CORRECTING THE CONFLICT BETWEEN STREET TREES AND SIDEWALKS

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City of DuPont, Washington

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Purpose and Action

- This is an informational briefing on the street tree and sidewalk repair program.
- Bottom Line Up Front (BLUF):
  - Traditional Repair City Wide $15.5M
  - Alternative Repair City Wide $2.5M
    - Tree Root Pruning, saves trees
    - Vacuum Lift, saves sidewalk panels
Agenda

- City of DuPont
- Streetscape Profile
- Sidewalk Damage
- Program Overview
- Stormwater Justification
- Photos
City of DuPont

- 1833, British owned Hudson's Bay Company established Ft. Nisqually
- 1906, DuPont Powder Works Explosive factory
- Plant workers employed reside in about 100 homes, Historic Village
- 1994 - 2008 over 3K homes constructed

- 2016 Population Est. 9.4K.
- Residents Breakout:
  - active duty
  - retired military
  - families new to the community
  - have lived in DuPont for many years
- Businesses:
  - State Farm, Cal Portland, BBB, The Home Course, Amazon, and Regional Girl Scouts

Street Profile

Slide#6
Sidewalk Damage

Street Tree & Sidewalk Repair Program Overview

- 5-years program; $2.5M
  - Save trees where we can
  - Remove trees where non-survivable*
  - Repair existing sidewalk
  - Install root barrier to prevent future damage
- Contracts; $400K
  - Tree removal and replacement
- Labor: Crew of 3 workers, and 1 clerk; $1.6M
- Equipment; $145K
- Materials; $150K
Stormwater Justification

A healthy urban forest can reduce the amount of runoff and pollutant loading in receiving waters by:

1. Through evapotranspiration, trees draw moisture from the soil ground surface, thereby increasing soil water storage potential.

2. The tree intercepts and stores rainfall, thereby reducing runoff volumes and delaying the onset of peak flows. **860 – 2,380 gallons/year/tree.**

   - For reference: 1 acre-inch of rain = 27,045 gallons

3. Root growth and decomposition increase the capacity and rate of soil infiltration by rainfall and reduce overland flow.

4. Tree canopies reduce soil erosion by diminishing the impact of raindrops on barren surfaces.

Saw Cut Panels

- Image of workers sawing a sidewalk with a sign reading "Sidewalk Closed."
Vacuum Lift

Remove the Roots
Prepare Base; Sand/Pea Gravel As Needed

Prepare Base; Sand/Pea Gravel As Needed
The Street Tree team has planted 123 trees total from our tree nursery.

Trees Planted Fall/Winter 2017 in South Palisade Village
Tree Planting

We Planted the following Trees:
- Red Oaks – 19 ● Crimson Cloud Hawthorns – 12 ● Crimson Sunset Maple – 11
- Urban Sunset Maple – 41 ● Hophornbeam - 40

QUESTIONS?
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October 24, 2018
Understanding Conflicts Between Sidewalks and Trees

Ben Thompson
Urban Forestry Specialist
WA State Dept of Natural Resources

Why are tree/sidewalk conflicts so widespread?

A. Bad design
B. Inappropriate trees for the space
C. Shoddy construction practices
D. Improper planting technique
E. Improper maintenance/lack of maintenance
F. All of the above
Many conflicts are “rooted” in a lack of understanding of how trees grow.
Soil cells

- Tree pit soil: 115 cf
- Cell soil: 890 cf
Proper tree selection

“Right Tree, Right Place”

- Evaluate the planting site first
- Base tree selection on site constraints

Trees come in all shapes and sizes

Pyramidal

Columnar

Oval

Rounded

Vase-shaped

Spreading

Weeping

How big will your tree get at maturity?
How will this tree fit into the surrounding landscape?

- Root and canopy competition
  - with other plants
  - with buildings, roads, etc
- Available growing space when mature

Follow BMPs for sidewalk construction
Follow BMP’s for Tree Planting

ANSI A300 (Part 6)
Planting and Transplanting

Don’t Top Trees!!!
Questions???

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