

Tolt Dam

Presented at: 2025 Carnation "Be Dam Ready" event

Outline

- Tolt Dam Overview
- Dam Safety
 - Surveillance and Monitoring
 - Emergency Preparedness
 - Current Status
- Tolt Early Warning System (Siren) Updates





Tolt Dam

- Earthfill dam
- 200 feet high, 980 feet long
- Storage of 57,900 acre-ft
- Tolt is source for 25% of drinking water in King County
- SPU operates and maintains the dam
- Seattle City Light operates the hydroelectric facility



Seattle Dam Safety Programs

- Purpose: To reduce the likelihood and consequences of a dam failure
- Tolt Dam is one of 19 dams owned by Seattle
- Key Components
 - Surveillance and Monitoring (reduce likelihood)
 - Emergency Action Planning (reduce consequences)

Government Regulators for Dam Safety

- Washington State - Department of Ecology - Dam Safety Office
- Most non-federal dams that are used to generate hydropower are regulated by the Federal Energy Regulatory Commission (FERC)
- These have extensive dam safety requirements, including:
 - Annual FERC Inspections
 - Annual Dam Safety Surveillance and Monitoring Reports
 - 5-year Independent Consultant (IC) inspections (Part 12D inspections)
 - Annual Emergency Action Plan (EAP) updates
 - Annual Dam Safety training for everyone involved in the EAP
 - 5-year Functional Exercises of EAPs

Tolt Dam Monitoring

- 24/7 surveillance and monitoring
- Daily visual inspections and instrument readings
- Periodic engineering, federal and independent consultant inspections
- *"The project features were inspected and no conditions were found that would require immediate remedial action to protect the safety of the project." - FERC 2025*

Tolt - Dam Failure Detection System

- Reservoir level indicator
- Dam crest loops
- Upstream river gauging station near spillway
- Downstream river gauging station near North Fork Bridge

Tolt - Emergency Action Plan (EAP)

- Emergency Action Plan updated annually
 - Includes Notification Flow Charts
 - King County Office of Emergency Management
 - Alert King County and Reverse 911 alerts
 - National Weather Service
 - Flood Warnings
 - Seattle Public Utilities
 - Tolt Early Warning System (Sirens)

Seattle Public Utilities - Emergency Management

- Connects SPU with King County Office of Emergency Management and Public Safety Partners
- Organizes Incident Management Teams at SPU to respond to emergencies
- Partners with SPU Dam Safety to deliver Trainings and Exercises for Dam Safety emergencies
- Represents SPU at the King County Emergency Operations Center



Tolt – Fall 2024 EAP Functional Exercise

- Participants Included:
 - King County
 - Riverview School District
 - Eastside Fire and Rescue
 - Carnation
 - Duvall
 - National Weather Service
 - Federal Energy Regulatory Commission



Tolt Early Warning System (Siren) Update

- Independent Review of TEWS and dam safety was completed in June 2025
- Carnation area siren speakers were reconnected as of October 2025 (disconnected in April 2024)
- Annual audible siren test schedule starting November 1, 2025



Recent Tolt Activities

- 2023 Seattle completed first in nation “Comprehensive Assessment” under new FERC regulations (Part 12D).
- 2024 Seattle completed the 5-year EAP functional exercise with regional partners.
- 2025 Started design of spillway improvements.
- 2026 Construction of new debris boom to start.



Thank you!

