

Bridge Replacement and Rehabilitation Program

Levy Oversight Committee

March 7, 2023

Wes Ducey, SDOT



Seattle
Department of
Transportation

Agenda

- Overview of the Bridge Replacement & Rehabilitation Program
- Accomplishments over the Life of the Levy
- Equity Considerations
- 2023 & 2024 Workplan
- Future Opportunities



Beneath Admiral Way Bridges (North & South)

Overview of the Bridge Replacement & Rehabilitation Program (BRRP)



Ballard Bridge

Background

The Levy included funding to study the replacement of high priority bridges across the city and to make pedestrian and bicycle safety improvements on or near our bridges.

Levy Commitment: Plan and design high priority bridge replacements to begin construction after 2024. Of the funds identified in this element, up to \$10M of total funding (local, Levy, leverage) may be used for implementing near-term pedestrian and bicycle safety projects on bridges being studied for replacement.



N 34th St PBL at Stone Way



2nd Ave. Ext. & Jackson St Bridges

Program Funding (2016-2024)

Levy to Move Seattle: **\$13.7M**

Leverage: **\$1.5M**

(originally predicted to be \$15M)

Local: **\$3.3M**

(originally predicted to be \$4M)

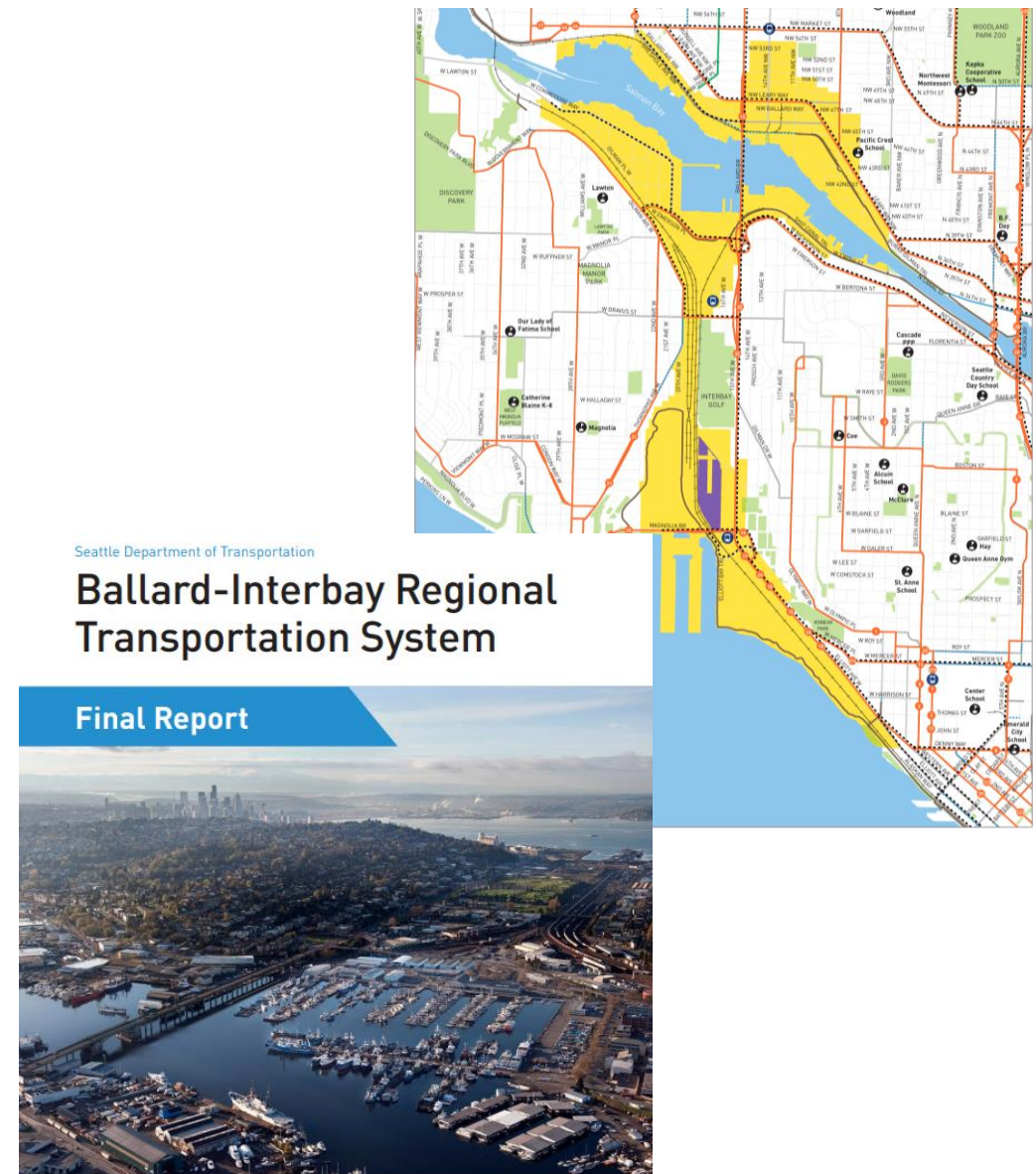
Funding provided to near-term bike and pedestrian safety improvements near bridges: **\$5M**



Magnolia Bridge

Program Value

- Provides an important cost estimate data point that both informs our proactive rehabilitation and replacement program and provides a foundation for pursuing future funding opportunities
- Allows us to implement additional bike/ped safety projects



Bridges Being Studied

| Bridges | Proposed Deliverable | Completion Date/Status |
|---|---------------------------|------------------------|
| Cowen Park Bridge | Alternatives Analysis | Q4 2017 |
| Magnolia Bridge | Alternatives Analysis | Q2 2019 |
| 39th and E. Pine St. Bike/Ped Bridge | Near-term implementation* | Q4 2019 |
| Thornton Creek Bridges (105th St, 110th St, 39th Ave NE, & 45th Ave NE) | Alternatives Analysis | Q3 2020 |
| Ballard Bridge | Alternatives Analysis | Q4 2020 |
| 33rd Ave W. Railroad Bike/Ped Bridge | 90% Design Completion | In Progress |
| Admiral Way Bridge North & South | Alternatives Analysis | In Progress |
| University Bridge N. Approach | Alternatives Analysis | In Progress |
| 2nd Ave. Extension and | Alternatives Analysis | Procuring Consultant |
| Jackson St (4 th to 5 th) West Bridges | Alternatives Analysis | Procuring Consultant |

**Deliverable shifted from 90% design completion to repair design and implementation*

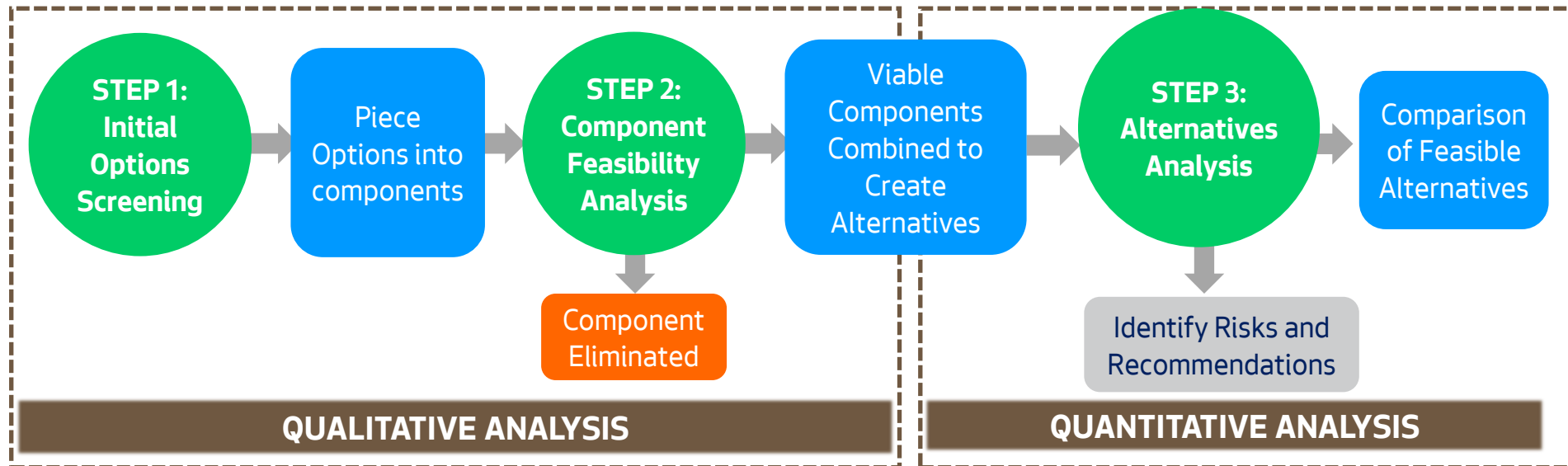


Cowen Park Bridge



15th Ave NE PBL on Cowen Bridge

What goes into an Alternatives Analysis?



Feasibility Analysis includes:

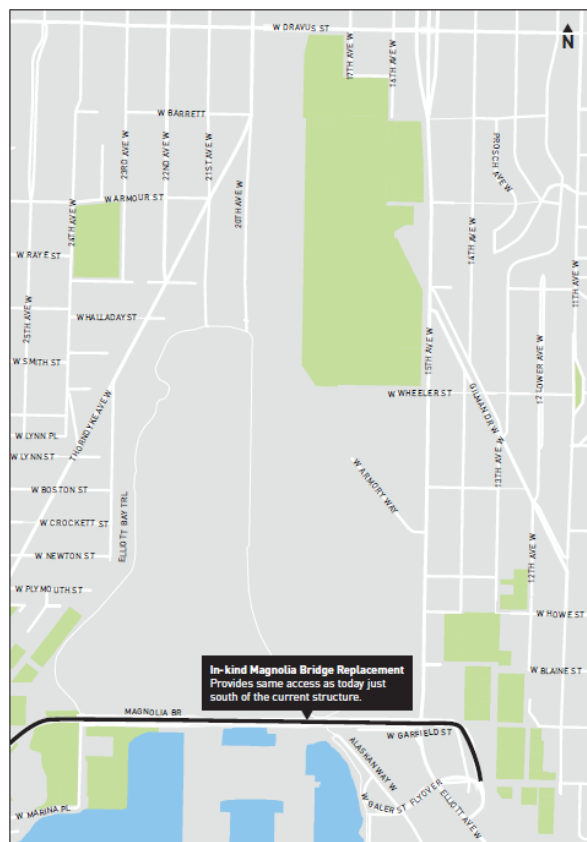
- Multimodal traffic analysis
- Geometric feasibility
- Structural analysis
- Constructability evaluation
- Rough Order of Magnitude (ROM) costs

Alternatives Analysis Criteria:

- Multimodal Mobility and Connectivity
- Community Support
- Environmental Impact
- Implementation Characteristics

Example: Magnolia Bridge Alternatives

2006 Recommended In-kind Replacement



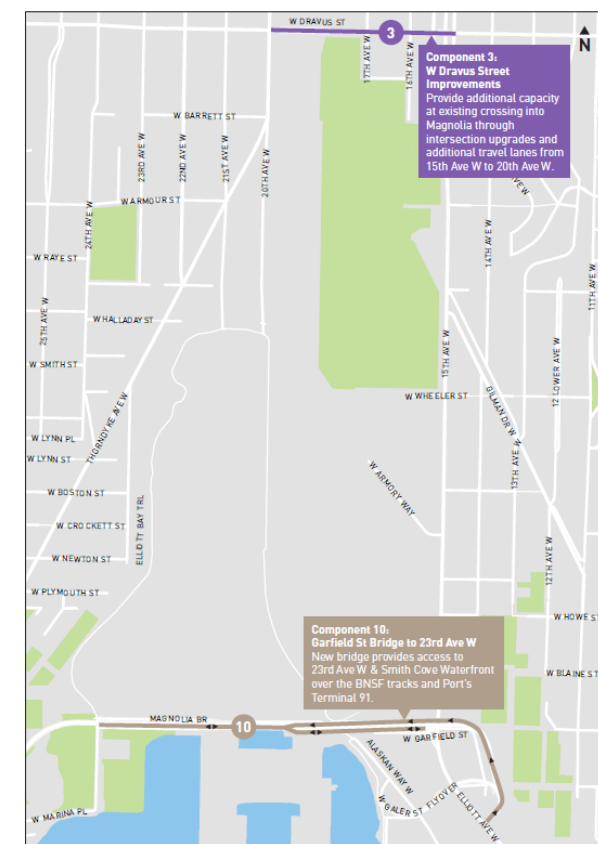
Alternative I - Armory Bridge, etc.



Alternative II - Dravus, etc.



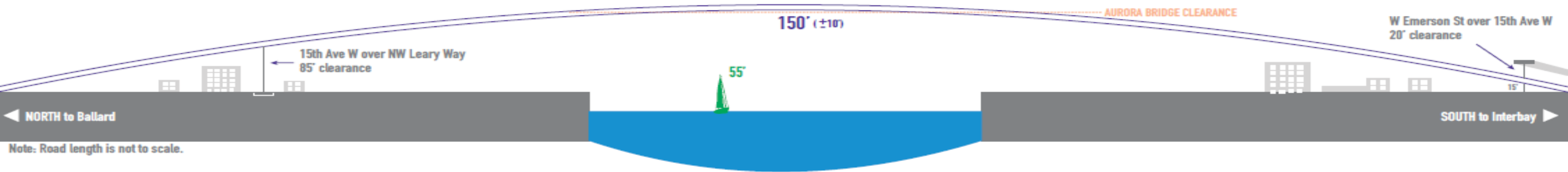
Alternative III - Dravus & Garfield Bridge



Example: Ballard Bridge Alternatives

HIGH LEVEL FIXED BRIDGE REPLACEMENT

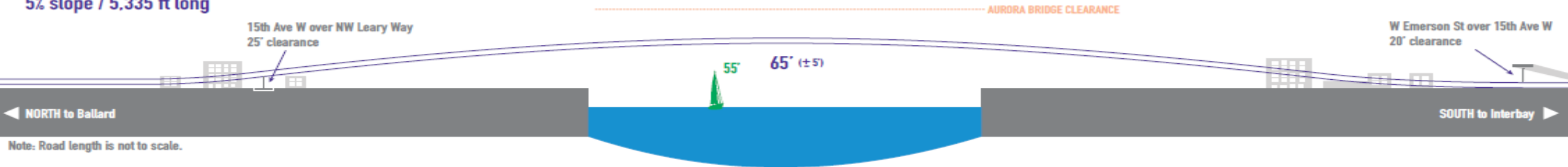
5% slope / 6,435 ft long



MID LEVEL MOVEABLE BRIDGE REPLACEMENT

Significant reduction in number of bridge openings.

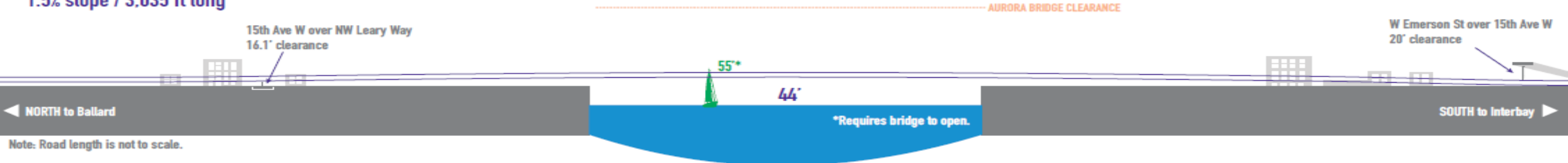
5% slope / 5,335 ft long



REHABILITATION OF EXISTING MOVEABLE BRIDGE (LOW LEVEL)

Similar number of bridge openings to today.

1.5% slope / 3,035 ft long



What do the “deliverables” look like?



Technical Memo

To: Wes Ducey, SDOT Project Manager
From: Lisa Reid, PE, PMP/SCJ Alliance
Marni C Heffron, PE, PTOE/Heffron Transportation Inc.
Date: April 17, 2019
Project: Magnolia Bridge Planning Study
Subject: Alternatives Analysis Summary

1. Executive Summary

The existing Magnolia Bridge currently serves to connect to and from Magnolia, Smith Cove Park/Elliott Bay Marina, Terminal 91/Elliott Bay Businesses, and 15th Ave W. The bridge serves 17,000 ADT and 3 King County Metro bus lines serving an average of 3,000 riders each weekday. The bridge was constructed 90 years ago and has deteriorated. While SDOT continues to perform maintenance to maintain public safety, the age and condition of the bridge structure means there will continue to be deterioration. In 2006, following a 4-year planning study; however, over the last decade, funding has not been identified to advance this alternative beyond 30% design.

This Magnolia Bridge Planning Study identified three Alternatives to the 2006 recommend In-Kind Replacement option. These Alternatives, along with the In-Kind Replacement option, have been analyzed and compared through a multi-criteria evaluation process. Focusing on the main connections into Magnolia and Smith Cove Park/Elliott Bay Marina, the Alternatives identified are:

- ♦ **Alternative 1:** a new Armory Way Bridge into Magnolia and a new Western Perimeter Road to Smith Cove Park/Elliott Bay Marina (\$200M - \$350M),
- ♦ **Alternative 2:** Improvements to the existing Dravus St connection into Magnolia and a new Western Perimeter Road to Smith Cove Park/Elliott Bay Marina (\$190M - \$350M),
- ♦ **Alternative 3:** Improvements to the existing Dravus St connection into Magnolia and a new Garfield St bridge to Smith Cove Park/Elliott Bay Marina (\$210M - \$360M), and
- ♦ **Alternative 4:** In-Kind Replacement of the existing Magnolia Bridge adjacent to its current location (\$340M - \$420M).

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<https://www.seattle.gov/transportation/magnoliabridgeplanning>

Ballard Bridge Planning Study Alternatives Comparison Report



October 19, 2020

Submitted By:

COWI

COWI North America, Inc.

In Association With:

Heffron Transportation
SCJ Alliance
HDR, Inc.
HWA Geosciences, Inc.
Historical Research Associates, Inc.
Cascadia Consulting Group

<https://www.seattle.gov/transportation/ballardbridge>

Bike and Pedestrian Safety Improvements

| Project (partnership) | Scope | Completion Date/Status |
|--|--|------------------------|
| Ballard Bridge north end, On-Ramp at NW Ballard Way, east of 15th Ave NW | Crossing Improvement | 2018 |
| Ballard Bridge north end, On-Ramp at NW Ballard Way, west of 15th Ave NW | Crossing Improvement | 2018 |
| 1st Ave S Bike/Ped Improvements (ITS & Vision Zero) | Path & Crossing Improvement | 2018 |
| 39 th and E. Pine St. Bike/Ped Bridge | Bridge Repair | 2019 |
| University Bridge PBL (BMP) | PBL Resurfacing | 2020 |
| N 34 th St. Mobility Improvements (BMP) | PBL Installation & Intersection Improvements | 2021 |
| 12 th Ave. S. Improvements (Vision Zero) | PBL Installation & Intersection Improvements | 2021 |
| Georgetown to Downtown PBL (BMP) | PBL Installation & Intersection Improvements | In Design |



1st Ave S & S Michigan St



NW Ballard Way & 15th Ave NW

BMP & Vision Zero Partnerships



N 34th St PBL at Fremont Bridge



12th Ave S PBL at Jose Rizal Bridge



Eastlake Ave NE PBL at University Bridge

Equity Considerations

- **Bridge selection:** Bridges being studied for replacement in this Levy were selected based on objective condition criteria along with a desire to spread bridge studies throughout the city
- **Future practices:** We've since continued to evolve and deepen the department's approach to equity over equality and are carrying that into our next funding package

2023 & 2024 Work Plan

| Project (partnership) | Accomplishment | Schedule |
|--|------------------------------|----------|
| 33rd Ave W. Railroad Bike/Ped Bridge | 90% Design Completion | 2023 |
| Admiral Way Bridge North & South | Alternative Analysis Report | 2023 |
| University Bridge N. Approach | Alternatives Analysis Report | 2023 |
| Georgetown to Downtown PBL (BMP) | Bike PBL Implementation | 2024 |
| 2nd Ave. Extension and Jackson St, 4 th to 5 th , West Bridges | Alternative Analysis Report | 2024 |



33rd Ave W. Railroad Bike/Ped Bridge

Opportunities

- **Preparing for the future:** The alternatives analysis for these bridges provide excellent foundational documentation for the eventual environmental permitting processes that would be required for replacement
- **Equity:** In the future, this program could add more layers of race and social equity into its prioritization
- **Narrowed focus:** It would also be beneficial to focus in on fewer or even a single structure as the next one to be replaced so the program doesn't have to keep spreading resources to keep multiple bridges in a similar phase of "readiness"



Questions?

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www.seattle.gov/transportation/projects-and-programs/programs/bridges-stairs-and-other-structures/bridges

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