

City of Kirkland – System Update

PSE System Planning

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SOUND
ENERGY**

Introduction

- Safety moment
- Modern Electric Delivery System
- System Planning Process
- Distribution System Overview
- Transmission System Overview

Safety Moment: Ladder Safety



SAFE STEPLADDER USE

- 

Follow manufacturer instructions and ladder labels
- 

Face the ladder while climbing up or down
- 

Keep slippery materials away from ladders
- 

Use a barricade to keep traffic away
- 

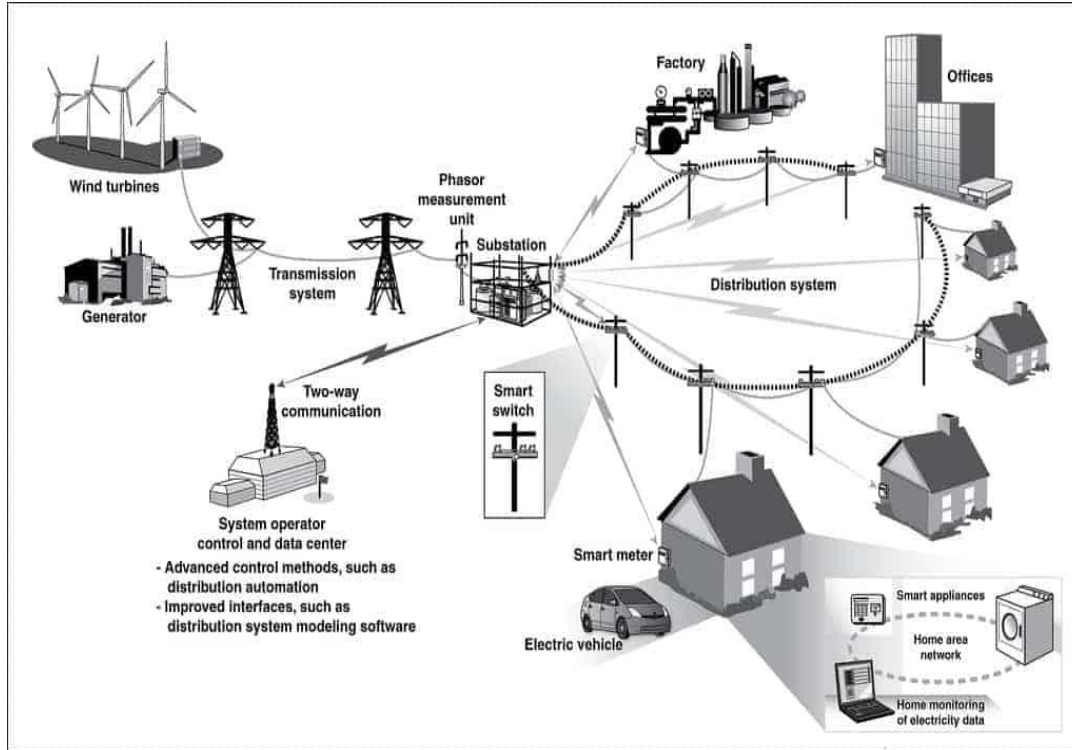
Only put ladders on a stable, level surface
- 

Maintain 3 points of contact (two hands and a foot, or two feet and a hand)
- 

Check for, and avoid, overhead power lines

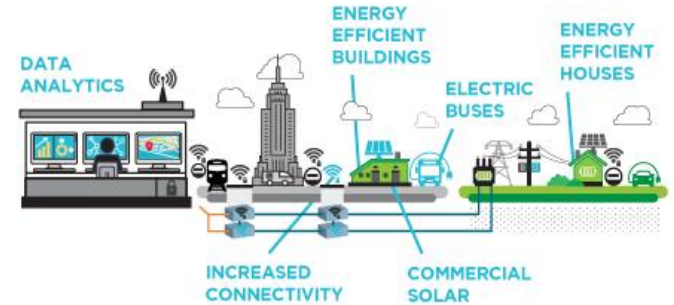
OSHA.GOV

Modern Electric Delivery System



Source: GAO analysis.

THE FUTURE OF THE GRID

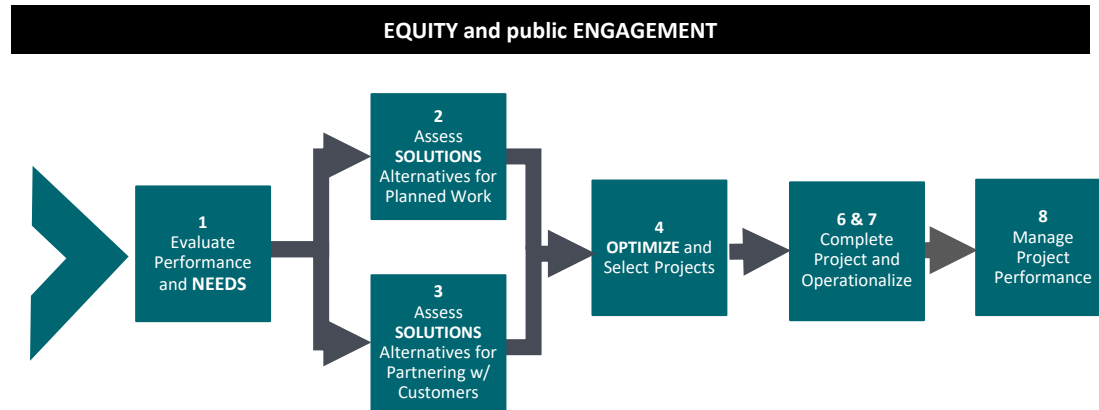


Energy Delivery System Planning Process

Energy Delivery System Planning (DSP) Operating Model

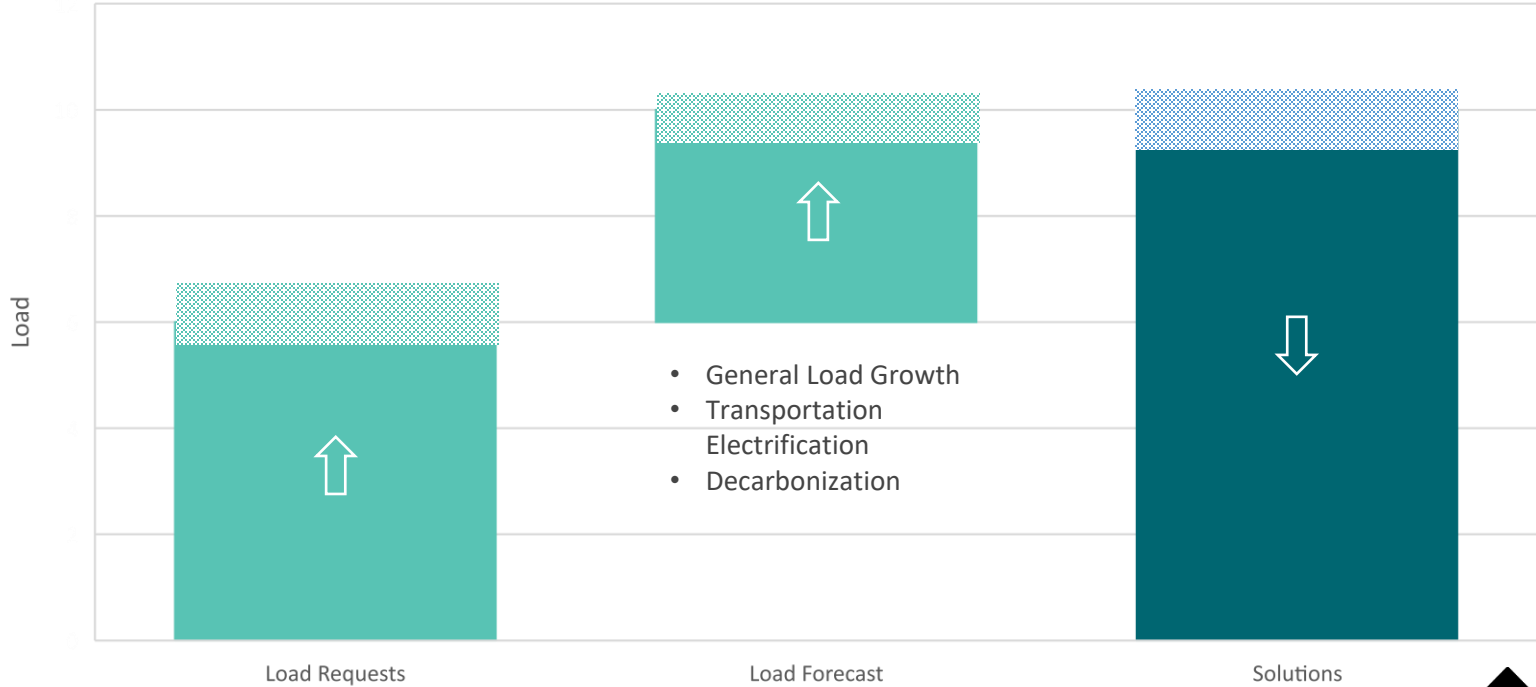
Triggers:

- Safety issues
- Customer capacity requests and partnerships
- Equity concerns
- Fuel Switching
- Transportation Electrification
- Delivery system modernization
- Asset health
- Asset reliability
- Asset integrity
- Compliance
- Proactive resource integration including customer partnerships



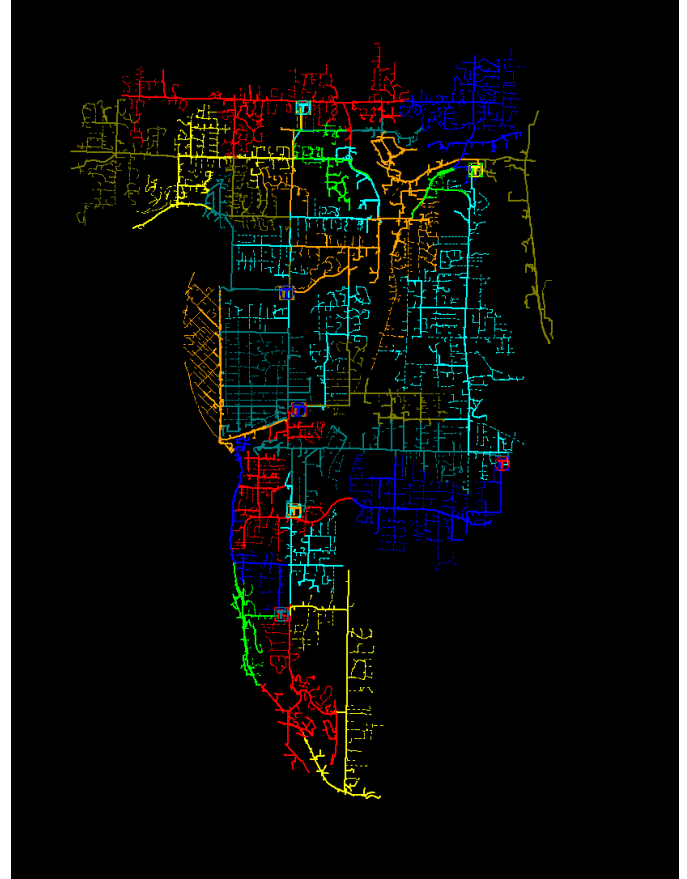
Needs/Solutions Impacts

Conceptual



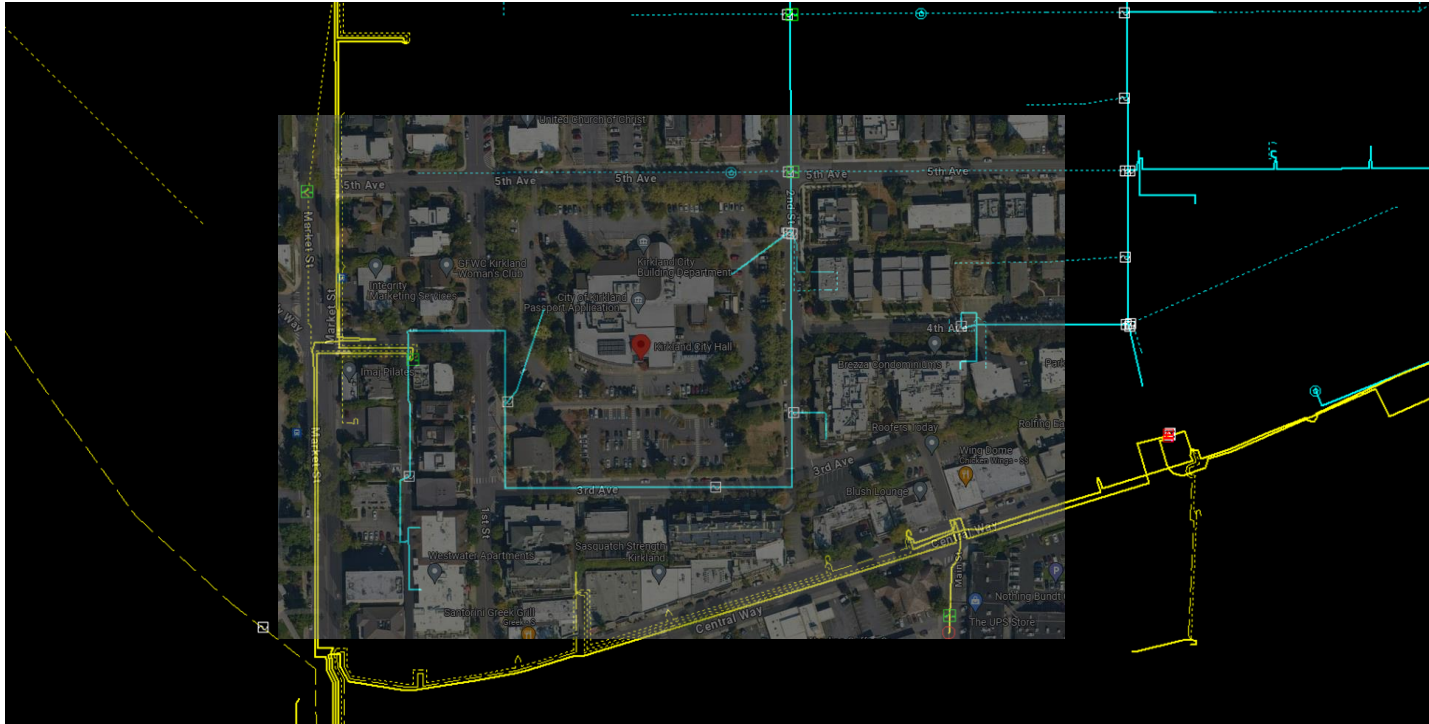
Kirkland Area Distribution Model

- Synergi is utilized to model distribution load flow
- Graphic shows Substations and Circuits feeding the Kirkland area and surrounding suburbs
- Load-flow simulates all grid deficiencies
- Projects up to 10-year forecasting of future growth



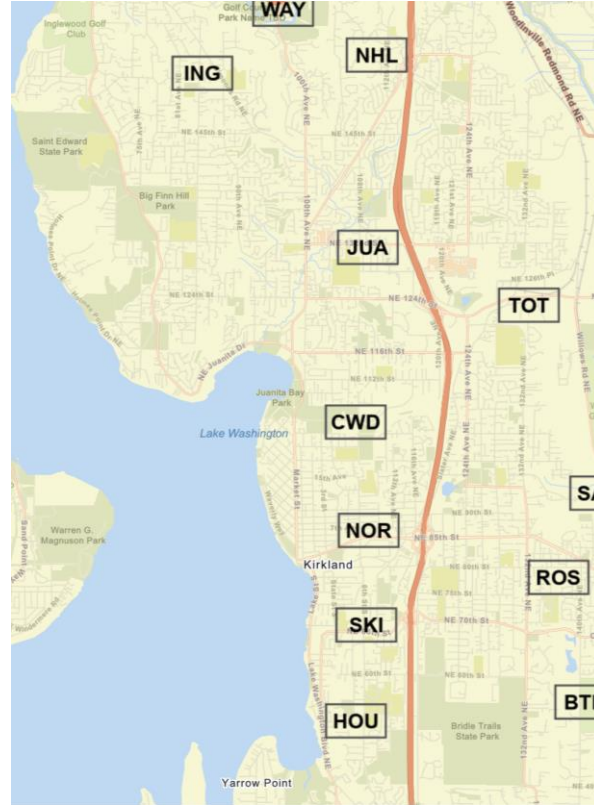
Kirkland Area Distribution Model

- Synergi Models can simulate individual customers, like the Kirkland City Hall, to entire regions worth of energy demand

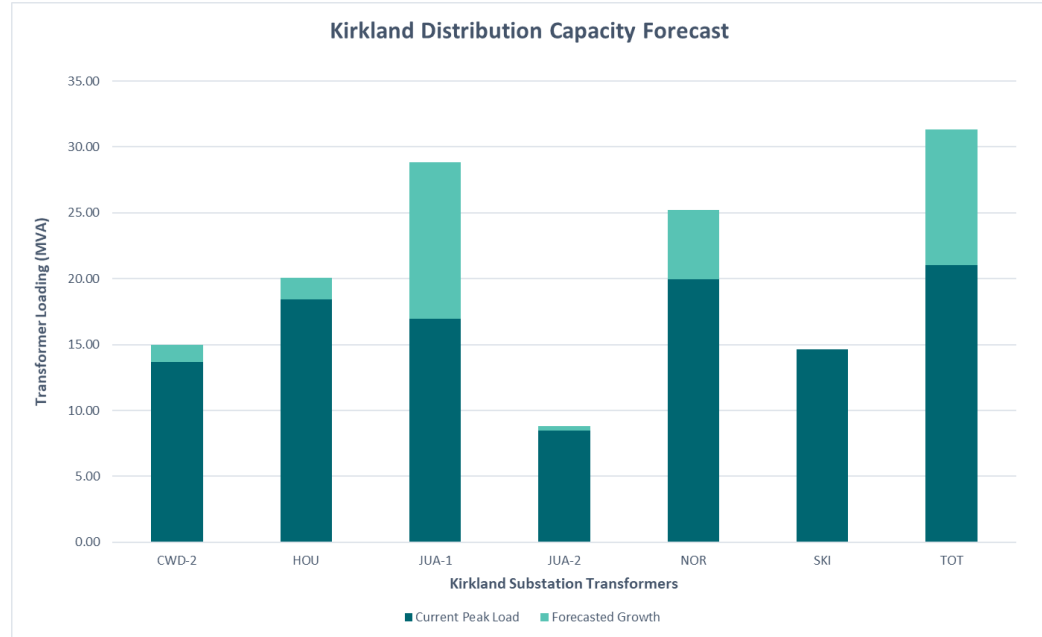
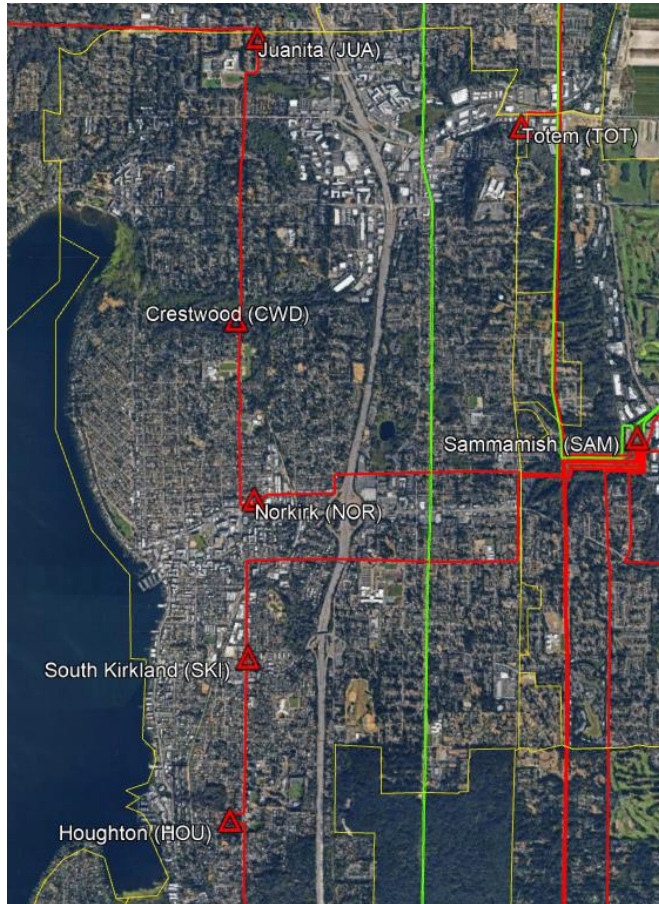


Targeted Capacity Projects for 2024 and Beyond

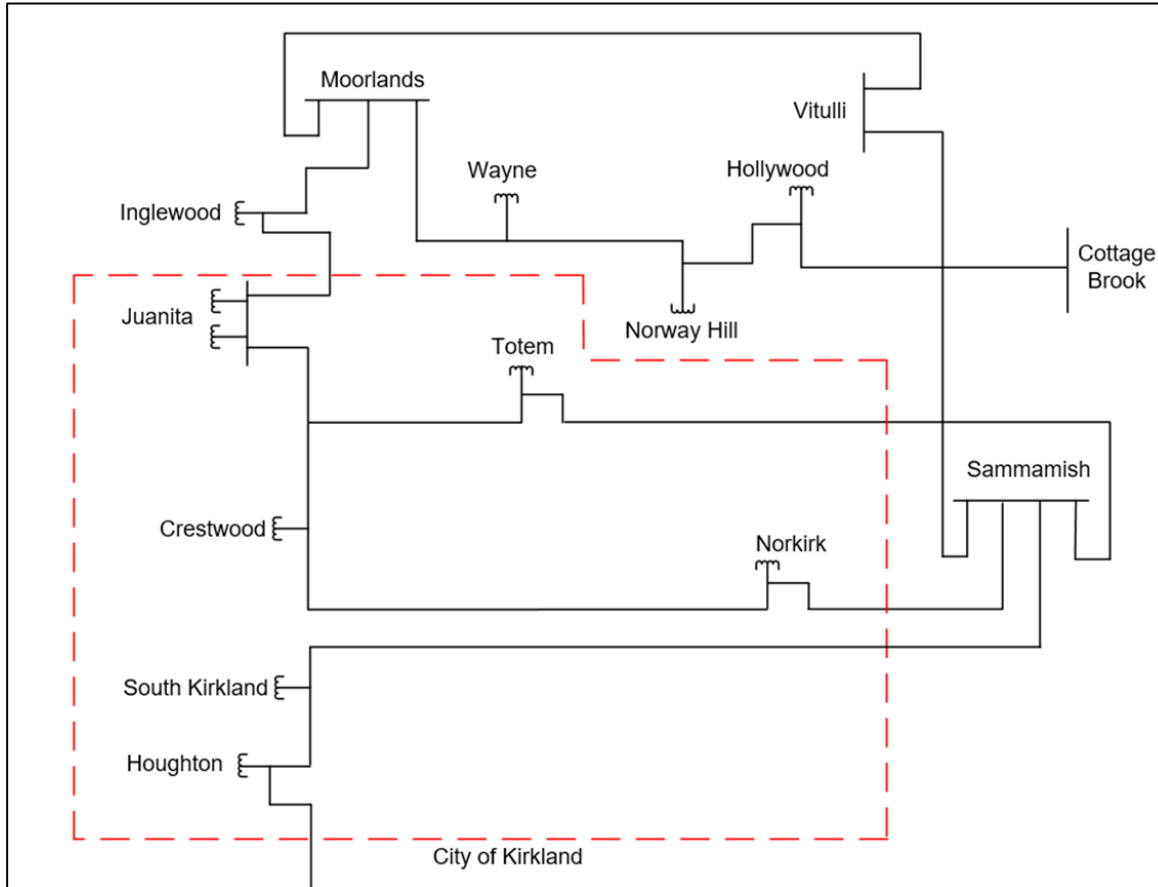
- Large load applications are tracked and incorporated into future forecasting models
- 34 planned distribution projects for the Kirkland City area between 2024 and 2026
- Future focus on building capacity along major areas of growth



Distribution System Overview



Transmission System Overview



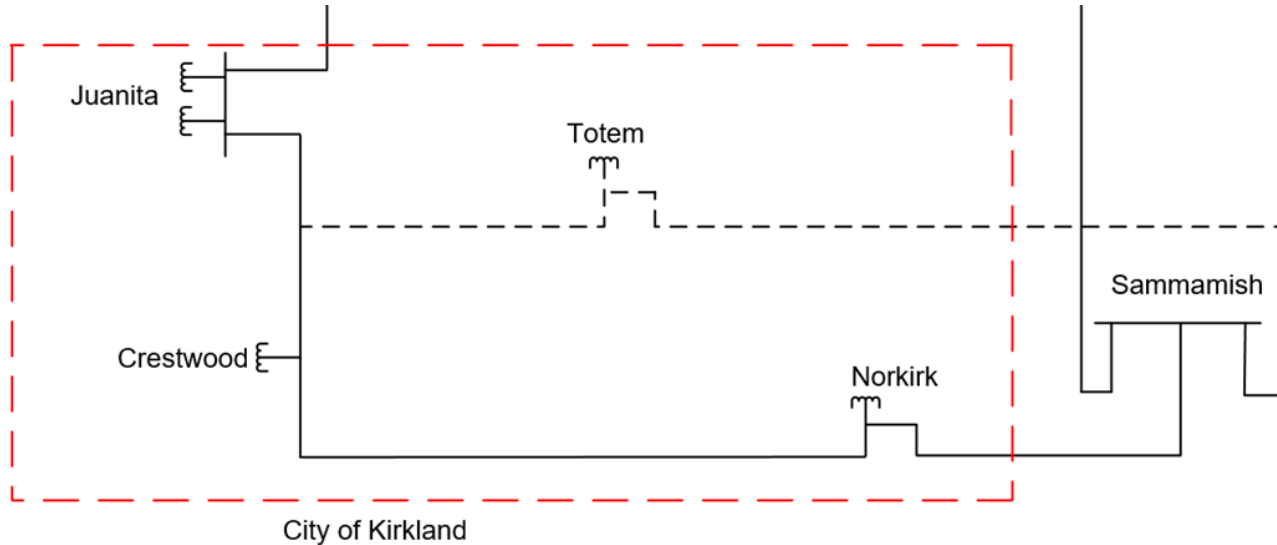
Two Transmission lines:

Sammamish – Moorlands #1 115kV line
Approx. 9.2 miles within City of Kirkland

Sammamish – Lochleven 115kV line
Approx. 4.4 miles within City of Kirkland

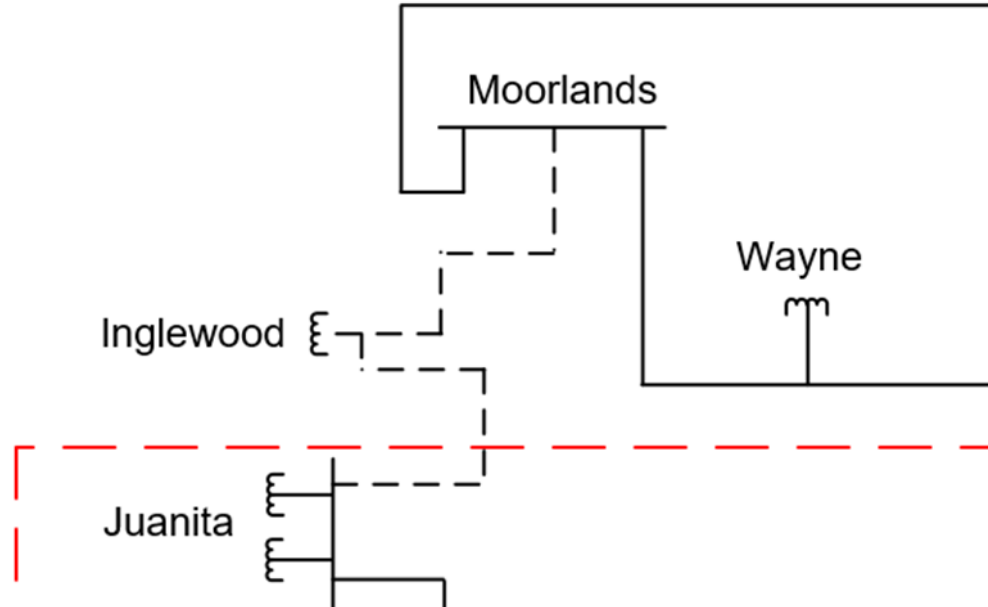
Sammamish – Juanita Project

- Project Goal: Increase capacity and reliability to serve the Juanita and Moorlands Area
- Scope: Build a new transmission line from Sammamish to Juanita substations
- Energized in 2023



Future Transmission Work

- Juanita – Moorlands Transmission Capacity
 - Transmission capacity to the area is limited by the line section between Juanita and Moorlands substations



Customer and System Projects

John Phillips



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Customer and System Projects

- Work covers electric and gas:
 - Residential
 - Commercial/Multi-Family
 - Public Improvement
- Scope of work
 - Intake
 - Project Management
 - Design
 - Permitting
 - Easements
 - Scheduling
- Cycle Times
 - Residential/small commercial – 4-6 months
 - Large commercial/MF – 12 months +

Customer and System Projects

- Projects in Kirkland
 - ~200+ gas and electric projects in 2023
 - Infill projects (demo/rebuilds) with load increases are common on the residential side
 - Facilities typically need to be upgraded and often relocated
 - Underground ordinance (electric) so most work requires trenching in right of way
 - Most projects 'complex' (electric)
 - Designs, Traffic Control Plans, and Permitting required
 - City of Kirkland permits average 5 weeks

Questions?