work
in 2011

INVOLVED CITY DEPARTMENTS

Neighborhoods are also receiving trees through the Department of Transportation's Bridging the Gap initiative. While Bridging the Gap, funded by a nine-year, \$365 million levy, is primarily designed to address transportation maintenance and improvements,⁹ the initiative's Community Tree Program works with neighborhoods to plant more than 800 new street trees per year that will be maintained by the Department of Transportation.¹⁰

→ KEY POINT

The city's electric and water utilities are important partners in Seattle's urban forestry work.

The city's publicly owned utility, Seattle City Light, has also played a significant role in expanding and maintaining Seattle's urban forest. Through its urban tree replacement program, Seattle City Light has planted 7,860 trees along its power lines in the metro Seattle area since 2000 and more than 40,000 native shrubs and bushes along rights of way to help restore vegetation cleared for utility line work and maintenance. Seattle City Light also offers urban landscape tree certificates to residents to offset its tree removals and partners with the Department of Transportation on its neighborhood tree planting work.

Seattle City Light has been invested in the urban forest for a long time. The utility adopted its first conservation program, Kill-a-Watt, back in 1973 and has been working with nonprofit The Nature Conservancy since the early 1980s to protect wildlife habitats. To date, Seattle City Light has purchased more than 10,000 acres to protect wildlife habitat, especially that of the various salmon and trout species in the Skagit and Tolt watersheds. As Lorraine Loomis with the Swinomish Indian Tribal Community's Fisheries Department related in 2009, "Whether it has been through the purchase of strategic parcels for protection of important habitats, its water

Montlake Cut in
Lake Washington



management strategies or its funding of research or restoration projects vital to the ongoing protection of anadromous salmonids, City Light has demonstrated that a public utility can provide a reliable source of energy while at the same time conserving and enhancing natural resources.”¹¹

Seattle Public Utilities (SPU), which encompasses the city’s water and engineering activities, is another essential Green Seattle partner and is working towards greener solutions for utility demands. Each year, Seattle’s stormwater carries more than 8,200 tons of toxic metals and volatile chemicals into the city’s waterways. In addition, in 2010, 190 million gallons of combined raw sewage and stormwater spilled into Seattle’s waterways. To address the problem, Seattle worked with federal and state regulators to develop a cost-effective and environmentally beneficial plan to solve its dual problems of stormwater and sewage, instead of just addressing one of the issues. This 2012 agreement is expected to save the city \$375 million over the next 13 years.¹²

The new agreement builds on many plans already underway by SPU, such as its Combined Sewer Overflow (CSO) Reduction Plan. As part of a 2010 amendment to the CSO plan, SPU began a pilot project in the city’s Ballard Basin to study the effectiveness of green infrastructure — rain gardens, green roofs, cisterns and more — as a stormwater control.¹³ Recently, the city began monitoring the performance of Ballard’s new roadside rain gardens¹⁴ and plans to use the lessons learned from this pilot project to implement full-scale green projects in other drainage basins in the city.

To engage residents in mitigating the city’s CSO problems, SPU created Residential RainWise to encourage Seattleites to install green infrastructure on their property. Through the program, residents in select CSO drainage basins can receive rebates from the city for installing rain gardens and cisterns. RainWise also encourages residents to plant trees, reduce paved area and use compost and mulch to help with stormwater retention.¹⁵

7,860

trees have been planted by Seattle City Light along power lines since 2000.

Landscaping in planting strips



SDOT encourages property owners to plant gardens in planting strips between the sidewalk and street area.

PLANS FOR THE FUTURE

A hallmark of Seattle's urban forest successes lies with the city's cooperative efforts. For decades, an interdepartmental team representing various parties concerned with Seattle's trees has been meeting to make sure all departments are on the same page. The Urban Forest Management Plan further solidified the collaboration among all of the different departments responsible for Seattle's urban forest. Urban forester Mead relates that there's good communication today among all of the different parties, resulting in a well-coordinated urban forest effort. As with the Green Seattle Partnership, the Urban Forest Management Plan is based upon the Urban Forest Sustainability Model.

KEY POINT

Updating the city's tree ordinances dealing with both street and private trees will help protect the urban forest in the coming years.

New LED lights on
Lake Washington Boulevard



ALLIE GERLACH/SDOT

Nolan Rundquist, city arborist with the Seattle Department of Transportation, mentions that three different assessments of Seattle's urban forest have been completed over the years, but each contractor used a different methodology. The city is currently working on updating the Urban Forest Management Plan in an effort to assess the city's progress in the last five years and part of this involves analyzing the different assessments to provide a more uniform look at Seattle's forest.

"We'll have more definitive and specific information and the ability to actually gauge how successful we've been in managing this forest," Mead says. "We feel really comfortable that we're going to find out some good info. Probably some bad [info], too, but I think we're going to be pretty happy with what we find."

Like many other cities, Seattle is also struggling with a lack of age distribution in the urban forest. "We planted pretty well up to 1930s. Then, we stopped planting," Mead says. "The forest was basically planted 80 years ago, so now they're falling down. We had pretty poor management up until 10 or 15 years ago."

Finding the funding for a robust management and maintenance program — so essential to ensuring the long-term health of the urban forest — has

also been difficult, adds Rundquist. “We’ve been able to add another maintenance crew to our staff, but we could definitely use more staffing for maintenance,” he says.

Updating the tree ordinances is another key to maintaining the health of the urban canopy. As Rundquist mentions, the city’s ordinance that deals with street trees hasn’t been updated since 1962, and the Tree Protection code, which deals with private property trees, hasn’t been updated in a decade.¹⁶

“We’ve made a lot of strides as far as tree protection in public places,” says Rundquist. “We’ve implemented tree protection zones. We have posters that display the values of trees when a construction project is underway so that people will stop and think, ‘I can’t damage this tree

because it’s worth \$20,000.’ We’re making good inroads in making sure the value of trees is out there in the development community, but a more involved education effort is needed to reach out to all of the constituents. If we’re going to grow the canopy, we really need to market the benefits and desirability of having canopy.”

Despite its challenges, the city is making tremendous progress in restoring Seattle’s urban forest, Mead says. “Certainly not getting the total amount of money we want to invest is hindering our work, but using what we have, we’re doing outrageously well,” he says. “The economy has hurt us just like everybody else, but we are continuing to thrive despite that. Seattleites love their trees.”

“If we’re going to grow the canopy, we really need to market the benefits and desirability of having canopy.”

NOLAN RUNDQUIST
City Arborist
City of Seattle

SPECIAL THANKS TO:

David Bayard,
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Parks and Recreation

Nolan Rundquist,
city arborist, City of
Seattle Department
of Transportation

Seattle skyline



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