

Seattle Department of Transportation

# Ballard-Interbay Regional Transportation System

## Executive Summary



**Seattle**  
Department of  
Transportation

## LAND ACKNOWLEDGMENT

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*Ballard-Interbay is on the ancestral lands of the Coast Salish and their descendants. We honor their elders, past and present—and thank them for the stewardship of this land and surrounding waters.*

*As we look to the future, we actively recognize that we live, learn, and work on Indigenous land.*

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## 2019 WASHINGTON STATE LEGISLATIVE LANGUAGE

ESHB 1160 – Section 311(18)(b)

*“Funding in this subsection is provided solely for the city of Seattle to develop a plan and report for the Ballard-Interbay Regional Transportation System project to improve mobility for people and freight. The plan must be developed in coordination and partnership with entities including but not limited to the city of Seattle, King county, the Port of Seattle, Sound Transit, the Washington state military department for the Seattle armory, and the Washington State Department of Transportation.*

*The plan must examine replacement of the Ballard Bridge and the Magnolia Bridge, which was damaged in the 2001 Nisqually earthquake. The city must provide a report on the plan that includes recommendations to the Seattle city council, King county council, and the transportation committees of the legislature by November 1, 2020. The report must include recommendations on how to maintain the current and future capacities of the Magnolia and Ballard bridges, an overview and analysis of all plans between 2010 and 2020 that examine how to replace the Magnolia bridge, and recommendations on a timeline for constructing new Magnolia and Ballard bridges.”*

## STUDY PURPOSE

The Ballard-Interbay Regional Transportation System (BIRT) study was commissioned by the 2019 Washington State Legislature and completed by the Seattle Department of Transportation (SDOT) in 2020. Its intent is to improve travel for people and goods in this locally and regionally significant area of Seattle.

The BIRT report examines Ballard-Interbay as an entire transportation and economic ecosystem and provides recommendations on future projects to meet local and regional transportation needs. It includes bridge replacement guidance as well as proposed tactical transportation investments informed by future employment and residential growth scenarios.

The study was conducted in 5 key phases during 2020:

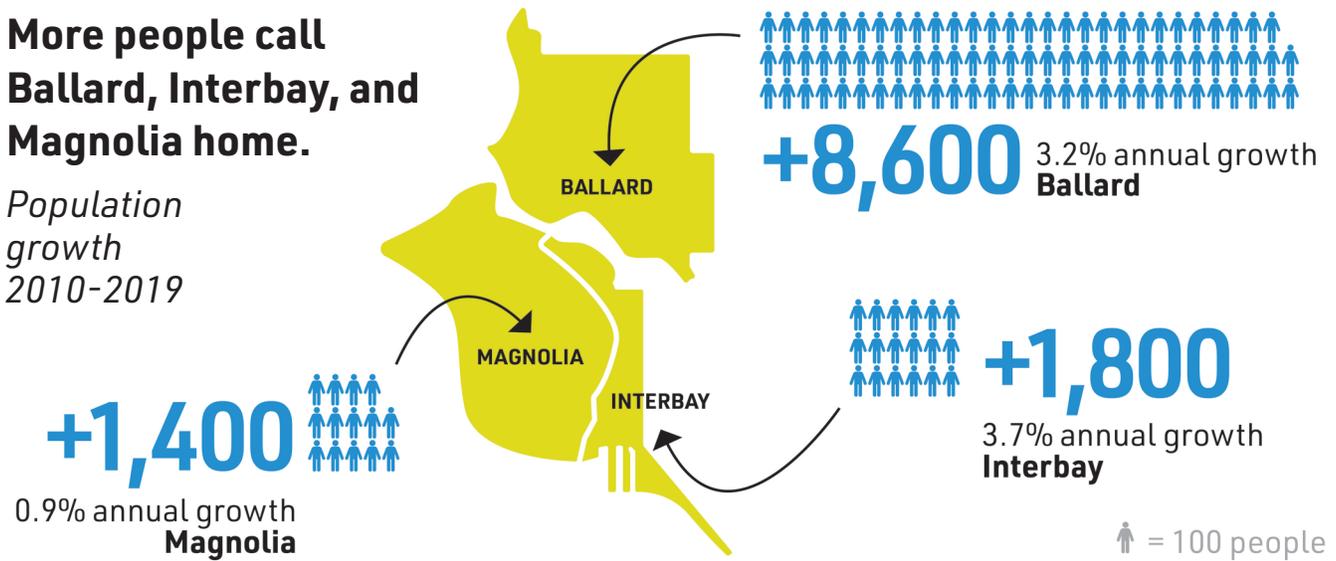


## BALLARD-INTERBAY AREA

The Ballard-Interbay-Northend Manufacturing and Industrial Center (BINMIC) is one of Seattle’s two major industrial centers, hosting 28,700 jobs in 2018. Surrounding neighborhoods are home to 95,200 people—roughly 13% of Seattle’s population—and the population of the study area has increased 14% since 2010. The vibrant mix of maritime, industrial, commercial, and service industry jobs here is critical to the region and its economic success. Providing reliable access for over 32,000 workers and freight haulers is vitally important. Major redevelopment opportunities at Terminal 91 Uplands (Port of Seattle), Fishermen’s Terminal (Port of Seattle), Armory site (Washington State National Guard), and additional employment growth at the Expedia campus will increase demand for a multimodal transportation system.

### More people call Ballard, Interbay, and Magnolia home.

Population growth 2010-2019



In 2019, the study area population was approximately

# 95,200



The Ballard-Interbay Manufacturing Industrial Center (BINMIC) is 1 of Seattle's 2 major industrial centers with about

**28,700**  
jobs in 2018

**50%**

of study area jobs are  
in the service sector

**12,000**

jobs are freight-oriented



BINMIC and Port of Seattle facilities were sited in this area to provide access to Elliott and Shilshole bays and the international waterways connected by the Puget Sound. Excellent access to regional and international waterways is not complemented by a comparably robust system of roadway connections. The lowland area between Smith Cove and the Ship Canal is highly constrained by 2 glacially carved hills, now home to the Magnolia and Queen Anne neighborhoods. Just 1 central artery—15th Ave W—connects to the Manufacturing and Industrial Center south of the Lake Washington Ship Canal and provides access to Magnolia via the aging Magnolia Bridge along with the W Dravus and W Emerson St corridors. The Ballard and Magnolia bridges, respectively, carry roughly 59,000 and 20,000 vehicles each day with many more people using transit. Without the bridges, travel for people and goods would be significantly constrained.

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*Action by the State of Washington and City of Seattle will be necessary to fund the critical bridge infrastructure that will keep Ballard and Interbay residents and businesses connected to the regional transportation system for decades to come.*

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## The BIRT Study Area and the Ballard and Magnolia Bridges



## ENGAGEMENT AND PARTNERSHIPS

The Ballard and Interbay transportation systems are critical to many agency stakeholders and the people and businesses they represent. Six agency partners were named in the BIRT legislation and worked together to develop this regional transportation strategy and manage coordination between this effort and related priorities in their respective agencies.

Agency	Key Coordination Elements
 <b>Seattle</b> Department of Transportation	<ul style="list-style-type: none"> <li>• Mayor's Maritime &amp; Industrial Strategy (M&amp;I) scenarios</li> <li>• Modal plans and major capital projects</li> <li>• Magnolia and Ballard bridge planning studies (2019-2020)</li> </ul>
 <b>King County</b> <b>METRO</b>	<ul style="list-style-type: none"> <li>• Future bus system restructuring needs</li> <li>• Bus operations and bus priority</li> </ul>
	<ul style="list-style-type: none"> <li>• West Seattle and Ballard Link Extensions (WSBLE)</li> <li>• Interbay and Ballard WSBLE Station Area Access</li> </ul>
 <b>Washington State</b> Department of Transportation	<ul style="list-style-type: none"> <li>• Regional freight and systems access</li> <li>• National Highway System</li> </ul>
	<ul style="list-style-type: none"> <li>• Ballard-Interbay Northend Manufacturing and Industrial Center (BINMIC)</li> <li>• Cruise Terminal, Port lands access, and Terminal 91</li> </ul>
 <b>Washington</b> <b>Military</b> Department	<ul style="list-style-type: none"> <li>• Coordination on Armory site redevelopment planning</li> </ul>

In addition to the Interagency Team, community members, area employees, and other key stakeholders listed below were engaged at several points in the project process.



### Elected officials

Briefings



### SDOT staff and Seattle advisory boards

Bicycle Advisory Board  
Freight Advisory Board  
Planning Commission



### Residents and business interests

Public meetings  
Public comment at IAT meetings  
Online survey  
Meetings with SDOT staff



### Advocacy groups

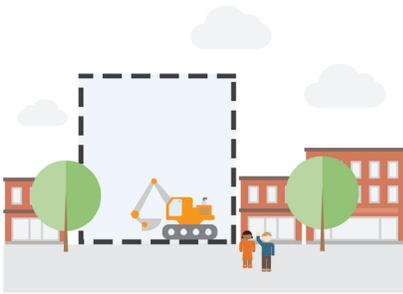
Ballard/Fremont  
Neighborhood Greenways  
Magnolia Community Council  
North Seattle Industrial Association

## SCENARIO ANALYSIS AND FINDINGS

To understand future needs for moving people and goods to and within the study area, the BIRT team conducted transportation modeling based on future (2042) land use scenarios. Scenarios were developed based on adopted City of Seattle land use forecasts, recent analysis by the State Department of Commerce for the Armory site, and potential zoning changes currently under analysis through the Mayor's Maritime & Industrial Strategy.

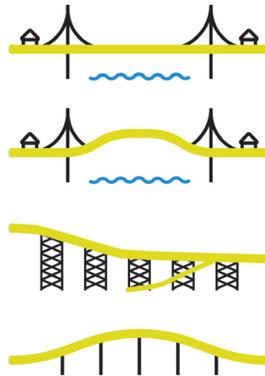
Scenario modeling tested multiple alternatives for the replacement of the Ballard and Magnolia bridges while holding constant key future transportation infrastructure identified in SDOT modal plans, King County Metro's long-range plan METRO CONNECTS, and Sound Transit's West Seattle and Ballard Link Extensions current preferred alignment.

### Scenario Elements



#### Land Use

Potential scenarios for development or redevelopment of parcels in the study area



#### Bridge Alternatives

Alternatives for replacement of the Ballard Bridge and Magnolia Bridge



#### Transportation System

Multimodal transportation system projects and operations

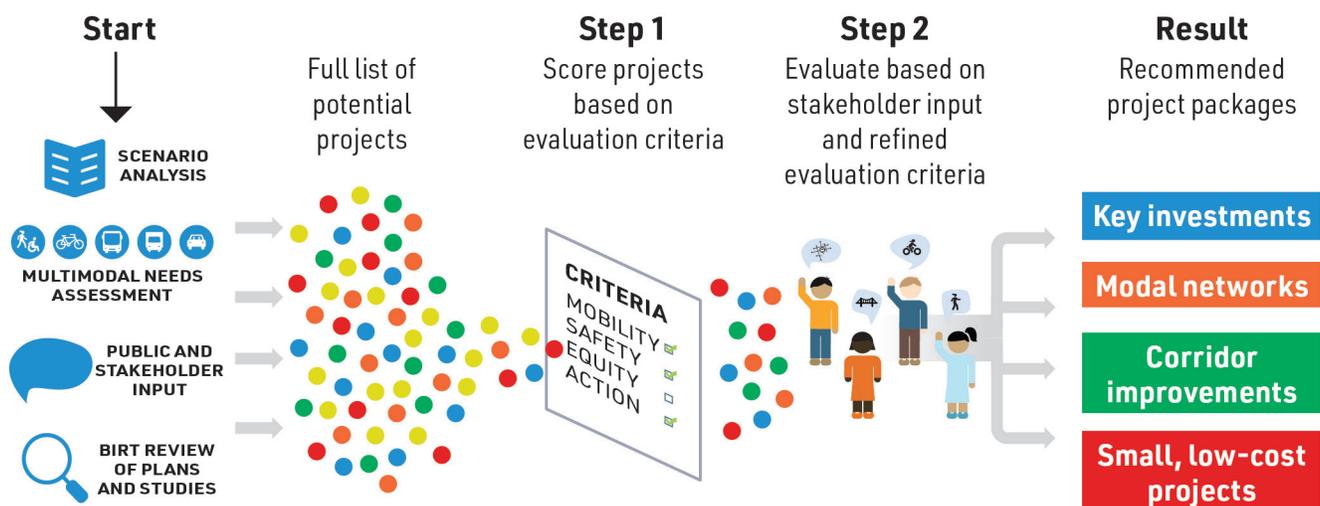
Key findings of the scenario analysis include:

- **The Ballard and Magnolia bridges are critical to regional travel for people and goods.**
- **All bridge replacement alternatives studied have the potential to accommodate future travel demand with supportive multimodal investments in their surrounding networks.**
- **Bridge alternatives with the best transportation performance also cost the most:**
  - **Magnolia Bridge:** The in-kind replacement alternative generally maintains the existing bridge alignment and transportation access and has high construction costs. The Armory Way Bridge alternative increases travel time for some market segments, particularly those connecting between southern Magnolia and points south (e.g., Downtown Seattle).

- **Ballard Bridge:** A mid-level alternative reduces the need for bridge span openings and provides better connectivity between the bridge and local streets north of the Ship Canal. The low-level alternative provides an easier grade for people walking or biking.
- **15th Ave W is the area's most critical transportation spine and will require investment** to keep people moving to and through the area and ensure reliable freight and goods movement. BIRT identifies corridor management strategies and capital investments along 15th Ave W to ensure reliable travel as the area grows in jobs and residents.
- **Providing a robust multimodal network that allows people to get around safely by transit, bicycling, and walking benefits everyone.** Freight haulers and industrial businesses that rely on reliable movement of goods on surface streets benefit when more people walk, bike, and ride transit. Three new light rail stations are planned in Ballard, Interbay, and Smith Cove and will offer reliable, frequent transit access. This study identifies opportunities to enhance safe access to and from bus and future light rail stations; reduce conflicts between motorists and vulnerable people walking or biking; and enhance efficiency for freight.
- **Changes to zoning that allow a broader mix of uses**—such as those being explored in the Maritime & Industrial Strategy, including residential development on the Armory site—**could lead to more traffic and would intensify the need for investment across all modal systems.** This study finds that 15th Ave W (including the Ballard Bridge) and W Dravus St require the highest capital and most traffic operations investments to prevent traffic delays and congestion expected with increased density.

## POTENTIAL TRANSPORTATION INVESTMENTS

The project team evaluated more than 80 projects identified through public engagement, collaboration with stakeholders and agency partners, recommendations from previous planning efforts, scenario analysis, and analysis of Ballard-Interbay's existing and anticipated future (2042) mobility needs.



This map illustrates key multimodal investments that complement the future replacement of the Magnolia Bridge and the Ballard Bridge and support the introduction of Sound Transit light rail to the study area.

SIDEWALKS IN BALLARD

SIDEWALKS IN INTERBAY

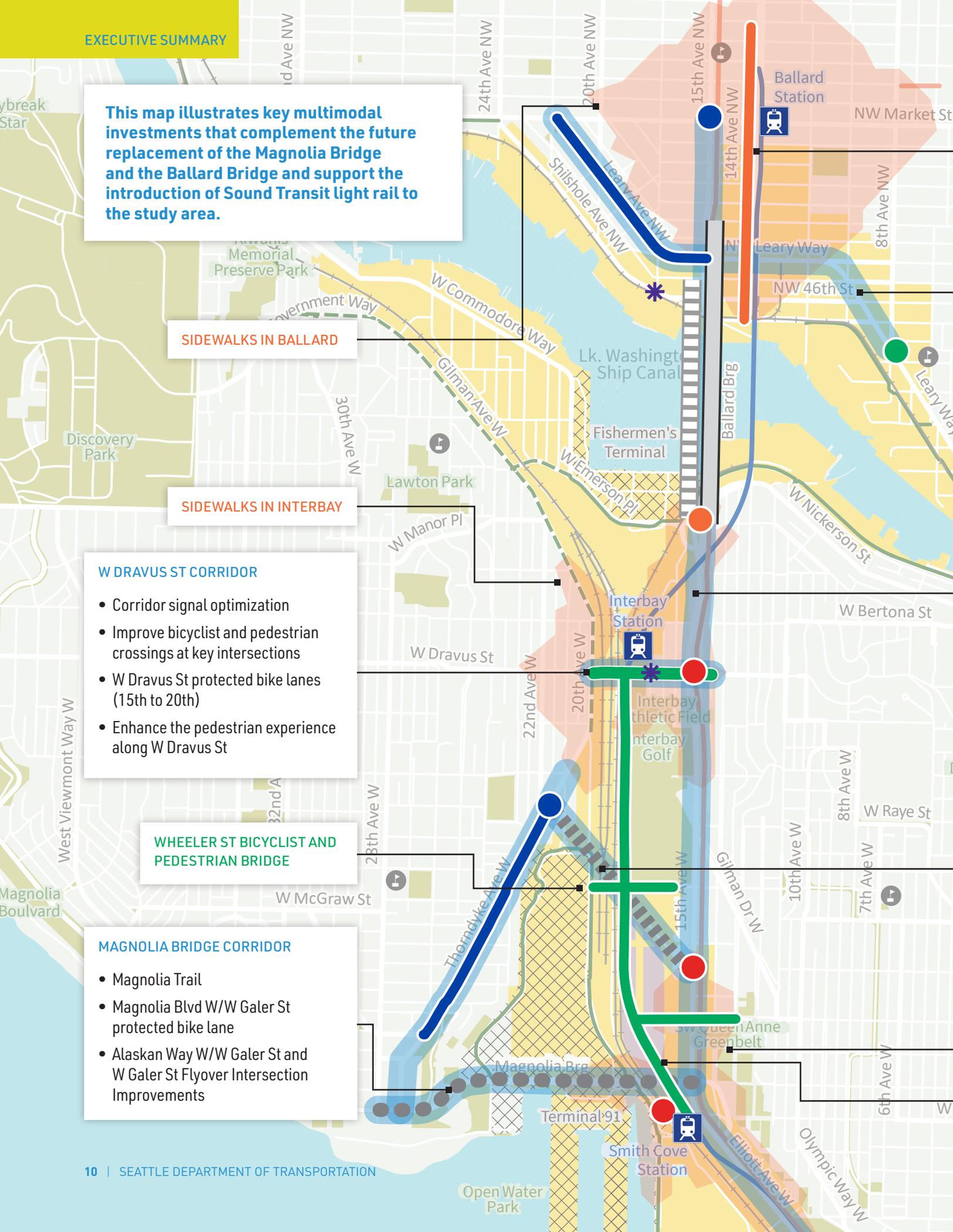
W DRAVUS ST CORRIDOR

- Corridor signal optimization
- Improve bicyclist and pedestrian crossings at key intersections
- W Dravus St protected bike lanes (15th to 20th)
- Enhance the pedestrian experience along W Dravus St

WHEELER ST BICYCLIST AND PEDESTRIAN BRIDGE

MAGNOLIA BRIDGE CORRIDOR

- Magnolia Trail
- Magnolia Blvd W/W Galer St protected bike lane
- Alaskan Way W/W Galer St and W Galer St Flyover Intersection Improvements



## Key Investments

### Modal Projects

-  Pedestrian
-  Bike and Pedestrian
-  Transit
-  Freight

### Key Corridors

-  Key Corridor

### Multimodal Projects

-  Intersection Improvement
-  Ballard Bridge Mid-Level Alternative
-  Ballard Bridge Low-Level Alternative
-  Magnolia Bridge In-Kind Replacement
-  Armory Way Alternative
-  School
-  Station Location\*
-  Light Rail Alignment\*
-  RapidRide
-  Multi-use Trail
-  Protected Bike Lanes
-  Railroad
-  Terminal
-  Ballard-Interbay Northend MIC
-  Armory

\*The graphic depicts the Preferred Alternative identified by the Sound Transit Board for study in the Draft EIS for the West Seattle and Ballard Link Extensions project. The Draft EIS will also examine a "Preferred Alternative with Third Party Funding" and other alternatives and will be published in 2021. Final selection of the project to be built will follow publication of the Final EIS, anticipated in 2022.

#### IMPROVEMENTS ALONG 14TH AVE NW

##### LEARY WAY NW CORRIDOR

- Future Leary Way RapidRide bus lanes between 15th Ave NW and NW Market St and passenger facility improvements
- Bike improvements at high collision locations (Leary Way NW/8th Ave NW)
- Operational/ITS improvements for freight access
- 15th Ave NW/NW Leary Way Freight and Transit (FAT) lanes for Ballard Bridge Access

##### 15TH AVE W/ELLIOTT AVE W CORRIDOR

- 15th Ave W FAT lanes
- Enhance the pedestrian experience along 15th Ave W and Elliott Ave W
- Improve bicyclist and pedestrian crossings at key intersections and top collision locations
- Intersection improvements for freight access at 15th Ave W/W Armory Way
- 15th Ave NW/NW Market St transit queue jump

##### ARMORY WAY BRIDGE/THORNDYKE AVE W CORRIDOR

- Thorndyke Ave W in-lane bus stops with TSP at Thorndyke Ave W/W Armory Way
- Safety and Crossing Improvements at Thorndyke Ave W/21st Ave W and W Galer St/Thorndyke Ave W
- Mobility Hub at west end of Magnolia or Armory Way Bridge
- W Galer St/Thorndyke Ave W signal

#### SIDEWALKS IN SMITH COVE

##### ELLIOTT BAY TRAIL EXTENSION (EAST)

## FUNDING STRATEGIES AND TIMELINE FOR BRIDGE REPLACEMENT

Bridge and major infrastructure construction costs pose a financial challenge to cities across the United States. At the time of this report, the City of Seattle faces funding and financial challenges on many fronts and across transportation priorities. Not only has the COVID-19 pandemic shifted City focus and reduced City tax revenue, but the West Seattle High Bridge emergency is now a priority for City and partner funding. As SDOT and its local, regional, state, and federal partners consider the funding required to rebuild or rehabilitate the Magnolia and Ballard bridges, several considerations emerge:

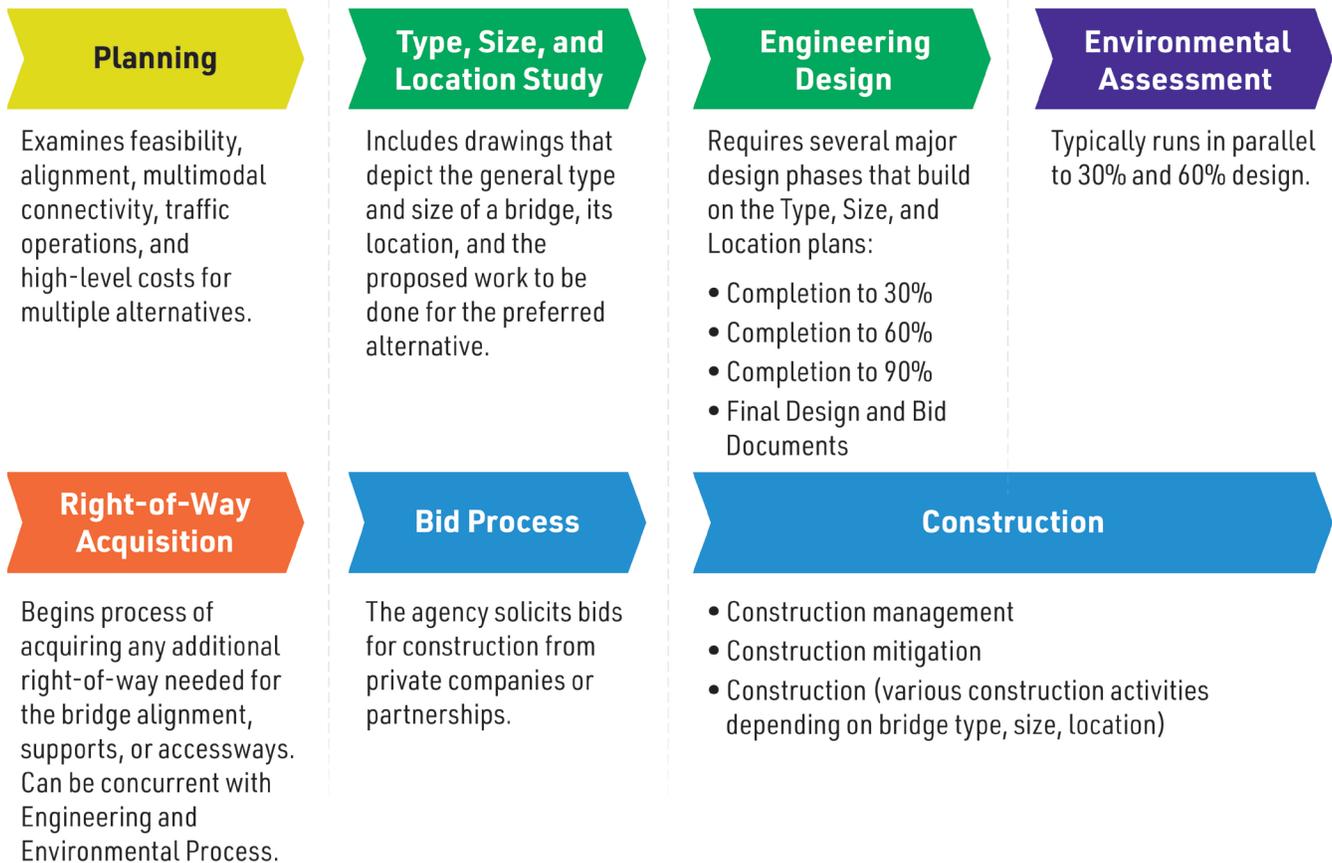
- The final bridge alternative and cost of replacement or rehabilitation for the Ballard and Magnolia bridges will be chosen based upon what is best for the communities and businesses they serve
- The cost to replace the Magnolia Bridge and replace or rehabilitate the Ballard Bridge will far exceed the City's financial means and require outside funding
- Like every major city in the United States, Seattle is stepping up to the challenge of maintaining our aging infrastructure in the face of grossly insufficient funding support from the federal government; further, a 2020 City of Seattle Bridge Audit identified additional investment and maintenance needs across 77 of the City's vehicle bridges

None of these realities reduces the importance of replacing or investing in the Magnolia and Ballard bridges. They do stress the need for financial partnerships and funding support from the State of Washington. Support from the Washington State Legislature will be needed to:

- Direct appropriations or prioritize future state gas tax or transportation revenue to Seattle for Ballard and Magnolia bridge replacement or rehabilitation
- Seek new sources of funding to support city infrastructure replacement and maintenance
- Garner broader support from the federal government and our Congressional Delegation to bring competitive transportation infrastructure funds to Washington and the City of Seattle
- Support local funding options such as facility tolling that may require approval from the Washington State Transportation Commission
- Support innovative financing, bridge design and delivery methods that could speed up the replacement timeline and/or allow for the delivery of multiple bridge projects simultaneously

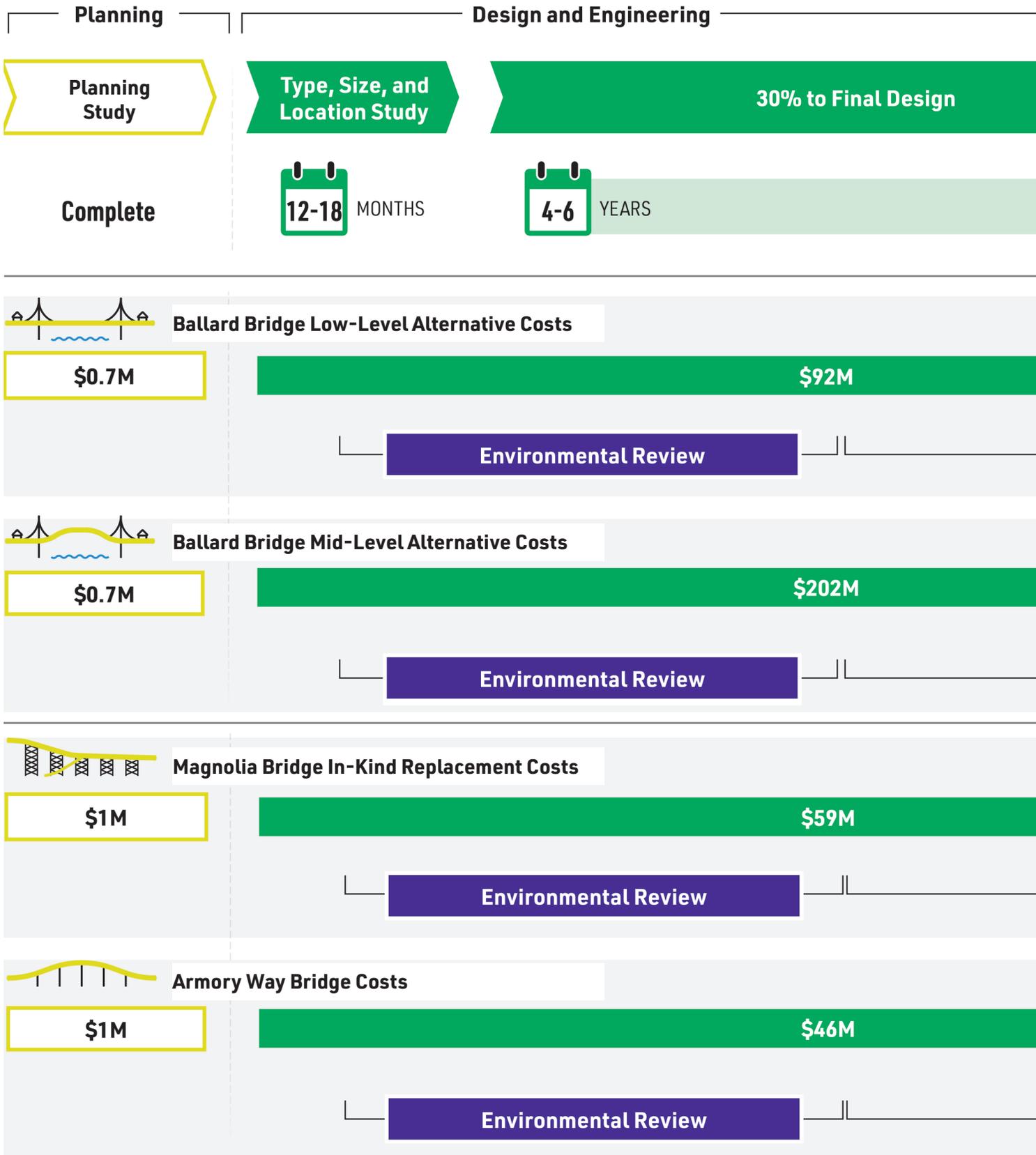
Although the BIRT report does not recommend a single, preferred bridge alternative for either the Ballard Bridge or the Magnolia Bridge, it does utilize the 2 most technically viable and publicly supported alternatives as determined in SDOT's *Ballard Bridge Planning Study* and the *Magnolia Bridge Planning Study*.

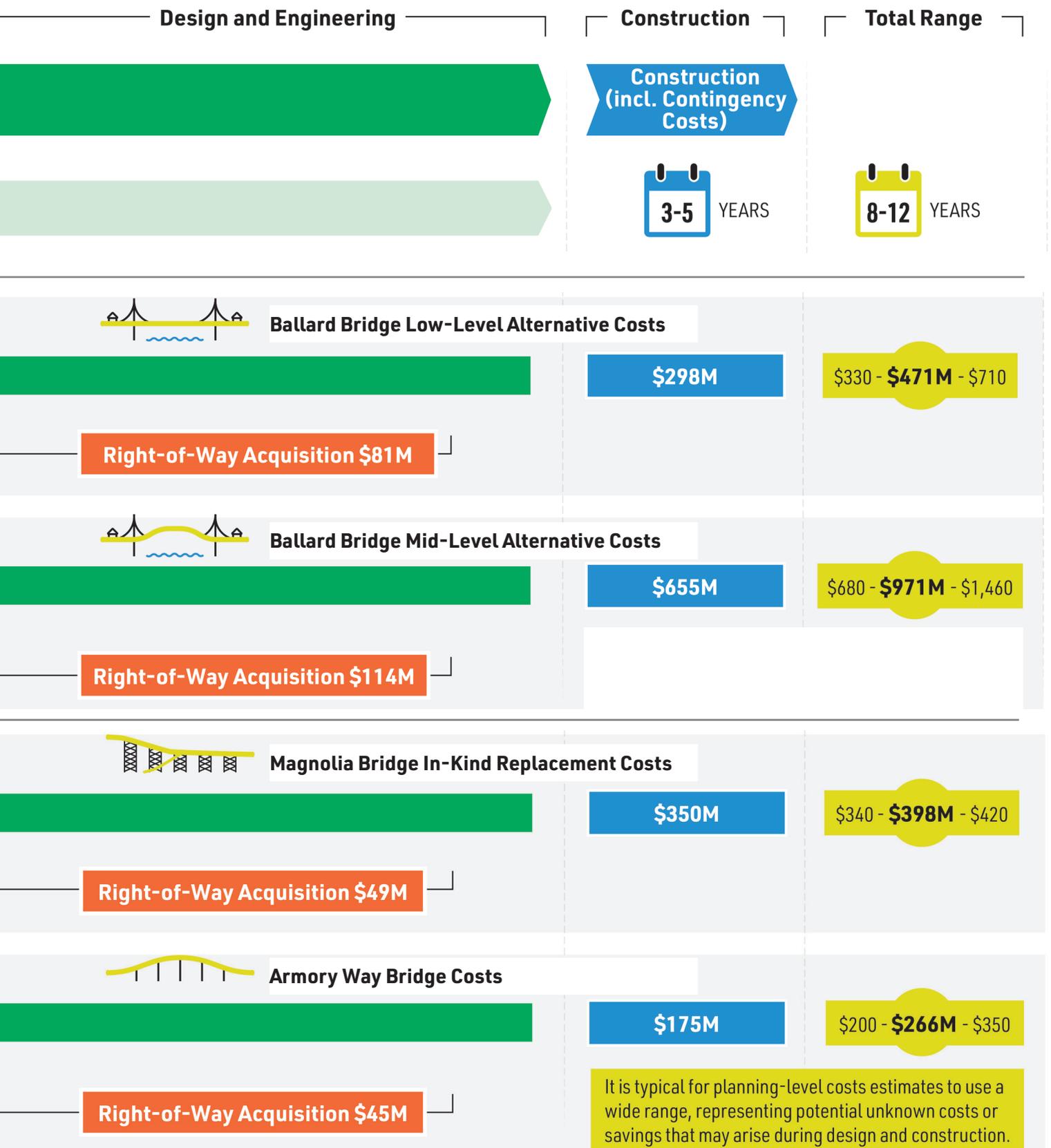
## Key Stages of a Bridge Project



BIRT defines the key phases of project development for each bridge with an associated timeline. The total estimated time to complete planning, design, and construction is 8-12 years for each bridge; this assumes that funding is available for each sequential phase. Given funding constraints, a multi-faceted program to leverage local, regional, state, and federal grants will be required to advance each incremental stage of planning, design, and engineering. The report provides a robust list of funding and financing options in Chapter 7.

## Conceptual Costs and Timelines for the Ballard and Magnolia Bridges





## NEXT STEPS

The BIRT report lays the foundation for identifying funding opportunities in partnership with the Washington State Legislature to improve the movement of people and goods in Ballard-Interbay. SDOT will develop a Bridge Assessment Strategic Management Plan (following its September 2020 Bridge Audit<sup>1</sup>) and then can proceed with a Ballard and Magnolia bridge preferred alternative decision and Type, Size, and Location study. In the meantime, the City of Seattle and other agency partners will work to advance area transportation improvements within the SDOT program structure to keep this vital area of Seattle connected to our neighborhoods, employers, commercial centers, and the broader region.



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1 Seattle Office of City Auditor. (September 2020). Seattle Department of Transportation: Strategic Approach to Vehicle Bridge Maintenance is Warranted. Available at: [https://sdotblog.seattle.gov/wp-content/uploads/sites/10/2020/09/2020\\_03\\_SeattleBridges\\_FinalReport.pdf](https://sdotblog.seattle.gov/wp-content/uploads/sites/10/2020/09/2020_03_SeattleBridges_FinalReport.pdf)

To read the full Ballard-Interbay Regional Transportation System (BIRT) Report, please visit: <http://www.seattle.gov/transportation/projects-and-programs/current-projects/ballard-interbay-regional-transportation-system>.

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