

Overview

As part of PSE’s 2019 Bainbridge Island Electric System Needs Assessment, PSE looked at a variety of data to identify Bainbridge Island’s specific needs. The data set reviewed in the Needs Assessment was from 2013 to 2017 and is available upon request.

Our teams have looked at transmission and substation outages from the period of 2018 to 2025 to complement the data in the Needs Assessment.

Transmission line outages

These tables provide a summary of transmission line outage data.

Bainbridge Island Transmission Line Outage Summary (2018-2025)¹

Transmission Line	Sustained Outages²	Momentary Outages³	Total Outages
Foss Corner-Port Madison ⁴	9	21	30
Foss Corner-Keyport ⁴	6	23	29
Port Madison-Winslow Tap	12	6	18
Port Madison-Murden Cove Tap	1	3	4

Bainbridge Island Transmission Line Outage Summary (Last Year, 2025)¹

Transmission Line	Sustained Outages²	Momentary Outages³	Total Outages
Foss Corner-Port Madison	1	4	5
Foss Corner-Keyport	1	5	6
Port Madison-Winslow Tap	1	1	2
Port Madison-Murden Cove Tap	0	0	0

¹ Includes storm and non-storm outages

² Sustained outages (> 1 min)

³ Momentary Outages (< 1 min)

⁴ Bainbridge Supply Lines: Overlap of 2 outage events on each supply line results in an island-wide outage. There was one island-wide outage in 2025 (2/25/2025) that happened during storm conditions.

Substation outages

These tables provide a summary of Bainbridge Island substation outages due to loss of transmission.

Bainbridge Island Substation Outage Summary 2018-2025 - Due to Loss of Transmission⁵

Substation	Island-Wide Outages	Individual Substation Outages	Total Substation Outages
Port Madison	3	0	3
Winslow	3	12	15
Murden Cove	3	2	5

Bainbridge Island Substation Outage Summary (Last Year, 2025) - Due to Loss of Transmission⁵

Substation	Island-Wide Outages	Individual Substation Outages	Total Substation Outages
Port Madison	1	0	1
Winslow	1	1	2
Murden Cove	1	0	1

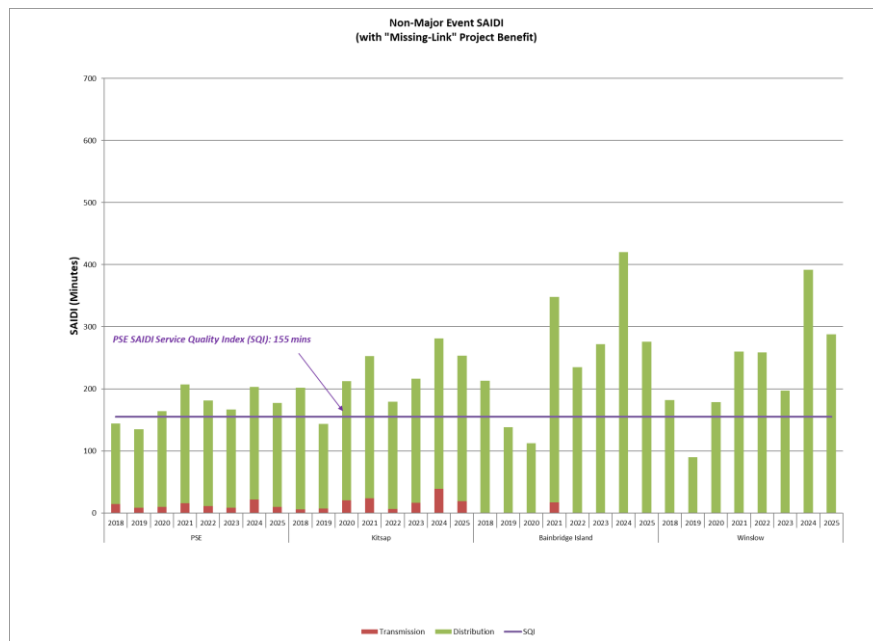
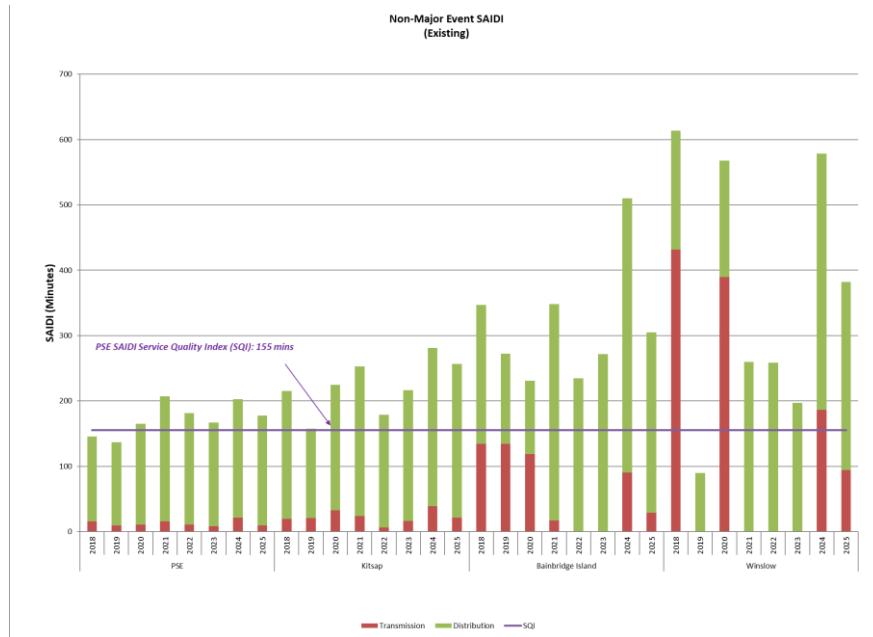
⁵ Includes storm and non-storm outages; sustained outages only (>1 min)

Reliability Improvements

PSE looked at the data from 2018 to 2025 to determine which outages could have been avoided if the new “missing link” transmission line to connect Murden Cove and Winslow substations had been in place during that time.

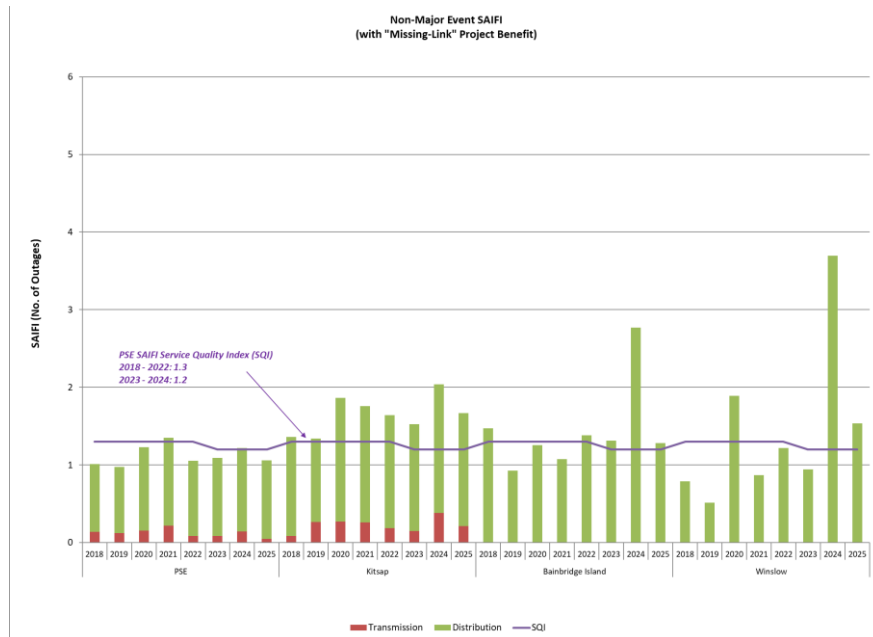
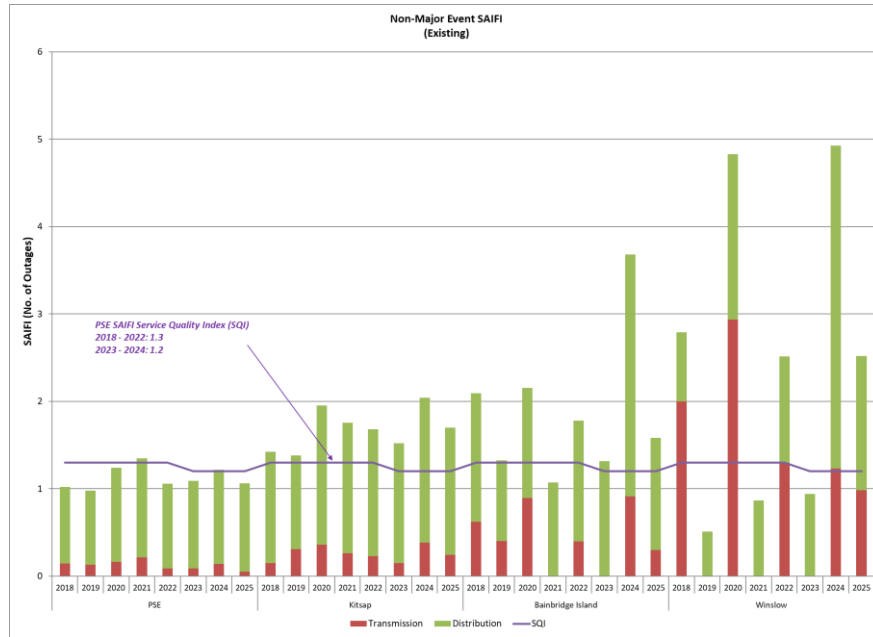
The outage data excludes storm related events for comparison to established PSE non-storm Service Quality Indices (SQIs).

Comparison of Non-Storm SAIDI⁶ Performance for Bainbridge Island (average outage duration from 2018 to 2025)



⁶ System Average Interruption Duration Index ("SAIDI") measures the average number of electric service interruption minutes per customer per year.

Comparison of Non-Storm SAIFI⁷ Performance for Bainbridge Island (average number of outages from 2018 to 2025)



⁷ System Average Interruption Frequency Index (“SAIFI”) measures the number of electric service interruptions per customer per year. Effective 2023, Service Quality Index (SQI) for SAIFI was reduced from 1.3 to 1.2 interruptions per customer per year.