

Seattle City Light Vegetation Management

Overview for the Seattle Urban Forestry Commission



Mission, Vision & Values

Mission

Seattle City Light provides our customers with affordable, reliable and environmentally responsible energy services.

Vision

Create a shared energy future by partnering with our customers to meet their energy needs in whatever way they choose.

Values



Customers First



Environmental Stewardship



Equitable Community Connections



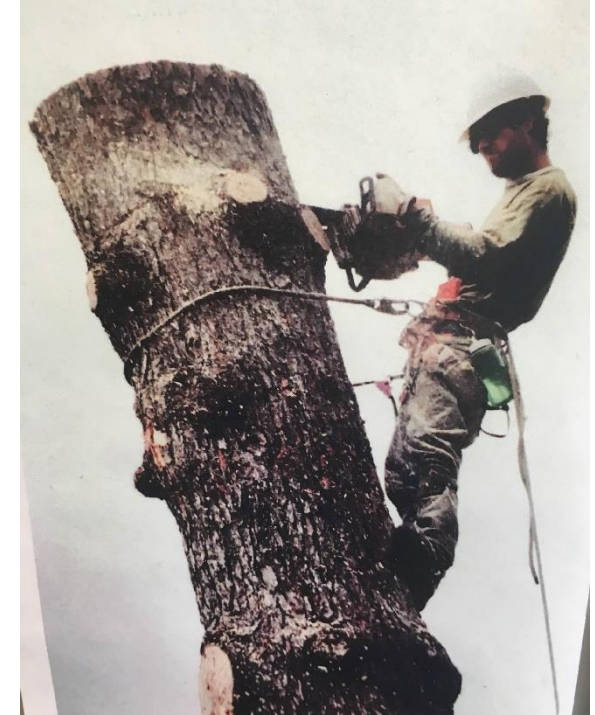
Operational and Financial Excellence



Safe and Engaged Employees

Introduction to UVM: Utility Vegetation Mgmt.

- **Presenter Intro:** David Bayard, VM and Fleets Mgr.
 - Tree Care industry since 2000, SCL since 2011
 - ISA CA (2009), ISA TRA Qualified (2013)
 - WA DNR Urban and Community Forestry Council (2017 - Present)
 - WA DNR Utility Wildland Fire Prevention Advisory Committee (2021 – Present)
 - Center for Energy Advancement through Technical Innovation Veg Mgmt. Group Exec. Council (2015 – Present)
 - Seattle UF Core Team (Founding member)
 - Owner *Canopy Climbers*, Seattle's 1st Rec. Tree Climbing co. (2011-2019)

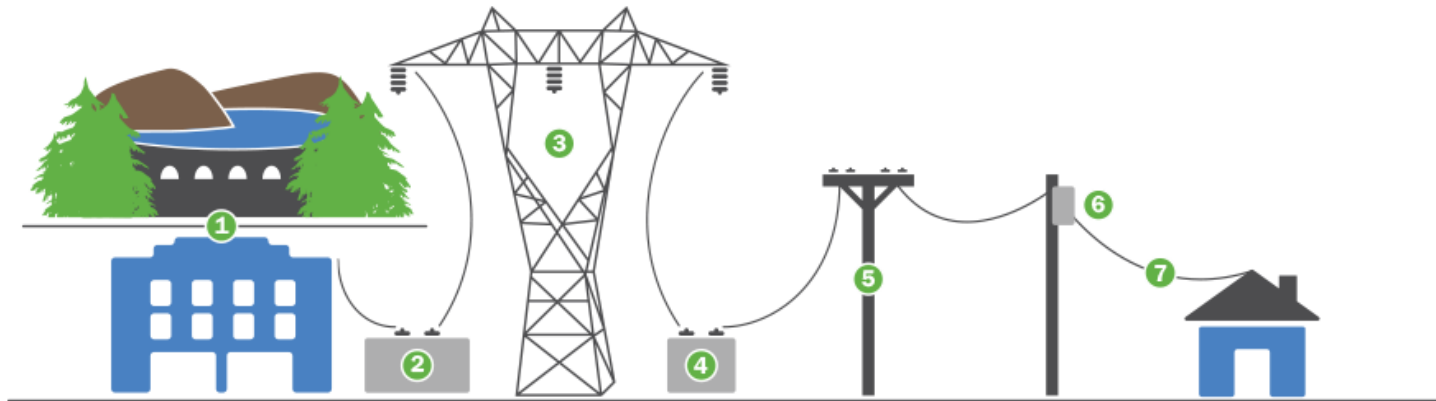


Intro. To UVM at SCL



Introduction to UVM: Utility Vegetation Mgmt.

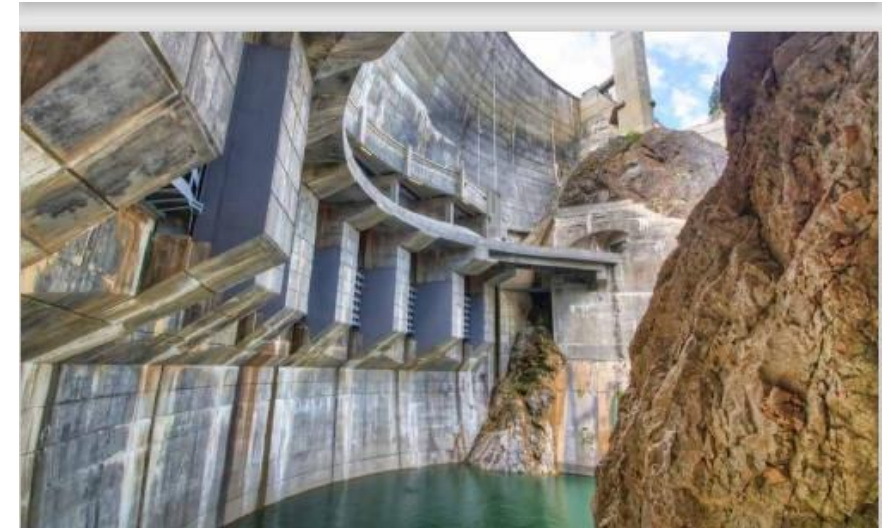
- City Light:
 - Public Power Generator, Transmitter, Distributer



- ① Power is generated from dam/powerhouse
- ② Substation transformer steps up voltage for transmission
- ③ Transmission lines carry electricity long distances
- ④ Neighborhood substation transformer steps down voltage
- ⑤ Distribution lines carry electricity to residents
- ⑥ Transformers on poles step down electricity before entering residence
- ⑦ Service line for residence

Introduction to UVM: Utility Vegetation Mgmt.

- City Light by the Numbers:
 - 10th Largest Public Power Utility in U.S.
 - 7 Hydroelectric Generation sites
 - 16 Major Substation
 - 656 M. Trans., 2300 M. Dist., 267 M. Network
 - 480K meters (customer-owners)
 - Over 75 properties



POWER SUPPLY OWNED BY CITY LIGHT

City Light Plants	Locations	Date in Service	Capability (Megawatts)	% of Total
Boundary	Pend Oreille River	8/23/67	1,120.5	55.8
Ross	Skagit River	12/30/52	450.0	22.4
Gorge	Skagit River	9/27/24	207.5	10.3
Diablo	Skagit River	10/20/36	190.4	9.1
Cedar Falls	Cedar River	10/14/04	30.0	1.5
S. Fork Tolt	S. Fork Tolt River	11/20/95	16.8	0.8
Newhalem	Newhalem Creek	1921	2.0	0.1
Total System Generation Capability			2,014.1	100.0

Introduction to UVM: Utility Vegetation Mgmt.

- Vegetation Management Unit
 - Located in T&D Operations (Mgr., Dir., COO, CEO)
 - T&D Ops Mission: "To Keep the Lights On"
 - 4 Programs:
 - Dist. Powerline Clearance (PLC)
 - Transmission Right of Way (TROW) Maint.
 - Landscapes Maint.
 - Urban & Community Forestry

Introduction to UVM: Utility Vegetation Mgmt.

- UVM *IS*:

Keeping the lights on by preventing and mitigating veg. caused outages	Invasive Species management
A specialized branch of the Tree Care industry	A connection point for developing community
Heavy equipment operation and construction	An opportunity to increase equity
Holistic landscapes management	A tool for increasing public health and wellness
Urban Forestry	Wildfire prevention and control
Land management and stewardship	Increasingly complex in the face of climate change
Front line invasive pest detection	Wildlife habitat creation and management
Undergoing seismic shifts in technology adoption	A growing and increasingly complex profession

SCL Dist. Powerline Clearance (PLC) Program

SUBSTATIONS



Dist. PLC Program

- Maintains and monitors over 300,000 trees with grow/fall in potential
- Trims over 2300 circuit-miles of overhead lines in Seattle and parts of Burien, Lake Forest Park, Normandy Park, Renton, SeaTac, Shoreline, Tukwila and Unincorporated King County.
- Approx. \$6M/year in contracted labor, working on a 4.5-year cycle system-wide
- More tree crews at work than any other Dept. in the City

Dist. PLC Program

- Cycle is Feeder-Based
- Contractors must have an ISA CA as GM, and 1 ISA CA per crew, on site.
- All work is planned and audited by ISA CA/UA
- Tree Line USA certified for 9 years running (since 1st applied)
- Follows ANSI A300 and Z133 standards for UVM



Dist. PLC Program

A) Primary wire, "Three Phase"

B) Step-down Transformer

C) Triplex Secondary wire

D) Triplex Service Drop

E) Guy line

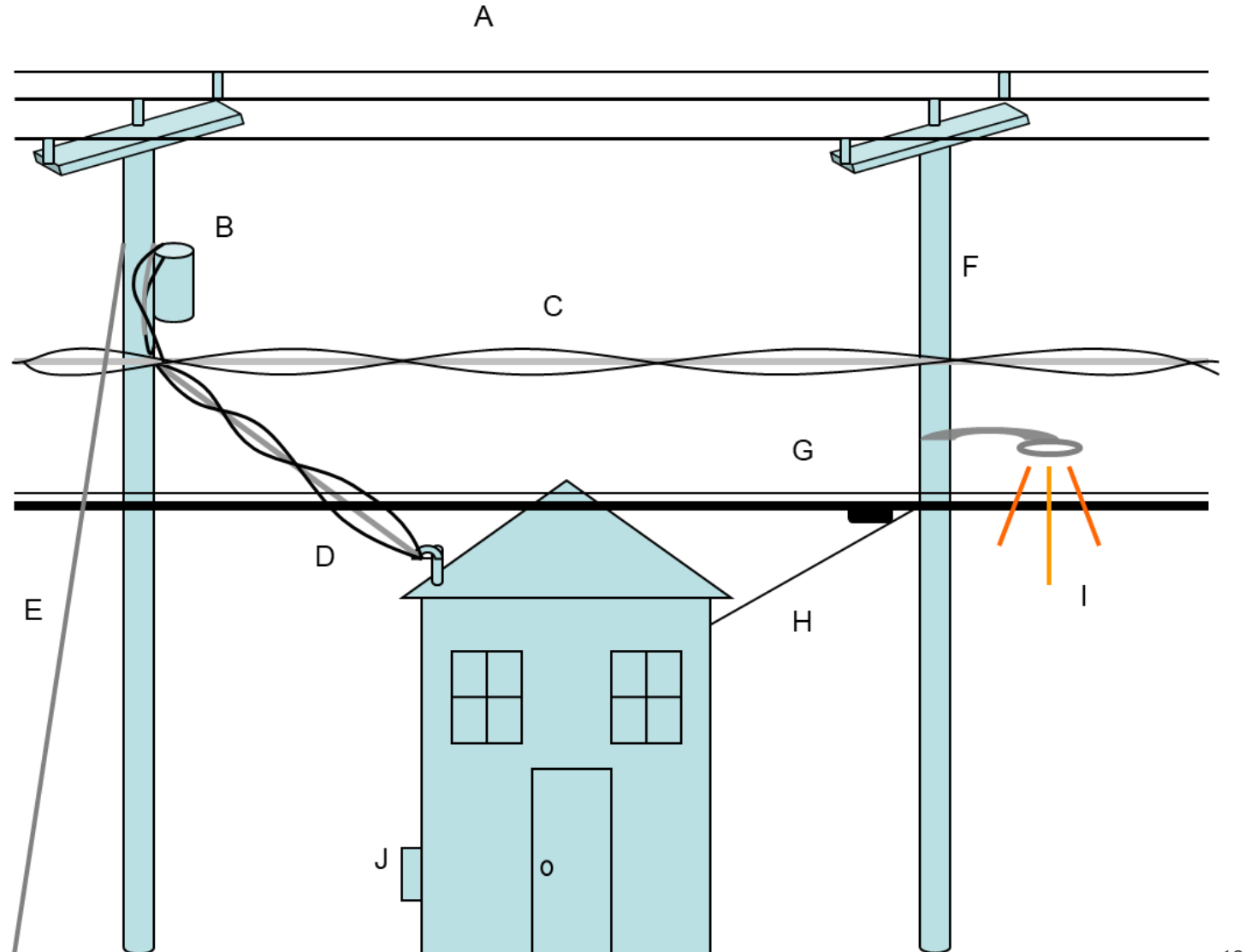
F) Utility Pole

G) Telecomm wires

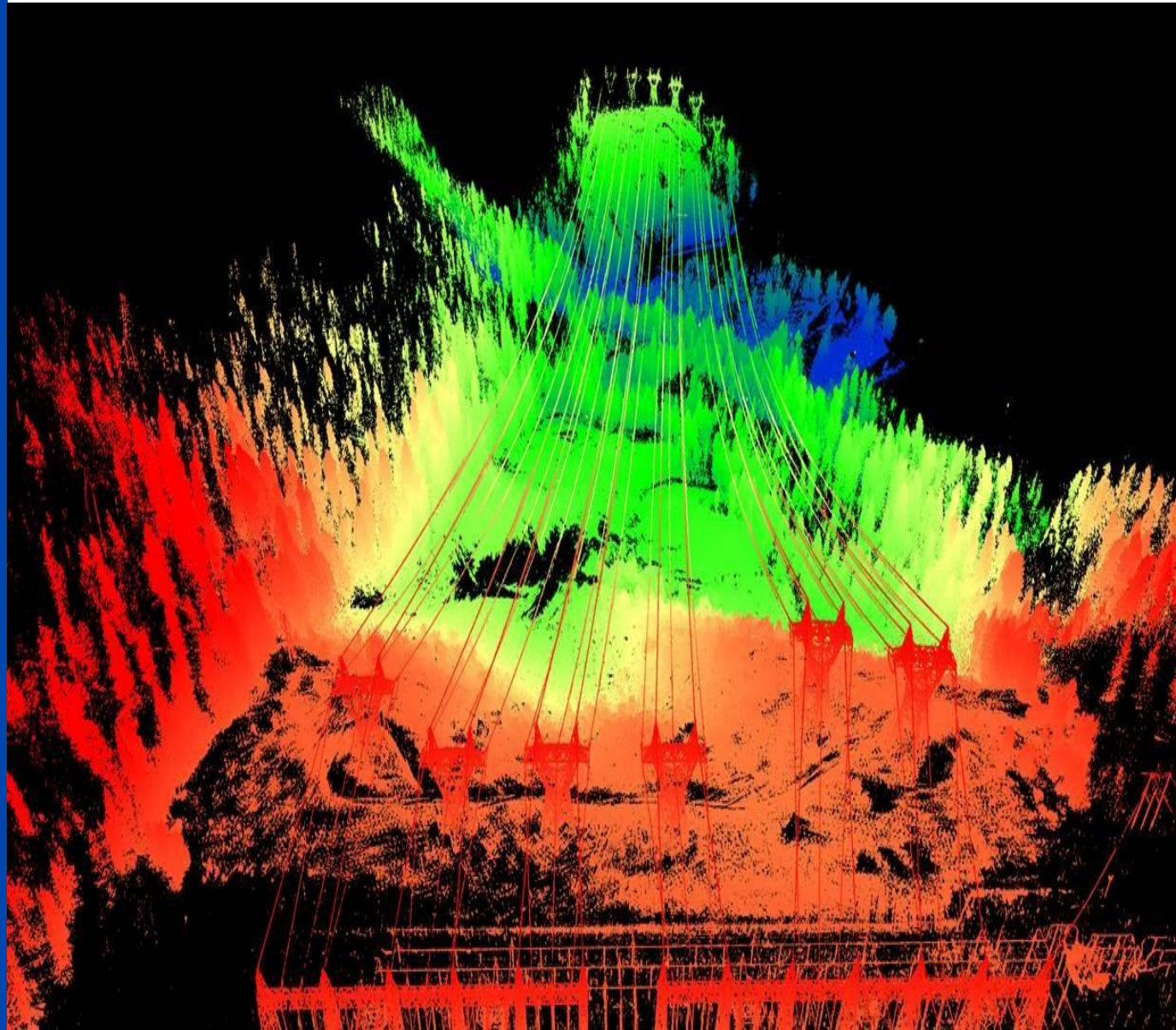
H) Telecomm Service Drop

I) Streetlamp

J) Electric Meter



Transmission Right-of-Way (TROW) Maintenance Program



TROW Maint. Program

- Manages vegetation along 657 miles of transmission right-of-way through King, Snohomish, Skagit, Whatcom and Pend Oreille counties.
- Managed on a 2-year cycle
- Two Systems: 230kV and 115 kV (Dist. is 26kV)
- 230 kV system subject to federal regulation by FERC/NERC (Skagit Relicensing)



TROW Maint. Program

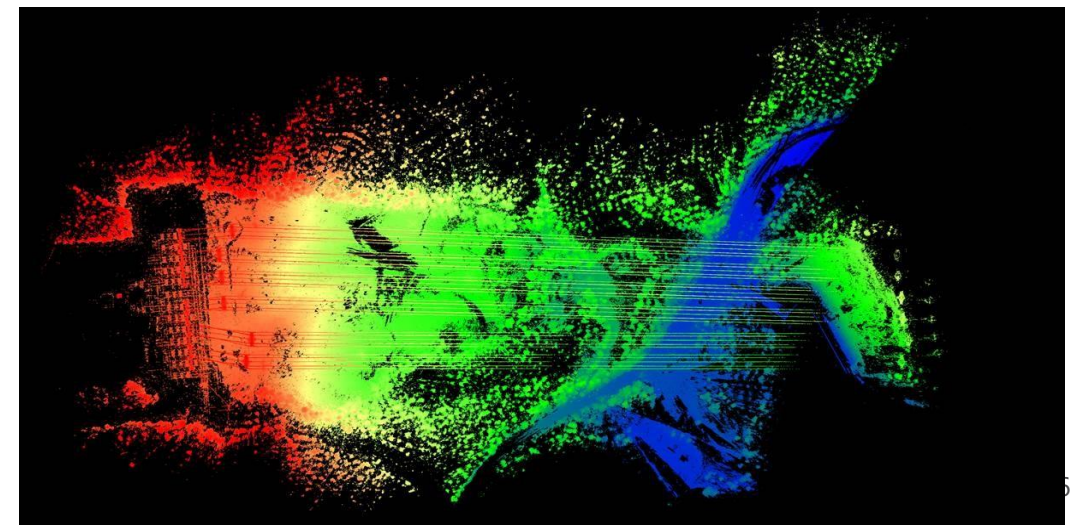
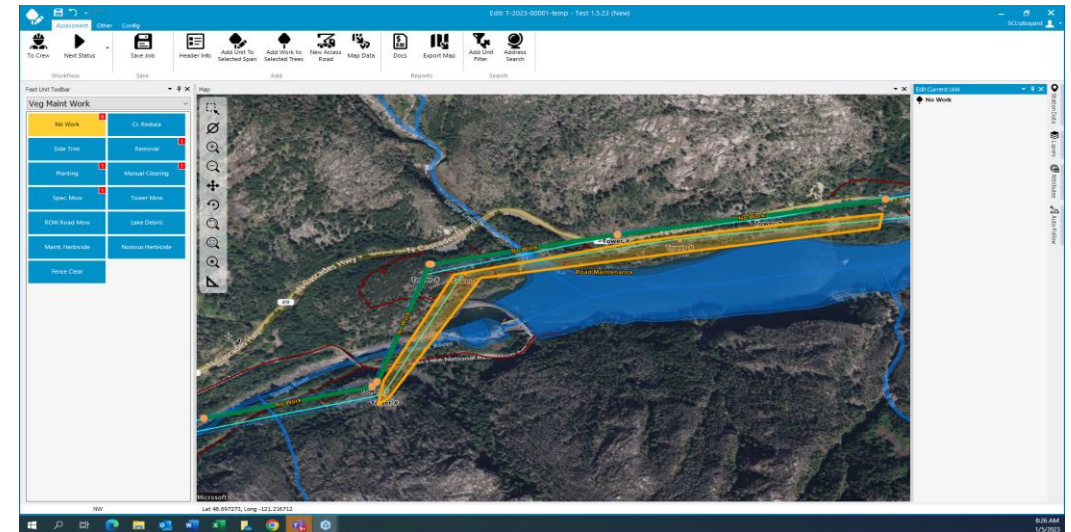
- Three Primary Drivers:
 - Safe/Reliable power transmission
 - NERC Compliance
 - Integrated UVM

- ROW Maint. is:
 - Tree pruning and removal
 - Invasive species mgmt.
 - ROW infrastructure maint/repair
 - Storm response
 - Wildfire prevention and mitigation



TROW Maint. Program

- Heavily/increasingly invested in technology:
 - GIS-based work management software
 - UAVs Integrated UVM
 - Satellite remote-sensing for tree health and hazard ID
 - LiDAR for clearances



Landscapes Maint.



Landscapes Maint. Program

- Primary role is Substation Maint (16)
 - Interiors weed-free
 - Exteriors (many historic landscapes)
- Maintain landscapes at 75+ SCL properties
 - Mow/Weed/Plant./Irrigate/IPM/etc.
- Other roles:
 - Snow Response Team
 - Repair/mitigate landscape damage
 - Special projects (pollinator gardens, tree planting, art installation, etc.)



Landscapes Maint. Program

- Major Substation Landscape Projects:
 - Creston-Nelson Substation



Landscapes Maint. Program

- Major Substation Landscape Projects:
 - Duwamish Substation:

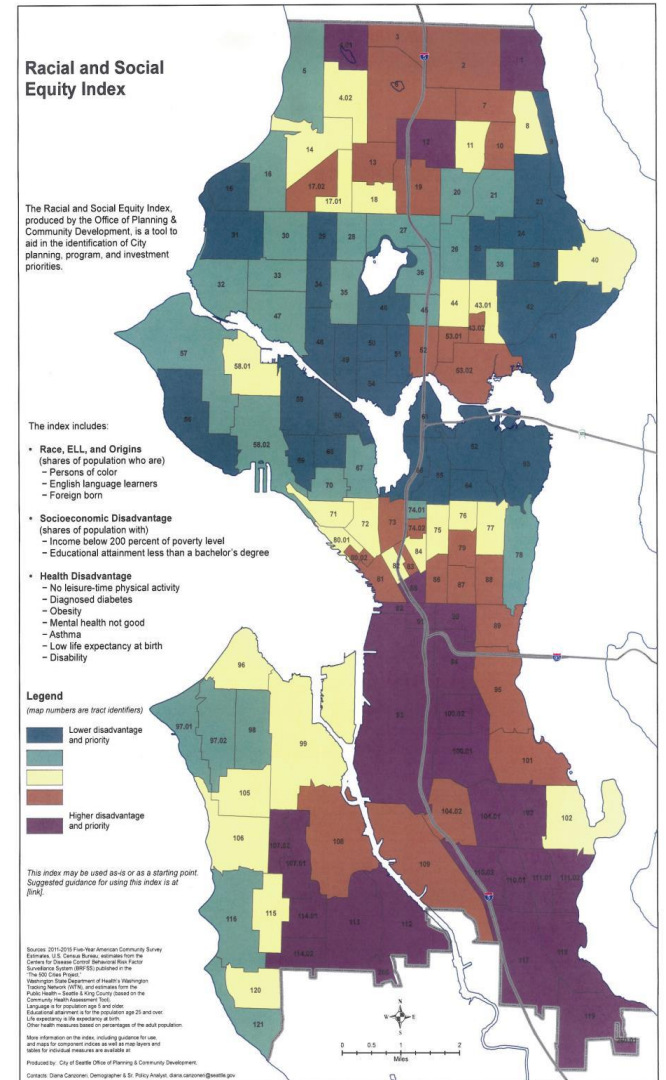


Landscapes Maint. Program

- Major Substation Landscape Projects:
 - Magnolia Substation:



Urban and Community Forestry



Urban and Community Forestry

- New Program in 2023 – one of the 1st/only of its kind in an electric utility
- U&CF Lead, Arborist and Trans. Sustainability Forester
- Umbrella Program

- Urban Tree Replacement Program (PLC)
- Tree Line USA certification (PLC)
- UDP private tree pruning pilot (PLC)
- *The Green Line* community ROW

Stewardship (TROW)

- TROW Stewardship Accreditation (TROW)
- Community Pollinator Planting (Lndscps)
- Community co-management and volunteerism coordination (TROW & Lndscps)
- Citywide Urban Forestry/equity engagement



Urban and Community Forestry

- Why Urban and Community Forestry in an electric utility?
 - U&C Forestry = Equity Work
 - We touch more trees than every other Dept. combined
 - Utility ROWs *are* public green spaces

Urban and Community Forestry

- It is baked in electric utilities' Value Statements:
 - “We are rooted in our commitment to racial diversity, social justice and the equitable provision of services to all.” –Seattle City Light
 - “Triple Bottom Line...This means...leading with love...ensuring that (their) benefits are accessible to all. And it means helping communities build resilience against climate change today –as well as tackling climate change –in ways that leave no one behind.” –Pacific Gas and Electric
 - “We are committed to doing what’s right. A deep connection to the communities we serve compels us to take back responsibility for our work, and we actively look for ways to engage and give back. We value the environment and work to reduce our impact with future generations in mind.” –Exelon Energy



Questions?

Email/Call Anytime

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THANK YOU



Seattle City Light