



BELLEVUE
**PEDESTRIAN
& BICYCLE**
IMPLEMENTATION INITIATIVE

Bicycle Rapid Implementation Program (BRIP) Budget Proposal

Transportation Commission Workshop

April 28, 2016

Franz Loewenherz, Senior Planner

Transportation Department

City of Bellevue

*Staff requests Transportation Commission provide direction on the narrative, and an expenditure amount, for a Bicycle Rapid Implementation Program budget proposal that includes the installation of bicycle infrastructure (**amount TBD**) and installation of counter technology equipment (**\$177,000**).*



- 1) PBII Context**
- 2) BRIP Process**
- 3) BRIP Options**





- 1) 2009 Plan**
- 2) PBII Principles**
- 3) PBII Oversight**
- 4) PBII Task 2**





2009

city of bellevue
pedestrian & bicycle
transportation plan report



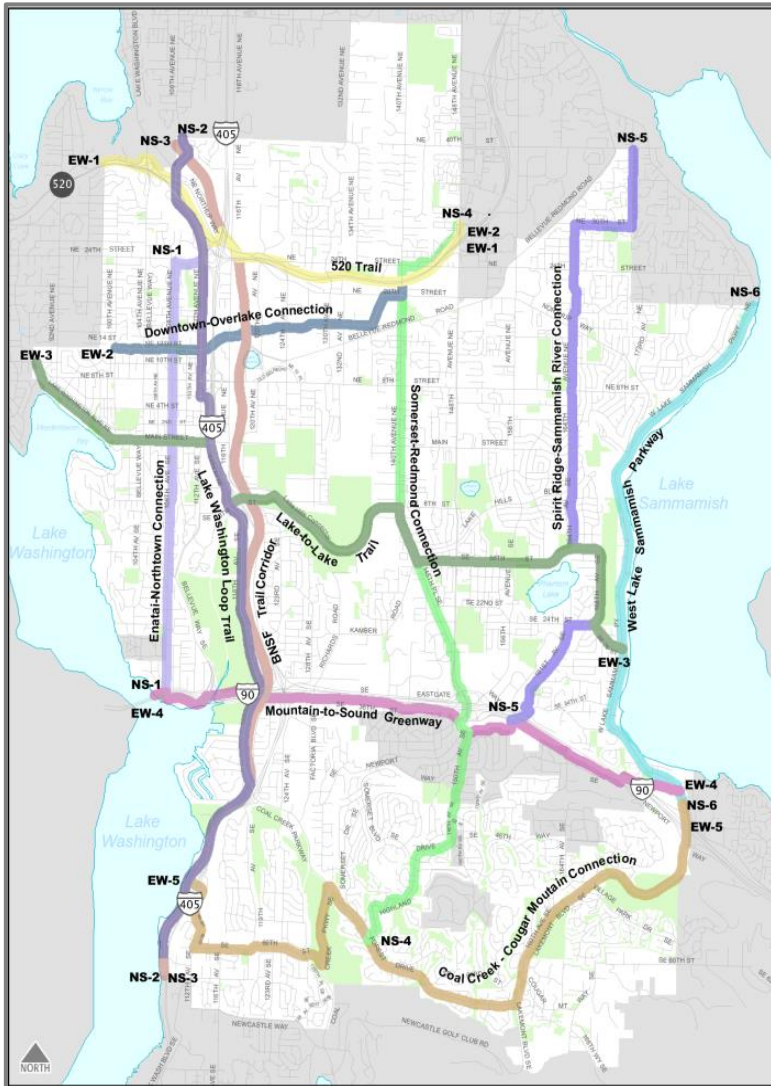
- Formulated vision, goals, objectives.
- Assessed gaps in the non-motorized network.
- Established performance targets.

Ordinance No. 5861 (2/17/2009)



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2009 Pedestrian & Bicycle Plan



2014 Performance Target:

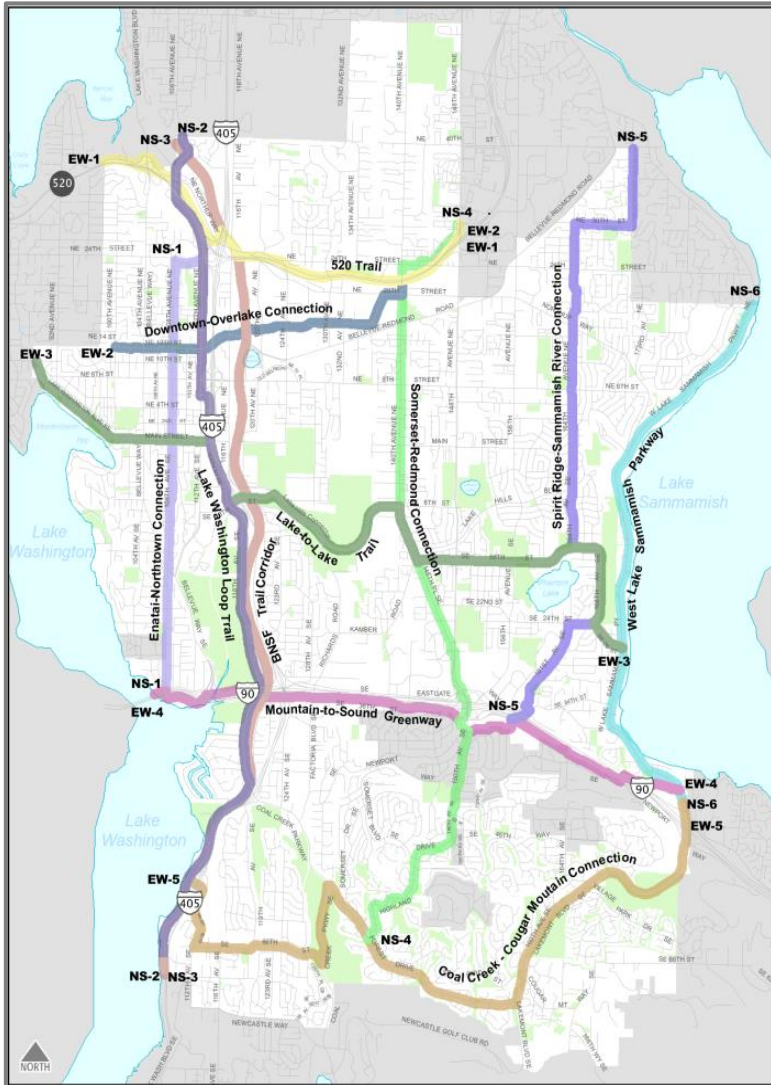
“Within 5 years, implement at least one completed and connected east-west and north-south bicycle route through Downtown Bellevue.”

- 2009 Pedestrian & Bicycle Transportation Plan



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Priority Bicycle Corridors



2019 Performance Target:

“Within 10 years, implement at least two completed, connected, and integrated north-south and at least two east-west bicycle routes that connects the boundaries of the city limits, and connects to the broader regional bicycle system.”

- 2009 Pedestrian & Bicycle Transportation Plan



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Priority Bicycle Corridors

Bellevue City Council

Claudia Balducci
Mayor

Kevin Wallace
Deputy Mayor

John Chelminiak
Councilmember

Conrad Lee
Councilmember

Jennifer Robertson
Councilmember

Lynne Robinson
Councilmember

John Stokes
Councilmember

PBII Program Principles

To guide the Transportation Commission in its oversight of the PBII, the Bellevue City Council approved the following set of **Program Principles**:

The City Council envisions an accessible, well-connected network of pedestrian and bicycle facilities for Bellevue that (i) enhances livability, (ii) supports economic vitality, and (iii) serves the mobility needs of people of all ages and abilities. The Council developed the following set of Program Principles to direct the Pedestrian & Bicycle Implementation Initiative, a complement of action-oriented efforts that advance non-motorized facility designs and programs identified by the 2009 Pedestrian and Bicycle Transportation Plan to meet or exceed the City's 2019 targets and position the City to realize its long-term vision for a walkable and bikeable Bellevue.

1. Continue to aspire to the vision established by the 2009 Pedestrian and Bicycle Transportation Plan, pursue its goals, which should not be diluted, and monitor its established measures of effectiveness.
2. Undertake an action-oriented initiative that advances projects and programs to help realize the City's vision.
3. Provide a safe pedestrian and bicycle environment, which is a prerequisite to making non-motorized travel a viable, attractive option in Bellevue.
4. Advance the implementation of Bellevue's planned Bicycle Priority Corridors to facilitate continuous bicycle travel along a connected grid of safe facilities throughout the city and the region.
5. Research pedestrian and bicycle count technologies to improve the City's data driven decision-making.
6. Determine where pedestrian and bicycle investments can improve the connectivity of the multi-modal transportation system.
7. Coordinate with other efforts underway in Bellevue related to pedestrian and bicycle issues.
8. Identify partnership opportunities to advance the implementation of non-motorized projects and programs.
9. Engage community stakeholders in setting the priorities for investment in non-motorized facilities.
10. Refine existing metrics to track plan progress and engage other departments as needed to foster a One City commitment to active transportation.

Continue to aspire to the vision established by the 2009 Pedestrian and Bicycle Transportation Plan, pursue its goals, which should not be diluted, and monitor its established measures of effectiveness.

- Approved by the Bellevue City Council (February 2015)



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Advance the implementation of Bellevue's planned Bicycle Priority Corridors to facilitate continuous bicycle travel along a connected grid of safe facilities throughout the city and the region.

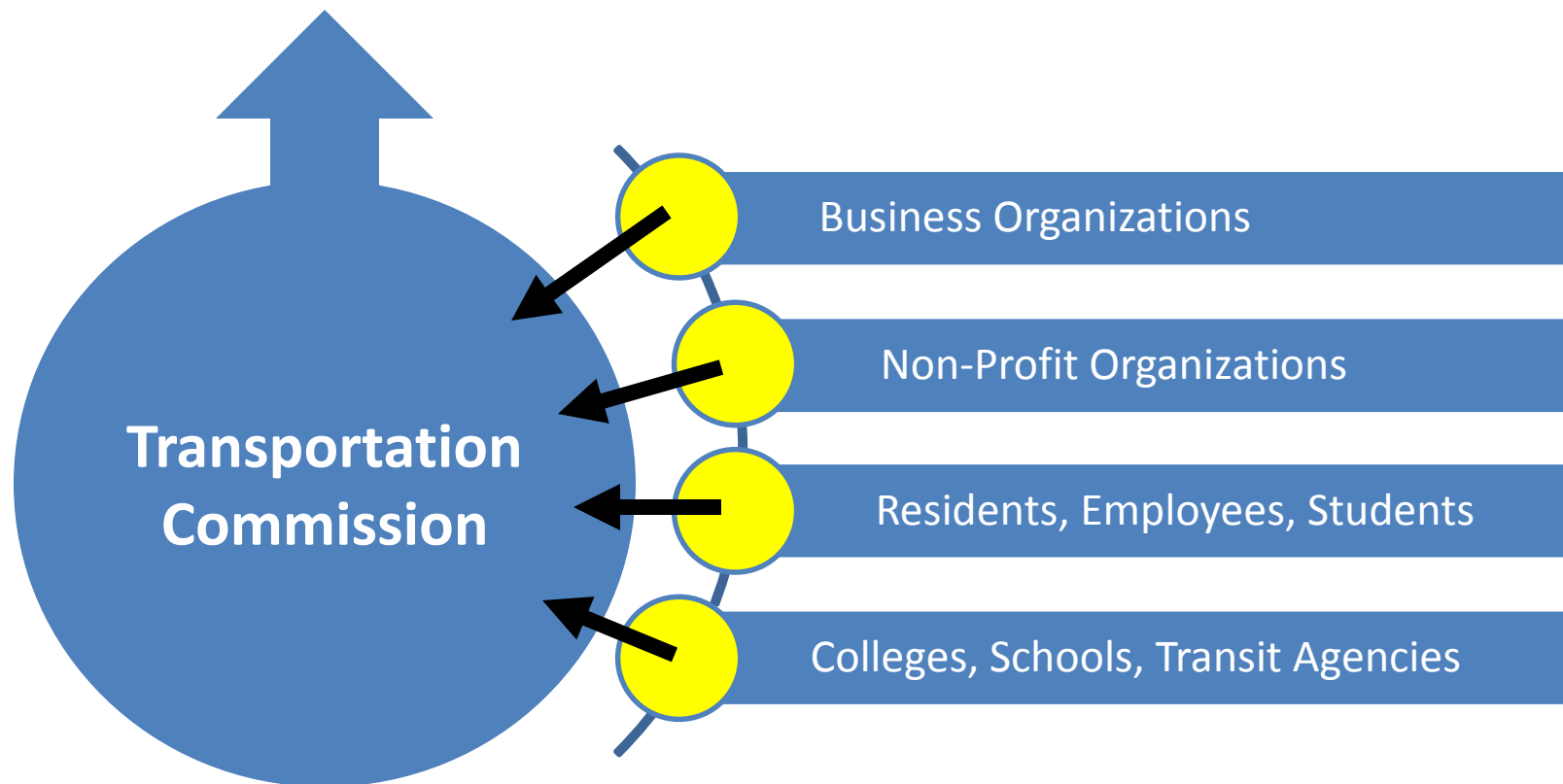
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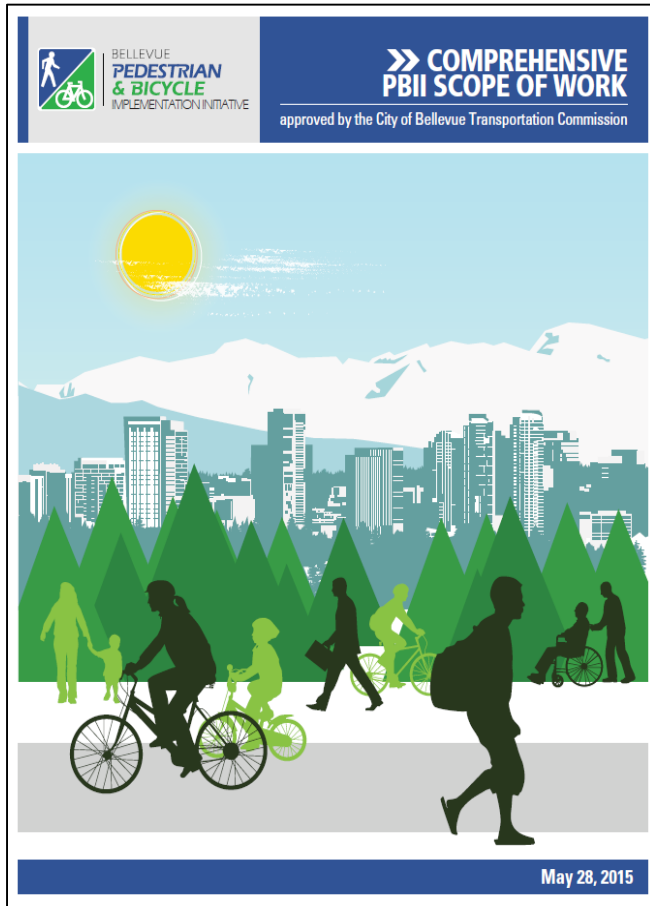


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PBII Program Principles

Bellevue City Council





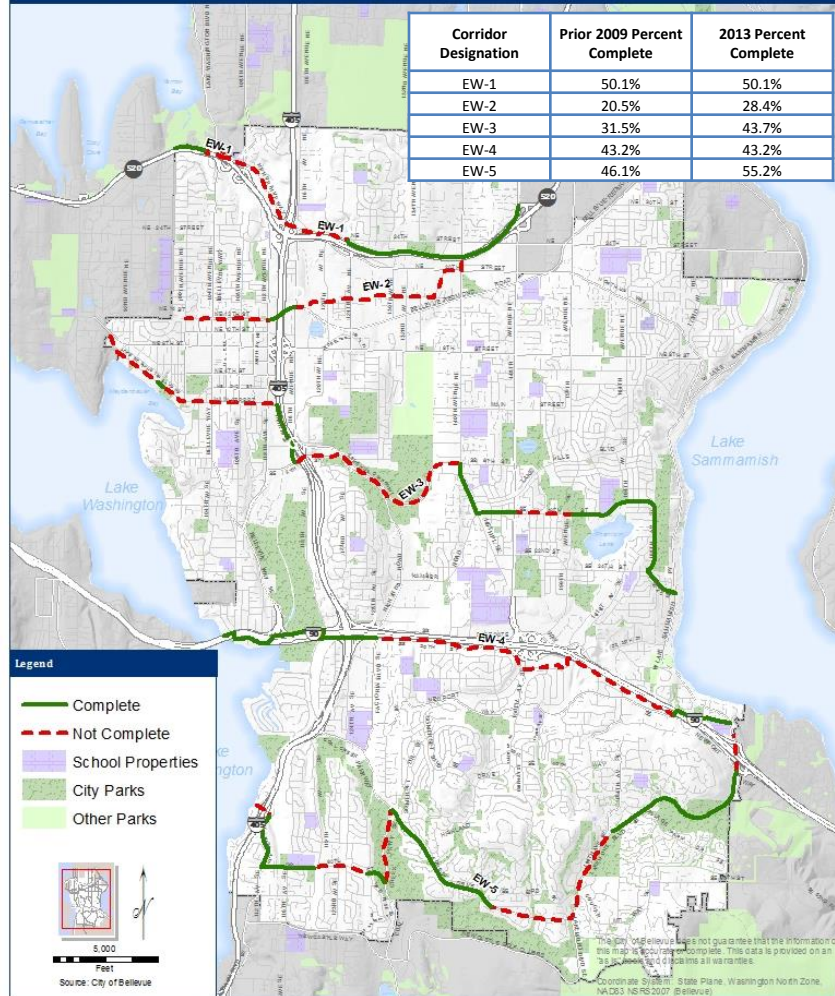
1. Ped-Bike Safety Assessment Report
2. Bicycle Priority Corridor Design Report
3. Transit Master Plan Integration Report
4. Implementation/Funding Strategy Report
5. Count Technology Report
6. Bike-Share Implementation Report
7. Performance Management Report



- 1) Progress Report**
- 2) Best Practices**
- 3) Community Input**
- 4) Project Ideas**
- 5) Community Input**
- 6) BRIP Options**



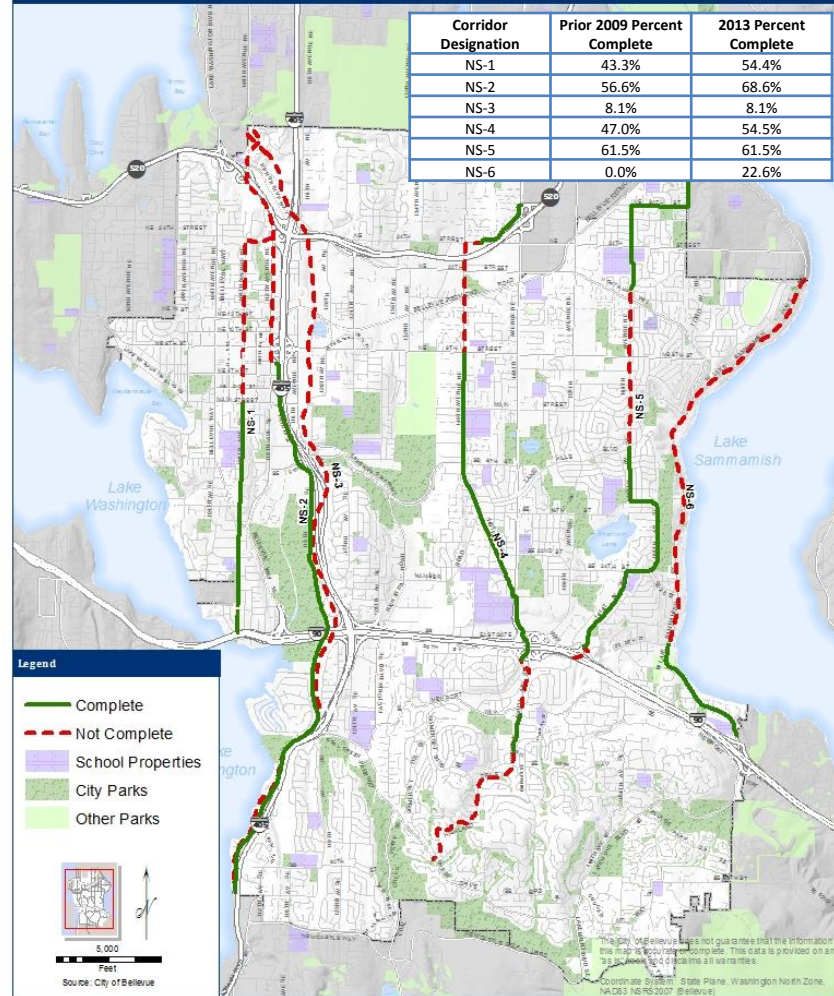
E-W Priority Bicycle Corridors Completion Status 2013



Date: 9/25/2014 File Name: V:\trid\gis\shape\Planning\GIS\Bellevue\FolderE-W\PrioritE-W\PriorityBicycleCorridors2013.mxd

IT Department

N-S Priority Bicycle Corridors Completion Status 2013



Date: 9/25/2014 File Name: V:\trid\gis\shape\Planning\GIS\Bellevue\FolderE-W\PrioritE-W\PriorityBicycleCorridors2013.mxd

IT Department



“The separated lane is very attractive for safety reasons. My greatest concern is the taking of scarce roadway space for a limited user base.” – Lampe

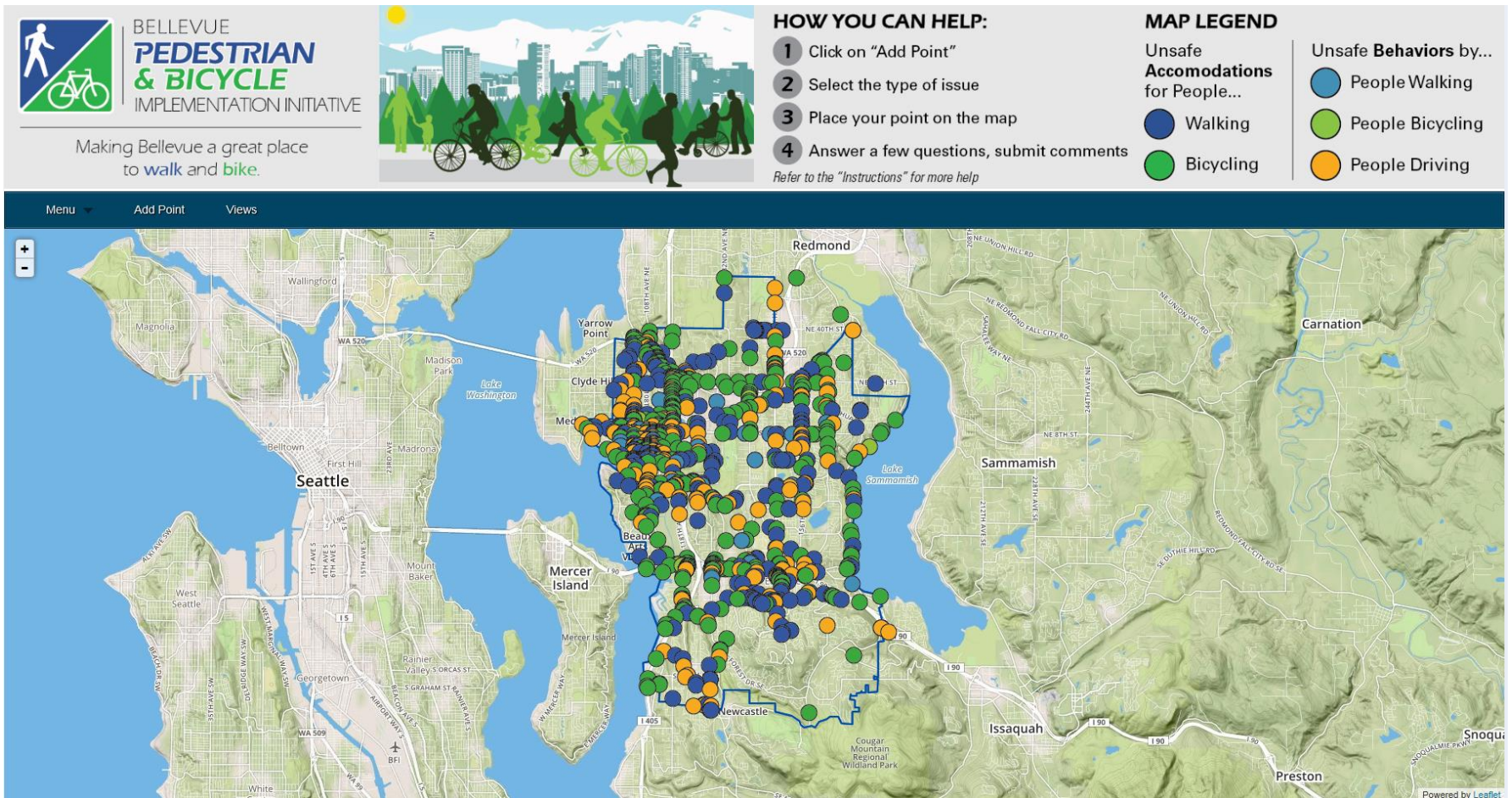


“Separating the biker from traffic is a given.... We provide it for cars to prevent accidents. We should provide it for bikers given the imbalance in protection.” – Barksdale



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Best Practices (SDOT 8/18/15)



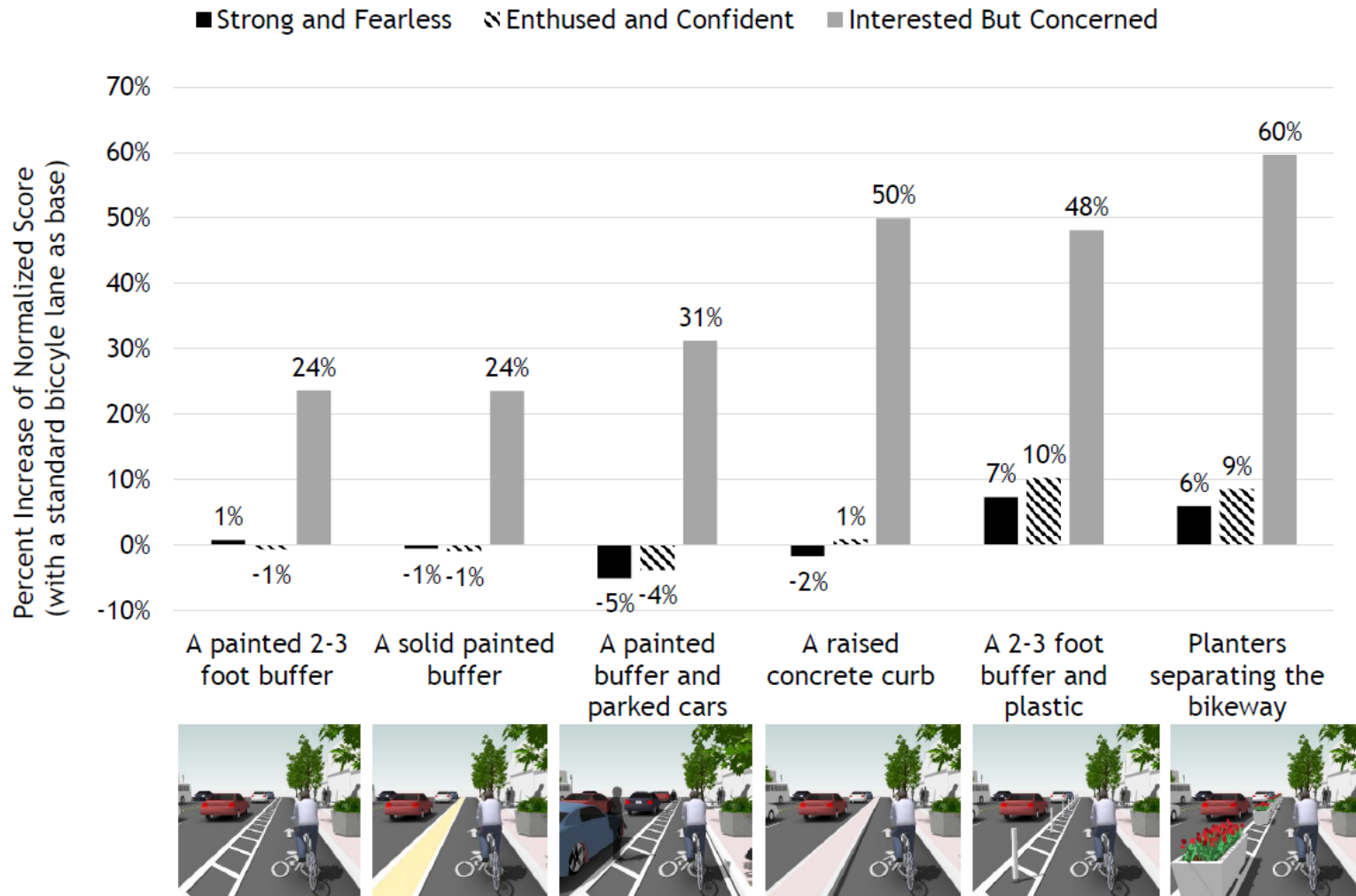
From August 26 – October 31 (2015) 700+ people created 1,600+ points on the wikimap identifying locations where they have noticed conditions making it uncomfortable for people walking and bicycling.



“Downtown Bellevue is not an area where the faint of heart would choose to ride; that said, it is prime for investment to attract additional riders. What’s needed are safe and inviting bicycle facilities that are separated from the auto.”

- Karen Doherty, Vice President, Puget Sound Area Manager of HDR

Change in Stated Comfort (from a bike lane), by bicyclist type



Source: Portland State University, *Lessons from the Green Lanes: Evaluating Protected Bike Lanes*, 2014.

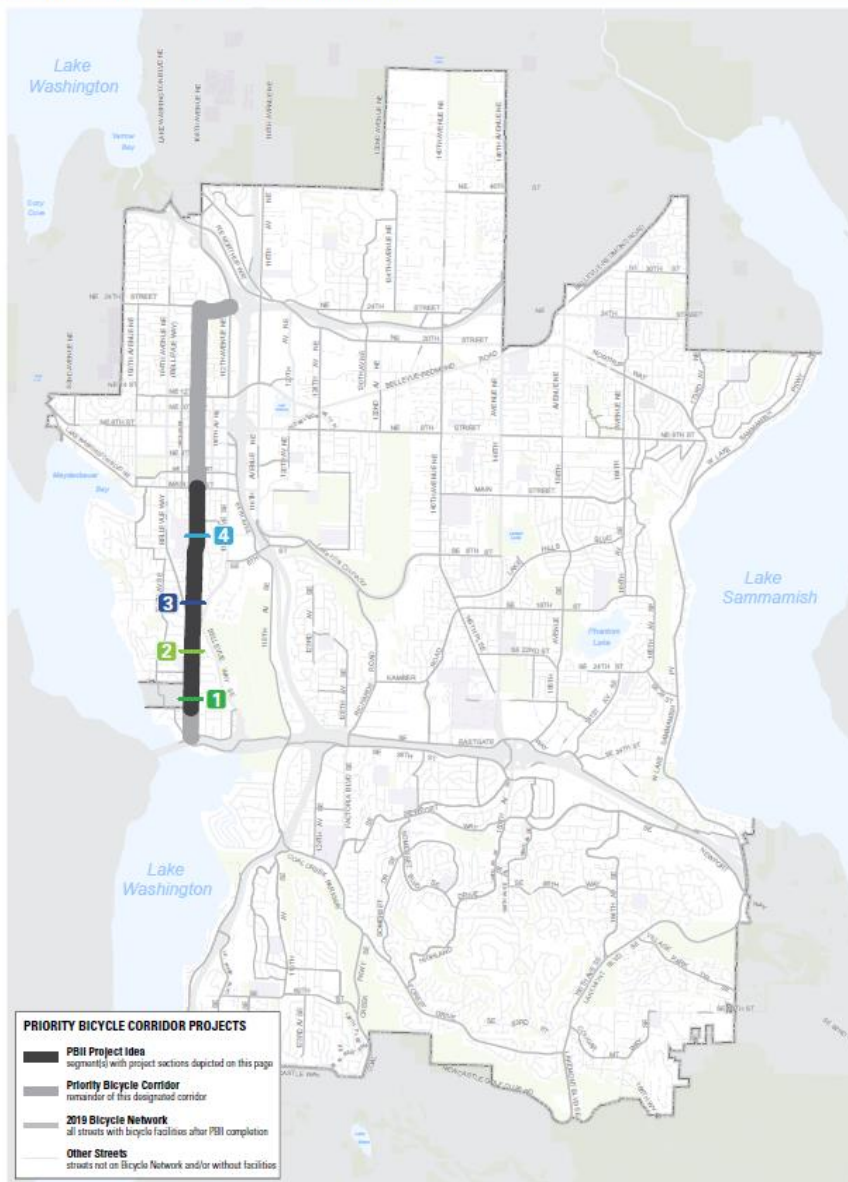


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Commission Briefing (12/10/15)

The Bicycle Rapid Implementation Program (BRIP) strives to fill gaps **[Connected]** along the Priority Bicycle Corridor network, and planned bicycle network, with facilities that appeal to “interested but concerned” bicyclists **[Protected]**. The BRIP approach emphasizes implementation of low cost/ short timeframe **[Rapid]** projects.

- **Connected**: Prioritizes a connected network that “fills the gaps” in lieu of piece-meal implementation.
- **Protected**: Promotes physically separated facilities to minimize conflicts between roadway users where possible.
- **Rapid**: Identifies early-win opportunities that can be implemented quickly to advance project delivery.



» PROJECT IDEA PBC-1: 108TH AVE SE (SOUTH OF MAIN ST)

Bicycle Classification: Priority Bicycle Corridor

Street Classifications: Collector Arterial

Traffic Volumes (AAWT):

4,700 (SE 12th St to Main St)

Posted Speed Limits:

25 MPH

Existing Bicycle Facilities:

Wide Lane/Shared Shoulder (SE 25th St to SE 14th St);

Shared/Wide Outside Lane, Both Sides (SE 30th St to SE 25th St)

Major Nearby Destinations:

Downtown Bellevue, South Bellevue Park-and-Ride, Bellevue High School, Enatai Elementary School, Mercer Slough Nature Park

Bicycle Network Connections:

I-90 Trail (PBC), Lake-to-Lake Trail (PBC)

Population (¼-mile buffer):

5,739 residents

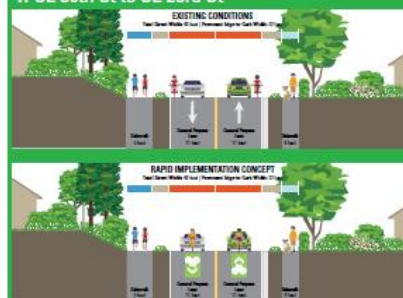
Employment (¼-mile buffer):

9,728 jobs

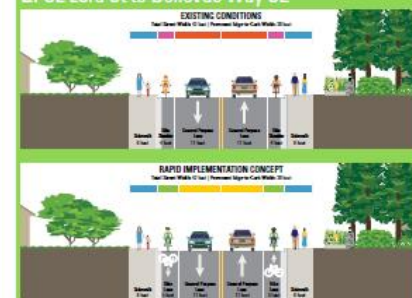
2009 Plan Projects: B-138 (Medium)

Typical Street Sections:

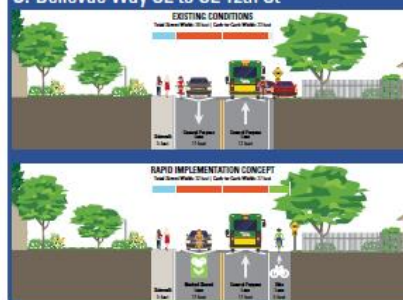
1. SE 30th St to SE 23rd St



2. SE 23rd St to Bellevue Way SE



3. Bellevue Way SE to SE 12th St



4. SE 12th St to Main St

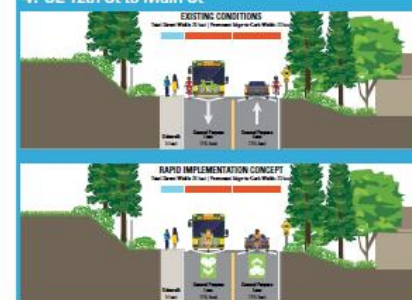


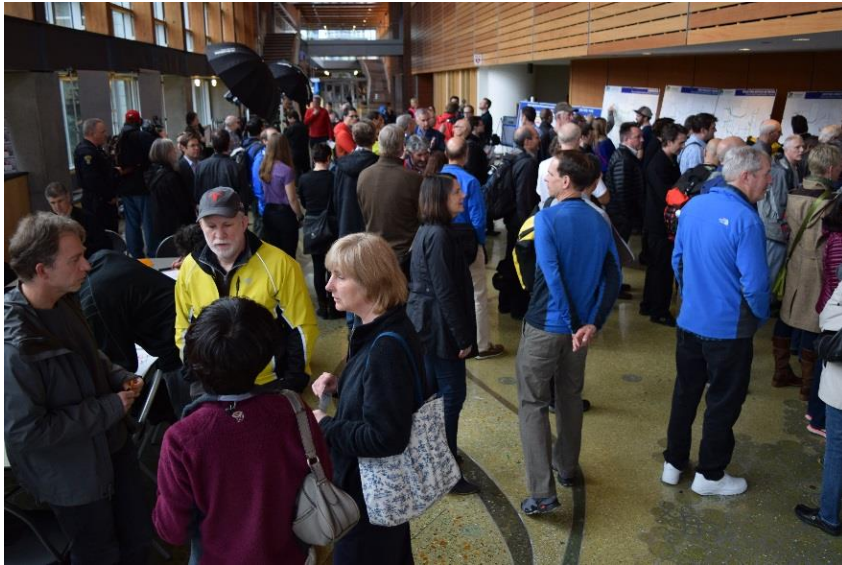
Photo Source: Google Maps Street View

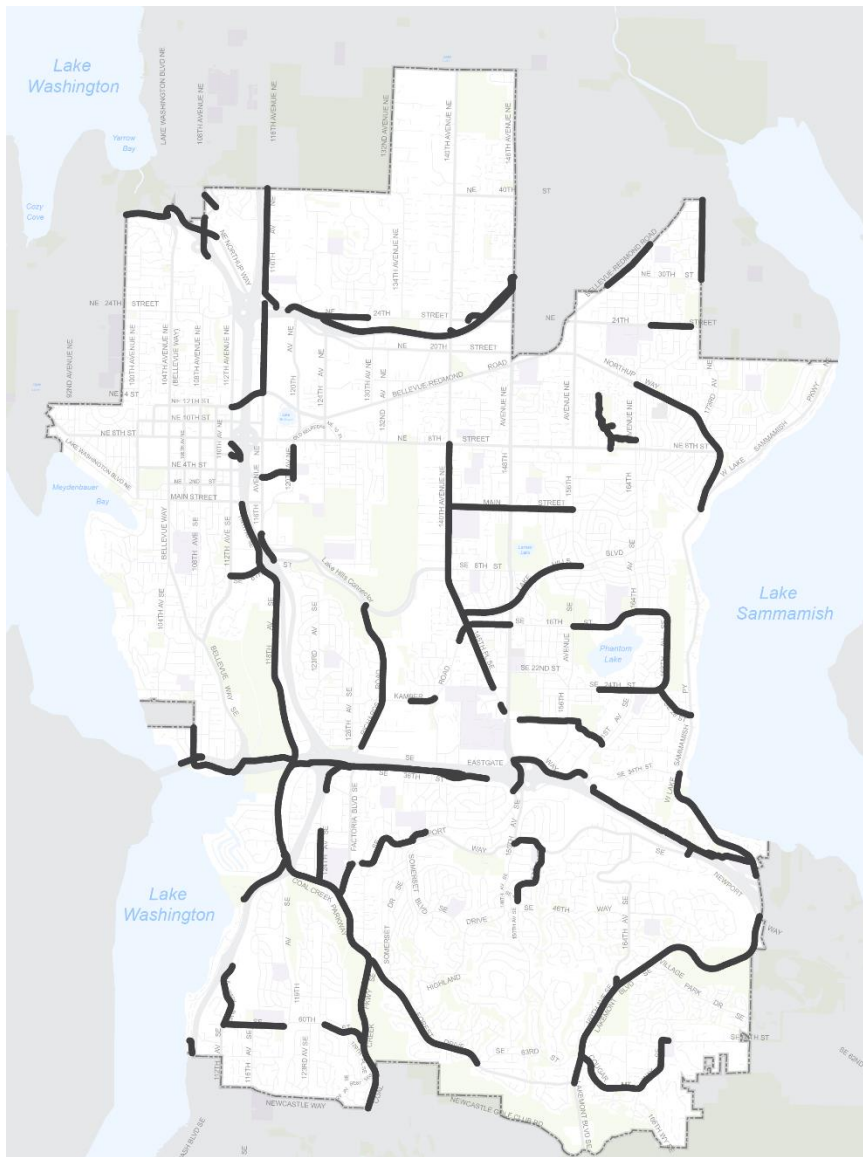


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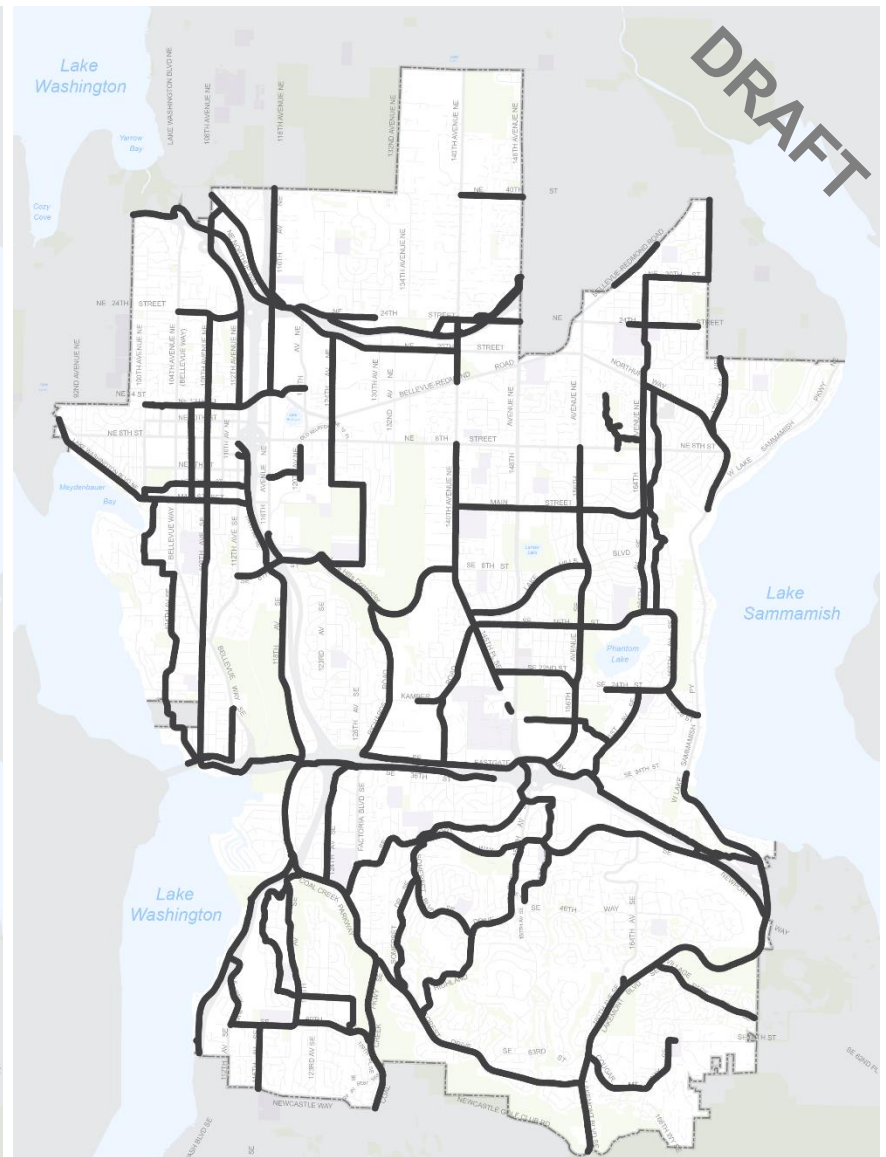
Commission Briefing (1/28/16)







Existing Bicycle Network



Bicycle Rapid Implementation Program Network

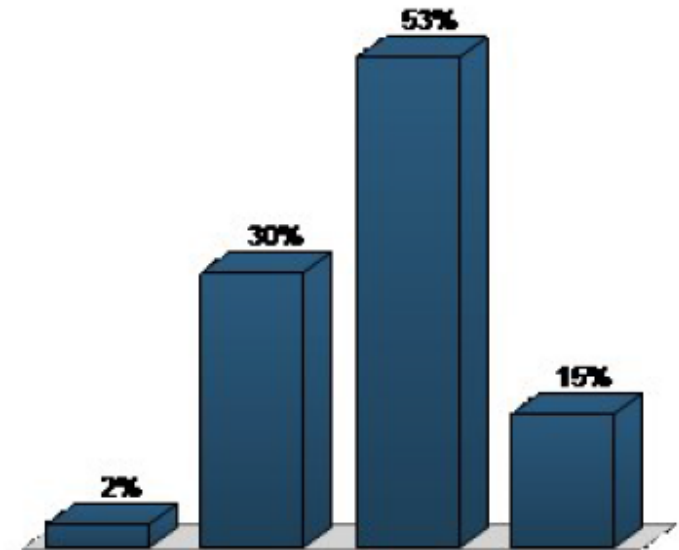


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BRIP Open House (Project Ideas)

Which of these types of facilities would encourage you to bicycle in Bellevue? (Multiple Choice)

	Responses	
	Percent	Count
Shared Lane Marking	2.42%	3
Bike Lane	29.84%	37
Protected Bike Lane	53.23%	66
Off-Street Path	14.52%	18
Totals	100%	124





CONNECTED

Comments/Suggestions:

Gaps in the network are barriers for families and all those who are not brave about biking in traffic.

Intersections ~~are~~ need care - that's where most of the danger lies.

Use all available space for wider bike lanes and wider buffers.

PROTECTED

Comments/Suggestions:

Sharrows are not bicycle infrastructure. The only people that sharrows make feel better are the DOT staff who pat each other on the back and pretend they actually did something.

NACTO does not list sharrows as acceptable infra.

You need to do better.

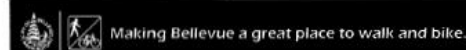
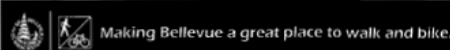
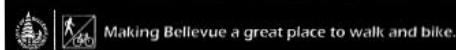
#Vision Zero

RAPID

Comments/Suggestions:

20 years of cycling here have made me cynical. So little progress and always talking about the far off future. You have a 2009 plan that FAILED to meet its goals. How will you correct that ASAP? Your butts should be on fire if we need urgent change - especially in the downtown area. We have skyscrapers being built & no art for people to bike around downtown - it may be too late - more cars coming in. Get to it today!!

Evan Morris
425 443 2588





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Making Bellevue a great place
to **walk** and **bike**.



HOW YOU CAN HELP:

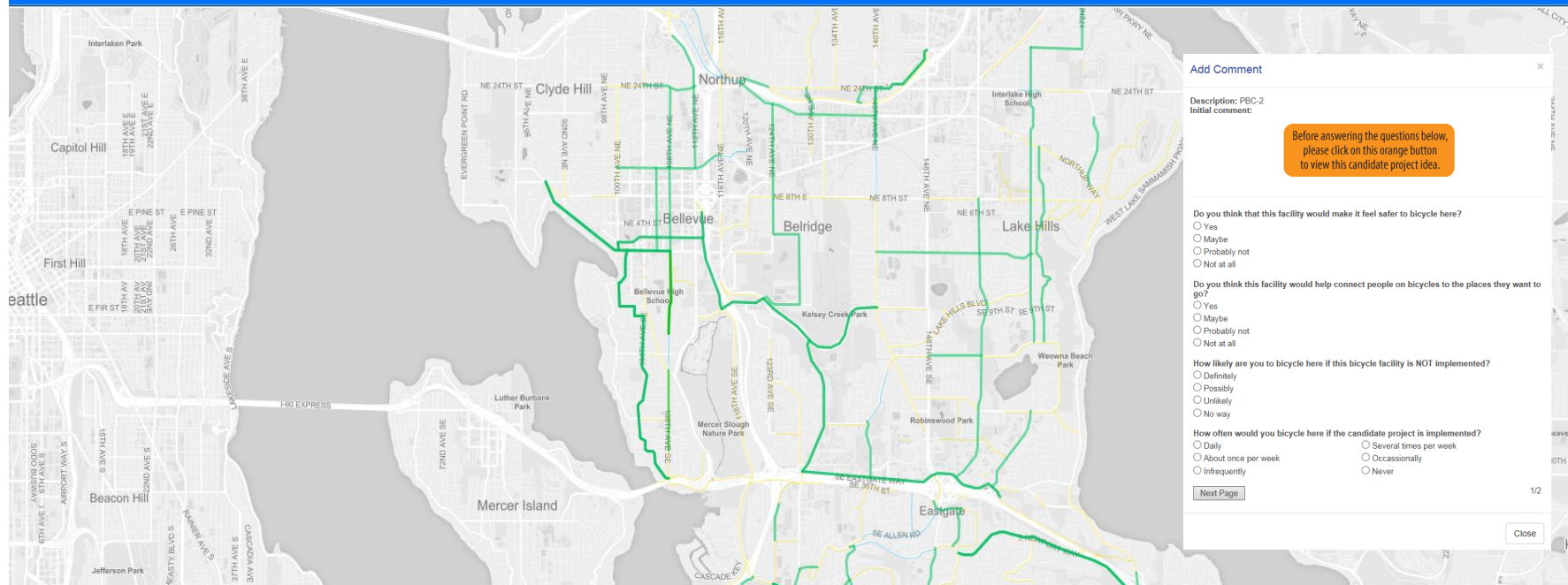
- 1 Click on the green lines
- 2 View candidate bicycle project idea details (PDF)
- 3 Return to comment form, answer questions, submit comments

Refer to the "Instructions" for more help

BICYCLE MAP LEGEND

- Candidate project ideas
- Funded projects
- Existing facilities

Options



From March 17 – April 30 (2016) people are providing feedback on 52 project ideas representing 57 miles of bicycle facility improvements: 2 miles of off-street path, 24 miles of separated bike lanes, 13 miles of conventional bike lanes, and 18 miles of shared roadway.



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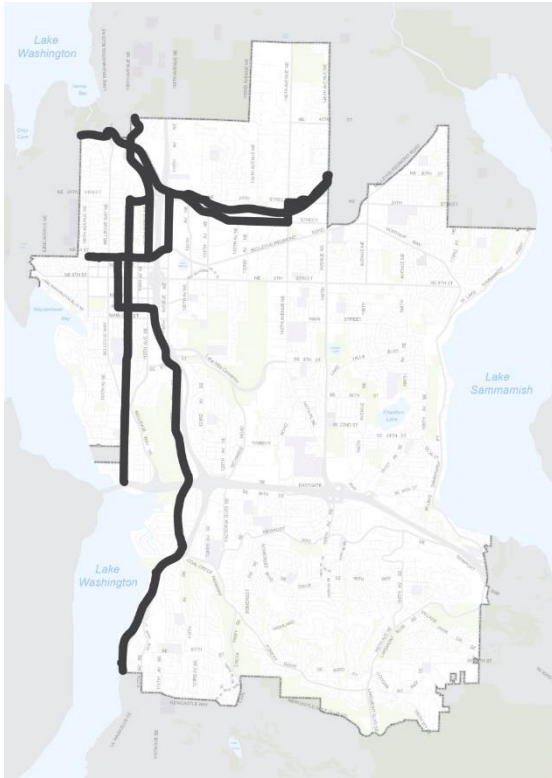
Community Input (Wikimap 2.0)



- 1) 3/24/16 Version**
- 2) 4/28/16 Version**
- 3) BRIP Assessment**
- 4) Commission Action**

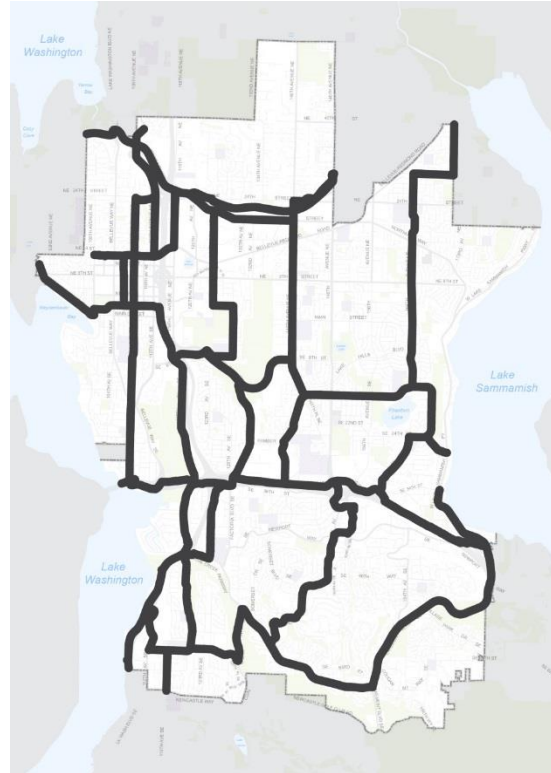


Option 1



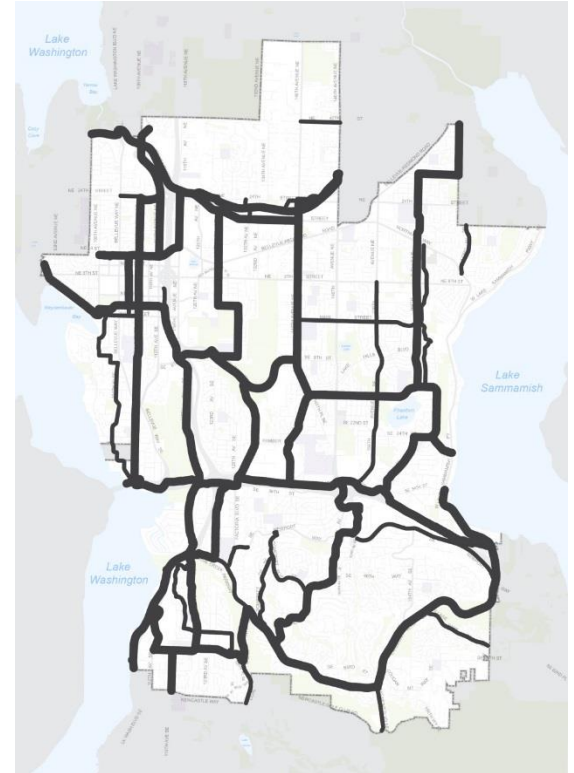
Est. Cost: \$6.1 Million

Option 2



Est. Cost: \$28.2 Million

Option 3



Est. Cost: \$32.1 Million



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Commission Briefing (3/24/16)

A motion was advanced to direct staff to focus on two options advancing the priority bicycle corridors in the 2009 Plan:

1. 2 north-south (NS-1 and NS-5) and two east-west (EW-1 and EW-4) cross-city corridors
2. 3 north-south (NS-1, NS-4, and NS-5) and three east-west (EW-1, EW-4, and EW-5) cross-city corridors.

For the April 28 workshop, the Transportation Commission requested staff frame these options within a 2019 time horizon with a budget of approximately \$6M. Staff supplemented the seven 2019 alternatives associated with Commission's request with two 2023 time horizon alternatives with an additional budget of approximately \$4M.

BRIP Options	Generalized Bicycle Facility Categories by BRIP Option (miles)				All Facilities (miles)	Estimated Installation Cost (Millions)
	Marked Shared Lanes	Conventional Bike Lanes	Separated Bike Lanes	Offstreet Paths		
2.0	6.6	7.6	11.5	-	25.74	\$5.62
2.1	5.9	5.4	11.2	0.1	22.59	\$6.15
2.2	4.6	2.1	10.0	0.4	17.06	\$6.21
2.3	2.8	3.0	10.5	0.7	16.19	\$6.21
3.0	7.9	4.4	16.6	-	28.96	\$5.82
3.1	7.6	2.4	17.3	0.1	27.39	\$6.58
3.2	3.8	2.2	16.4	0.4	22.80	\$7.31
2023.1	16.8	12.0	21.2	-	50.26	\$8.75
2023.2	4.8	5.3	20.2	0.7	30.93	\$9.42

Note: Not included in the above estimated installation cost figures (2016\$) is the expense of acquiring/installing 25 inductive loop bicycle counters (16 for conventional bike lanes and 9 for separated bike lanes) + 2 off-street path multi-counters (counts and differentiates between pedestrians and bicyclists). The total cost for acquiring/installing this performance monitoring system is estimated to be \$177,000.

Wikimap 1.0

User generated points within 100 ft of BRIP Project Ideas

BRIP Option	Bike Accommodation Issue Points	
2.0	205	36%
2.1	173	30%
2.2	165	29%
2.3	180	31%
3.0	206	36%
3.1	192	34%
3.2	182	32%
2023.1	237	41%
2023.2	231	40%
Total	573	

Wikimap 2.0

Responses to “Do you think that this facility would make it feel safer to bicycle here?”

BRIP Option	Total Comments	Supportive of the project idea		Supportive of improvements w/ modifications to the project idea		Neutral		Opposed to bicycle improvements along corridor segment	
2.0	263	199	76%	39	15%	15	6%	10	4%
2.1	253	190	75%	39	15%	14	6%	10	4%
2.2	214	160	75%	34	16%	11	5%	9	4%
2.3	212	158	75%	34	16%	11	5%	9	4%
3.0	238	178	75%	37	16%	11	5%	12	5%
3.1	257	190	74%	40	16%	14	5%	13	5%
3.2	196	148	76%	30	15%	8	4%	10	5%
2023.1	407	298	73%	60	15%	27	7%	22	5%
2023.2	304	232	76%	43	14%	14	5%	15	5%



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BRIP Option Assessment

Access to Transit

Bus stops within 200 ft of BRIP Project Ideas

BRIP Option	Connections to Transit, Spring 2015			
	Stops Served		Average Daily Ons/Offs	
BRIP Option 2.0	138	20%	29,080	53%
BRIP Option 2.1	115	17%	28,409	52%
BRIP Option 2.2	95	14%	27,776	51%
BRIP Option 2.3	105	15%	28,023	51%
BRIP Option 3.0	146	21%	29,483	54%
BRIP Option 3.1	132	19%	29,023	53%
BRIP Option 3.2	124	18%	28,127	51%
BRIP Option 2023.1	240	35%	31,353	57%
BRIP Option 2023.2	175	25%	29,729	54%
Total	691		54,686	

Proximity to Population/Jobs

1/4 mile buffer around BRIP Project Ideas

BRIP Options	Population	Jobs	Pop + Jobs	Rank
BRIP Option 2.0	57,300	94,859	152,159	5
BRIP Option 2.1	52,205	97,533	149,738	6
BRIP Option 2.2	47,563	87,297	134,859	9
BRIP Option 2.3	45,597	88,749	134,346	10
BRIP Option 3.0	63,528	95,261	158,789	4
BRIP Option 3.1	64,807	94,329	159,136	3
BRIP Option 3.2	56,120	83,924	140,044	7
BRIP Option 2023.1	94,612	107,699	202,311	1
BRIP Option 2023.2	68,398	102,635	171,033	2





“We strongly urge you to prioritize funding for a complete, connected 57 mile network of bike/ped infrastructure throughout Bellevue, emphasizing protected bike paths as much as possible.”

- Eric Artz, Chief Operating Officer



“We support increased investment in bicycling infrastructure and taking rapid action on the following projects ...”

- Al Kinisky, Senior Director of Real Estate



Seattle Children's
HOSPITAL • RESEARCH • FOUNDATION

“... the Bicycle Rapid Implementation plan is a cost-effective strategy to help transform Bellevue into a safe and inviting urban center for bicyclists and vital for improving station access in preparation for Sound Transit's East Link....”

- Lisa Brandenburg, President



Community Input (Letters)

*Staff requests Transportation Commission provide direction on the narrative, and an expenditure amount, for a Bicycle Rapid Implementation Program budget proposal that includes the installation of bicycle infrastructure (**amount TBD**) and installation of counter technology equipment (**\$177,000**).*



The program implements priority bicycle corridors consistent with targets outlined in the 2009 Ped-Bike Plan; by 2019, implement at least two completed, connected, and integrated N/S and two E/W bicycle routes that connect the city limits (Comp Plan Policy PB-2). The program is consistent with Bellevue's Ped & Bike Implementation Initiative and Vision Zero policy, implementing a grid of safe bicycle facilities throughout the city that connect with the priority bicycle corridors. The program is – by virtue of its focus on early-win opportunities – targeting lower-cost on-street bicycle facility projects involving paint, signage, and delineator posts rather than more expensive off-street, raised, or curb-separated bicycle facilities. The program implements automated data collection for ped & bike activity citywide; a key element to achieving the 2009 Plan, directing staff to "develop procedures to collect data in order to measure pedestrian and bike usage on an ongoing basis."

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For Additional Information



Commissioner Bishop's Optional Summary Table and Supporting Materials



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BRIP Options Background

Commissioner Bishop's Optional Summary Table

DRAFT

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2.0	6.6	7.6	11.5	-	25.74	\$5.6
2.1	5.9	5.4	11.2	0.1	22.59	\$6.1
2.2	4.6	2.1	10.0	0.4	17.06	\$6.2
2.3	2.8	3.0	10.5	0.7	16.19	\$6.2
3.0	7.9	4.4	16.6	-	28.96	\$5.8
3.1	7.6	2.4	17.3	0.1	27.39	\$6.6
3.2	3.8	2.2	16.4	0.4	22.80	\$7.3
2023.1	16.8	12.0	21.2	-	50.26	\$8.7
2023.2	4.8	5.3	20.2	0.7	30.93	\$9.4

1.2	2 NS + 2 EW CCC only, Using 108 th Downtown & 164 th	\$2.0
1.4	2 NS + 2 EW CCC with supplements or 164 th Ave NE.	\$4.0
1.6	Any of BRIP Options 2.0 thru 3.1 Above	\$6.6
1.9	Any of BRIP Options 2.0 thru 2023.2 Above	\$9.4

No. 1.2 - Low End Option - \$2 million

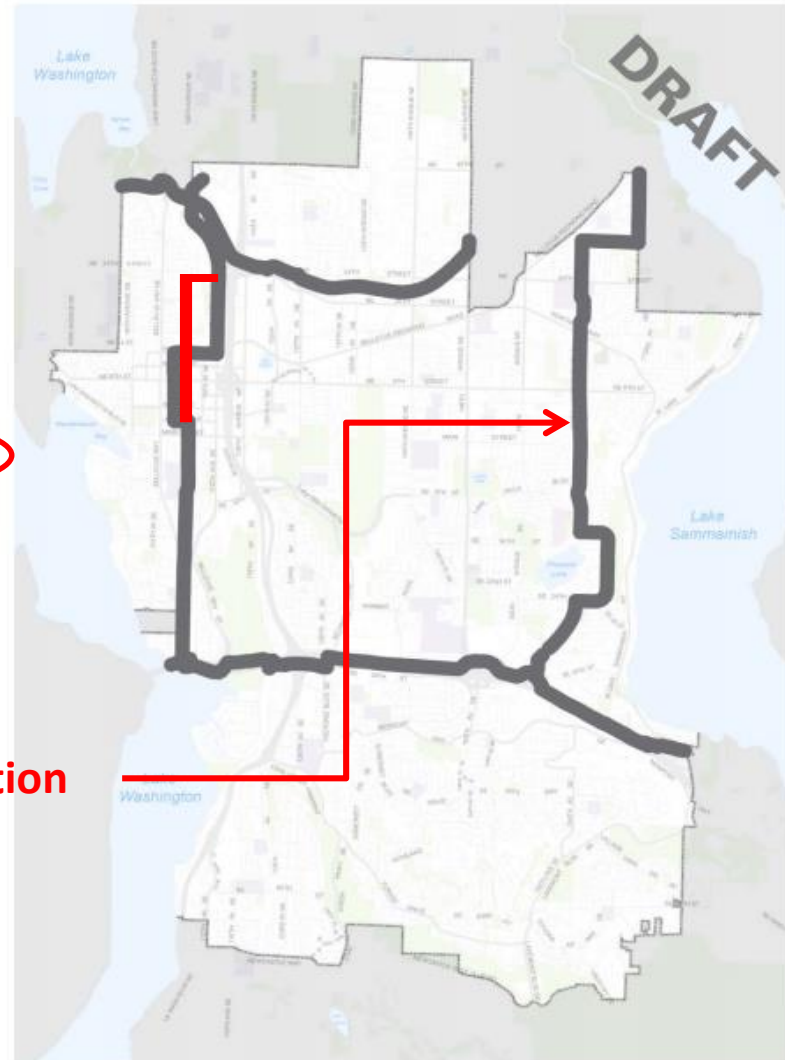
Key Tradeoffs:

Cross-City Connections

1. 2 N-S / 2 E-W:

- Continuous bicycle facilities...
 - spanning SR-520 and I-90 corridors
 - connecting I-90 Trail to 520 Trail through Downtown
 - connecting Eastgate to Redmond via the 164th corridor
- No cross-city connections through central or south Bellevue
- Cost for completing CCCs ranges from \$2.04M to \$5.32M depending on alignment

Use 165th/166th route for Low End Option



No. 1.4 - Middle Option - \$4 million

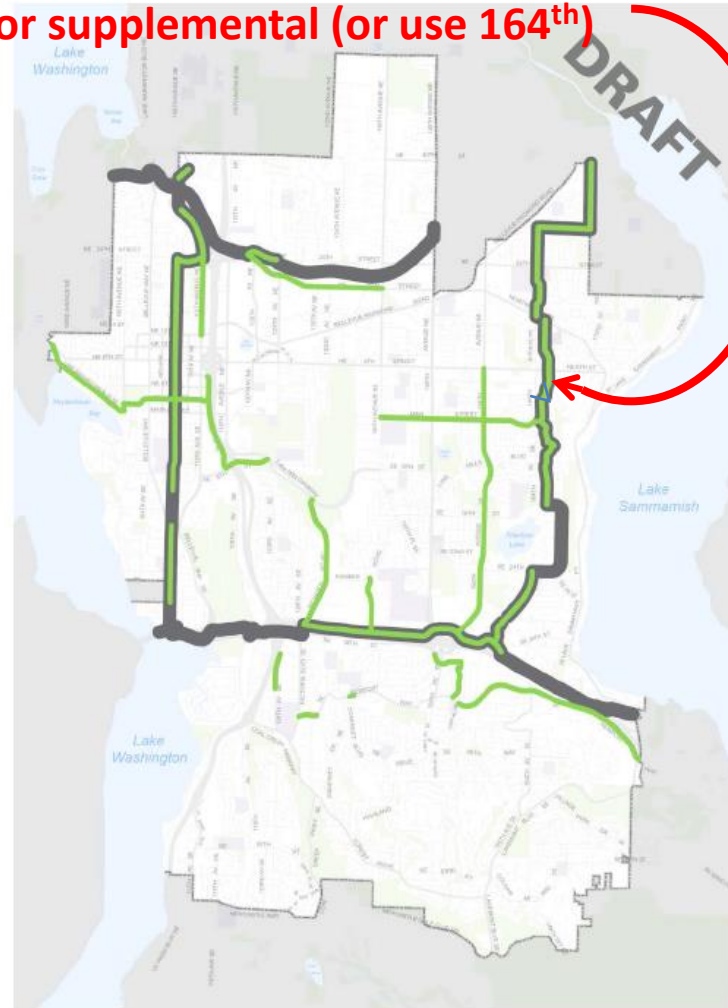
Modify to \$2.0 m for CCC's + \$2.0 m for supplemental (or use 164th)

Key Features:

- \$5.62M est. installation cost
 - \$2.0M along CCCs
 - \$3.6M for supplemental bike access
- No off-street path construction
- High level of supplemental bicycle access improvements

Tradeoffs:

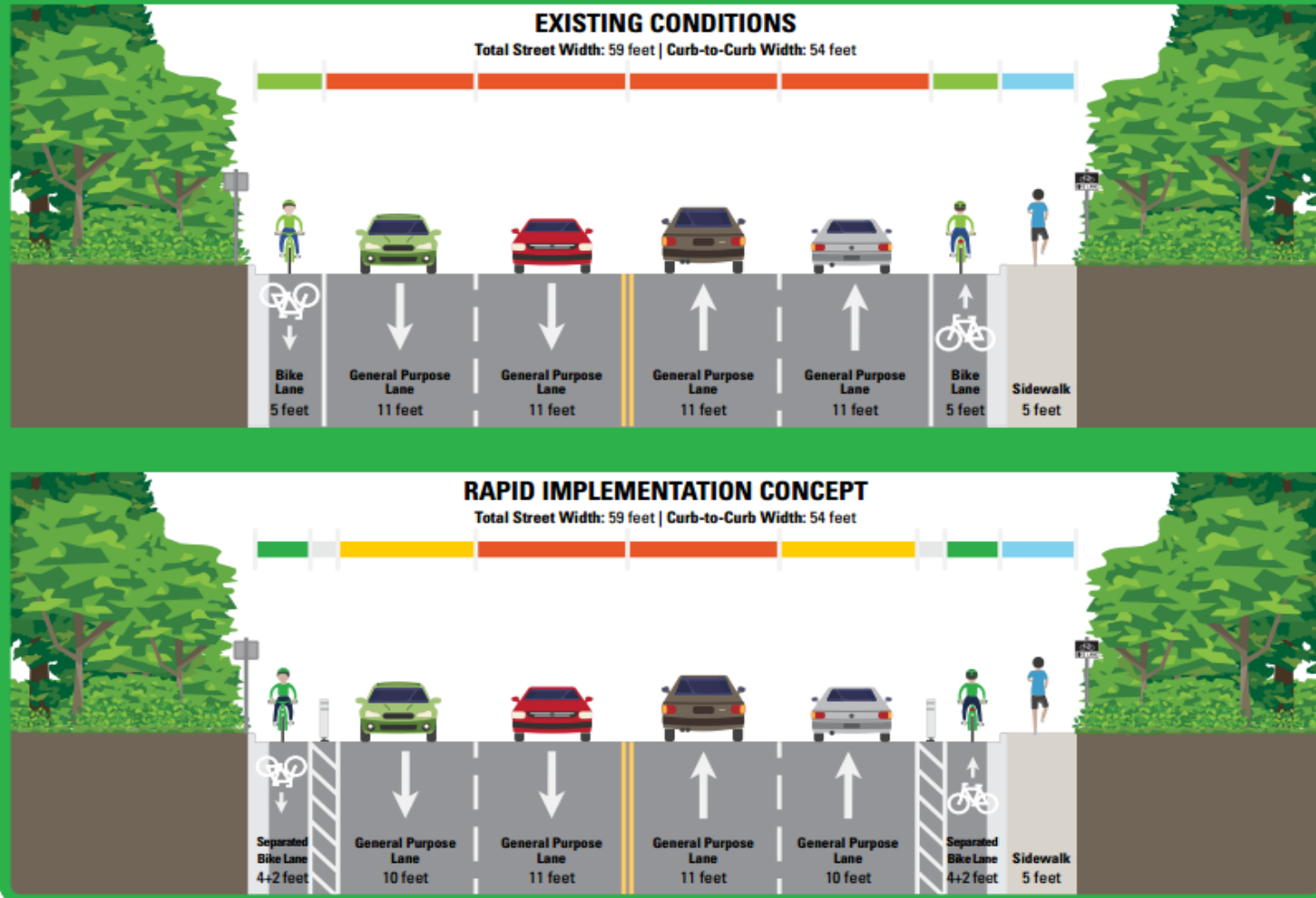
- No dedicated N-S bicycle facility through Downtown
- Indirect, hilly neighborhood route alternative for NS-5
- Moderate level of bicycle improvements south of I-90



Coal Creek Parkway, SE 60th ST. to Forest Dr. SE

Typical Street Sections:

1. South City Limits to Factoria Blvd SE



BRIP Options	Generalized Bicycle Facility Categories by BRIP Option (miles)				All Facilities (miles)	Estimated Installation Cost (Millions)
	Marked Shared Lanes	Conventional Bike Lanes	Separated Bike Lanes	Offstreet Paths		
1.2	4.7	0.7	4.9	0.0	10.30	\$2.04
2.0	6.6	7.6	11.5	-	25.74	\$5.62
2.1	5.9	5.4	11.2	0.1	22.59	\$6.15
2.2	4.6	2.1	10.0	0.4	17.06	\$6.21
2.3	2.8	3.0	10.5	0.7	16.19	\$6.21
3.0	7.9	4.4	16.6	-	28.96	\$5.82
3.1	7.6	2.4	17.3	0.1	27.39	\$6.58
3.2	3.8	2.2	16.4	0.4	22.80	\$7.31
2023.1	16.8	12.0	21.2	-	50.26	\$8.75
2023.2	4.8	5.3	20.2	0.7	30.93	\$9.42

Note: Not included in the above estimated installation cost figures (2016\$) is the expense of acquiring/installing 25 inductive loop bicycle counters (16 for conventional bike lanes and 9 for separated bike lanes) + 2 off-street path multi-counters (counts and differentiates between pedestrians and bicyclists). The total cost for acquiring/installing this performance monitoring system is estimated to be \$177,000.

Wikimap 1.0

User generated points within 100 ft of BRIP Project Ideas

BRIP Option	Bike Accommodation Issue Points	
1.2	45	8%
2.0	205	36%
2.1	173	30%
2.2	165	29%
2.3	180	31%
3.0	206	36%
3.1	192	34%
3.2	182	32%
2023.1	237	41%
2023.2	231	40%
Total	573	

Wikimap 2.0

Responses to “Do you think that this facility would make it feel safer to bicycle here?”

BRIP Option	Total Comments	Supportive of the project idea		Supportive of improvements w/ modifications to the project idea		Neutral		Opposed to bicycle improvements along corridor segment	
1.2	106	76	72%	18	17%	8	8%	4	4%
2.0	263	199	76%	39	15%	15	6%	10	4%
2.1	253	190	75%	39	15%	14	6%	10	4%
2.2	214	160	75%	34	16%	11	5%	9	4%
2.3	212	158	75%	34	16%	11	5%	9	4%
3.0	238	178	75%	37	16%	11	5%	12	5%
3.1	257	190	74%	40	16%	14	5%	13	5%
3.2	196	148	76%	30	15%	8	4%	10	5%
2023.1	407	298	73%	60	15%	27	7%	22	5%
2023.2	304	232	76%	43	14%	14	5%	15	5%



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BRIP Option Assessment

Access to Transit

Bus stops within 200 ft of BRIP Project Ideas

BRIP Option	Connections to Transit, Spring 2015			
	Stops Served		Average Daily Ons/Offs	
BRIP Option 1.2	51	7%	13,566	25%
BRIP Option 2.0	138	20%	29,080	53%
BRIP Option 2.1	115	17%	28,409	52%
BRIP Option 2.2	95	14%	27,776	51%
BRIP Option 2.3	105	15%	28,023	51%
BRIP Option 3.0	146	21%	29,483	54%
BRIP Option 3.1	132	19%	29,023	53%
BRIP Option 3.2	124	18%	28,127	51%
BRIP Option 2023.1	240	35%	31,353	57%
BRIP Option 2023.2	175	25%	29,729	54%
Total	691		54,686	

Proximity to Population/Jobs

1/4 mile buffer around BRIP Project Ideas

BRIP Options	Population	Jobs	Pop + Jobs	Rank
BRIP Option 2.0	57,300	94,859	152,159	5
BRIP Option 2.1	52,205	97,533	149,738	6
BRIP Option 2.2	47,563	87,297	134,859	9
BRIP Option 2.3	45,597	88,749	134,346	10
BRIP Option 3.0	63,528	95,261	158,789	4
BRIP Option 3.1	64,807	94,329	159,136	3
BRIP Option 3.2	56,120	83,924	140,044	7
BRIP Option 2023.1	94,612	107,699	202,311	1
BRIP Option 2023.2	68,398	102,635	171,033	2





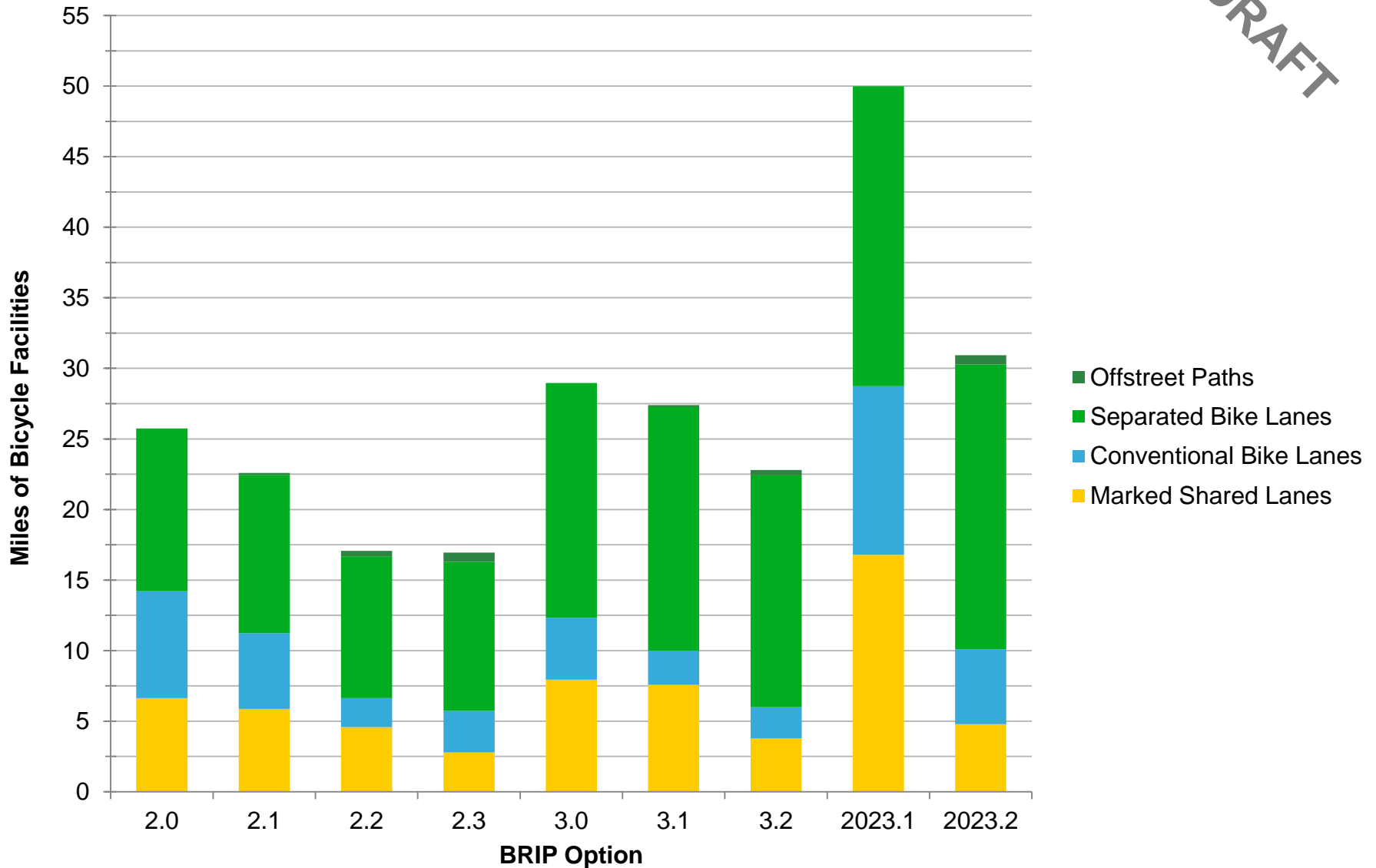
BRIP Options Summary:

Bicycle Facility Types and Estimated Installation Costs



Bicycle Facilities by BRIP Option and Generalized Facility Category

DRAFT



BRIP Options	Generalized Bicycle Facility Categories by BRIP Option (miles)				All Facilities (miles)	Estimated Installation Cost (Millions)
	Marked Shared Lanes	Conventional Bike Lanes	Separated Bike Lanes	Offstreet Paths		
2.0	6.6	7.6	11.5	-	25.74	\$5.6
2.1	5.9	5.4	11.2	0.1	22.59	\$6.1
2.2	4.6	2.1	10.0	0.4	17.06	\$6.2
2.3	2.8	3.0	10.5	0.7	16.19	\$6.2
3.0	7.9	4.4	16.6	-	28.96	\$5.8
3.1	7.6	2.4	17.3	0.1	27.39	\$6.6
3.2	3.8	2.2	16.4	0.4	22.80	\$7.3
2023.1	16.8	12.0	21.2	-	50.26	\$8.7
2023.2	4.8	5.3	20.2	0.7	30.93	\$9.4

Note: All cost estimates reflect 2016 dollars

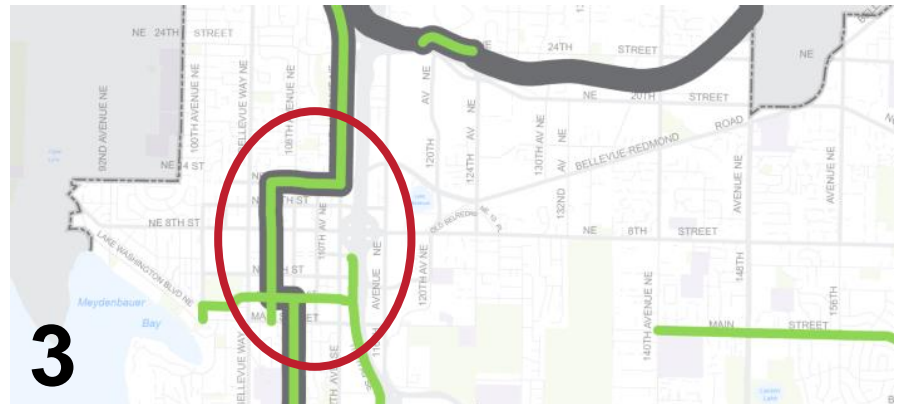
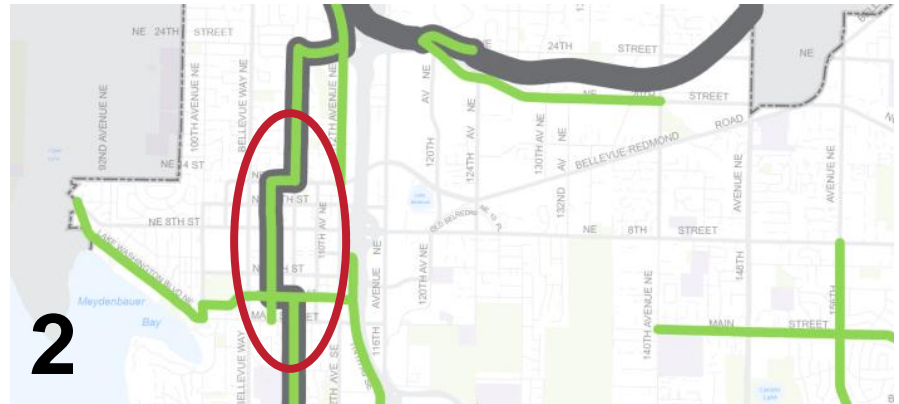
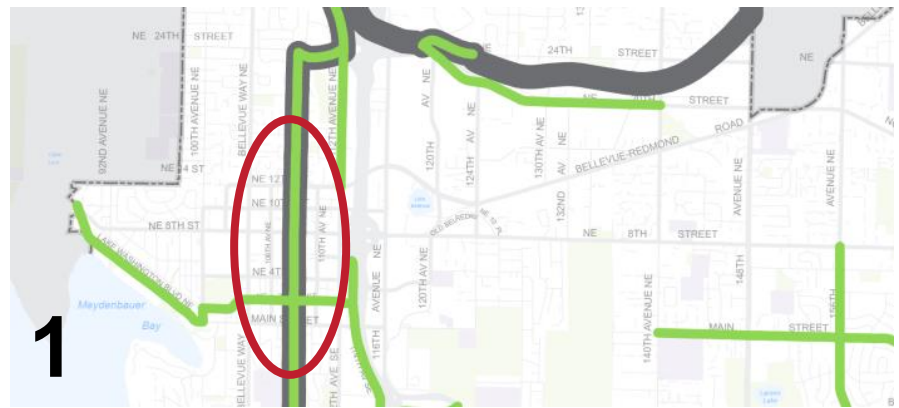
Key Tradeoffs:

Downtown N-S bicycle facilities

- 108th Ave NE:
 - Primarily marked shared lanes
 - Follows direct, planned NS-1 route
- NE 2nd St, 106th Ave NE, NE 12th St:
 - Continuous exclusive bicycle facilities
 - Deviation of one superblock from planned route

Three Alternatives:

1. No off-street path construction
 - Lowest cost (\$0.16M), least protected
2. Short off-street path
 - Higher cost (\$1.73M), no connection to existing NE 12th St off-street path
3. No off-street path construction
 - Highest cost (\$2.79M)
 - Most connected and protected
 - Least resources available for supplementary access improvements



Key Tradeoffs:

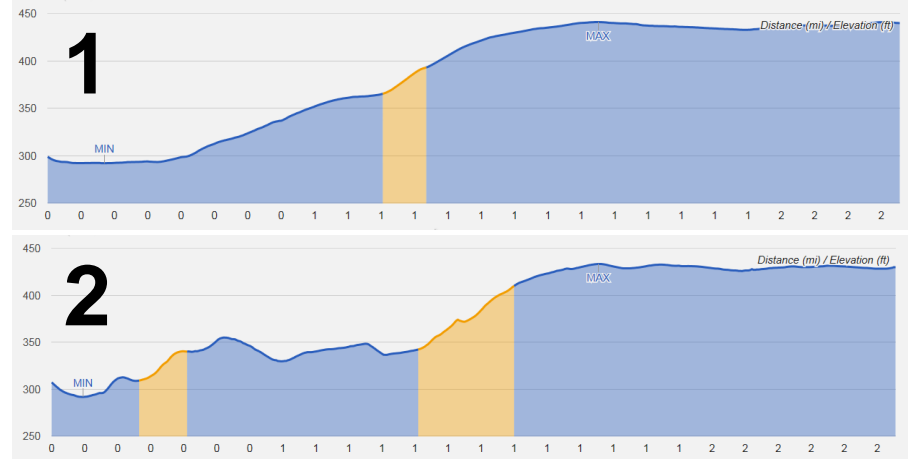
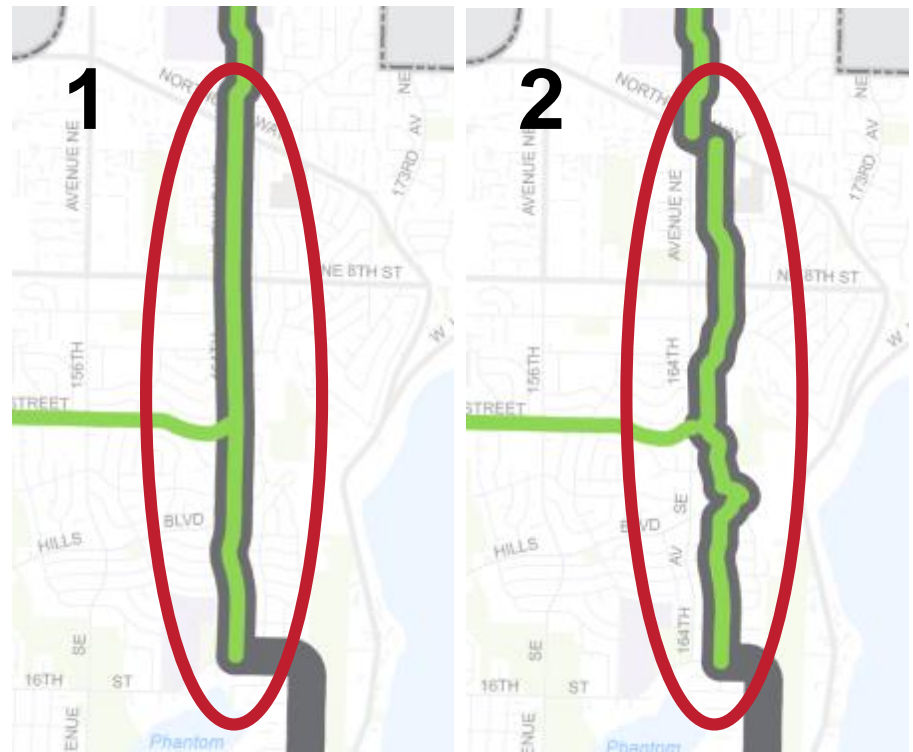
East Bellevue NS-5 Alignment

1. 164th Ave:

- Continuous separated bicycle facilities from SE 12th St to Northup Way
- Direct, straight-line route
- Displaces on-street parking where permitted from SE 12th St to Northup Way
- Higher cost (\$652k)

2. 165th/166th Aves:

- Marked shared lanes as part of a new neighborhood bikeway
- Meandering route with two left turns and more challenging climbs
- May require reconfiguration of multiple stop-controlled intersections
- Lower cost (\$88k)



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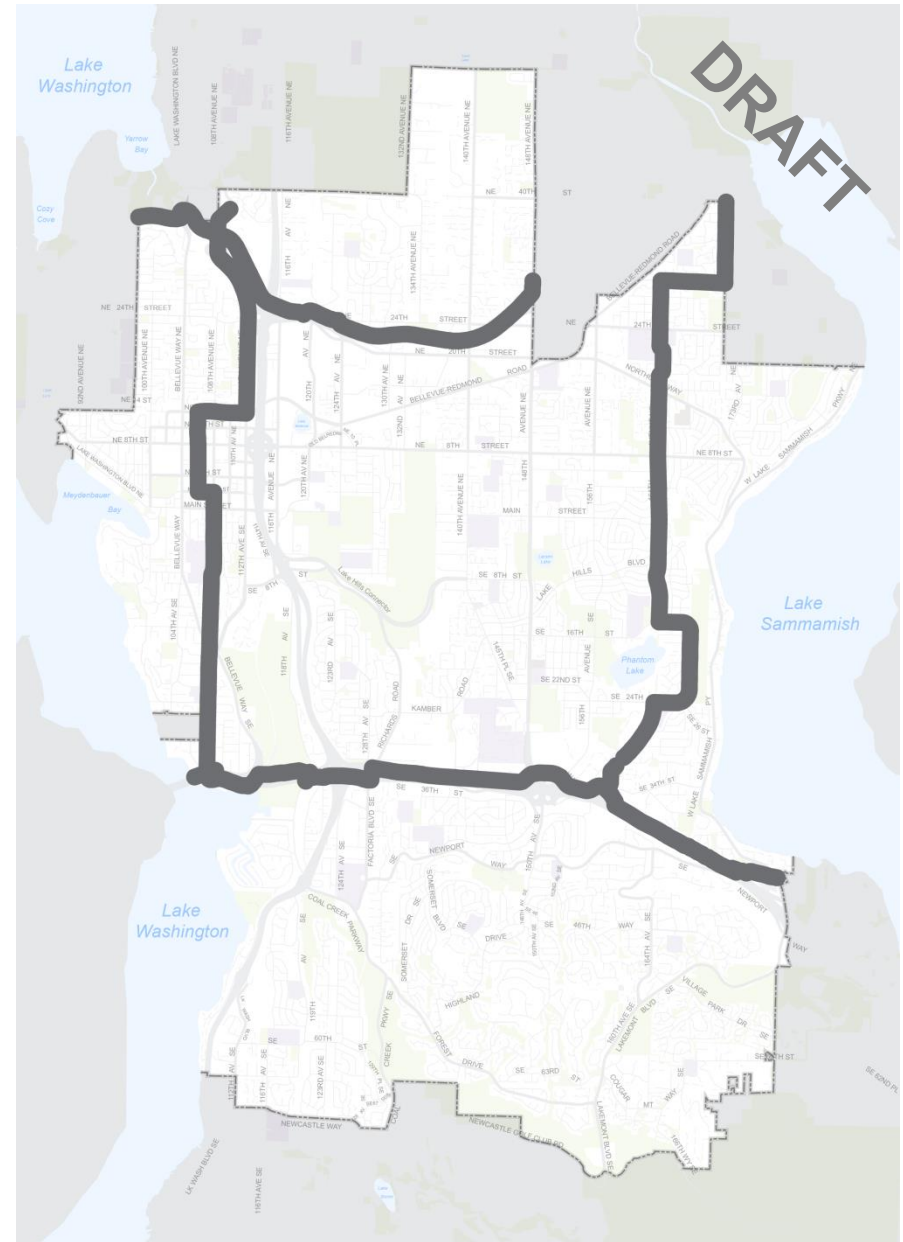
BRIP Key Tradeoffs

Key Tradeoffs:

Cross-City Connections

1. 2 N-S / 2 E-W:

- Continuous bicycle facilities...
 - spanning SR-520 and I-90 corridors
 - connecting I-90 Trail to 520 Trail through Downtown
 - connecting Eastgate to Redmond via the 164th corridor
- No cross-city connections through central or south Bellevue
- Cost for completing CCCs ranges from \$2.04M to \$5.32M depending on alignment

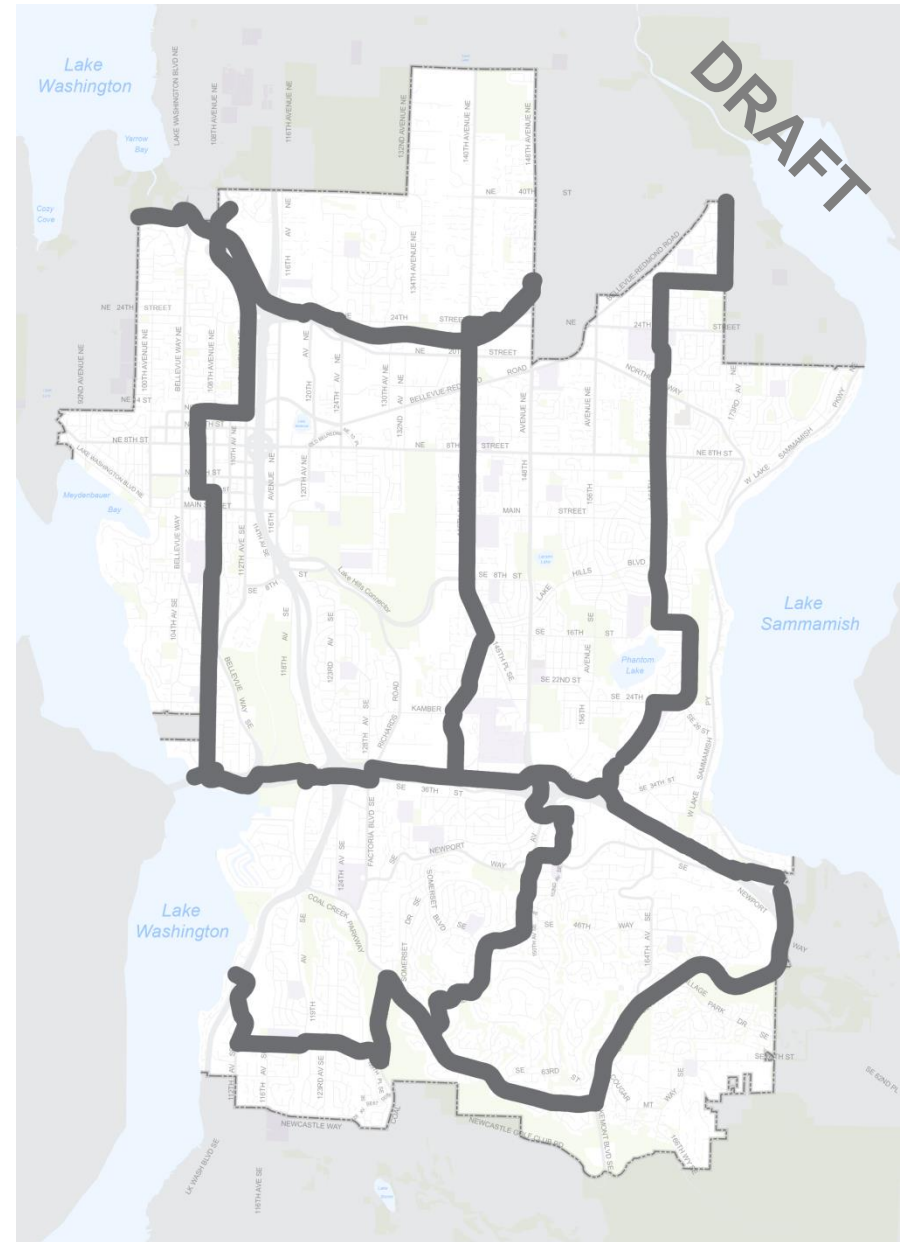


Key Tradeoffs:

Cross-City Connections

1. 3 N-S / 3 E-W:

- Continuous bicycle facilities...
 - spanning SR-520 and I-90 corridors
 - connecting I-90 Trail to 520 Trail through Downtown
 - connecting Bridle Trails to Somerset via Eastgate
 - connecting Eastgate to Redmond via the 164th corridor
 - spanning south Bellevue via SE 60th St, Forest Dr, and Lakemont Blvd SE
- Cost for completing CCCs ranges from \$3.68M to \$6.97M depending on alignment
- Generally, fewer resources remain to invest in supplemental access improvements



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BRIP Key Tradeoffs



BRIP Options Details:

Constituent Project Ideas
and Resulting Bicycle
Networks



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BRIP Options Background

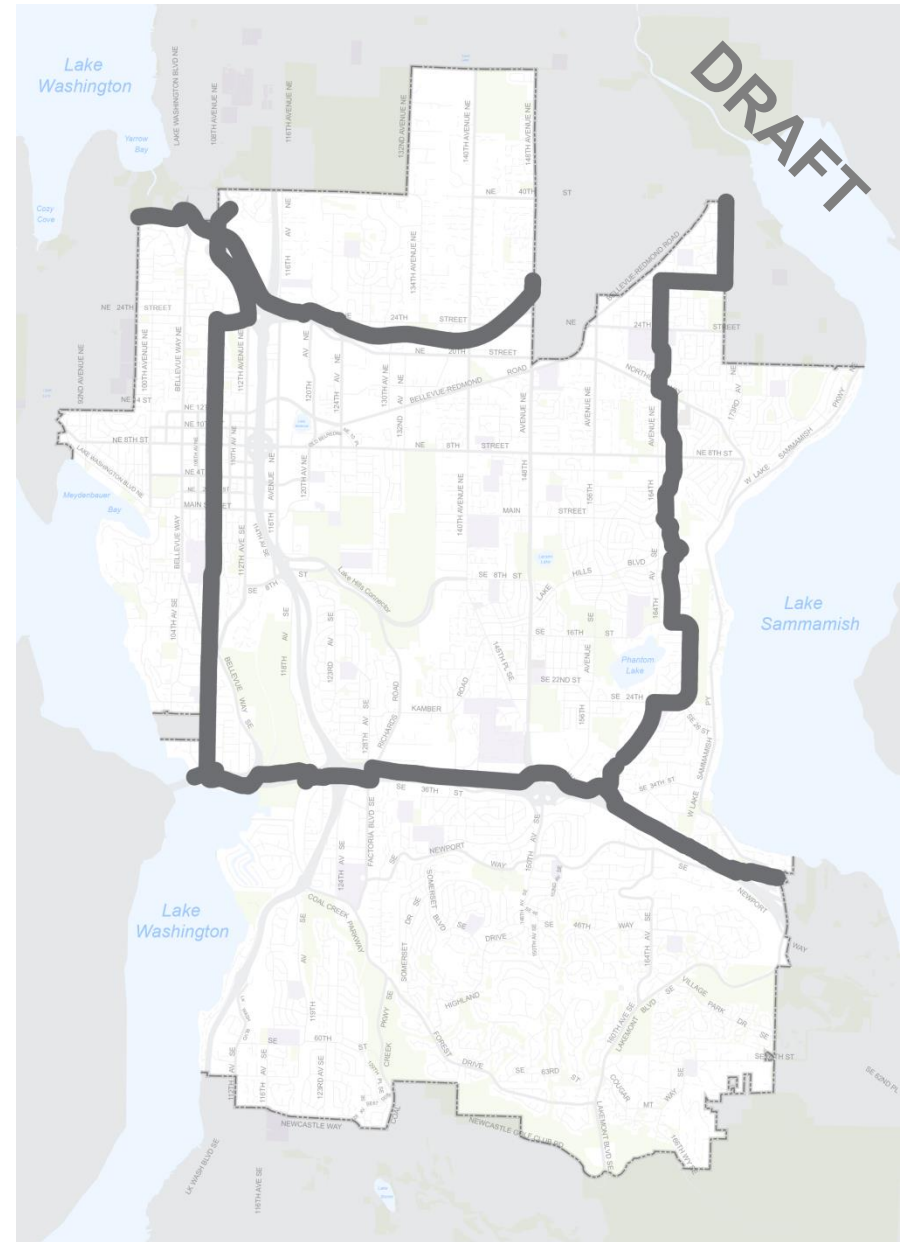
Key Features:

2 North-South cross-city connections

- NS-1: Enatai to South Kirkland
 - 108th Ave, NE 24th St, 112th Ave NE
- NS-5: Spirit Ridge to Sammamish River
 - 161st Ave SE, SE 24th St, 168th Ave SE, SE 14th St, 166th Ave, 165th Ave, 164th Ave NE, NE 30th St, 172nd Ave NE

2 East-West cross-city connections

- EW-1: 520 Trail
 - 520 Trail (west), Northup Way, NE 24th St, 520 Trail (east)
- EW-4: Mountains to Sound Greenway
 - I-90 Trail (west), Richards Rd, SE Eastgate Way, I-90 Trail (east)



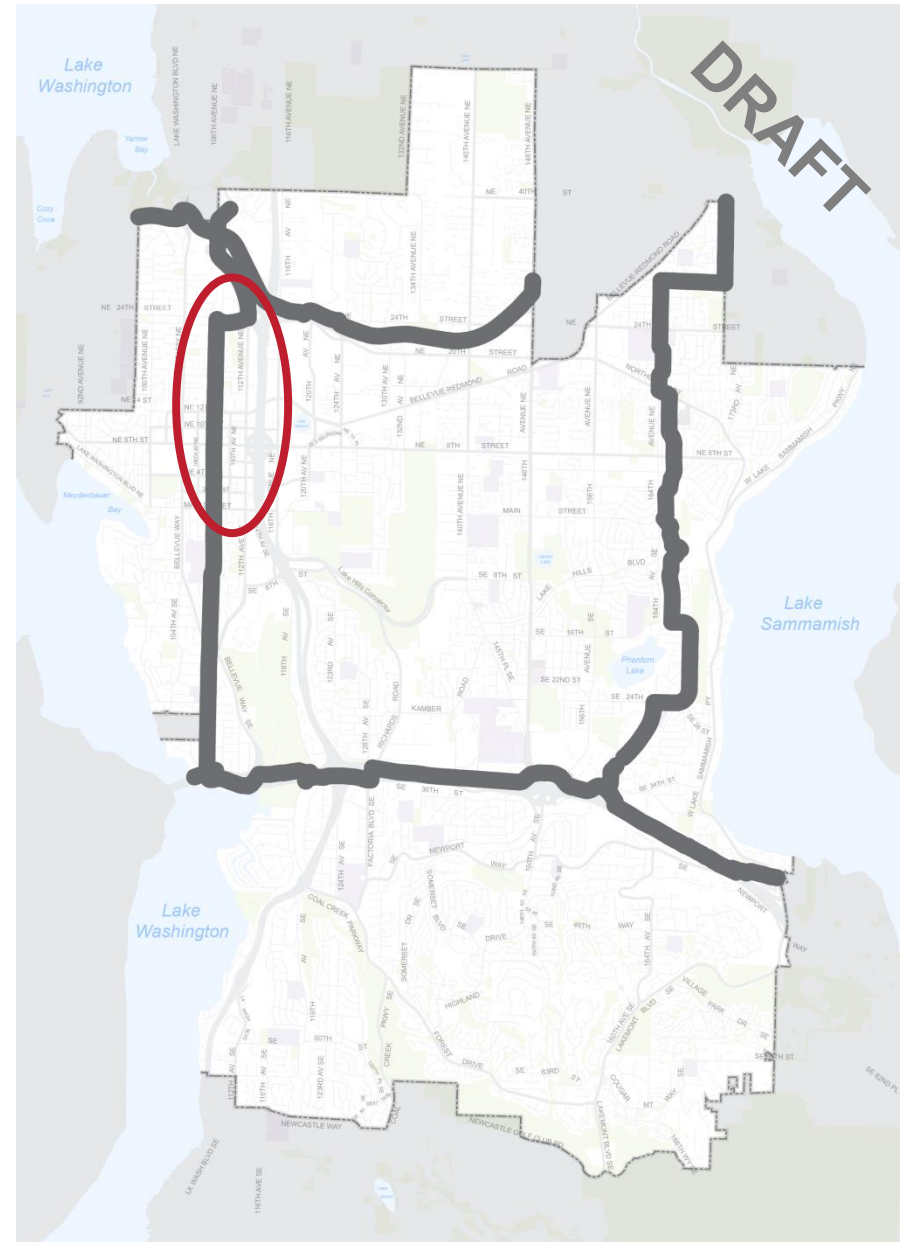
Key Features:

2 North-South cross-city connections

- NS-1: Enatai to South Kirkland
 - 108th Ave, NE 24th St, 112th Ave NE
- NS-5: Spirit Ridge to Sammamish River
 - 161st Ave SE, SE 24th St, 168th Ave SE, SE 14th St, 166th Ave, 165th Ave, 164th Ave NE, NE 30th St, 172nd Ave NE

2 East-West cross-city connections

- EW-1: 520 Trail
 - 520 Trail (west), Northup Way, NE 24th St, 520 Trail (east)
- EW-4: Mountains to Sound Greenway
 - I-90 Trail (west), Richards Rd, SE Eastgate Way, I-90 Trail (east)



Key Features:

- \$5.62M est. installation cost
 - \$2.0M along CCCs
 - \$3.6M for supplemental bike access
- No off-street path construction
- High level of supplemental bicycle access improvements

Tradeoffs:

- No dedicated N-S bicycle facility through Downtown
- Indirect, hilly neighborhood route alternative for NS-5
- Moderate level of bicycle improvements south of I-90

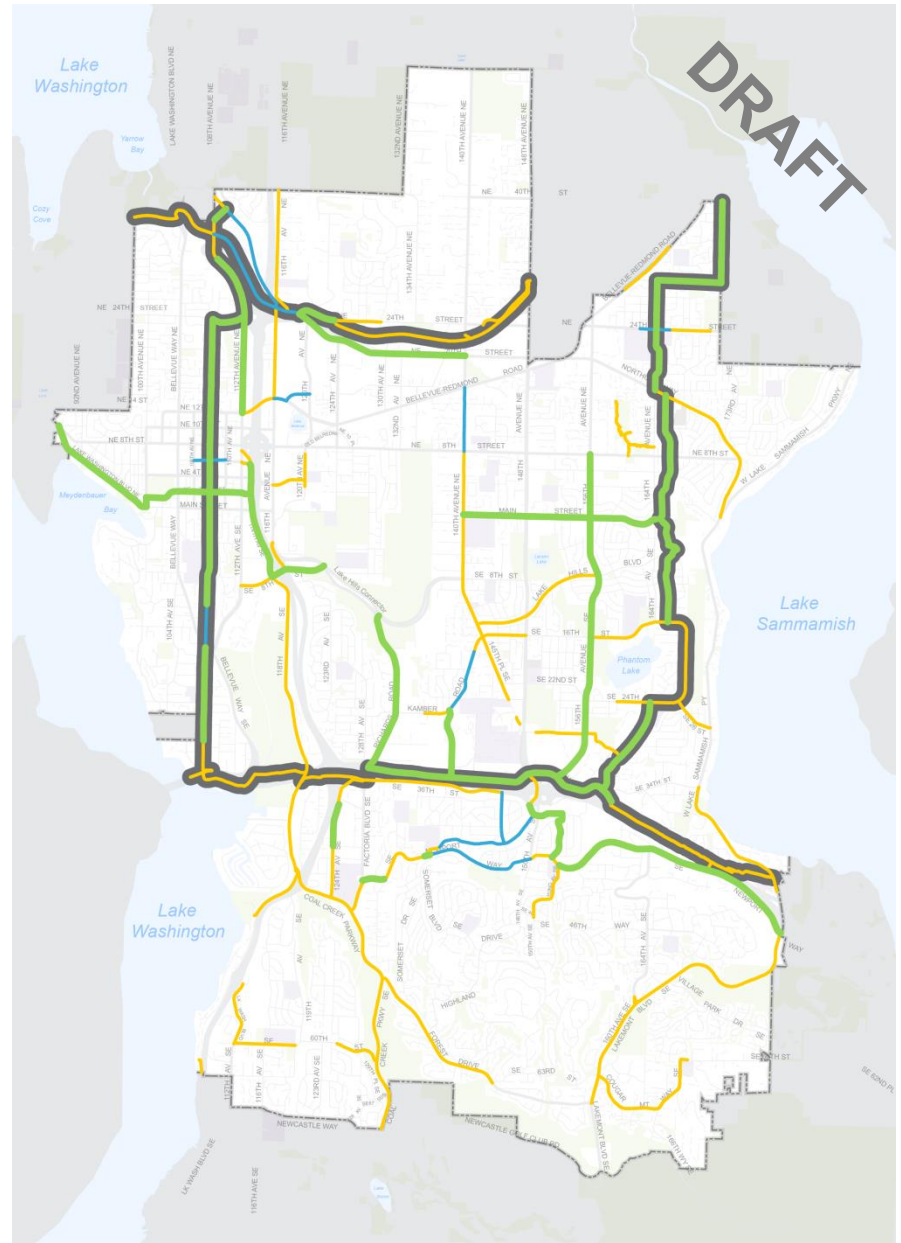


Key Features:

- \$5.62M est. installation cost
 - \$2.0M along CCCs
 - \$3.6M for supplemental bike access
- No off-street path construction
- High level of supplemental bicycle access improvements

Tradeoffs:

- No dedicated N-S bicycle facility through Downtown
- Indirect, hilly neighborhood route alternative for NS-5
- Moderate level of bicycle improvements south of I-90



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BRIP Option 2.0

Key Features:

- \$5.62M est. installation cost
 - \$2.0M along CCCs
 - \$3.6M for supplemental bike access
- No off-street path construction
- High level of supplemental bicycle access improvements

Tradeoffs:

- No dedicated N-S bicycle facility through Downtown
- Indirect, hilly neighborhood route alternative for NS-5
- Moderate level of bicycle improvements south of I-90



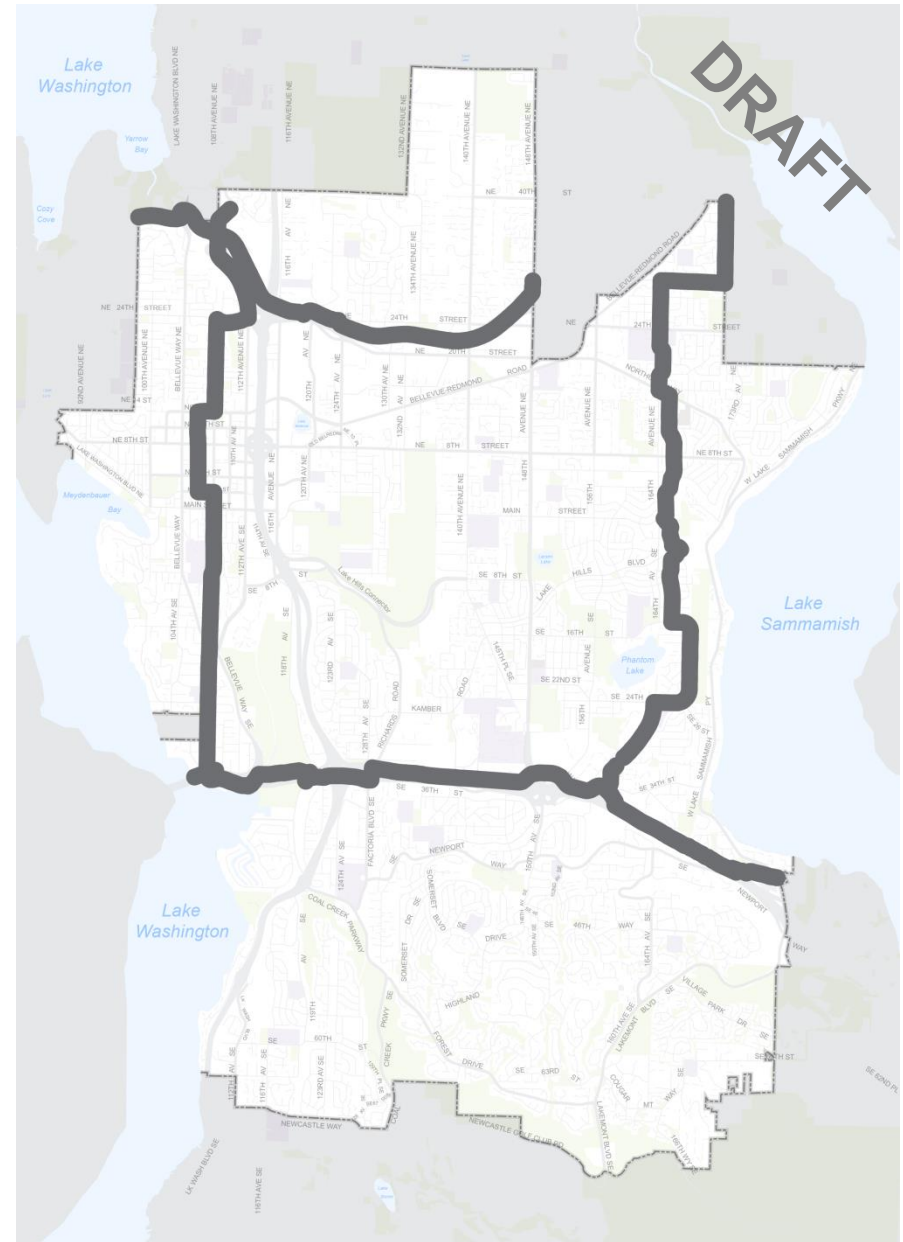
Key Features:

2 North-South cross-city connections

- **NS-1: Enatai to South Kirkland**
 - 108th Ave SE, NE 2nd St, 106th Ave NE, NE 12th St, 108th Ave NE, NE 24th St, 112th Ave NE
- **NS-5: Spirit Ridge to Sammamish River**
 - 161st Ave SE, SE 24th St, 168th Ave SE, SE 14th St, 166th Ave, 165th Ave, 164th Ave NE, NE 30th St, 172nd Ave NE

2 East-West cross-city connections

- **EW-1: 520 Trail**
 - 520 Trail (west), Northup Way, NE 24th St, 520 Trail (east)
- **EW-4: Mountains to Sound Greenway**
 - I-90 Trail (west), Richards Rd, SE Eastgate Way, I-90 Trail (east)



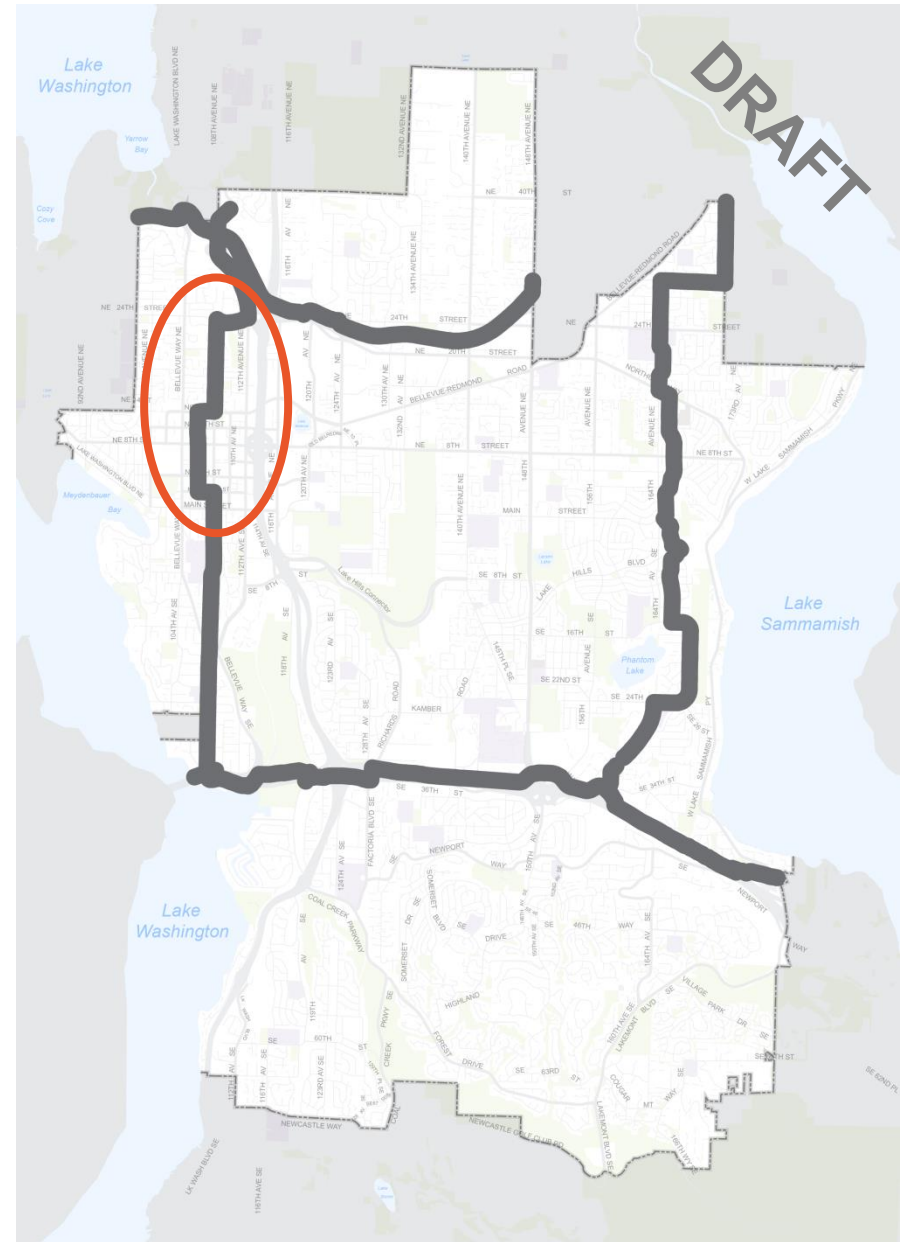
Key Features:

2 North-South cross-city connections

- NS-1: Enatai to South Kirkland
 - 108th Ave SE, NE 2nd St, 106th Ave NE, NE 12th St, 108th Ave NE, NE 24th St, 112th Ave NE
- NS-5: Spirit Ridge to Sammamish River
 - 161st Ave SE, SE 24th St, 168th Ave SE, SE 14th St, 166th Ave, 165th Ave, 164th Ave NE, NE 30th St, 172nd Ave NE

2 East-West cross-city connections

- EW-1: 520 Trail
 - 520 Trail (west), Northup Way, NE 24th St, 520 Trail (east)
- EW-4: Mountains to Sound Greenway
 - I-90 Trail (west), Richards Rd, SE Eastgate Way, I-90 Trail (east)

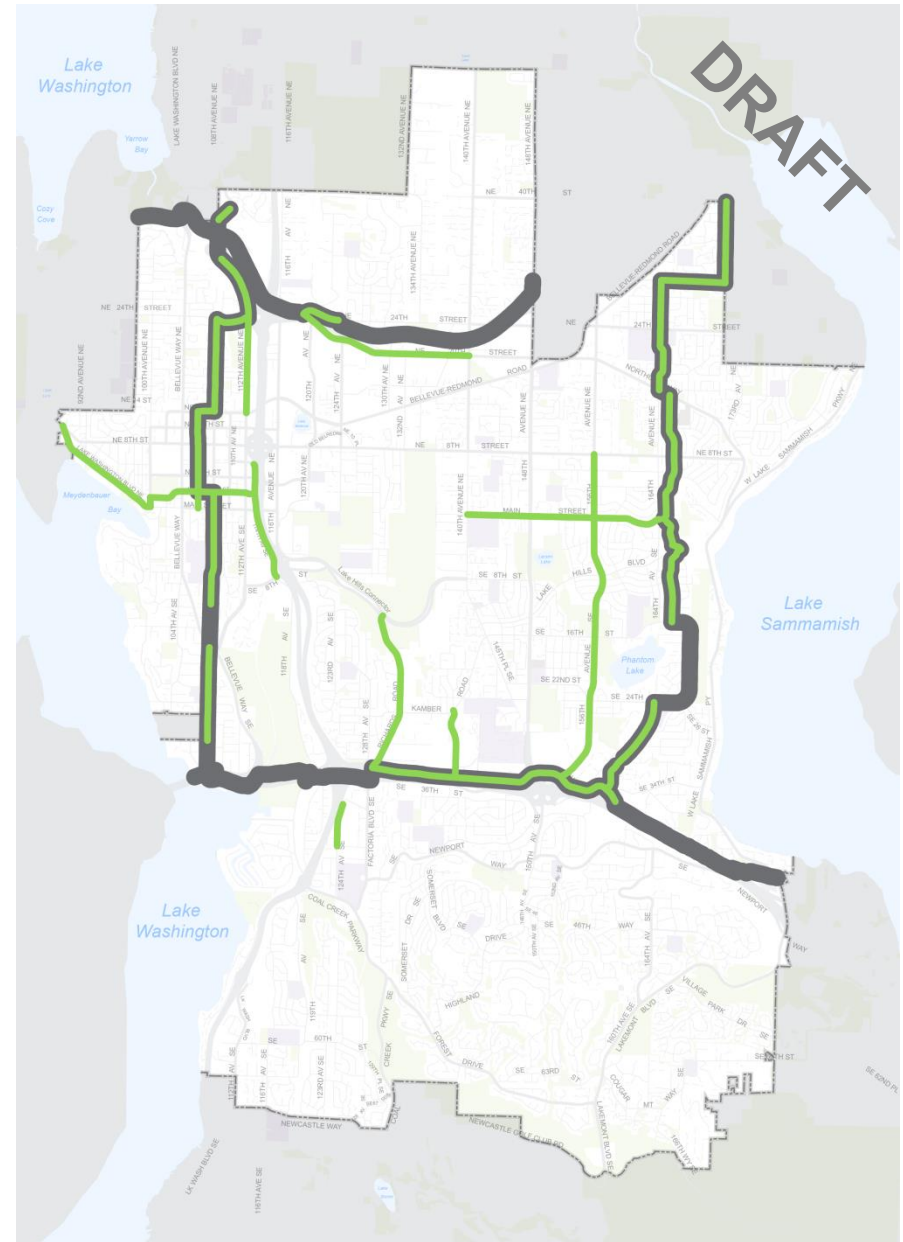


Key Features:

- \$6.15M est. installation cost
 - \$3.6M along CCCs
 - \$2.5M for supplemental bike access
- Off-street path construction from 106th–108th Ave NE
- Dedicated N-S bicycle facilities on 106th Ave NE in Downtown
- Moderate level of supplemental bicycle access improvements

Tradeoffs:

- Indirect, hilly neighborhood route alternative for NS-5
- Low level of bicycle improvements south of I-90



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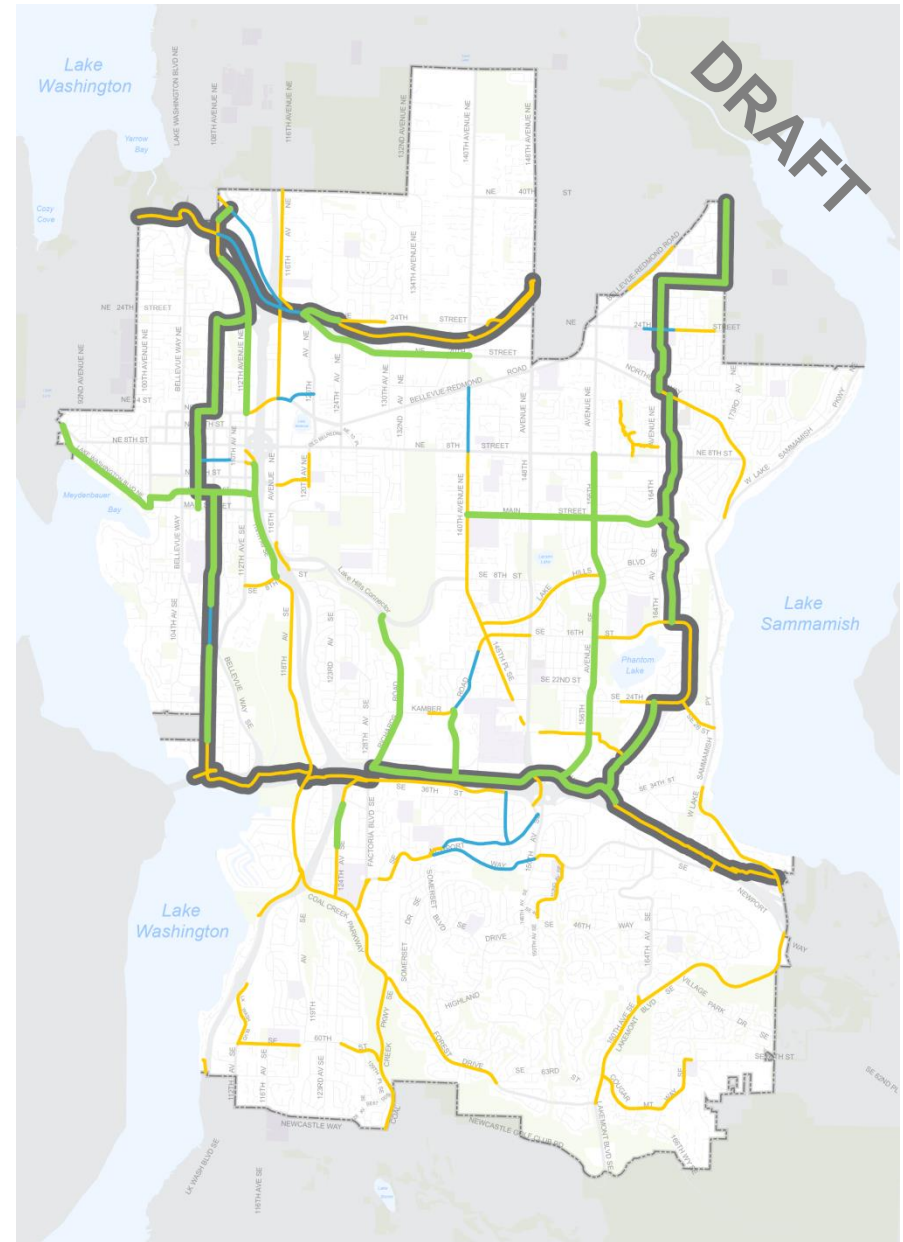
BRIP Option 2.1

Key Features:

- \$6.15M est. installation cost
 - \$3.6M along CCCs
 - \$2.5M for supplemental bike access
- Off-street path construction from 106th–108th Ave NE
- Dedicated N-S bicycle facilities on 106th Ave NE in Downtown
- Moderate level of supplemental bicycle access improvements

Tradeoffs:

- Indirect, hilly neighborhood route alternative for NS-5
- Low level of bicycle improvements south of I-90



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BRIP Option 2.1

Key Features:

- \$6.15M est. installation cost
 - \$3.6M along CCCs
 - \$2.5M for supplemental bike access
- Off-street path construction from 106th–108th Ave NE
- Dedicated N-S bicycle facilities on 106th Ave NE in Downtown
- Moderate level of supplemental bicycle access improvements

Tradeoffs:

- Indirect, hilly neighborhood route alternative for NS-5
- Low level of bicycle improvements south of I-90



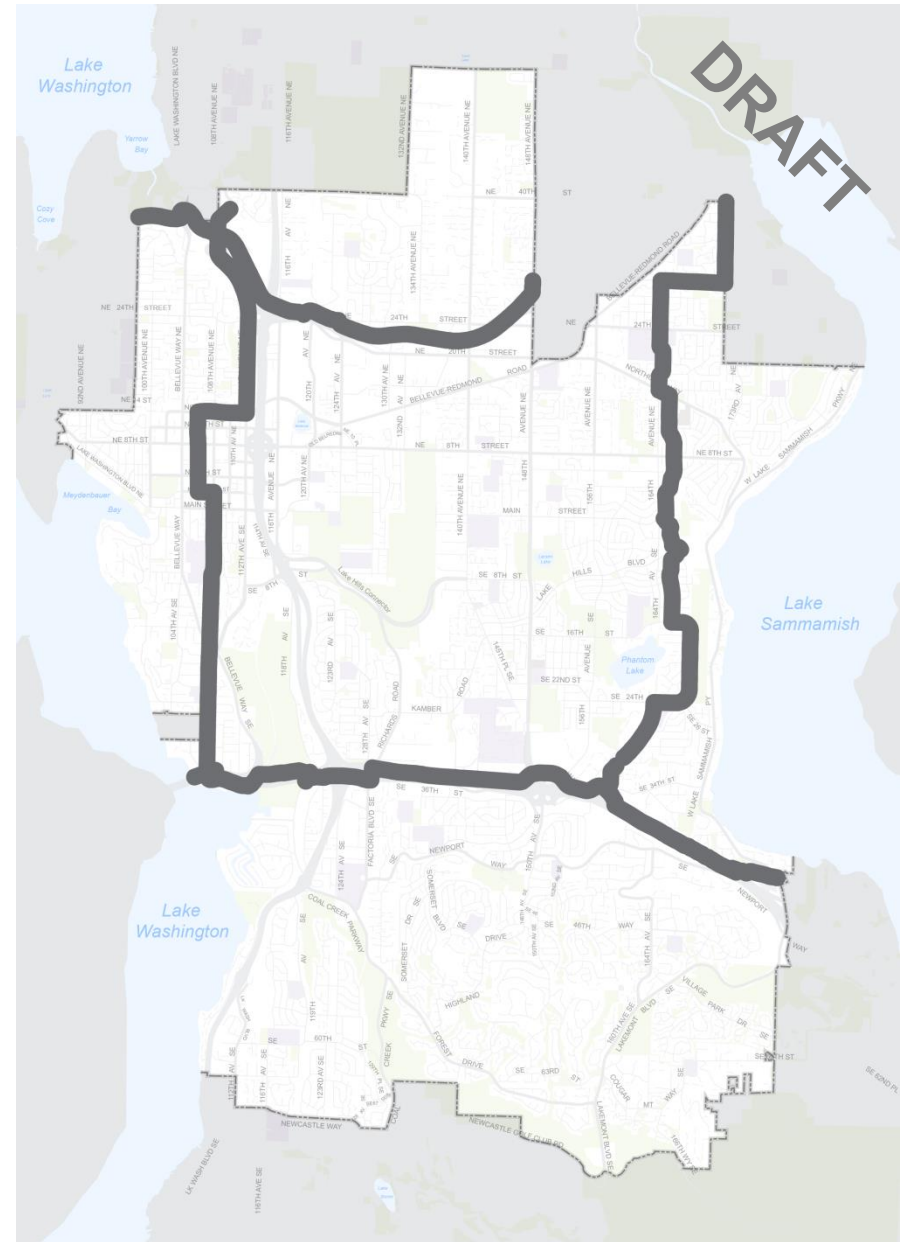
Key Features:

2 North-South cross-city connections

- **NS-1: Enatai to South Kirkland**
 - 108th Ave SE, NE 2nd St, 106th Ave NE, NE 12th St, 112th Ave NE
- **NS-5: Spirit Ridge to Sammamish River**
 - 161st Ave SE, SE 24th St, 168th Ave SE, SE 14th St, 166th Ave, 165th Ave, 164th Ave NE, NE 30th St, 172nd Ave NE

2 East-West cross-city connections

- **EW-1: 520 Trail**
 - 520 Trail (west), Northup Way, NE 24th St, 520 Trail (east)
- **EW-4: Mountains to Sound Greenway**
 - I-90 Trail (west), Richards Rd, SE Eastgate Way, I-90 Trail (east)



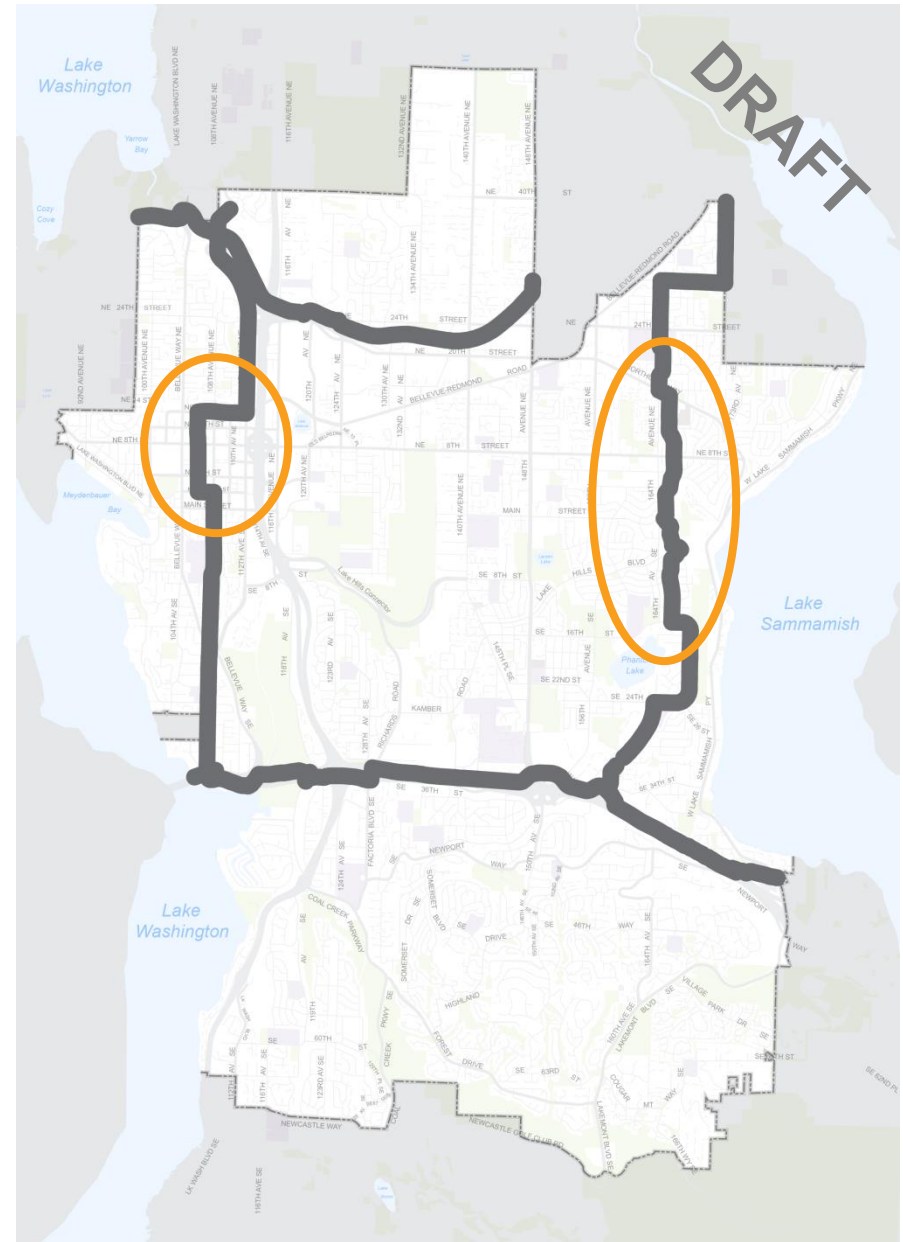
Key Features:

2 North-South cross-city connections

- NS-1: Enatai to South Kirkland
 - 108th Ave SE, NE 2nd St, 106th Ave NE, NE 12th St, 112th Ave NE
- NS-5: Spirit Ridge to Sammamish River
 - 161st Ave SE, SE 24th St, 168th Ave SE, SE 14th St, 166th Ave, 165th Ave, 164th Ave NE, NE 30th St, 172nd Ave NE

2 East-West cross-city connections

- EW-1: 520 Trail
 - 520 Trail (west), Northup Way, NE 24th St, 520 Trail (east)
- EW-4: Mountains to Sound Greenway
 - I-90 Trail (west), Richards Rd, SE Eastgate Way, I-90 Trail (east)

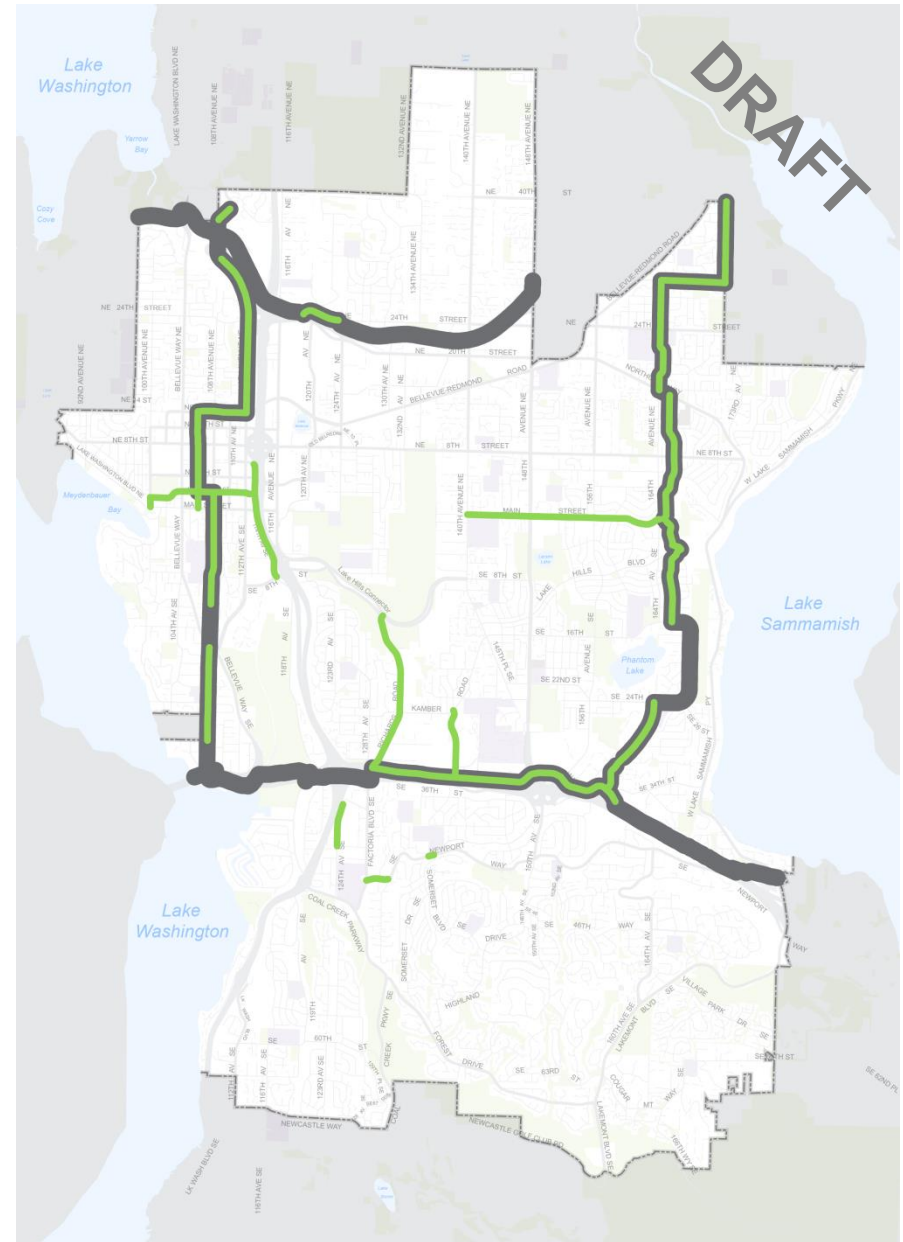


Key Features:

- \$6.21M est. installation cost
 - \$4.9M along CCCs
 - \$1.2M for supplemental bike access
- Off-street path construction from 106th–112th Ave NE
- Dedicated N-S bicycle facilities on 106th Ave NE in Downtown

Tradeoffs:

- Low level of supplemental bicycle access improvements
- Indirect, hilly neighborhood route alternative for NS-5
- Low level of bicycle improvements south of I-90

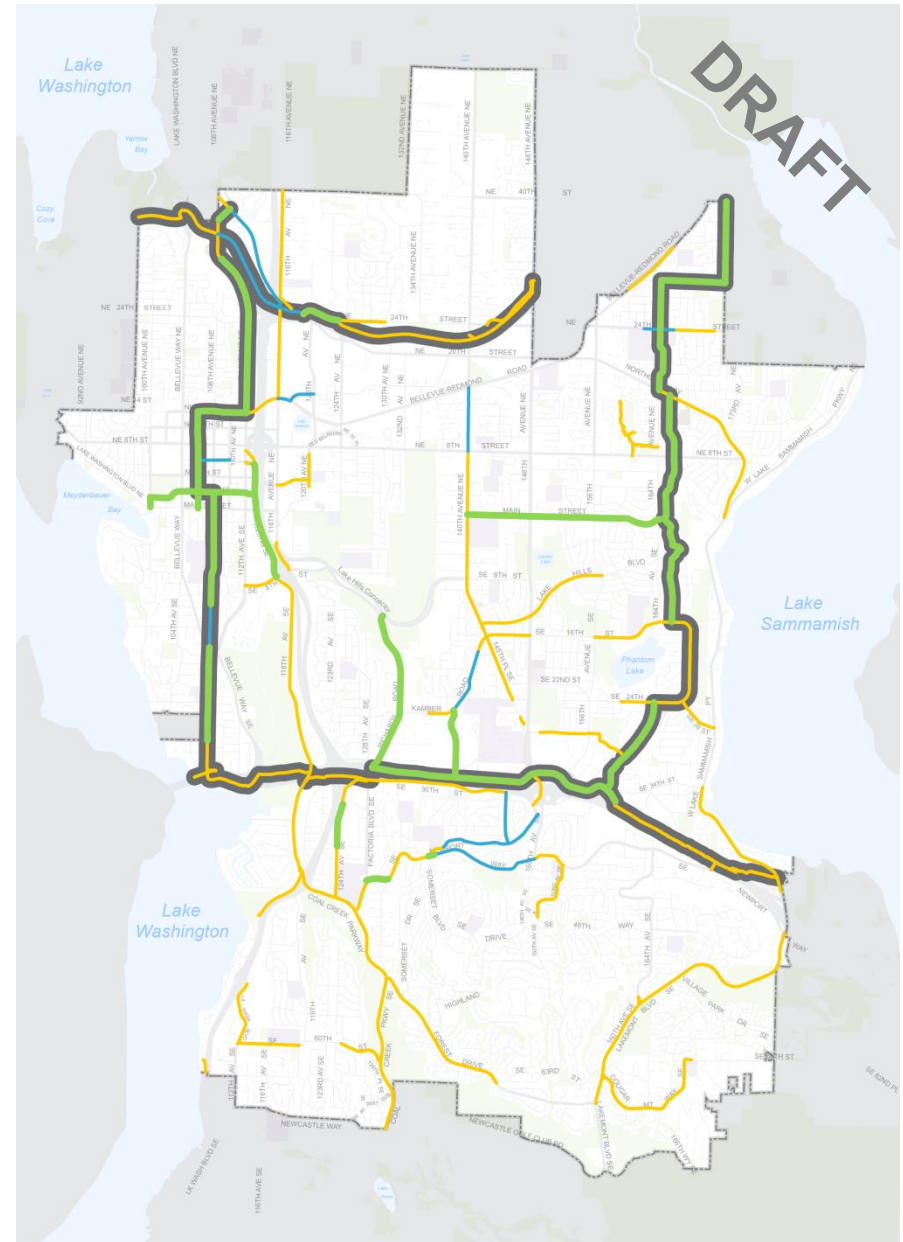


Key Features:

- \$6.21M est. installation cost
 - \$4.9M along CCCs
 - \$1.2M for supplemental bike access
- Off-street path construction from 106th–112th Ave NE
- Dedicated N-S bicycle facilities on 106th Ave NE in Downtown

Tradeoffs:

- Low level of supplemental bicycle access improvements
- Indirect, hilly neighborhood route alternative for NS-5
- Low level of bicycle improvements south of I-90



Key Features:

- \$6.21M est. installation cost
 - \$4.9M along CCCs
 - \$1.2M for supplemental bike access
- Off-street path construction from 106th–112th Ave NE
- Dedicated N-S bicycle facilities on 106th Ave NE in Downtown

Tradeoffs:

- Low level of supplemental bicycle access improvements
- Indirect, hilly neighborhood route alternative for NS-5
- Low level of bicycle improvements south of I-90



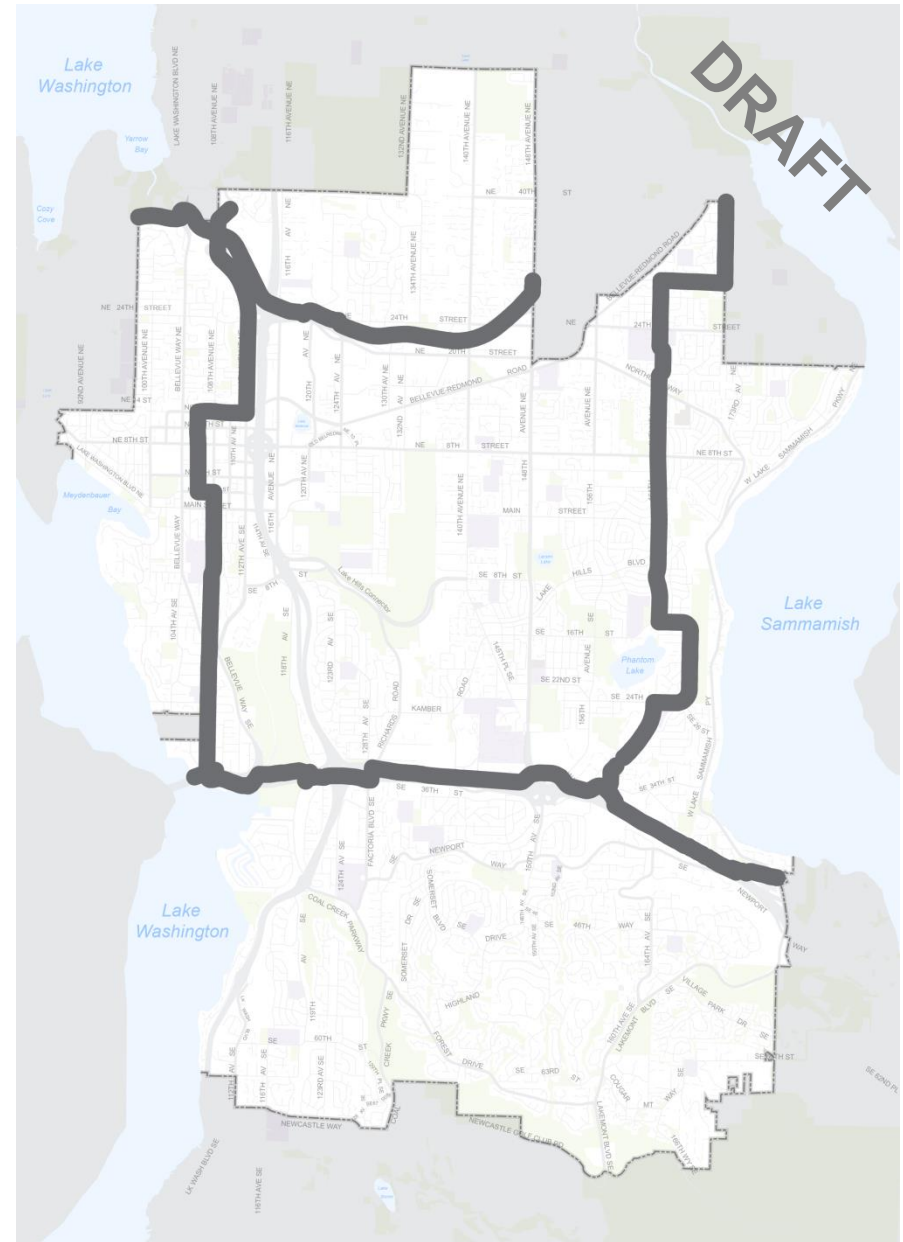
Key Features:

2 North-South cross-city connections

- **NS-1: Enatai to South Kirkland**
 - 108th Ave SE, NE 2nd St, 106th Ave NE, NE 12th St, 112th Ave NE
- **NS-5: Spirit Ridge to Sammamish River**
 - 161st Ave SE, SE 24th St, 168th Ave SE, SE 14th St, 164th Ave, NE 30th St, 172nd Ave NE

2 East-West cross-city connections

- **EW-1: 520 Trail**
 - 520 Trail (west), Northup Way, NE 24th St, 520 Trail (east)
- **EW-4: Mountains to Sound Greenway**
 - I-90 Trail (west), Richards Rd, SE Eastgate Way, I-90 Trail (east)



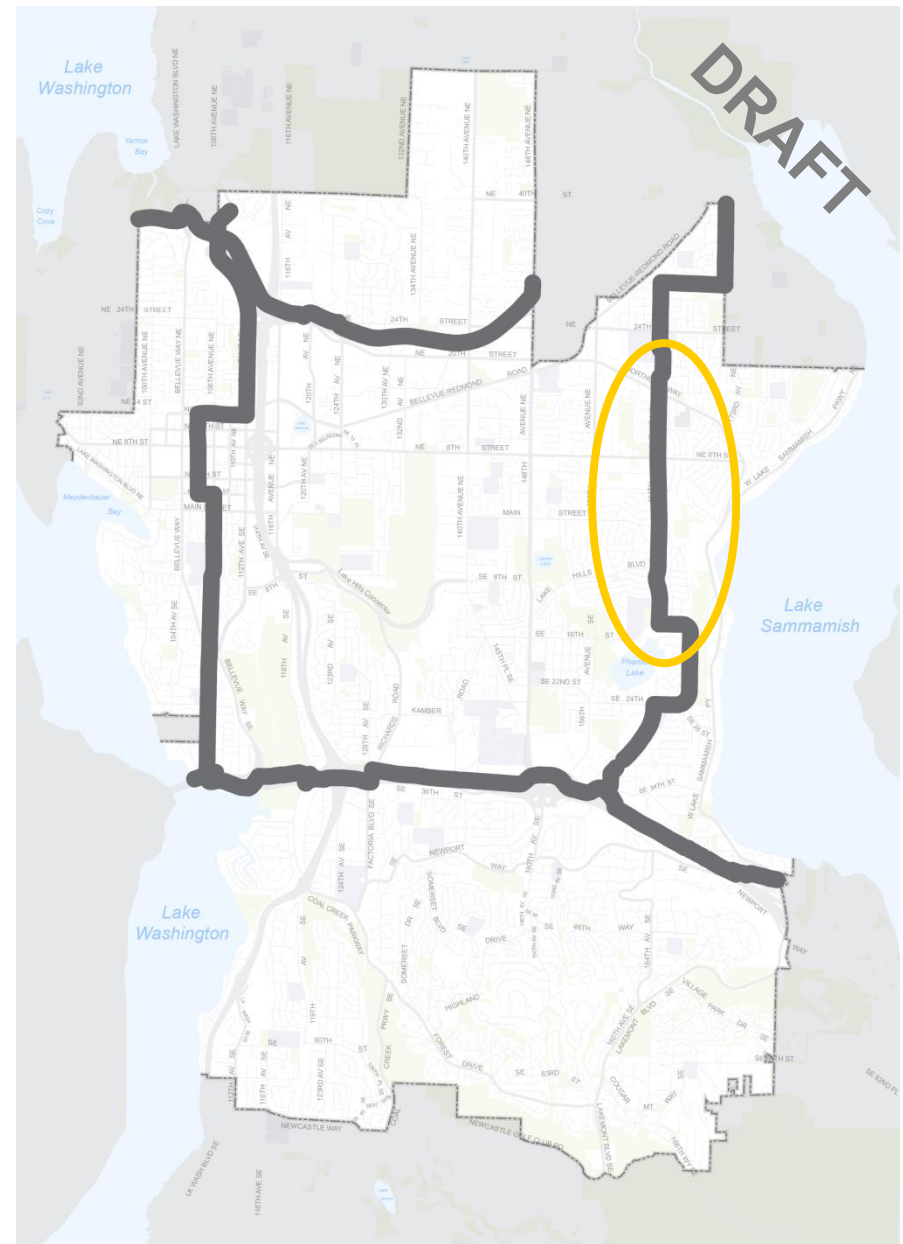
Key Features:

2 North-South cross-city connections

- NS-1: Enatai to South Kirkland
 - 108th Ave SE, NE 2nd St, 106th Ave NE, NE 12th St, 112th Ave NE
- NS-5: Spirit Ridge to Sammamish River
 - 161st Ave SE, SE 24th St, 168th Ave SE, SE 14th St, 164th Ave, NE 30th St, 172nd Ave NE

2 East-West cross-city connections

- EW-1: 520 Trail
 - 520 Trail (west), Northup Way, NE 24th St, 520 Trail (east)
- EW-4: Mountains to Sound Greenway
 - I-90 Trail (west), Richards Rd, SE Eastgate Way, I-90 Trail (east)



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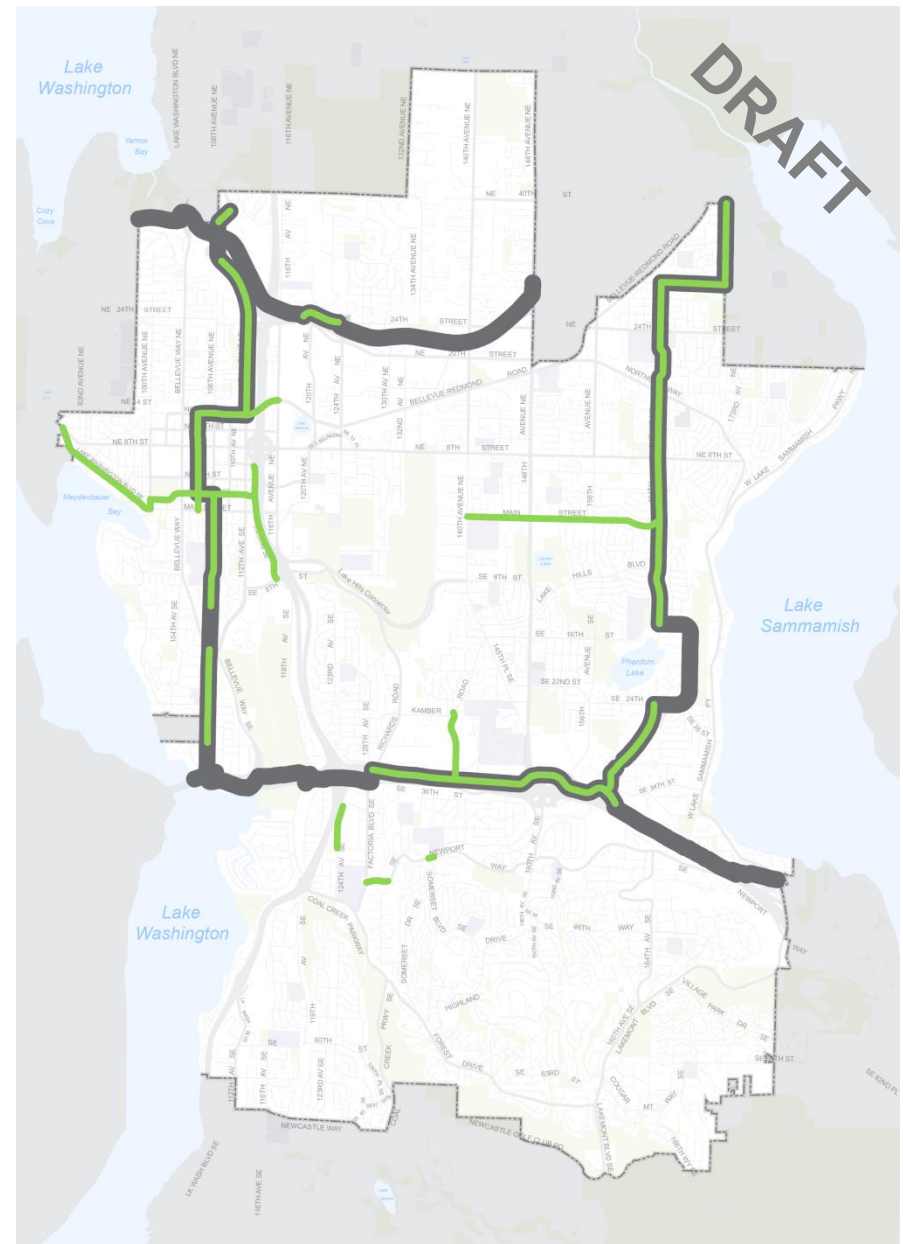
BRIP Option 2.3

Key Features:

- \$6.21M est. installation cost
 - \$5.3M along CCCs
 - \$0.9M for supplemental bike access
- Off-street path construction from 106th–112th Ave NE
- Dedicated N-S bicycle facilities on 106th Ave NE in Downtown
- Direct, buffered NS-5 route

Tradeoffs:

- Low level of supplemental bicycle access improvements
- On-street parking displacement along 164th Ave (NS-5)
- Low level of bicycle improvements south of I-90



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IMPLEMENTATION INITIATIVE

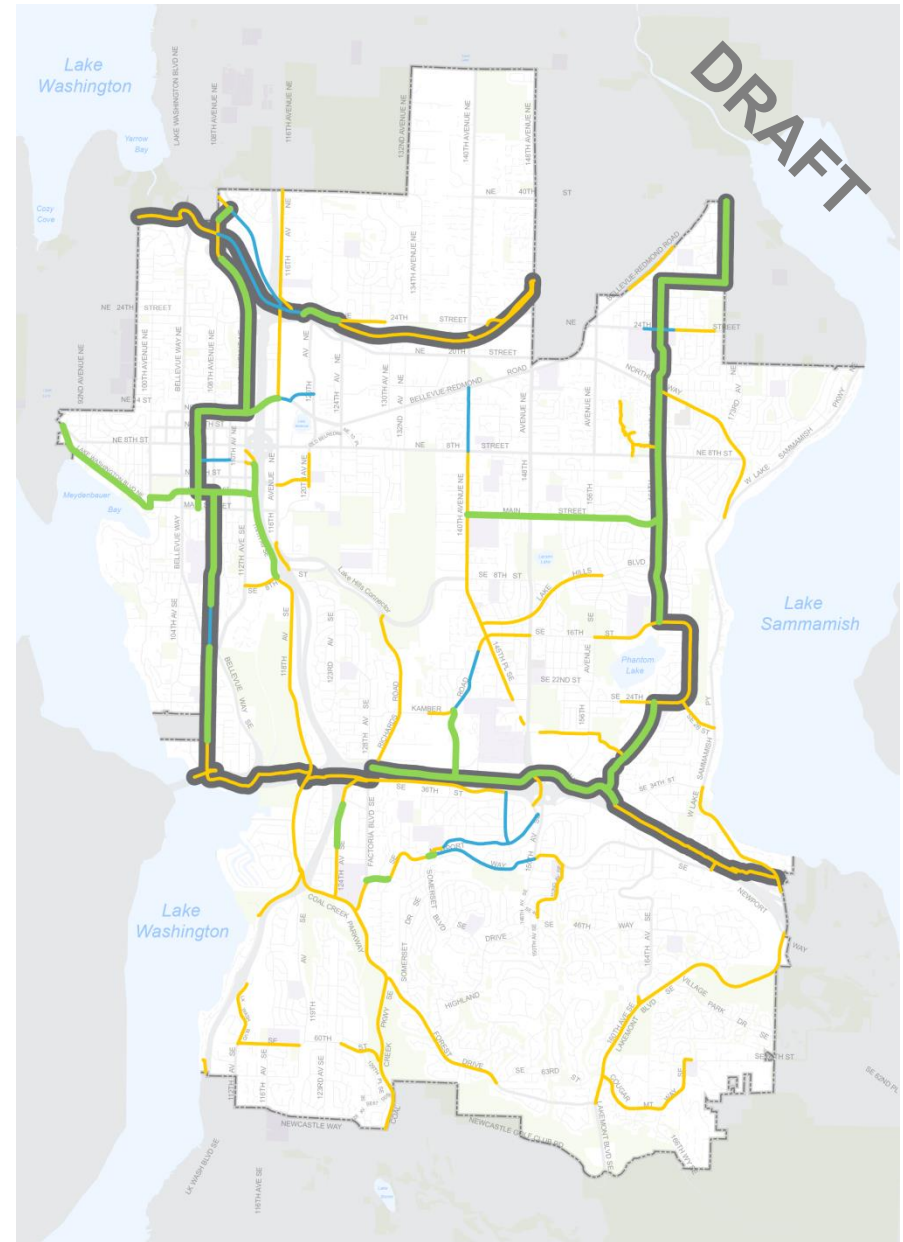
BRIP Option 2.3

Key Features:

- \$6.21M est. installation cost
 - \$5.3M along CCCs
 - \$0.9M for supplemental bike access
- Off-street path construction from 106th–112th Ave NE
- Dedicated N-S bicycle facilities on 106th Ave NE in Downtown
- Direct, buffered NS-5 route

Tradeoffs:

- Low level of supplemental bicycle access improvements
- On-street parking displacement along 164th Ave (NS-5)
- Low level of bicycle improvements south of I-90

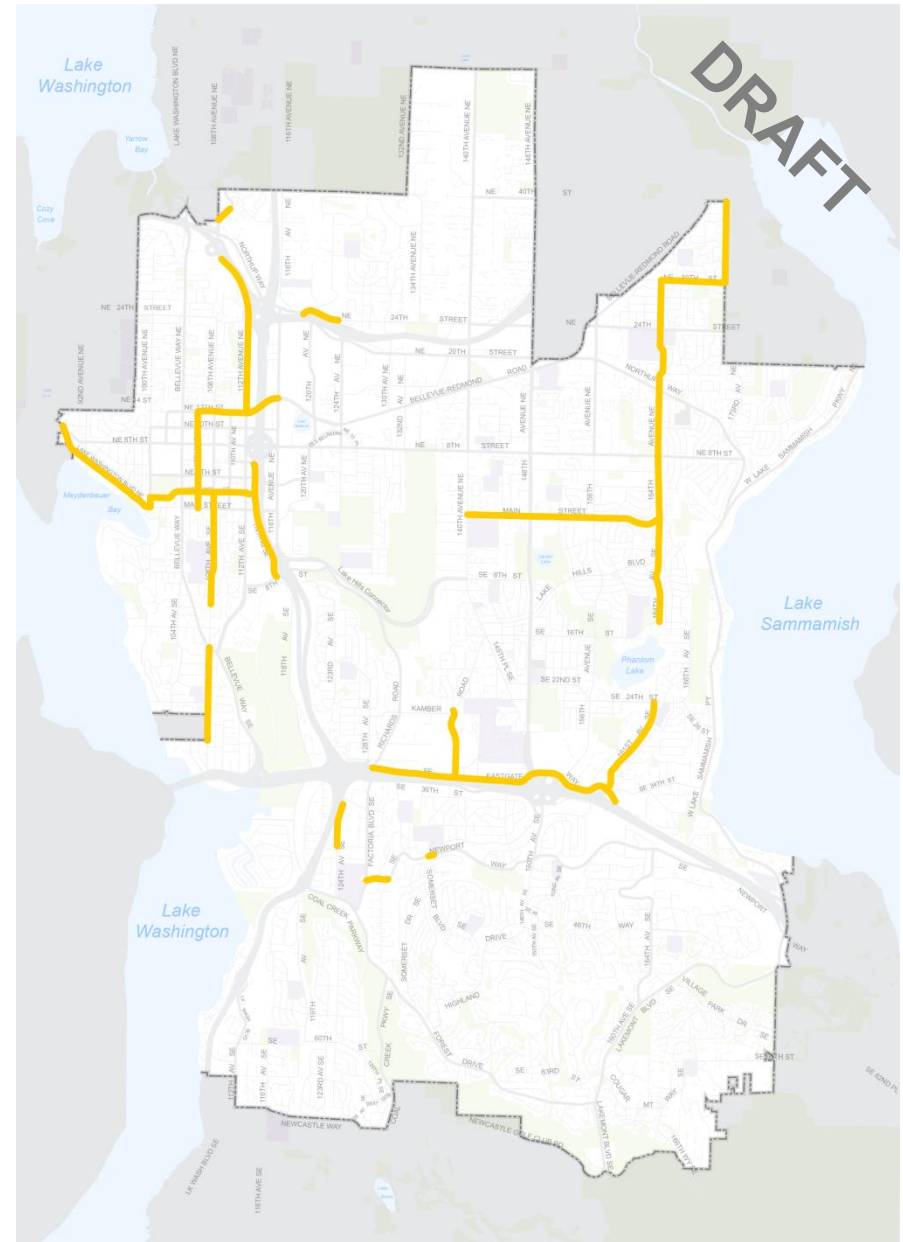


Key Features:

- \$6.21M est. installation cost
 - \$5.3M along CCCs
 - \$0.9M for supplemental bike access
- Off-street path construction from 106th–112th Ave NE
- Dedicated N-S bicycle facilities on 106th Ave NE in Downtown
- Direct, buffered NS-5 route

Tradeoffs:

- Low level of supplemental bicycle access improvements
- On-street parking displacement along 164th Ave (NS-5)
- Low level of bicycle improvements south of I-90



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BRIP Option 2.3

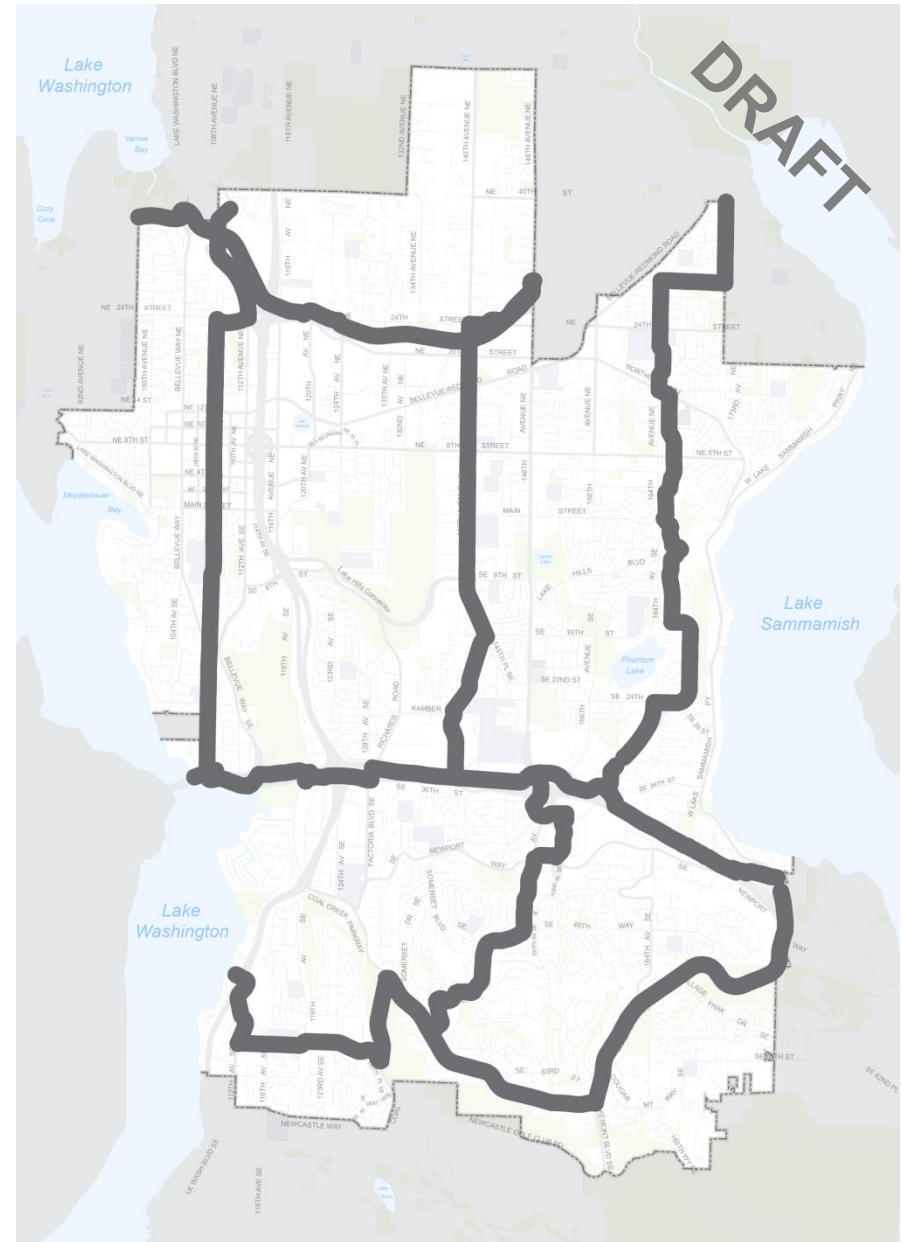
Key Features:

3 North-South cross-city connections

- **NS-1: Enatai to South Kirkland**
 - 108th Ave, NE 24th St, 112th Ave NE
- **NS-4: Somerset to Redmond**
 - Highland Dr, 140th Ave SE, Newport Way, 154th Ave SE, SE 38th St, I-90 Overpass, SE Eastgate Way, 139th Ave SE, Kamber Rd, 140th Ave, NE 24 St, NE 29th PI
- **NS-5: Spirit Ridge to Sammamish River**
 - 161st Ave SE, SE 24th St, 168th Ave SE, SE 14th St, 166th Ave, 165th Ave, 164th Ave NE, NE 30th St, 172nd Ave NE

3 East-West cross-city connections

- **EW-1: 520 Trail**
 - 520 Trail (W), Northup Way, NE 24th St, 520 Trail (E)
- **EW-4: Mountains to Sound Greenway**
 - I-90 Trail (W), Richards Rd, SE Eastgate Way, I-90 Trail (E)
- **EW-5: Coal Creek to Cougar Mountain**
 - Lake Washington Blvd SE, SE 60th St, Coal Creek Pkwy SE, Forest Dr SE, Lakemont Blvd SE



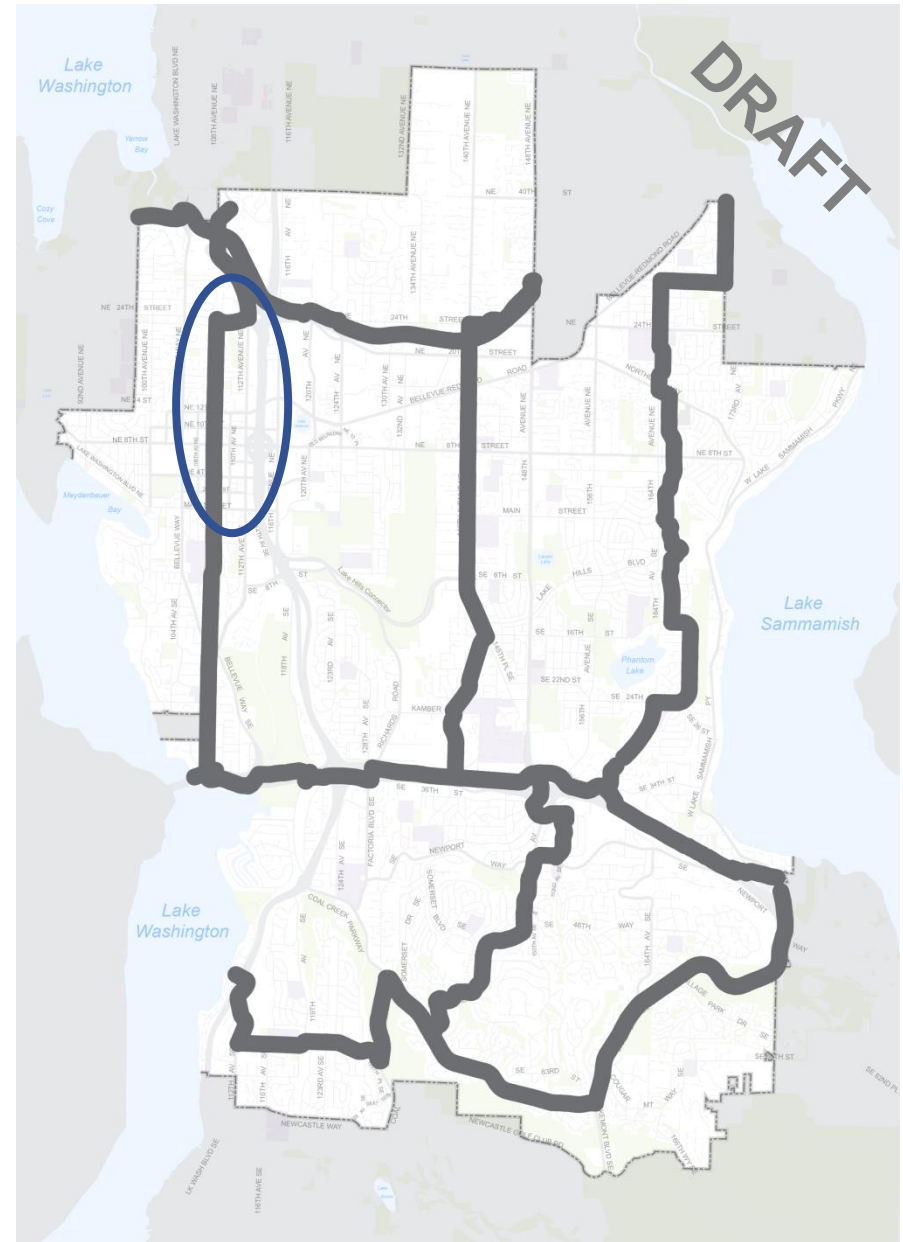
Key Features:

3 North-South cross-city connections

- **NS-1: Enatai to South Kirkland**
 - 108th Ave, NE 24th St, 112th Ave NE
- **NS-4: Somerset to Redmond**
 - Highland Dr, 140th Ave SE, Newport Way, 154th Ave SE, SE 38th St, I-90 Overpass, SE Eastgate Way, 139th Ave SE, Kamber Rd, 140th Ave, NE 24 St, NE 29th PI
- **NS-5: Spirit Ridge to Sammamish River**
 - 161st Ave SE, SE 24th St, 168th Ave SE, SE 14th St, 166th Ave, 165th Ave, 164th Ave NE, NE 30th St, 172nd Ave NE

3 East-West cross-city connections

- **EW-1: 520 Trail**
 - 520 Trail (W), Northup Way, NE 24th St, 520 Trail (E)
- **EW-4: Mountains to Sound Greenway**
 - I-90 Trail (W), Richards Rd, SE Eastgate Way, I-90 Trail (E)
- **EW-5: Coal Creek to Cougar Mountain**
 - Lake Washington Blvd SE, SE 60th St, Coal Creek Pkwy SE, Forest Dr SE, Lakemont Blvd SE

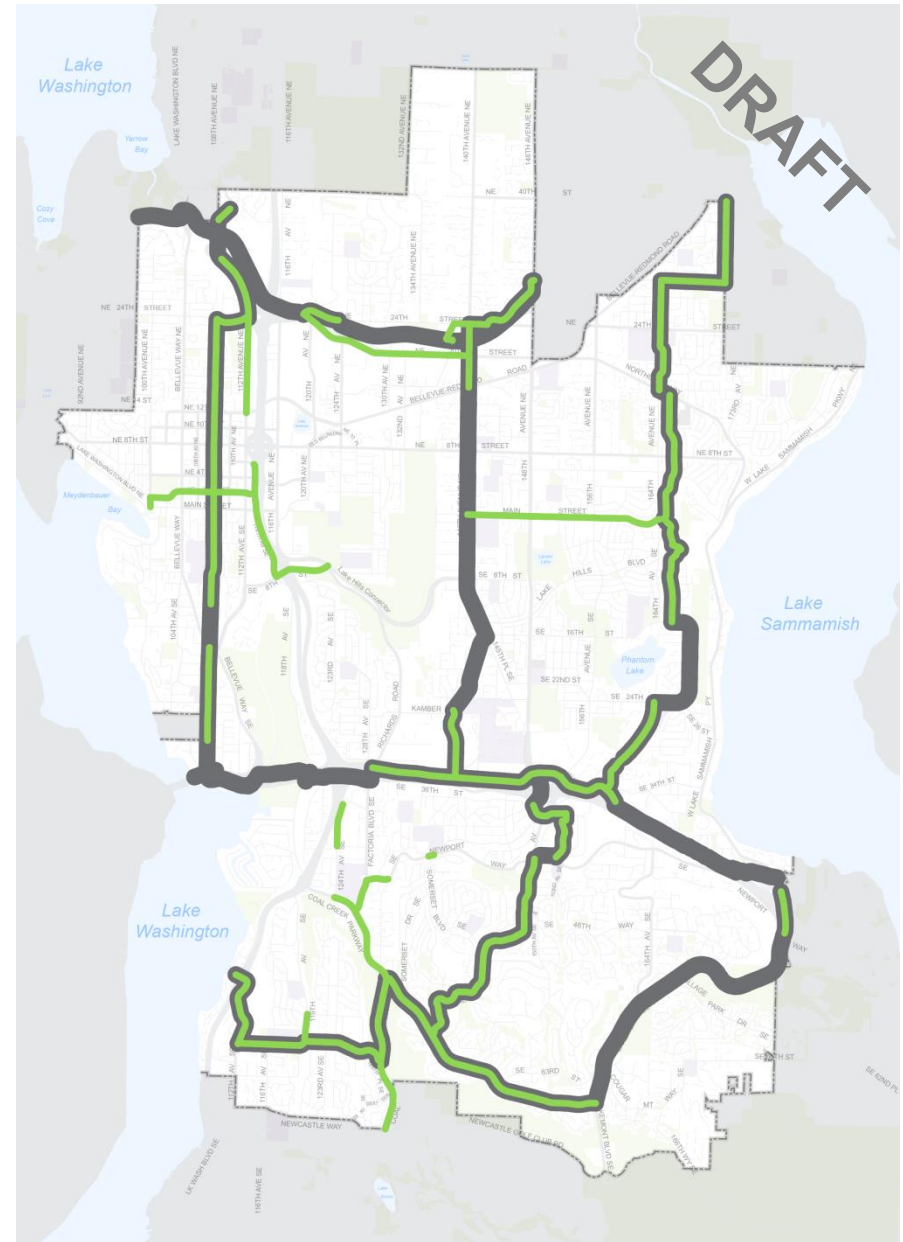


Key Features:

- \$5.82M est. installation cost
 - \$3.6M along CCCs
 - \$2.1M for supplemental bike access
- Exceeds 2019 goals for cross-city connections
- No off-street path construction
- Moderate level of supplemental bicycle access improvements

Tradeoffs:

- No dedicated N-S bicycle facility through Downtown
- Indirect, hilly neighborhood route alternative for NS-5



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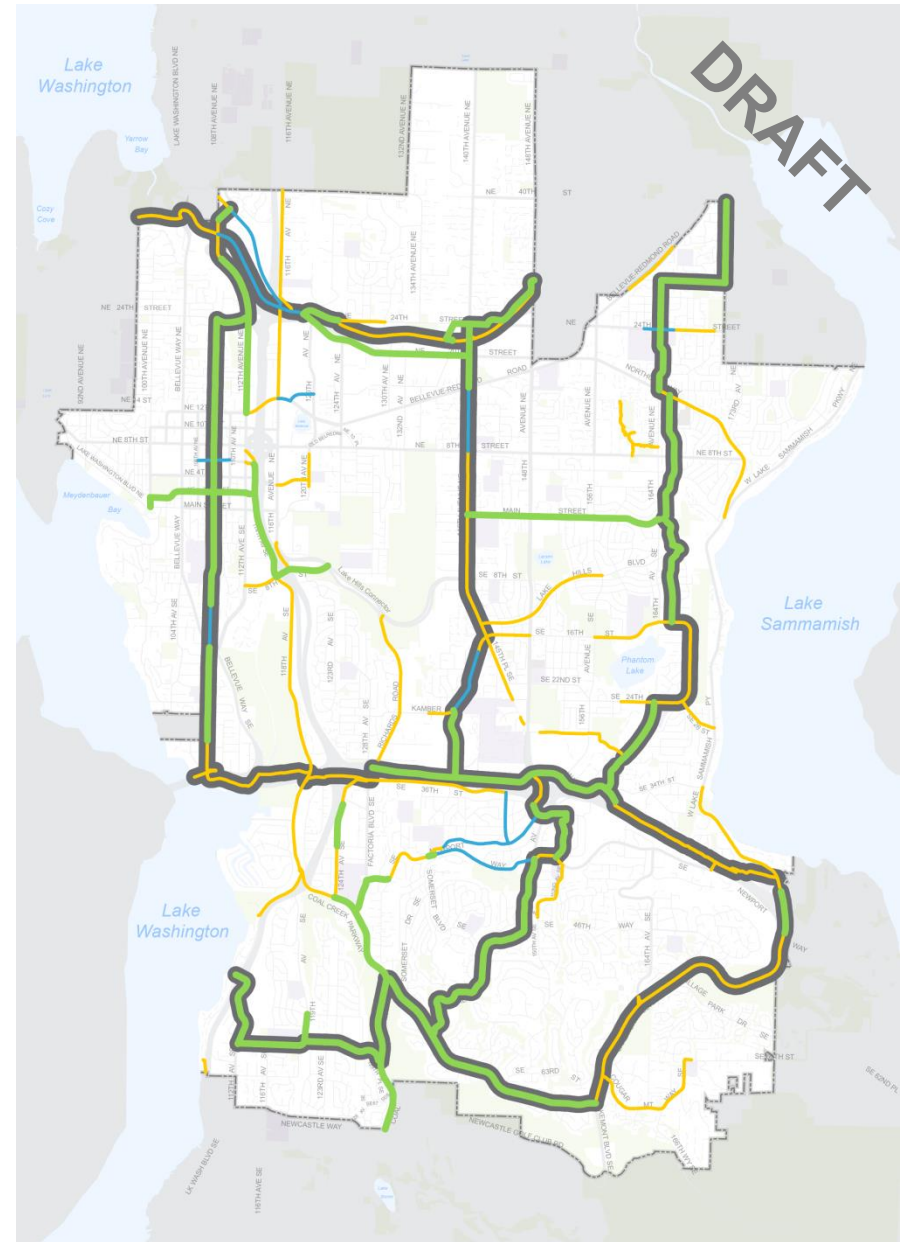
BRIP Option 3.0

Key Features:

- \$5.82M est. installation cost
 - \$3.6M along CCCs
 - \$2.1M for supplemental bike access
- Exceeds 2019 goals for cross-city connections
- No off-street path construction
- Moderate level of supplemental bicycle access improvements

Tradeoffs:

- No dedicated N-S bicycle facility through Downtown
- Indirect, hilly neighborhood route alternative for NS-5



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BRIP Option 3.0

Key Features:

- \$5.82M est. installation cost
 - \$3.6M along CCCs
 - \$2.1M for supplemental bike access
- Exceeds 2019 goals for cross-city connections
- No off-street path construction
- Moderate level of supplemental bicycle access improvements

Tradeoffs:

- No dedicated N-S bicycle facility through Downtown
- Indirect, hilly neighborhood route alternative for NS-5



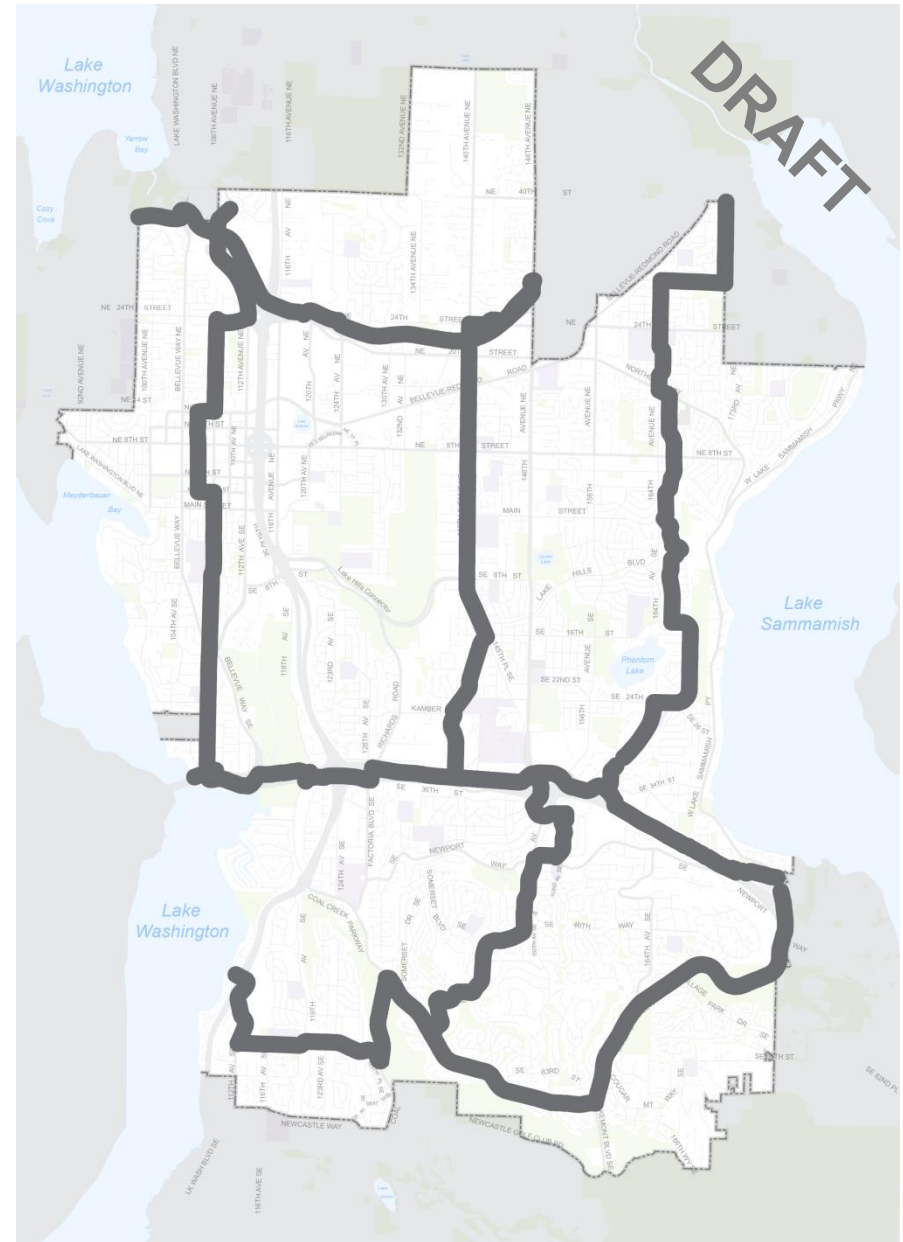
Key Features:

3 North-South cross-city connections

- **NS-1: Enatai to South Kirkland**
 - 108th Ave SE, NE 2nd St, 106th Ave NE, NE 12th St, 108th Ave NE, NE 24th St, 112th Ave NE
- **NS-4: Somerset to Redmond**
 - Highland Dr, 140th Ave SE, Newport Way, 154th Ave SE, SE 38th St, I-90 Overpass, SE Eastgate Way, 139th Ave SE, Kamber Rd, 140th Ave, NE 24 St, NE 29th Pl
- **NS-5: Spirit Ridge to Sammamish River**
 - 161st Ave SE, SE 24th St, 168th Ave SE, SE 14th St, 166th Ave, 165th Ave, 164th Ave NE, NE 30th St, 172nd Ave NE

3 East-West cross-city connections

- **EW-1: 520 Trail**
 - 520 Trail (W), Northup Way, NE 24th St, 520 Trail (E)
- **EW-4: Mountains to Sound Greenway**
 - I-90 Trail (W), Richards Rd, SE Eastgate Way, I-90 Trail (E)
- **EW-5: Coal Creek to Cougar Mountain**
 - Lake Washington Blvd SE, SE 60th St, Coal Creek Pkwy SE, Forest Dr SE, Lakemont Blvd SE



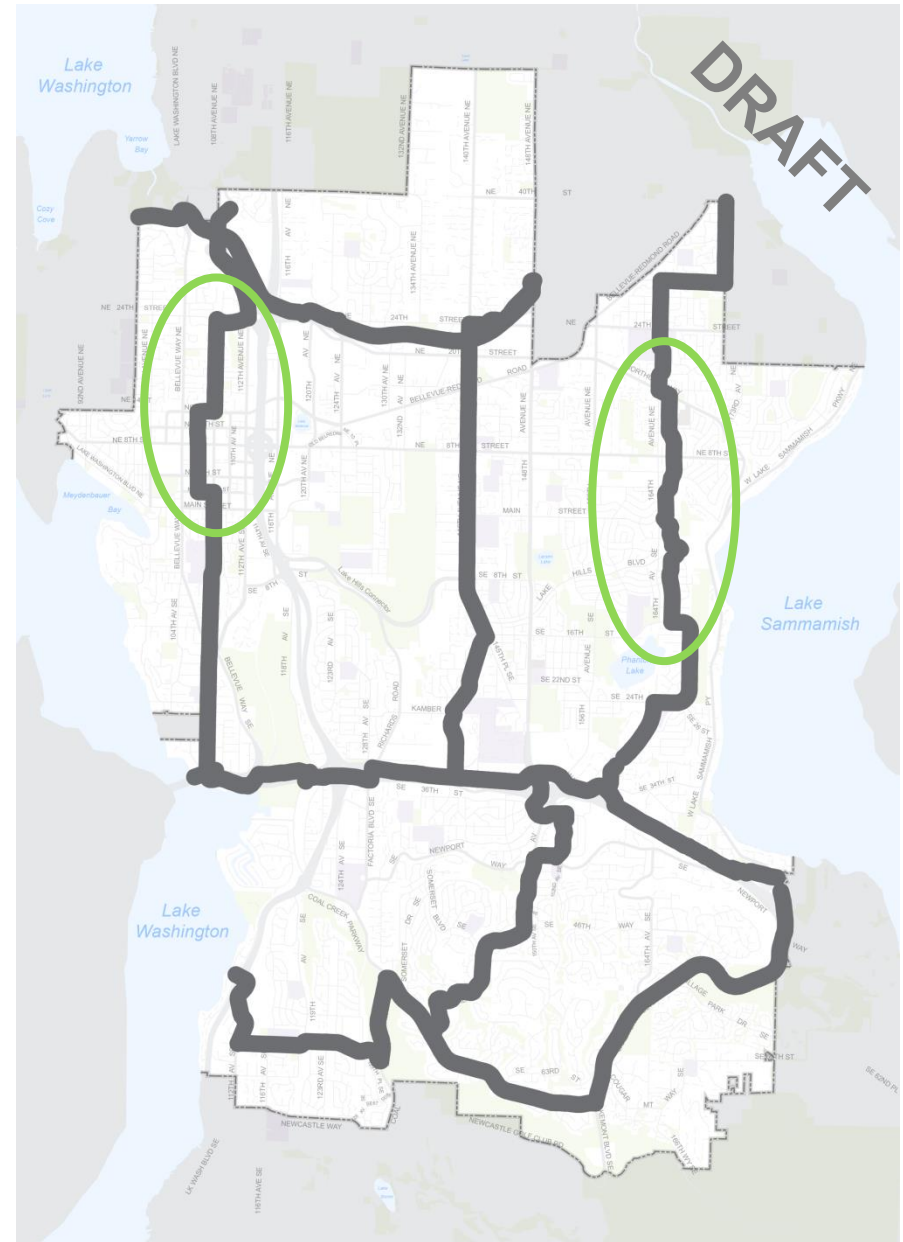
Key Features:

3 North-South cross-city connections

- **NS-1: Enatai to South Kirkland**
 - 108th Ave SE, **NE 2nd St**, **106th Ave NE**, **NE 12th St**, **108th Ave NE**, NE 24th St, 112th Ave NE
- **NS-4: Somerset to Redmond**
 - Highland Dr, 140th Ave SE, Newport Way, 154th Ave SE, SE 38th St, I-90 Overpass, SE Eastgate Way, 139th Ave SE, Kamber Rd, 140th Ave, NE 24 St, NE 29th Pl
- **NS-5: Spirit Ridge to Sammamish River**
 - 161st Ave SE, SE 24th St, 168th Ave SE, **SE 14th St**, **166th Ave**, **165th Ave**, **164th Ave NE**, NE 30th St, 172nd Ave NE

3 East-West cross-city connections

- **EW-1: 520 Trail**
 - 520 Trail (W), Northup Way, NE 24th St, 520 Trail (E)
- **EW-4: Mountains to Sound Greenway**
 - I-90 Trail (W), Richards Rd, SE Eastgate Way, I-90 Trail (E)
- **EW-5: Coal Creek to Cougar Mountain**
 - Lake Washington Blvd SE, SE 60th St, Coal Creek Pkwy SE, Forest Dr SE, Lakemont Blvd SE



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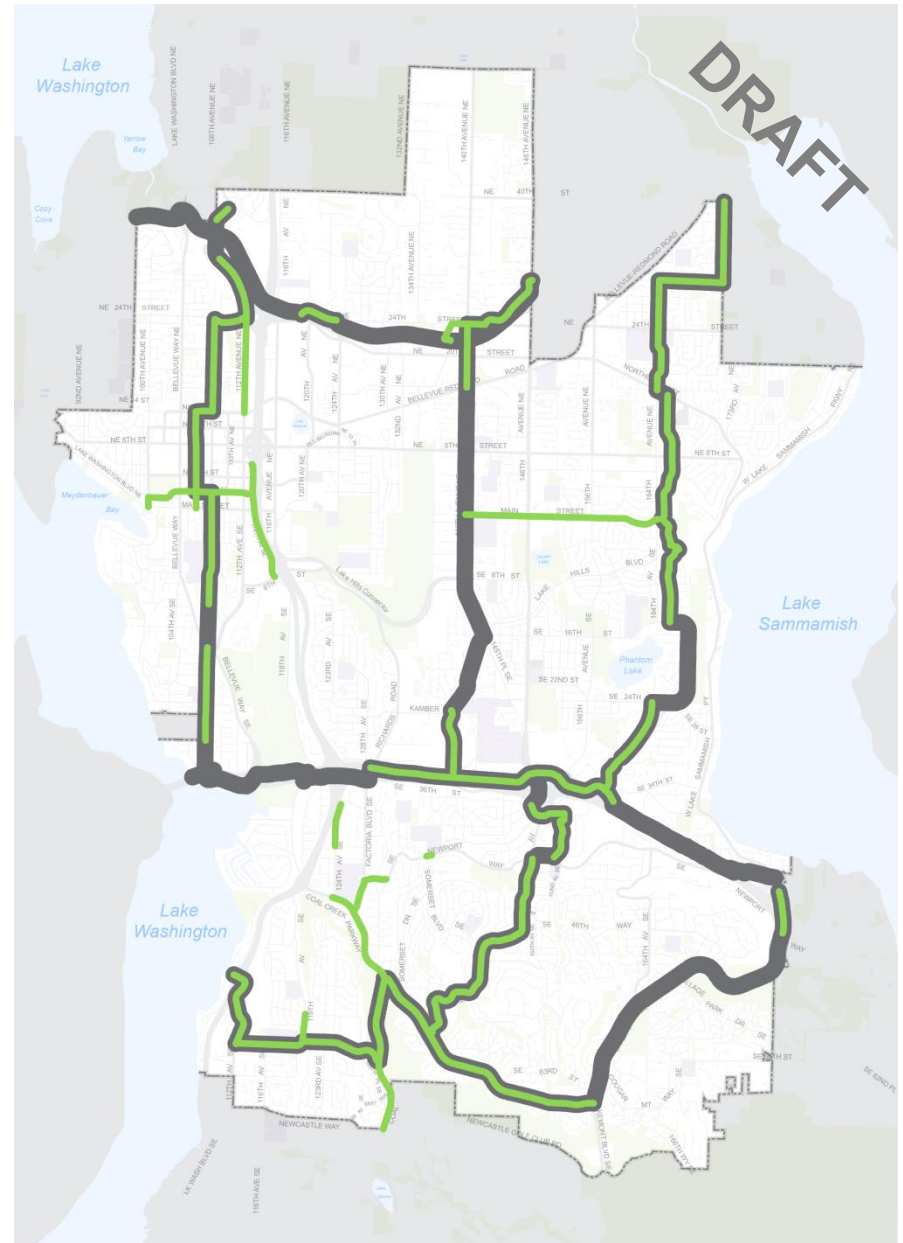
BRIP Option 3.1

Key Features:

- \$6.58M est. installation cost
 - \$5.2M along CCCs
 - \$1.3M for supplemental bike access
- Exceeds 2019 goals for cross-city connections
- Off-street path construction from 106th–108th Ave NE
- Dedicated N-S bicycle facilities on 106th Ave NE in Downtown
- Moderate level of supplemental bicycle access improvements

Tradeoffs:

- Indirect, hilly neighborhood route alternative for NS-5

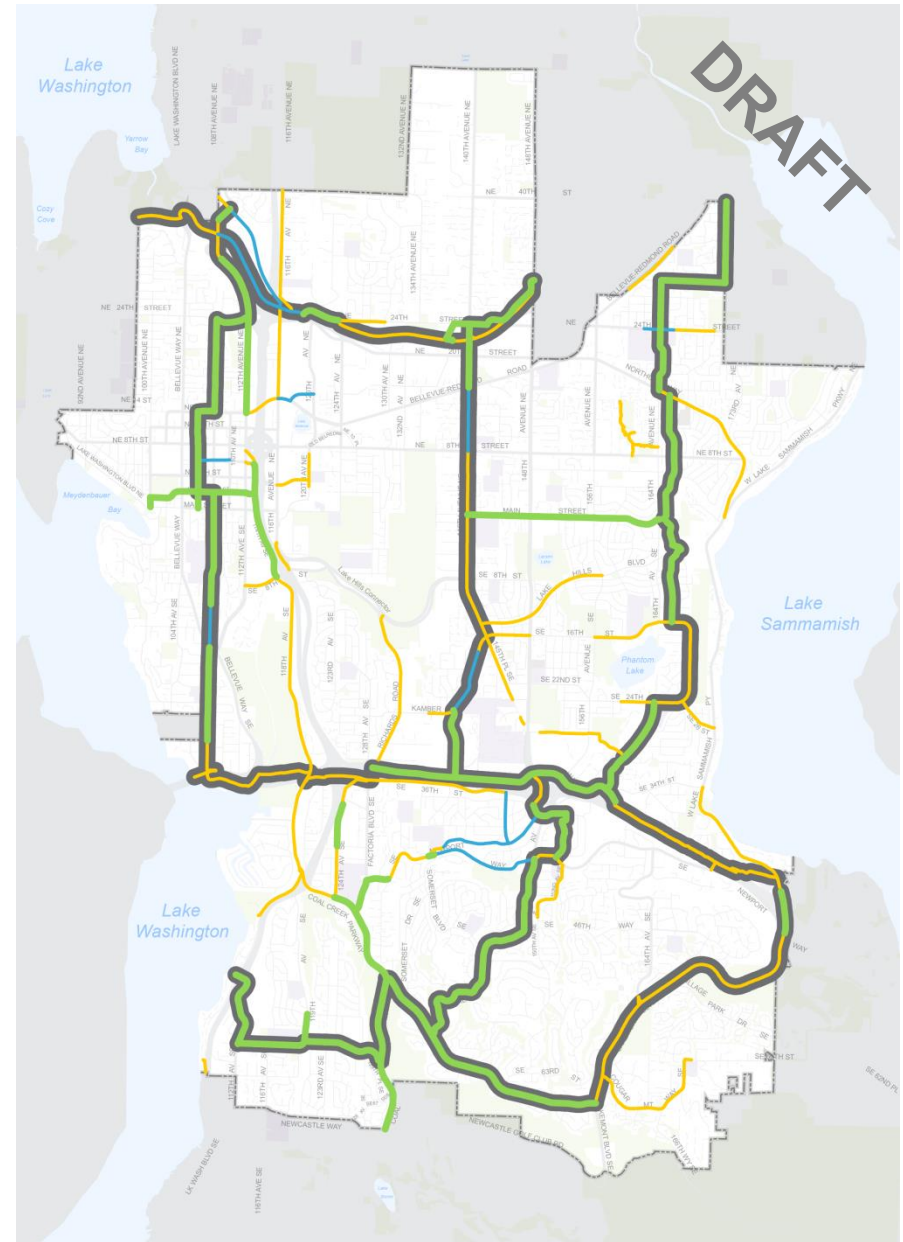


Key Features:

- \$6.58M est. installation cost
 - \$5.2M along CCCs
 - \$1.3M for supplemental bike access
- Exceeds 2019 goals for cross-city connections
- Off-street path construction from 106th–108th Ave NE
- Dedicated N-S bicycle facilities on 106th Ave NE in Downtown
- Moderate level of supplemental bicycle access improvements

Tradeoffs:

- Indirect, hilly neighborhood route alternative for NS-5



Key Features:

- \$6.58M est. installation cost
 - \$5.2M along CCCs
 - \$1.3M for supplemental bike access
- Exceeds 2019 goals for cross-city connections
- Off-street path construction from 106th–108th Ave NE
- Dedicated N-S bicycle facilities on 106th Ave NE in Downtown
- Moderate level of supplemental bicycle access improvements

Tradeoffs:

- Indirect, hilly neighborhood route alternative for NS-5



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BRIP Option 3.1

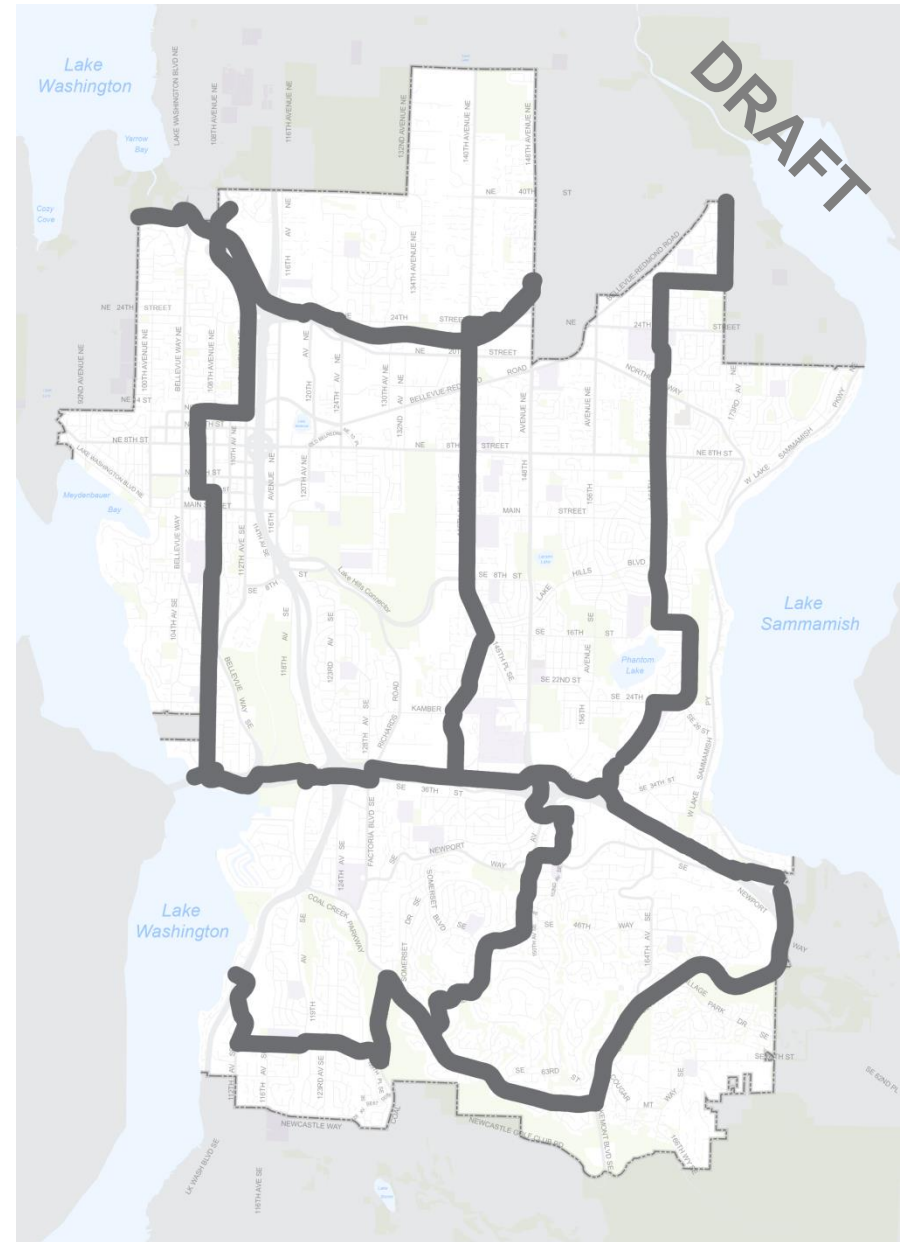
Key Features:

3 North-South cross-city connections

- **NS-1: Enatai to South Kirkland**
 - 108th Ave SE, NE 2nd St, 106th Ave NE, NE 12th St, 112th Ave NE
- **NS-4: Somerset to Redmond**
 - Highland Dr, 140th Ave SE, Newport Way, 154th Ave SE, SE 38th St, I-90 Overpass, SE Eastgate Way, 139th Ave SE, Kamber Rd, 140th Ave, NE 24 St, NE 29th Pl
- **NS-5: Spirit Ridge to Sammamish River**
 - 161st Ave SE, SE 24th St, 168th Ave SE, SE 14th St, 164th Ave, NE 30th St, 172nd Ave NE

3 East-West cross-city connections

- **EW-1: 520 Trail**
 - 520 Trail (W), Northup Way, NE 24th St, 520 Trail (E)
- **EW-4: Mountains to Sound Greenway**
 - I-90 Trail (W), Richards Rd, SE Eastgate Way, I-90 Trail (E)
- **EW-5: Coal Creek to Cougar Mountain**
 - Lake Washington Blvd SE, SE 60th St, Coal Creek Pkwy SE, Forest Dr SE, Lakemont Blvd SE



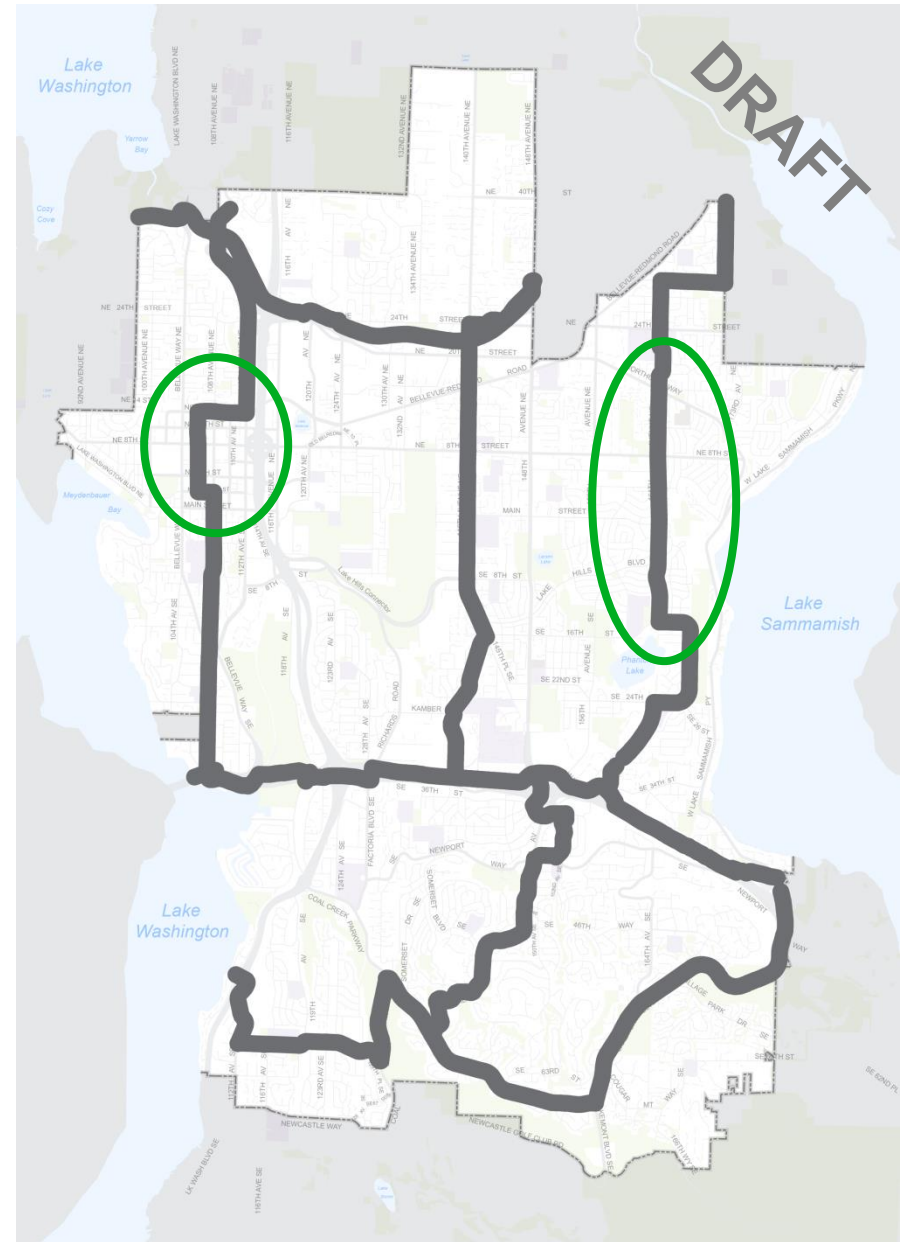
Key Features:

3 North-South cross-city connections

- **NS-1: Enatai to South Kirkland**
 - 108th Ave SE, **NE 2nd St**, **106th Ave NE**, **NE 12th St**, **112th Ave NE**
- **NS-4: Somerset to Redmond**
 - Highland Dr, 140th Ave SE, Newport Way, 154th Ave SE, SE 38th St, I-90 Overpass, SE Eastgate Way, 139th Ave SE, Kamber Rd, 140th Ave, NE 24 St, NE 29th Pl
- **NS-5: Spirit Ridge to Sammamish River**
 - 161st Ave SE, SE 24th St, 168th Ave SE, **SE 14th St**, **164th Ave**, NE 30th St, 172nd Ave NE

3 East-West cross-city connections

- **EW-1: 520 Trail**
 - 520 Trail (W), Northup Way, NE 24th St, 520 Trail (E)
- **EW-4: Mountains to Sound Greenway**
 - I-90 Trail (W), Richards Rd, SE Eastgate Way, I-90 Trail (E)
- **EW-5: Coal Creek to Cougar Mountain**
 - Lake Washington Blvd SE, SE 60th St, Coal Creek Pkwy SE, Forest Dr SE, Lakemont Blvd SE

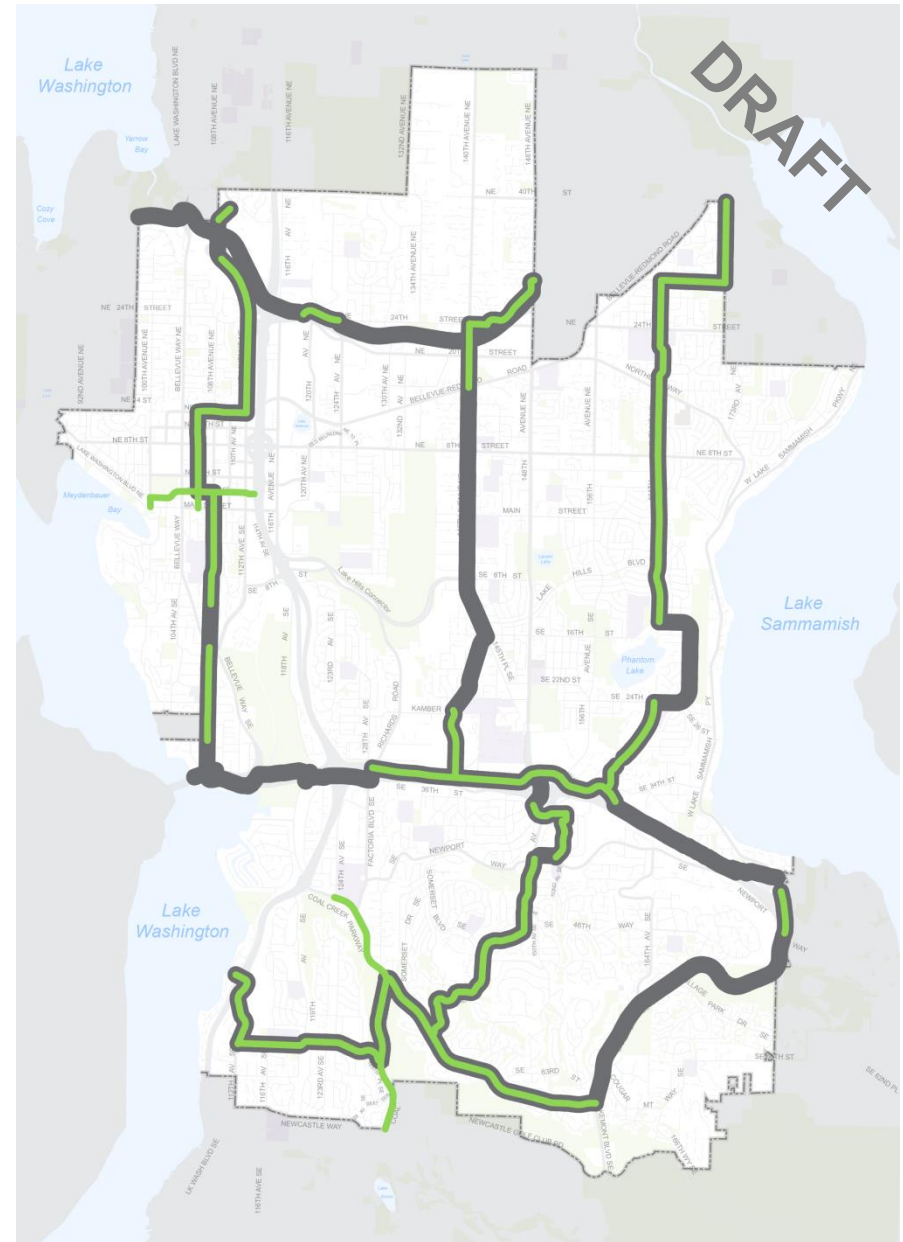


Key Features:

- \$7.31M est. installation cost
 - \$6.9M along CCCs
 - \$0.3M for supplemental bike access
- Exceeds 2019 goals for cross-city connections
- Off-street path construction from 106th–112th Ave NE
- Dedicated N-S bicycle facilities on 106th Ave NE in Downtown
- Direct, buffered NS-5 route

Tradeoffs:

- Lowest level of supplemental bicycle access improvements
- On-street parking displacement along 164th Ave (NS-5)



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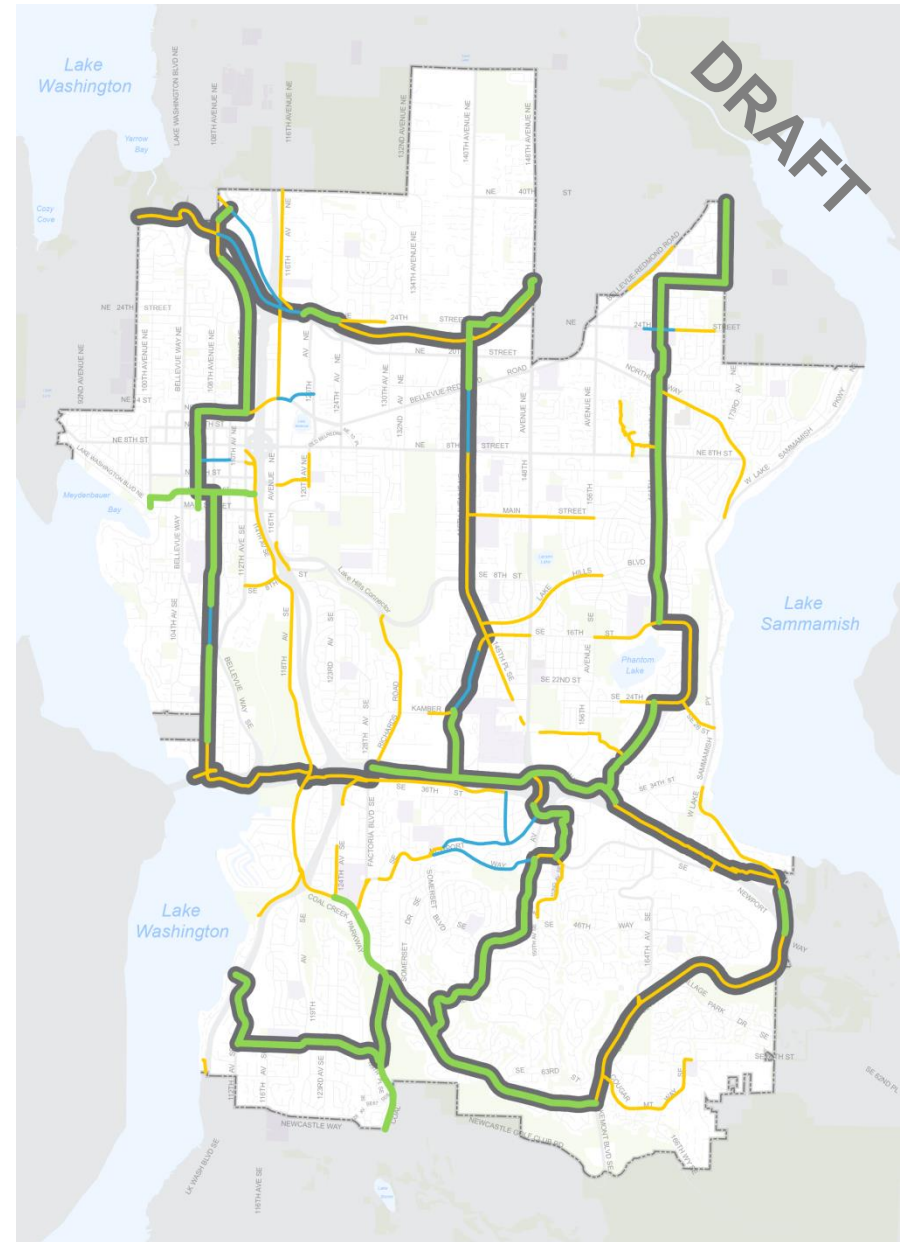
BRIP Option 3.2

Key Features:

- \$7.31M est. installation cost
 - \$6.9M along CCCs
 - \$0.3M for supplemental bike access
- Exceeds 2019 goals for cross-city connections
- Off-street path construction from 106th–112th Ave NE
- Dedicated N-S bicycle facilities on 106th Ave NE in Downtown
- Direct, buffered NS-5 route

Tradeoffs:

- Lowest level of supplemental bicycle access improvements
- On-street parking displacement along 164th Ave (NS-5)

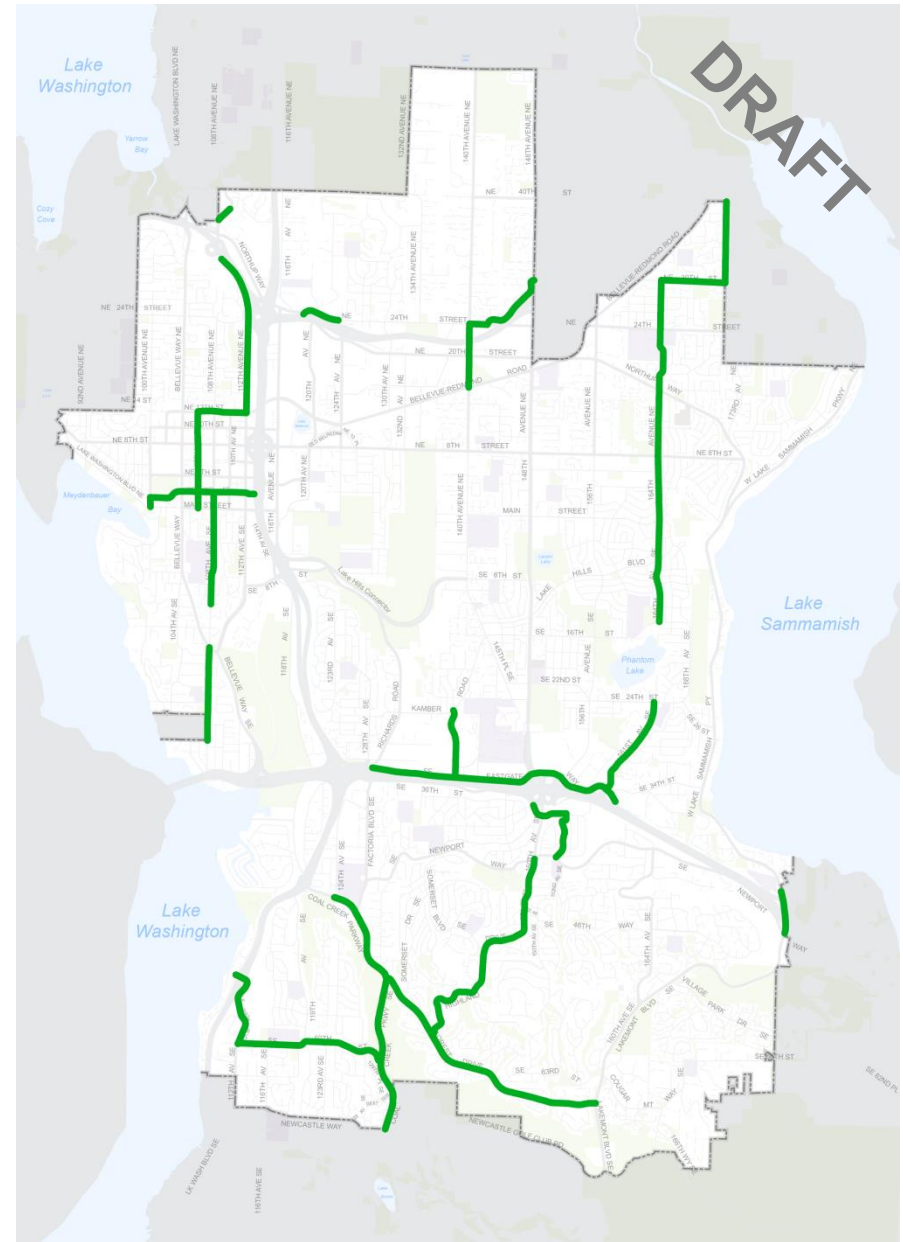


Key Features:

- \$7.31M est. installation cost
 - \$6.9M along CCCs
 - \$0.3M for supplemental bike access
- Exceeds 2019 goals for cross-city connections
- Off-street path construction from 106th–112th Ave NE
- Dedicated N-S bicycle facilities on 106th Ave NE in Downtown
- Direct, buffered NS-5 route

Tradeoffs:

- Lowest level of supplemental bicycle access improvements
- On-street parking displacement along 164th Ave (NS-5)



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BRIP Option 3.2

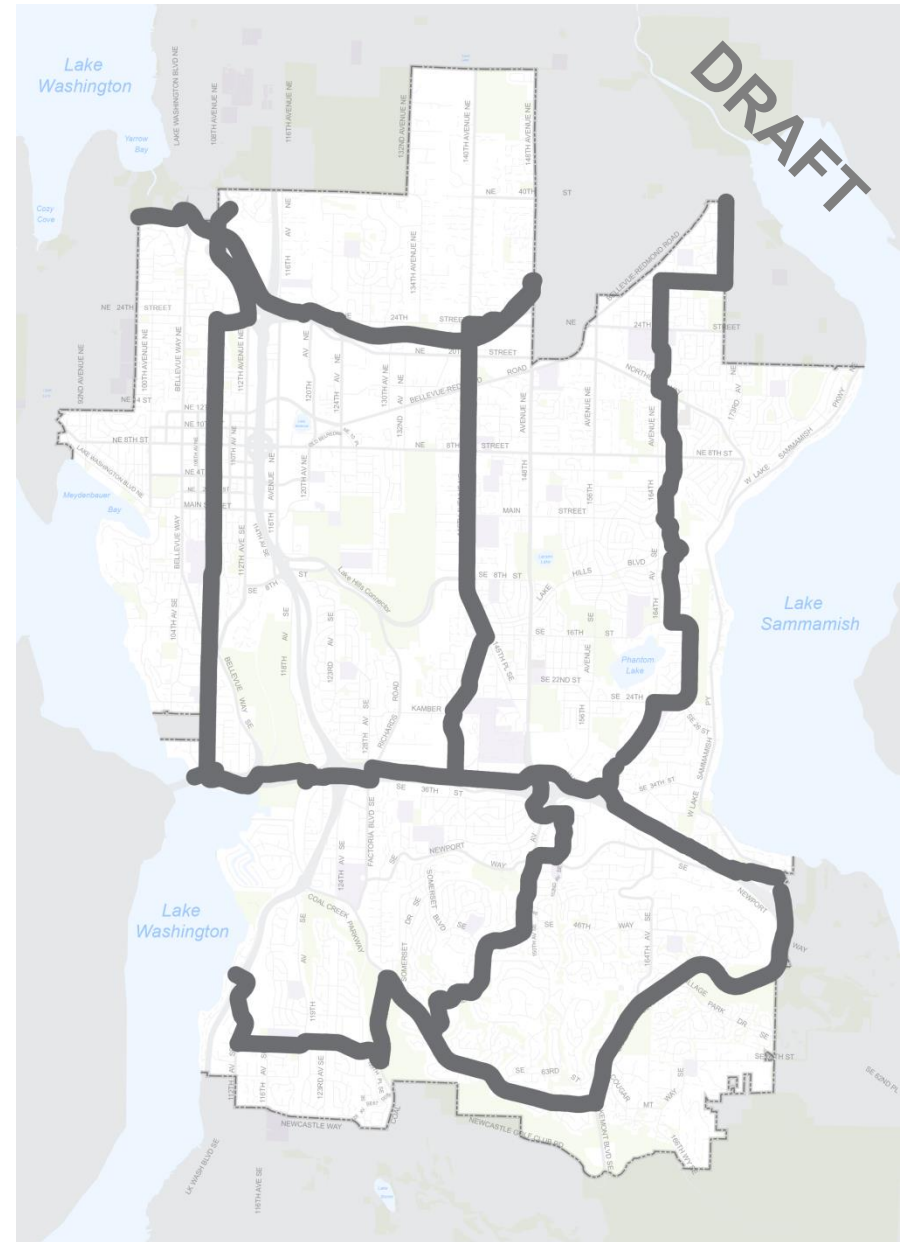
Key Features:

3 North-South cross-city connections

- **NS-1: Enatai to South Kirkland**
 - 108th Ave, NE 24th St, 112th Ave NE
- **NS-4: Somerset to Redmond**
 - Highland Dr, 140th Ave SE, Newport Way, 154th Ave SE, SE 38th St, I-90 Overpass, SE Eastgate Way, 139th Ave SE, Kamber Rd, 140th Ave, NE 24 St, NE 29th PI
- **NS-5: Spirit Ridge to Sammamish River**
 - 161st Ave SE, SE 24th St, 168th Ave SE, SE 14th St, 166th Ave, 165th Ave, 164th Ave NE, NE 30th St, 172nd Ave NE

3 East-West cross-city connections

- **EW-1: 520 Trail**
 - 520 Trail (W), Northup Way, NE 24th St, 520 Trail (E)
- **EW-4: Mountains to Sound Greenway**
 - I-90 Trail (W), Richards Rd, SE Eastgate Way, I-90 Trail (E)
- **EW-5: Coal Creek to Cougar Mountain**
 - Lake Washington Blvd SE, SE 60th St, Coal Creek Pkwy SE, Forest Dr SE, Lakemont Blvd SE



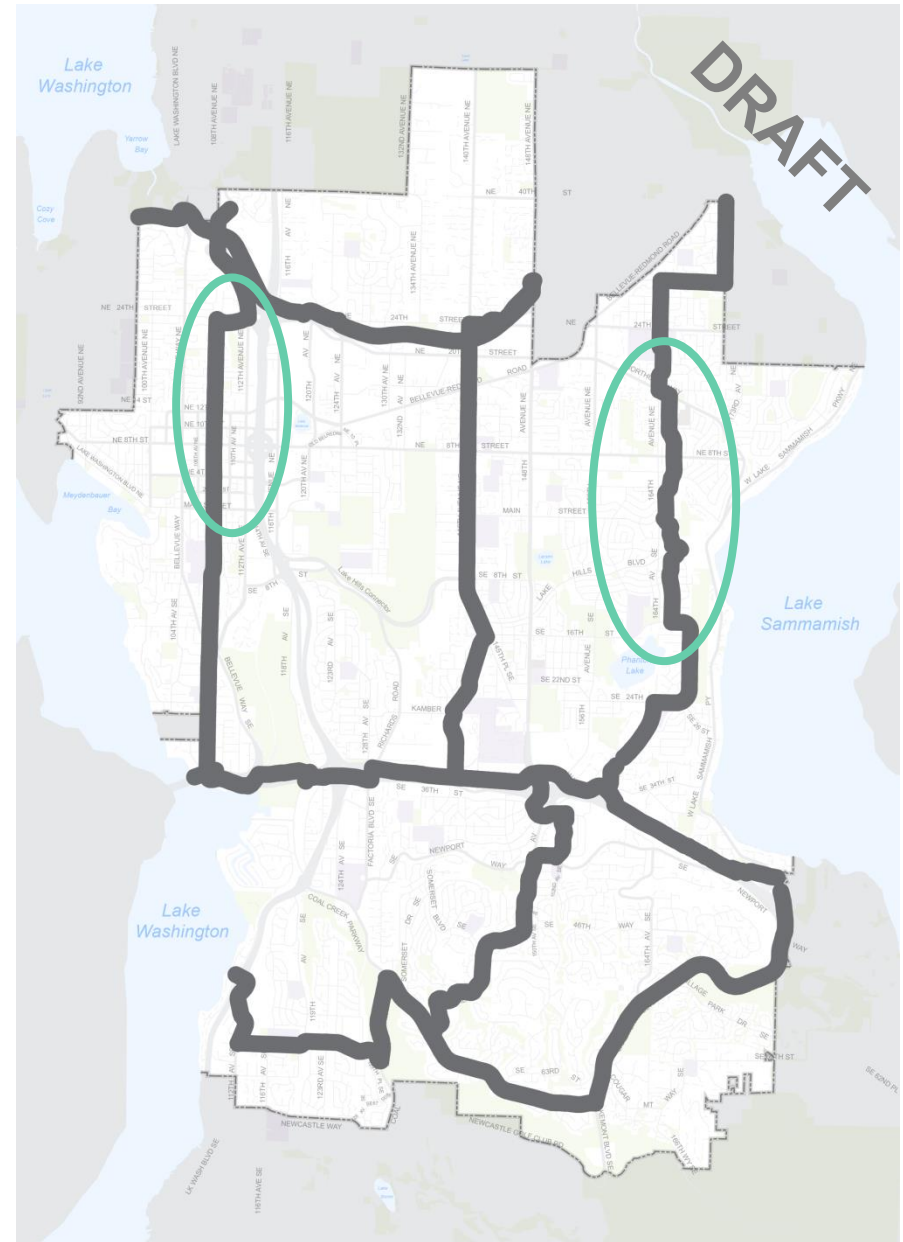
Key Features:

3 North-South cross-city connections

- **NS-1: Enatai to South Kirkland**
 - 108th Ave, NE 24th St, 112th Ave NE
- **NS-4: Somerset to Redmond**
 - Highland Dr, 140th Ave SE, Newport Way, 154th Ave SE, SE 38th St, I-90 Overpass, SE Eastgate Way, 139th Ave SE, Kamber Rd, 140th Ave, NE 24 St, NE 29th PI
- **NS-5: Spirit Ridge to Sammamish River**
 - 161st Ave SE, SE 24th St, 168th Ave SE, SE 14th St, 166th Ave, 165th Ave, 164th Ave NE, NE 30th St, 172nd Ave NE

3 East-West cross-city connections

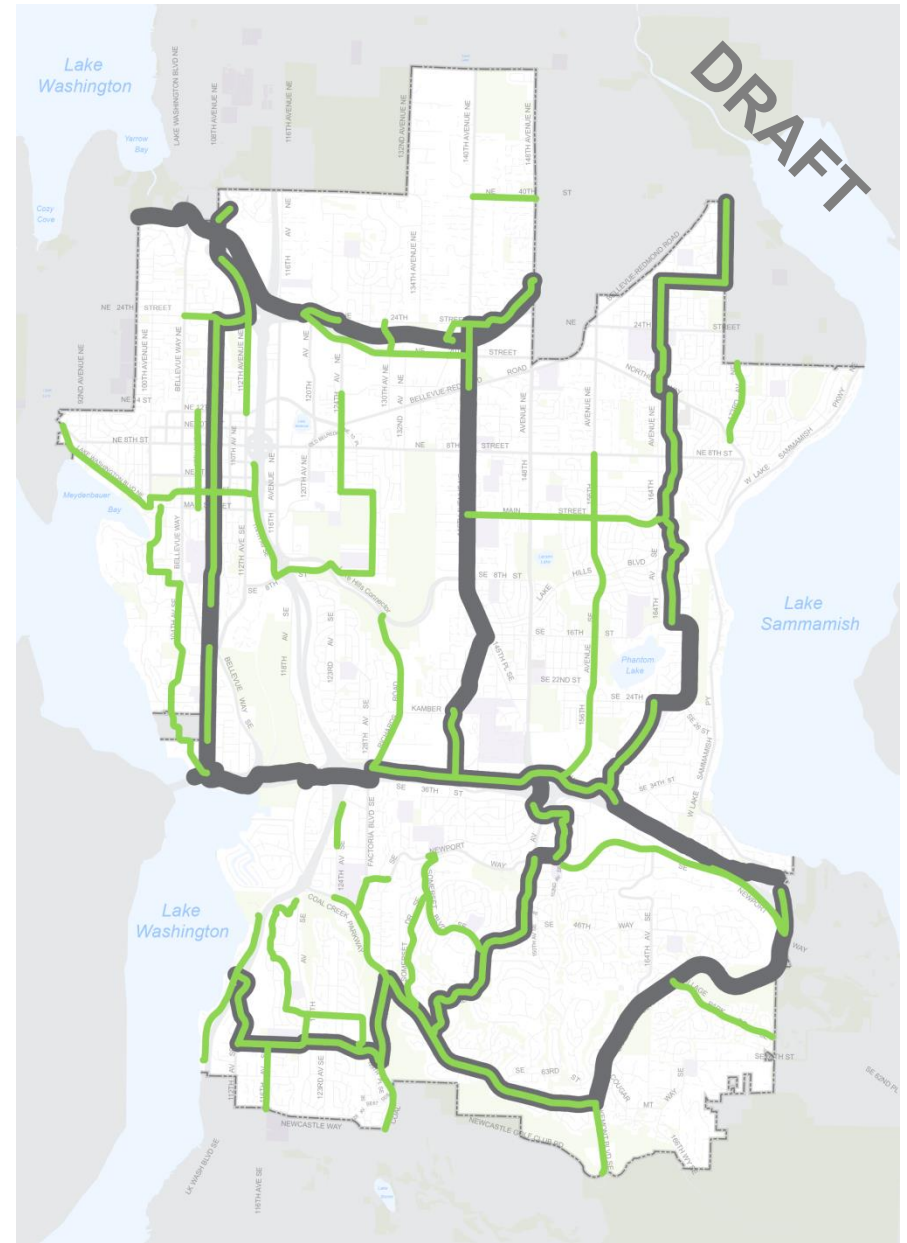
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 - I-90 Trail (W), Richards Rd, SE Eastgate Way, I-90 Trail (E)
- **EW-5: Coal Creek to Cougar Mountain**
 - Lake Washington Blvd SE, SE 60th St, Coal Creek Pkwy SE, Forest Dr SE, Lakemont Blvd SE



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BRIP Option 2023.1

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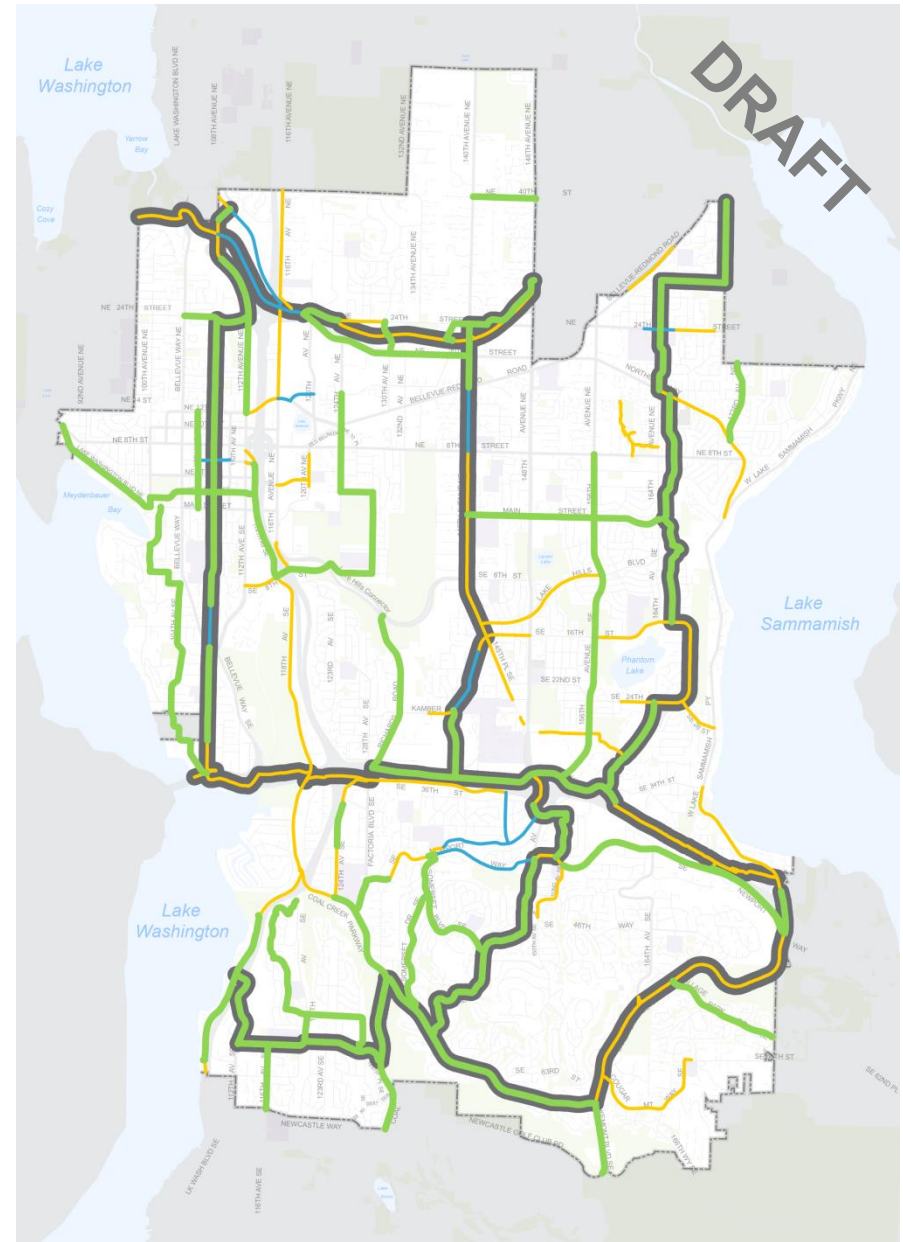


Key Features:

- \$8.76M est. installation cost
 - \$3.7M along CCCs
 - \$5.0M for supplemental bike access
- Realizes **all** 50 PBII project ideas not requiring major construction
- No off-street path construction

Tradeoffs:

- No continuous bicycle connection from NE Spring Blvd through Downtown via NE 12th St
- Indirect, hilly neighborhood route alternative for NS-5



Key Features:

- \$8.76M est. installation cost
 - \$3.7M along CCCs
 - \$5.0M for supplemental bike access
- Realizes **all** 50 PBII project ideas not requiring major construction
- No off-street path construction

Tradeoffs:

- No continuous bicycle connection from NE Spring Blvd through Downtown via NE 12th St
- Indirect, hilly neighborhood route alternative for NS-5



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BRIP Option 2023.1

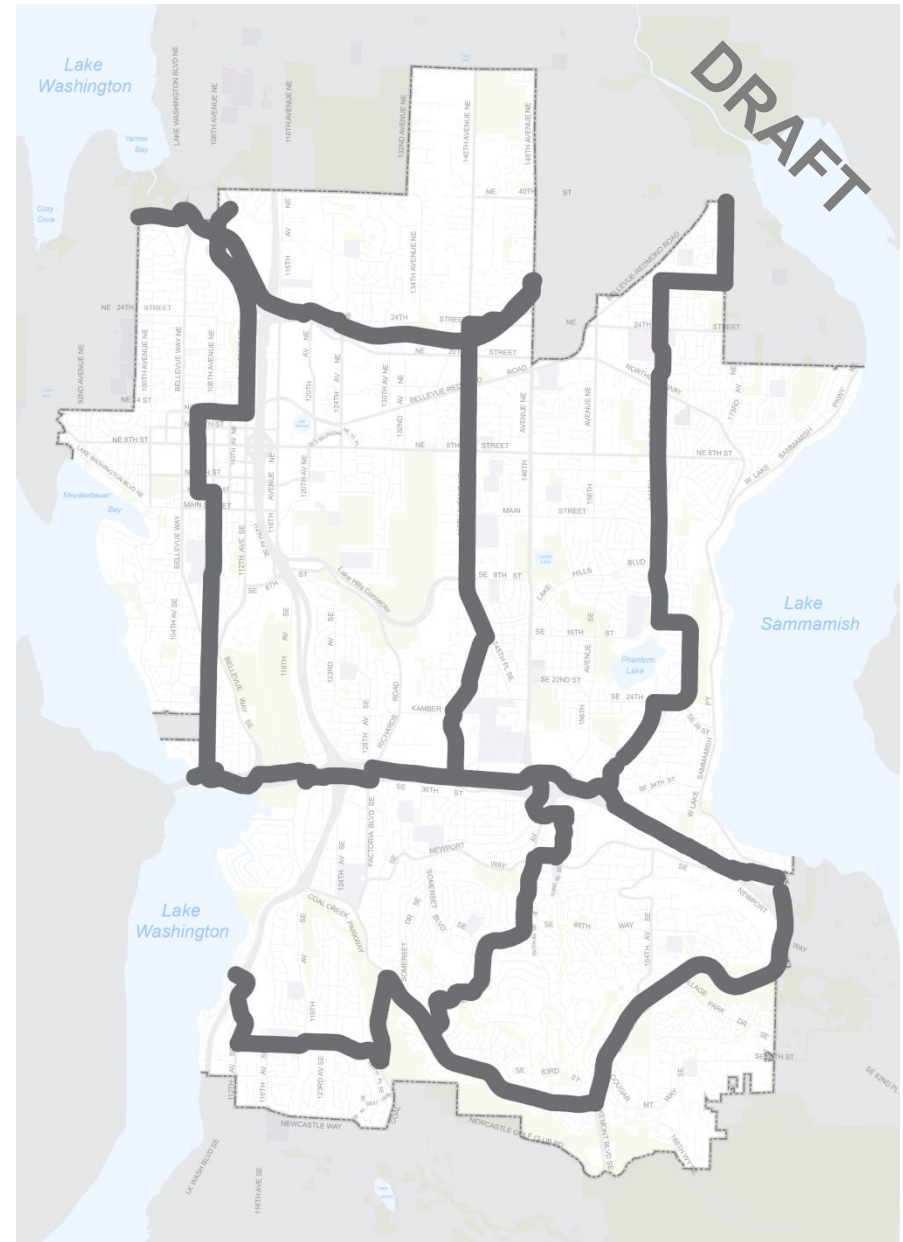
Key Features:

3 North-South cross-city connections

- **NS-1: Enatai to South Kirkland**
 - 108th Ave SE, NE 2nd St, 106th Ave NE, NE 12th St, 112th Ave NE
- **NS-4: Somerset to Redmond**
 - Highland Dr, 140th Ave SE, Newport Way, 154th Ave SE, SE 38th St, I-90 Overpass, SE Eastgate Way, 139th Ave SE, Kamber Rd, 140th Ave, NE 24 St, NE 29th Pl
- **NS-5: Spirit Ridge to Sammamish River**
 - 161st Ave SE, SE 24th St, 168th Ave SE, SE 14th St, 164th Ave, NE 30th St, 172nd Ave NE

3 East-West cross-city connections

- **EW-1: 520 Trail**
 - 520 Trail (W), Northup Way, NE 24th St, 520 Trail (E)
- **EW-4: Mountains to Sound Greenway**
 - I-90 Trail (W), Richards Rd, SE Eastgate Way, I-90 Trail (E)
- **EW-5: Coal Creek to Cougar Mountain**
 - Lake Washington Blvd SE, SE 60th St, Coal Creek Pkwy SE, Forest Dr SE, Lakemont Blvd SE



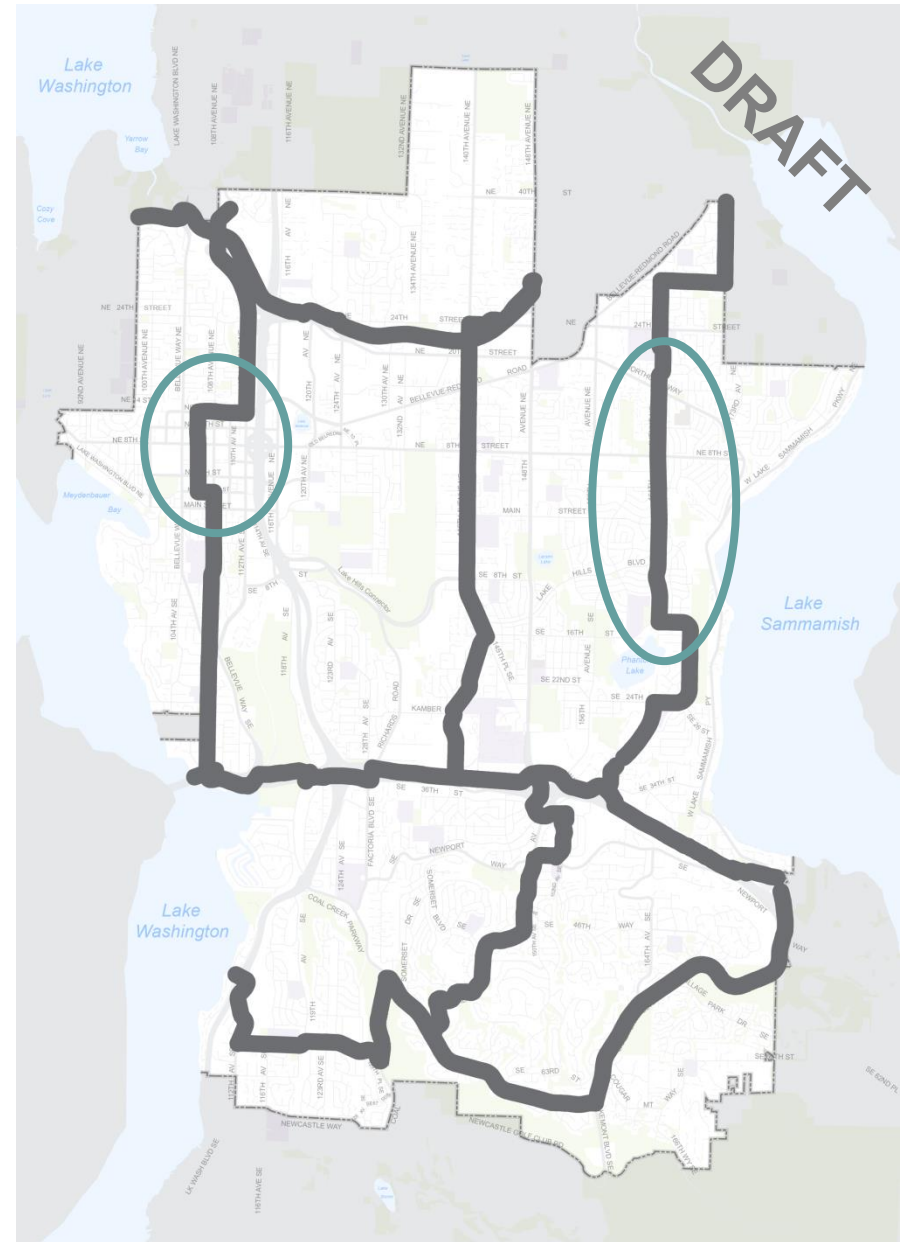
Key Features:

3 North-South cross-city connections

- **NS-1: Enatai to South Kirkland**
 - 108th Ave SE, **NE 2nd St**, **106th Ave NE**, **NE 12th St**, **112th Ave NE**
- **NS-4: Somerset to Redmond**
 - Highland Dr, 140th Ave SE, Newport Way, 154th Ave SE, SE 38th St, I-90 Overpass, SE Eastgate Way, 139th Ave SE, Kamber Rd, 140th Ave, NE 24 St, NE 29th Pl
- **NS-5: Spirit Ridge to Sammamish River**
 - 161st Ave SE, SE 24th St, 168th Ave SE, **SE 14th St**, **164th Ave**, NE 30th St, 172nd Ave NE

3 East-West cross-city connections

- **EW-1: 520 Trail**
 - 520 Trail (W), Northup Way, NE 24th St, 520 Trail (E)
- **EW-4: Mountains to Sound Greenway**
 - I-90 Trail (W), Richards Rd, SE Eastgate Way, I-90 Trail (E)
- **EW-5: Coal Creek to Cougar Mountain**
 - Lake Washington Blvd SE, SE 60th St, Coal Creek Pkwy SE, Forest Dr SE, Lakemont Blvd SE

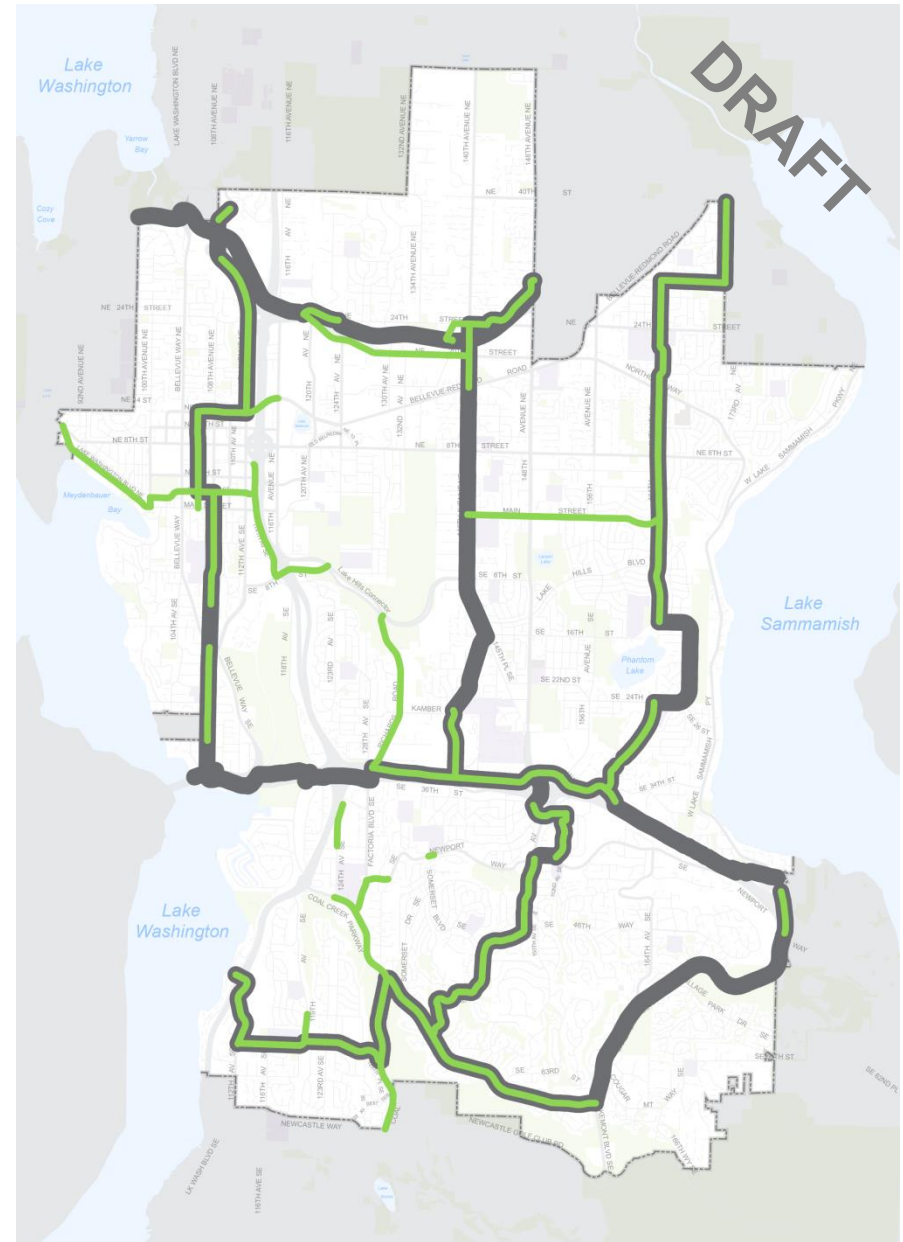


Key Features:

- \$9.42M est. installation cost
 - \$6.9M along CCCs
 - \$2.5M for supplemental bike access
- Continuous bicycle connection from NE Spring Blvd through Downtown via NE 12th St
- Direct, buffered NS-5 route

Tradeoffs:

- On-street parking displacement along 164th Ave (NS-5)
- Moderate level of supplemental bicycle access improvements

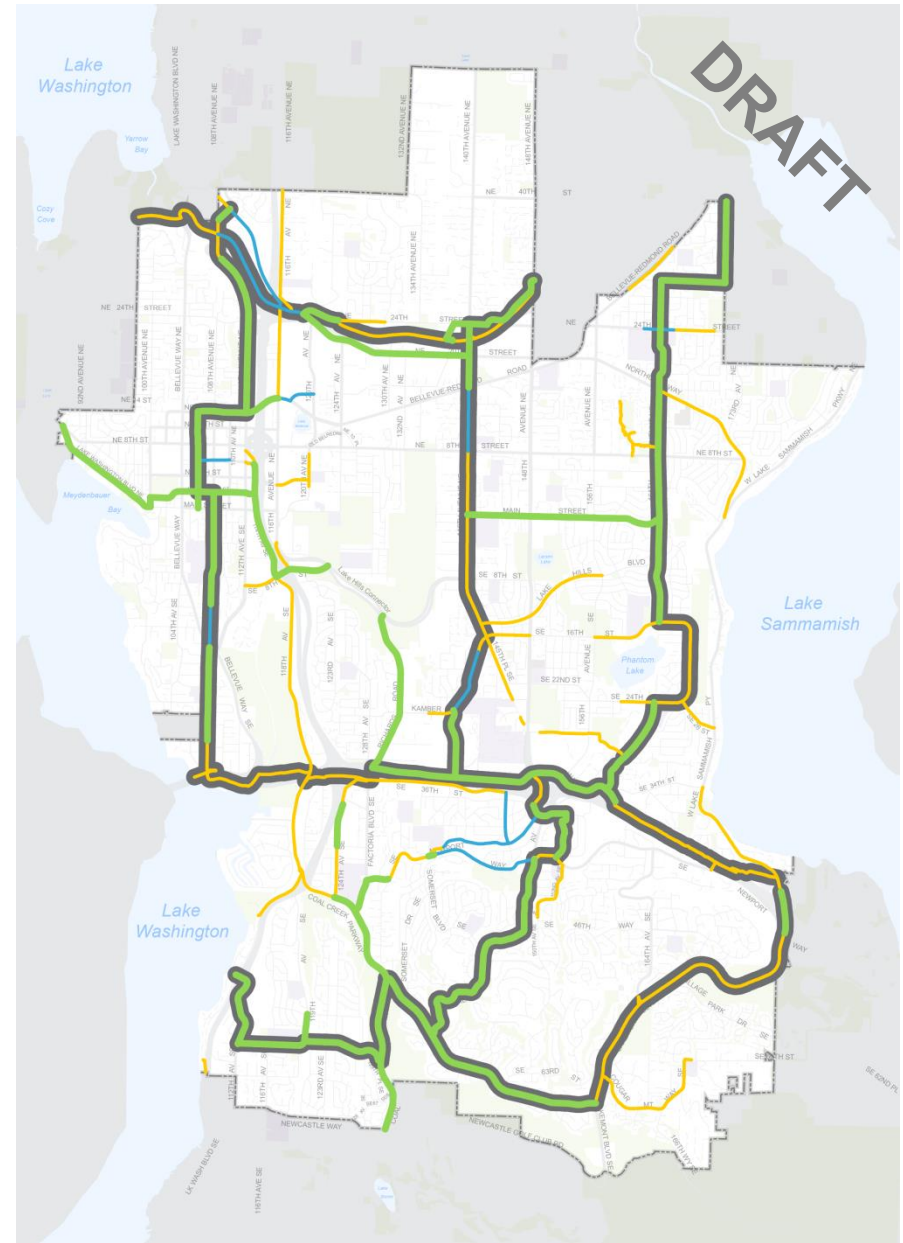


Key Features:

- \$9.42M est. installation cost
 - \$6.9M along CCCs
 - \$2.5M for supplemental bike access
- Continuous bicycle connection from NE Spring Blvd through Downtown via NE 12th St
- Direct, buffered NS-5 route

Tradeoffs:

- On-street parking displacement along 164th Ave (NS-5)
- Moderate level of supplemental bicycle access improvements



Key Features:

- \$9.42M est. installation cost
 - \$6.9M along CCCs
 - \$2.5M for supplemental bike access
- Continuous bicycle connection from NE Spring Blvd through Downtown via NE 12th St
- Direct, buffered NS-5 route

Tradeoffs:

- On-street parking displacement along 164th Ave (NS-5)
- Moderate level of supplemental bicycle access improvements



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BRIP Option 2023.2



BRIP Options Comparisons: Constituent Project Ideas



Constituent Project Ideas:

	Corridor	Project Idea	Location
CCCs	NS-1	PBC-1	108th Ave SE
		PBC-2	108th Ave NE
		PBC-3	108th Ave NE
	NS-5	PBC-9	161st Ave SE
		NB-1	East Bellevue Bikeway
		PBC-10b	164th Ave NE (north of Northup Way)
		PBC-11	NE 30th St, 172nd Ave NE
Supplemental Bicycle Access	EW-1	BN-20	NE 24th St
	EW-4	BN-25	SE Eastgate Way
		BN-1	100th Ave NE
		BN-5	124th Ave SE
		BN-10	139th Ave SE
		BN-11	153rd Ave SE
		BN-12	156th Ave
		BN-17	Main St (Lake Hills)
		BN-18	NE 2nd St
		BN-22	Northup Way
		BN-23	Richards Rd
		BN-26	SE Newport Way (west of 150th)
		BN-27	SE Newport Way (east of 150th)
		PBC-5	114th Ave SE
		PBC-6	112th Ave NE, 108th Ave NE
		PBC-13a	Lake Washington Blvd NE
		PBC-14a	SE 8th St
		PBC-16	SE 38th St



Constituent Project Ideas:

	Corridor	Project Idea	Location
CCCs	NS-1	PBC-1	108th Ave SE
		BN-18	NE 2nd St
		BN-2	106th Ave NE
		PBC-12a	NE 12th St
		PBC-3	108th Ave NE
	NS-5	PBC-9	161st Ave SE
		NB-1	East Bellevue Bikeway
		PBC-10b	164th Ave NE (north of Northup Way)
		PBC-11	NE 30th St, 172nd Ave NE
	EW-1	BN-20	NE 24th St
Supplemental	EW-4	BN-25	SE Eastgate Way
		BN-1	100th Ave NE
		BN-5	124th Ave SE
		BN-10	139th Ave SE
		BN-12	156th Ave
		BN-17	Main St (Lake Hills)
		BN-22	Northup Way
		BN-23	Richards Rd
		PBC-5	114th Ave SE
		PBC-6	112th Ave NE, 108th Ave NE
		PBC-13a	Lake Washington Blvd NE

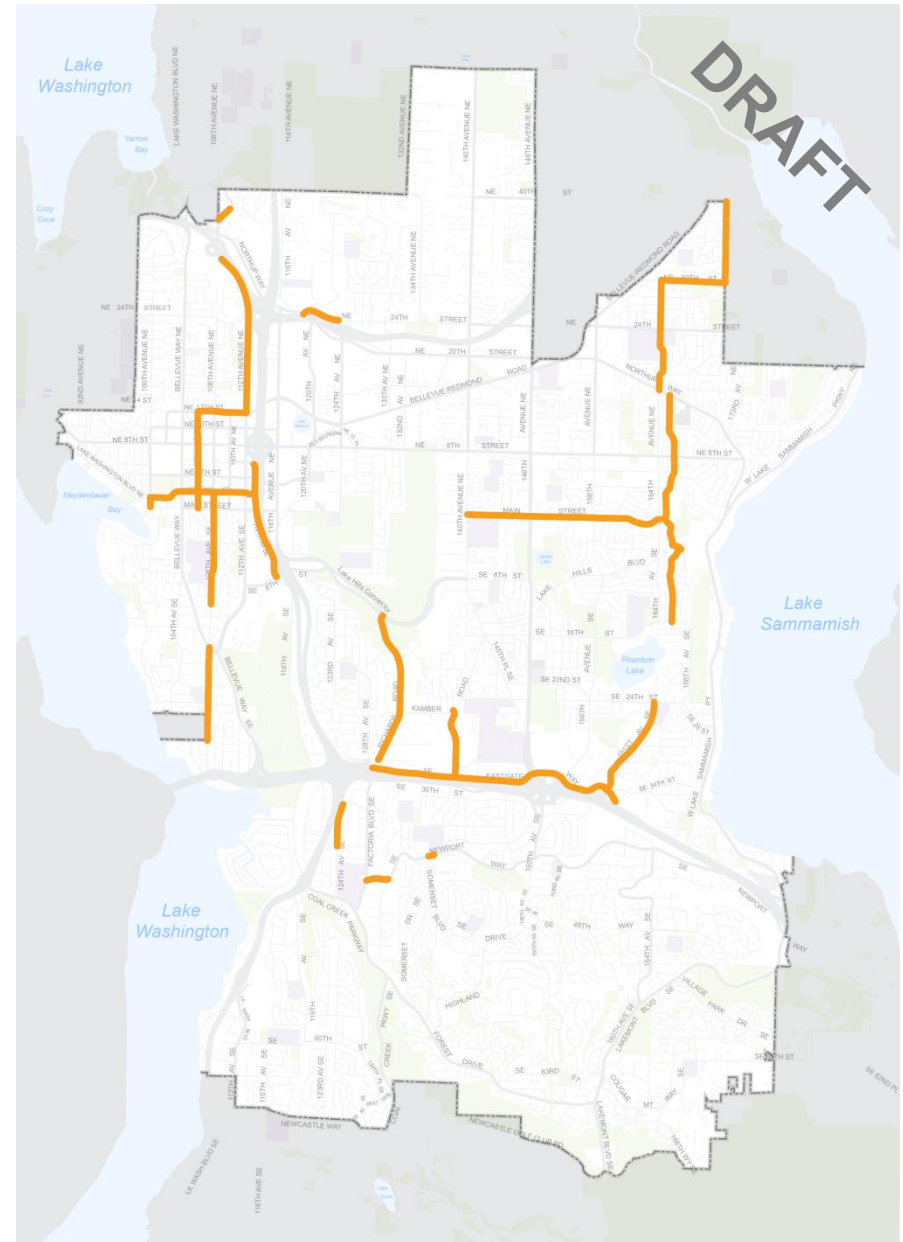


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BRIP Option 2.1

Constituent Project Ideas:

	Corridor	Project Idea	Location
CCCs	NS-1	PBC-1	108th Ave SE
		BN-18	NE 2nd St
		BN-2	106th Ave NE
		PBC-12b	NE 12th St
		PBC-6	112th Ave NE, 108th Ave NE
	NS-5	PBC-9	161st Ave SE
		NB-1	East Bellevue Bikeway
		PBC-10b	164th Ave NE (north of Northup Way)
		PBC-11	NE 30th St, 172nd Ave NE
	EW-1	BN-20	NE 24th St
Supplemental	EW-4	BN-25	SE Eastgate Way
		BN-1	100th Ave NE
		BN-5	124th Ave SE
		BN-10	139th Ave SE
		BN-17	Main St (Lake Hills)
		BN-23	Richards Rd
		BN-26	SE Newport Way (west of 150th)
		PBC-5	114th Ave SE



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BRIP Option 2.2

Constituent Project Ideas:

	Corridor	Project Idea	Location
CCCs	NS-1	PBC-1	108th Ave SE
		BN-18	NE 2nd St
		BN-2	106th Ave NE
		PBC-12b	NE 12th St
		PBC-6	112th Ave NE, 108th Ave NE
	NS-5	PBC-9	161st Ave SE
		PBC-10	164th Ave NE
		PBC-11	NE 30th St, 172nd Ave NE
	EW-1	BN-20	NE 24th St
	EW-4	BN-25	SE Eastgate Way
Supplemental		BN-1	100th Ave NE
		BN-5	124th Ave SE
		BN-10	139th Ave SE
		BN-17	Main St (Lake Hills)
		BN-26	SE Newport Way (west of 150th)
		PBC-5	114th Ave SE
		PBC-12d	NE 12th St
		PBC-13a	Lake Washington Blvd NE

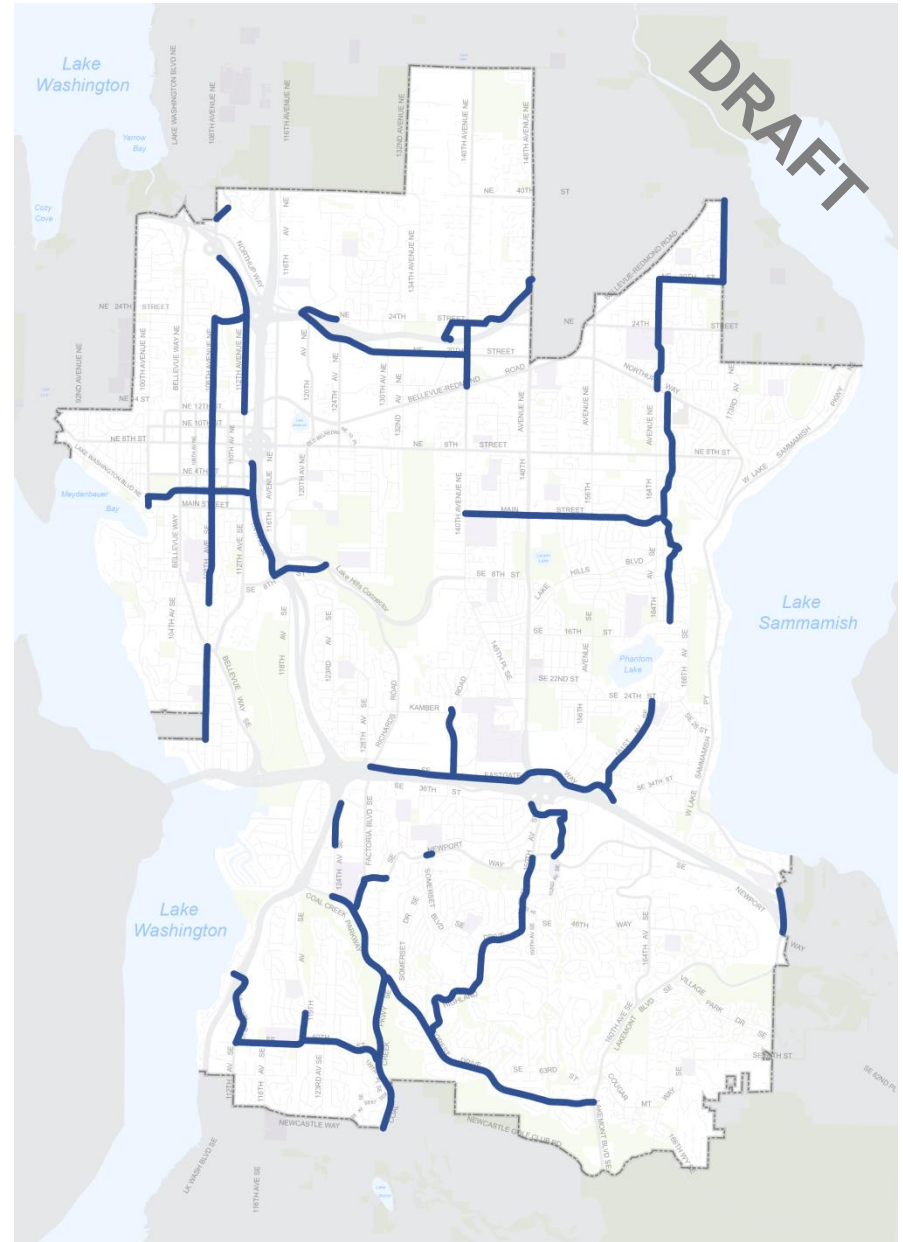


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BRIP Option 2.3

Constituent Project Ideas:

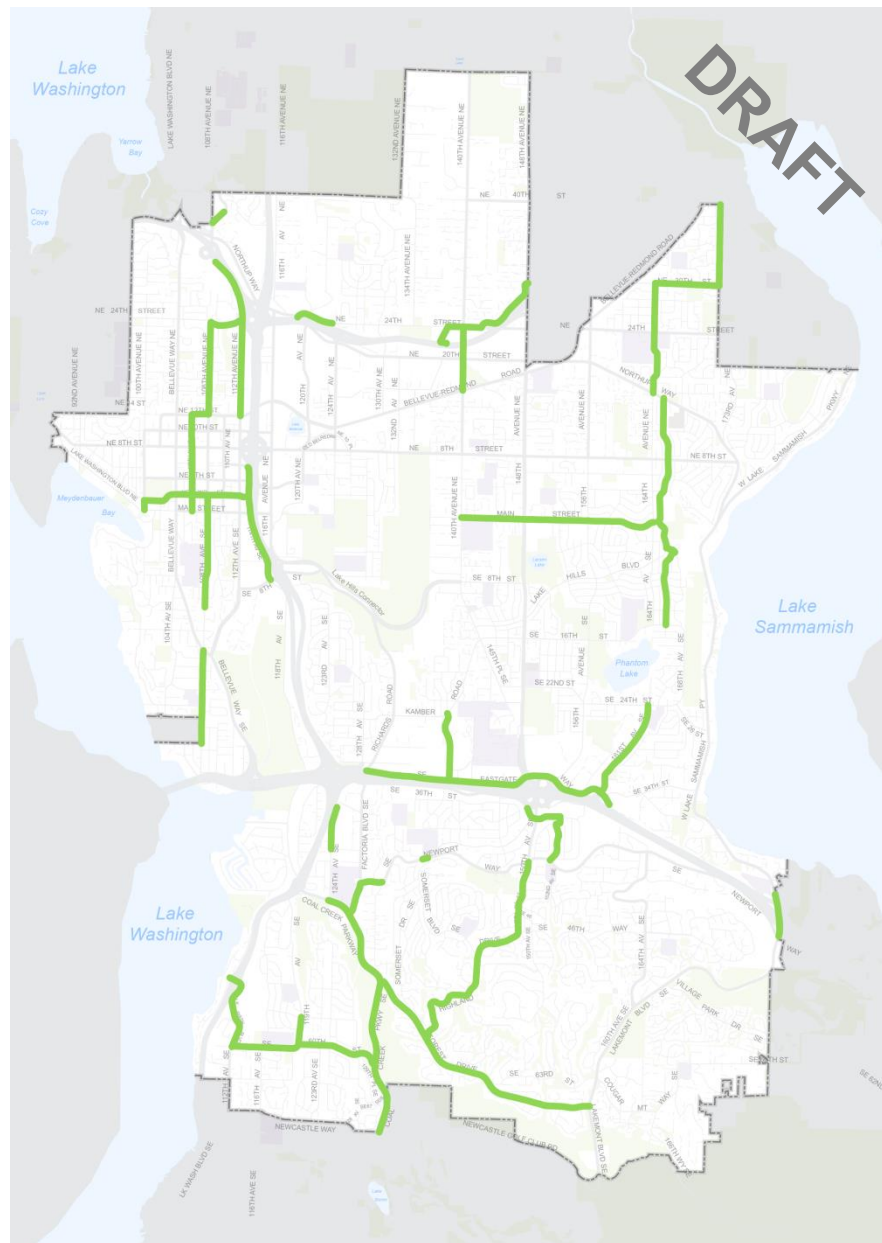
	Corridor	Project Idea	Location
CCCs	NS-1	PBC-1	108th Ave SE
		PBC-2	108th Ave NE
		PBC-3	108th Ave NE
	NS-4	PBC-7	Highland Dr, 148th Ave SE
		BN-11	153rd Ave SE
		PBC-16	SE 38th St
		BN-25	SE Eastgate Way
		BN-10	139th Ave SE
		PBC-8	140th Ave NE, NE 24th St, NE 29th PI
		NS-5	PBC-9
	NB-1		East Bellevue Bikeway
	PBC-10b		164th Ave NE (north of Northup Way)
	PBC-11		NE 30th St, 172nd Ave NE
	EW-1	BN-20	NE 24th St
	EW-4	BN-25	SE Eastgate Way
	EW-4	PBC-17	Lk Wash Blvd SE, SE 60th St
PBC-18		Forest Dr SE	
PBC-19		Lakemont Blvd SE	
Supplemental Bicycle Access		BN-1	100th Ave NE
		BN-4a	119th Ave SE
		BN-5	124th Ave SE
		BN-9	136th Ave NE, NE 24th St
		BN-14	Coal Creek Pkwy SE
		BN-15	Factoria Blvd SE
		BN-17	Main St (Lake Hills)
		BN-22	Northup Way
		BN-26	SE Newport Way (west of 150th)
		PBC-5	114th Ave SE
		PBC-6	112th Ave NE, 108th Ave NE
		PBC-14a	SE 8th St



BRIP Option 3.0

Constituent Project Ideas:

	Corridor	Project Idea	Location
CCCs	NS-1	PBC-1	108th Ave SE
		BN-18	NE 2nd St
		BN-2	106th Ave NE
		PBC-12a	NE 12th St
		PBC-3	108th Ave NE
	NS-4	PBC-7	Highland Dr, 148th Ave SE
		BN-11	153rd Ave SE
		PBC-16	SE 38th St
		BN-25	SE Eastgate Way
		BN-10	139th Ave SE
	NS-5	PBC-8	140th Ave NE, NE 24th St, NE 29th PI
		PBC-9	161st Ave SE
		NB-1	East Bellevue Bikeway
		PBC-10b	164th Ave NE (north of Northup Way)
		PBC-11	NE 30th St, 172nd Ave NE
	EW-1	BN-20	NE 24th St
	EW-4	BN-25	SE Eastgate Way
	EW-4	PBC-17	Lk Wash Blvd SE, SE 60th St
		PBC-18	Forest Dr SE
		PBC-19	Lakemont Blvd SE
Supplemental		BN-1	100th Ave NE
		BN-5	124th Ave SE
		BN-9	136th Ave NE, NE 24th St
		BN-14	Coal Creek Pkwy SE
		BN-15	Factoria Blvd SE
		BN-17	Main St (Lake Hills)
		BN-26	SE Newport Way (west of 150th)
		PBC-5	114th Ave SE
		PBC-6	112th Ave NE, 108th Ave NE

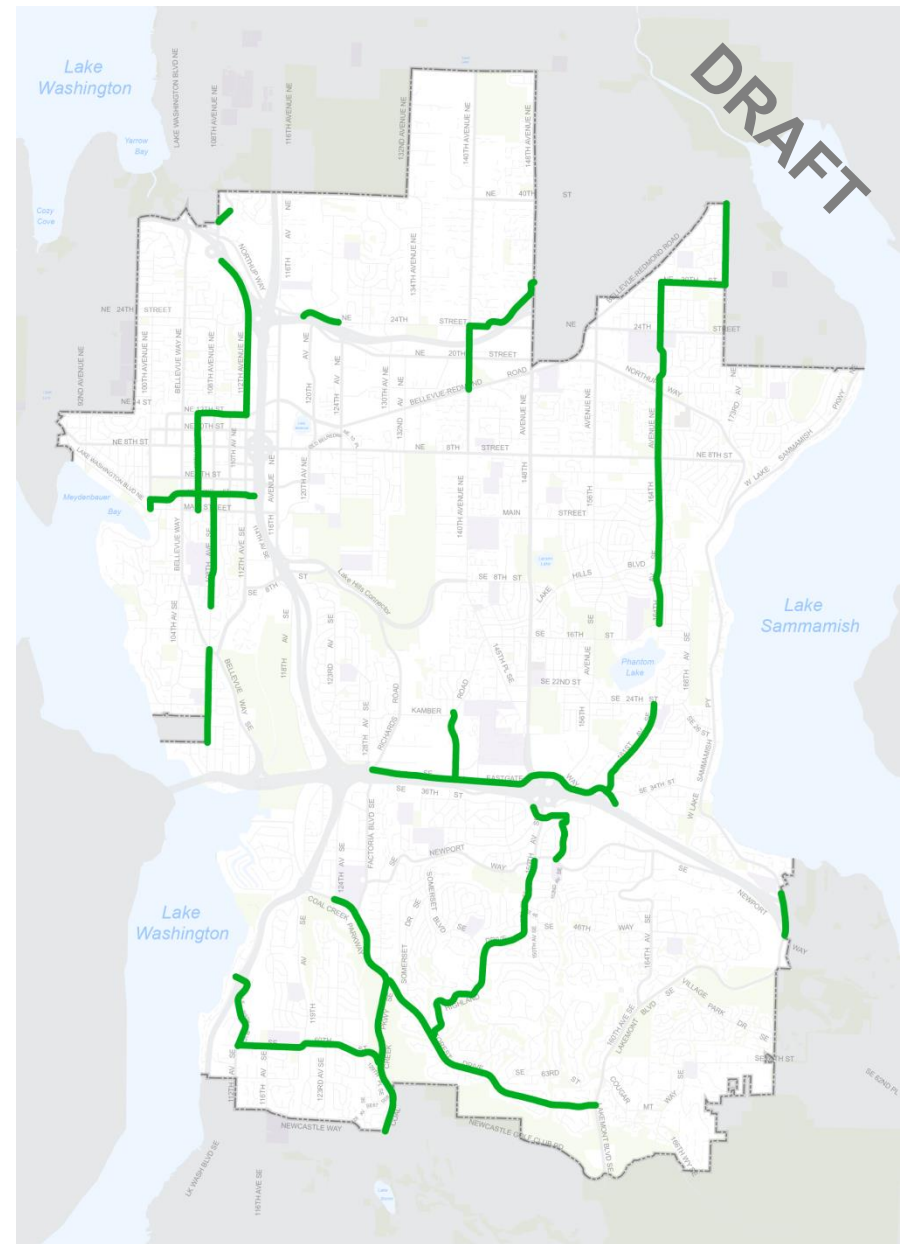


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BRIP Option 3.1

Constituent Project Ideas:

	Corridor	Project Idea	Location
CCCs	NS-1	PBC-1	108th Ave SE
		BN-18	NE 2nd St
		BN-2	106th Ave NE
		PBC-12b	NE 12th St
		PBC-6	112th Ave NE, 108th Ave NE
	NS-4	PBC-7	Highland Dr, 148th Ave SE
		BN-11	153rd Ave SE
		PBC-16	SE 38th St
		BN-25	SE Eastgate Way
		BN-10	139th Ave SE
		PBC-8	140th Ave NE, NE 24th St, NE 29th PI
	NS-5	PBC-9	161st Ave SE
		PBC-10	164th Ave NE
		PBC-11	NE 30th St, 172nd Ave NE
	EW-1	BN-20	NE 24th St
	EW-4	BN-25	SE Eastgate Way
	EW-4	PBC-17	Lk Wash Blvd SE, SE 60th St
		PBC-18	Forest Dr SE
		PBC-19	Lakemont Blvd SE
Suppl.		BN-1	100th Ave NE
		BN-14	Coal Creek Pkwy SE



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BRIP Option 3.2

Constituent Project Ideas:

Includes **all** 50 PBII project ideas not requiring major construction

- Excludes off-street path along Lake Hills Connector (part of PBC-14)
- Excludes roadway reconstruction of SE 16th St, incl. separated bike lanes (PBC-15)



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BRIP Option 2023.1

Constituent Project Ideas:

	Corridor	Project Idea	Location
CCCs	NS-1	PBC-1	108th Ave SE
		BN-18	NE 2nd St
		BN-2	106th Ave NE
		PBC-12b+d	NE 12th St
		PBC-3	108th Ave NE
	NS-4	PBC-7	Highland Dr, 148th Ave SE
		BN-11	153rd Ave SE
		PBC-16	SE 38th St
		BN-25	SE Eastgate Way
		BN-10	139th Ave SE
	NS-5	PBC-8	140th Ave NE, NE 24th St, NE 29th Pl
		PBC-9	161st Ave SE
		PBC-10	164th Ave NE
	EW-1	PBC-11	NE 30th St, 172nd Ave NE
		EW-1	BN-20
	EW-4	BN-25	SE Eastgate Way
	EW-4	PBC-17	Lk Wash Blvd SE, SE 60th St
		PBC-18	Forest Dr SE
		PBC-19	Lakemont Blvd SE
Supplemental Bicycle Access		BN-1	100th Ave NE
		BN-4a	119th Ave SE
		BN-5	124th Ave SE
		BN-9	136th Ave NE, NE 24th St
		BN-14	Coal Creek Pkwy SE
		BN-15	Factoria Blvd SE
		BN-17	Main St (Lake Hills)
		BN-22	Northup Way
		BN-23	Richards Rd
		BN-26	SE Newport Way (west of 150th)
		PBC-5	114th Ave SE
		PBC-13a	Lake Washington Blvd NE
		PBC-14a	SE 8th St



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BRIP Option 2023.2



BRIP Estimated Costs:

Installation, Construction,
Count Technology, and
Maintenance



BRIP Options	Estimated Capital and O&M Costs by BRIP Option (\$ Millions)			
	Capital Costs		Annual Costs	
	Installation	Count Technology	Maintenance	Telemetry
2.0	\$5.6	\$0.11 (approx. \$109,300)	\$0.14	\$0.01 (approx. \$11,300)
2.1	\$6.1		\$0.13	
2.2	\$6.2		\$0.12	
2.3	\$6.2		\$0.12	
3.0	\$5.8		\$0.15	
3.1	\$6.6		\$0.17	
3.2	\$7.3		\$0.14	
2023.1	\$8.7		\$0.27	
2023.2	\$9.4		\$0.20	

Notes: (i) All BRIP Options include an estimated \$360,000 for the purchase of new maintenance equipment. (ii) All cost estimates reflect 2016 dollars.

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Estimates Include:

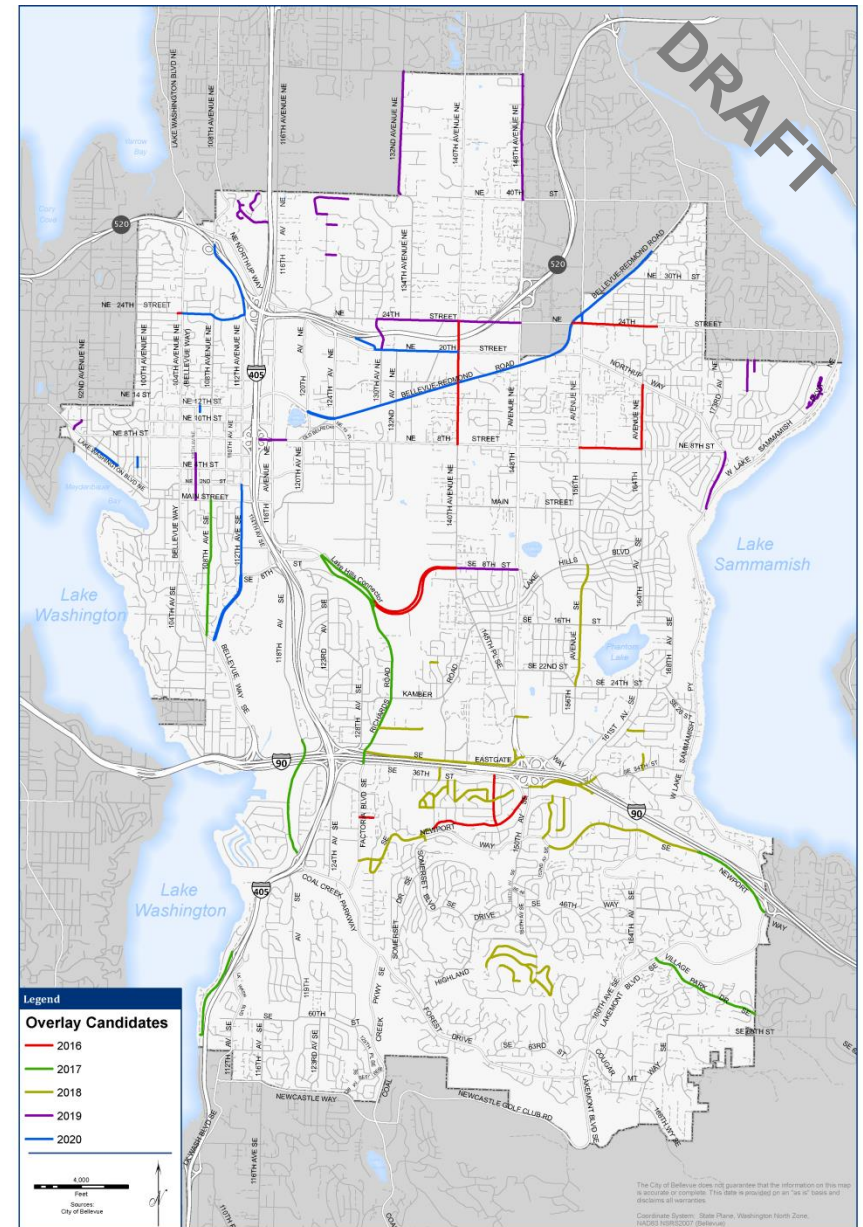
- Unit costs for lane striping, pavement markings and symbols, signs, induction loops, and delineators
 - Markings include: green bike lane treatments, raised pavement markers, bike lane symbols, sharrows, and traffic arrows
- Percent-based estimates for existing pavement marking removal, assorted engineering and construction costs, and contingency
 - Several projects benefit from cost savings through coordination with the Pavement Overlay Program

Feature Inputs	Distance	Unit		
Green-Backed Sharrows	7815	FT		
Neighborhood Greenway	0	FT		
Conventional Bike Lane	3246	FT		
Separated Bike Lane/Separated Ped Path	0	FT	Type 1 RPM	Type 2 RPM
Double Centerline	0	LF	0	0
Single Wide Line	0	LF	0	0
TwLT Stripe	0	LF	0	0
Skip Stripe	0	LF	0	0
Island Channelization	0	LF	0	0
		Totals	0	0

Item	Unit	Quantity	Unit Price	Total Price
4" White Paint Line	LF	3246	\$0.50	\$1,623
4" Plastic Line	LF	0	\$8.00	\$0
Permanent Signs	EA	8	\$200.00	\$1,600
Green Bike Lane Treatment	SF	1100	\$10.00	\$11,000
Green Backed Sharrows	EA	78	\$350.00	\$27,300
Plastic Bike Lane Symbol or Sharrow	EA	11	\$250.00	\$2,750
Bicycle Induction Loop Symbols	EA	0	\$250.00	\$0
Delineators	EA	0	\$75.00	\$0
Vehicle Induction Loops (Traffic and Bicycle Loops)	EA	0	\$750.00	\$0
Plastic Traffic Arrows	EA	0	\$125.00	\$0
Raised Pavement Marker Type 1	EA	0	\$4.00	\$0
Raised Pavement Marker Type 2	EA	0	\$6.00	\$0
		Construction Subtotal		\$44,273
Removing Existing Pavement Markings (5%)	\$0	If done with 2017 Overlay		
Traffic Control (25%)	\$11,068			
Planning Level Estimate (10%)	\$4,427			
Roadside Cleanup (10%)	\$4,427			
Erosion Control (5%)	\$2,214			
Mobilization (10%)	\$6,641			
Construction Total	\$73,050			
Inspection Total (10% of Construction Total)	\$7,305			
Design Total (20% of the Construction Total)	\$14,610			
Contingency (10% of the Construction Total)	\$7,305			
Project Grand Total		\$102,271		

Alignment between Overlay Plan and BRIP project ideas:

2016	PBC-8: 140th Ave NE
	PBC-10: 164th Ave NE
2017	PBC-1: 108th Ave NE
	PBC-4: Lake Washington Blvd SE
	BN-23: Richards Rd
	BN-27: SE Newport Way
2018	BN-29: Village Park Dr
	BN-11: 153rd Ave SE
	BN-12: 156th Ave SE
	BN-25: SE Eastgate Way
2019	BN-26: SE Newport Way
	BN-2: 106th Ave NE
	BN-8: 130th Ave NE
	PBC-8 and BN-9: NE 24th St
2020	PBC-6: 112th Ave NE
	PBC-3 and BN-19: NE 24th St
	BN-22: Northup Way



2016–2020 Pavement Overlay

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Estimates Include:

- 25 inductive loop bicycle counters
 - 16 for conventional bike lanes
 - 9 for separated bike lanes
- 2 off-street path multi-counters
 - Counts and differentiates between pedestrians and bicyclists
- Annual telemetry services provided by Eco-Counter
- A mix of counter types and locations would help to obtain data for four traffic pattern groups
 - Primarily utilitarian
 - Mixed utilitarian
 - Mixed recreational
 - Primarily recreational



Estimates Include:

- Unit costs for each project idea:
 - Street sweeping
 - Vehicle maintenance
 - Replacement of lane striping, pavement markings and symbols, signs, and delineators
- Other costs
 - Annual sweeper vehicle maintenance and replacement
 - Annual salary and benefits for one FTE
 - Capital cost for one new protected lane/trail sweeper vehicle

DESCRIPTION OF ADD	ITEM ADDED <i>Instructions for PM - enter the amount of infrastructure added into dark blue column. Duplicate spreadsheet into additional Tabs as needed for projects. Do not overwrite other columns but add rows if you are adding something not covered.</i>	Unit
Annual cost for increased service level from Arterial to Bike Lane	Conversion from Arterial Roadway to Bike Lane (Linear	Lane Mile
Annual sweeping hours for increased service level from Arterial to	Conversion from Arterial Roadway to Bike Lane (Linear	Lane Mile
Annual cost for disposal / increased service level from Arterial to Bike Lane	Conversion from Arterial Roadway to Bike Lane (Linear	Lane Mile
LW Hours for Program Management	Conversion from Arterial Roadway to Bike Lane (Linear	Lane Mile
Annual Cost per sign for maintenance	Added Signs	Each
Annual Hours per sign for	Added Signs	Each
Annual Cost per delineator for maintenance	Added Delineators	Each
Annual Hours per delineator for maintenance	Added Delineators	Each
** Annual Cost per square foot for green lane marking maintenance	Green Bike Lane Markings	Square Foot
Annual Hours per Square Foot for green lane maintenance	Green Bike Lane Markings	Square Foot
Annual Cost per Sharrow or Bike Lane Marking for maintenance	Annual Cost per Sharrow or Bike Lane Marking for maintenance	Square Foot
Annual Hours per Sharrow or Bike Lane Marking for maintenance	Annual Hours per Sharrow or Bike Lane Marking for maintenance	Square Foot
Capital Cost for Protected Lane/Trail Sweeper	Capital Cost for Protected Lane/Trail Sweeper	One-time (Purchase)
Annual Maintenance Cost for Protected Lane/Trail Sweeper	Annual Maintenance Cost for Protected Lane/Trail Sweeper	Dollars
Annual Replacement Cost for Protected Lane/Trail Sweeper	Annual Replacement Cost for Protected Lane/Trail Sweeper	Dollars
Annual Maintenance Cost per Protected Lane/Trail (up to 1 mile)	Annual Maintenance Cost per Protected Lane/Trail (per mile)	Each Mile per year
Cost for One FTE	Cost for Maintenance FTE	Dollars
Cost for Benefits	Annual Maintenance Cost for	Dollars
Annual Maintenance Hours per Protected Lane/Trail (up to 1 mile)	Annual Maintenance Hours per Protected Lane/Trail (per mile)	Each Mile
Estimated Annual Hours per 0.25 mile to respond to bicycle safety/complaints (not covered under	Estimated Annual Hours per 0.25 mile to respond to bicycle safety/complaints (not covered under	Mile
	One-time Cost	Totals
	Ongoing Annual Cost Not including inflation	

