Sammamish-Juanita 115 kV Project
Powering the Northern Redmond-Kirkland Area
How power gets to you

Distribution

Power is generated from a variety of sources

500 kV and 230 kV Transmission

Bulk power lines

Transmission Switching Substation

Local 115 kV transmission lines

Distribution Substation

12.5 kV neighborhood distribution circuits and laterals

Individual transformer

Service line

Wiring in home

Electrical panel

Power is moved through our electric system...

...and into our homes and businesses.
What’s the problem?

- Demand for power is growing
- Demand for power is pushing limits of system capacity
- Our job is to keep your lights on and we need a reliable system to do so

Capacity means being able to supply enough power.

Reliable means keeping power on even when parts of the system are down.
Solutions to capacity and reliability challenges

- Expand or rebuild existing infrastructure
- Build new infrastructure
- Energy efficiency
- Alternative energy
- Energy storage
Keeping the power on in the Northern Redmond-Kirkland area

PSE serves nearly 150,000 customers in the northern Redmond-Kirkland area on the Moorlands electrical system.

The orange lines distribute power to local substations.

Power is brought into the area on the green bulk transmission lines.

- **Bulk transmission lines**
- **Local transmission lines**
- Transmission substation
- Transmission switching station
- Substation
The Moorlands electrical system was built before the 1960s and the local transmission lines are near capacity.

The system is supported by three local transmission lines:
- Sammamish to Moorlands line
- Sammamish-Vitulli-Moorlands line
- Cottage Brook to Moorlands line
Current Moorlands capacity

Winter and summer months are peak periods in electricity use.

System is approaching capacity limits.

All three lines have to work together as a system; otherwise 150,000 customers could lose power during times of peak load.

The load line shows the actual power used for this date.

Peak Moorlands Load (MW)
December 9, 2009

Sammamish-Vitulli Capacity 239 MW
Sammamish-Moorlands Capacity 178 MW
Cottage Brook-Moorlands Capacity 169 MW
Moorlands System Projects

- Cottage Brook-Moorlands Project - Rebuild by 2013
- Moorlands-Vitulli Project - Rebuild by 2014
- Sammamish-Juanita-Moorlands Project - New lines in two phases

Future phase: Juanita to Moorlands

Our project: Sammamish to Juanita
Sammamish-Juanita 115 kV Project

A new line will:

- Improve reliability by adding an additional transmission pathway for the system
- Increase available capacity by transferring two substations off the existing system
- Ensure dependable power so it is there when you need it

Additional transmission pathway increases system capacity and reliability

Transferring two substations to another system increases capacity on the Moorlands system
After all three projects have been built, system capacity will increase...

...while system load will decrease since we transferred two substations to another system.
How will the Sammamish-Juanita 115 kV Project benefit my community?

The new transmission line will:

- Increase electric capacity to serve customer demand
- Reduce the risk for power outages
- Ensure PSE can continue to supply 150,000 customers in Redmond and Kirkland with dependable power for years to come