Seattle Department of Transportation

Ballard-Interbay Regional Transportation System Study

Plan Review

DRAFT

April 2020

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Table of Contents

Page

Introduction 2
Policy and Planning Priorities and Recommendations 5
Capital Improvements and Investment Recommendations 8
Increasing Range and Density of Land Use Recommendations 14
Conclusion 18

Table of Figures

Page

Figure 1 Plans and Documents Reviewed 3
Figure 2 Recommendations to Preserve Freight Access 5
Figure 3 Recommendations to Maintain Access During Construction 6
Figure 4 Recommendations to Balance Multimodal Needs 7
Figure 5 Recommendations to Prioritize Safety 7
Figure 6 Recommendations to Support Growing Transit Ridership 8
Figure 7 Recommendations to Improve Pedestrian and Bicycle Safety 9
Figure 8 Recommendations for Ballard Bridge Structural Improvements 9
Figure 9 Recommendations for Magnolia Bridge Structural Improvements 10
Figure 10 Recommendations for Active Transportation Connections and Improvements 10
Figure 11 Recommendations for Freight Capacity and Access 11
Figure 12 Recommendations for Transit Service and Connections 11
Figure 13 Map of Recommended Infrastructure and Capital Projects 13
Figure 14 Recommendations for Industrial and Manufacturing Uses 14
Figure 15 Recommendations for Transit-Oriented Development 14
Figure 16 Recommendations for Light Industrial Redevelopment 15
Figure 17 Recommendations for Neighborhood Character 15
Figure 18 Recommendations for Right-of-Way Impacts 16
Figure 19 Map of Recommended Density and Land Use Recommendations 17
Figure A-1 West Seattle/Ballard Project Map 1
Figure A-2 2040 METRO CONNECTS Service Network 2
Figure A-3 Transit Master Plan High-Capacity Transit Vision 3
Figure A-4 Ballard to Downtown Seattle Transit Expansion Study Area 4
Figure A-5 Proposed Gateway Building Area 5
Figure A-6 Phases 1 and 2 of Terminal 91 Uplands Development 6
Figure A-7 Armory Redevelopment Concepts 7
Figure A-8 Elliott Bay Trail Improvements Underway near Expedia's Campus as of Summer 2019 8
Figure A-9 Map of Industrially Zoned Land 9
Figure A-10 Ballard Bridge Options 10
Figure A-11 Location 1: Ballard Bridge South 11
Figure A-12 Location 3: Ballard Bridge Northwest 11

Figure A-13 Proposed Locations for Improved Ship Canal Crossings 13
Figure A-14 Possible Pedestrian and Bicycle Improvements to Ballard Bridge 14
Figure A-15 The Missing Link on the Burke-Gilman Trail 15
Figure A-16 Project Details 16
Figure A-17 Character Areas 17
Figure A-18 Move Ballard Study Area 18
Figure A-19 Opportunity Areas in the Ballard Urban Village 19
Figure A-20 Alternative 1: Armory Way Bridge Concept 20
Figure A-21 Alternative 4: In-Kind Replacement Concept 20
Figure A-22 Possible Detour During Magnolia Bridge Replacement 21
Figure A-23 Priority Investment Network 22
Figure A-24 Planned Bicycle Master Plan Projects 2019 - 2024 23
Figure A-25 Top 20 Priority Bicycle (Left) and Pedestrian (Right) Locations per Council District 24
Figure A-26 North Seattle Freight Projects 25

INTRODUCTION

Plan Review Purpose

The Ballard-Interbay Regional Transportation System (BIRT) study legislative language requires a review of plans and studies that examine replacement of the Ballard and Magnolia bridges, transportation network, land use, and urban design recommendations in the study area. This document summarizes key plans developed between 2010 to 2020 and highlights projects, policies, recommendations, and implementation priorities relevant to the BIRT study. It is a guide for the project team to document what is most important to the Ballard-Interbay community and reflect the priorities captured in the many planning processes that affect the study area.

Study Area Context

The Ballard and Magnolia neighborhoods are experiencing significant residential and employment growth, and the Ballard-Interbay-Northend Manufacturing and Industrial Center (BINMIC) is an important local and regional economic asset. The Magnolia and Ballard bridges have been studied extensively over the last decade given that they are aging infrastructure serving increasing travel demand.

In addition to bridge studies, planning is underway for major projects and developments that will shape the future of Ballard-Interbay. These include the future Sound Transit 3 West Seattle to Ballard Link Extension, transit-oriented development at the future Link stations and along the transit corridor, redevelopment of light industrial spaces at Terminal 91, Fishermen's Terminal redevelopment, the Armory site at Interbay, and the new Expedia corporate campus. Significant capital improvements are already underway related to these projects, and in many cases, they call for investments in the surrounding public realm and transportation networks.

Methodology and Purpose

For each of the plans and documents included in this review, the project team summarized the plan purpose, scope, and outcomes in the Appendix. The body of this report includes details from that apply to the BIRT study. Specifically, the reviewed focused on:

- Projects, policies, or recommendations that have the potential to influence study assumptions about future baseline conditions (projects or policies set to be implemented)
- Projects, policies or recommendations that are unfunded but desired by the community
- Projects, policies or recommendations that have received consistent input through various community and stakeholder processes and should be included for consideration in this study
- Planned changes to land use conditions, such as proposed development or redevelopment projects, that will change the nature of travel demand for people and goods in the area
- Construction mitigation strategies for transportation projects or other short-term strategies that are emblematic of the communities' concerns

Findings are categorized into major themes and summarized, including specific project, policy or program details such as locations, costs, and/or schedules. Source documents are referenced

throughout. The Appendix serves as a guide for reviewers that may wish to understand where more detailed information about specific projects and study findings can be located.

Plans and Documents Reviewed

The documents reviewed were identified by the Seattle Department of Transportation or recommended by the project's Interagency Team which consists of staff from partner agencies. They include relevant projects or initiatives that may impact the assumptions or evaluation criteria for the BIRT study. The Ballard Municipal Center Master Plan adopted in 2001 and revised in 2013 was included in the review, though the most major projects have since been completed (e.g., Ballard Commons Park and the neighborhood library). Seattle's modal plans were reviewed to incorporate planned projects across all modes of travel and goods delivery that are planned, underway, or recently completed in the study area.

Figure 1 includes the full list of plans and documents, organized by discipline and geographic scope. Descriptions of all plans are included in the Appendix.

Figure 1 Plans and Documents Reviewed

Category	Plan or Document
Transit Expansion	▪ Sound Transit West Seattle and Ballard Link Extensions (2019) ▪ METRO CONNECTS (2017) ▪ Seattle Transit Master Plan (2016) ▪ Ballard to Downtown Transit Expansion Study (2014)
Land Use and Development	▪ Fishermen's Terminal Redevelopment (2019-2023) ▪ Terminal 91 Uplands Development (Phase I, 2019) ▪ The Interbay Project: National Guard Armory Redevelopment (2019) ▪ Expedia Environmental Impact Statement (2016) ▪ Industrial Lands Policy Discussion Summary and Recommendations (2015)
Ballard Bridge	▪ Ballard Bridge Planning Study (2019) ▪ Bridge Safety Analysis (2018) ▪ Ballard Bridge Seismic Retrofit Environmental Conditions Memorandum (2018) ▪ Ship Canal Crossing Study (2015) ▪ Ballard Bridge Sidewalk Widening Concept Study (2014)
Ballard Area	▪ Burke-Gilman Trail Missing Link (2018) ▪ Interbay Trail Connections Project (2016) ▪ Ballard Urban Design Transportation Framework (2016) ▪ Move Ballard (2016) ▪ Ballard Urban Design Existing Conditions Report (2014)
Magnolia Bridge	▪ Magnolia Bridge Planning Study Technical Memorandum (2019) ▪ Magnolia Bridge Replacement Environmental Assessment Report (2015)
Multimodal Plans	▪ Seattle Pedestrian Master Plan 5-Year Implementation Plan and Progress Report (2019) ▪ Seattle Bicycle Master Plan 2019-2024 Implementation Plan (2019) ▪ Seattle Bike and Pedestrian Safety Analysis (2016) ▪ Seattle Freight Master Plan (2016)

Key Findings

Plan review findings and recommendations are organized into three sections: transportation policy and planning priorities for the study area; upcoming capital improvements; and increasing diversity and density of land uses in Ballard-Interbay. Key findings are listed below for each section and explained in further detail starting on page 5.

Transportation Policy and Planning Priorities for the Study Area

Key policy themes shared across multiple plans and projects for the study area include:

- **Preserve freight access:** Freight and local industrial access in the Ballard-Interbay area is critical to local and regional economic vitality.
- **Maintain access during construction:** Freight and local industrial stakeholders need easy and direct access before, during, and after construction of infrastructure projects to keep people and goods moving.
- **Balance multimodal needs:** All projects including bridge alternatives must address access and connections to existing and planned networks for pedestrians, cyclists, motorists, transit, and freight.
- **Prioritize safety:** The most space-efficient travel modes and vulnerable travelers should be prioritized given deficiencies in sidewalks, intersection crossings, and physical separation between people walking, biking and motorized users.
- **Support growing transit ridership:** Future high capacity transit such as RapidRide and Link light rail extension require transit-supportive policies to grow ridership.

Planned Capital Improvements and Investments

Ballard-Interbay is home to many capital projects that are planned, funded, or pending funding and assumed to be part of a future transportation baseline for the study area:

- **Ballard Bridge Pedestrian and Bicycle Safety Improvements:** Several studies have studied the feasibility and estimated costs associated with better accommodations for pedestrians and bicyclists in a future bridge with wider facilities separated from motor vehicles.
- **Ballard Bridge Replacement:** The Ballard bridge will require replacement due to its aging infrastructure and several bridge replacement alternatives are under consideration.
- **Magnolia Bridge Replacement:** Alternatives to an in-kind bridge replacement were examined in a 2019 study in response to bridge deterioration; after a multi-criteria evaluation including cost, mobility, and technical feasibility, the two best performing options propose a new Armory Way Bridge into Magnolia and a new Western Perimeter Road to Smith Cove Park/Elliott Bay Marina ($200-$350M) or an in-kind replacement adjacent to the existing bridge ($340-$420M).
- **Freight Capacity and Access:** Several capital projects are planned to address freight traffic delays at intersections and bottleneck locations approaching Ballard bridge from the south.
- **Active Transportation Connections and Improvements:** Investments are planned to connect gaps in existing non-motorized trails and neighborhood greenway networks.

- **Transit Service and Connections:** Sound Transit is planning a new light rail line funded by ST 3 that will serve the study area with three new stations and King County Metro and SDOT are investing in speed and reliability improvements for RapidRide and other local bus service.

Increasing Diversity and Density of Land Uses in Ballard-Interbay

An expansion in the diversity of land uses and increased density is changing the Ballard-Interbay landscape, guided by the following considerations:

- **Existing Industrial and Manufacturing Uses:** Zoning in the Ballard-Interbay-Northend Manufacturing and Industrial Center (BINMIC) is intended to protect freight, fishing, maritime, and industrial uses into the future. Longtime maritime, fishing, manufacturing, and freight industries are vital to the local and regional economy.
- **Transit-Oriented Development:** The Ballard Link light rail extension will call for greater density and mixed-use development at stations and along the corridor.
- **Light Industrial Redevelopment:** Public and private redevelopment efforts to expand are underway at terminal 91 Uplands, Fishermen's Terminal, and the WA state military Armory site.
- **Neighborhood Character:** As Ballard continues to grow and densify, urban design guidelines and transportation networks are recommended to maintain its character.
- **Right-of-Way Impacts:** Any bridge replacement alternative and redevelopment efforts should minimize environmental impacts and maintain public access to key assets and the waterfront.

POLICY AND PLANNING PRIORITIES AND RECOMMENDATIONS

The plan review revealed several key categories of policy, program, project, and land use recommendations. These center around themes of preserving freight and industrial uses, providing multimodal access, ensuring safe travel, and managing travel demand amidst growth. The following section includes a synthesis of important plan review findings. Policy and planning findings will be integrated into the BIRT study goals, performance measures, and evaluation criteria to support the consideration of multimodal projects, programs, and policies.

Preserve Freight Access

Several plans emphasized the importance of maintaining freight and local industrial access to the Ballard and Magnolia areas during bridge replacement or other construction activities associated with development. Reliable freight travel is also a concern as traffic volumes increase with new development. Recommendations include the use of measures such as flaggers for traffic management and allowing designated truck travel to preserve freight and local industrial access, and to minimize delay during bridge, roadway, or redevelopment construction. Some of these actions may be complete and are indicative of the types of actions that are important to local businesses and residents.

Figure 2 Recommendations to Preserve Freight Access

Details	Plan or Document
▪ Employ flaggers or other measures during trail construction to minimize freight delays in areas heavily used by freight.	Burke-Gilman Trail Missing Link (2018)

▪ Increasing density means there are more trucks serving construction sites and delivering products, and therefore supporting freight and local access are high priorities. Ballard's active commercial core and its adjacency to the BINMIC emphasize the importance of freight movement to the neighborhood's transportation network.	Move Ballard (2016)
▪ Maintain access for over-legal loads (20 ft x 20 ft). ▪ Maintain predictability of bridge openings for marine and roadway traffic.	Ballard Bridge Planning Study (2019)
▪ Maintain freight access during replacement construction. Truck movements in and out of Terminal 91 would continue to use the Galer Flyover access from Elliott Avenue West and the Terminal 91 East Gate.	Magnolia Bridge Replacement Environmental Assessment Report (2015)
▪ The Ballard Bridge is identified as a Seaport Highway Connector and Major Freight route. It is also noted as a bottleneck on NW 15th Ave/Ballard Bridge (W Nickerson St to Market St). ▪ 15th Ave NW, Elliott Ave W, NW Market St, and Ballard Bridge are identified as major freight corridors, calling for a roadway classification of a minor arterial or higher. Dravus St is noted as a minor freight corridor, meaning a minor arterial or higher.	Seattle Freight Master Plan (2016)

Maintain Access during Construction

During bridge replacement or other redevelopment construction, the Magnolia Bridge Replacement study calls for detours that maintain general-purpose traffic and transit access to key destinations and employment centers, as well as walking and biking access to natural assets and the waterfront.

Figure 3 Recommendations to Maintain Access During Construction

Details	Plan or Document
▪ Maintain transit service to the Terminal 91 complex during construction. Re-route transit service or provide shuttle vehicles to bring transit passengers between 15th Avenue West bus stops and the complex.	Magnolia Bridge Replacement Environmental Assessment Report (2015)
▪ Traffic detours during bridge replacement construction may include existing city streets, new surface streets through Terminal 91, or staged construction and temporary ramps to keep traffic in the existing corridor.	Magnolia Bridge Replacement Environmental Assessment Report (2015)
▪ Maintain public access to waterfront during Bridge reconstruction or replacement; do not interfere with or limit public access to the waterfront. Improve waterfront access to and from the Magnolia neighborhood.	Magnolia Bridge Environmental Assessment Report (2015)

Balance Multimodal Needs

Several plans call for the desire to balance multimodal movement, access, and planned network priorities with proposed bridge alternatives. Efforts to maintain capacity must also consider multimodal needs, new high-quality, all age facilities, intuitive and connected networks, and acceptable levels of service for all modes, not just single-occupancy vehicles. Several corridors in the study area are designated priority corridors for pedestrians, bicyclists, transit, and freight according to the City of Seattle's modal plans.

Figure 4 Recommendations to Balance Multimodal Needs

Details	Plan or Document
▪ Key considerations include maintaining multimodal access to Leary Way NW, W Emerson St, and W Nickerson St.	Ballard Bridge Planning Study (2019)
▪ Identify existing accessibility and mobility challenges for all modes and enhance safety and convenience of more space efficient transportation modes (transit, bicycle, pedestrian) to enhance mobility while maintaining freight and vehicle access.	Move Ballard (2016)
▪ Balance the mobility needs of pedestrians, bicycles, transit, cars, and freight.	Ballard Urban Design Transportation Framework (2016)
▪ Create a Magnolia Bridge facility that can link with present and future multimodal transportation opportunities.	Magnolia Bridge Environmental Assessment Report (2015)
▪ The Ballard Urban Village is designated as a Pedestrian Priority Investment Area.	Seattle Pedestrian Master Plan 5-Year Implementation Plan and Progress Report (2019)

Prioritize Safety

Several plans identify the need to prioritize safety for modes of travel that require the least amount of space and that support the mobility needs of vulnerable travelers (e.g., transit, walking, cycling, and vanpooling). Analyses conducted by the City of Seattle show a history of pedestrian and bicyclist crashes in the study area. As Ballard-Interbay continues to grow, traffic volumes are projected to increase. Several plans support and deliver policies and projects that are designed to encourage more sustainable and space-efficient travel modes.

Figure 5 Recommendations to Prioritize Safety

Details	Plan or Document
▪ Enhance the safety and convenience for those who take (transit, bike, or walk to enhance mobility while maintaining freight and vehicle access.	Move Ballard (2016)
▪ The ideal solution provides efficient, safe, and improved multimodal access to and from Magnolia destinations.	Magnolia Bridge Planning Study Technical Memorandum (2019)
▪ Create a hierarchy of great streets and public spaces, with special attention to Market Street, and preserve green spaces.	Ballard Urban Design Transportation Framework (2016)
▪ 15th Ave NW is a high crash corridor. Along with intersections along the Burke Gilman Trail, safety improvements to accommodate the high volumes of bicyclists through this part of the study area are key recommendations. ▪ For pedestrians, commercial areas and locations with high transit activity have a high potential for conflicts. On-street parking also contributes to limited visibility of pedestrians. Both are key focuses for pedestrian safety improvements.	Seattle Bike and Pedestrian Safety Analysis (2016)

Support Growing Transit Ridership

Most plans focused on the Ballard neighborhood emphasize the anticipated impacts of a future light rail station in the heart of Ballard. The implications of future light rail and additional high capacity transit services (e.g., RapidRide) influence policy, design, and investment decisions regarding multimodal access to stations, mode share targets, trip generation projections, density, and costs of development. Recommendations also include managing parking and demand for drive-alone commute trips at major employment sites.

Figure 6 Recommendations to Support Growing Transit Ridership

Details	Plan or Document
▪ Identify community preferences for future potential light rail station locations and understand the transit-oriented development (TOD) potential in Ballard.	Move Ballard (2016)
▪ Prepare for potential light rail investment by making existing pedestrian, bicycle crossings and transit facilities on the edges more appealing and safer through signalization improvements, active street-level uses at the corners, wider sidewalks and landscaped buffers (e.g., 15th Ave NW, NW Leary Way, 24th Ave NW).	Ballard Urban Design Transportation Framework (2016)
▪ Connect with the existing and future transit system, including Sound Transit's Link Light Rail and the City of Seattle's South Lake Union Streetcar.	Ballard to Downtown Transit Expansion Study (2014)
▪ Consider Sound Transit's future light rail extension project when planning new routes.	Magnolia Bridge Planning Study Technical Memorandum (2019)
▪ Implement parking time limits for 16th Ave W and W Galer Street to encourage turnover and prioritize business access near high-capacity transit stops. ▪ Implement a series of strategies detailed in a Transportation Management Plan (TMP) to meet a drive-alone mode share goal of 49% at initial occupancy and a drive-alone rate of no more than 30% at full occupancy of proposed buildings.	Expedia Environmental Impact Statement (2016)

CAPITAL IMPROVEMENTS AND INVESTMENT RECOMMENDATIONS

The plans reviewed recommend several upgraded facilities and new capital infrastructure projects, both funded and unfunded. These projects shape the changing transportation context, and the results of this study and other parallel efforts may influence these projects. The projects listed below enhance safety and the structural integrity of infrastructure throughout the study area.

Ballard Bridge Pedestrian and Bicycle Safety Improvements

The Ballard Bridge has been identified in several studies as a challenging connection for people walking and biking. The population of Ballard has grown significantly during the last decade, increasing demand for bridge crossings and amplifying the impacts of insufficient bicycle and pedestrian facilities on the bridge. Connectivity challenges at the bridgeheads are also issues. Projects to address locations with the greatest risk to pedestrians and bicyclists have been identified in response to crash data and safety studies.

Figure 7 Recommendations to Improve Pedestrian and Bicycle Safety

Details	Plan or Document
Three locations were identified at or near the Ballard Bridge to improve pedestrian visibility and reduce conflicts between people walking, biking, and motorists. Improvements range from new sidewalks to curb extensions, railings, and high visibility crosswalks and cost anywhere between $200,000 and $12 million. ▪ Location 1: Ballard Bridge South (15th Ave NW and W Emerson St) ▪ Location 2: Ballard Bridge Sidewalk (Between W Emerson St and NW Ballard Way) ▪ Location 3: Ballard Bridge Northwest (On-ramp) ▪ Location 4: Ballard Bridge Northeast (Off-ramp)	Bridge Safety Analysis (2018)
Four (4) alternatives were studied to widen the Ballard Bridge sidewalks, and all four were deemed technically feasible. Each has potential challenges, including business relocation impacts, temporary construction impacts to traffic, and associated costs (from $3 million to $48 million). ▪ Alternative 1: Add an additional foot to sidewalk width by modifying the existing railing and barrier and adding a railing between the sidewalk and travel lanes ▪ Alternative 2: Widen sidewalks to either six or ten feet, including a railing between the sidewalk and travel lanes ▪ Alternative 3: Install a railing on the inside barrier between the existing sidewalk and travel lanes ▪ Alternative 4: Provide a trail connection from the southwest corner of the Ballard Bridge to the South Ship Canal Trail and the sidewalk on 15th Avenue West, south of the bridge	Ballard Bridge Sidewalk Widening Concept Study (2014)

Ballard Bridge Replacement

The Ballard Bridge was built in 1917 and is no longer in optimal condition. Studies exploring the replacement of the Ballard Bridge focused on several options and included recommendations for structural design. The Ballard Bridge Planning Study is yet to be published, but the concept with the greatest public support is a low-level moveable bridge replacement. Replacement of the bridge will cause traffic impacts during construction.

Figure 8 Recommendations for Ballard Bridge Structural Improvements

Details	Plan or Document
Several technical replacement options were considered that call for roadway grades at or less than 5% (maximum grade of 7% as necessary): ▪ High-level 150' fixed bridge replacement: 5% slope ▪ Mid-level 60' moveable bridge replacement: 5% slope ▪ Rehabilitation of existing movable bridge (low level): 1.5% slope ▪ Public outreach conducted in fall 2019 indicated a preference for a low-level movable bridge. The least preferred option was a high-level fixed bridge. ▪ Cost estimates and constructability findings have not been published but were noted as an important consideration among stakeholders.	Ballard Bridge Planning Study (2019)

Magnolia Bridge Replacement

The Magnolia Bridge opened in 1930 and is showing signs of deterioration. It carries one-third of the daily traffic to and from Magnolia neighborhood. Given the bridge's age and structural

compromises from the 2001 Nisqually Earthquake, it is susceptible to damage and collapse should another earthquake occur. The Magnolia Bridge Planning Study and Environmental Assessment explored four alternatives that range in costs and public acceptance but are all technically feasible. The four bridge alternatives would have a range of transportation impacts during construction.

Figure 9 Recommendations for Magnolia Bridge Structural Improvements

Details	Plan or Document
Alternatives 1 and 4 scored the highest among the project evaluation criteria and had the most public support throughout the planning process. (Cost estimates are in 2018 dollars). Alternative 4 received the highest level of public support, followed by Alternative 1. ▪ Alternative 1: Armory Way Bridge Concept: 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 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 Street bridge to Smith Cove Park/Elliott Bay Marina ($210M-$360M). ▪ Alternative 4: In-Kind Replacement Concept: In-Kind Replacement of the existing Magnolia Bridge adjacent to its current location ($340M – $420M).	Magnolia Bridge Planning Study Technical Memorandum (2019)
▪ The cost to keep the existing bridge in service for more than 10 years, including the cost for repair, strengthening and preservation, continued maintenance and full seismic retrofit, would approach the cost of replacing the existing bridge. ▪ Employ context-sensitive design for the Magnolia Bridge reconstruction. The location, design, and maintenance of a transportation facility can positively and negatively affect visual features of the landscape.	Magnolia Bridge Replacement Environmental Assessment Report (2015)

Active Transportation Connections and Improvements

The highest profile bicycle and pedestrian project in the study area is the completion of the Burke-Gilman Trail. There are additional projects identified in the City's Bicycle and Pedestrian Master Plans, including crosswalks, sidewalks, and a wider Ballard Bridge to contribute to safer active travel.

Figure 10 Recommendations for Active Transportation Connections and Improvements

Details	Plan or Document
▪ Connect the Elliott Bay Trail, the Helix Pedestrian Bridge, and on-site bicycle amenities to enhance the existing off-road facilities and upgrade existing trails.	Expedia Environmental Impact Statement (2016)
▪ Complete the Burke-Gilman Trail: Connect the 1.4-mile segment of the Burke-Gilman Trail through the Ballard neighborhood to create a complete and predictable corridor that enhances safety for pedestrians, trucks, bicycles, and cars. Trail width should generally be between 10 and 12 feet wide depending upon existing conditions and constraints throughout the corridor.	Burke-Gilman Trail Missing Link (2018)
▪ Many arterial and non-arterial streets in Ballard and its Urban Village are identified as part of the city's Pedestrian Priority Investment Network between 2018 and 2020.	Seattle Pedestrian Master Plan 5-Year

▪ Several streets in the BIRT study area have missing sidewalks. Some sidewalks were added in 2019 along W Nickerson St between Ballard Bridge and 13th Ave W in the BIRT study area. Planned improvements include a connection of the two existing portions of the Burke-Gilman Trail through the Ballard neighborhood along with pedestrian and bike crossings on NW 45th St, Shilshole Ave, and NW Market St.	Implementation Plan and Progress Report (2019)
▪ Alternatives are explored to enhance the non-motorized facilities on the Ballard Bridge, including providing enough width to accommodate people safely walking and biking across the bridge, with physical separation from motor vehicles.	Ballard Bridge Sidewalk Widening Concept Study (2014)
▪ In addition to existing bike lanes along the Elliott Bay Trail and Gilman Ave, neighborhood greenway connections to the Burke-Gilman Trail through the Ballard neighborhood are proposed. ▪ Neighborhood Greenway upgrades were proposed in 2019 to improve signal detection at 8th Ave NW on NW 58th St from Seaview Ave NW to 4th Ave NW.	Seattle Bicycle Master Plan 2019-2024 Implementation Plan (2019)

Freight Capacity and Access

Capital improvements to enhance freight access to the Ballard Bridge and ensure timely travel throughout the study area with new traffic signals have been recommended to improve freight movement in the study area.

Figure 11 Recommendations for Freight Capacity and Access

Details	Plan or Document
▪ To enhance freight access to the Ballard Bridge, add an eastbound left-turn lane at the intersection of 17th Ave & Shilshole.	Ballard Urban Design Transportation Framework (2016)
▪ Reduce vehicle delay and improve roadway systems: Intersection signalization or capacity improvements are recommended at several locations including Alaskan Way/W. Galer Flyover, 15th Ave W/W Gilman Street, and W. Galer Street/Thorndyke Ave W.	Expedia Environmental Impact Statement (2016)

Transit Service and Connections

Sound Transit's West Seattle to Ballard Link Extension (WSBLE) and transit service improvements by SDOT and King County Metro will enhance transit access and connections to transit stations. RapidRide D Line is the first branded, frequent bus service in the study area. King County and the City of Seattle are using designated ST3 funds to continue to improve speed and reliability in the D Line corridor. Coordination between the City of Seattle and Sound Transit is critically important as preferred alternatives are finalized for the Ballard to Downtown segment, which is expected to be complete by 2035.

Figure 12 Recommendations for Transit Service and Connections

Details	Plan or Document
▪ King County Metro envisions 26 RapidRide routes by 2040. RapidRide D Line already serves the Ballard-Interbay area along 15th Ave. METRO CONNECTS and other service planning efforts related to North Link envision new bus services from east Seattle and east King County terminating in the Interbay area. Other planned investments include bus-only lanes and transit priority features. METRO	METRO CONNECTS (2017)

Details	Plan or Document
CONNECTS' 2040 network anticipates travel time improvements between Ballard and the University District of 48% (29 minutes).	
▪ Sound Transit is planning a future high-capacity transit corridor from Ballard to downtown Seattle. The project will add 7.1 miles of light rail service, including a new downtown Seattle rail-only tunnel. The corridor includes 9 new stations between Chinatown-International District and Market Street. The Draft EIS will be released in early 2021 for public review and comment. Three stations are planned in the BIRT study area: Smith Cove, Interbay, and Ballard Stations.	Sound Transit West Seattle and Ballard Link Extensions

Summary Map of Capital Improvements

The capital projects described in this section will be included in the baseline and future assumptions for traffic analysis and forecasting. Planned or recommended investments will be incorporated in the future scenarios used in this study. A summary of capital projects is illustrated in Figure 13.

Figure 13 Map of Recommended Infrastructure and Capital Projects

INCREASING RANGE AND DENSITY OF LAND USE RECOMMENDATIONS

The following recommendations describe existing and planned land uses, zoning, and guidelines for new or redeveloped areas. As the study area experiences rapid growth and redevelopment, along with transit-supportive mixed-use development, it will become home to more people and businesses. This will lead to more trips, which must be factored into future traffic forecasts.

Existing Industrial and Manufacturing Uses

Most of Interbay is currently zoned for industrial use and is in a designated as the Ballard-Interbay-Northend Manufacturing Industrial Center (BINMIC). As the BINMIC and surrounding areas grow, it will be critical analyze the preservation of industrial and manufacturing activities and land uses.

Figure 14 Recommendations for Industrial and Manufacturing Uses

Details	Plan or Document
▪ Modify development standards to protect industrial and manufacturing activities. Consider small changes to development standards to support the continued vitality of industrial and manufacturing activities within Industrial Commercial zoned sites in the Urban Village and adjacent industrial lands.	Ballard Urban Design Transportation Framework (2016)
▪ Maintain Industrial Zoning to Preserve Maritime and Commercial Uses: Future land use and zoning in the study area would not change substantially. Most of the land would remain industrial and retain industrial zoning.	Magnolia Bridge Environmental Assessment Report (2015)

Transit-Oriented Development

Anticipated investments in high-capacity transit, including RapidRide and Link light rail, call for higher-density development at stations, transit hubs, and along transit corridors. Accessible and convenient connections to transit stops and stations—for buses and light rail— are identified as critical for ensuring that transit is a viable mode for residents and workers in the area.

Figure 15 Recommendations for Transit-Oriented Development

Details	Plan or Document
▪ Plan for Transit-Oriented Development around Light Rail Stations: Identify community preferences for future potential light rail station locations and understand the transit-oriented development (TOD) potential in Ballard.	Move Ballard (2016)
▪ Support sustainable urban growth in the Ballard Link Extension corridor. One of the goals of the Ballard to Downtown Transit Expansion Study is to support economic and transit-oriented development in the corridor, including compact communities.	Ballard to Downtown Transit Expansion Study (2014)
▪ METRO CONNECTS envisions a TOD program that would include high density development within a convenient 10-minute walk from transit stops or stations, mixed-use development, street amenities that support safe walking and biking, parking management to optimize land uses, and integrated street trees and lighting.	METRO CONNECTS (2017)

Light Industrial Redevelopment

The redevelopment of Terminal 91 Uplands, the National Guard Armory site, and Fishermen's Terminal will increase light industrial space in the BINMIC and support continued growth of manufacturing and industrial uses. Armory site development proposals include a mix of uses including industrial, manufacturing, housing, office, and open space The Armory's land uses have yet to be determined.

Figure 16 Recommendations for Light Industrial Redevelopment

Details	Plan or Document
▪ Develop Terminal 91 Uplands Over the Next 10-15 Years: Develop two 50,000 square foot parcels (100,000 total) of light industrial space and associated site infrastructure improvements including, but not necessarily limited to: paving, water, sanitary sewers, storm sewers, lighting, electrical power, natural gas, communications, and landscaping. Phase II will develop another 300,000 square feet of light industrial facilities.	Terminal 91 Uplands Development (Phase I, 2019)
▪ The Department of Commerce explored six redevelopment scenarios of the Armory that could include market-rate housing, affordable housing, commercial and industrial uses, and open space.	The Interbay Project: National Guard Armory Redevelopment (2019)
▪ Roughly 60,000 square feet of new light industrial space will be developed for complementary maritime businesses by the end of 2022. The new "Gateway" building is planned in the area of the existing vacant bank building and Net Sheds 7 and 8.	Fishermen's Terminal Redevelopment (2019-2023)

Neighborhood Character

Several plans recommend zoning frameworks to protect the historic neighborhood character of Ballard as it continues to grow. Active uses at the ground-floor level are recommended in pedestrian-designated areas, with more industrial activities focused outside of civic centers and residential neighborhoods. The Ballard library and proposed park opened in 2005, creating new civic neighborhood anchors.

Figure 17 Recommendations for Neighborhood Character

Details	Plan or Document
▪ Protect the Historic Character of the Ballard Neighborhood: Protect and support Ballard's thriving industries while ensuring appropriate balance between maritime/industrial, retail, and restaurants. Prioritize active ground floor uses along Ballard's key commercial streets and require them in pedestrian-designated areas. In other areas, ground-level residential is acceptable or preferred.	Ballard Urban Design Transportation Framework (2016)
▪ Develop an integrated land use and transportation strategy by coordinating with the Ballard Urban Design Framework.	Move Ballard (2016)

Right-of-Way Impacts

Several studies recommend that any bridge replacement scenario have a minimal impact on the existing right-of-way. Specific considerations include maintaining and enhancing access to the waterfront, creating connections to natural assets and trails, and avoiding environmental impacts.

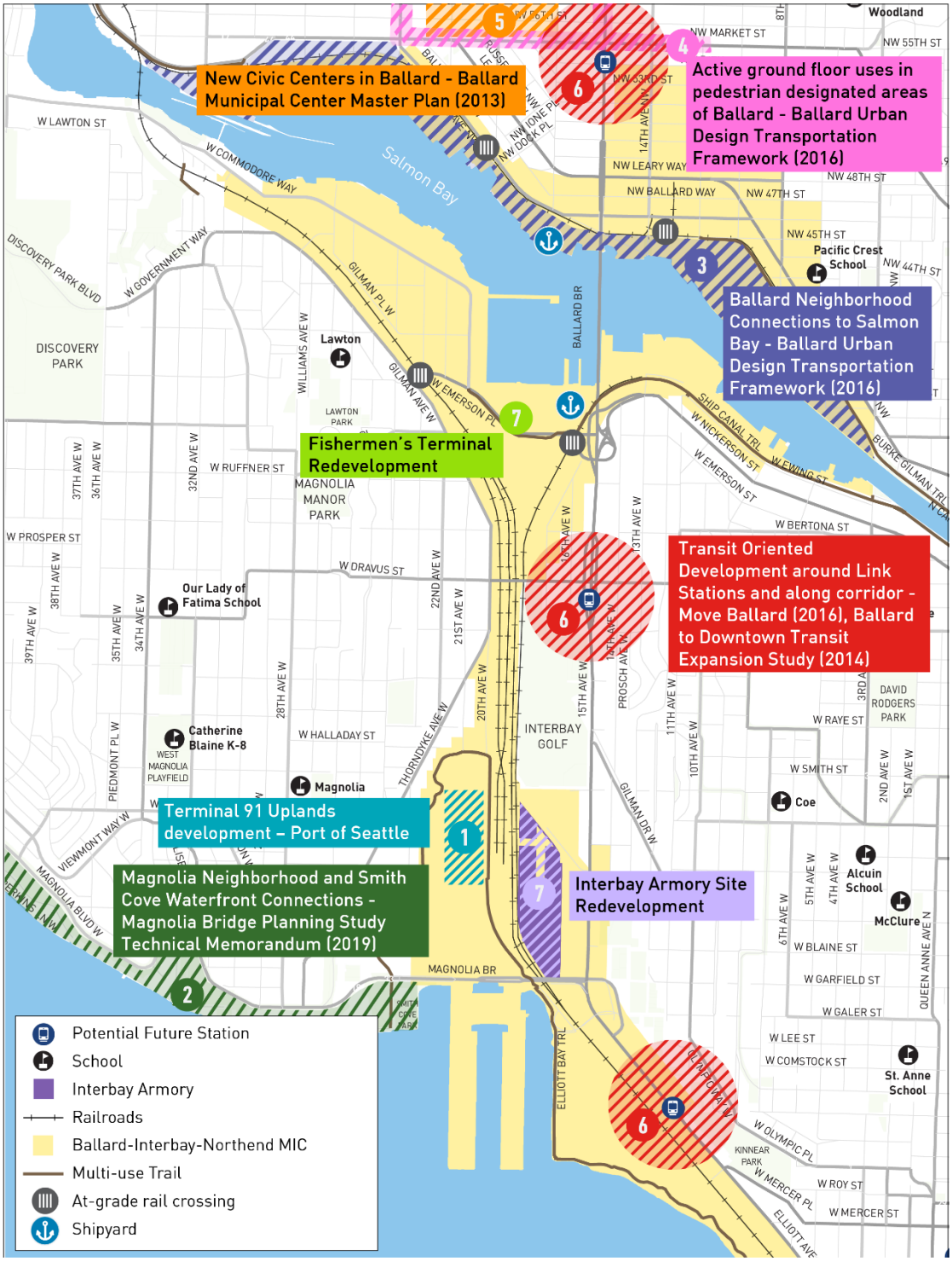
Figure 18 Recommendations for Right-of-Way Impacts

Details	Plan or Document
▪ Provide walking access along the waterfront, from downtown Ballard to the waterfront and to Salmon Bay. ▪ Coordinate infrastructure projects to support existing and new businesses and residents, increase waterfront access, improve multimodal mobility, and steward public investments.	Ballard Urban Design Transportation Framework (2016)
▪ Limit Environmental Impacts and Right-of-Way Acquisition with Bridge Alternatives: The ideal solution avoids or mitigates impacts to environmentally sensitive areas, minimizes impacts to natural hazards, and limits right-of-way acquisition as well as noise and visual pollution impacting adjacent residents and businesses.	Magnolia Bridge Planning Study Technical Memorandum (2019)
▪ Maintain access to the Smith Cove waterfront and improve connections between the Magnolia neighborhood and the Smith Cove waterfront.	Magnolia Bridge Planning Study Technical Memorandum (2019)

Summary Map of Density and Land Use Recommendations

The Ballard-Interbay area can expect that demand for people and goods movement will grow over time as additional development occurs. Growth will shape future scenarios and inform the project team and stakeholders' thinking about appropriate projects and programs that could emerge from the BIRT study. A summary of developments and changing land uses is illustrated in Figure 19.

Figure 19 Map of Recommended Density and Land Use Recommendations



CONCLUSION

The projects and recommendations summarized in this review cover years of planning and investments in the study area. Priorities of partner agencies, residents, businesses, and stakeholders are reflected, but it should be recognized that many planning efforts are ongoing and priorities continue to evolve. Replacement or rehabilitation of the Ballard and Magnolia Bridges and the Sound Transit WSBLE project, represent major infrastructure improvements that will improve transportation access and change circulation patterns in the Ballard-Interbay area. These projects will influence decisions about other local street and intersection improvements and present opportunities to refine connectivity for all modes of travel.

The findings from this plan review set the foundation for the Ballard-Interbay Regional Transportation System project goals, assumptions, and scenario development, as well as performance measures that will be used to evaluate scenarios. The project team will use proposed bridge alternatives, transportation network investments, and potential land use changes to shape forecasts and alternatives that will be evaluated in the BIRT study process.

Appendix A List of Plans and Documents

The following plans and documents are organized by the categories shown in Figure 1. They include the plan or document title, date, and a brief summary of the plan's purpose, leading and partner agencies.

Transit Expansion

Sound Transit West Seattle and Ballard Link Extensions

In November 2016, voters approved the Sound Transit 3 West Seattle and Ballard Link Extensions which will provide fast, reliable light rail connections to West Seattle and Ballard and neighborhoods in between, such as SODO, Chinatown-International District, Downtown, South Lake Union, Smith Cove, and Interbay. Following an extensive alternatives development phase, the Sound Transit Board identified routes and station locations (Figure A-1) to study in a Draft Environmental Impact Statement (EIS). The Draft EIS includes preferred alternatives, preferred alternatives with third-party funding, and other draft EIS alternatives.

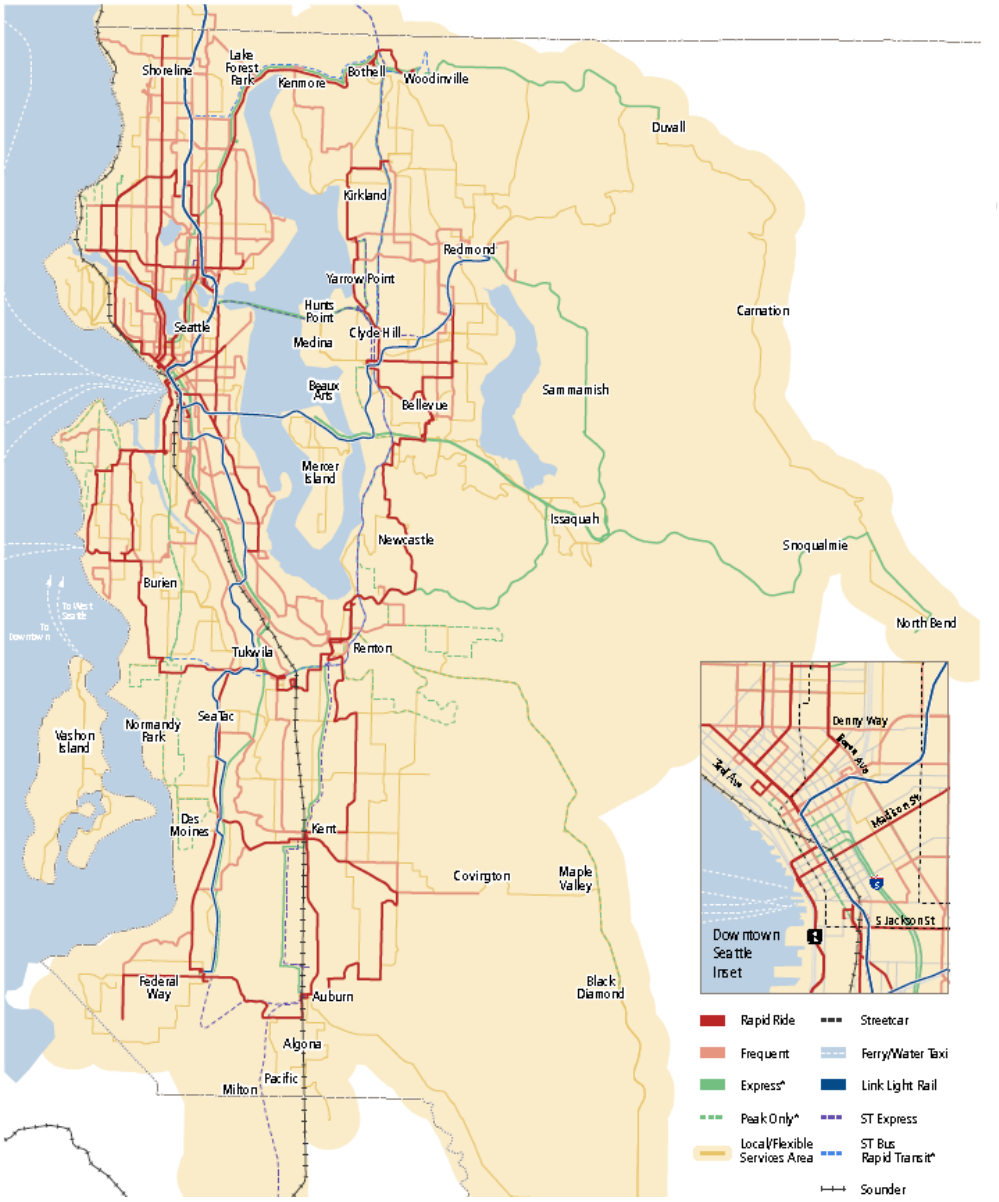
The finalization of station locations at Smith Cove, Interbay, and Ballard will have a significant influence on local mobility in the study area. Sound Transit and the City of Seattle are working in partnership to define station access priorities and options to fund those projects through ST3 and local source funds.

Figure A-1 West Seattle/Ballard Project Map

METRO CONNECTS (2017)

METRO CONNECTS is a 25-year vision for improved transit service throughout King County. The plan outlines a network of frequent, express, local, and flexible services designed around a system of high-capacity transit (HCT) routes including light rail, bus rapid transit (BRT), and RapidRide service that extends north and south of Downtown Seattle. The network allows for the quick movement of passengers across King County and the metro region, while establishing connections to destinations beyond the HCT lines. Key components of the plan include investments in the RapidRide network, which are the trunk transit routes operating at the highest frequencies and carrying large volumes of passengers daily. Among the high-level service concepts proposed in Metro Connects are new or revised bus routes that travel east-west through Seattle and terminate in Interbay.

Figure A-2 2040 METRO CONNECTS Service Network

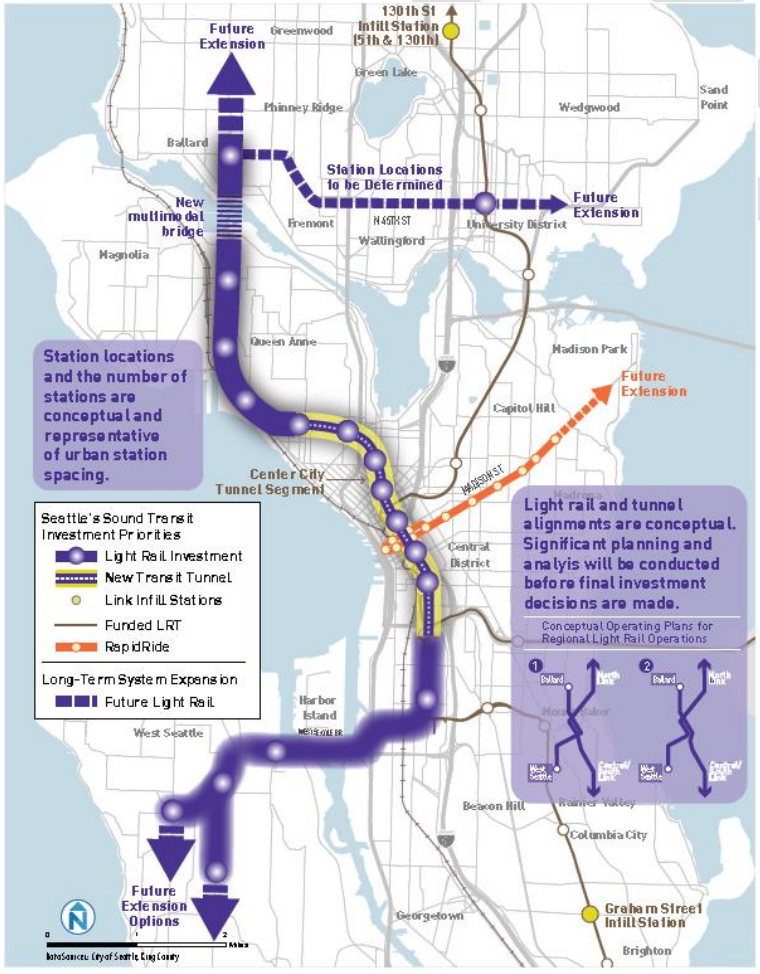


Seattle Transit Master Plan (2016)

The City of Seattle Transit Master Plan (TMP) is a 20-year plan that identifies capital investments in transit facilities, services, programs, and system features. While planning and design of Link light rail service is the responsibility of Sound Transit, the TMP outlines the city's policy guidance regarding desired future transit investments. The original TMP in 2012 identified extensions of light rail to Ballard and West Seattle as top priority projects and includes them in the long-range high capacity transit vision in Figure A-3. There is also interest in a future Ballard to University District light rail corridor as two of the most rapidly growing Urban Village/Centers. (As of 2020, the City of Seattle is working with Sound Transit to refine the station locations and rail alignment in Ballard-Interbay. The option of a tunnel underneath the Salmon Bay/Ship Canal is in discussion if third party funding can be determined.)

The TMP identifies several recommendations to enhance transit access in the BIRT study area. It includes Facility Design Guidelines for a Transportation Center at 15th Ave NW and Market and priority access nodes on either head of the Ballard bridge. There are also recommendations for a 10-minute walkshed from transit corridors in the BIRT study area north of the Ballard bridge, and a 10-minute bikeshed from transit corridors south of the Ballard bridge in the Magnolia neighborhood.

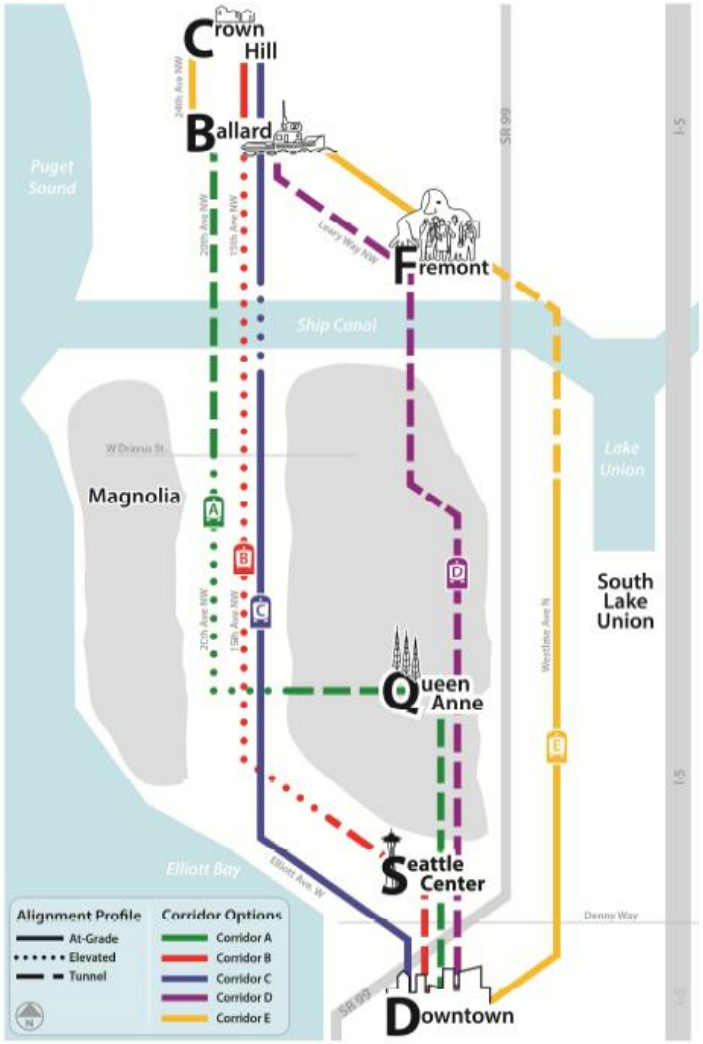
Figure A-3 Transit Master Plan High-Capacity Transit Vision



Ballard to Downtown Transit Expansion Study (2014)

Sound Transit and the City of Seattle partnered to develop the Ballard to Downtown Transit Expansion Study to explore concepts for improved transit connections between Ballard and downtown Seattle, in anticipation of the ST3 vote. A set of candidate corridors was identified based on previous planning studies and community input, generally paralleling surface streets. A multi-tiered alternatives review process incorporated project goals and objectives to screen the segments and alignment alternatives. Some segments and alignments were immediately removed from consideration due to known engineering or environmental challenges, or community opposition. Five corridor options (Figure A-4) were carried forward for evaluation in the final screening review. The study did not recommend a specific corridor, but the results informed the Sound Transit 3 System Plan Representative Project in the System Plan, approved by the Sound Transit board in June 2016.

Figure A-4 Ballard to Downtown Seattle Transit Expansion Study Area



Land Use and Development

Fishermen's Terminal Redevelopment (2019-2023)

The Port of Seattle is improving the long-term financial stability of the Port by developing new light industrial space and creating new jobs at Fishermen's Terminal. The project will provide roughly 60,000 square feet of new light industrial space for complementary maritime businesses.[1] Improvements to the Terminal facility will include parking restriping, lighting upgrades, wayfinding, and new public interpretive displays. The new "Gateway" building is planned in the area of the existing vacant bank building and Net Sheds 7 and 8. The project is expected to cost about $25 million and will be completed in late 2022.

Figure A-5 Proposed Gateway Building Area

[1] https://www.portseattle.org/projects/fishermens-terminal-redevelopment

Terminal 91 Uplands Development (2019-2023)

The Port of Seattle plans to develop 100,000 square feet of light industrial space and associated site infrastructure at Terminal 91 Uplands, the area north of the pier and Magnolia Bridge.[2] The Port of Seattle Commission approved $4 million for the project, which will include two 50,000 square-foot buildings to support the expansion of fishing and maritime supply chain companies within the existing Ballard-Interbay Manufacturing Industrial Center. Phase 1 will focus on the planning, design, and environmental review for the entire redevelopment area, including partial construction and stormwater improvements. Phase 1 is funded in the Port's 2019-2023 Capital Improvement Plan. Phase 2 will provide another 300,000 square feet of light industrial space, while the third phase of development anticipates adding another 600,000 square feet. The Port will assess the success of the first two phases before considering proceeding with Phase 3.

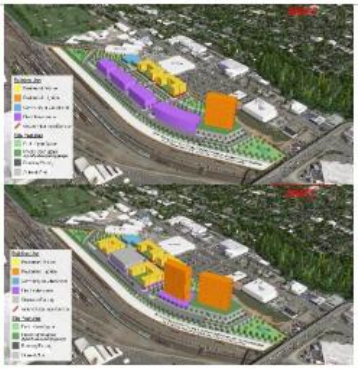
Figure A-6 Phases 1 and 2 of Terminal 91 Uplands Development

[2] https://www.portseattle.org/projects/terminal-91-uplands-development-project

The Interbay Project: National Guard Armory Redevelopment (2019)

In 2018, the Department of Commerce was tasked by the Washington State Legislature to explore potential future uses of its Interbay Property. Located in the Ballard-Interbay Manufacturing Industrial Center, the property is currently used as a readiness center by the Washington National Guard. The Guard plans to move to a location with better transportation access in cases of emergency, and with buildings better suited to their needs. The Department of Commerce studied the options of market-rate housing, affordable housing, commercial and industrial uses, and open space. Six high-level options have been developed that mix and match these priorities. The Interbay Public Development Advisory Committee created an in-depth report with recommendations on the highest public benefit and future economic development uses for the site.

Figure A-7 Armory Redevelopment Concepts

Concept	Concept Image
Mixed use commercial/residential with mixed-income housing framework	
(1) High-Rise Concept	
(2) Mid-Rise Concept	
Industrial framework	
(3) Industrial-Only Concept	
Mixed use light industrial/residential with mixed-income housing framework	
(4) Housing Next to Industrial (mid-rise) (5) Housing Next to Industrial (high-rise)	
(6) Housing Above Industrial	

Expedia Environmental Impact Statement (2016)

Expedia Group Inc. completed an Environmental Impact Statement (EIS) in preparation for its move to a new campus in Interbay, including a 546,000-square-foot office building and parking facilities for 4,500 workers. The Final Environmental Impact Statement for the Expedia Campus Major Phased Development analyzed the probable environmental impacts associated with 13 key environmental parameters, including transportation/circulation and parking, and land use. Transit facility improvements, employee shuttle service and stops on public streets, and transit service upgrades were suggested for coordination with SDOT and King County Metro. Coordination with Sound Transit on the future Ballard Link Extension and station was also recommended. Expedia occupied the first phase of its development in the fall of 2019 and early winter of 2020. Projects delivered as part of the company's transportation mitigation include a major upgrade to the Elliott Bay Trail adjacent to the campus.

Figure A-8 Elliott Bay Trail Improvements Underway near Expedia's Campus, Summer 2019

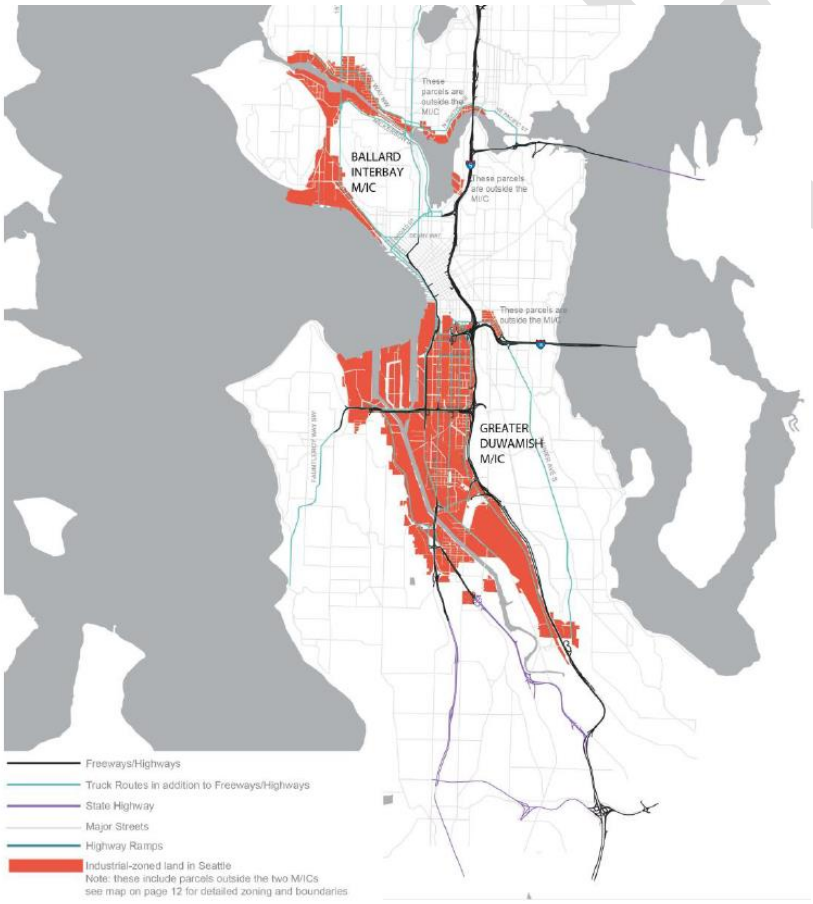
Industrial Lands Policy Discussion Summary and Recommendations (2015)

This report provides background information and summaries of City Seattle studies related to industrial land policies. It also reports on the Department of Planning and Development's public outreach in 2014 and 2015 to obtain feedback on recommended Comprehensive Plan policies intended to strengthen the City's commitment to protect industrial land. The document examines the importance of Seattle's designated Manufacturing/Industrial Centers (MICs) to the local, regional, and global economy, and describes the physical characteristics, challenges, and opportunities for the future of each, including the Ballard-Interbay-Northend MIC.

The proposed industrial lands policies were included as part of Seattle 2035, the city's comprehensive plan, including two new policies:

- GS2.20: Retain land in the Manufacturing/Industrial Centers for industrial uses and develop criteria for evaluating requests to remove land from a MIC, recognizing the important economic resource the land in these centers represents.
- LU1.22: Limit the future application of the Industrial Center zone inside the MIC boundaries to prevent the expansion of offices and other non-industrial uses.

Figure A-9 Map of Industrially Zoned Land

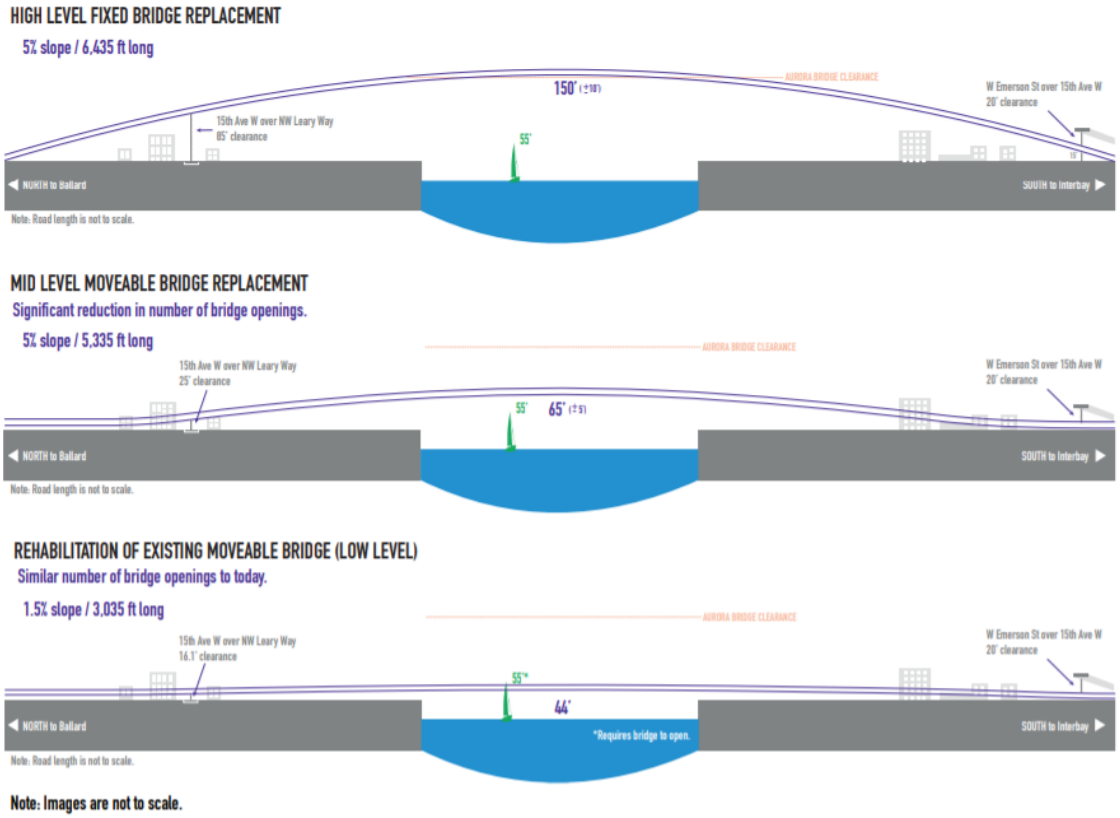


Ballard Bridge

Ballard Bridge Planning Study (2019)

The Ballard Bridge Planning Study explores rehabilitation and replacement options for the long-term future of the Ballard Bridge, built in 1917. It is one of ten studies to assess roadway structure maintenance needs, and understand the extent of Seattle's maintenance backlog. Agency partners, advisory boards, and community members identified needs and values and screened alternatives that explored high-, mid-, and low-level bridge options. Options were evaluated on mobility and connectivity, environmental and permitting considerations, implementation characteristics, cost, and community input. The final report will be published in 2020 and will provide a comparison of alternatives and a summary of public input

Figure A-6 Ballard Bridge Options



Note: Images are not to scale.

Bridge Safety Analysis Report (2018)

The Bridge Safety Analysis Report reviews and evaluates existing conditions and collision history at nine bridge locations within the city of Seattle, four of which are near the Ballard Bridge (see Figures A-11 and A-12). Lack of signage and pavement to establish pedestrian right-of-way and limited dedicated bicycle and pedestrian facilities are the main issues near the Ballard Bridge. Safety improvements to benefit pedestrians and bicyclists include preliminary design and planning-level cost estimates.

Location 1: Ballard Bridge South (15th Ave NW and W Emerson St, Figure A-11): Concept provides a crossing on the east leg at the intersection of W Emerson St and W Nickerson St, west of 15th Ave; provides stop control at all three intersection segments; adds a sidewalk and shared use path to the SW curb. Estimated cost: $1,019,000 to $1,325,000.

Location 2: Ballard Bridge Sidewalk (Between W Emerson St and NW Ballard Way): Provide a railing along the bridge between the sidewalk and vehicle travel lane to reduce conflicts between sidewalk users and motorists. Estimated cost: $9,271,000 to $12,053,000.

Location 3: Ballard Bridge Northwest (On-ramp, Figure A-12): Provide curb extensions and high visibility crosswalks to increase pedestrian visibility and reduce turning vehicle speeds. Estimated cost: $207,000 to $270,000.

Location #4: Ballard Bridge Northeast (Off-ramp): Provide crosswalks, bicycle wayfinding, and signage and pavement markings to direct turning vehicles. Implement parking restrictions and enhance and extend the barrier area farther south to provide increased separation between vehicles and pedestrians. Estimated cost: Included in Location #3 estimates.

Figure A-7 Location 1: Ballard Bridge South

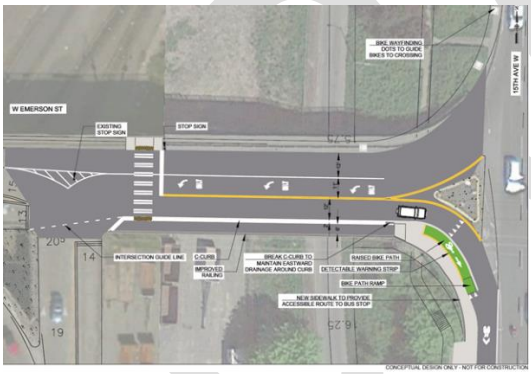
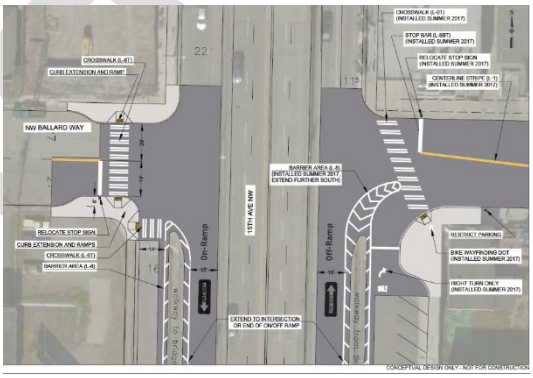


Figure A-8 Location 3: Ballard Bridge Northwest



Ballard Bridge Seismic Retrofit Environmental Conditions Memorandum (2018)

The Ballard Bridge Seismic Retrofit Project called for an identification of existing conditions related to environmental resources for two retrofit scenarios. The first scenario includes foundation retrofit work that would require construction below the ordinary high-water mark. The second scenario would *not* require construction below the ordinary high-water mark. Environmental resources considered include shoreline and waterways, wildlife and critical habitat, cultural (historic and archaeological) resources, public properties and parks, and sensitive noise receptors. Potential environmental approvals, permits, and required time frames for approval, and completion, are described to inform the conceptual engineering design.

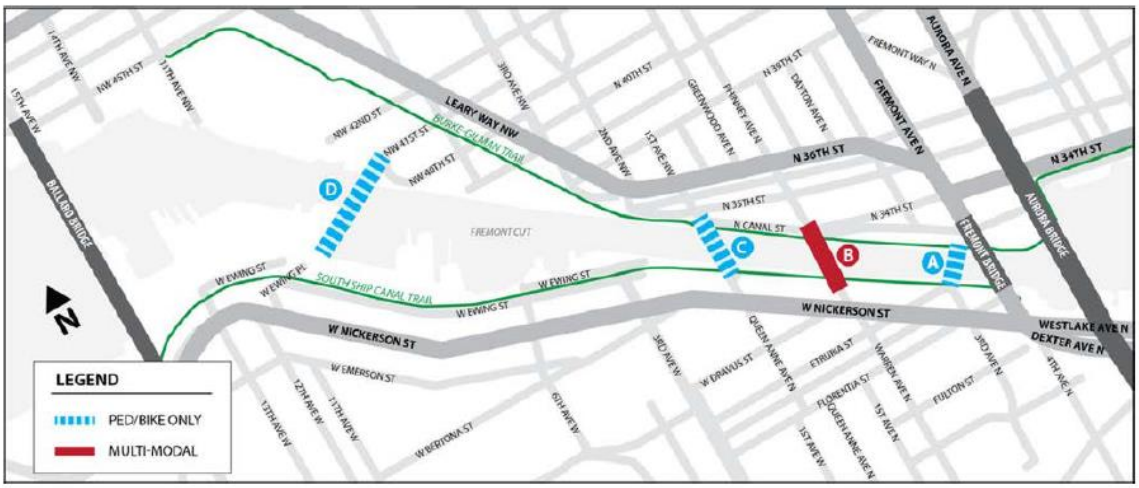
Ship Canal Crossing Study (2015)

The Ship Canal Crossing Study responds to needs identified in the city's Pedestrian, Bicycle, and Transit Master Plans to improve multimodal crossings of the Lake Washington Ship Canal in the vicinity of the Ballard and Fremont neighborhoods. This study is intended to guide future investments that improve mobility across the ship canal, including replacement of the Ballard Bridge and Sound Transit's high capacity transit from Ballard to Downtown. It identifies deficiencies for bicycle and pedestrian crossings on both the Ballard and Fremont bridges, and multimodal needs based upon multiple modal plans. Conceptual designs and cost estimates were developed for two types of potential crossings of the Ship Canal:

1) A movable pedestrian/bicycle-only bridge, and
2) A movable bridge that would accommodate pedestrians, bicycles, and transit, as well as potentially accommodate general purpose traffic.

Four water-crossing options were selected as representative for the study area to serve as points of comparison for constructability, conceptual cost, and mobility and connectivity benefits. All crossings were assumed to be low-level bridges incorporating a movable bridge.

Figure A-9 Proposed Locations for Improved Ship Canal Crossings



Location A: Burke Gilman Trail to Nickerson and Florentia St.
Location B: Phinney Ave N to Warren Ave N
Location C: 1st Ave NW to Queen Anne Ave N
Location D: NW 41st to W Ewing St.

Ballard Bridge Sidewalk Widening Concept Study (2014)

The Ballard Bridge Sidewalk Widening Concept Study analyzed potential improvements to the bridge for pedestrians and bicyclists. The study evaluated the feasibility of widening the sidewalks on the bridge approaches, installing a railing between the travel lanes and the existing sidewalks, and providing a multi-use connector trail between the southwest corner of the Ballard Bridge, 15th Avenue West, and the South Ship Canal Trail.

- Alternative 1: Adding an additional foot to sidewalk width by modifying the existing railing and barrier and adding a railing between the sidewalk and travel lanes
- Alternative 2: Widening sidewalks to either six or ten feet, including a railing between the sidewalk and travel lanes
- Alternative 3: Installing a railing on the inside barrier between the existing sidewalk and travel lanes
- Alternative 4: providing a trail connection from the southwest corner of the Ballard Bridge to the South Ship Canal Trail and the sidewalk on 15th Avenue West, south of the bridge

All were deemed technically feasible, though each had potential challenges, including business relocation impacts, temporary construction impacts to traffic, and associated costs ranging from $3 million to $48 million.

Figure A-10 Possible Pedestrian and Bicycle Improvements to Ballard Bridge

Ballard Area

Burke-Gilman Trail Missing Link Project (2018)

The Burke-Gilman Trail is a 27-mile trail that runs from Golden Gardens Park in Seattle to the Sammamish River Trail in Bothell. It is one of the most heavily used walking and bicycling routes in Seattle and serves as a major transportation corridor. The trail is complete except for a 1.4-mile segment through the Ballard neighborhood, known as the "Missing Link." The Missing Link has been included in the City's Comprehensive Plan since the early 1990s and is identified as one of Seattle's top-rated trail priorities in the 2014 Bicycle Master Plan. An Environmental Impact Study identified a preferred alternative, and design was completed in 2018.

Construction is anticipated to be completed in three phases. The Market Phase (I) includes segments of the corridor that run along NW 54th St and NW Market St. The Shilshole Phase (II) includes segments of the corridor along Shilshole Ave NW. The 45th Phase (III) includes segments of the corridor along Shilshole Ave NW and NW 45th St.

Figure A-11 The Missing Link on the Burke-Gilman Trail

Interbay Trail Connections Project (2016)

SDOT's Interbay Trail Connections Project aimed to create family-friendly connections for people traveling between the Ship Canal Trail, Elliott Bay Trail, and the Ballard Locks to more easily reach Westlake, downtown Seattle, and points along the Burke-Gilman Trail. This project built on the Bicycle Master Plan's recommendations for the Interbay and Magnolia communities to connect major trails. The project concepts included a redesign of 20th Ave W, Gilman Ave W, and W Emerson Place to have protected bike lanes and improved intersections that are more comfortable for bicyclists and efficient for motorists and goods delivery. Recommended improvements were built in 2017.

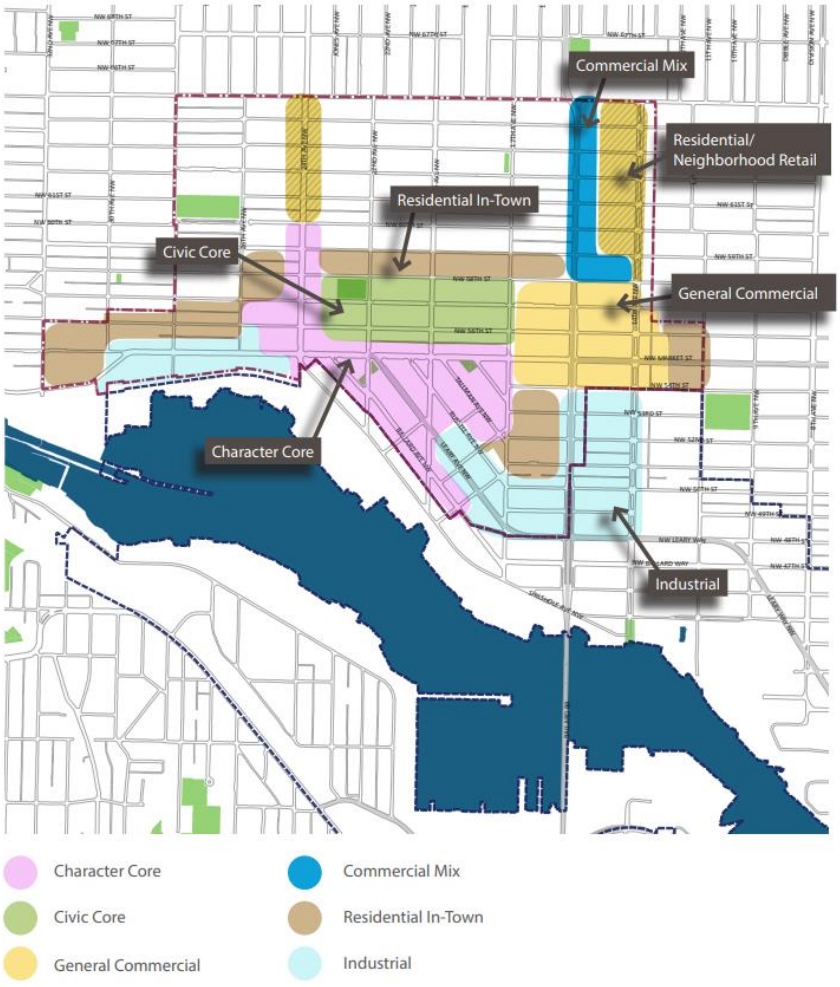
Figure A-12 Project Details

Ballard Urban Design and Transportation Framework (2016)

The Ballard Urban Design and Transportation Framework defines urban design recommendations, including streetscape design, land use regulations, and design guidelines, that will guide future development while ensuring Ballard's people and places can thrive. The Transportation Framework and recommendations are also known as *Move Ballard*, a set of 10 near-term multimodal transportation studies and improvements. The City Council adopted the recommended amendments to development standards and zoning changes in September 2016.

Urban design recommendations include the development of character areas, land use and zoning changes to reinforce the desired mix of land uses; development standards for building massing and scale; and future station area planning to accommodate future high capacity transit.

Figure A-17 Character Areas

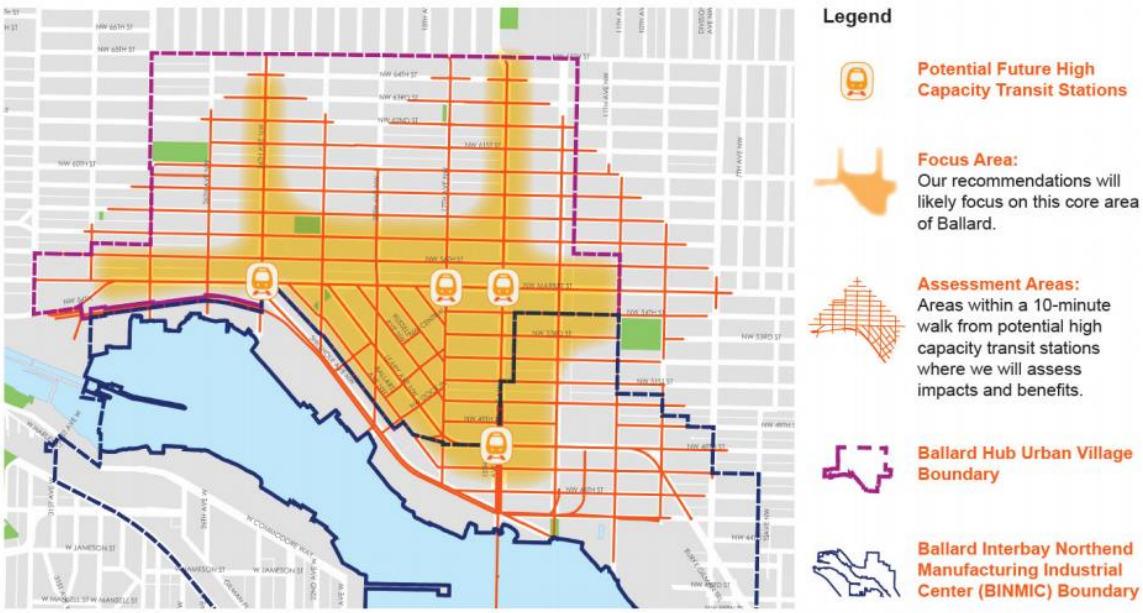


Move Ballard (2016)

This plan identifies and prioritizes near-term multimodal transportation studies and improvements to help meet the transportation demands of the Ballard neighborhood. Developed in coordination with the Office of Planning and Community Development, the Ballard Urban Design Transportation Framework (2016), these documents work together to articulate a shared vision and strategies to guide future development and transportation investments in Ballard.

Move Ballard incorporates the goals and objectives of other planning work, including existing neighborhood plans, previous transportation studies, and citywide modal plans. In anticipation of the Sound Transit 3 project list, this study evaluates and prioritizes potential future light rail stations identified in the Ballard to Downtown Seattle Transit Expansion Study (2014). The study captures the neighborhood's preference for high capacity transit station locations and connectivity, and identified a list of 10 projects to be implemented in the next one-to-three years, as well as longer-term projects that address major transportation needs.

Figure A-18 Move Ballard Study Area



Ballard Urban Design Existing Conditions Report (2014)

In support of the Ballard Urban Design and Transportation Framework, the Existing Conditions Report documents the area's existing conditions and trends. The report found that population grew by 24 percent between 2000 and 2010, concentrated in the commercial and multifamily areas in the Ballard Urban Village, ranking among the ten most rapidly growing Urban Villages in Seattle. The report focused the Ballard Urban Village and areas within a 10-minute walk of Sound Transit's potential light rail station locations given anticipated future growth, and identified five opportunity areas to ensure people have access to economic opportunity and the amenities for a healthy life (Figure A-19):

1. 24th Ave NW at Market Street
2. 20th and 22nd Ave NW at NW Market Street
3. 15th and 17th Ave NW at Market Street
4. 15th and 14th Ave NW at NW Leary Way
5. 22nd Ave NW at NW 56th Street

These are the areas with the most potential and likelihood of future development and are recommended to have densities, block structures, land use mixes, and streetscapes that will accommodate future growth, access to transit, and access to jobs and other local destination.

Figure A-13 Opportunity Areas in the Ballard Urban Village

Magnolia Bridge

Magnolia Bridge Planning Study Technical Memorandum (2019)

The Magnolia Bridge Planning Study identified three alternatives to the 2006 recommended In-Kind Replacement option. These alternatives, along with the In-Kind Replacement option, have been analyzed and compared through a multi-criteria evaluation process. The evaluation process focused on key metrics including mobility and connectivity, environmental impacts, cost estimates, implementation characteristics, and community support. After scoring the alternatives and applying a sensitivity analysis to the metric weights, two options consistently performed best: a new Armory Way Bridge into Magnolia and a new Western Perimeter Road to Smith Cove Park/Elliott Bay Marina ($200M – $350M), and In-Kind Replacement of the existing Magnolia Bridge adjacent to its current location ($340M – $420M). The Magnolia community prefers the In-Kind Replacement option.

Figure A-14 Alternative 1: Armory Way Bridge Concept

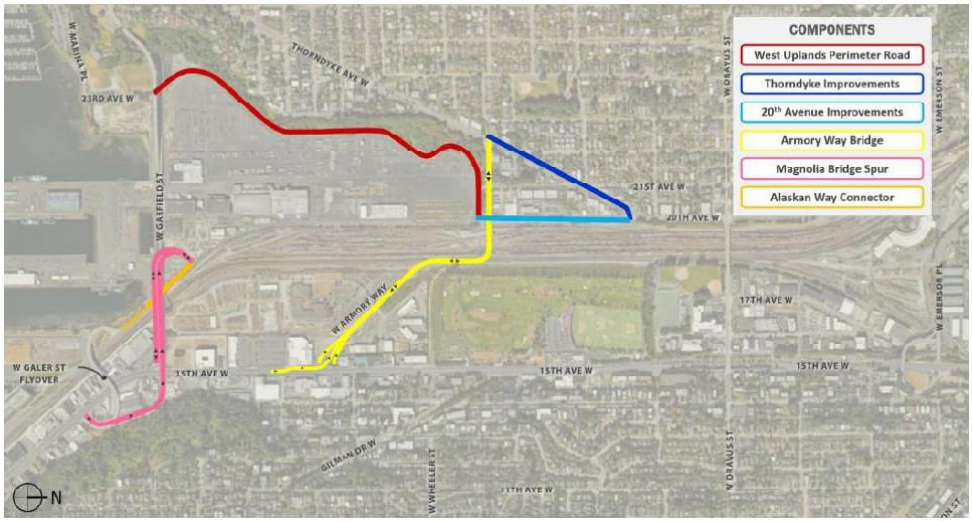


Figure A-15 Alternative 4: In-Kind Replacement Concept

Magnolia Bridge Replacement Environmental Assessment Report (2015)

In March 2006, SDOT recommended a Preferred Alternative to replace the existing Magnolia Bridge. The replacement bridge would lie immediately south of the existing bridge between the Magnolia Bluff and Pier 90, and very close to the same alignment as the existing bridge between Pier 90 and 15th Avenue West/Elliott Avenue West. This environmental assessment report evaluates probable environmental effects that could result from the bridge replacement. This report also contains the measures to avoid or minimize adverse effects of constructing and operating the project, such as construction detours shown in Figure A-22.

Figure A-16 Possible Detour During Magnolia Bridge Replacement

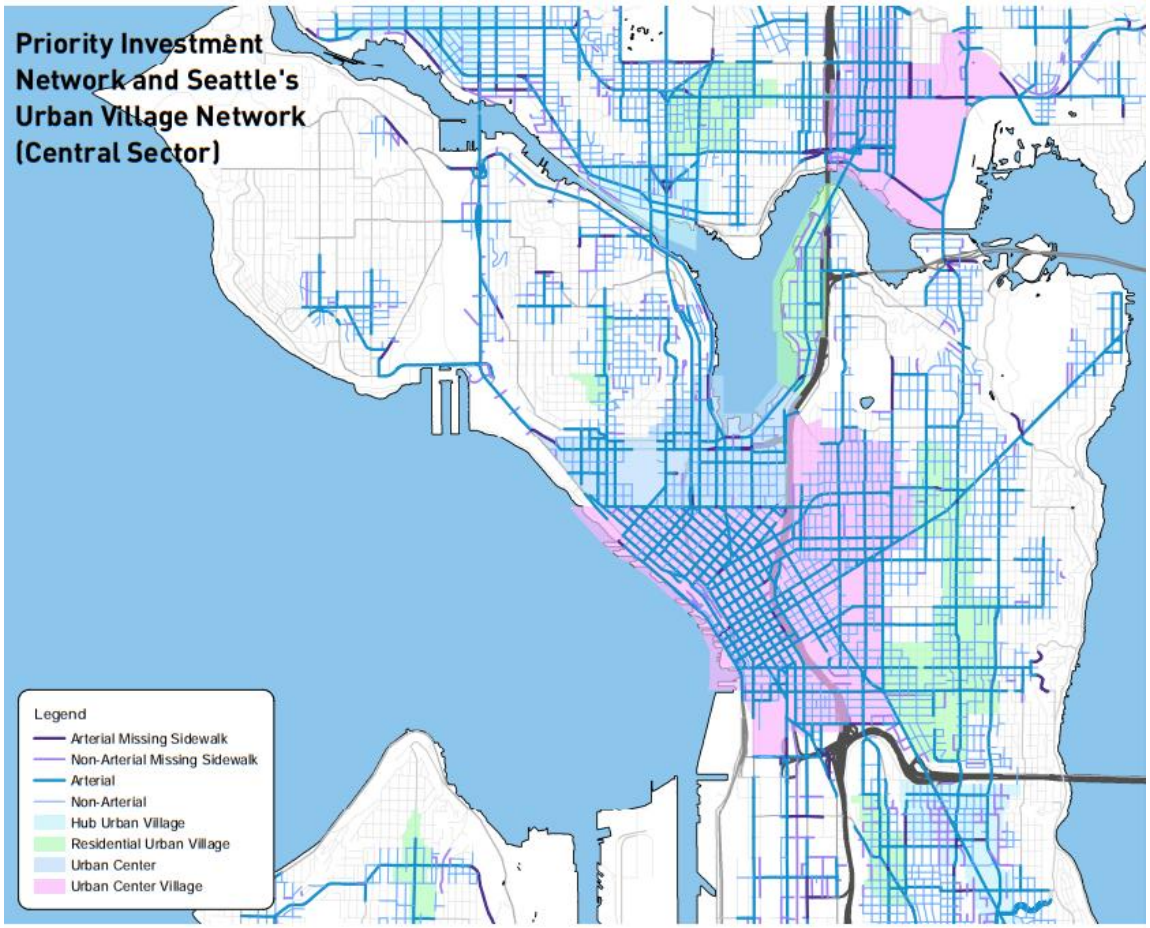
Multimodal Plans

Seattle Pedestrian Master Plan (PMP) 5-Year Implementation Plan and Progress Report (2019)

The PMP Implementation Plan addresses near-term improvements to the pedestrian environment in Seattle, focused on the 26% of all block-faces that lack sidewalks. It includes improvements developed by both public and private stakeholder input and identifies projects and programs that, combined with existing facilities, will make considerable progress toward achieving the PMP vision within five years, from 2019 to 2024. The implementation plan includes a prioritized list of SDOT's pedestrian capital investments, cost and funding summary, summary of pedestrian-related initiatives, and cost-sharing opportunities with utilities and private investment.

Since the plan's adoption, sidewalks were added along W Nickerson St between the Ballard Bridge and 13th Ave W in the BIRT study area. Other planned improvements include a connection of the two existing portions of the Burke-Gilman Trail through the Ballard neighborhood along with pedestrian and bike crossings on NW 45th St, Shilshole Ave, and NW Market St.

Figure A-17 Priority Investment Network



Seattle Bicycle Master Plan (BMP) 2019-2024 Implementation Plan (2019)

The Seattle BMP identifies projects and programs to be implemented from 2014 to 2033 to achieve the vision and meet the plan's goals for safety, ridership, equity, connectivity, and livability. The BMP outlines an infrastructure plan for a connected network that includes approximately 100 miles of protected bicycle lanes and nearly 250 miles of neighborhood greenways. The BMP Implementation Plan describes the work that SDOT and partners have completed and plan to undertake in the next six years, including specific infrastructure projects. A progress report is submitted to City Council each year.

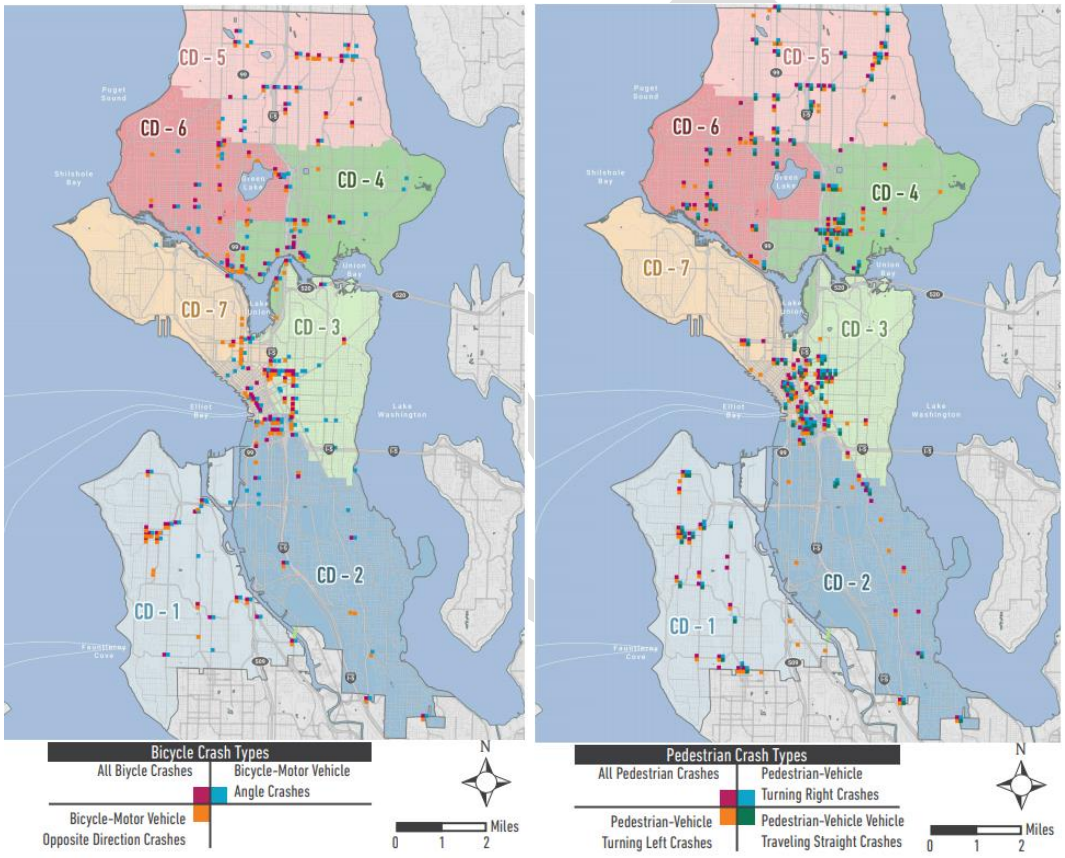
In Ballard, neighborhood greenway upgrades were planned for 2019 (Ballard East-West signal detection improvement at 8th Ave NW on NW 58th Street from Seaview Ave NW to 4th Ave NW). The completion of the Burke Gilman Missing Link is targeted for phased completion in 2020 and 2021.

Figure A-18 Planned Bicycle Master Plan Projects 2019 - 2024

Seattle Bike and Pedestrian Safety Analysis Phase 2 (2020)

The initial Bike and Pedestrian Safety Analysis was conducted in 2016. The 2020 update included analysis of three additional years of crash data (2014 – 2017) and signal phasing data that was not previously available. This analysis also refined and confirmed exposure estimates to help understand crash risk across the city. As a result, the analysis identified locations that are a higher priority for safety improvements to proactively address safety issues before a crash occurs. The Ballard neighborhood has a high level of bicycle activity and many bike- and pedestrian-related collisions. There are several locations identified as top priority locations for bike and pedestrian safety improvements, many just north of the Ballard Bridge. There are very few crashes cited in the Interbay neighborhood.

Figure A-19 Top 20 Priority Bicycle (Left) and Pedestrian (Right) Locations per Council District



Seattle Freight Master Plan (2016)

The Freight Master Plan focuses primarily on urban truck movement to support Seattle's increasing demand for the delivery of goods and services in a safe and reliable manner. As one of two Manufacturing and Industrial Centers (MICs) in the City of Seattle, the Ballard-Interbay-Northend MIC (BINMIC) is the region's smallest MIC at 932 acres. Uses span light manufacturing, maritime, food processing, warehouse uses, a rail yard, and several Port of Seattle facilities. The FMP identifies major and minor freight corridors within the BIRT study area and includes a toolbox to address bottlenecks and safety locations; the Ballard Bridge is noted as a *high* bottleneck location.

There are 22 recommended project concepts (see Figure A-26) that build upon an inventory of freight and mobility connectivity projects from other planning efforts (e.g., Levy to Move Seattle, SDOT's Large Capital Program prioritization, Freight Access Project, and the 2014 Washington State Freight Mobility Plan). They include traffic signal improvements, interchange ramp improvements, turn-restrictions, elimination of height restrictions on pedestrian bridges, and dynamic messaging to communicate travel conditions, and modifications to turning radii. Replacement of the Ballard bridge is noted as a catalyst project that is located at a choke point in the network.

Figure A-26 North Seattle Freight Projects