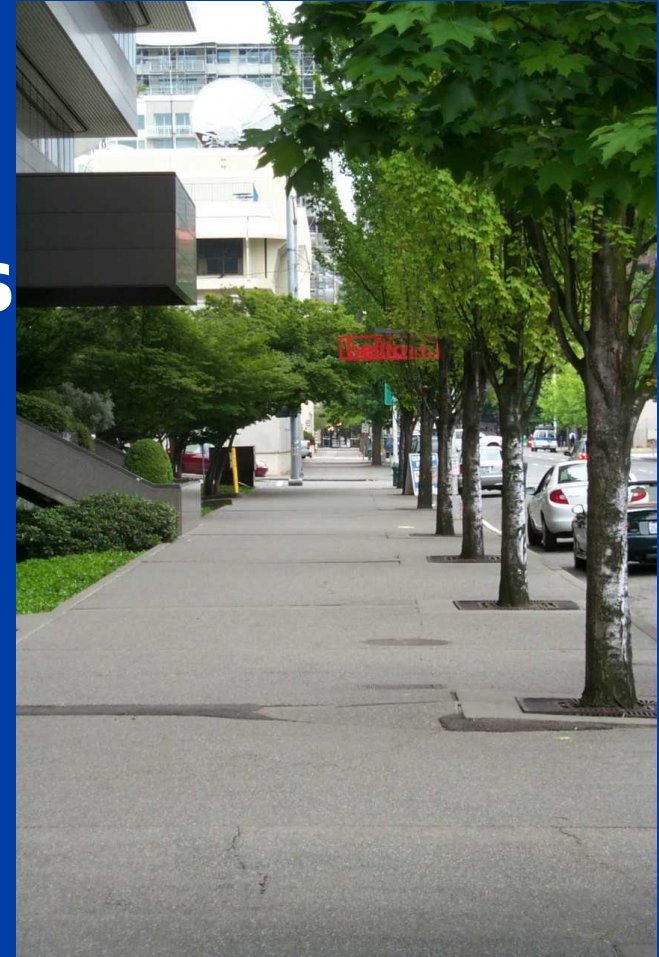


Protecting Seattle's Trees from Common Pests and Preparing for Invasive Insects



Our vision, mission, and core values

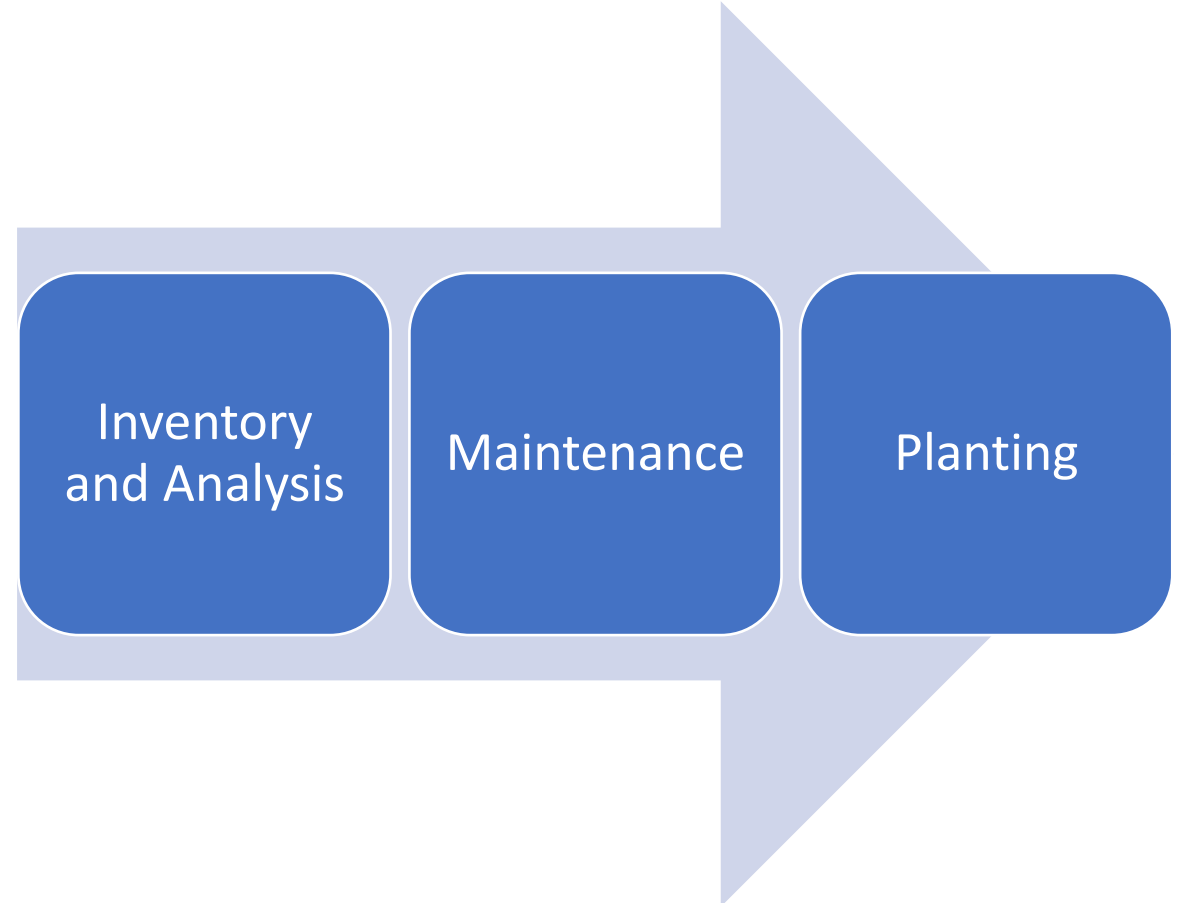
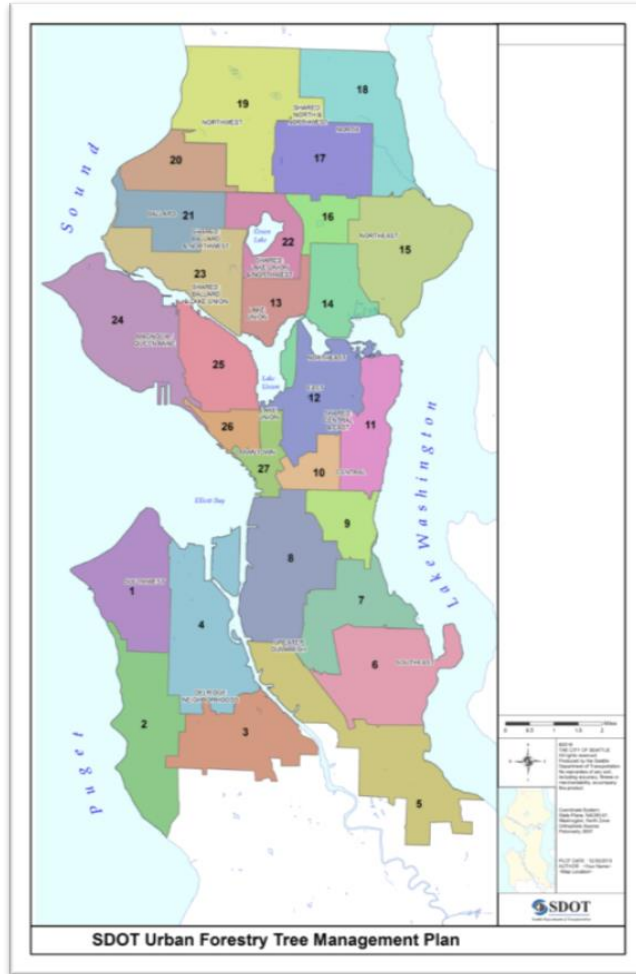
Vision: Seattle is a thriving equitable community powered by dependable transportation

Mission: to deliver a transportation system that provides safe and affordable access to places and opportunities

Committed to **6 core values:**

- Equity
- Safety
- Mobility
- Sustainability
- Livability
- Excellence

SDOT Management Units at-a-glance



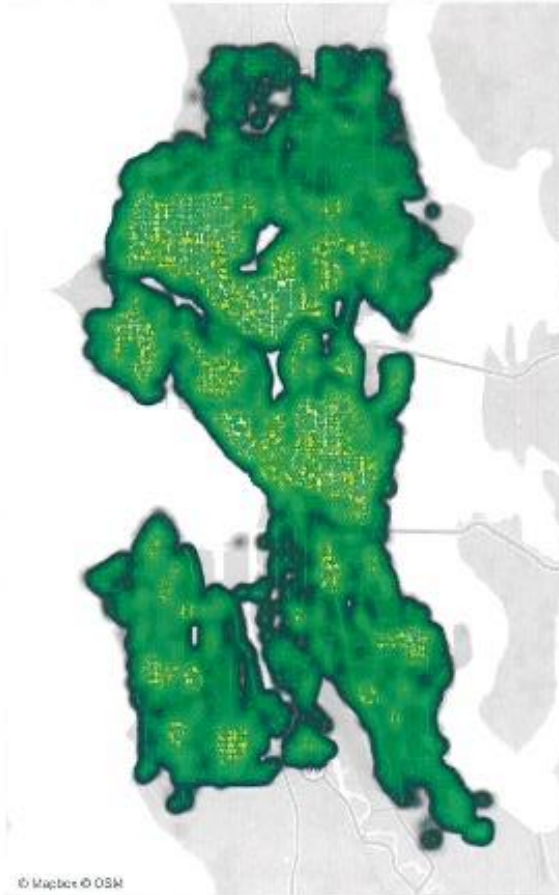


In 2016, SDOT launched our Street Tree Management Plan. This program gives us the opportunity to engage with Seattle's street trees with an innovative approach. To do this, we created 27 management units throughout Seattle and will focus efforts in a minimum of three units per year. We have assessed 21 of 27 management units since 2016. [Data Source](#)

Through effective inventorying, maintenance, replacement, and community involvement, we hope to ensure the health, preservation, and expansion of Seattle's urban forest. Trees improve our health and environment and make our neighborhoods friendlier places to live, work, and play.

The City of Seattle's goal, as outlined in the Urban Forest Stewardship Plan, is to increase Seattle's tree canopy cover to 30 percent by 2037. That's why, when SDOT must remove trees, we are committed to replanting 2 trees for every 1 removed. Tree replacement planting is funded by the 9-year Levy to...

Top 25 Trees by Genus



Trees	Average Diameter	Species	CO2 Lbs/Yr
165,107	8	712	28M

CO2 Sequestration

Seattle calculates the carbon dioxide sequestration and building energy savings provided by individual trees. Planting billions of trees across the world is one of the biggest and cheapest ways of taking CO2 out of the at...

Condition Rating

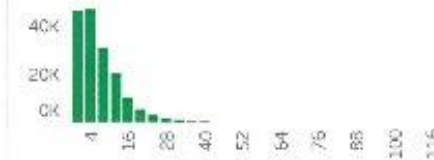
[Rating System](#)

SDOT maintains a tree rating system to assess the life of the tree inventory.



Tree Diameter

Distribution of Seattle's trees (in inches).



Common Street Tree Pests & Issues

Most common Seattle tree pests

Anthracnose

Common on dogwood, London Planetree, Maple

- In spring, fungus in diseased tissue produces spores, which spread by rain or wind to cause new infections.
- In spring as leaves expand, they turn brown as they emerge from buds.
- Blotches enlarge and grow together ultimately covering much of the leaf surface.
- If severe, infected leaves fall and the entire tree can be defoliated except for terminal leaves, creating the “witches broom” effect.
- The disease is more severe in wet springs

Pacific Northwest Pest Management Handbooks



Necrosis following the leaf vein.

Photo by Jay Pscheidt, PNW Pest Management Handbooks

Most common Seattle tree pests

Pear Trellis Rust

- First major instance in Seattle was in Jose Rizal Park in the mid 2000's
- First observed in Bellingham in 1997
- Aeciospores from Pear (summer host) leaves infect Juniper
- Teliospores from Juniper (winter host) infect Pear in spring
- Juniper fruiting bodies can release spores over multiple years.
- Juniper should be minimum 1000' feet away



Most common Seattle tree pests

Powdery Mildew

Common on dogwood, serviceberry, cherry, crabapple, maple

- A fungi requiring a live host to grow and reproduce.
- We see the white dusty appearance of vegetative structures and spores.
- Underneath the leaf is penetrated where the host is intercepting nutrients
- Compromises vigor and can result in defoliation and cosmetic damage.

- Pacific Northwest Pest Management Handbooks



Powdery mildew on dogwood.

Photo by Robin Rosetta, 2006. PNW Pest Management Handbooks

Most common Seattle tree pests

Aphids

Common on lindens and maples... lots of trees in Seattle

- Overwinter in the egg stage and hatch early in the spring.
- Later in the spring, live in colonies on the most succulent plant tissues.
- Can compromise the vigor of the host.
- Leaf and shoot distortion can occur.
- Produces honeydew, that encourages black sooty mold and becomes a sticky nuisance on decks, cars, and any underlying surface.

Pacific Northwest Pest Management Handbooks



Green peach aphid feeding on leaf. Note the mouthparts. M. R. Bush, WA State University

Most common Seattle tree pests

Bronze Birch Borer

Becoming more common in Seattle. *Betula* is main host here in Seattle but can affect *Fagus*. 4% of population 18% of removal permits

- Larvae hatch from eggs laid on surface
- Bore into branches and trunk
- Feed on cambium (transport system)
- Disruption eventually kills the tree

Oregon State Extension "Homeowner Guide to Managing Bronze Birch Borer"

Adult bronze birch borer



Photos courtesy of Nolan Rundquist

Most common Seattle tree pests

Dutch Elm Disease (DED)

Simplified...

- Spread by bark beetles, via fungal spores, from tree to tree
- Spores in the feeding site eventually grow in the xylem
- Eventual spread of spores throughout tree and full vascular disruption

Pacific Northwest Pest Management Handbook



Adult European Beetle

Photos courtesy of Nolan Rundquist

Potential Street Tree Pests & Issues

Emerald Ash Borer Why Form a Plan?

Our priority pests aren't here yet,
but will be soon

**Currently 4,478 inventoried ash
street trees (#9 – 182,014 total)**

Spread from urban to rural

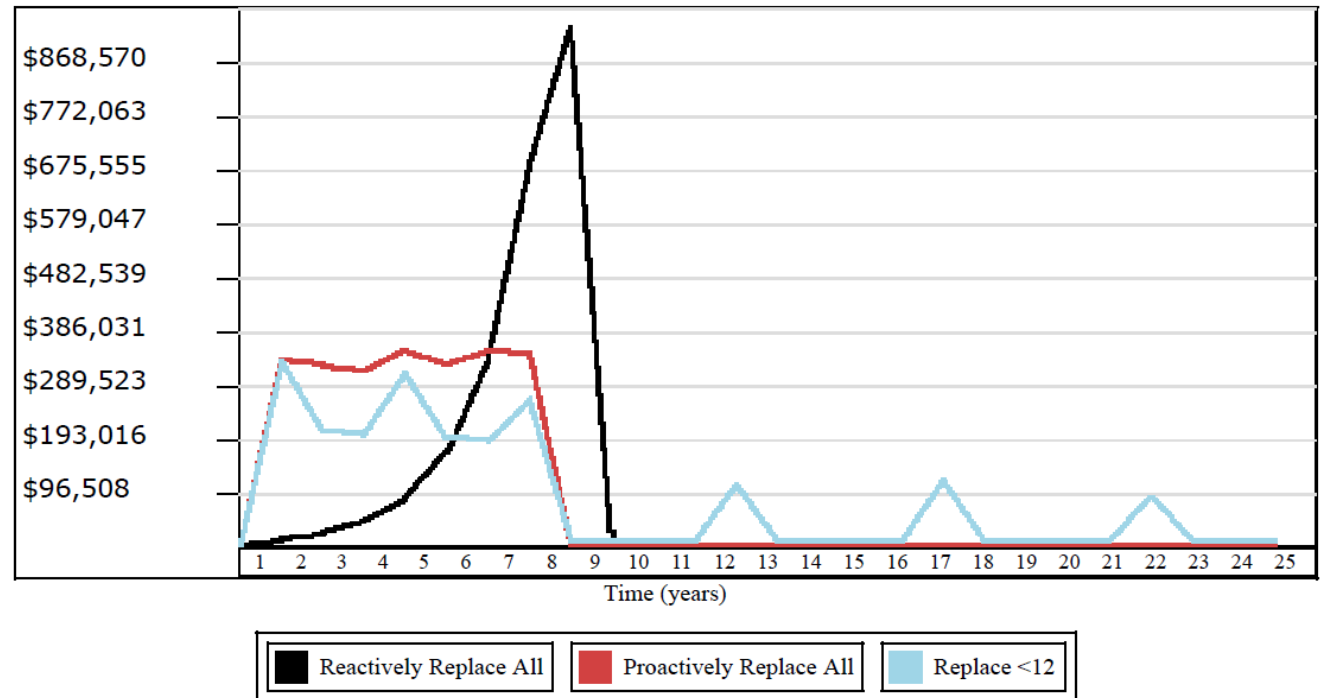
More expensive and destructive to
wait

Priority for state & federal
regulatory authorities

Creation of Washington State Urban
Forest Pest Readiness Playbook

Emerald Ash Borer Cost Estimate for Seattle

Annual Cost Comparison in Today's Dollars
Over Time With a 3% Discount Rate



Purdue University EAB Cost Calculator

Emerald Ash Borer

- National Priority Pest
- Damage across eastern half of the US
- Disproportionately affects communities and corridors
- Impact native ash
- We need to be 'good neighbors'



Photo Credit: Washington Invasive Species Council

Asian & Citrus Longhorn Beetle

- Over 40 tree hosts
- Large exit holes compromise structural integrity of tree
- Public safety element
- Citrus LB eradicated in Tukwila



Photo Credit (both photos): Bugwood.org

Sirex Woodwasp

- Mainly impacts pines, firs, spruce
- Present in NE US
- Could present huge issue with Parks and private property
- 2016 Tree Canopy Analysis (28%)
- Would devastate state forests
- No known treatment that private companies can use



Photo Credit: Steven Valley, Oregon Dept of Agriculture

And many more...

Asian & European Gypsy Moth

Winter Moth

Spotted Lanternfly

Washington Invasive Species

Council Priority Pests


WASHINGTON STATE
DEPARTMENT OF TRANSPORTATION
WASHINGTON INVASIVE
SPECIES COUNCIL

FILTER SPECIES

SORT BY: Sort Results By ▾

Type

- Invasive Animals
 - Amphibians and Reptiles
 - Fish
 - Mammals
 - Shellfish
 - Small Marine Life
- Invasive Insects
- Noxious Weeds
 - Aquatic
 - Terrestrial
- Wildlife Diseases

RESET

Invasive Species

Take Action

Campaigns

About

Contact Us

Priority Species



Apple Maggot



Asian Giant Hornet



Brown Marmorated
Stink Bug



Citrus, Asian, and
Red-Necked
Longhorned Beetles



Emerald Ash Borer



European Chafer

Invasive Pest Response Plan: A Multitool Approach

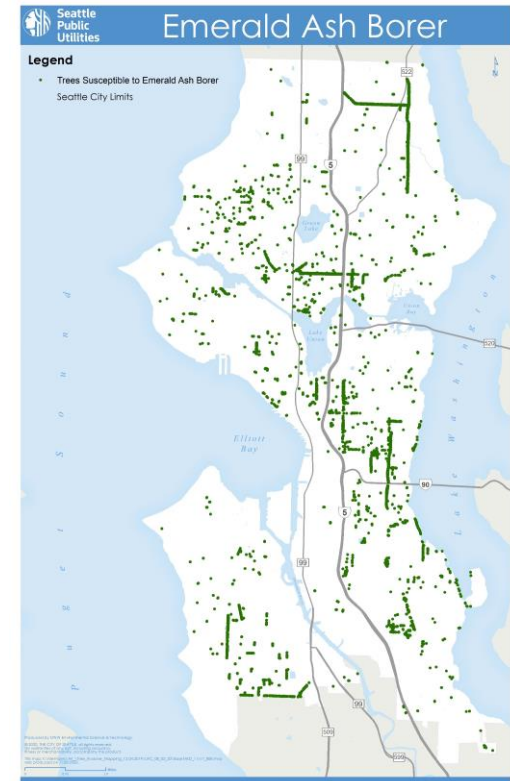
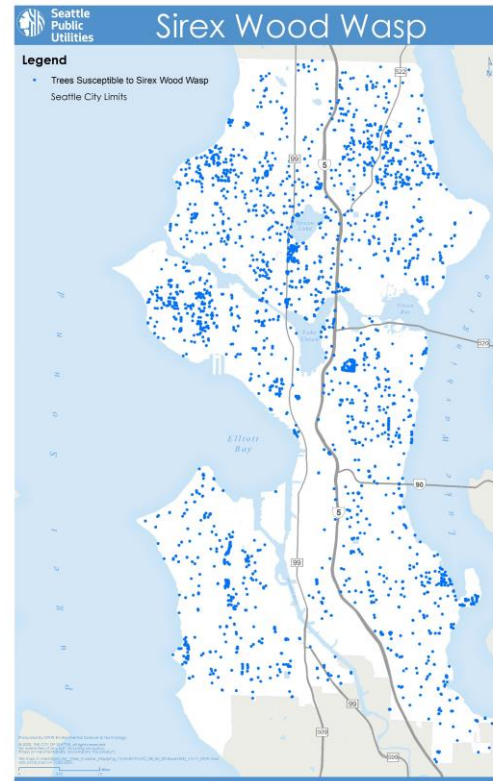
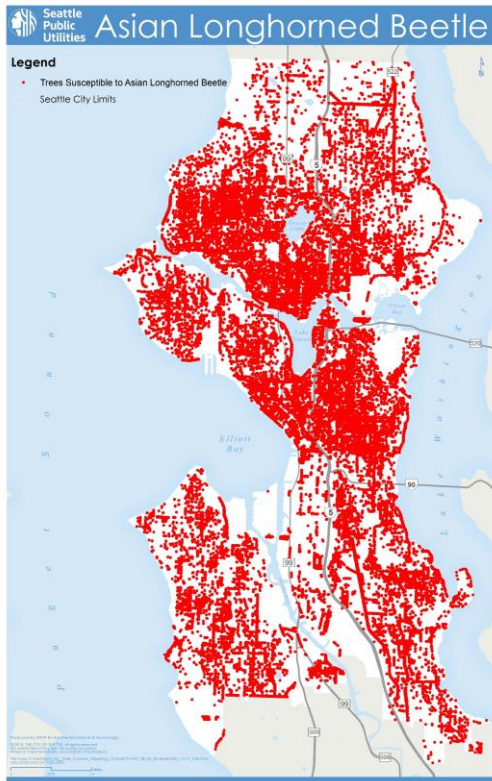


- Communication
- Data
- Operations
- Trainings
- Mitigation

Communication

- Result: Faster Response Time
- Breaking down interdepartmental barriers
- Better chances of eradicating pest
- Internal and external process/communication diagrams
- Hosting monthly SCIP meetings
- Seattle was first to exercise detection notification outlined in UFPR Playbook!





Map Credit: GIS Analysts in the Environmental Science & Technology Division in Drainage and Waste Water in Seattle Public Utilities

Host Trees of Priority Pests

Mitigation

- Trees for Seattle – education & outreach
- Trees for Neighborhoods Program
- Tree planting diversification – selection of drought tolerant trees
- Updating SDOT Street Tree Guidance List



THANK YOU!

Nolan Rundquist | (206) 684-TREE

Joe Markovich | seattle.trees@seattle.gov

<https://www.surveymonkey.com/r/SeattleInvasivePestResponse>

www.seattle.gov/transportation

