

Washington State Bridges

Successes, Challenges, and Needs

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ROB CHARBONNEAU – CAPITAL PROGRAMS
JAMES MORIN – MAINTENANCE
SONIA LOWRY – LOCAL PROGRAMS
Washington State Transportation Commission Meeting
February 19, 2025

Bridge Panel - WSDOT

Evan Grimm

State Bridge & Structures Engineer
Bridge & Structures Office

Rob Charbonneau

Priority Programming Manager
Capital Program Development
and Management

James Morin

Maintenance Operations
Branch Manager
HQ Maintenance

Sonia Lowry

Local Programs Bridge Engineer
Local Programs

Introduction

- Bridge Preservation Resources
 - Condition Trends
 - Underfunding
- Preservation and Maintenance Programs
 - Who and What
 - Challenges and Successes
- Local Programs



WSDOT Bridge Inventory



WSDOT's Aging Bridge Inventory

Replacement value \$131 Billion

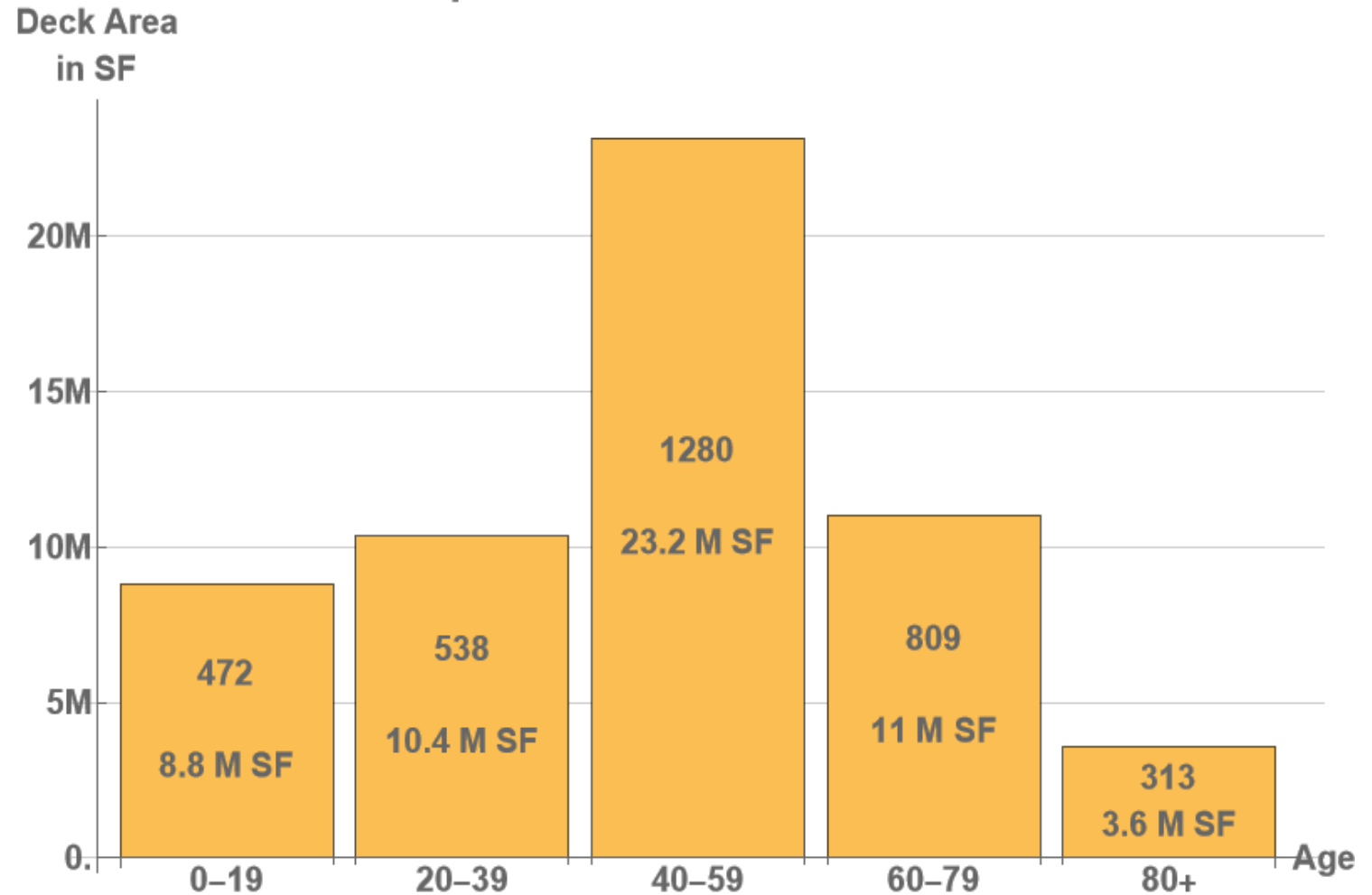
Total 3,412 bridges

Average age: 51 years

Oldest: 1915

80+ yrs. old

313 bridges (\$8.3 B)

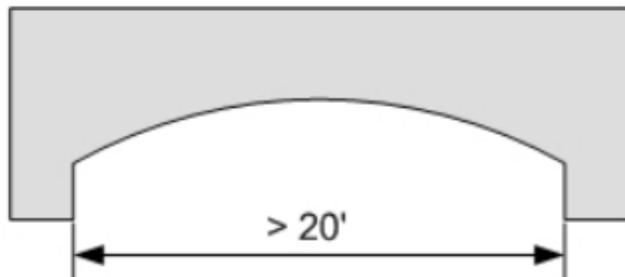
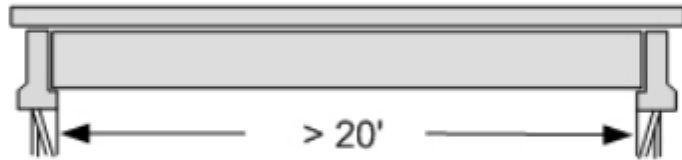
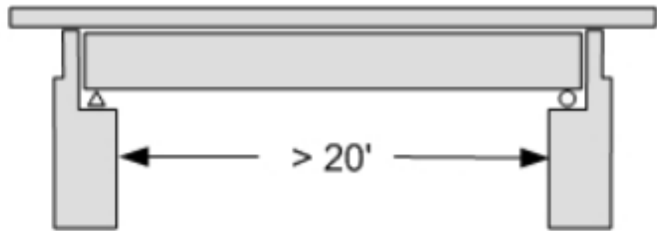


Data from June 2024

Reportable vs Short-Span

"Reportable"

- National Bridge Inspection Standards
- Span Length Greater than 20 Feet



"Short-Span"

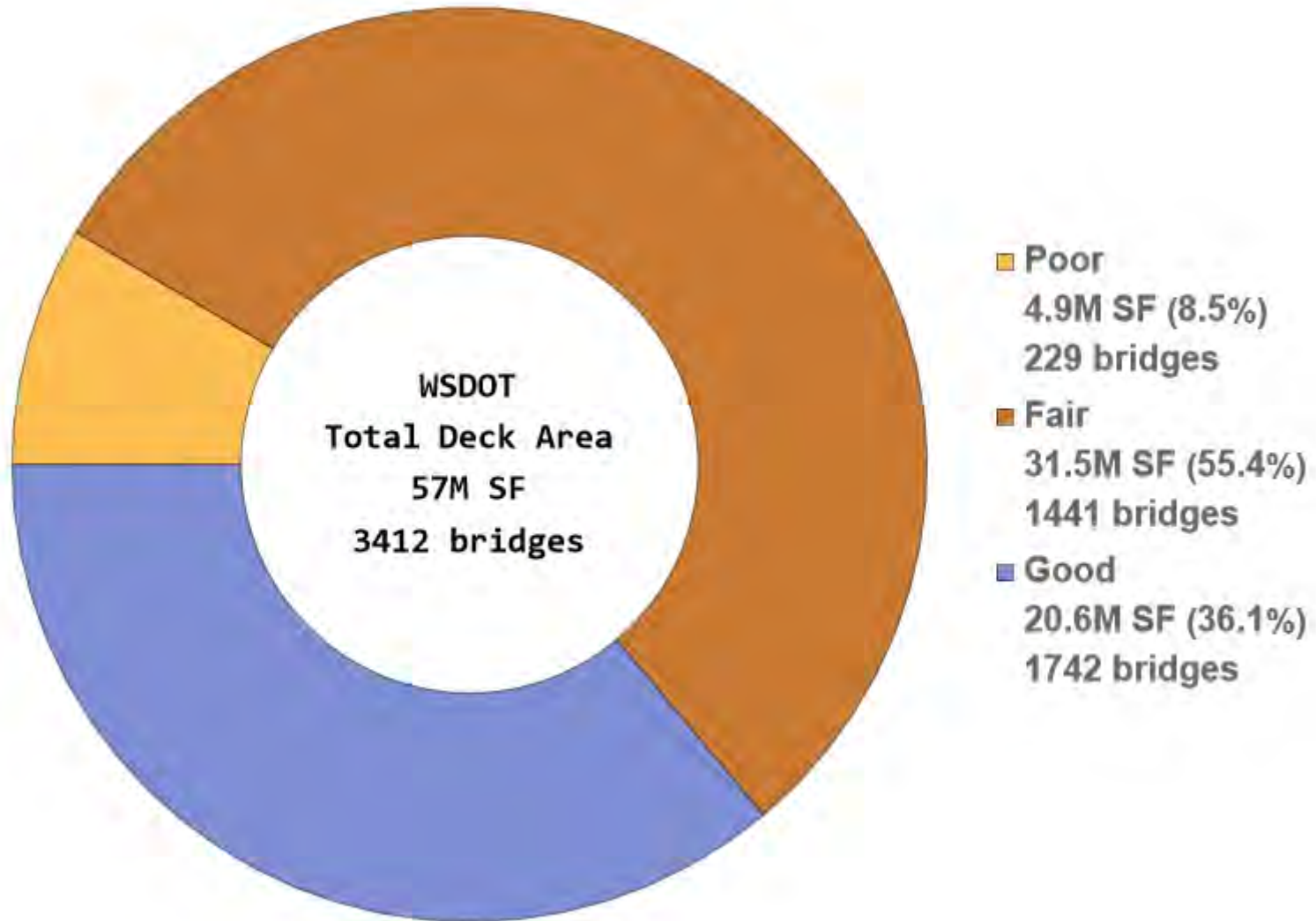
- Span Length 20 Feet or Less
- Concrete, Steel: Minimum Opening of 6 Feet
- Timber: Minimum Opening of 4 Feet
- WSDOT Owns **476** Short Spans



How We Measure Bridge Condition

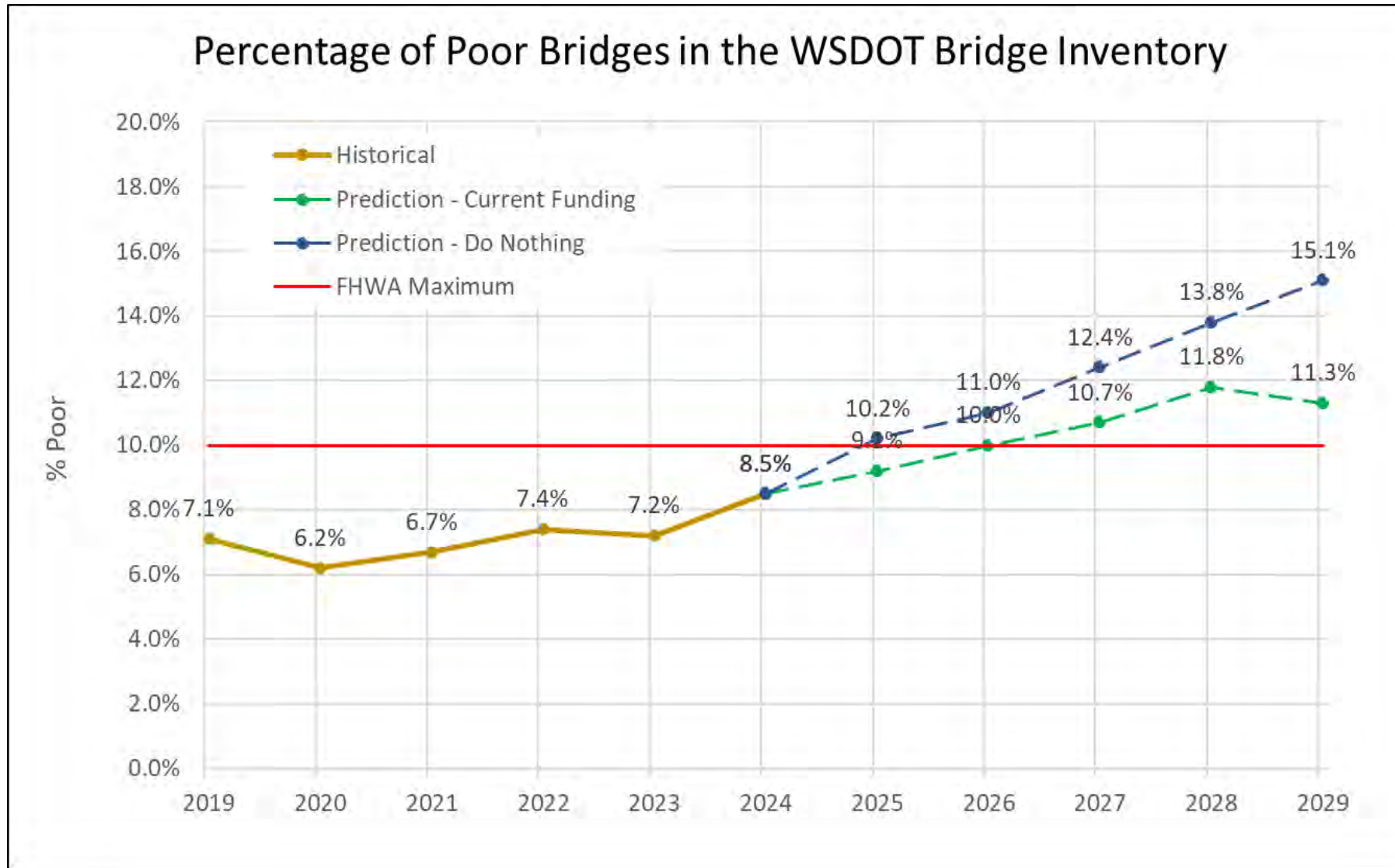


Statewide WSDOT Bridge Condition

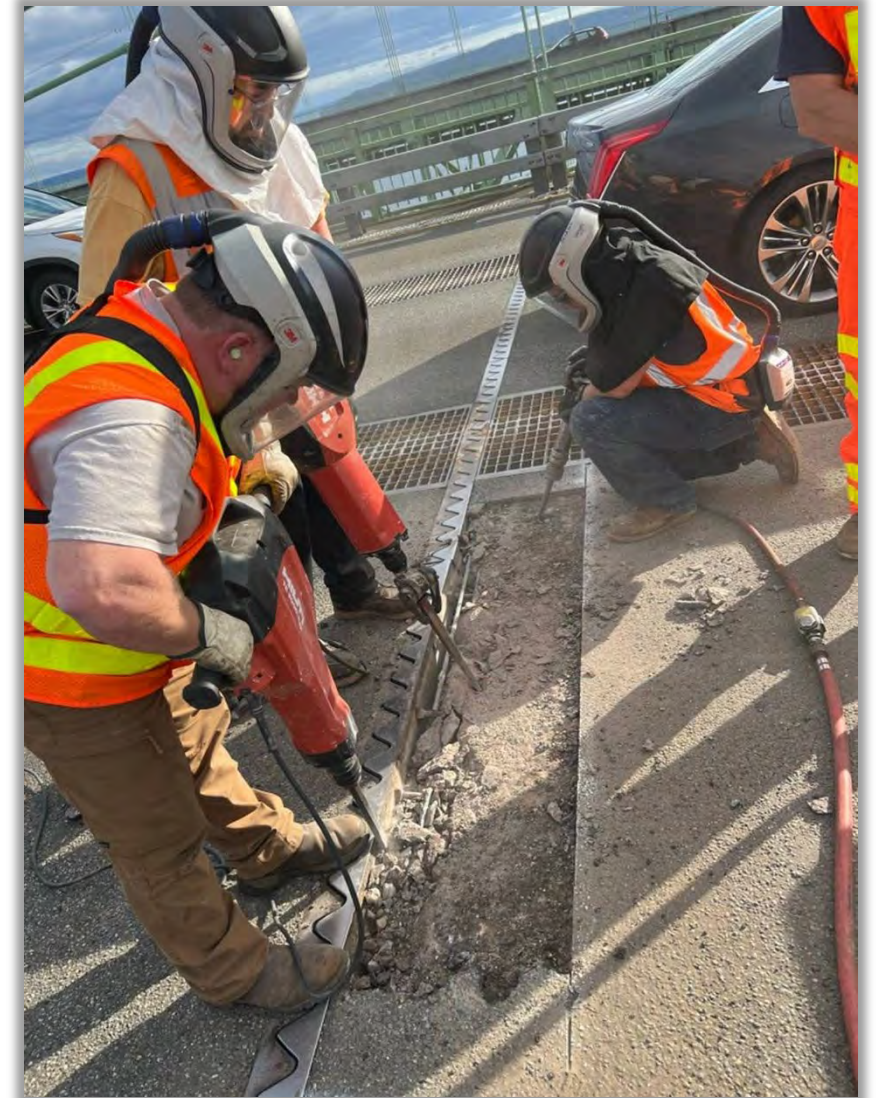
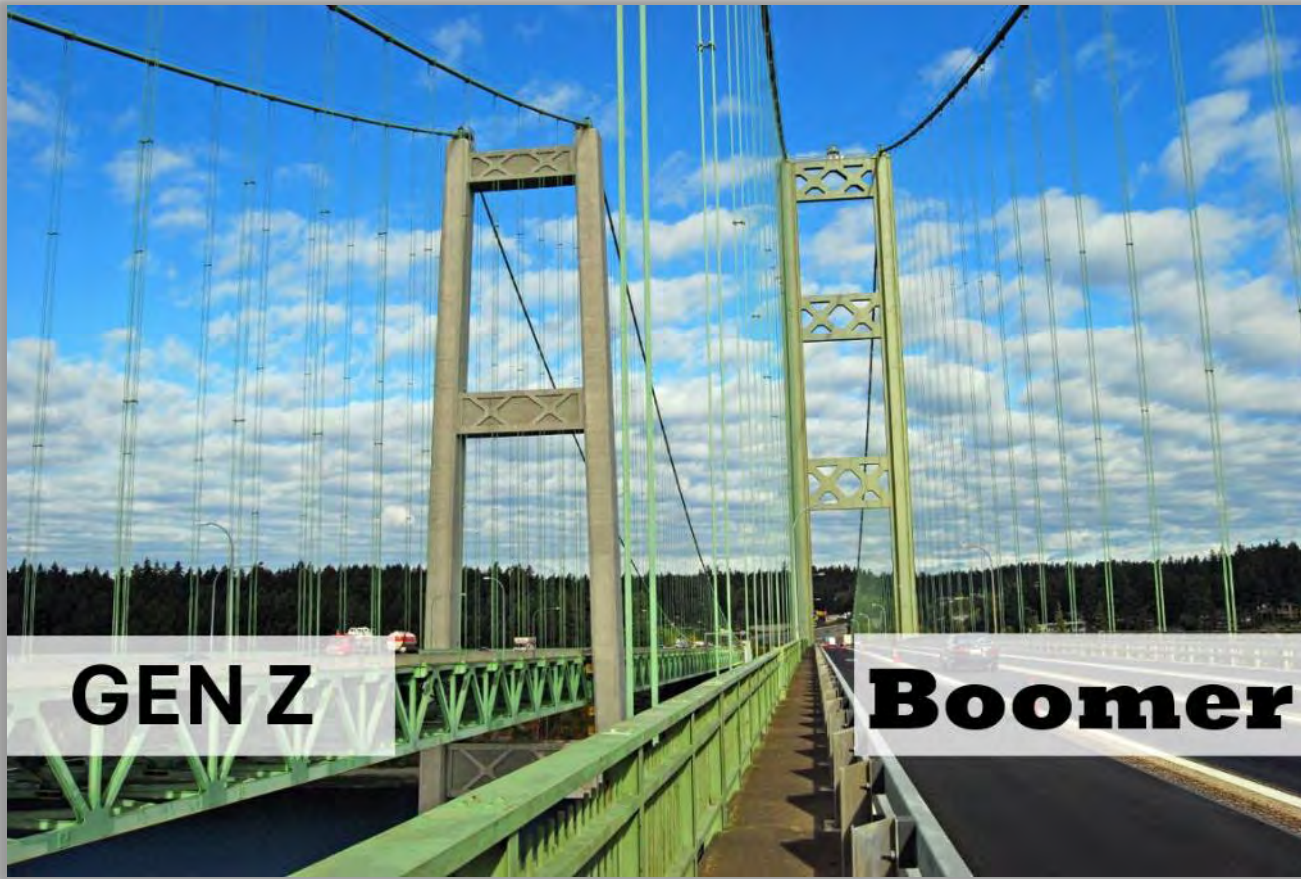


Data from June 2024

Condition Trends and Projections



Example - Tacoma Narrows Bridge

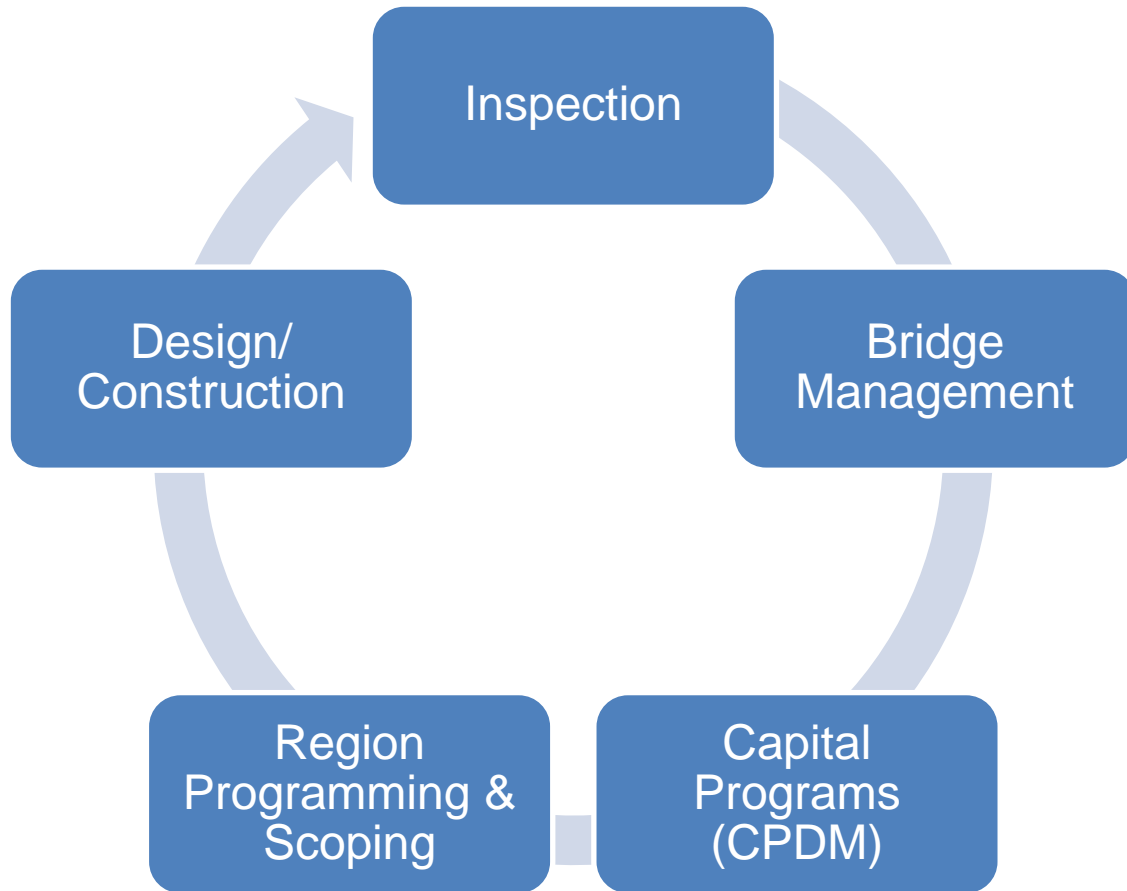


Examples - Movable Bridges

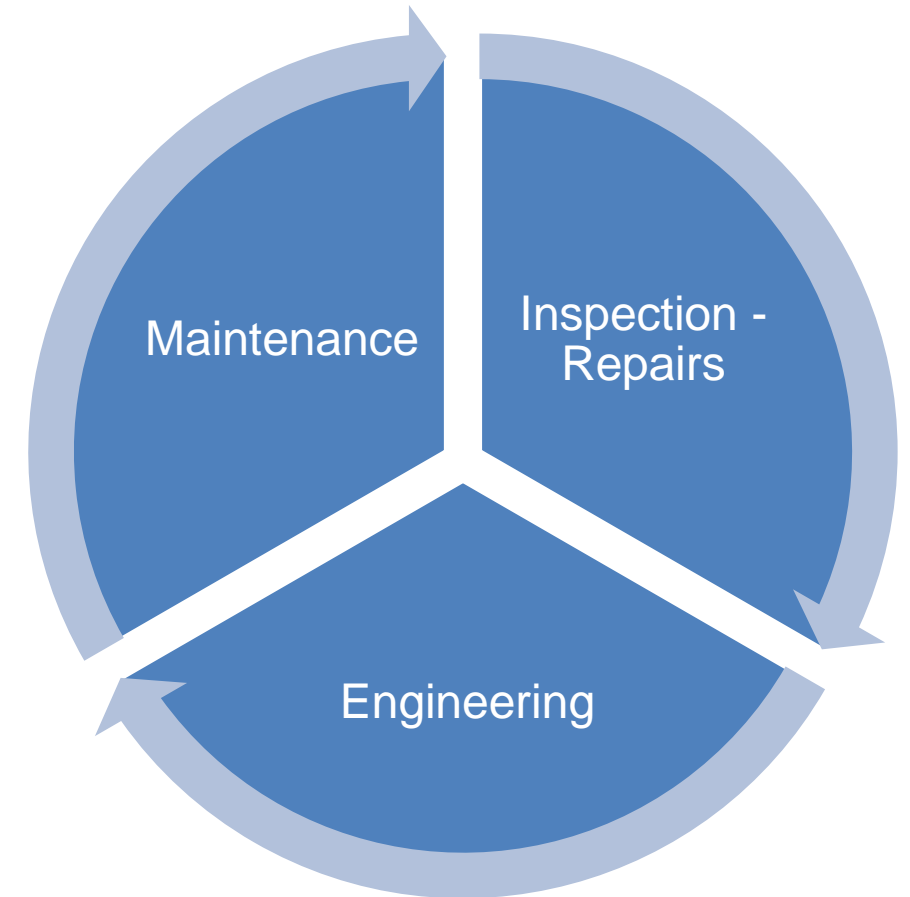


Supporting Preservation and Maintenance

Preservation (P)



Maintenance (M)



P2
Maintenance
Program

Bridge Inspection



Keeping Bridges Safe – Carbonado/Fairfax



Year Built 1921

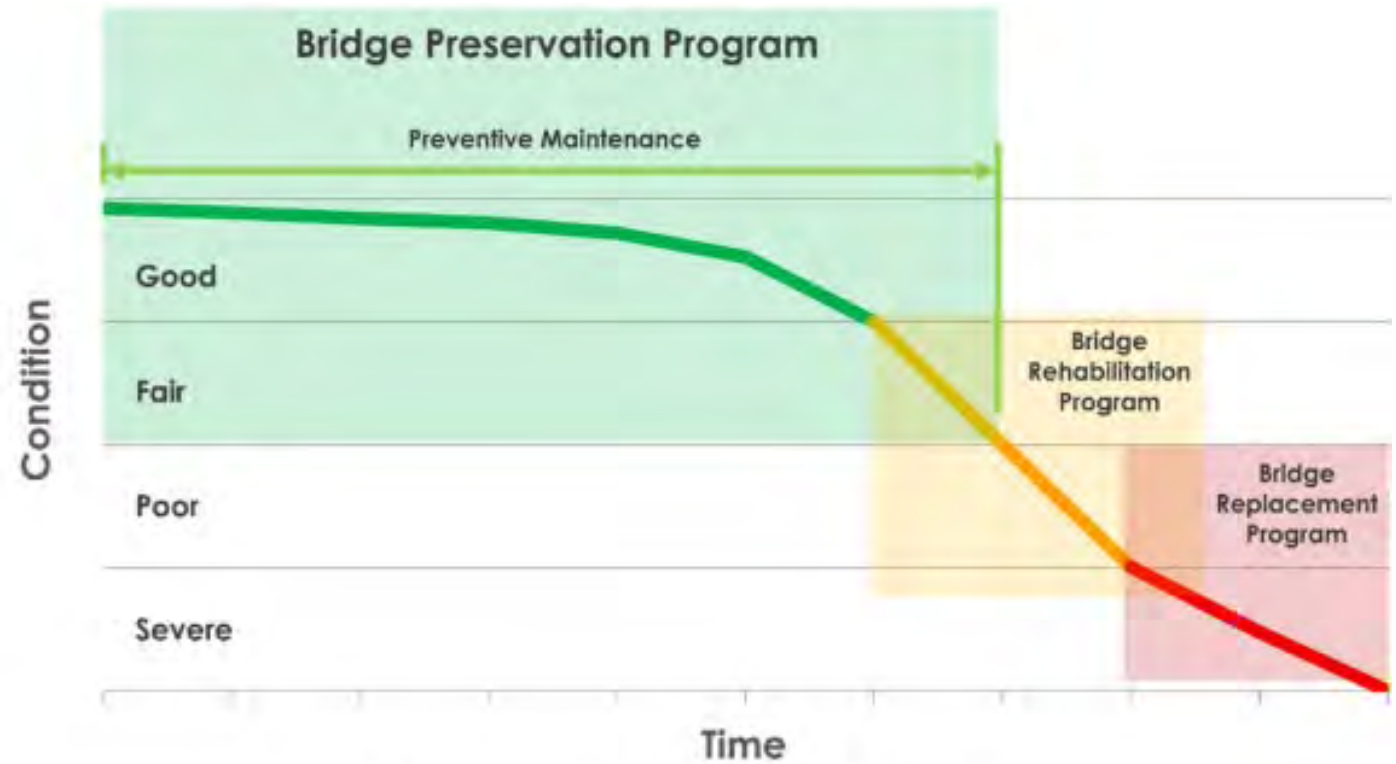


Figure 14. Bridge condition over time.

Carbonado/Fairfax Bridge 165/10

Upper Truss Panel Point 17 East Deck Truss Gusset Plate



2018



2020

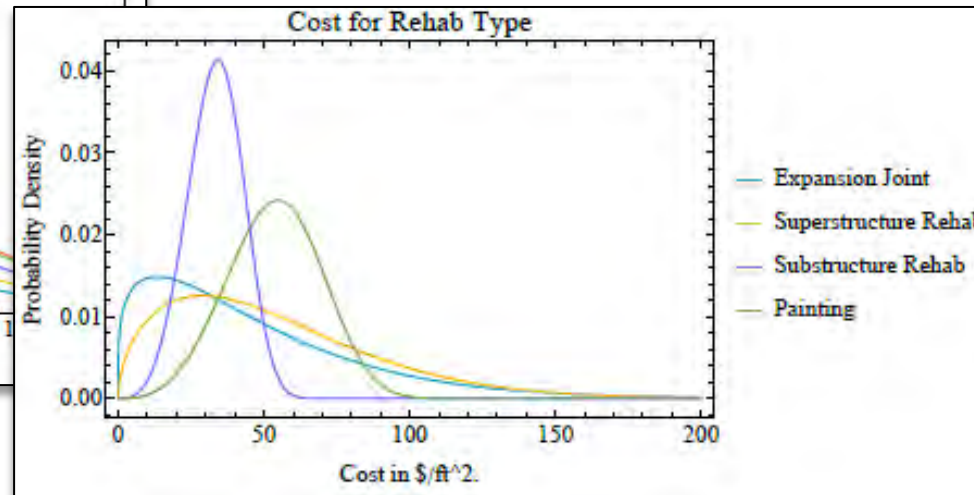
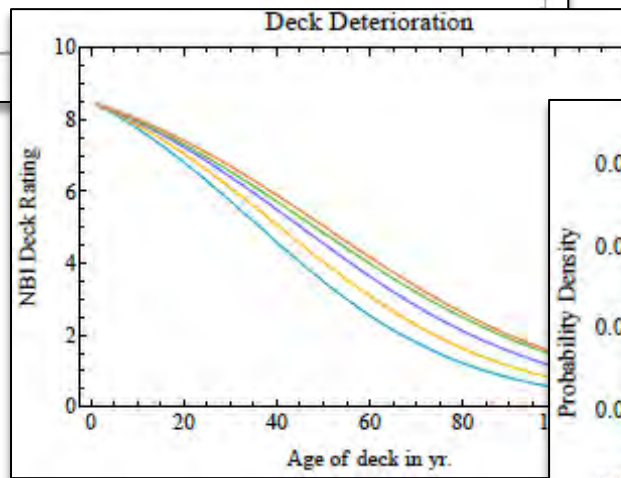
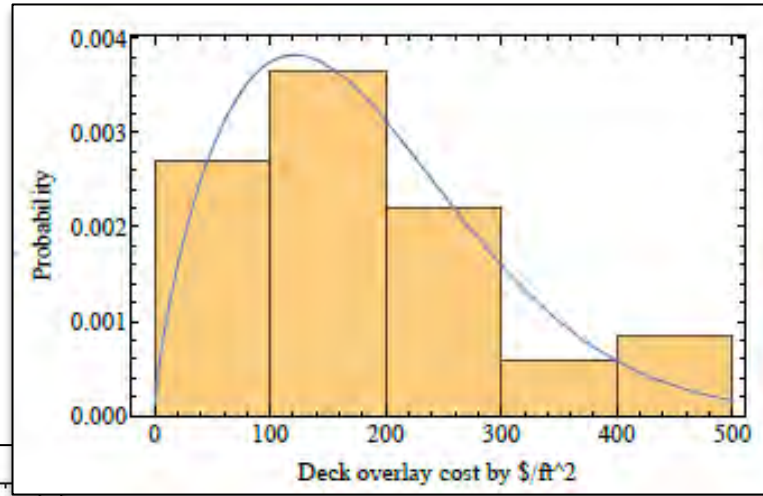
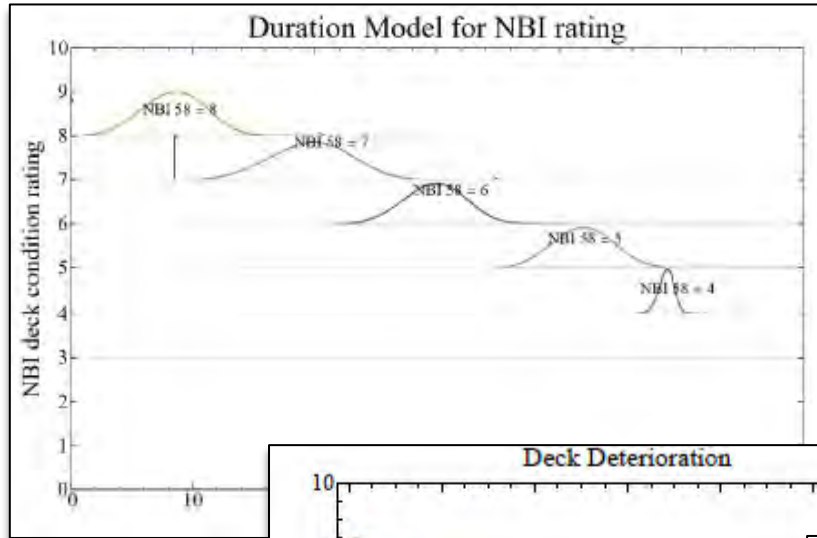


2024

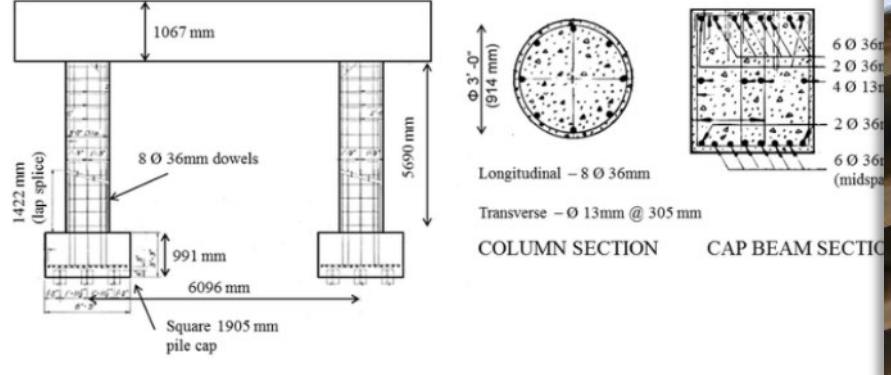
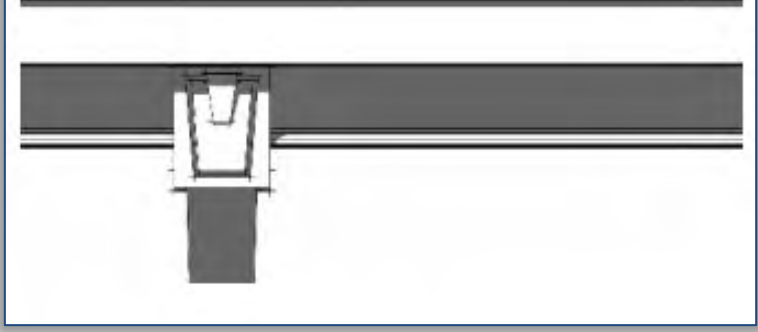
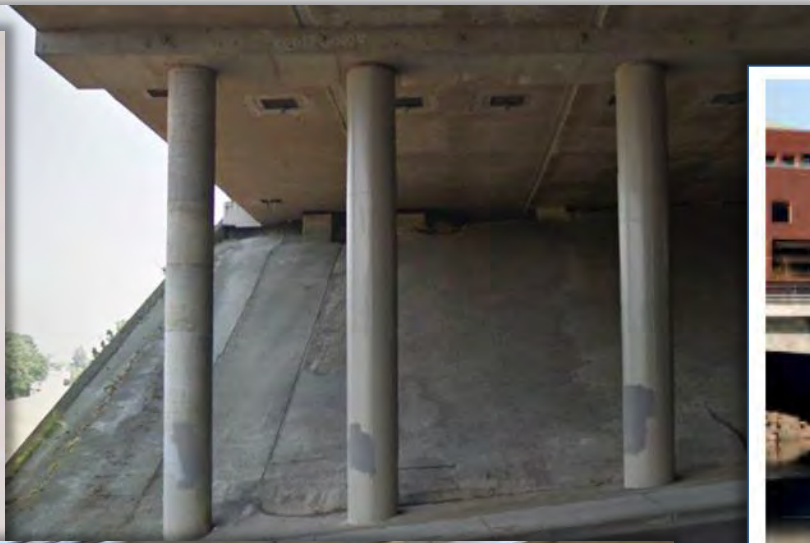
Bridge Preservation Office's Emergency Phone



Bridge Asset Management



In-House Design Expertise



Preservation Funding Challenge



UNFUNDED CRITICAL PRIORITIES

ADDITIONAL NEED

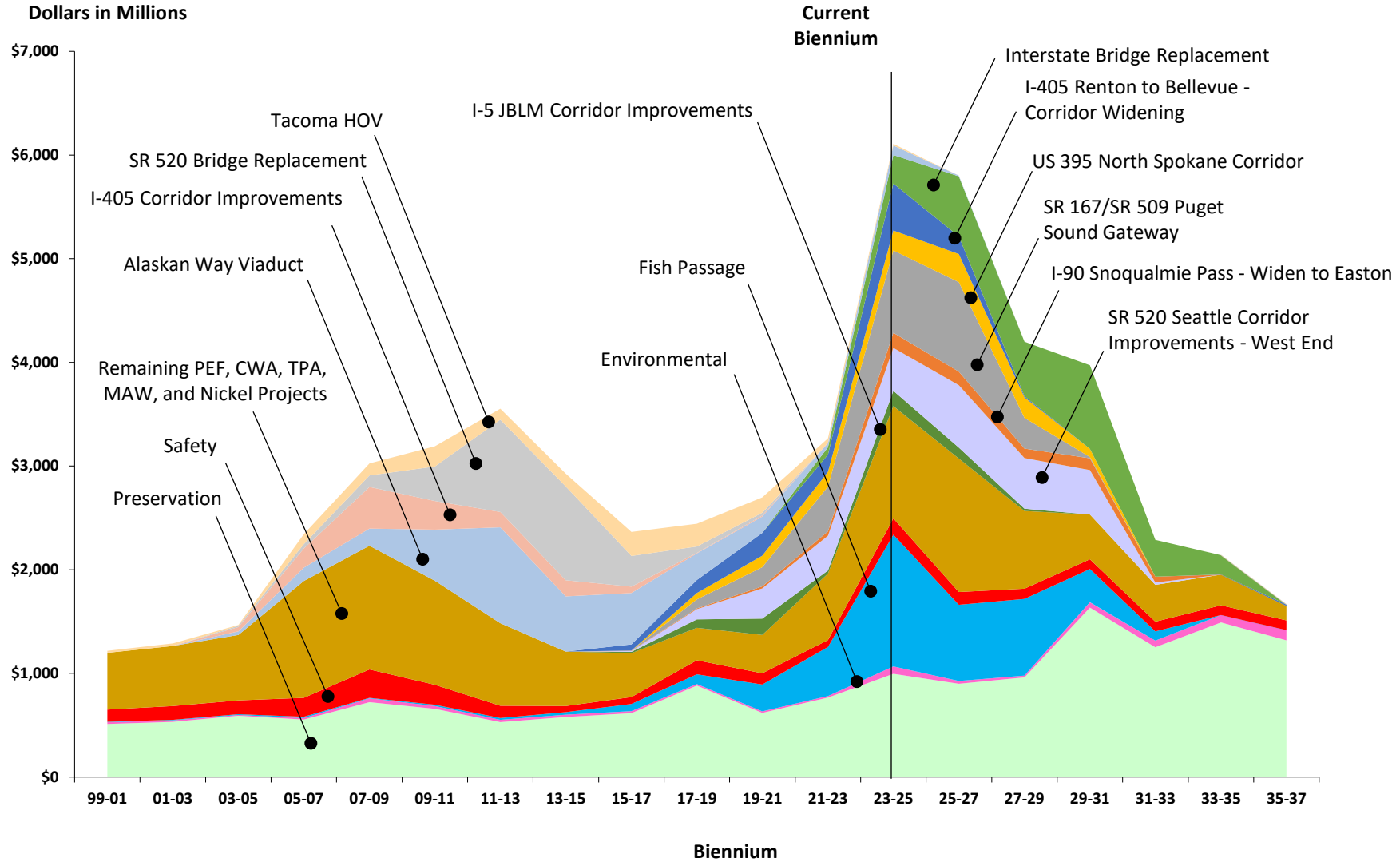
- Operations and Maintenance - \$350 million ongoing per biennia
- Fish barrier removal - \$5 billion
- Safety - \$2.375 billion over 10 years
- Preservation - \$3 billion over 10 years
- Restoring ferry service - \$5.5 billion



WSDOT Highway Construction Program with Revenue Packages

2025 Agency Budget Request

25DOT001 (Excludes sub-programs 16 and 17, no error corrections)



Investment needed for State of Good Repair

Delivering Complete Streets w/ highway preservation dollars

Asset category	Replacement value	Average annual need	Current plan annual average spending (including MAW)	Average annual funding shortfall
Highways	\$123,425	\$1,055	\$705	\$350
Deliver Complete Streets with Preservation	N/A	\$210	\$70	\$140
Multimodal (i.e. Aviation, Public Transportation, Rail)	\$685	\$115	\$60	\$55
Intra-Agency (i.e. IT, Facilities, Fleet, Real Estate)	\$70,245	\$185	\$80	\$105
Ferries	\$5,325	\$510	\$330	\$180
TOTAL	\$199,680	\$2,075	\$1,245	\$830

Notes: Figures in millions of dollars, rounded to the nearest \$5M.

State of Good Repair funding need is Preservation and Maintenance funding numbers combined.

It is assumed that approximately 50% of the additional Highways Preservation dollars provided by Move Ahead Washington, excluding the funding provided for Highway Maintenance, will be needed to implement the Complete Streets proposal in conjunction with those projects.

The funding numbers above (excluding Replacement Value) represent 10-year annual averages.

Preservation funding needs

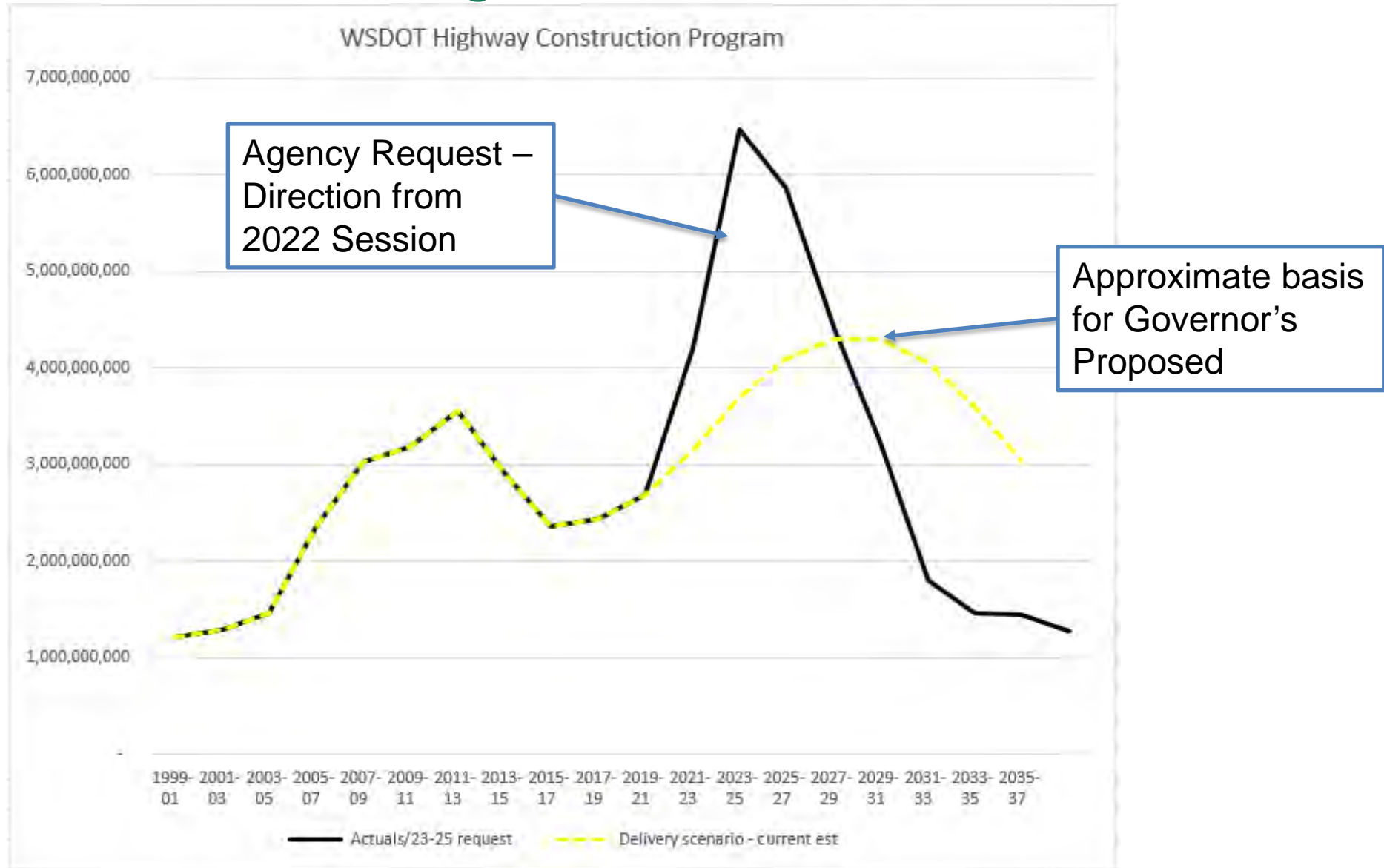
10-year need: \$3 billion

Current 2025-27 funding: \$900 million

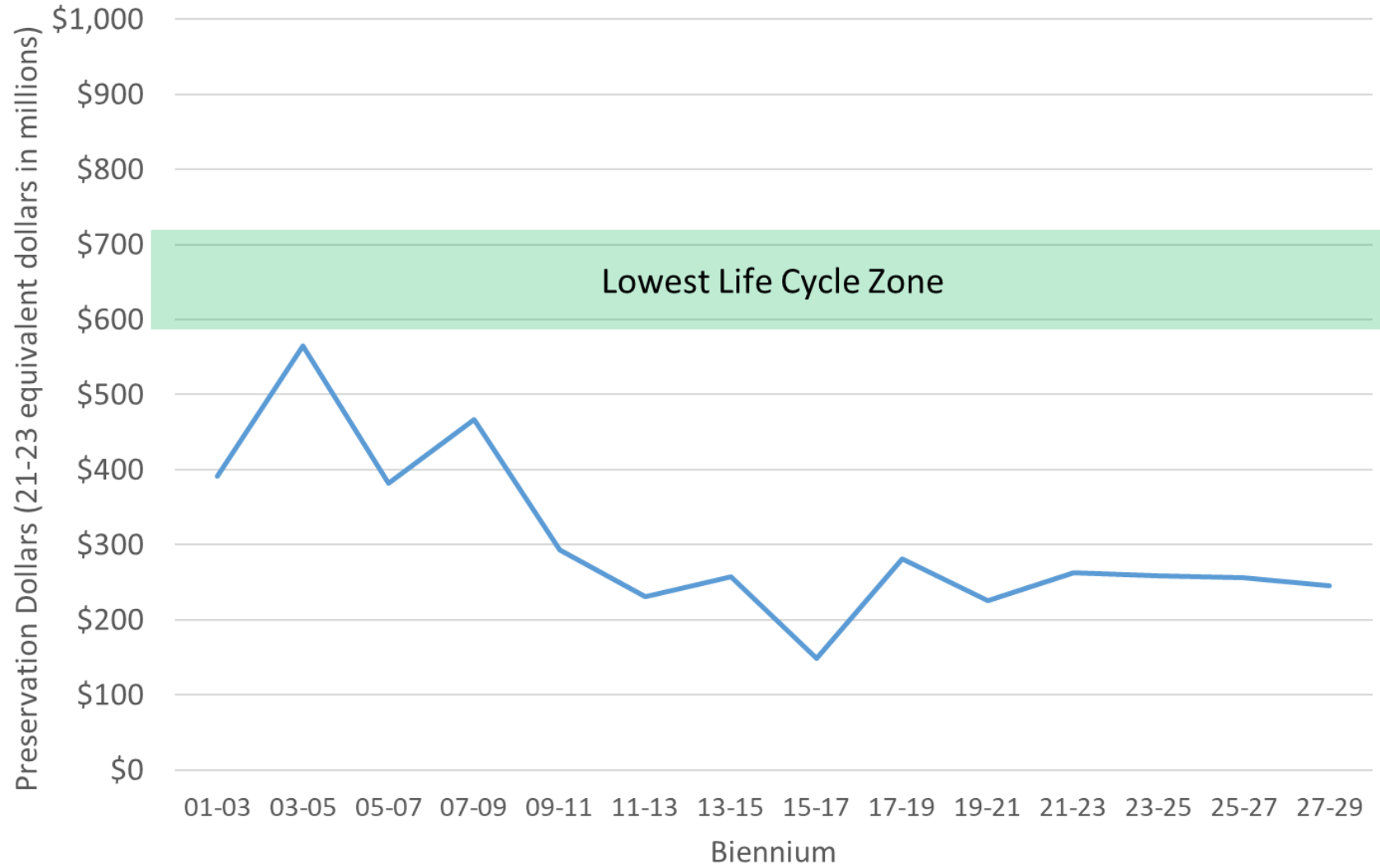
Additional biennial need: \$600 million

- Pavement and bridges across the state are showing effects of 20 years of underfunding
- Current investment is 40% of what is needed for state of good repair
- Public is noticing the results:
 - More emergency repairs and closures
 - Reduced speed limits
 - Rougher roads

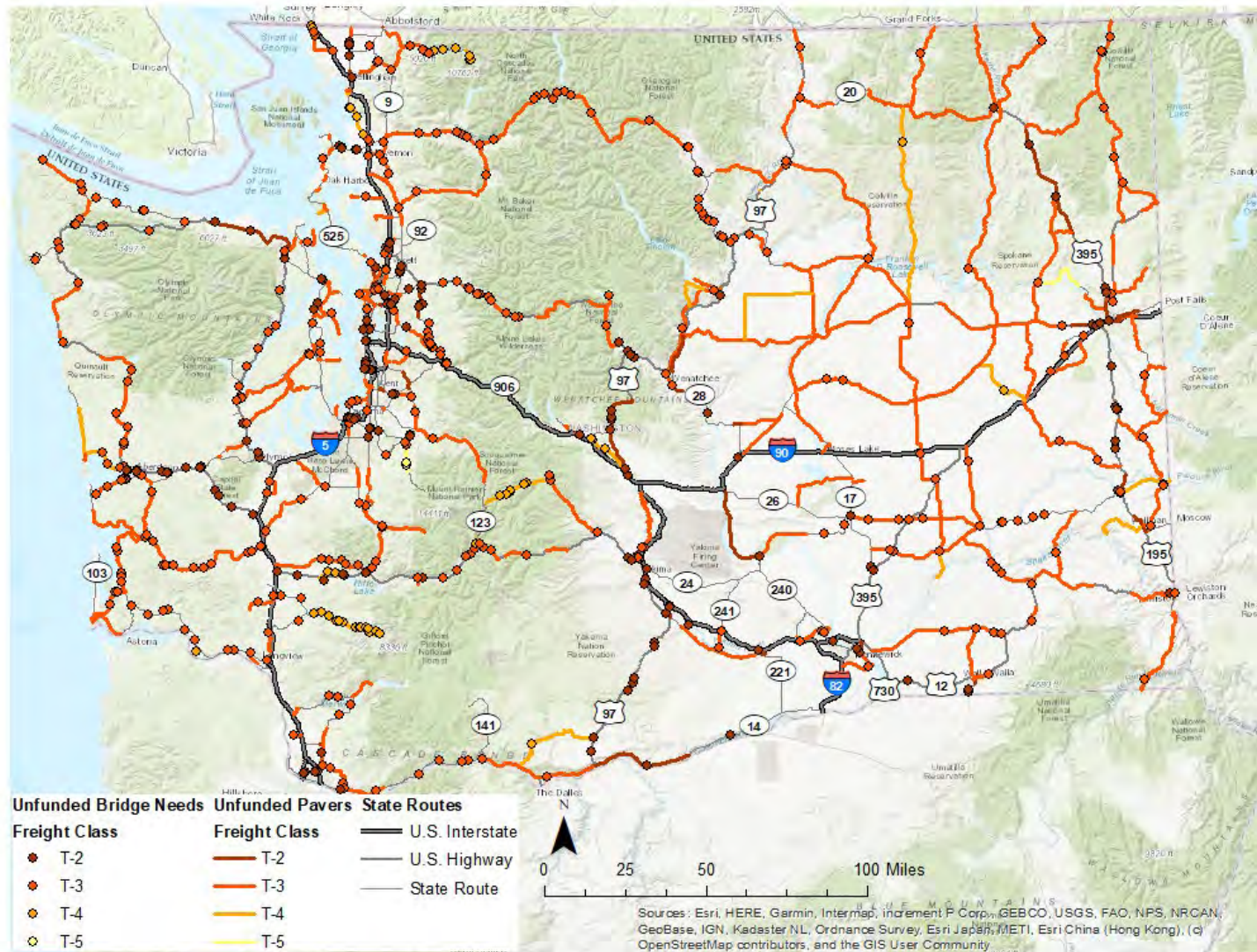
Highway Construction Program



Bridge Preservation Funding 2001 through 2030



Preservation Backlog



A Ten-Year Strategy – How do we accomplish it?

- Our state’s population and economy are growing. That growth relies on transportation services and infrastructure that are aged and failing and can’t be sustained without a **change in trajectory.**
- The needs are great, and **available funds are inadequate and oversubscribed.**
- **We all know we’re beyond quick fixes;** the challenge is to support decision-makers by laying out a path forward that is responsive to Washingtonians’ transportation needs and sensitive to funding realities.
- The list of unfunded priorities reflects our commitment to meeting that challenge. WSDOT’s strategy outlines an investment path that demonstrates **how to meet minimum needs and avoid deeper degradation of infrastructure over a ten-year period.**

Preservation and Maintenance



Maintenance Program



Funding Limitations

Preservation



Maintenance



Strategic Maintenance

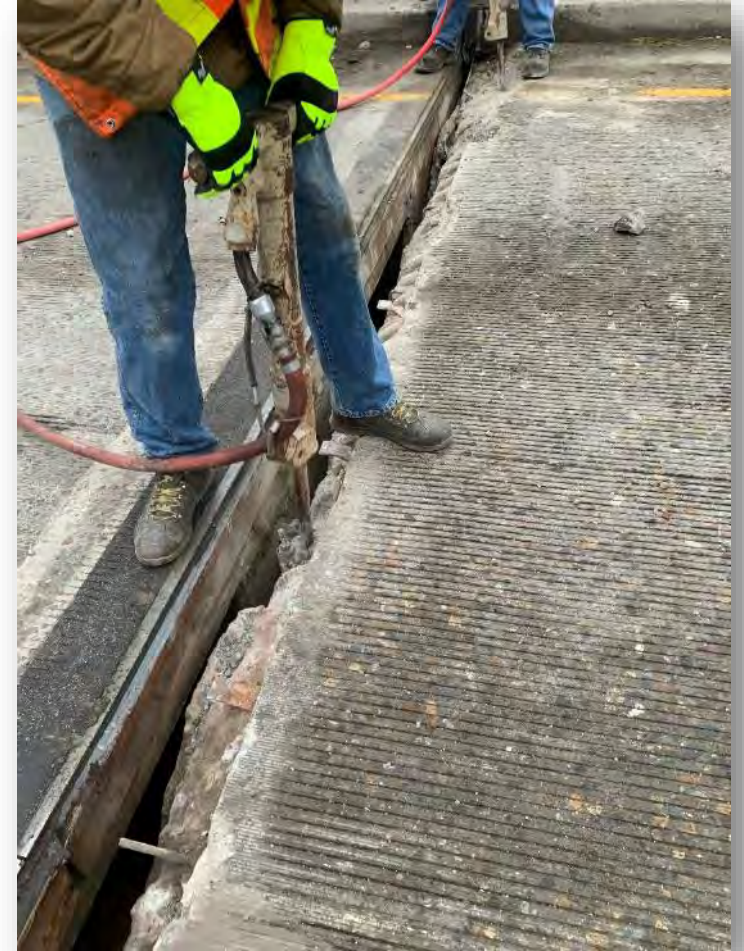
Deck Sealing



Bridge Washing



Expansion Joints



Expansion Joints



Deck Repair



Indirect Impacts

- Crew Safety
- Other preventative maintenance work doesn't get accomplished
 - Scour
 - Structural maintenance
 - Expansion joint maintenance
 - Drainage
- Quality of repair
- Less opportunity to grow staff skills
- Recruitment and retention issues
- Cost increases



Improvements



Local Programs



WSDOT Local Programs - Bridge

- Delegated Program Manager
 - Maintain bridge inventory
 - Ensure NBIS compliance
- Provide technical guidance
- Distribute federal bridge funds



Coulee-Hite Rd in Spokane County



Murray Morgan Bridge in City of Tacoma



Manley Middle Culvert in Clark County

Local Agency Bridge Inventory

4304 Total Local Agency Bridges

3425 County owned

839 City owned

40 Owned by others*

Average Year Built is **1976**

Average Bridge is **49 years** old

*Others include County/City Parks, Sound Transit, Toll Authorities, and more.
From November 2024 WSBIS Data

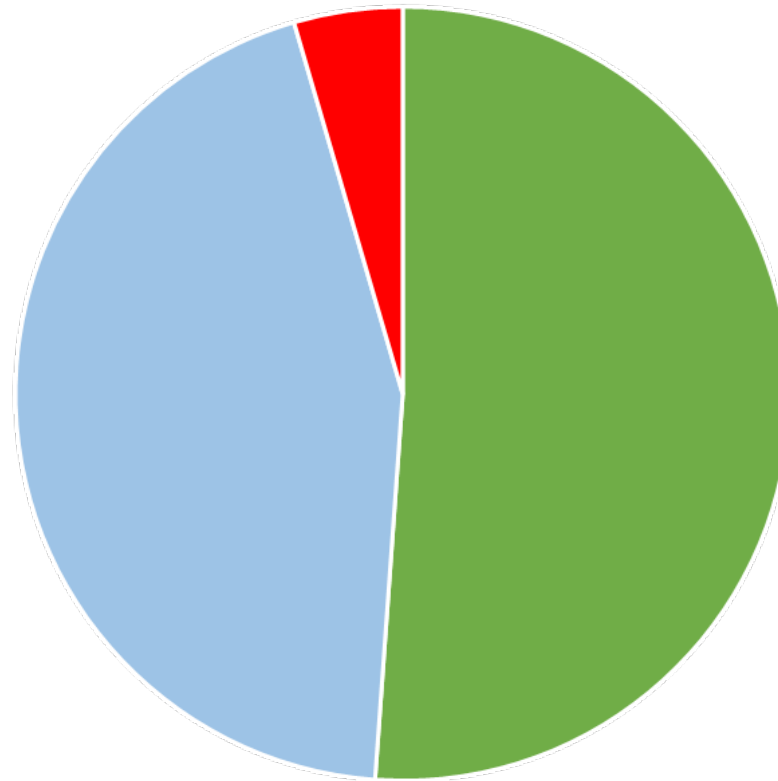
Total does *not* include
1531 short span bridges
102 bridges without public access



Independence Bridge
in Thurston County

Local Agency Bridge Overall Condition

Condition as coded in the bridge inspection report for the minimum of Deck Overall, Superstructure Overall, and Substructure Overall. These items are evaluated on a 0 to 8 scale, where 0-4 is Poor Condition, 5-6 is Fair Condition, and 7-8 is Good Condition.

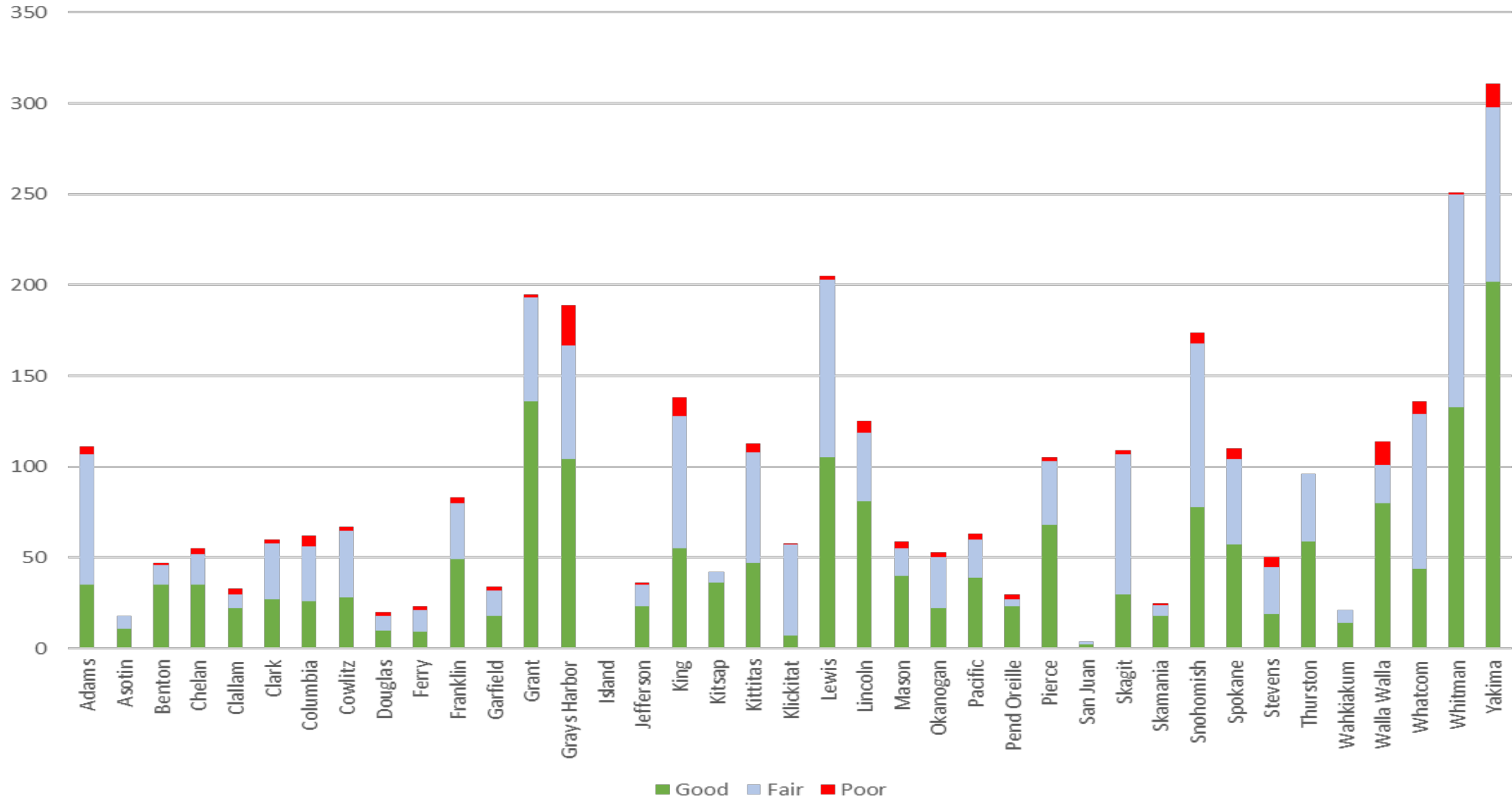


Good = 51.1%
Fair = 44.3%
Poor = 4.5%

■ All Local Good ■ All Local Fair ■ All Local Poor

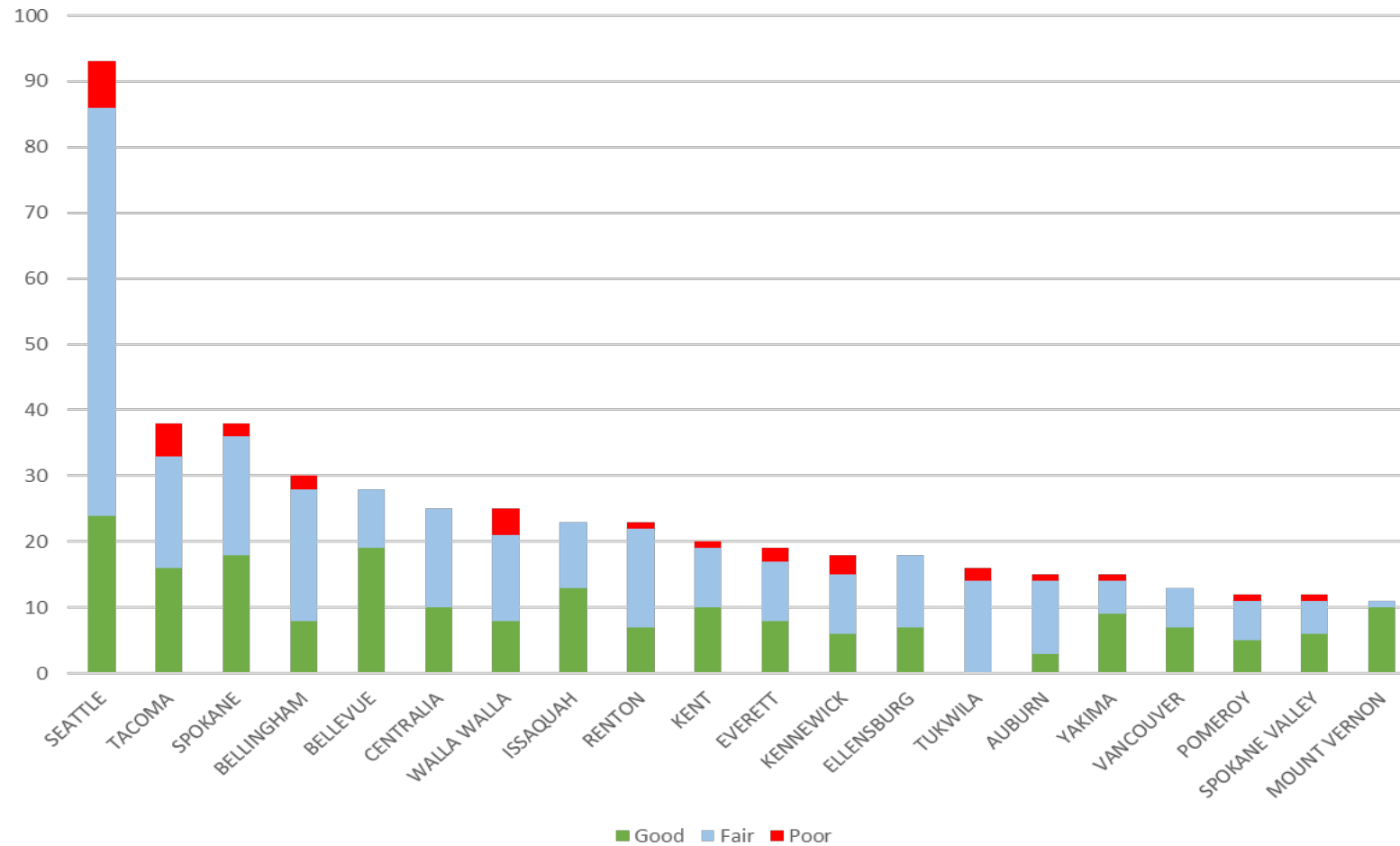
Bridge Condition by County

County Inventory - by Condition



Bridge Condition

Top 20 Cities by Inventory Size



Local Agency Bridges – Poor Condition



**10th Ave South
City of Union Gap**

Quality Assurance Visit
October 2024

Bridge Closed
November 2024



Local Agency Bridge – Critical Findings

- A *critical finding* is a deficiency that requires immediate action to ensure public safety
- Doubled over four-year period:
 - 21 critical findings from 2017-2020
 - 43 critical findings from 2021-2024
- From 2024 critical findings:
 - 1 bridge replaced
 - 2 bridges remain closed
 - 7 bridges open with repairs, load posting, or lane restrictions
 - 2 bridges open after in-depth assessment



102nd Ave Over SR 522
City of Bothell

Local Agency Asset Management

- Local Agencies are responsible for their own asset management plans



Sagehill Road
Franklin County
Replacement Candidate



Ever's Bridge
Mason County
Rehabilitation Candidate



Federal Local Bridge Program

- Bridge Advisory Committee (BAC)
- NBI reportable structures are eligible



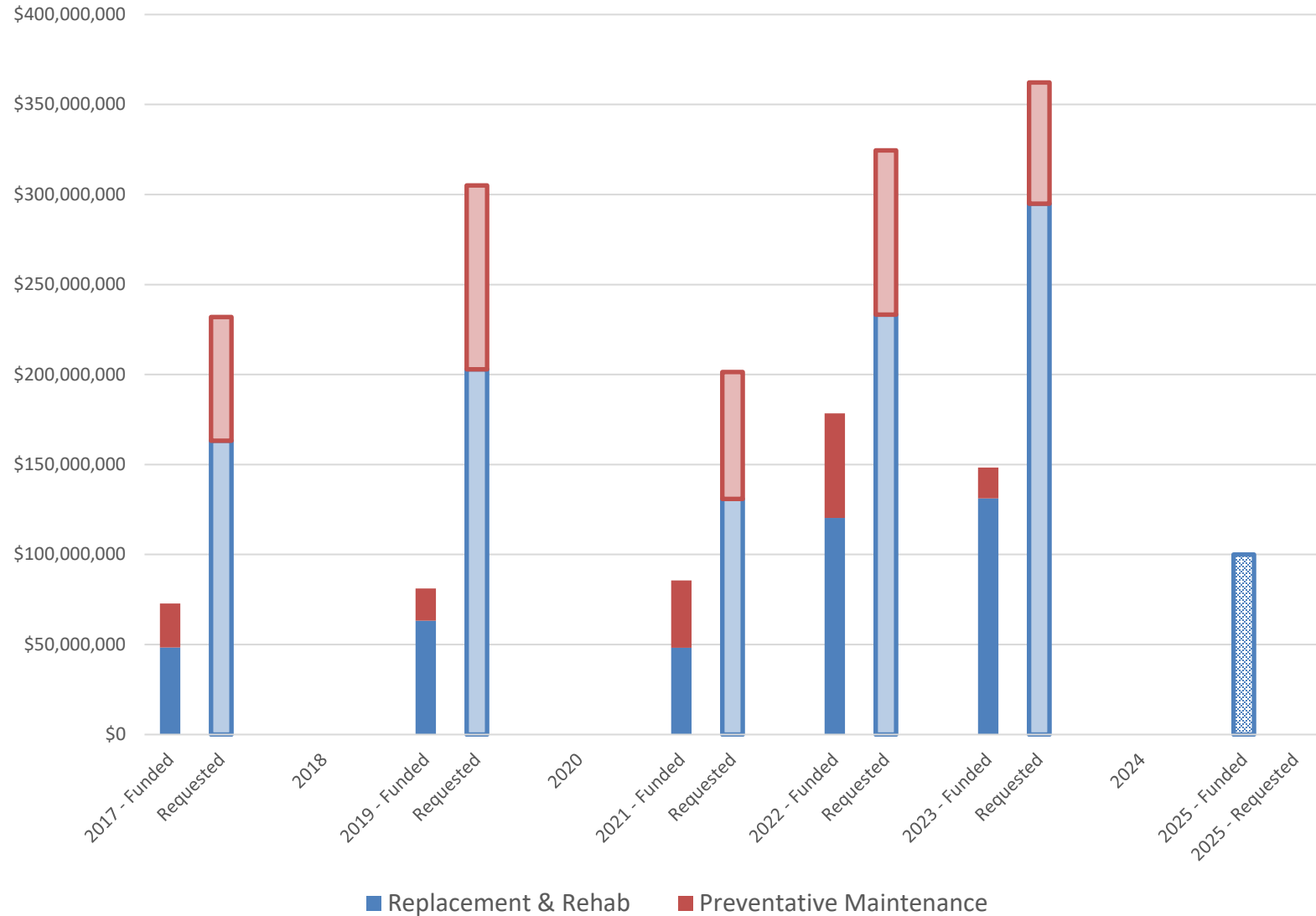
Upper Finney Creek
Skagit County
Seismic Rehabilitation



Twisp River
Okanogan County
Rehabilitation

Federal Local Bridge Program

Federal Local Bridge Program



■ Replacement & Rehab ■ Preventative Maintenance

Questions?

For additional information on the State of Washington's Bridges, please contact:

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