

Creating a more resilient Sound Transit

Climate change adaptation overview

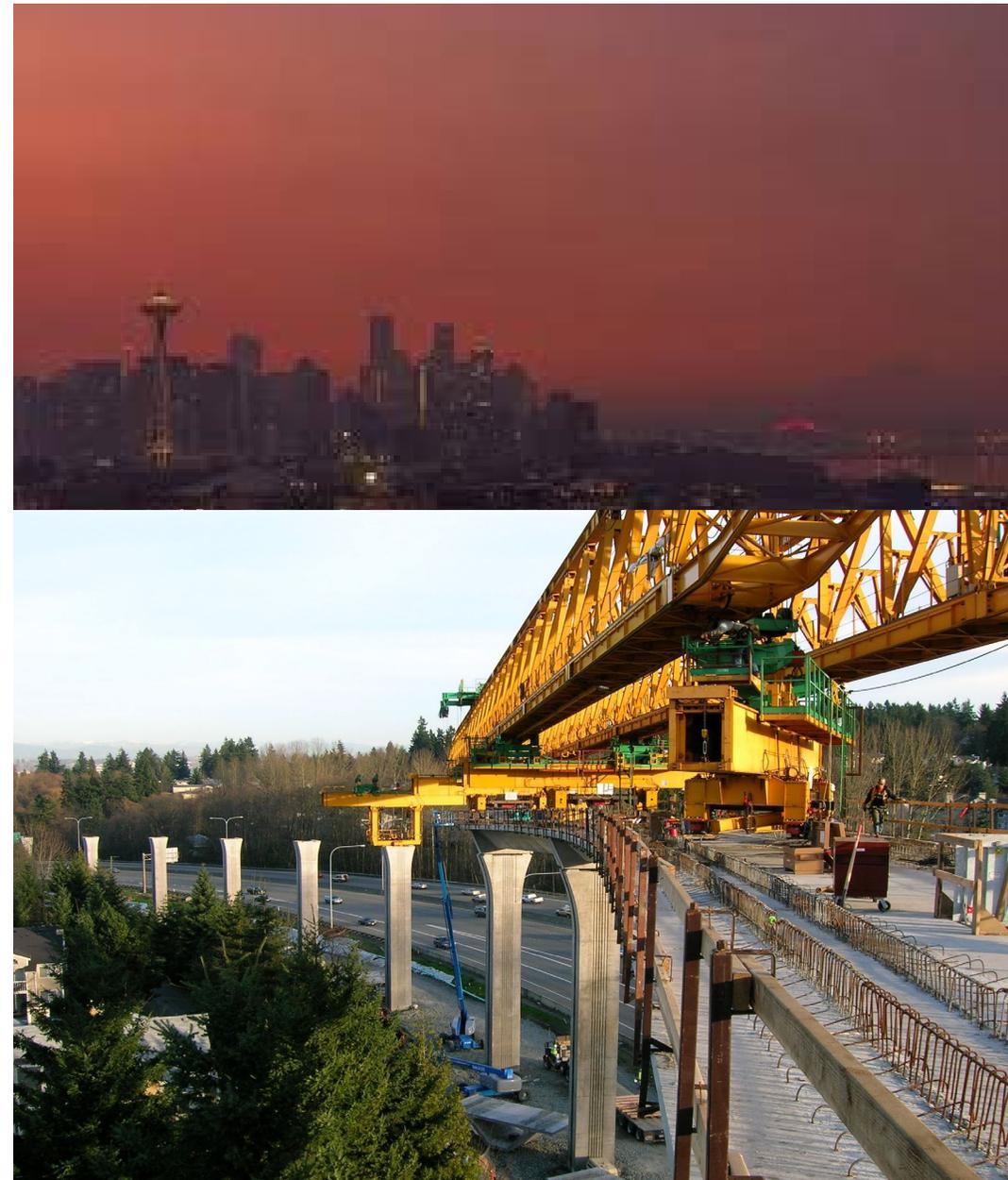
System Expansion Committee

09/08/2022



Why are we here?

- Report on Sound Transit's climate adaptation and resilience efforts
- Substantial climate change impacts are predicted for the region.
- Proactive planning for adaptation is underway and enables cost-effective solutions for resilience



Climate change is breaking news



Seattle sees
hottest day
on record,
and worst is
yet to come

Heat wave serves WA a lesson in climate adaptation, mitigation

“Washington state was not built for triple digit temperatures,”

Hospitals
taxed by
heat-related
illnesses

Seattle and Portland are sizzling in hottest weather of the summer

In both cities, this Pacific Northwest heat wave could reach a historically long duration

Puget Sound Climate Impacts

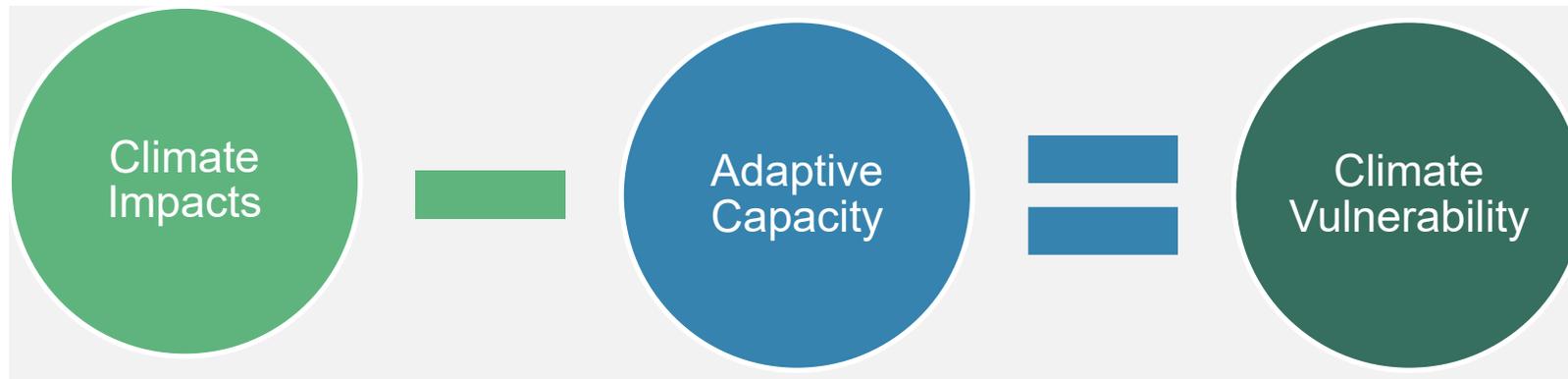
- Substantial warming across the Northwest; expected to continue
- Wetter winters, drier summers; natural variability may dominate trends
- Increases in heavy rainfall; more extreme heat, rain events likely
- Reduced snowpack, increased winter flood risk
- Higher sea level, increasing tidal and storm surge reach



Climate adaptation and resilience

Response to climate change must include **mitigation** (reducing greenhouse gas levels) and **adaptation** (reducing the vulnerability of human and natural systems to climate impacts) - *FTA, 2021*

Climate **resilience** is successfully coping with and managing climate change and understanding our **adaptive capacity**



Climate Change Risk Reduction Project

Key findings remain relevant

- Climate change exacerbates existing issues.
- The probability, timing, and degree of climate change impacts depends on many factors
- Many climate change impacts will likely be minor to moderate, although significant impacts are possible
- Sound Transit already possesses some degree of climate resilience and adaptive capacity



Sound Transit
Climate Risk Reduction Project

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FTA Report No. 0075
Federal Transit Administration

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U.S. Department of Transportation
Federal Transit Administration

Climate adaptation efforts to date

2013
Climate Risk
Reduction
Project

- Climate vulnerability assessment
- 70+ potential adaptation options

2014 – 2015
Prioritization

- Memo with 49 sorted adaptation options
- Resilience targets and metrics

2016 – 17
Climate
Adaptation
Strategy

- Overarching goals
- Near- and long-term actions

2017 – Today
Implementation

Research and collaboration support for short-term actions



Current implementation

- Require Climate Vulnerability Analysis for all major capital projects
- Developing resources:
 - 2021 Puget Sound Climate Change Impacts overview (UW)
 - GIS layers mapping flooding and sea level rise
 - Develop Adaptation Vulnerability Assessment Guidance
- Update 2016 Adaptation Strategy

Capital Projects Vulnerability Analyses

- **Conducting Climate Vulnerability Analyses**
 - Puget Sound climate impacts > Site-specific impacts
 - Adaptative capacity > climate vulnerability

Key findings:

- Localized flooding and increasing heat stress across system
- Cost effective engineering solutions can mitigate vulnerabilities

Next Steps

- Integrate findings into project/agency engineering standards
- Ensure analyses inform planning, design and construction

Next Steps



- Finalize analyses for WSBLE & TDLE
- Finalize Climate Vulnerability Analysis Guidelines for all capital projects
- Update 2016 Sound Transit Climate Adaptation Strategy (2023 – 2025)
- Participate in development of APTA's Planning and Design Standards for Climate Adaptation (2022 – 2024)
- Participate in regional collaboratives:
 - Puget Sound Climate Preparedness Collaborative
 - PSRC Vision 2050

Thank you.



 soundtransit.org/wsblink

