

# PSE on bainbridge island

## Investing in electric reliability and grid modernization

### PSE on Bainbridge

PSE has provided Bainbridge Island electric service for decades, serving a population increasing from just over 4,000 residents in 1950 to nearly 25,000 today.

Bainbridge Island families, schools and businesses depend on PSE to provide safe, reliable and affordable power. It's critical that we invest in modern infrastructure and technologies to support the rapidly growing community's economy and quality of life.

### Electric reliability on the island needs to be improved

Bainbridge Island customers experience longer and more frequent outages than the average PSE customer. Simply stated, it is time for an upgrade to the electric system to meet changing demands and improve reliability.

PSE and independent experts conducted studies to consider both modern wires and "non-wires" solutions that improve reliability, meet the community's growing energy needs, and align with the community's values.

### What affects reliability?

- Trees and aging infrastructure are significant contributors to reduced reliability.
- The design of the existing electric transmission system leaves two-thirds of the island's system without backup transmission.
- The geography of an island also poses unique challenges for electric reliability, mainly the lack of neighboring infrastructure to serve as backup.
- High winds, winter storms and tall trees all contribute to the number of outages. Trees are the most frequent cause of outages on the island.

### Bainbridge Island's electric transmission system



NOTE: Map elements are not to scale and locations are approximate.

# Our proposed plan is a unique solution crafted for Bainbridge Island



**New transmission line and rebuild the aging Winslow Tap** to improve reliability

**New 3.3 MW battery energy storage system** to add additional capacity

**Targeted conservation and demand response programs** to reduce demand

The project package combines new technologies and grid infrastructure to ensure safe, dependable power for families and businesses for years to come. These projects are designed to:

- Improve electric service reliability, reducing the frequency and duration of power outages for customers on Bainbridge Island.
- Successfully meet the increasing power needs of Bainbridge Island for years to come.
- Support the electrification of the Washington State Ferries.
- Deploy new technologies that will help postpone building a new substation. These technologies maximize opportunities for conservation and innovation, and may help reduce our carbon footprint.

## Non-wires solutions

PSE is committed to partnering with our customers for a better energy future. Batteries and distributed technologies are an important part of that equation for our Bainbridge Island customers.

To address the growth that's straining the island's distribution system and balance the values of the community to limit infrastructure, PSE is proposing to postpone a new substation and instead:



Install a utility-scale battery energy storage system at the Murden Cove substation. The 3.3 MW battery will add capacity to the system by supplying electricity during peak periods when demand is high.



Implement innovative conservation and demand response programs that help lower customer demand in various ways. This may include partnerships with customers to lower their energy use during periods of peak demand by using smart thermostats and other tools.

## Wires solutions

In addition, we're investing in transmission infrastructure that will make Bainbridge Island's electric grid more resilient and reduce the impact of any single outage by focusing on redundancy.



We'll add the "missing link" transmission line between the Winslow and Murden Cove substations to create a transmission "loop." This means each substation will be connected to two transmission lines. If one line goes out, the other line will still feed the substation and provide power to customers.



We'll also replace aging infrastructure and improve the utility corridor on Winslow Tap, a critical transmission line that serves the south end of the island.

## We will partner with the community to implement these solutions

Together with our Bainbridge Island customers, we'll improve reliability, ensure we can meet the community's growing energy needs and create a better energy future. Over the next year, we'll work with the community to:

- Site the new transmission line "loop." We'll engage the community in early 2020 to help us with this.
- Deploy robust energy efficiency tools and demand response programs.
- Share information and gather input on these projects.

## Get involved

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