



**Seattle City Light**

# WILDFIRE RISK REDUCTION STRATEGY

Summer 2024

Version: 2024.08.v02



# Table of Contents

- Acknowledgments.....iii**
  
- Message From the General Manager/CEO .....i**
  
- 1. Executive Summary.....1**
  
- 2. Strategy Overview.....1**
  - 2.1. Purpose .....2
  - 2.2. Where WRRS Can be Found Online.....3
  - 2.3. Best Practices and Standards.....4
  
- 3. Utility Overview.....5**
  - 3.1. Context Setting Table .....7
  
- 4. Strategy Objectives.....9**
  - 4.1. Minimizing Likelihood of Ignition.....9
  - 4.2. Resiliency of the Electric Grid ..... 10
  
- 5. Strategy Governance ..... 11**
  - 5.1. Utility Roles and Responsibilities ..... 11
    - 5.1.1. WRRS Executive Advisory Board..... 14
    - 5.1.2. WRRS Leadership Council ..... 14
    - 5.1.3. WRRS Working Group ..... 15
  - 5.2. Coordination with Local Utility and Infrastructure Providers ..... 15
  - 5.3. Coordination with Local Tribal Governments ..... 15
  - 5.4. Emergency Management / Incident Response Organization..... 16
  
- 6. Wildfire Risks and Drivers ..... 17**
  - 6.1. Pacific Northwest Wildfire Risk and Climate Change ..... 17
  - 6.2. Risk Profile of City Light Facilities ..... 19
    - 6.2.1. Skagit Hydroelectric Project, Including Communities of Newhalem and Diablo21
    - 6.2.2. Boundary Hydroelectric Project ..... 22
    - 6.2.3. Cedar Falls and South Fork Tolt Hydroelectric Projects ..... 22
    - 6.2.4. Transmission Infrastructure ..... 22
    - 6.2.5. Distribution Infrastructure..... 23
  - 6.3. Enterprise-wide Operational Risks ..... 23
    - 6.3.1. Asset Inventory ..... 24
    - 6.3.2. Understanding Asset Failures ..... 24
    - 6.3.3. Wildfire Smoke ..... 25
  
- 7. Risk Mitigation ..... 26**
  - 7.1. Weather Forecasting ..... 27
  - 7.2. Design and Construction Standards ..... 27

7.2.1.	Transmission Line Reliability Program .....	27
7.2.2.	Transmission Line Capacity Program.....	27
7.2.3.	Transmission Wooden Pole Replacement.....	28
7.2.4.	Distribution Overhead Equipment Replacements.....	28
7.2.5.	Distribution Overhead Customer-Driven Capacity Addition.....	28
7.2.6.	Distribution Undergrounding Programs .....	28
7.2.7.	Distribution Automation.....	28
7.2.8.	Substation Circuit Breaker Replacement Program.....	29
7.2.9.	Substation Equipment Improvement Program.....	29
7.2.10.	Cedar Falls Hydroelectric Facility Project Hardening.....	29
7.3.	Fuel and Vegetation Management .....	29
7.3.1.	Transmission Vegetation Management.....	30
7.3.2.	Vegetation Clearance.....	30
7.3.3.	Danger Tree Removal .....	31
7.3.4.	Right-of-Way Maintenance .....	31
7.4.	Asset Inspection and Response.....	32
7.4.1.	Transmission Line Vegetation Inspections .....	32
7.4.2.	Assessing Asset Condition .....	32
7.5.	Workforce Training.....	33
7.6.	Relay and Reclosure Practices.....	34
7.7.	De-energization and Public Safety Power Shutoff.....	34
7.8.	Power Supply Diversification .....	35
<b>8.</b>	<b>Stakeholder Cooperation and Community Engagement.....</b>	<b>36</b>
8.1.	Engagement With Communities.....	36
8.2.	Engagement With Emergency Response Organizations and Municipalities.....	37
<b>9.</b>	<b>Restoration of Services .....</b>	<b>39</b>
<b>10.</b>	<b>Evaluation of Strategy and Action Plan .....</b>	<b>40</b>
10.1.	Metrics and Assumptions for Measuring Performance .....	40
10.2.	Areas of Continued Improvement.....	40
10.3.	Monitoring the Performance of Inspections .....	42

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# Message From the General Manager/CEO

As summers grow hotter, drier, and longer, wildfire risk in the Pacific Northwest is rising. At Seattle City Light, we work year-round to make sure our transmission and distribution lines, system equipment, and facilities are resilient to storms and natural disasters, including wildfires.



While City Light has managed wildfire risk for years, we published our first Wildfire Risk Reduction Strategy in 2023, ahead of this year’s requirement that electric utilities submit a wildfire mitigation plan to the state. This updated strategy responds to evolving industry regulations and underscores our commitment to environmental stewardship. It is informed by our climate-change research and adaptation program designed to increase resilience to our changing climate, which is contributing to longer and more active fire seasons.

The strategy incorporates risk assessments and prioritizes a diverse mix of energy sources. It explores new technology, including additional assessment and inspection in remote areas. The plan includes expanded stakeholder engagement and establishes a governance structure to ensure City Light is prepared to respond to the impacts and risks of wildfires. Our top priority is the safety of our customers, employees, and the communities near our infrastructure.

While our service area is primarily urban, wildfire risks are highest where our transmission lines cross through forests and at our remote generation sites: Boundary Dam in the northeast corner of the state, the Skagit River Hydroelectric Project in the upper watershed of the Skagit River in the North Cascades, and the Cedar Falls and Tolt hydroelectric projects in eastern King County.

In 2015 and 2023, lightning strikes ignited wildfires in the Skagit River watershed, burning thousands of acres and leading to the evacuation of City Light’s nearby company towns. These events, which resulted in a temporary shutoff of our transmission lines from the Skagit Project, served as real-time tests of our wildfire resilience. They underscored the risk wildfire poses to our critical infrastructure, which includes dams and powerhouses, and the need for a robust wildfire resilience plan.

This strategy is a living document and will help us prevent, mitigate, and quickly recover from wildfires while providing safe, reliable, and environmentally responsible energy services. Our employees are prepared to meet these challenges through innovative planning and effective execution.

I extend my gratitude to the City Light team leading this important work, our partners for their support and expertise, and our customers and communities for your trust as we continue our commitment to managing wildfire risk.

A handwritten signature in black ink that reads "Dawn Roth Lindell". The signature is fluid and cursive, written in a professional style.





# 1. Executive Summary

Seattle City Light (City Light), a municipally owned electric utility, originally developed a Wildfire Risk Reduction Strategy (WRRS) in recognition of the increased risk from wildfire in Washington. The safety of customers, communities, and employees, as well as sustaining reliable electricity services and resource adequacy is of paramount importance. As required by Revised Code of Washington (RCW) 19.29A.170, by October 31, 2024, and every three years thereafter, each electric utility must review, if appropriate revise, and adopt its wildfire mitigation plan. This WRRS is City Light's wildfire mitigation plan to address the rising risk from wildfire, build an operational framework, and meet the new legal requirement for Washington state.

The approach used to develop the WRRS followed an established wildfire mitigation framework developed for the state of California and a wildfire mitigation plan template created by the Washington State Department of Natural Resources. During the development of the strategy, City Light recognized that each service and operating area faces unique geography, terrain, vegetation, and other characteristics that present a variety of risk levels, which require unique and geographically tailored approaches to address those risks.

City Light serves customers in Seattle and neighboring franchise cities. The utility owns, maintains, and operates six hydroelectric plants and interconnected power lines in Washington. These areas have varied amounts of forest and different climates, which have varying effects on wildfire risk. City Light has actively managed wildfire risks for years and has been impacted by multiple wildfires in the past. Thus, the utility has a suite of strategies to minimize wildfire risk, which have been documented within this WRRS. These include infrastructure inspection and hardening, vegetation management, workforce training, situational awareness, operational controls, and communications.

Because the risk from wildfires is evolving, the WRRS includes a portfolio of future actions to remain adaptive and resilient to future wildfire risk. This action plan includes additional risk assessments, more diverse energy sources, increased technology deployment, expanded stakeholder engagement and collaborations, and additional staff expertise and wildfire governance. City Light strives to continue to be fire-ready and protect communities and customers' energy assets through implementation of the WRRS and continued vigilance in managing risks and uncertainties while providing safe, reliable, and environmentally responsible electricity services.

## 2. Strategy Overview

City Light developed this WRRS because wildfire presents an increasing risk, driven in part by climate change. Ensuring the safety of customers, communities, and employees, as well as maintaining the reliability of our services, are City Light's foremost concerns. City Light also recognizes the legislative momentum around mitigating wildfire risk and wishes to address the issue proactively. City Light's first

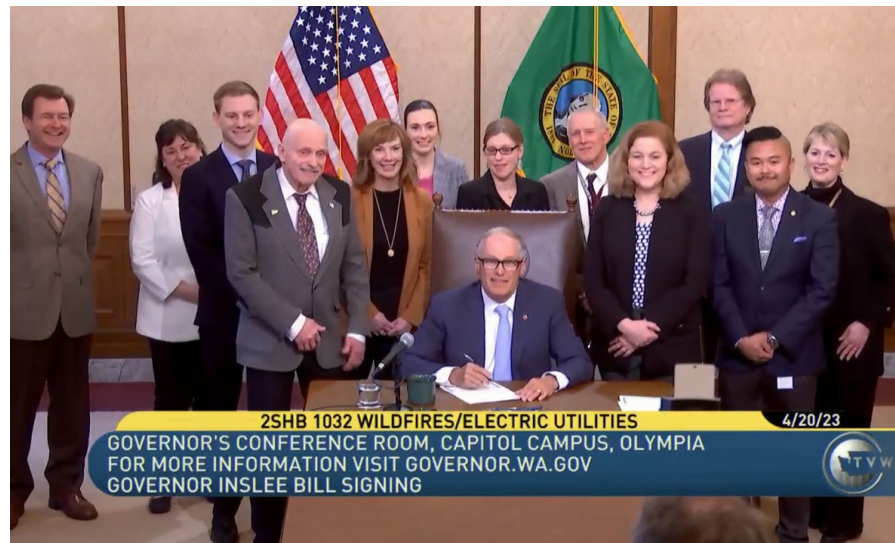
WRRS (Version 1.0) was completed in August 2023 and revised during the summer of 2024 (Version 2.0).



*Seattle City Light transmission lines overlooking downtown Seattle.*

## 2.1. Purpose

The WRRS is informed by City Light’s values, which include a commitment to public and employee safety, placing customers first, maintaining visible and active involvement in the communities we serve and operate in, and striving for excellence in our operational, financial, and environmental stewardship. With wildfire season increasing in duration and wildfires becoming more severe and frequent, City Light’s WRRS serves as a living document for advancing wildfire risk assessment, risk mitigation, and response. The insights



*WA Governor Inslee signing Bill 25HB 1032.*

gained in developing the WRRS also helped guide new legislation recently passed in Washington (e.g., 2SHB 1032).<sup>1</sup>

In spring 2023, the Washington State Legislature passed House Bill 1032, which went into effect July 23, 2023, and was codified into law as RCW 19.29A.170. The legislation requires electric utilities to provide wildfire mitigation plans to the Department of Commerce and the Department of Natural Resources by Oct. 31, 2024. The plans need to include elements that relate to utility activities such as vegetation management; infrastructure maintenance, repair, and inspection; modifications or upgrades to system facilities or construction of new facilities; operational procedures; and preventative programs, including adoption of new technologies. Each utility will need to review and revise its mitigation plan, as appropriate, every three years thereafter.

The WRRS is intended to meet the requirements in this new legislation and prepare City Light for responding to future, relevant policy changes. Continued development and implementation of the WRRS will improve the reliability of electricity generation and delivery to customers, safeguard the welfare of employees and adjacent communities, and improve the resilience of City Light infrastructure.

## **2.2. Where You Can Find the WRRS Online**

The WRRS (including archived versions) is available on City Light's website at <https://seattle.gov/city-light/environment/climate-change-response/wildfire-preparedness>.

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<sup>1</sup> <https://app.leg.wa.gov/billsummary?billnumber=1032&year=2023>

## 2.3. Best Practices and Standards

The approach taken in developing the WRRS included establishing a wildfire risk reduction framework to guide development of the strategy, reviewing and customizing the various elements of the framework based on applicability to City Light, articulating the current status of City Light programs relevant to the individual framework elements, identifying gaps, and summarizing potential future actions. Many dedicated employees and subject matter experts across the organization and electric utility industry contributed to the effort. Numerous wildfire plans and regulatory requirements for wildfire mitigation were reviewed, which resulted in a framework that incorporates the key elements to reduce wildfire risk:

- Risk assessment
- Risk mitigation
- Emergency management
- Stakeholder engagement
- Governance and accountability

City Light's WRRS includes all five elements. The specific capabilities included in the strategy are based on their applicability to the utility's system, processes, and circumstances. City Light developed the structure of the WRRS after reviewing industry best practices for wildfire risk reduction, including the capabilities described in *California's Wildfire Mitigation Maturity Model*.<sup>2</sup> (Table 1 provides a cross reference of the use of best practices within the WRRS.) The WRRS also includes an action plan (Sect. 10.2) that outlines specific actions City Light will take across the five areas of the framework to advance the strategy.

As required by RCW 19.29A.170, City Light's WRRS was sent to area fire districts in May of 2024 for review and comment. On April 1, 2024, the Washington State Department of Natural Resources published a template for utility wildfire mitigation plans<sup>3</sup>. The template and list of elements included were developed in conjunction with the Utility Wildland Fire Prevention Advisory Committee, electric utilities, the state fire

### What are the key elements of City Light's Wildfire Risk Reduction Strategy?

- **Risk assessment** to understand the risk of electric grid assets causing wildfires, as well as the risk of those assets being affected by wildfires.
- **Risk mitigation** to reduce wildfire risk, including actions such as grid hardening and vegetation management.
- **Emergency management** to monitor for high-risk weather conditions when fires are more likely to occur and to respond when those conditions arise.
- **Stakeholder engagement** with the communities that may be affected by wildfire or City Light's response to wildfires, and coordination with emergency response organizations and municipalities to respond to events.
- **Governance and accountability** to designate responsibility for execution of the WRRS and provide oversight to improve the strategy as it is executed.

<sup>2</sup> Title: "2023-2025 Electrical Corporation Wildfire Mitigation Maturity Model" Source: Energy Safety California URL: <https://efiling.energysafety.ca.gov/eFiling/Getfile.aspx?fileid=53394&shareable=true> (download)

<sup>3</sup> WDNR Electric Utility Wildfire Mitigation Plan Template - <https://www.dnr.wa.gov/about/boards-and-councils/utility-wildland-fire-prevention-advisory-committee>



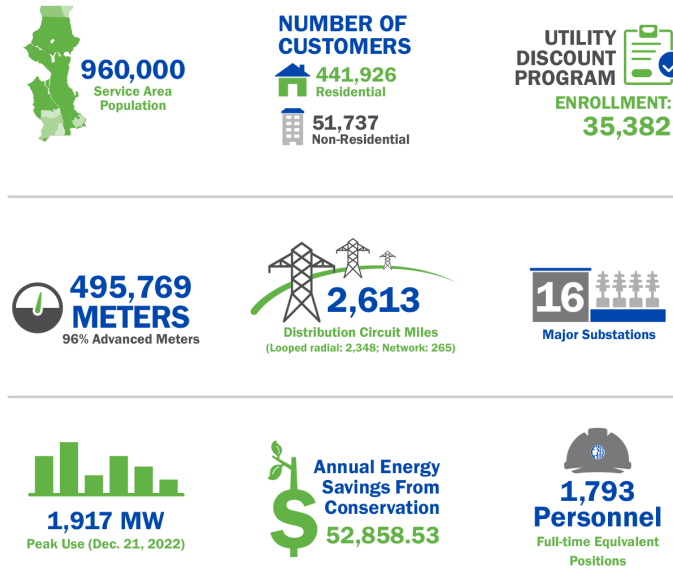
marshal, the Governor’s Office of Indian Affairs, and the public. City Light’s WRRS Version 1.0 was revised to align with this template more closely during the development of City Light’s WRRS Version 2.0.

TABLE 1. BEST PRACTICES CROSS-REFERENCE		
BEST PRACTICE TOPIC	DOCUMENT PAGE OR CITATION	COMMENTS
RCW 19.29A.170 – By Oct. 31, 2024, and every three years thereafter, each utility must review, if appropriate revise, and adopt its wildfire mitigation plan.	Section 1.0, 2.3, and 10.3	WRRS Version 2.0 meets the Oct. 31, 2024, deadline.
Washington Electric Utility Wildland Fire Mitigation Plan Template (April 1, 2024)	Entire WRRS	WRRS Version 2.0 represents revisions to align with template with small deviations in section titles and content.
California’s 2023-2025 Electrical Corporation Wildfire Mitigation Maturity Model	Section 5.0, 6.0, 7.0, 8.0, 9.0, and 10.0	These sections tie to the framework of California’s model.
North American Electric Reliability Corporation (NERC), including FAC-003, and National Electric Safety Code, Rule 218	Section 7.3.2	Relates to our vegetation management plans and relevant vegetation clearance standards.

### 3. Utility Overview

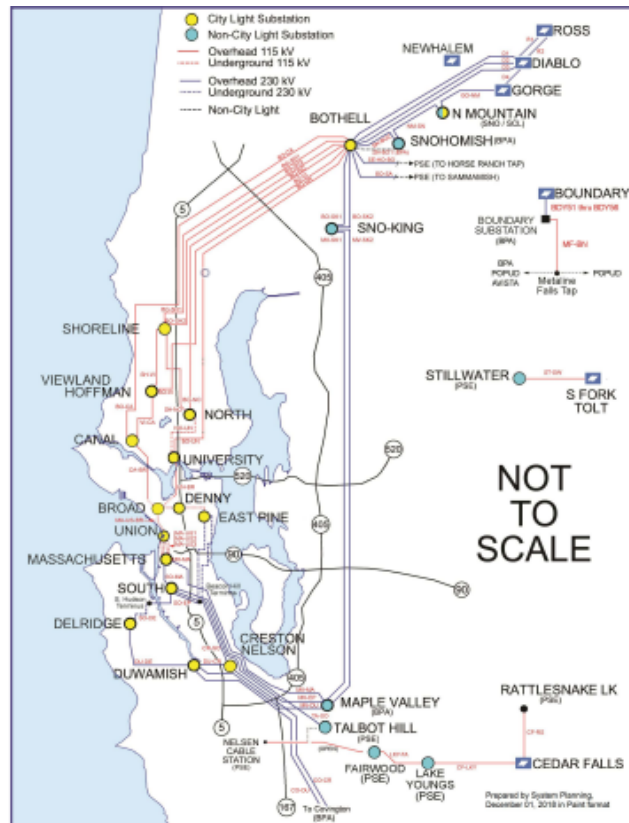
City Light is a municipally owned electric utility that serves the residents of Seattle and neighboring franchise cities and is governed by the city of Seattle’s elected officials. The utility has a state-of-the-art systems operation center for coordinating all activities for reliably serving electricity to Seattle and eight adjacent jurisdictions: Burien, Renton, Tukwila, SeaTac, Normandy Park, Shoreline, Lake Forest Park, and parts of unincorporated King County in White Center and Bryn Mawr-Skyway. To support meeting the electricity demand of all the customers in our service area, City Light owns, maintains, and operates hydroelectric generating facilities consisting of six hydroelectric plants located on the Pend Oreille, Skagit, Cedar, and Tolt rivers with a combined maximum capacity of almost 2,100 megawatts. City Light’s generation resources connect into 668 miles of high-voltage transmission lines, of which 645 miles are overhead and 23 miles are underground.

**Figure 1. High Level Overview of City Light<sup>4</sup>**



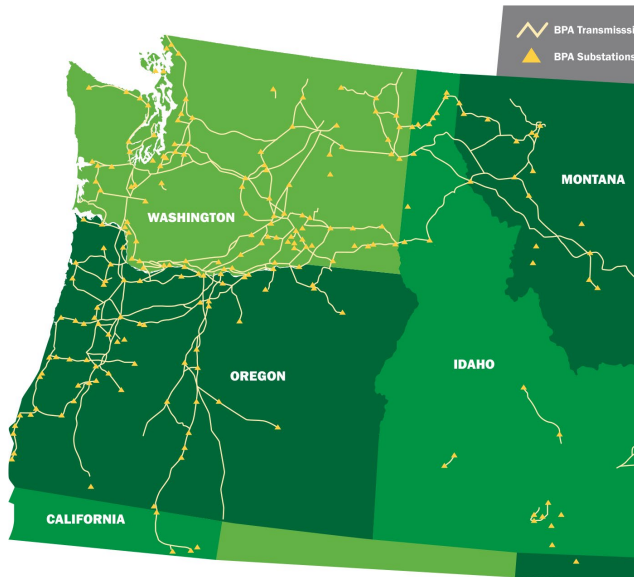
Information as of December 31, 2023

**Figure 2. City Light Generation Facilities, Transmission Lines, and Substations**



<sup>4</sup> Information as of Dec. 31, 2022.

**Figure 3. Bonneville Power Administration Transmission Lines and Substations**



It should be noted that Bonneville Power Administration owns and operates a high-voltage transmission system across the Pacific Northwest, including transmission lines that run through the Seattle area. Bonneville Power Administration and City Light transmission systems are interconnected at several points and work together to provide reliable electricity to customers in the Seattle area. Figure 3 shows Bonneville Power Administration transmission lines and substations.

### 3.1. Context Setting Table

For ease of comparing various Washington electric utilities, the following table is provided.

TABLE 2. CONTEXT-SETTING INFORMATION	
<b>Utility Name</b>	Seattle City Light
<b>Service Area Size (sq miles)</b>	131 sq. miles
<b>Service Area Make-up</b>	87% Urban 0.3% Agriculture 6.8% Barren/Other 0% Desert 1.6% Evergreen Forest 1.8% Deciduous Forest 1.6% Mixed Forest 0.1% Herbaceous 0.2% Shrub 0.6% Water <i>Other</i> includes developed open space and wetlands.
<b>Service Area Wildland Urban Interface (based on total area)</b>	0% Wildland Urban Interface 0.05% Wildland Urban Intermix Most of Service Area is urban.
<b>Customers Served</b>	Approximately 495,769 (as of 2023)



<b>Account Demographic</b>	90% Residential 0% Agricultural 10% Commercial/Industrial
<b>Utility Equipment Make-up (circuit miles)</b> Distances are measured as total circuit miles.	Overhead Radial Dist.: 1739 miles Overhead Trans.: 494 Miles of 230 kV; 150 miles of 115 kV. Underground Radial Dist.: 593 miles Underground Network Distribution: 348 miles Underground Trans.: 9.7 miles of 230 kV; 13.25 miles of 115kV.
<b>Has developed protocols to pre-emptively shut off electricity in response to elevated wildfire risks?<sup>5</sup></b>	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> A summary or description of protocols can be provided in section 7.
<b>Has previously pre-emptively shut off electricity in response to elevated wildfire risk?</b>	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If yes, then provide the following data for the three trailing calendar years: Number of shut-off events: July – August 2023: Lightning started the Sourdough Wildfire near the Skagit Hydroelectric Project on July 29. Portions of the 230 kV system were deenergized to support evacuation and reduce risk to buildings and infrastructure. Customer Accounts that lost service for >10 minutes: No service disruption to customers as additional circuits were available for meeting customer load. For prior response, average duration before service restored: NA

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<sup>5</sup> For many utilities this will be a reference to a Public Safety Power Shutoff (PSPS) event. These events, whether through a formally defined PSPS program or not, are recognized as a safety measure of last resort initiated by utilities to pre-emptively de-energize specific power lines during critical fire weather to reduce the risk of the electric system being involved in an ignition. The decision to either have or not have this type of practice is at the operational discretion of the individual utility.

## 4. Strategy Objectives

City Light strives to provide affordable, reliable, environmentally responsible energy while prioritizing the safety of our customers, communities, and employees. Although wildfire risk has historically been relatively low in western Washington, climate change and the growing human population, resulting in expanding wildland-urban interface, are increasing the threat of wildfire to City Light's electricity generation and delivery, communities, and employees.

City Light has actively managed wildfire risk for years, and the WRRS is an effort to formalize and advance our wildfire risk reduction efforts. The objectives of the WRRS are to understand City Light's current state of wildfire risk, review industry best practices for wildfire risk reduction, identify the wildfire risk reduction actions and possible gaps of existing City Light programs, and develop a portfolio of potential future actions (including incident simulation exercises) to address gaps in wildfire risk. The WRRS addresses both the potential for City Light infrastructure to cause wildfires as well as the potential for City Light infrastructure and operations to be impacted by wildfires.

### Why does City Light need a Wildfire Risk Reduction Strategy?

- Wildfire presents an increasing threat to City Light's hydroelectric projects and their transmission lines.
- City Light's [Climate Change Vulnerability Assessment and Adaptation Plan](#) identified the increasing risk of wildfire as one of the 13 impact pathways through which the utility will experience climate-related risks to its mission.
- The safety of the public and City Light employees is one of City Light's core values.

### 4.1. Minimizing Likelihood of Ignition

City Light has numerous ways to minimize the chance of ignition from energized equipment. These include grid design, operational tactics, staff training, coordination, and communications. Grid design elements include, but are not limited to, power line rating, adequate spacing between power lines, and replacing combustible components. Examples of operational tactics include additional inspections, deferring maintenance activities, disabling reclosures during high-risk fire weather, vegetation clearing and fuels management, and limiting public access in hydropower watersheds. Staff training provides protocols for crews working in the field during dry and windy conditions, as well as practicing standard emergency procedures. Coordination is critical for reducing wildfire vulnerability and includes reoccurring meetings with Seattle Public Utilities' wildfire supervision crew and U.S. National Park Service wildfire experts. Communication supports minimizing the likelihood of ignitions by sharing alerts on high-risk fire conditions to staff, advancing continuous improvement through after-action reviews, and providing education on fire hazards to customers. More details on these mitigating approaches are in Sections 5 (Strategy Governance) and 7 (Risk Mitigation).

## 4.2. Resiliency of the Electric Grid

City Light's infrastructure system, service area, and existing plans and procedures provide resiliency to high-wildfire weather conditions and effective management during wildfire events. While wildfires are rare in western Washington, City Light has systems in place to minimize their impacts. All of City Light's hydroelectric projects and their associated transmission lines are in rural, forested areas with greater exposure to wildfires compared to urban areas with fewer trees and faster firefighting response. In 2015 and again in 2023, lightning strikes ignited wildfires in the Skagit River Watershed, which caused the evacuation of City Light's company towns and a temporary shutoff of transmission lines from the Skagit Hydroelectric Project. These wildfire events provided real-time tests of City Light's wildfire resilience and the risk wildfire poses to our facilities, demonstrating the need to establish a utility-wide wildfire prevention and response practice, which led to the development of a WRRS. For more details on City Light's ability to withstand fire weather conditions and quickly recover, see Section 5 (Strategy Governance), Section 7 (Risk Mitigation), and Section 9 (Restoration of Services).

## 5. Strategy Governance

### 5.1. Utility Roles and Responsibilities

City Light can benefit from a comprehensive governance structure related to our WRRS as we proactively manage and mitigate wildfire risks. The structure is patterned after our Incident Management System (ICS) framework. This ensures enterprise-wide accountability and alignment of organizational efforts with strategic objectives and that resources are directed where they matter most. A structured approach enhances accountability and transparency, establishing clear roles and responsibilities throughout the organization. Additionally, governance tends to build stakeholder confidence by demonstrating a commitment to safety and community well-being. Most importantly, a governance structure comprised of decision-makers and subject matter experts (SMEs) in key operational functions allows for adaptability and continuous improvement, which enables the utility to stay ahead of evolving wildfire challenges and emerging technologies. This ultimately contributes to a safer, more resilient operational environment.

The governance structure is designed to establish a robust framework for wildfire risk reduction. At its core is an Executive Advisory Board, comprised of leaders from the City Light Executive Team, who provide strategic guidance and oversight to ensure alignment with organizational objectives. The board would collaborate closely with a dedicated Leadership Council responsible for executing the strategy's objectives and action plans, leveraging the specialized expertise present throughout the organization. Moreover, the Leadership Council would engage with external stakeholders as needed to facilitate coordination, collaboration, and compliance in wildfire risk mitigation efforts. A final governance entity is the WRRS Working Group that implements the priorities of the Leadership Council, monitors and reports on progress, and recommends new strategies.

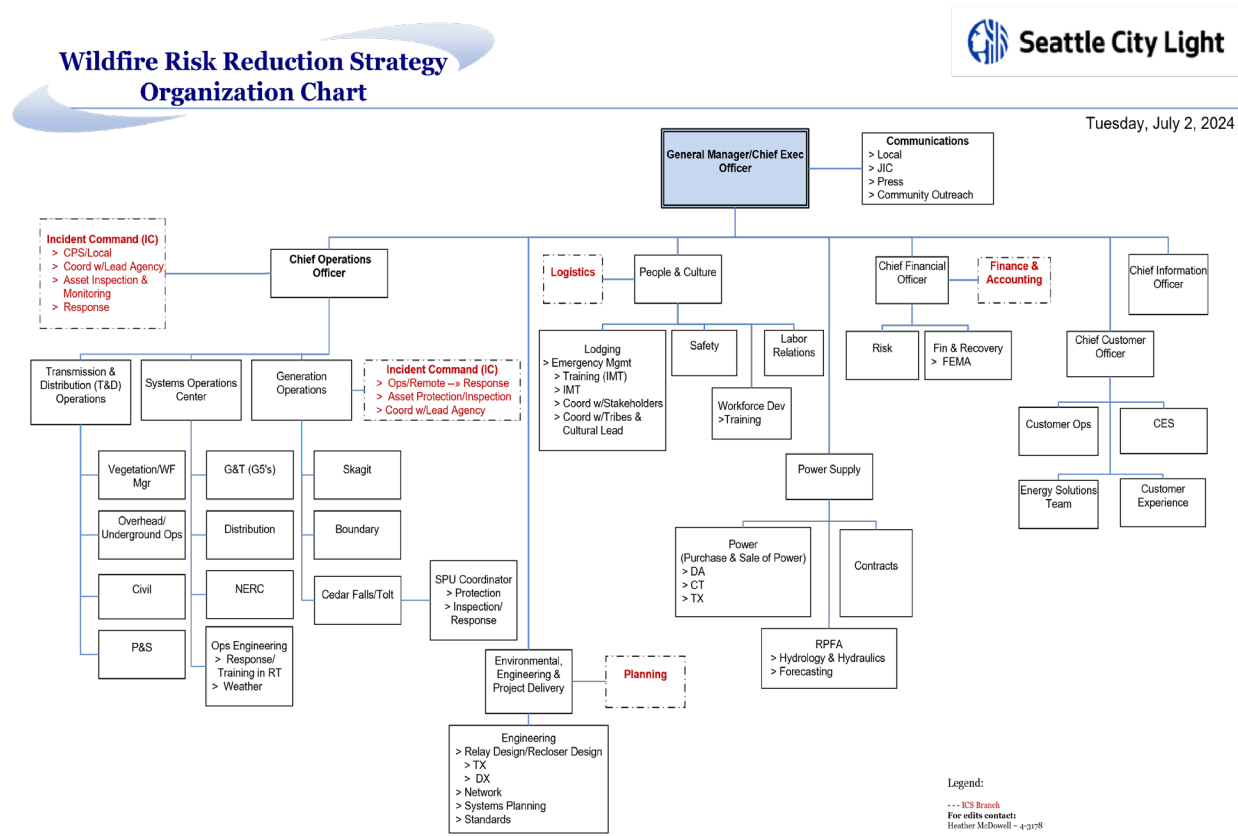
Table 3 specifies the staff, roles, responsibilities, and logistics of these governance entities. The following sections offer a detailed breakdown of this structure, entity functions, and the mechanism for engaging with internal and external contributors. Membership in the three entities will vary over time. Figure 4 displays the organizational chart indicating positions that share responsibility in mitigating wildfire risk.

**TABLE 3. WRRS GOVERNANCE CHART**

ENTITY	STAFF	ROLE	RESPONSIBILITIES	LOGISTICS
<b>Executive Advisory Board</b>	Chief Operating Officer Chief of Staff Environment, Engineering & Project Delivery Officer	Provide guidance on objectives, policy, and risk consideration of strategy.	<ul style="list-style-type: none"> <li>• Ensure alignment with other strategies and mission.</li> <li>• Ensure adequate resources to implement the strategy.</li> <li>• Set expectations and risk tolerance.</li> <li>• Monitor and inform Executive Team on progress.</li> <li>• Review and approve of updates to strategy and submittal to State</li> </ul>	<ul style="list-style-type: none"> <li>• Meet bi-annually in spring and autumn.</li> <li>• 2-year membership minimum.</li> </ul>
<b>Leadership Council</b>	Manager, All-Hazards Incident Management Manager, Strategic Planning and Performance Manager, Vegetation Management Chief Dispatcher, G&T Manager, Science Policy Director, Workplace Logistics Director, Field Operations Director, System Operations	Coordinate the implementation of the strategy.	<ul style="list-style-type: none"> <li>• Identify and prioritize actions in the action plan.</li> <li>• Identify and guide resources.</li> <li>• Establish accountability in resources who are implementing actions.</li> <li>• Provide clarification of strategic goals and actions</li> <li>• Help resolve barriers to implementing actions.</li> <li>• Monitor the progress on actions.</li> <li>• Produce annual report of advancement of action plan.</li> <li>• Report progress to Executive Board.</li> <li>• Update the strategy as needed.</li> <li>• Create submittal package for State.</li> </ul>	<ul style="list-style-type: none"> <li>• Meet bi-monthly</li> <li>• Rotating meeting chair every 6 months.</li> </ul>

<p><b>Working Group</b></p>	<p>Senior Manager, Operations Strategic Advisor, State Government Relations Strategic Advisor, Climate Change Research &amp; Adaptation Manager, Information &amp; Data Management Senior Manager, Operations, Boundary &amp; Lucky Peak Senior Public Relations Specialist Manager, Race &amp; Social Justice Senior Strategic Manager, Network &amp; Transmission Senior Manager, Grid Modernization Strategic Advisor, Legal Affairs Director, Power Management Director, Safety, Health &amp; Wellness Director, Accounting Director, Customer Operations Chief Information Officer Director, Communications Director, Risk Oversight</p>	<p>Implement the strategy action plan.</p>	<ul style="list-style-type: none"> <li>• Establish and carry out work plans for actions within the strategy’s action plan.</li> <li>• Create subcommittees and external support to complete actions.</li> <li>• Identify barriers to completing actions.</li> <li>• Refine actions as needed to meet strategy objectives.</li> <li>• Apply guidance of Leadership Council.</li> <li>• Report on progress bi-monthly to Leadership Council.</li> <li>• Recommend new actions to be added to the strategy.</li> <li>• Document action plan progress as part of annual report.</li> </ul>	<ul style="list-style-type: none"> <li>• Meet bi-annually as a group and subcommittees, as needed.</li> <li>• Membership varies by actions being implemented.</li> </ul>
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**Figure 4 – Wildfire Risk Reduction Strategy Organization Chart**



**5.1.1. WRRS Executive Advisory Board**

The WRRS Executive Advisory Board plays a critical role in overseeing and guiding the strategic direction of City Light’s wildfire risk reduction efforts. This board, typically consisting of three executive-level officers, provides high-level guidance and ensures alignment with City Light's goals, mission, vision, and values. This board provides explicit sponsorship, offering clear strategic guidance and the necessary resources to empower the WRRS Leadership Council in executing their objectives, action plans, and fostering accountability throughout the wildfire risk reduction efforts.

**5.1.2. WRRS Leadership Council**

The WRRS Leadership Council assumes a central role in the comprehensive WRRS, overseeing a range of critical functions aimed at safeguarding City Light and its communities from wildfire threats. At the core of their responsibilities is the implementation of the strategy and action plans (see Section 10.2), approved by the WRRS Executive Advisory Board. This involves translating high-level goals and action plans into tangible, on-the-ground outcomes that effectively reduce wildfire risk and help respond to such events effectively, when it becomes necessary.

Cross-functional coordination is fundamental, as the Leadership Council fosters collaboration and coordination among different divisions, specialists, and working groups including external partners, such



as City departments, federal/state/county agencies, Tribal governments, and other organizations involved in wildfire risk reduction. This collaborative approach ensures that all stakeholders are aligned in their efforts, working collectively toward shared risk reduction goals. Thus, this team leans heavily on the WRRS Working Group members, as needed, for their expert input to help strengthen the WRRS and accomplish set objectives and identified action plans.

### **5.1.3. WRRS Working Group**

The WRRS Working Group takes on the responsibility of collaborating closely with the WRRS Leadership Council. Recognizing the pivotal role that SMEs play in the successful implementation of wildfire risk reduction measures, this partnership prioritizes regular communication, cross-functional cooperation, and a shared dedication to achieving the wildfire risk reduction objectives.

The WRRS Working Group actively participates not only by providing expert advice, feedback, and insight but also by actively engaging in the completion of action items, within their scope of job responsibilities, and their timely delivery to the Leadership Council. This multifaceted approach ensures that strategies and action plans are firmly rooted in the latest technical knowledge and industry best practices, and it actively contributes to the realization of these plans.

Meetings and working sessions are convened as necessary, offering a platform for SMEs to contribute their specialized knowledge, participate in various exercises, including risk assessments and hands-on support in completing assigned action items. Furthermore, the Leadership Council considers the recommendations and concerns put forth by the WRRS Working Group as integral to the prioritization and decision-making process, reflecting a genuine commitment to shaping and refining risk mitigation strategies.

This collaborative approach is designed to foster a culture of continuous improvement, with lessons learned from practical experience and emerging technologies incorporated into the ongoing development of wildfire risk reduction efforts. Through this active partnership, the Working Group ensures that, as an organization, we optimally leverage the wealth of knowledge and expertise within its ranks, strengthening City Light's capacity to effectively mitigate wildfire risks and safely and reliably serve our customers.

## **5.2. Coordination with Local Utility and Infrastructure Providers**

City Light maintains ongoing communication and coordination with adjacent utilities, municipalities, local, state, and federal agencies, and other organizations regarding a wide range of planning and operational subjects that include real-time wildfire risk. Such coordination is critical to help reduce wildfire risk since wildfires often cross multiple jurisdictions, such as municipal or company boundaries. (See Sections 5.4 and 8.2 for more details.)

## **5.3. Coordination with Local Tribal Governments**

City Light regularly engages with and consults federally recognized Tribes and Canadian First Nations as part of our FERC licenses and for other projects within our generation facilities, along transmission rights-

of-way (ROW) outside of our service area, and both distribution and transmission ROW within our service area. In the event of wildfire or other weather events that have the potential to affect places of traditional religious and cultural importance (PTRCI) to Tribes, City Light consults with Tribes to develop strategies for their protection and to safely evaluate how they were affected after an event. As an example, during the Sourdough Creek fire in 2023, City Light consulted with affected Tribes to identify their concerns for effects to PTRCI from the fire itself and from actions related to the response. Once it was safe to do so, City Light provided opportunities for Tribes to visit the area affected by the fire and evaluate effects to PTRCI.

## 5.4. Emergency Management / Incident Response Organization

Emergency management involves actions to monitor for high-risk weather conditions when fires are more likely to occur (see Section 7.1) and to respond when those conditions arise. The Emergency Management program partners with the City Light Safety, Health, and Wellness program for redundancy when monitoring for potential risk. The City Light emergency management component of the WRRS includes situational awareness and operational response to events.

Situational awareness comprises actions to understand the current state and trajectory of the risk of City Light assets causing wildfire, as well as those assets being impacted by externally caused wildfires. It also includes awareness of the potential that transmission lines owned by Bonneville Power Administration may be impacted by wildfires.

Operational response includes the plans and actions that City Light — in coordination with other City agencies, the state, and others — would take to prepare for, operate through, and recover from a wildfire impacting City Light's operations.

Operational response encompasses managing transmission operations to mitigate wildfire risks and addressing externally triggered wildfires with the City of Seattle's Comprehensive Emergency Management Plan and All-Hazards Mitigation Plan, as well as City Light's Continuity of Operations Plan (COOP) and All Hazard Response and Restoration Plan. The COOP is distributed internally within the utility and externally to agencies that may be affected by its implementation. This plan identifies City Light's Emergency Management program and serves as a directive for leadership to follow before, during, and after emergencies.

In addition, to ensure a unified, interoperable approach to resource sharing, coordination, incident management, and information dissemination, City Light employs the Incident Command System under the National Response Framework as established by the Federal Emergency Management Agency.

The City of Seattle's Comprehensive Emergency Management Plan<sup>6</sup> is an all-hazards plan. It describes how the City of Seattle's emergency management system is organized and managed to prepare for, prevent, mitigate, respond to, and recover from any emergency that could adversely affect the health and safety of Seattle's employees, residents, visitors, and environment. Through a series of documents, the

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<sup>6</sup>[https://www.seattle.gov/documents/Departments/Emergency/PlansOEM/2021%20EMAP%20Updated%20Plans/2021-10-26\\_CEMPIIntroduction.signed2.pdf](https://www.seattle.gov/documents/Departments/Emergency/PlansOEM/2021%20EMAP%20Updated%20Plans/2021-10-26_CEMPIIntroduction.signed2.pdf)

Comprehensive Emergency Management Plan describes how City departments coordinate emergency management–related actions, resources, and activities with county, regional, state, federal, private sector, and nongovernmental organizations.

Annex III of the Comprehensive Emergency Management Plan, the City of Seattle All-Hazards Mitigation Plan, is the guiding document for the City’s hazard mitigation program. Its goal is to understand the hazards that pose a risk to the city and identify a comprehensive strategy for minimizing potential losses and maximizing opportunities to increase the community’s resiliency.

The All-Hazards Mitigation Plan requires that all City departments, including City Light, maintain a Continuity of Operations Plan, which is discussed below.

Annex IV of the Comprehensive Emergency Management Plan, Response & Emergency Support Function, provides the foundation for Emergency Support Functions, the various Support Operations Plans (Alert & Warning, Evacuation, and Military), and the Incident Operations Plan. This plan describes how the City responds to save lives, protect property, and stabilize an incident. It describes how coordination is managed among the many departments and organizations, including City Light, that may be involved in response to achieve unity of effort.

## **6. Wildfire Risks and Drivers**

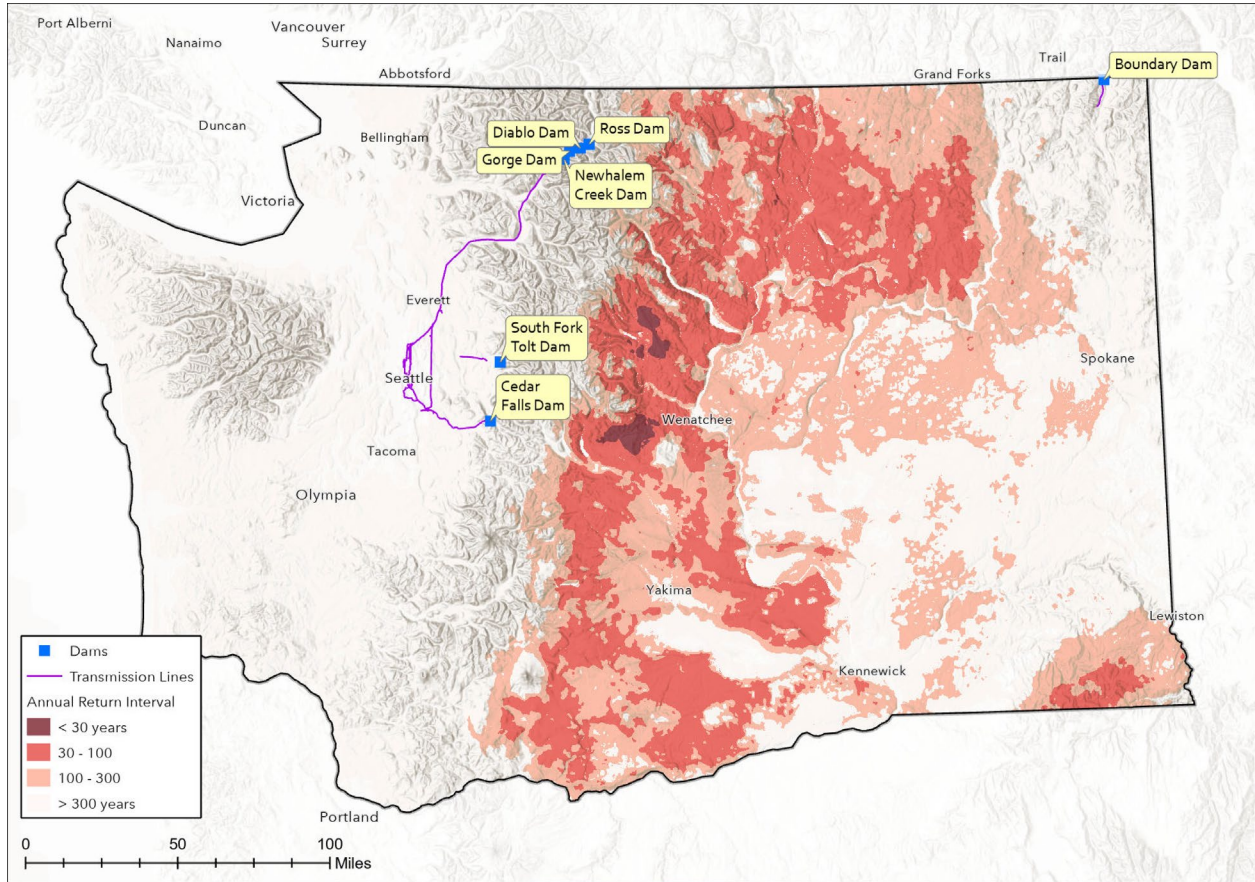
### **6.1. Pacific Northwest Wildfire Risk and Climate Change**

City Light’s generation and transmission infrastructure is in forested areas owned mostly by private companies and state and federal natural resource agencies. Relative to drier regions in eastern Washington, wildfires have been infrequent in the maritime climate of western Washington, where most of City Light’s transmission and generation infrastructure is located. However, on the west side of the Cascade Mountains, dense forest vegetation and summer drought can create conditions that are conducive to wildfires spreading once started during strong easterly wind events. Figure 5 shows the historical annual wildfire return interval in Washington state, developed by the USDA Forest Service in 2020, as well as the locations of City Light generation and transmission facilities. Most areas where City Light’s facilities and service area are located have a historical annual wildfire return interval of greater than 300 years. However, these return intervals are at a single location and wildfires can occur more frequently somewhere on the landscape. Additionally, increased human population and changing climate are shifting the historical probability of wildfire. A recent study projecting changes in the probability from an ensemble of global climate models found a 78-327% increase in Washington’s West and North Cascades by mid-21<sup>st</sup> century compared to contemporary burn probability.<sup>7</sup>

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<sup>7</sup> Dye, A. W., Reilly, M. J., McEvoy, A., Lemons, R., Riley, K. L., Kim, J. B., & Kerns, B. K. (2024). Simulated future shifts in wildfire regimes in moist forests of Pacific Northwest, USA. *Journal of Geophysical Research: Biogeosciences*, 129, e2023JG007722. <https://doi.org/10.1029/2023JG007722>.

**Figure 5. Historical Wildfire Return Interval and City Light Facilities**



City Light recognizes the impact that climate change has on wildfire risk within our service area and the Pacific Northwest region. City Light’s Climate Change Vulnerability Assessment and Adaptation Plan<sup>8</sup> identifies the increasing risk of wildfire as one of the 13 impact pathways through which the utility will experience climate-related impacts to our mission. More recently, University of Washington’s Climate Impacts Group completed an assessment of extreme weather and found indications of potential increases in lightning as well as the number of days with low humidity and easterly winds in mountainous areas near City Light’s hydroelectric projects in the future.<sup>9</sup> Climate models project a doubling in the annual number of high fire danger days near City Light’s Skagit and Boundary Hydroelectric projects by mid-century compared to current levels.<sup>10</sup>

<sup>8</sup> <https://www.seattle.gov/documents/Departments/CityLight/ClimateChangeAdaptationPlan.pdf>

<sup>9</sup> <https://cig.uw.edu/projects/extreme-weather-and-seattle-city-light-operations/>

<sup>10</sup> High fire danger day is a day when 100-hour fuel moisture levels are less than the historical 20<sup>th</sup> percentile - <https://cig.uw.edu/resources/analysis-tools/climate-mapping-for-a-resilient-washington/>

Wildfires in the Pacific Northwest region are projected to increase in frequency and size based on the following major variables related to climate change:

1. Higher temperatures and lower snowpack will cause snow to melt earlier in spring, lengthening the fire season at higher elevations.
2. Higher temperatures and reduced precipitation in summer will dry soils, woody debris, and vegetation, creating vegetation conditions that enable wildfires to spread.
3. Greater tree mortality caused by drought and insects will likely increase the amount of dead vegetation available as fuel to support the spread and severity of wildfires as well as the susceptibility to partial or whole tree failure near power lines.
4. Higher summer temperatures throughout the western United States could increase fire hazards across the region, limiting fire suppression capacity.

## 6.2. Risk Profile of City Light Facilities

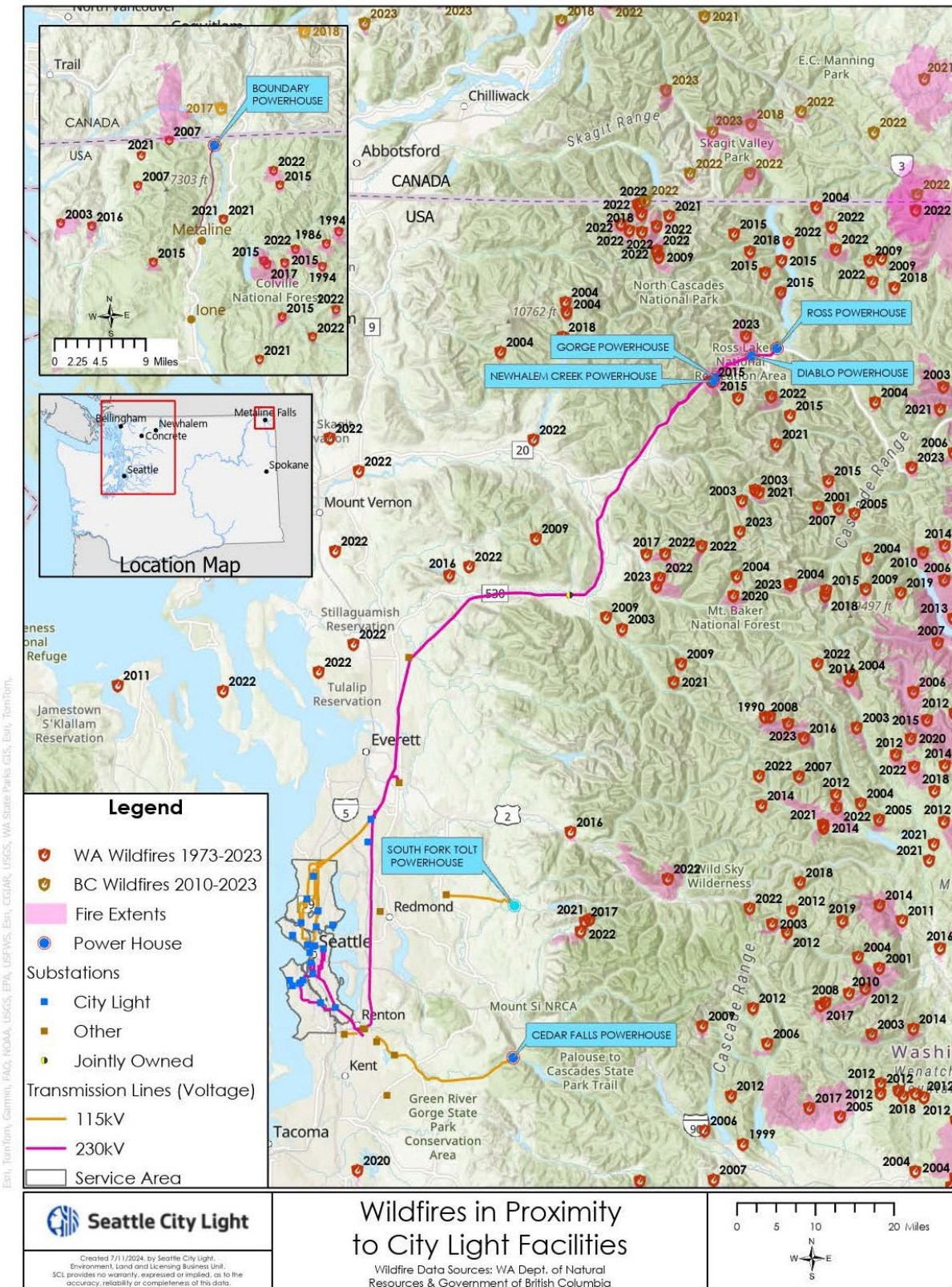
Wildfires in Washington typically occur in forested, mountainous terrain, which is illustrated over the span of several decades in Figure 6. Because City Light hydroelectric projects are also located in such places, these fires present a risk to those projects and their associated transmission lines more so than to transmission and distribution lines located in more urban areas farther west. Nine wildfires larger than 100 acres have occurred within five miles of City Light infrastructure since 1986, according to records from the National Interagency Fire Center (NIFC) and the United States Department of Agriculture using United States Forest Service.<sup>11</sup>

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<sup>11</sup> Data gathered from <https://data-nifc.opendata.arcgis.com/> and [https://data.fs.usda.gov/geodata/edw/datasets.php?xmlKeyword=S\\_USA.FinalFirePerimeter](https://data.fs.usda.gov/geodata/edw/datasets.php?xmlKeyword=S_USA.FinalFirePerimeter)



**Figure 6. Wildfire Mapping Between Near City Light Facilities**



### 6.2.1. Skagit Hydroelectric Project, Including Communities of Newhalem and Diablo

Located within the Ross Lake National Recreation Area, the Skagit Hydroelectric Project is surrounded by the forested wilderness of North Cascades National Park. Both the recreation area and park are part of the North Cascades National Park Complex, managed by the U.S. National Park Service. The towns of Diablo and Newhalem, as well as portions of the hydroelectric facilities, are mapped as a wildland-urban interface by the Washington State Department of Natural Resources<sup>12</sup> and represent areas most at risk with increasing wildfire hazard. The wildland-urban interface is a transition zone between structures, other development, and undeveloped land or vegetative fuels.<sup>13</sup>

The forests surrounding the Skagit Hydroelectric Project and extending north to Hozomeen along the east side of Ross Lake have historically had a moderate fire return interval of 50 to 100 years,<sup>14</sup> whereas the maritime forests west of Ross Lake have had a fire return interval of 80 to 1,000+ years, according to LANDFIRE.<sup>15</sup> Washington State Highway 20 through the Ross Lake National Recreation Area is a popular corridor for summer recreation, increasing the potential for human-caused ignitions. This area also experiences frequent lightning ignitions that have sparked several wildfires in recent history, including the Goodell Creek fire that started with a lightning strike north of Newhalem in August 2015.

The Goodell Creek fire required City Light to evacuate nonessential personnel from Diablo and Newhalem and de-energize transmission lines for several days. The cost to the utility was \$2.2 million in damages, response and labor, as well as an additional \$900,000 for power purchases and lost generation. The low snowpack, early snowmelt and abnormally warm

temperatures in the spring and summer of 2015 likely contributed to the spread of the fire, a weather pattern that is consistent with projected changes in climate for the Skagit area. As version 1.0 of City Light's WRRS was being released, the Skagit area was subject to another wildfire, Sourdough Wildfire, during the summer of 2023. This lightning-caused wildfire burned over 7,000 acres adjacent to the Skagit



*2023 Sourdough Wildfire above Diablo Dam.*

<sup>12</sup> Wildland Urban Interface mapped for the state of Washington, available on Washington Geospatial Open Data Portal at: [https://geo.wa.gov/maps/786aaa1dbbd748e6ae04bc43c8f127fe\\_0/explore?location=48.714522%2C-121.186626%2C11.86](https://geo.wa.gov/maps/786aaa1dbbd748e6ae04bc43c8f127fe_0/explore?location=48.714522%2C-121.186626%2C11.86).

<sup>13</sup> <https://www.usfa.fema.gov/wui/what-is-the-wui.html>

<sup>14</sup> Hamlet, A.F. [et al.]. 2010, Final Project Report for the Columbia Basin Climate Change Scenarios Project, <http://warm.atmos.washington.edu/2860/report/>.

<sup>15</sup> LANDFIRE, Landscape Fire and Resource Management Planning Tools, is a shared program between the wildland fire management programs of the U.S. Department of Agriculture Forest Service and U.S. Department of the Interior, providing landscape scale geospatial products such as fire return interval for the entire United States. <https://landfire.gov/index.php>.



Hydroelectric Project, requiring shutting down some turbines, de-energizing power lines, and resulting in expenses close to \$5.2 million in suppression, operational support, and additional power purchases.

### **6.2.2. Boundary Hydroelectric Project**

Located in northeastern Washington near the Canada-U.S. border, the Boundary Hydroelectric Project is surrounded by U.S. National Forest Service land and forested lands across the border. According to LANDFIRE, the surrounding forests burn with a shorter fire return interval (i.e., 20 to 80 years) compared with forests in northwestern Washington.<sup>16</sup> The hot, dry summers in this region are conducive to the start and spread of wildfires. Additionally, lightning is more frequent in this area than west of the Cascade Mountains. These forests have adapted to be fire resilient, but a legacy of forest management and fire exclusion by humans in this region has contributed to greater fire hazard, causing fires to burn with higher severity and over larger areas when they occur.

### **6.2.3. Cedar Falls and South Fork Tolt Hydroelectric Projects**

The Cedar Falls and South Fork Tolt projects are in wet, maritime forests with long historic fire return intervals (i.e., over 250 years), but large wildfires have occurred in these forests in the past. For example, in 2022 the Lock Katrine and Bolt Creek wildfires were burning in watersheds south and north of the Tolt River watershed, respectively. Wildfires typically burn under extreme weather conditions with warm, dry easterly winds and during periods of extended drought; thus, fires are large when they do occur. The Cedar Falls Hydroelectric Project is in the Cedar River Watershed, which is owned and managed by Seattle Public Utilities (SPU). The South Fork Tolt Hydroelectric Project in the Tolt River Watershed is managed for forest production by private, federal, and Tribal entities. These municipal watersheds are heavily monitored for wildfire by SPU because of the potential detrimental impacts of wildfire on drinking-water quality. SPU maintains an active and highly trained wildfire suppression crew and monitors conditions throughout the summer. SPU owns and manages 8,400 acres primarily to safeguard drinking water quality. As a result, public access to these watersheds is limited to minimize water contamination risks and prevent human-induced wildfires. Lightning is less common in this region compared to eastern Washington. Thus, the potential for wildfires to start near these projects is lower and the likelihood of suppressing them quickly is greater compared to the wilderness areas surrounding the Skagit and Boundary projects.

### **6.2.4. Transmission Infrastructure**

The location of City Light's transmission lines from the Skagit and Boundary hydroelectric projects increases their wildfire risk because they pass through rural, forested land owned by private companies and state and federal natural resource agencies. These lands have abundant vegetation, rugged topography and limited access, making fire protection more challenging compared with urban or agricultural areas. Transmission rights-of-way across the system are managed to promote vegetation of varying heights to create a more natural landscape, consistent with regulatory requirements and industry best practices. However, this increases the volume of combustible vegetation under the lines.

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<sup>16</sup> <https://landfire.gov/>

Furthermore, the rights-of-way for transmission lines are, in some places, relatively narrow, limiting the area adjacent to the lines in which City Light can actively manage vegetation. This limits City Light's ability to control the amount of vegetation that can support fire spread, either through ignition from transmission lines or from surrounding ownerships.

The materials used in the construction of transmission towers are an important factor affecting risk. The 230 kV transmission lines from the Skagit and Boundary projects are primarily on steel structures, decreasing sensitivity to wildfire compared to wooden poles. The 115 kV transmission lines from the Cedar Falls and South Fork Tolt projects contain more wooden poles and are at higher risk of damage from fire.

Fire-related outages of the local distribution system at the hydroelectric projects can have consequences for reliability locally if power is not available to support the facilities. For example, at the Skagit Hydroelectric Project, 26 kV transmission and 7 kV distribution lines on wooden poles provide station service to Ross and Ross Lake Resort and power to the Gorge Dam.

Since City Light's transmission system has many adjacencies and interconnections within the Bonneville Power Administration's regional transmission system, in addition to being the regional transmission path operator, the potential that Bonneville Power Administration will need to initiate public safety power shutoffs (PSPS) to prevent wildfires presents a risk of reduced energy supply to the city of Seattle and parts of western Washington.

#### **6.2.5. Distribution Infrastructure**

City Light's distribution system is within our service areas in Seattle and several surrounding cities, with over 50% located above ground. The service area is primarily urban; though, there are stretches of urban forest and greenbelts that contain contiguous sections of trees and other vegetation. These areas have the potential for vegetation to contact electrical equipment and spark a fire. However, the cities' fire departments can rapidly respond within minutes to reported fires. Consequently, fires would likely be small, contained, and cause limited local service interruptions due to the interconnected system, sectionalizing, and prompt response by City Light operations crews.

### **6.3. Enterprise-wide Operational Risks**

City Light evaluates and monitors enterprise-wide operational risks and readiness at various levels, encompassing emergency response, seismic risks, cyber security, physical plant security, generation, transmission and distribution inspections, and disaster recovery.

City Light's enterprise risk and emergency response framework includes an active Emergency Management Program that adheres to FEMA standards, conducting semi-annual exercises to test its emergency response capabilities. City Light's Continuity of Operations Plan documents our preparation for and response to all hazards, including wildfires, establishing a response organization structure aligned with the National Incident Management System and Incident Command System. (See Section 5.4.)

The sections below describe the processes City Light uses to assess wildfire risk posed by our assets as well as the risks wildfire poses to those assets. Effective risk assessment includes asset management,

understanding asset performance and failure rates, and assessing the condition of assets via inspection and testing.

### **6.3.1. Asset Inventory**

Having an accurate inventory of electric system assets, their operating history and condition is critical to understanding the wildfire risk posed by those assets. City Light has two primary systems that support asset management: the Work and Asset Management System and a geographic information system.

The Work and Asset Management System captures and stores information on most of City Light's physical assets and is used to assist in decision-making. The database contains certain asset-specific information:

- Date of installation, i.e., asset age.
- Nameplate data, including make, model and serial numbers.
- Asset-specific information, e.g., unique asset numbers, locations and a limited repository of recent condition assessment information.
- Work-order activities, including repair history, preventive maintenance cycles, and inspection criteria for all applicable electrical assets.

Information concerning City Light's linear assets, such as conductors and duct banks, is stored in the geographic information system. The system shows the overall connectivity of City Light's electrical system and our assets in location-based settings.

### **6.3.2. Understanding Asset Failures**

To better understand ignition risk and mitigate wildfire, City Light tracks data on component failure rates and electric-system reliability performance. Failures of overhead components, whether in-service failures or components in danger of imminent failure, present a risk of wildfire ignition from potential arcing or wires falling to the ground. City Light tracks transmission and distribution component failures and reliability performance via several systems, including:

- Dispatcher Logging System
- Outage Management System
- Energy Management System
- Advanced Grid Analytics System

Analyzing reclosing activities on overhead lines can help inform City Light's understanding of wildfire risk. For instance, auto-reclosing, relay-protection schemes and using system operator-initiated reclosing on transmission and distribution circuits enhances stability margins and increases system reliability. These reclosing activities provide insight into the interaction between electric lines and vegetation. Lines with a higher number of reclosing incidents interact with vegetation to a greater degree, with each interaction presenting some level of ignition risk. Animals and objects such as Mylar balloons can also trigger reclosing incidents. Reclosing operations are tracked in the Energy Management System and Outage Management System.



*The Diablo switchyard in the North Cascades with Elephant Butte in the background.*

### **6.3.3. Wildfire Smoke**

Wildfires produce significant amounts of smoke and fine particles that can be harmful when inhaled. Smoke reduces visibility, which can impact operations in several ways. It can make driving hazardous and result in road closures, especially on highways or roads near active fire zones. Such road closures may impact the ability of City Light operations crews to perform normal maintenance and respond to electric outages or emergency situations, such as de-energizing electric service to a building on fire or a wire down on a vehicle. Smoke may also disrupt transportation systems which can impact the ability of City Light employees to travel to work.

Fine smoke particles can also present health hazards to employees with respiratory issues such as asthma, bronchitis, etc., with such hazards compounding the impact on City Light operations. Smoke may also impact other City operations and make coordinating with other City agencies more difficult, potentially lengthening response times to outages and emergency situations.





*Wildfire smoke from the Goodell Creek fire near Newhalem.*

## **7. Risk Mitigation**

City Light’s risk mitigation strategy includes situational awareness, grid hardening, vegetation management, and actions to mitigate the impact of losing supply sources not controlled by City Light. Situational awareness involves weather forecasting to better understand environmental conditions. Grid hardening includes activities that help reduce the risk of wildfire by replacing defective assets with new assets, increasing operating flexibility by changing the grid structure with switches, and performing routine or preventive maintenance activities that identify and correct deficiencies before they present undue risk.

Vegetation management includes inspecting rights-of-way to identify encroaching vegetation, trimming/removing incompatible vegetation, and promoting compatible vegetation to reduce the risk of becoming a fuel source for wildfires or of wildfires damaging transmission lines. Risk mitigation also includes actions that can reduce the impact of the loss of supply from sources not owned by City Light. For example, this could include outages of generation units or transmission lines that deliver energy to City Light. More details on these mitigations are provided below and future actions to bolster risk characterization and mitigation are provided in Section 10.2.

## 7.1. Weather Forecasting

Weather forecasting is a part of situational awareness involving emergency management and crew dispatch, as discussed previously in Section 5.4. The City Light Resource Planning, Forecasting and Analysis team, the system operations center, and the Power Operations and Marketing team monitor meteorological and environmental forecasts from various sources to support operations. These include:

- Weather data and forecasts from public and contracted services that include both local and regional information, particularly forecasted wind events such as WindWatch.<sup>17</sup>
- 10-day-ahead and monthly temperature and precipitation forecasts from multiple global synoptic-scale and regional mesoscale numerical weather prediction models.
- Short-term (zero to 10 days ahead) temperature, precipitation, humidity, wind and cloud cover forecasts from [Weather Underground](#) centered on weather stations at Marblemount (adjacent to the Skagit Hydroelectric Project) and at Metaline Falls (upstream of Boundary Hydroelectric Project).
- Current snow-water equivalent data from the Natural Resources Conservation Service (NRCS) for each hydropower watershed.
- Soil moisture and drought conditions information from NRCS and U.S. Drought Monitor.

City Light does not currently contract services with any entities designated for wildfire detection but does monitor publicly available wildfire maps during wildfire season, such as the [AirNow Fire and Smoke Map](#). Recent build out of adjacent utility technology in support of wildfire prediction and response present additional opportunities for a more regional approach to overall wildfire mitigation.

## 7.2. Design and Construction Standards

City Light has a portfolio of programs to replace assets and install new ones to improve safety, increase reliability, and reduce the risk of wildfire. City Light's Capital Improvement Program provides funding for repairing, upgrading, and expanding infrastructure to reduce the risk of infrastructure causing wildfires.

### 7.2.1. Transmission Line Reliability Program

This ongoing program repairs or replaces the worst 1% of City Light's transmission structures and conductors each year. It also sets engineering, construction and other goals for improving and maintaining the reliability of the overhead and underground transmission systems.

### 7.2.2. Transmission Line Capacity Program

This ongoing program upgrades transmission lines, builds new lines, relocates lines, and provides for other system needs, including enhancing City Light's transmission capacity. As part of these upgrades, older and poorer-performing components are replaced, reducing wildfire risk.

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<sup>17</sup> <https://a.atmos.washington.edu/SCL/>

### **7.2.3. Transmission Wooden Pole Replacement**

Some of City Light's 115 kV transmission system is supported by wooden poles. City Light has been strategically replacing wooden poles with composite poles, which are more fire resistant, in ecologically sensitive areas, reducing potential damage from externally caused wildfires. As of summer 2024, 57 poles have been replaced with composite poles, and an additional 3 poles are scheduled to be replaced by December 2024.

### **7.2.4. Distribution Overhead Equipment Replacements**

This ongoing project replaces older equipment in City Light's distribution system that is nearing the end of its usable life, is overloaded, or no longer has an available supply of spare parts. These items include poles, cross arms, transformers, and open-wire secondaries. Such replacements reduce the risk of component failure that can cause wildfire ignitions.

Covered overhead conductors present a lower ignition risk than bare conductors. City Light's distribution system consists of approximately 1,730 miles of overhead 26 kV conductors; virtually all those circuit miles are bare conductor. The Overhead Equipment Replacement Program includes the replacement of bare overhead distribution conductors with covered conductors.

### **7.2.5. Distribution Overhead Customer-Driven Capacity Addition**

The replacement of substandard or deteriorated assets under this program reduces the risk of component failure and consequently the risk of wildfire. Work includes replacing old line segments, building new line segments, relocating lines for construction clearances and replacing rotten or damaged poles in the distribution system. This ongoing program reduces wildfire risk by replacing older, obsolete 4 kV electrical equipment with new, efficient, more reliable 26 kV distribution equipment. This program also increases capacity to deliver power to City Light customers, rebuilds and maintains the backbone of City Light's system, saves energy by reducing transformer and line losses, and improves quality and reliability of service to customers.

### **7.2.6. Distribution Undergrounding Programs**

Converting overhead wire-distribution infrastructure to underground significantly reduces the risk of wildfire. City Light has several undergrounding programs that move overhead infrastructure underground during other City transportation, commercial, and utility projects. This program also addresses modifications to the distribution system, including replacement or modifications of old lines, poles, and underground facilities as necessary.

### **7.2.7. Distribution Automation**

Distribution automation systems help reduce wildfire risk by improving situational awareness and control over distribution feeders, which can support the implementation of public safety power shutoffs (PSPS) and help minimize the scope and duration of those events. This ongoing program automates radial distribution feeders, which includes installing equipment to provide remote control of switches on power



lines that gather real-time data on the conditions of distribution power lines. The installation of strategically placed switches allows automatic outage restoration, shifting blocks of load to maximize system efficiency, and reconfiguration of the grid to reduce the impact of PSPS and weather-related service interruptions on customers.

#### **7.2.8. Substation Circuit Breaker Replacement Program**

Circuit breakers interrupt the flow of electric current when the system senses problems. They can also turn off power for maintenance and support PSPS, when utilities de-energize lines during high-risk weather to reduce the threat of lines causing wildfires. The Substation Breaker Replacement Program funds the review of City Light's inventory of approximately 400 transmission and distribution voltage circuit breakers and determines which have the greatest wear, gas or oil leaks, maintenance cost, service stress, and fault interrupting history. City Light replaces circuit breakers with the highest failure risk.

#### **7.2.9. Substation Equipment Improvement Program**

Properly operating equipment in City Light substations is critical to reducing wildfire risk and responding to wildfires that do occur. The Substation Equipment Improvement Program adds, replaces, and upgrades substation equipment, including remote control and monitoring equipment at the system operations center. The upgrades improve response times to correct problems or respond to outages. Additionally, better remote control of substation equipment facilitates the implementation of PSPS, reducing wildfire risk as well as the scope and duration of PSPS events.

#### **7.2.10. Cedar Falls Hydroelectric Facility Project Hardening**

The Cedar Falls facility includes a dam, penstocks, a powerhouse, substation, and associated outbuildings. The penstocks transport raw drinking water, water for the hydroelectric powerhouse, and water for fire suppression. This facility is a critical community lifeline that supplies clean drinking water to approximately one million people in the Seattle area.

City Light recently received funding to protect the Cedar Falls watershed and Hydroelectric Project under the Federal Emergency Management Agency Hazard Mitigation Grant Program. The scope of the project includes developing a hazardous fuels management strategy and creating a defensible space of approximately 100 feet surrounding the hydroelectric project's infrastructure to protect the facility from wildfire hazards. The defensible space buffer will extend the entirety of two 7,500-foot-long (1.42-mile-long), 78-inch-diameter steel penstocks from their source at Masonry Dam to the powerhouse located at Cedar Falls.

### **7.3. Fuel and Vegetation Management**

Vegetation management includes inspecting rights-of-way to identify encroaching vegetation, trimming/removing incompatible vegetation, and promoting compatible vegetation to reduce the risk of causing wildfires or of wildfires damaging transmission lines.

### 7.3.1. Transmission Vegetation Management

Trees can cause damage to electrical lines, with the risk of triggering ignitions and wildfire. City Light's Transmission Vegetation Management Program (TVMP) is designed as a management framework that, through routine inspection, maintenance, and documentation, can reduce the risk of wildfires, increase the reliability of electric service, and improve safety for surrounding communities.

The City Light TVMP includes the following management components:

- Annual right-of-way patrols and inspections.
- Routine, cyclical vegetation management to achieve required clearances.
- Routine, cyclical right-of-way maintenance.
- Danger tree removal.
- Quality assurance.

The City Light vegetation management strategy uses the Integrated Vegetation Management approach, an industry best practice, which employs a variety of manual, chemical, biological, and cultural techniques to promote desirable, stable, low-growing plant communities that will resist invasion by tall-growing tree species.

### 7.3.2. Vegetation Clearance

The TVMP complies with the requirements in the North American Electric Reliability Corporation (NERC) reliability standards, including FAC-003,<sup>18</sup> which addresses all transmission circuits rated at 200 kV or higher. City Light also uses guidelines from the National Electric Safety Code, Rule 218, and considers the annual growth rates of vegetation. Any issues or concerns found during the inspection process are documented with a Transmission Planned Action Item form, which outlines transmission work that will be prioritized and distributed to the appropriate crews.

Using Integrated Vegetation Management, City Light or contractor crews:

- Selectively remove and control tall-growing species with as little impact as possible on native and other low-growing species. City Light Power Line Clearance and Landscapes teams trim trees according to City Light's minimum standing vegetation clearances. This work includes removing deciduous trees in a way that prevents resprouting.
- Develop new plant communities through seeding and planting with compatible species.
- Seed or fertilize existing or disturbed areas with compatible species.

Table 4 summarizes the vegetation clearance methods at various City Light facilities.

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<sup>18</sup> <https://www.nerc.com/pa/Stand/Reliability%20Standards/FAC-003-4.pdf>

TABLE 4. VEGETATION CLEARANCE		
FACILITY	DESCRIPTION	CLEARANCE OBJECTIVES
<b>Distribution Power Lines</b>	Primary Voltage	10 ft. for slow-growing species 14 ft. for fast-growing species 15 ft. overhang clearance
	Service Lines and System Neutral Lines	3 ft. for slow-growing species 5 ft. for fast-growing species City Light prunes vegetation away from Service Lines for first 10 ft. from where they connect to utility poles
<b>Transmission Power Lines</b>	115,000 Volt	Based on line-engineering, species, trim-cycle, and right-of-way width
	240,000 Volt	Based on line-engineering, species, trim-cycle, and right-of-way width
<b>Infrastructure</b>	Underground Vaults	Vaults must be accessible for maintenance work
	Power Meters	Meters must be accessible
	Transformer	10 ft. clearance for all tree species
	Utility Poles	3 ft.

**7.3.3. Danger Tree Removal**

One of the largest causes of power outages to City Light’s transmission lines are diseased or dying trees, commonly called “danger trees” or “hazard trees,” outside the right-of-way and at risk of falling into transmission lines. In assessing danger trees for removal, crews consider the growth rate and overall health of the tree, the stability of the ground surrounding the tree, the location and proximity to the power lines, and the criticality of the power line.

City Light has begun to explore remote sensing technologies, including Light Detection and Ranging (LiDAR) scanning and satellite imagery, with the capacity to help evaluate tree health, height, and strike potential at a right-of-way scale.

Since trimming danger trees often requires consultation and permission from the owners of the adjacent property, City Light continues to build and foster relationships with owners to improve the safety and reliability of the transmission system and the overall health of surrounding vegetation.

**7.3.4. Right-of-Way Maintenance**

Crews also perform maintenance in the right-of-way, including mechanical clearing and applying herbicides. Mechanical clearing is used on a limited basis on City Light’s rights-of-way in areas with high tree density and accessible terrain. Herbicides are primarily used to help control deciduous tree stump resprouting and invasive and noxious weeds. Spot application of approved herbicides is the only airborne application method used for herbicides on rights-of-way; injection and hand-painting methods are employed as well.

## 7.4. Asset Inspection and Response

### 7.4.1. Transmission Line Vegetation Inspections

City Light transmission right-of-way crews work in the transmission corridors daily. Transmission line crew chiefs monitor vegetation growth, clearances between vegetation and the line, access roads, culverts, bridges, right-of-way uses, land use/easement encroachments, and vandalism in their daily work to identify areas and prioritize types of vegetation needing control.

City Light's 230 kV transmission system is patrolled once every calendar year, typically in the October to December time frame, to capture the following:

- Assess the condition of the transmission right-of-way.
- Identify potential encroachments, including new construction that could conflict with the safe operation of the transmission system.
- Identify changes in vegetation and tree conditions along the right-of-way.
- Identify potential damage to transmission access and roadways.

In addition to the annual patrols on the 230 kV system, the City Light transmission right-of-way vegetation management organization conducts a four-year work cycle plan that includes maintenance such as clearing vegetation, maintaining right-of-way infrastructure, and addressing encroachments or ensuring proper access or egress. The return intervals for the segments vary, with most maintained on a two-year interval and some segments inspected and maintained annually. These schedules ensure the entire system is maintained over the course of the four-year cycle.

### 7.4.2. Assessing Asset Condition

City Light assesses the condition of our assets through inspection and testing. Periodic asset inspections are used for transmission lines, structures, and their associated components. These assets have documented assessment criteria and a standardized asset health-scoring system. City Light determines asset-inspection intervals by considering factors such as:

- Age and condition.
- Average useful life span.
- Consequences of failure.
- Environmental factors.
- Regulatory requirements.

For City Light's transmission system, the primary inspection method is to perform visual inspections from the ground or from the air (using helicopters with high-definition cameras). Inspections aim to confirm the structural integrity of the tower, tower base, and groundline installation by looking for the following risk factors:

- Excessive corrosion, bent or damaged members, and broken or loose hardware.
- Inadequate cathodic protection.<sup>19</sup>
- Mechanical damage to components.
- Potential metal loss.
- Vegetation encroachment at the footings.

City Light continues to evaluate the optimal inspection cycle for our steel-lattice transmission structures and overhead transmission conductors. Both asset classes are estimated to be able to provide reliable service for 80 to 90 years, and condition assessments done in the last five years indicate that these assets are in good condition.

City Light performs testing to evaluate the condition of our assets, which includes technologies such as:

- Drone inspections, currently in the initial stages of development.
- Infrared monitoring, which is used to find hot spots in electrical connections that may signal a higher risk of failure.
- Light Detection and Ranging scanning, performed periodically by helicopter, to measure the distances of the transmission conductors from the ground and surrounding vegetation to ensure the utility is maintaining all required clearances.
- Partial discharge detection, which detects radio frequency emissions from defective electrical components.
- Resistograph™ pole drilling, which uses an electronically controlled drill and computer analysis that measures the density of wood and can identify weakened poles.

For distribution infrastructure, City Light runs an active and ongoing wooden pole inspection and replacement program. Every one of the approximately 92,000 wooden poles is inspected every 10 years. Out of this, City Light replaces 1,500-2,000 wooden poles each year through this program.

City Light conducts periodic visual inspections on distribution infrastructure. If an issue is identified, City Light conducts further inspections, repairs, and/or replacements as required.

## 7.5. Workforce Training

Another important aspect of operations concerns the risk of wildfires caused or observed by utility and contract personnel while performing work. City Light has specific response and communications protocols for our employees and contract crews as well as effective work practices to reduce the risk of causing ignitions, to respond and report fire incidents, and to suppress any developing fire, if they do occur. Additionally, City Light personnel support the efforts of external agencies, such as the National Park Service.

City Light staff follow the Industrial Fire Precaution Levels (IFPL) when planning and performing their work to minimize fire ignition and spread.<sup>20</sup> Personnel who work in the transmission rights-of-way as well as in

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<sup>19</sup> A technique used to control the corrosion of metal surfaces using electric currents.

<sup>20</sup> <https://www.dnr.wa.gov/ifpl>

the Cedar River and South Fork Tolt watersheds are required to attend annual training on the WDNR fire prevention and reporting requirements, including IFPL, firewatch requirements, how to recognize fire emergencies, and the required availability and use of fire suppression equipment. Trained and experienced vegetation management personnel may provide support to fire crews, including cutting fire breaks outside the active fire zone, removing deadfall, selectively removing damaged trees, and advising on routes for access and egress.

Personnel at remote generation sites are trained to recognize and promptly report fire incidents. They have Emergency Evacuation Protocols that they train on, and they provide support within their training and experience capabilities. During fire season any outside work that could produce sparks or flames requires a hot-work permit and on-location availability of fire suppression and communications equipment. The Skagit Hydroelectric Project has a fire brigade and trains annually in accordance with federal regulations per 29 CFR 1910.156 (WAC 296-305).

All personnel who may be impacted by airborne fire hazards and by ambient heat are required to annually complete safety training on the hazards of smoke and smoke mitigation measures to protect personnel. Additional annual training requirements related to wildland fire hazards include respiratory protection and working in high temperature environments.

## **7.6. Relay and Reclosure Practices**

City Light's protective devices and relay practices closely follow NERC compliance requirements, but do not specifically change for the purpose of wildfire mitigation. Disabling auto-reclose is a practice that could be considered during high fire season or during actual elevated fire risk during an event.

## **7.7. De-energization and Public Safety Power Shutoff**

The electricity for City Light customers is supplied by transmission lines — some of which are owed by City Light and others that are owned by Bonneville Power Administration — that may need to be de-energized for the following reasons:

- To avoid arcing or flashover from the lines to the ground through smoke when wildfires and smoke are in the vicinity.
- To ensure the safety of firefighters and firefighting activities such as helicopters dropping water on fire near lines.

Because of the networked nature of the transmission grid, such de-energizations may not necessarily result in customer outages. City Light's system-operations personnel have direct communications with Bonneville Power Administration system-operations personnel, and this existing communications channel is integral in the event of such a de-energization. The decision to de-energize City Light transmission is made by field personnel performing inspections or during coordination through an incident command structure. It is also possible that protective relaying might trip lines out of service during an event, depending on the proximity of the fire to the transmission lines.



As City Light implements the WRRS, the work of exploring the creation of a formal public safety power shutoffs (PSPS) program should consider the following best practices:

- Monitoring forecasts on the potential for high-risk weather to affect our service area.
- Developing well-defined protocols for initiating PSPS with explicit procedures and thresholds above which PSPS are activated as a measure of last resort.
- Proactively communicating the potential for PSPS to customers who may be affected, with particular focus on customers on life support equipment and other vulnerable populations.
- Providing timely communication updates via a variety of channels, including Microsoft Teams channels, Webex, email, and voice and radio communication.
- Working with the community and various stakeholders to minimize the impact of PSPS events.
- Developing well-defined protocols for re-energization.

## 7.8. Power Supply Diversification

City Light also reduces the potential impact of wildfires on electricity supply by diversifying our portfolio of power resources to include utility-owned generation, power contracts with other suppliers, and geographic diversity. Geographic diversity increases resilience to natural hazards, including wildfires, that affect resources in a specific location. Overall risk to reliability of the system in one location can be mitigated by resources in other locations.



*Crew conducting inspection/vegetation clearance around power lines.*

## 8. Stakeholder Cooperation and Community Engagement

The stakeholder engagement component of City Light's WRRS entails engaging the communities we serve, emergency response organizations, and other utilities and agencies to identify lessons learned and best practices for reducing wildfire risk and responding to wildfires that do occur.

### 8.1. Engagement With Communities

In engaging with communities, City Light incorporates or plans to incorporate the following:

- Sharing information with the public about our WRRS on our Powerlines blog.<sup>21</sup>
- Publishing brochures designed to inform and educate the public, for example, "Living and Working Near High Voltage Power Lines" and "Native Plants for Power Lines."
- Collaborating with the Washington State Nursery and Landscape Association to issue certificates through The Urban Landscape Tree Certificate program to property owners who support tree removal on City Light's transmission right-of-way.
- Sharing information and safety tips with City Light customers about vegetation management, tree maintenance, and tree trimming activities in our print and digital newsletters.
- Ensuring information is appropriate and accessible for all audiences, including language access and tailored, targeted outreach, via the City Light Communications Division.
- Hiring a dedicated Community Outreach & Engagement Advisor who is focused on developing a utility-wide framework for inclusive community outreach, engagement, and relationship-building with the extensive network of community-based organizations in our service area.
- Ensuring visibility into enrolled-customer locations and needs during unplanned outages via City Light's Life Support Equipment Program.
- Collaborating proactively prior to implementation of a PSPS program, emphasizing transparent communication, timely updates, and tailored outreach strategies to ensure resident preparedness and safety.

For the communities of Newhalem and Diablo, where City Light's generation facilities are located, partnerships with the Skagit and Whatcom conservation districts led to completing wildfire hazard risk assessments in 2013 and 2014 that resulted in the following:

- City Light developed action plans to reduce the likelihood and consequences of wildfire for infrastructure damage and employee safety.

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<sup>21</sup> Apr. 2022 Powerlines blog - <https://powerlines.seattle.gov/2022/04/20/protecting-our-planet-and-our-community-from-extreme-wildfires/> and Aug. 2023 Powerlines blog - <https://powerlines.seattle.gov/2023/08/15/seattle-city-lights-wildfire-risk-reduction-strategy/>.

- The towns were recognized as Firewise USA® communities in 2013 and 2014, which raises the awareness of wildfire hazard and increases coordination among City Light and the local, state, and federal agencies responsible for wildfire response.
- City Light identified at-risk infrastructure and actions that can be taken to reduce future wildfire risk:
  - Removing vegetation and woody debris near buildings to increase defensible space.
  - Removing invasive and flammable vegetation around infrastructure.
  - Enhancing evacuation procedures.
  - Increasing capacity to manage wildfire risk by hiring a full-time fire brigade chief to support coordination with fire and emergency agencies in preparation/response/recovery activities as a utility liaison, support and conduct risk assessments, and address other wildfire-related safety concerns.

## 8.2. Engagement With Emergency Response Organizations and Municipalities

City Light maintains ongoing communications and coordination with adjacent utilities, municipalities, local, state, and federal agencies, and other organizations regarding a wide range of planning and operational subjects impacting City Light's WRRS:

- The City Light wildfire mitigation plan for the Skagit Hydroelectric Project was developed through the collaboration of local emergency-management experts, community members, climate-adaptation specialists, and City Light employees.
- City Light and other public- and investor-owned utilities and rural electric cooperatives have been collaborating with the Washington Department of Natural Resources on approaches to wildland fire-risk assessment, prevention, and mitigation. City Light participated in the Utility Wildland Fire Task Force in 2019, which addressed fire investigation protocols and removal regulations for "danger trees" within utility rights-of-way. City Light continues to work with utilities and agencies on the Utility Wildland Fire Prevention Advisory Committee to develop solutions for fire prevention and risk mitigation.
- City Light supported King County's development of a wildfire risk reduction strategy, its first-ever strategic framework for cross-jurisdictional and cross-organizational work on wildfire risk reduction.
- The City of Seattle has Cooperative Agreements with the Washington State Department of Natural Resources and Eastside Fire and Rescue to support rapid response to wildfire starts.
- Where City Light transmission lines cross U.S. Forest Service (USFS)-administered lands, City Light manages the land and vegetation through either a Federal Energy Regulatory Commission (FERC) license if lines are on land within the FERC project limits or a special-use permit with the USFS. The license and permit detail how the utility operates on USFS-administered lands. The special-use permit also includes operating plans that describe

treatment of vegetation within the right-of-way to prevent vegetation grow-in and maintain North American Electric Reliability Corporation compliance.

- City Light has served as the Executive Committee Chair of the CEATI<sup>22</sup> Vegetation Management Task Force for the last several years, which focuses on the advancement of technologies to support utility vegetation management, including wildfire detection, mitigation, planning and response.

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<sup>22</sup>The Centre for Energy Advancement through Technological Innovation

## 9. Restoration of Services

City Light's Continuity of Operations Plan provides a clearly defined and structured approach to restorations following an incident that results in an outage event, including those related to wildfire. This plan ensures that restoration efforts are performed in an effective and coordinated manner, enhancing our ability to restore electrical systems and essential services to our customers. The plan has four aims:

- Protection of physical infrastructure and cyber security.
- Mitigation, to identify vulnerabilities and reduce them.
- Response, which maintains a strong capability to address emergencies.
- Recovery, which gets City Light and our customers back to normal.

The City Light All-Hazard Response and Restoration Plan is a guide for decision-making actions involving damage assessment, identification of restoration tasks, and development of metrics and activation levels during restoration efforts. The plan is distributed to all City Light staff who have restoration responsibilities. To ensure effective coordination during restoration efforts, the plan is shared as necessary with local emergency response and management agencies, designated emergency-coordination officers, emergency-management directors, emergency-management planners, and other affected parties. The plan:

- Describes the basic strategy and tactics for responding to outage events and demobilizing after completion of restoration efforts.
- Defines storm and earthquake activation modes, trigger points, and expected actions of various operating centers.
- Outlines the basic restoration response organization.
- Outlines the roles and responsibilities for City Light personnel to respond to emergencies in a coordinated effort to restore power to customers.
- Identifies restoration event and response levels.
- Provides notification and mobilization procedures for City Light response personnel.
- Establishes overall restoration procedures and policies.

City Light activates the Continuity of Operations Plan and the All-Hazard Response and Restoration Plan and takes necessary actions, in coordination with Citywide disaster plans, in the following situations:

- Widespread or significant interruption of electrical service to City Light customers or failure of generation, transmission, or distribution facilities that impact overall public safety and cause property damage that requires emergency response on the part of City Light or other City departments.
- Emergencies or disaster situations caused by storms or earthquakes where City Light assistance is needed by other City departments or outside agencies.

# 10. Evaluation of Strategy and Action Plan

## 10.1. Metrics and Assumptions for Measuring Performance

An important aspect of reducing wildfire risk includes benchmarking and monitoring City Light’s wildfire readiness and performance from current and future strategies. City Light identified three categories to measure and track wildfire risk reduction in our service area and operating areas: internal training, outage management, and alertness. Metrics for each of these performance indicators are shown in Table 5. The metrics will be assessed annually to inform the level of risk and readiness related to wildfire.

TABLE 5. PERFORMANCE CATEGORY METRICS	
Category	Metric
Internal Training	<ul style="list-style-type: none"> <li>• Emergency Management – Tabletop Exercise – 2024</li> <li>• Emergency Management – Functional Drill – 2026</li> <li>• Emergency Management – Full Scale Exercise – 2028</li> <li>• Safety, Health, and Wellness – Wildfire Training – Yearly</li> </ul>
Outage Management	<ul style="list-style-type: none"> <li>• Miles of transmission lines inspected – Yearly</li> <li>• Systems operations center log with fire information – Yearly</li> <li>• Percent of distribution feeder breakers with Supervisory Control (SCADA) installed – Yearly</li> </ul>
Alertness	<ul style="list-style-type: none"> <li>• Number of Red Flag Warning days between April and October – Yearly</li> <li>• Number of High Wind days between April and October – Yearly</li> <li>• Number of IMT activations related to Red Flag Warnings and High Wind Events between April and October – Yearly</li> </ul>

## 10.2. Areas of Continued Improvement

Table 6 outlines a collection of action plans to advance the WRRS over the next several years. More details on actions are provided in a living document as a Portfolio of Actions that will evolve over time as actions are implemented and new ones are identified during implementation of the WRRS. This Portfolio of Actions details priorities among actions, leads and collaborators on actions, approach to address action, and a timeline to complete actions.



**TABLE 6. CITY LIGHT WRRS ACTION PLAN**

Area	Action Description
Risk Assessment	Evaluate wildfire risks at asset level for Skagit, Boundary, Cedar Falls and South Fork Tolt generation facilities as well as transmission lines.
Risk Assessment	Advance City Light's understanding of the wildfire risk reduction value of investment programs and incorporate findings into decision and optimization processes.
Risk Assessment	Expand and centralize data repositories on reliability performance, customer interruptions, asset inventory and condition, vegetation management, weather data and fire events.
Risk Assessment	Evaluate current inspection/assessment cycles for infrastructure with lens of fire risk reduction.
Risk Assessment	Explore technology options to inspect infrastructure in remote areas.
Risk Assessment	Develop a report on overhead transmission and distribution line reclosing operations to help inform the risk assessment component of the WRRS.
Risk Mitigation	Incorporate wildfire risk-reduction potential into new technology evaluations.
Risk Mitigation	Seek federal funding to mitigate wildfire risk to critical energy and water infrastructure.
Risk Mitigation	Continue to diversify portfolio of power resources with respect to location of power generation.
Risk Mitigation	Develop a formal quality-assurance and quality-control program to verify the quality of repairs and maintenance performed.
Risk Mitigation	Evaluate Vegetation Management Program to identify opportunities to better reduce wildfire risk, including formulating agreements with landowners on danger tree management.
Emergency Management	Explore developing a formalized public safety power shutoff, including procedures for high-risk weather conditions.
Emergency Management	Create formal agreements with Skagit County fire chiefs, National Parks Service and the Washington State Department of Transportation for clarity on wildfire response events.
Emergency Management	Increase the deployment of remote sensors and cameras in City Light transmission corridors.
Emergency Management	Integrate WRRS with the City of Seattle's Comprehensive Emergency Management Plan, Seattle Disaster Readiness and Response Plan, and other plans.
Emergency Management	Contract services from entities designated for wildfire detection outside current use of publicly available wildfire maps during wildfire season ( <a href="https://fire.airnow.gov/">https://fire.airnow.gov/</a> ).

**TABLE 6. CITY LIGHT WRRS ACTION PLAN (CONT.)**

Area	Action Description
Emergency Management	Evaluate the feasibility of providing 40-hour training for right-of-way crews to provide them with the skills and knowledge to safely support fire personnel providing quick response to developing fires, such as creating fire breaks.
Emergency Management	Collaborate on new technologies supporting wildfire prediction and response with adjacent utilities to advance regional preparedness.
Stakeholder Engagement	Identify and map disadvantaged communities in service and remote areas; integrate wildfire hazard risk assessments with Skagit, Whatcom and Pend Oreille conservation districts for rural communities (Newhalem, Diablo, Metaline Falls).
Stakeholder Engagement	Evaluate relationship with landowners adjacent to hydroelectric projects and transmission lines, and engage in conversations and collaborations with adjacent landowners on wildfire prevention methods and wildfire response.
Accountability and Governance	Institutionalize a formal governance structure following industry best practices.

### 10.3. Monitoring the Performance of Inspections

The City Light Transmission Vegetation Management Program includes a quality assurance and control component. After vegetation management work is completed, a field inspection is conducted by City Light crew chiefs and/or right-of-way leads who verify each other’s work for added quality control measures. Copies of the verification forms are retained digitally by the Vegetation Management team and submitted to City Light’s Compliance Unit team for review, regulatory compliance, and record retention.

Although City Light’s inspection programs have no formal quality-assurance/quality-control triggers to determine the quality of maintenance work performed, such a program development is proposed as part of the WRRS Action Plan. (See Section 10.2.) City Light requires contractors to develop an approved quality-assurance/quality-control process to ensure accurate information and quality data are delivered and entered into the Work and Asset Management System.

