BELLEVUE
PEDESTRIAN
& BICYCLE
IMPLEMENTATION INITIATIVE

BICYCLE RAPID IMPLEMENTATION PROGRAM

project ideas and conceptual layouts

DRAFT

April 2016

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BELLEVUE PEDESTRIAN & BICYCLE IMPLEMENTATION INITIATIVE

Making Bellevue a great place to walk and bike.

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INTRODUCTION
CONNECTED. PROTECTED. RAPID.

Background

A recurring message throughout Bellevue's 2009 Pedestrian and Bicycle Transportation Plan development process—from the online survey effort, focus-groups sessions, public meetings, and online interactive map—was the need for improved connectivity to facilitate cross-city bicycle trips. There is broad public agreement that many of the existing bicycle facilities in Bellevue, particularly on-street segments, have been implemented in a piecemeal approach and therefore do not provide a connected and easily navigable cycling network.

Responding to this public input, Bellevue's 2009 Plan designates five east-west and six north-south cross-city Priority Bicycle Corridors (see Figure 1) that together create a continuous network that promotes connections to surrounding jurisdictions and creates links between neighborhoods within Bellevue. Regardless of the type of facility implemented on a given corridor or corridor segment—whether bicycle lanes on major streets, multi-use off-street paths, shared lanes on low traffic streets, or some other context-appropriate solution—the components of the Priority Bicycle Corridors must be well connected and provide safe and reasonably direct ways to travel between destinations throughout the city for people of all ages and abilities.

The 2009 Plan established two goals relating to bicycle facilities: (1) by 2019, implement at least two completed, connected, and integrated north-south and at least two east-west bicycle routes that connect the boundaries of the city limits, and (2) by 2014, implement at least one completed and connected east-west and north-south bicycle route through Downtown Bellevue. Task 2 of the Pedestrian & Bicycle Implementation Initiative (PBII) aims to realize both of these goals by 2019.

Bicycle Rapid Implementation Program

In keeping with Task 2 of the PBII Scope of Work, this document assesses the Priority Bicycle Corridor network established in the 2009 Plan to:

1. Evaluate the bicycle facility types that could be applied along missing segments in the network;
2. Consider the associated maintenance needs of each treatment;
3. Develop planning level cost estimates and priorities to inform the next round of updates to Bellevue's Transportation Facilities Plan and Capital Investment Program and implementation opportunities through other programs (e.g., Pavement Overlay).

The Transportation Commission directed staff to develop a package of project ideas that would realize a network of bicycle facilities that are:

1. **connected**, prioritizing a network that "fills the gaps" in lieu of piece-meal implementation,
2. **protected**, promoting physically separated facilities to minimize conflicts between roadway users where possible, and
3. **rapid**, leveraging early-win opportunities that can quickly advance project delivery.

The PBII Task 2 Team drafted and refined 52 project ideas over the course of several months that responds to this CPR theme and considers feedback submitted by the public through various channels, such as the first PBII Wikimap. Collectively, these projects ideas are referred to as the Bicycle Rapid Implementation Program. This document presents the potential constituent parts of this program.

Process & Next Steps

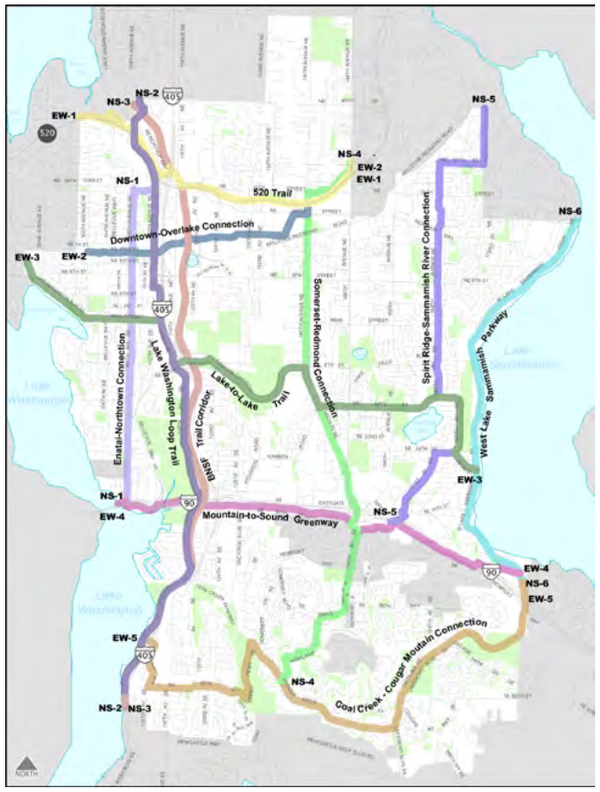
At its January 28 and February 25 workshops, the Transportation Commission reviewed and discussed the conceptual layouts for BRIP candidate projects. Commissioners concurred that context-appropriate solutions—informed by engineering judgement in consultation with the community—are required when considering accommodations for people on bicycles.

Public feedback will continue to serve an important role in helping the Transportation Commission evaluate and prioritize budget recommendations for citywide investments in bicycling infrastructure. To that end, on March 23, 2016, the Transportation Commission hosted a public open house presenting 52 project ideas packaged together as the Bicycle Rapid Implementation Program (BRIP).

At its March 24 and April 28 workshops, the Transportation Commission reviewed a variety of different options for implementing the BRIP and their associated costs and tradeoffs, all of which would achieve the 2009 Plan goals by completing either two north-south and two east-west Cross-City Connections (CCCs) or 3 north-south and 3-east west CCCs. All of the options considered—which range in estimated cost from $5.6 to $7.3 million—were illustrative only. Based on their consideration of these options, the Transportation Commission voted to recommend the allocation of $6.8 million for the BRIP through 2019. This recommendation will help to inform City Council in their deliberations for the 2017–2019 budget.

The ultimate package of projects to be funded and implemented by the BRIP will be determined through additional consultation of the Transportation Commission, community, and engineering staff.

Figure 1. Bellevue's Priority Bicycle Corridors, as identified in the 2009 Ped-Bike Plan.



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DOCUMENT OVERVIEW: PROJECT IDEA TEMPLATES, PAGE 1

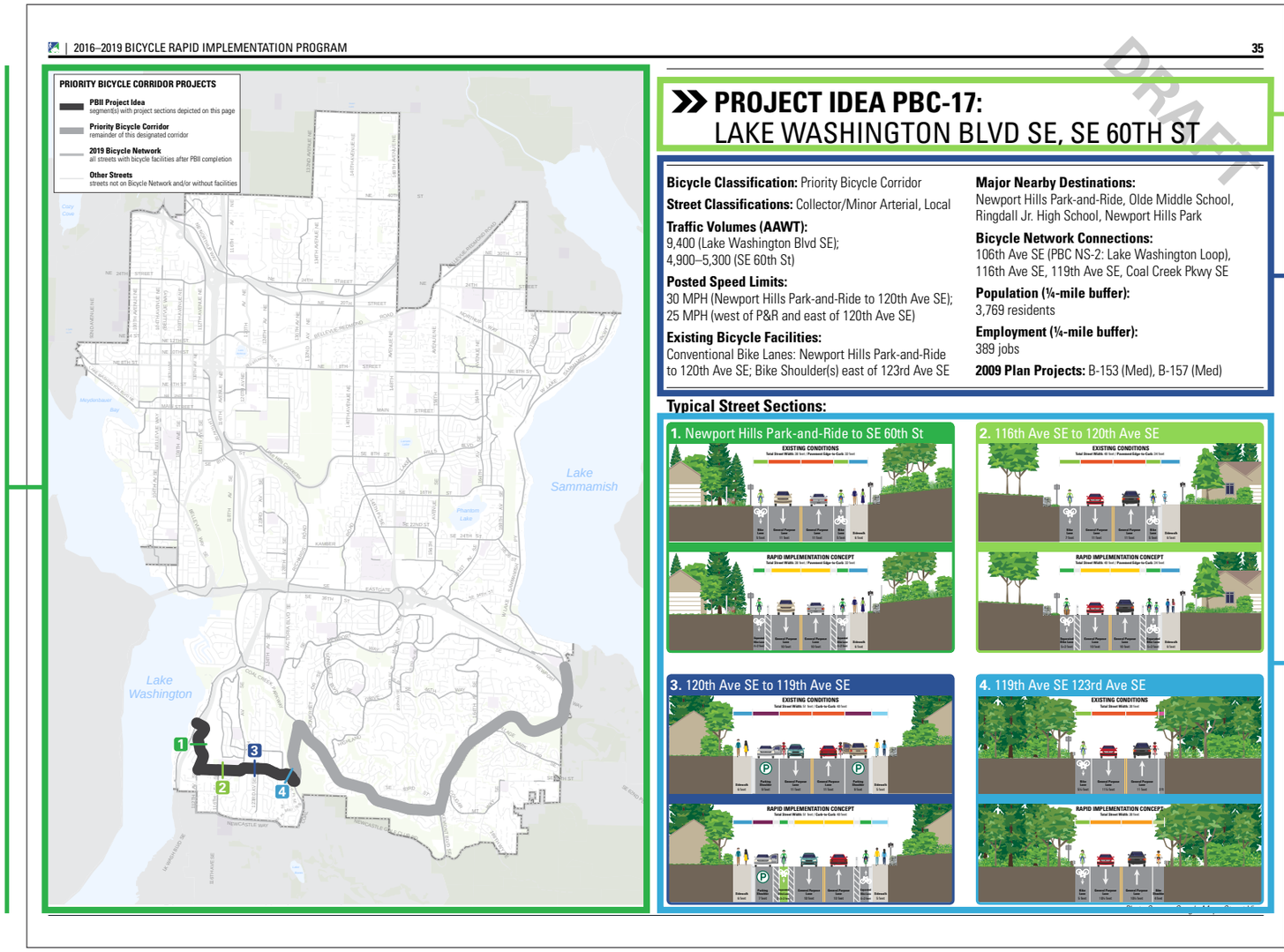
Every project idea presented in this document follows a two-page template, described here to help readers better find the information that matters most to them. The first page (1) identifies the project idea by number, name, and location on a map; (2) lists existing conditions that influence what kinds of investments might be appropriate on the corridor; (3) describes the places and the number of people and jobs that the project idea would help improve bicycle access to and for; (4) illustrates the typical street design as it exists in March 2016 and how it could look if the concept were implemented.

Context Map

The presentation of each project idea begins with a map that depicts the location of the project idea within the City of Bellevue and relative to the rest of Bellevue's bicycle network.

Street segments along which improvements are being considered are highlighted by a **thick dark gray line**. For project ideas along Priority Bicycle Corridors, such as the example shown at right, a **thick light gray line** shows how the project idea relates to the rest of the Priority Bicycle Corridor of which it is a part, as defined by the *2009 Pedestrian and Bicycle Transportation Plan*. Thin light gray lines help provide context for how the project idea relates to the rest of the bicycle network as it would exist in 2019 if all project ideas being considered as part of the Bicycle Rapid Implementation Program were implemented.

The map also depicts four icons along each project idea, which relate to the content on the lower right side of the page under the heading "Typical Street Sections." Colored icons that are numbered—as in the example at right—represent street sections, with colored lines identifying the approximate locations of the corresponding street section illustrations. Gray camera icons that are lettered A–D represent the approximate location of photos that are sometimes included to complement typical street sections when fewer than four sections are required to illustrate the typical design of a street.



Project Idea Number and Location

Project ideas are numbered alphabetically with prefixes that reflect the dominant bicycle classification of the corridor: PBC (Priority Bicycle Corridor), BN (Bicycle Network), or NB (Neighborhood Bikeway).

Corridor Overview and Data

Existing conditions data is provided for each project idea, including bicycle and street classification, average annual weekday traffic, posted speed limit, and existing bicycle facilities. Major destinations highlighted include schools, public transit, parks, public services, and shopping centers. Population and employment figures reflect 2015 data within one-quarter mile of project ideas. 2009

Typical Street Sections

Street sections help to illustrate what a street looks like from the perspective of the people who are bicycling, walking, and driving on it. These graphics translate a project idea line on a map into something more comprehensible, and they visually communicate what improvements like separated bike lanes could actually look like in a particular location if implemented.

Each project idea includes up to four typical street sections; however, many project ideas have fewer illustrations if there is little variation in the existing street width and/or the bicycle improvements being considered. For each pair of street sections—such as section 1 at left from Newport Hills Park-and-Ride to SE 60th St—the top image reflects existing conditions, and the bottom image reflects the PBII rapid implementation concept. If fewer than four street sections are required, photos are provided instead to help provide context for the project idea.

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DOCUMENT OVERVIEW: PROJECT IDEA TEMPLATES, PAGE 2

The second page of most two-page templates serves two purposes: (1) it identifies the issues and opportunities associated with each project idea on a map, with supplementary color-coded text and icon descriptions, and (2) it presents CAD-drawn conceptual layouts of the project idea overlaid atop aerial imagery to demonstrate the early thinking on how these ideas could potentially be realized, subject to funding, community consultation, and engineering design. This template applies to all Priority Bicycle Corridor (PBC) and Bicycle Network (BN) project ideas. Neighborhood Bikeway (NB) project ideas do not present conceptual layouts, instead describing and depicting several potential treatments for this new type of facility.

Issues and Opportunities

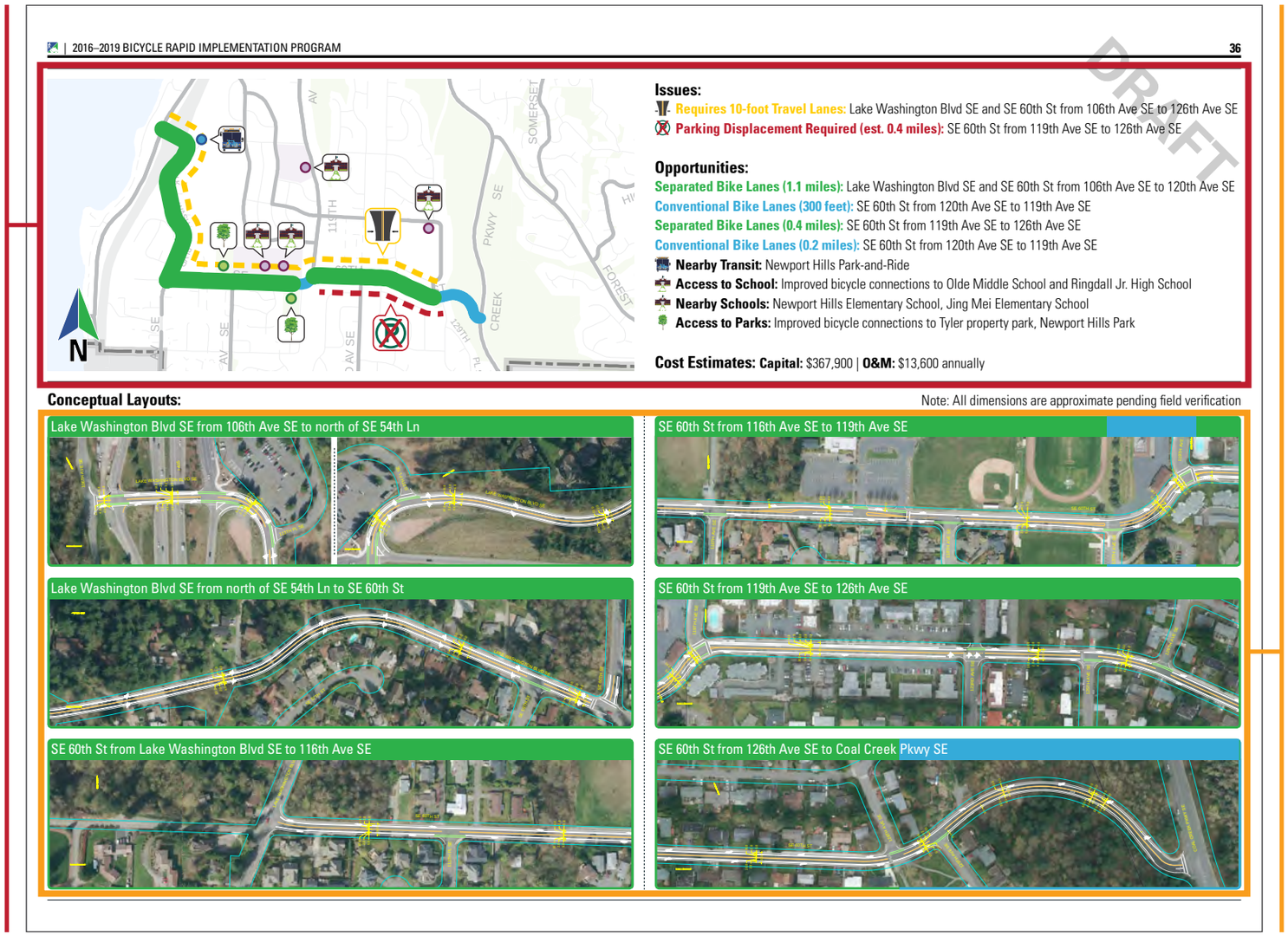
The map in the top-left provides a closer look at the project idea and its vicinity. Lines reflecting potential bicycle facility improvements—whether new facilities or upgrades to existing facilities—correspond to the color-coded text to the right of the map, and these lines also correspond to the color-coded heading bars for the conceptual layout tiles on the lower half of the page.

In the example shown at right, the leftmost **thick green line** on the map corresponds to **Separated Bike Lanes (1.1 miles)** along Lake Washington Blvd SE and SE 60th St from 106th Ave SE to 119th Ave SE; it also corresponds to the conceptual layouts shown in the three left and top right tiles with **green heading bars**.

Issues are depicted on the map with dashed lines and color-coded icons matching those in the text to the right of the map. In the example at right, the **red dashed line** and ⊗ icon indicate that on-street parking displacement would be required to accommodate the bicycle facility improvements identifed along SE 60th St between 119th Ave SE and 126th Ave SE. Other issues identified in this document include the narrowing of travel lanes, shoulder widening, and travel lane reconfiguration.

In addition to potential bicycle facility improvements, the Opportunities section also identifies destinations that the project idea would help to improve bicycle access to, both directly and nearby through connections along other routes. Destinations highlighted include transit stations and major stops, schools, parks, public services like libraries and community centers, and connections to regional trails.

Cost estimates reflect planning-level assumptions and are subject to change following engineering design.



Conceptual Layouts

The bottom half of the page presents up to six tiles containing CAD-drawn conceptual layouts of the project idea from end-to-end. Layouts are organized from top-to-bottom and left-to-right, beginning at either the west or south end of a project idea and traveling to the east or north end, depending on the orientation of the corridor. Color-coded heading bars correspond to project idea lines in the top-left map and associated text in the Opportunities section.

Conceptual layouts were created as a first level of screening to assess the viability of a project idea. For example, if a roadway has three travel lanes and is only 36-feet wide, there would be insufficient space to install new bicycle lanes on both sides. However, a different three-lane street that is 40-feet wide could accommodate 5-foot wide conventional bicycle lanes on both sides if the travel lanes are each narrowed to 10-feet wide—a width that has been proven to be as safe or safer for all road users by studies nationwide when implemented in appropriate contexts.

In the left-middle tile shown in the example at left, the conceptual layout depicts potential bicycle facility improvements along Lake Washington Blvd SE. This two-lane street is 32-feet wide and has existing 5-foot wide conventional bike lanes. The conceptual layout demonstrates that if the travel lanes were narrowed to 10-feet wide, it would be possible to upgrade the bicycle facility to a separated bike lane that is 4-feet wide with a 2-foot painted buffer.

As noted, all dimensions shown in the conceptual layouts are approximate pending field verification, but these conceptual layouts suggest provide an early indication of what may be achievable, subject to funding, community consultation, and engineering design.

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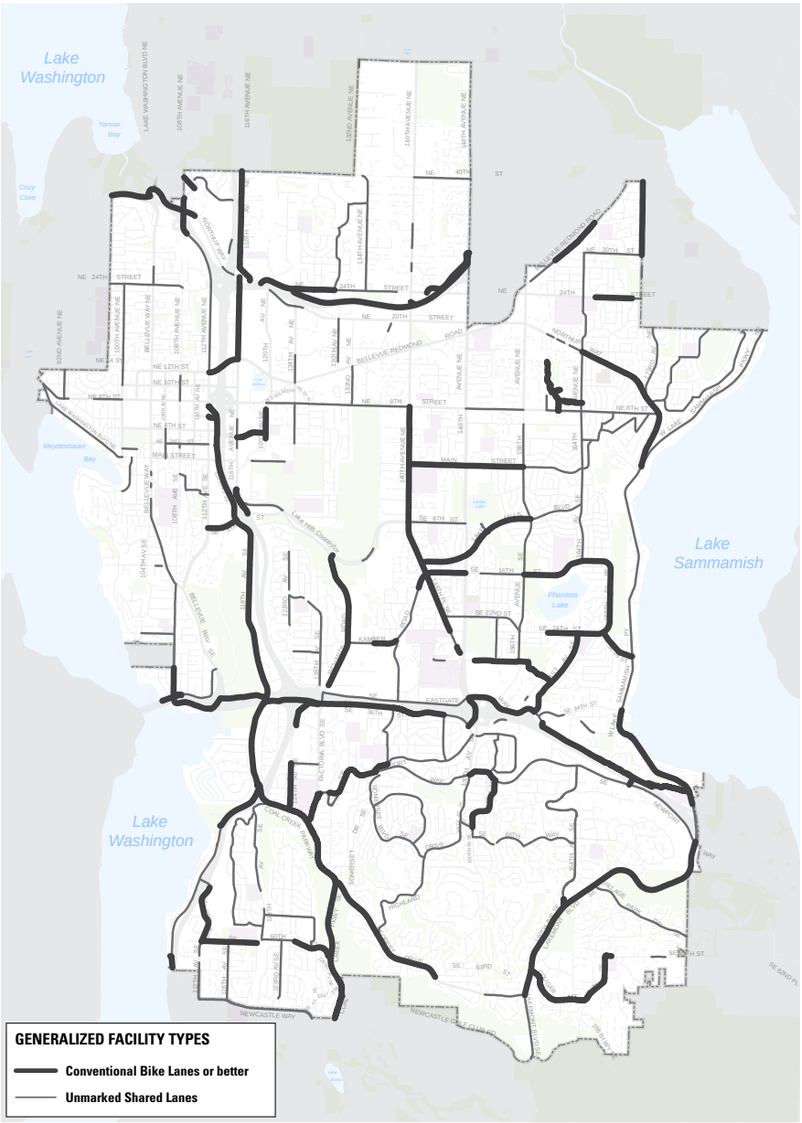
BICYCLE RAPID IMPLEMENTATION PROGRAM SUMMARY
EXISTING, POTENTIAL, FUTURE

The City of Bellevue currently has an existing Bicycle Network (bottom left) comprising 107 miles of facilities. Of this, 42 miles are conventional bicycle lanes or off-street paths, depicted in bold lines in the map below. The remaining 65 miles of bicycle facilities are wide lanes and shoulders shared with motor vehicles, and nearly all of these are unmarked for use by people on bicycles.

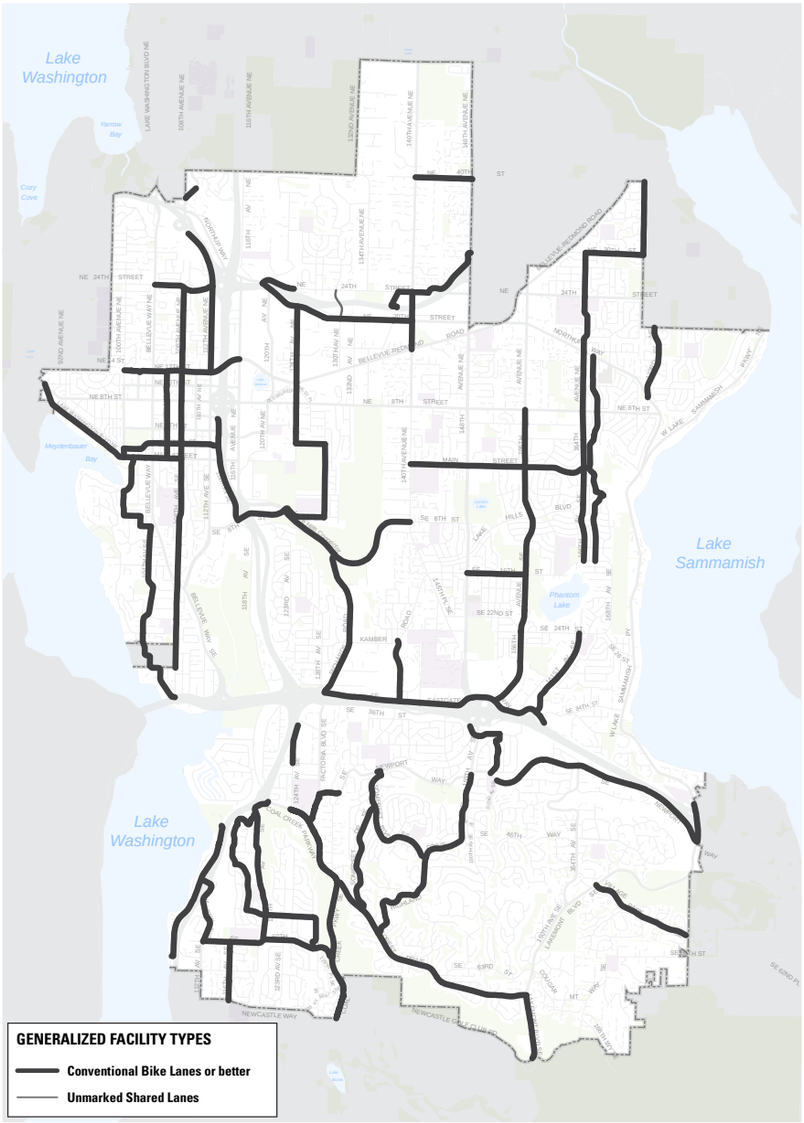
This document presents 52 project ideas that are collectively referred to as the Bicycle Rapid Implementation Program (BRIP), which would implement 57 miles of new and upgraded existing bicycle facilities citywide (bottom center). Completion of the BRIP—together with several already funded projects (see page ix)—would expand the Bicycle Network (bottom right) to 128 miles of facilities. Of this, 75 miles would be conventional bicycle lanes, separated bicycle lanes, and off-street paths; unmarked shared roadway would be reduced to 35 miles citywide.

The following pages provide additional details about the existing network, BRIP package, other funded projects, and resulting Bicycle Network, including mileage by facility type, the population and number of jobs accessible along each facility type, the number of publicly-submitted Wikimap points located along each network, and bicycle connections to transit along each network.

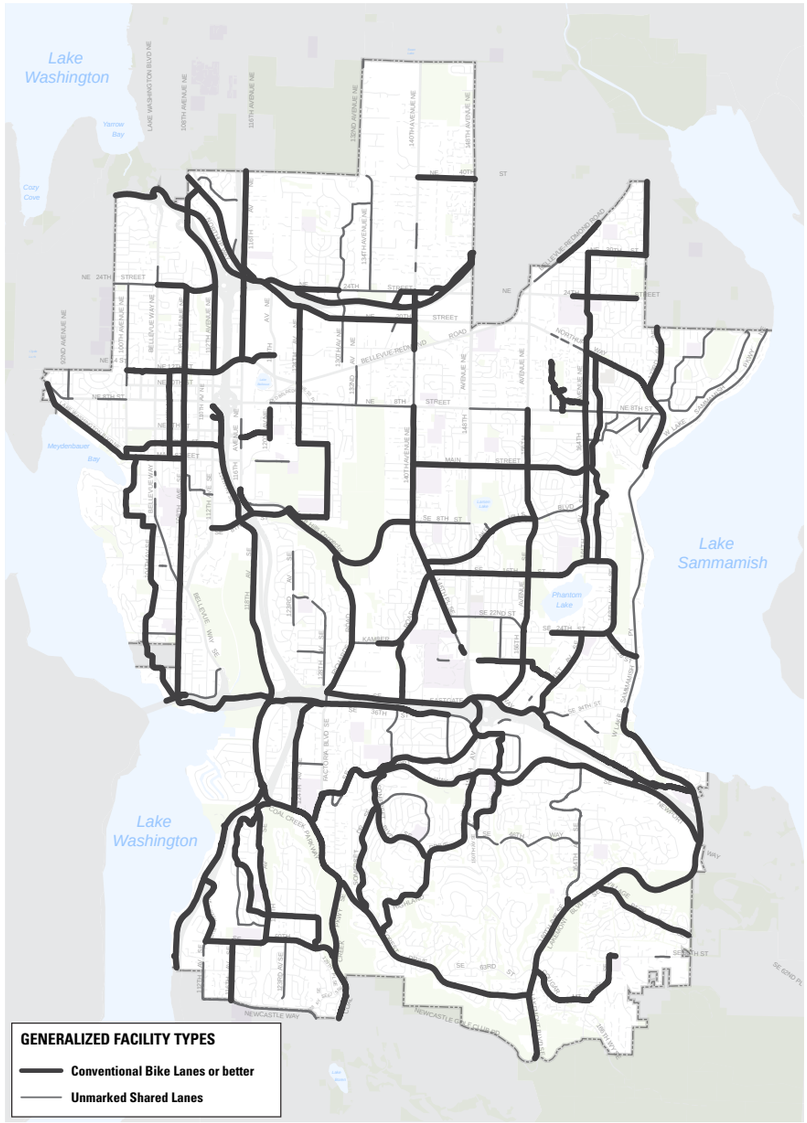
Existing Bicycle Facilities, March 2016



BRIP Project Ideas



Resulting Bicycle Facilities, Post-BRIP Completion



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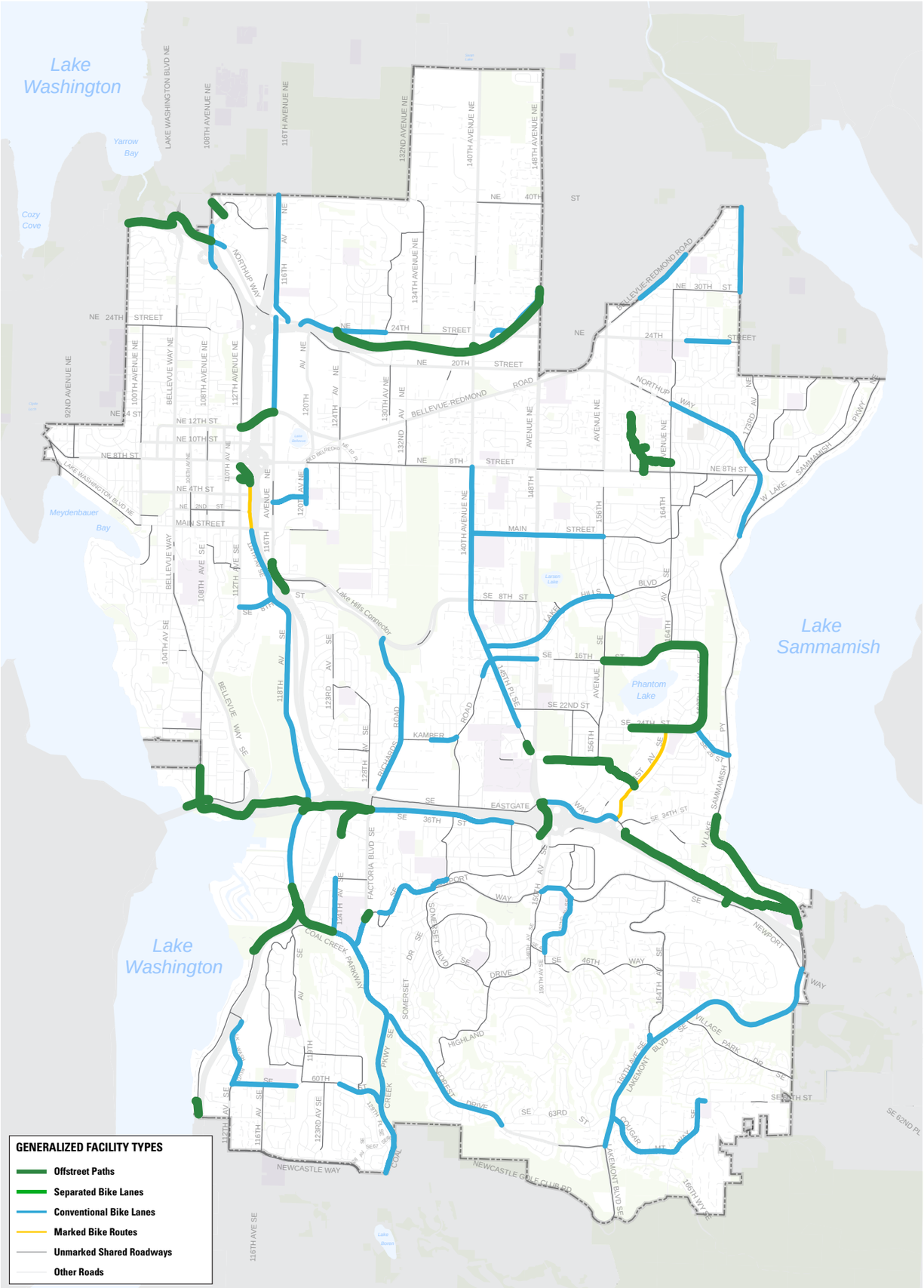

EXISTING BICYCLE NETWORK: GENERALIZED FACILITY TYPES

107 Miles comprising Bicycle Network

42 Miles with bike lanes or better

Miles by generalized facility type:

13.5 Off-street Paths

28.5 Conventional Bike Lanes

1.2 Marked Shared Roadways

64.3 Unmarked Shared Roadways

0 Number of complete, connected cross-city bicycle corridors

Population living near:*.

27,091 Off-street Paths

64,721 Conventional Bike Lanes

4,373 Marked Shared Roadways

Number of jobs near:*.

59,738 Off-street Paths

58,027 Conventional Bike Lanes

18,959 Marked Shared Roadways

Percentage of Wikimap "bicycle accommodation issue" points located along...

59% the Bicycle Network (all facilities)

26% Conventional Bike Lanes

28% Unmarked Shared Roadways

Percentage of bus stops with bicycle connections along...

65% the Bicycle Network (all facilities)

25% bike lanes or better

Percentage of average daily transit boardings and alightings with bicycle connections along...

37% the Bicycle Network (all facilities)

15% bike lanes or better

*Population and jobs within one quarter-mile of bicycle facilities

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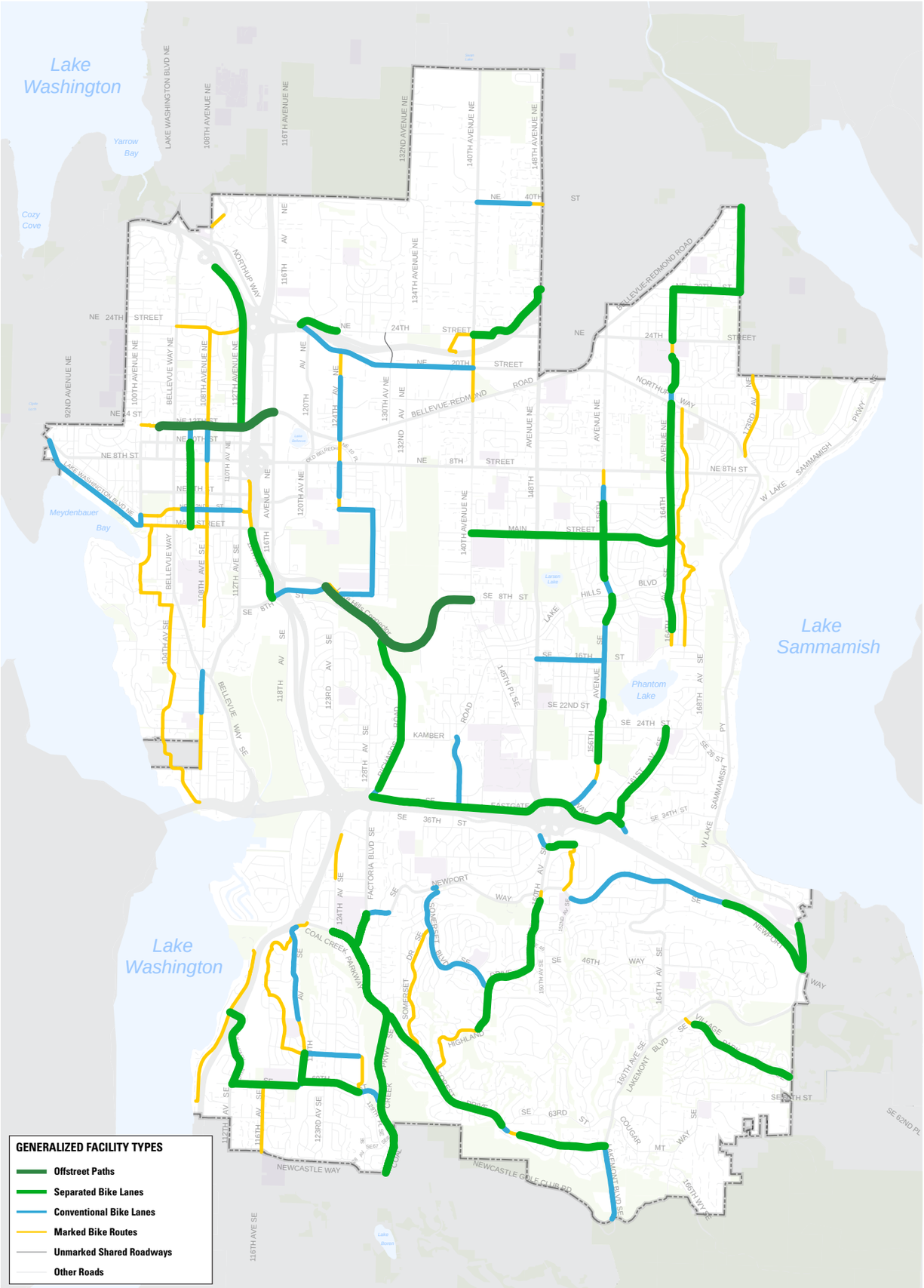

BRIP PROJECT IDEAS: CANDIDATE NEW & IMPROVED FACILITIES

52 Number of project ideas

57 Miles of bicycle facility improvements

Miles of improvement by generalized facility type:

- **2.4** Off-street Paths
- **12.9** Conventional Bike Lanes
- **23.5** Separated Bike Lanes
- **18.0** Marked Shared Roadways

Change in population living near project ideas for:*..

- **+7,807** Off-street Paths
- **+16,923** Conventional Bike Lanes
- **+59,168** Separated Bike Lanes
- **+53,303** Marked Shared Roadways

Change in the number of jobs near project ideas for:*..

- **+9,306** Off-street Paths
- **+43,639** Conventional Bike Lanes
- **+83,266** Separated Bike Lanes
- **+44,136** Marked Shared Roadways

Percentage of Wikimap "bicycle accommodation issue" points located along project ideas for...

- **33%** in total (all facilities)
- **13%** Conventional Bike Lanes
- **14%** Separated Bike Lanes

Percentage of bus stops with bicycle connections along...

- **40%** all project ideas
- **32%** project ideas for bike lanes or better

Percentage of average daily transit boardings and alightings with bicycle connections along...

- **59%** all project ideas
- **56%** project ideas for bike lanes or better

*Population and jobs within one quarter-mile of bicycle project ideas

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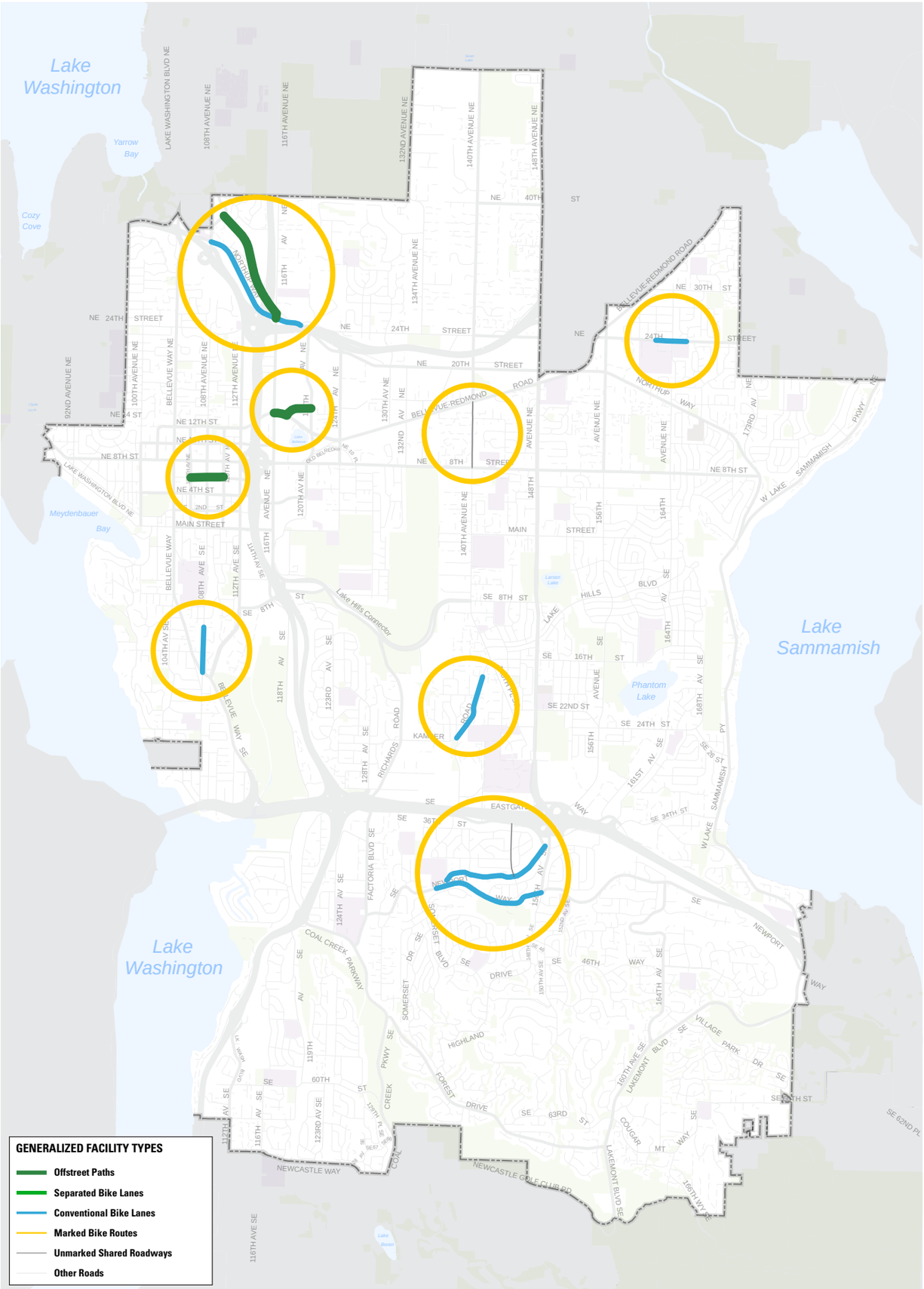

OTHER FUNDED PROJECTS, 2016–2019: OVERLAY, CIP, AND KING COUNTY PROJECTS

11 Number of bicycle projects separate from the BRIP

5.8 Miles of bicycle facility improvements

Miles of improvement by generalized facility type:

1.2 Off-street Paths

3.7 Conventional Bike Lanes

0.9 Marked Shared Roadways

Percentage of Wikimap "bicycle accommodation issue" points located along...

14% the Bicycle Network (all facilities)

11% Conventional Bike Lanes

2% Unmarked Shared Roadways

Projects associated with the 2016 Pavement Overlay Program:

- **108th Ave SE** from Bellevue Way SE to SE 12th St: Conventional Bike Lane (one side)
- **140th Ave NE** from NE 8th St to Bel-Red Rd: Unmarked Shared Roadway (4-ft shoulder)
- **146th Ave SE** from SE Allen Rd to SE 36th St: Unmarked Shared Roadway (4-ft shoulder)
- **Kamber Rd** from 139th Ave SE to SE 18th St: Conventional Bike Lane (one side)
- **NE 24th St** from 162nd Ave NE to 166th Ave NE: Conventional Bike Lane (one side)
- **SE Allen Rd** from 138th Ave SE to SE 38th St: Conventional Bike Lane (one side), Sharrows (one side)

Projects associated with Capital Investment Program (CIP) projects:

- **NE 6th St Pedestrian Corridor** from 106th Ave NE to 108th Ave NE: Off-street path
- **Newport Way** from Somerset Blvd SE to 150th Ave SE: Conventional Bike Lanes (both sides)
- **Northup Way** from NE 33rd Pl to NE 24th St: Conventional Bike Lanes (both sides)
- **NE Spring Blvd** from 116th Ave NE to 120th Ave NE: Off-street Path

Projects being completed by King County:

- **Eastside Rail Corridor** from 108th Ave NE to Northup Way: Off-street Path

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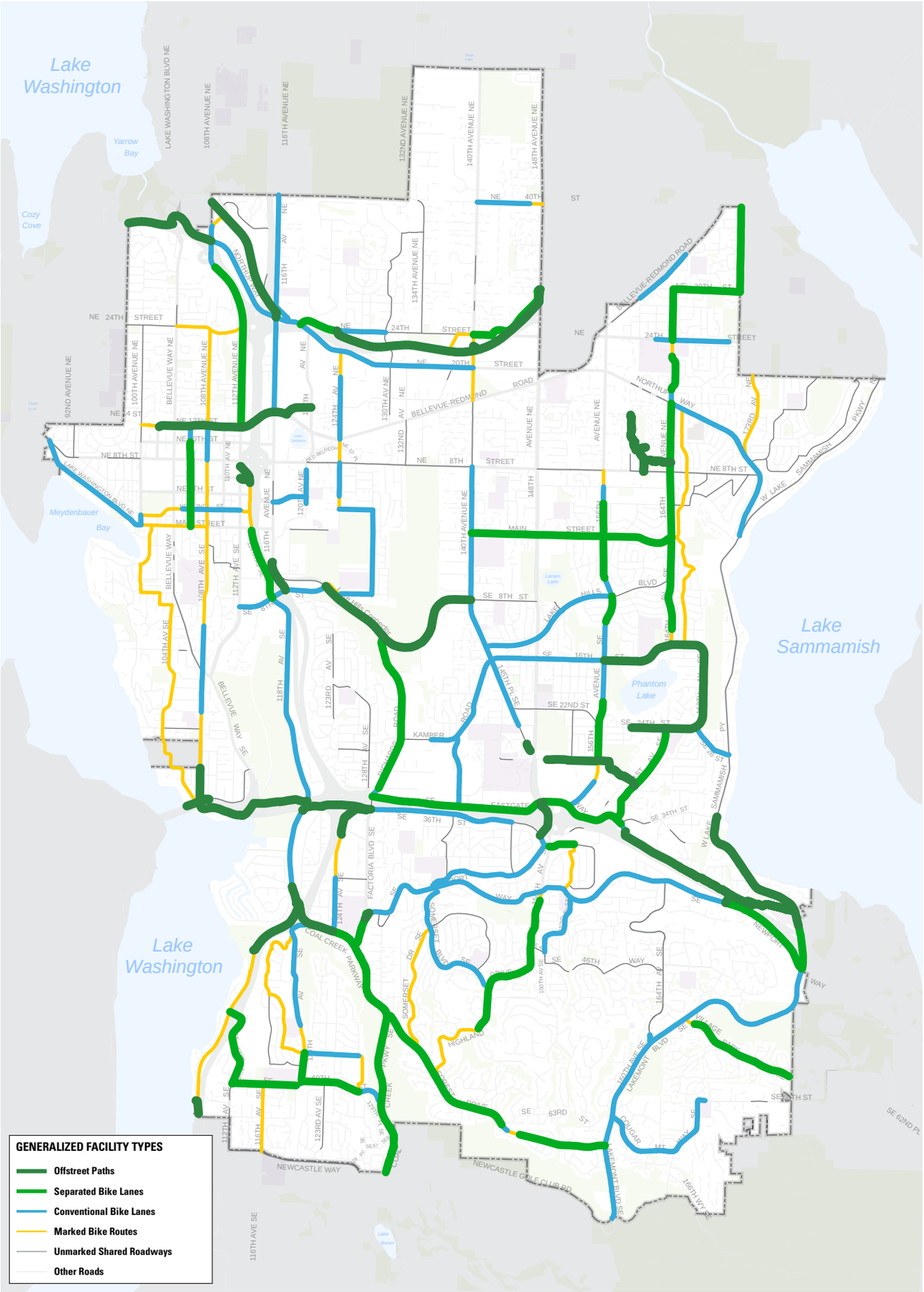

RESULTING BICYCLE NETWORK: GENERALIZED FACILITY TYPES

128 Miles comprising Bicycle Network

75 Miles with bike lanes or better

Miles by generalized facility type:

16.8 Off-street Paths

23.5 Separated Bike Lanes

35.0 Conventional Bike Lanes

18.0 Marked Shared Roadways

10 Number of complete, connected cross-city bicycle corridors

Population living near:*.

34,898 Off-street Paths

59,168 Separated Bike Lanes

81,644 Conventional Bike Lanes

57,675 Marked Shared Roadways

Number of jobs near:*.

68,774 Off-street Paths

83,266 Separated Bike Lanes

101,667 Conventional Bike Lanes

63,096 Marked Shared Roadways

Percentage of Wikimap "bicycle accommodation issue" points located along...

78% the resulting Bicycle Network

14% Separated Bike Lanes

40% Conventional Bike Lanes

17% Unmarked Shared Roadways

Percentage of bus stops with bicycle connections along...

77% the resulting Bicycle Network

50% bike lanes or better

Percentage of average daily transit boardings and alightings with bicycle connections along...

74% the resulting Bicycle Network

63% bike lanes or better

*Population and jobs within one quarter-mile of bicycle facilities