



# Seattle Bridges

## Status of Bridge Maintenance Audit & 2023 Investments

City Council Transportation & Seattle Public Utilities Committee  
March 2023

# Recommendation 1

The Seattle Department of Transportation should take immediate steps to resolve all the issues identified in the 2019 Federal Highway Administration review.

**STATUS: PENDING**

# Recommendation 1

## - Pending

- Overhauled file management system, going digital and meeting FHWA 23 Metrics for:
  - Qualifications of personnel
  - Inspection frequency
  - Inspection procedures
  - Inventory data



### Bridge Files

SDOT Bridges   All Bridges   NBI Bridges   Bridge File Document Library

### File Uploader by Inspector

Abad, Abigail   Brazzale, Ross   Escobedo, Alyssa   Frank, Peter  
Funk, Greg   Long, Richard   Loo, Kit   Molla, Ainalem  
Wilson, Stephen   Zuleta, Pablo

### Bridge Inspection Schedule

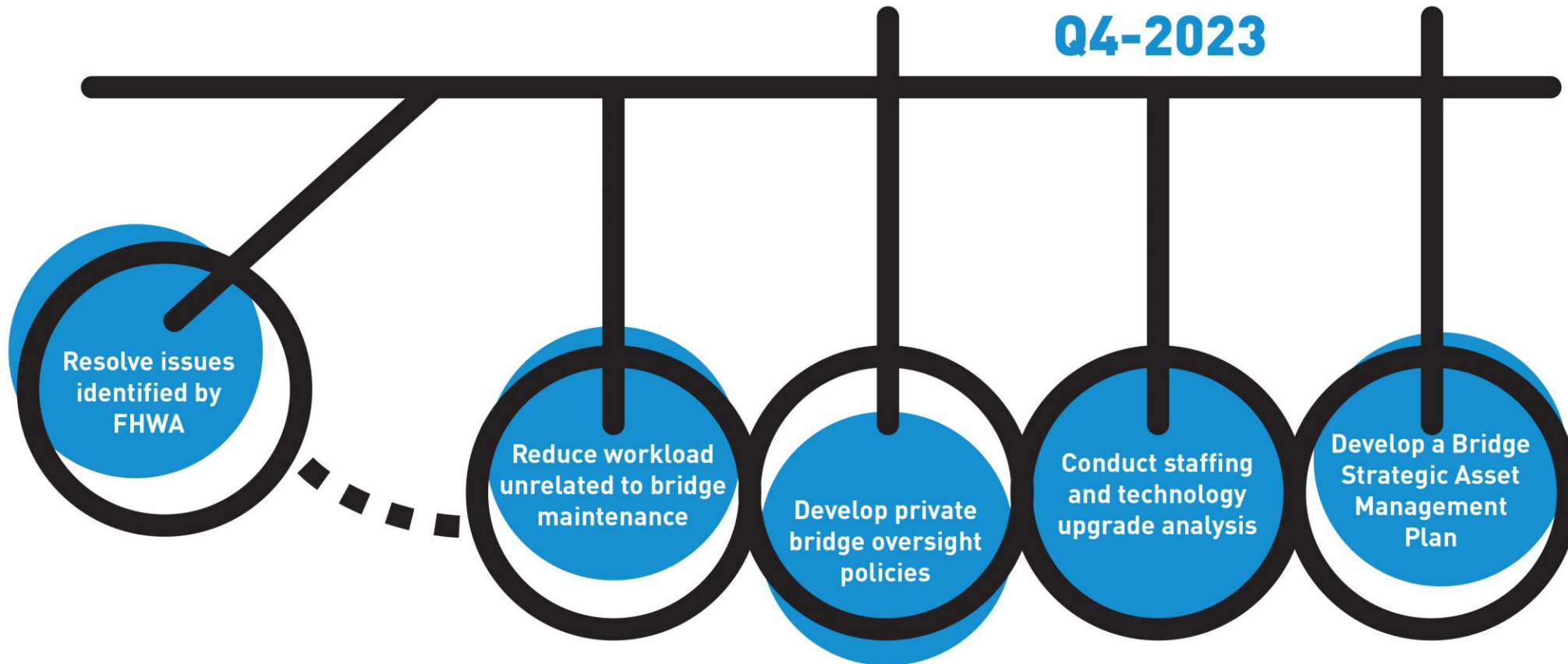
Today   February 2023

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Jan 29	30	31	Feb 1	2	3	4
5	6	7 BRG-004: ALB...	8 BRG-112: Marti... BRG-114: 23 A...	9 BRG-213: 32N... BRG-214: ELM...	10	11
12	13	14 BRG-025: S LU...	15	16	17 BRG-059: LEN... BRG-367: UNI...	18

Fri, Feb 17   Unscheduled   X

- All day   BRG-059: LENORA ST PED /RR
- All day   BRG-367: UNION ST PED at We...

# Recommendation 1 - Pending



# Recommendation 2

- The Seattle Department of Transportation (SDOT) should reduce the share of the department's bridge maintenance workload that is currently dedicated to reimbursable projects unrelated to SDOT bridge maintenance. Such a change could be done incrementally.

**STATUS: IMPLEMENTED**

# Recommendation 2

## - Implemented

- 2023 policy focusing Roadway Structure crews on complex, multiday bridge repair
- Repairs underway now and next:
  - Queen Anne Bridge, Magnolia Bridge, Ballard Bridge
  - Includes spalls repair, epoxy crack injection, resealing expansion joints



# Recommendations 3, and 4

- Recommendation 3: The Seattle Department of Transportation should develop draft legislation to replace Ordinance 96715 to address current City of Seattle bridge maintenance priorities and ensure adequate oversight of private bridges.
- Recommendation 4: The Seattle Department of Transportation should develop policies and procedures to adequately oversee private bridges that align with a revised version of Ordinance 96715, as mentioned in Recommendation 3.

**STATUS: PENDING**



# Recommendations 3 & 4 - Pending

Q4  
2023

- Director's Rule best approach to maximize efficiency
- Inspection responsibility shifts to private bridge owners, allowing existing inspectors to focus on Roadway Structure's assets



# Recommendations 5, 6 and 7

- Recommendation 5: The Seattle Department of Transportation should conduct a staffing analysis to determine the number and type of staff required for the implementation of a bridge preservation program.
- Recommendation 6: The Seattle Department of Transportation should incorporate the City's Race and Social Justice Initiative values into the staffing analysis of its bridge program.
- Recommendation 7: The Seattle Department of Transportation should conduct a cost benefit analysis of technology upgrades needed to improve staff efficiency as part of their staffing analysis.

**STATUS: PENDING**

# Recommendations 5, 6 & 7 - Pending

## Analysis Phase 1:

Identify immediate resource needs



## Technology Cost

### Benefit Analysis:

Technology solutions to increase resource efficiency



## Race & Social Justice

### Initiative Values:

Racial Equity Toolkit on staff diversity



## Analysis Phase 2:

Incorporate the Life Cycle Cost Analysis to identify future resource needs



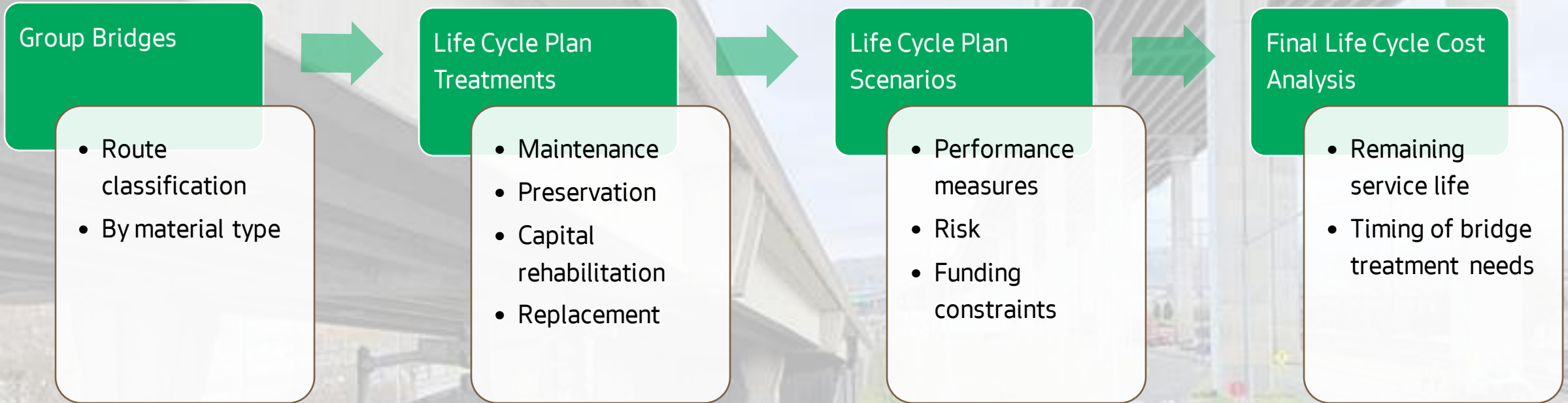
# Recommendations 8, and 9

- Recommendation 8: The Seattle Department of Transportation should update the estimated useful life of their bridges using the condition data of individual bridge components.
- Recommendation 9: The Seattle Department of Transportation should use the updated useful life estimates of its bridges to plan for preservation work and lifecycle costs.

**STATUS: PENDING**

# Recommendations 8 & 9 - Pending

Q4  
2023

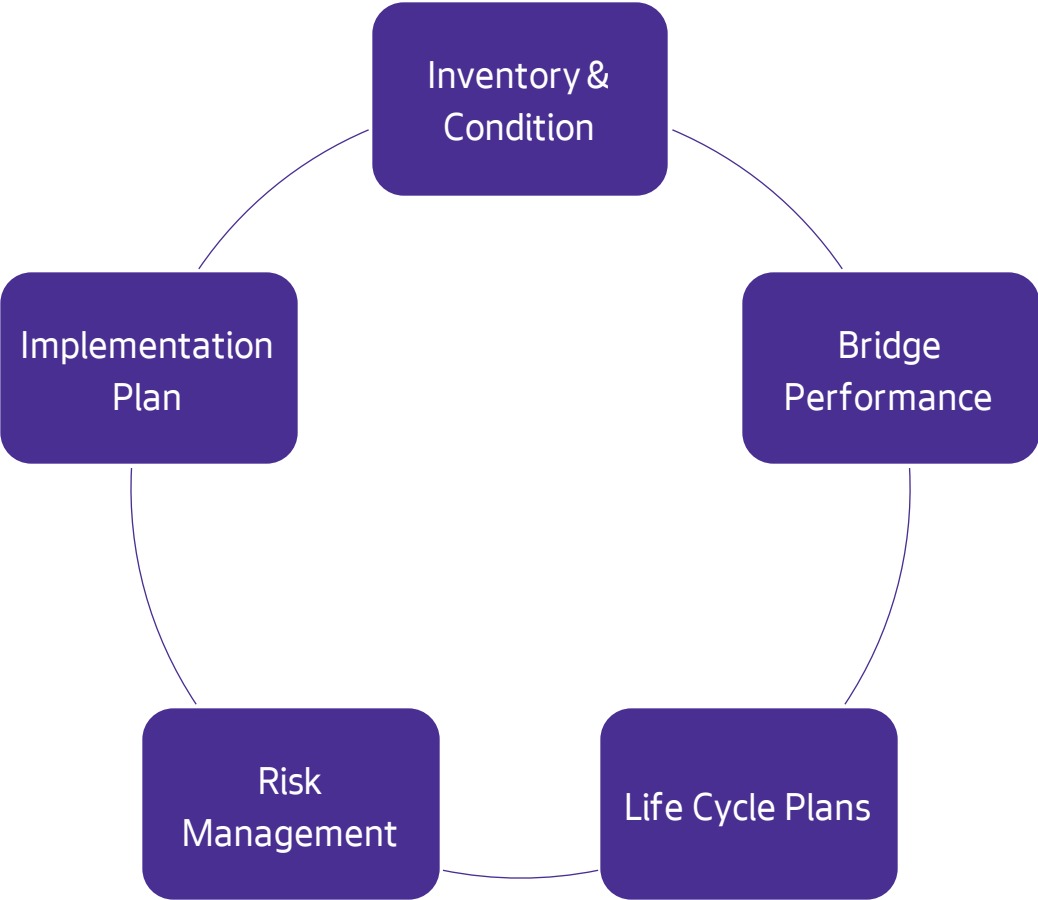


# Recommendation 10

- After the Seattle Department of Transportation (SDOT) has accurate condition data, updated estimated useful life calculations, and lifecycle cost data, SDOT should develop a strategic asset management plan for its bridges and the City should develop and implement strategies to fill the bridge maintenance funding gap.

**STATUS: PENDING**

# Recommendation 10 - Pending



Together, the audit recommendations create the Bridge Strategic Asset Management Plan, a holistic, proactive approach to bridge preservation that plans for the right treatment at the right time.

# Next Steps

- Office of City Auditor: We can provide a future update at the committee's request, thank you
- SDOT: Updates on Roadway Structures current bridge investments

## Questions?

# Bridge program overview

- Roadway Structures overview
- Bridge investments underway
- Questions and answers



Lander St Bridge funding partners



Lander St Bridge completed Oct 2020





# Roadway Structures

Responsible for:

- 126 bridges plus nearly 1,500 retaining walls, stairways and underground support walls which require ongoing maintenance and investment
- Full bridge replacements
- Bridge and structure repair and rehabilitation
- Seismic retrofits
- Maintenance
- Response to City Auditor recommendations



# Planning for the future

The *Bridge Strategic Asset Management Plan*, in partnership with planning studies, answers these questions:

1. Can the life of the bridge be extended by performing what type of major maintenance at what time?
2. When does it become cost effective to replace which bridge?

Planning studies then guide how to approach bridge replacement.

## Planning Studies Underway

### Replacement Planning Studies

- 2nd Ave Ext & Jackson St (4th-5th)
- 33rd Ave W Bike/Ped Bridge
- Admiral Way Bridge North and South
- University N Approach

### Seismic Conceptual Design Reports

- E Boston Terrace
- W Dravus/15th Ave Bridge
- 1st Ave S Viaduct/Argo Bridge
- 4th Ave S Main to Airport Way Bridge
- McGilvra Blvd E

## Planning Studies Completed

- Cowen Park Bridge Replacement Study
- Ballard Bridge Replacement Study
- Thornton Creek Bridges Replacement Study
- Magnolia Bridge Replacement Study
- Ballard Bridge Seismic Study
- Fremont Bridge Seismic Study
- West Seattle Bridge Replacement Study

# Investing today

- Levy to Move Seattle commitments for spot repair and maintenance backlog
- Eight seismic, painting or rehabilitation projects in construction
- Seven seismic or painting projects in design
- Investing in major maintenance this year
- Leveraging local funds for grant opportunities



# Capital project investments

Budget: \$71 million on 14 bridges

In final design, slated for 2023 construction

Program	Bridge	Total Estimate
Painting	Admiral Way S Bridge	\$ 0.8M
Painting	Emerson St Viaduct	\$ 4.9M
Painting	Galer St Flyover	\$ 0.7M
Seismic <sup>1</sup>	McGraw St Bridge	\$ 8.4M
Seismic <sup>1,2</sup>	15th Ave NW/Leary Way Bridge	\$ 4.8M
Seismic <sup>1,2</sup>	Admiral Way N Bridge	\$ 7.8M
Seismic <sup>1</sup>	Admiral Way S Bridge	\$ 7.6M
Seismic <sup>1</sup>	15 <sup>th</sup> Ave NE/NE 105th St Bridge	\$ 8.9M

<sup>1</sup> Move Seattle Levy Funded

<sup>2</sup> Grant Funded

In early design, slated for 2024 construction

Program	Bridge	Total Estimate
Painting <sup>2</sup>	Jose Rizal	\$ 10.2M
Seismic <sup>1</sup>	13th Ave NW/Holman Rd Ped*	\$ 2.1M
Seismic <sup>1</sup>	45th Ave Ped*	\$ 2.1M
Seismic <sup>1</sup>	N 102nd and Aurora Ped*	\$ 2.7M
Seismic <sup>1</sup>	Rainier and MLK Jr Way Ped*	\$ 3.2M
Seismic <sup>1</sup>	N 41st Ped Bridge	\$ 2.7M
Seismic <sup>1</sup>	Delridge Way Ped Bridge	\$ 4.4M

\*Pending confirmation of approach with Levy Oversight Committee

# 2023 structures major maintenance

Total estimate: \$6.3 million

- Ship Canal bridges: movable bridge component upgrade and replacement
- Spokane St Swing Bridge: hydraulic repairs
- 4<sup>th</sup> Over Argo Railroad Bridge: lane reopening repairs
- USDOT Bridge Investment Program: 4th Argo Railroad Bridge Replacement Study

# University Bridge project & planning investments

Budget: Over \$2 million being invested + ongoing operations, inspections, and quarterly maintenance

Type	Project	Complete
Planning	North approach replacement	Q4 2023
Design	State of Good Repair concept design	Q2 2024
Major	Grey/black water pump-out modifications	Q2 2024
Maintenance	Drive motor control cabinet replacement	Q4 2025

# West Seattle Bridge Safety Program investments

Total program budget: \$175 million

## Remaining projects

- Strengthening contract: Spokane St Swing Bridge equipment (Q2-2023)
- Spokane St Swing Bridge communications and controls projects (Q3-2023)
- Reconnect W Seattle projects scheduled for post-bridge opening installation (ongoing till early 2024)

## Close-out schedule and budget

- Contract close-out Q4 2023
- Program close-out expected early 2024
- Budget used as of **Q1 2023**: \$128 million

# In summary

- Audit responses compete by end of year, including new *Bridge Strategic Asset Management Plan* for proactive approach to preservation
- \$13M in 2023 dedicated to operation and maintenance of bridges
- \$34.6M in 2023 to capital investment and major maintenance of bridges
- \$25.5M in grants received
- 8 seismic, painting or rehabilitation projects in construction
- 7 seismic or painting projects in design
- 10 planning studies underway, required for future replacement
- Ongoing Levy to Move Seattle spot improvements



# Questions?



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[Bridges - Transportation | seattle.gov](https://bridges-transportation.seattle.gov)





**Thank you!**

