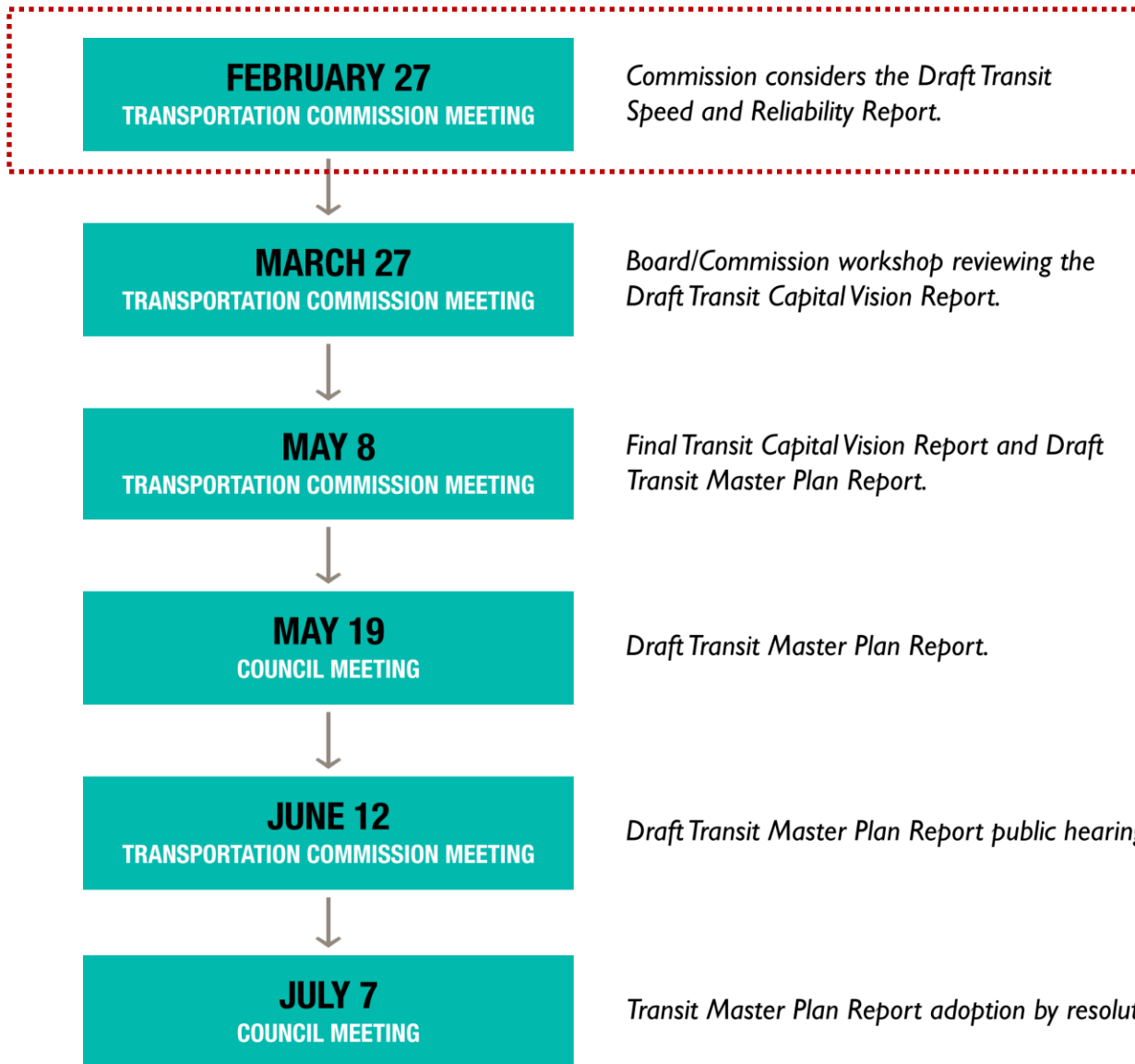




***Transportation Commission Briefing  
February 27, 2014***



- 1. Project Timeline**
- 2. Draft Speed & Reliability Report**
- 3. Draft Ped-Bike Access Report**
- 4. Draft Benefits of Transit Report**
- 5. Next Steps**





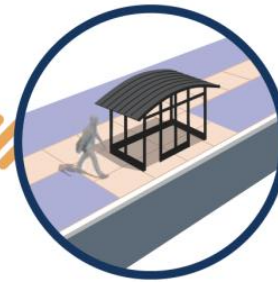
The Rider



The Development Lot



The Pedestrian & Bicycle Environment



The Transit Stop



The Transit Vehicle and Infrastructure

Draft Transit Layover Report

Draft Ped-Bike Access Report

Draft Commuter Parking Report  
Draft Bus Shelter Analysis

Draft Speed & Reliability Report





## ***Draft Speed & Reliability Report***

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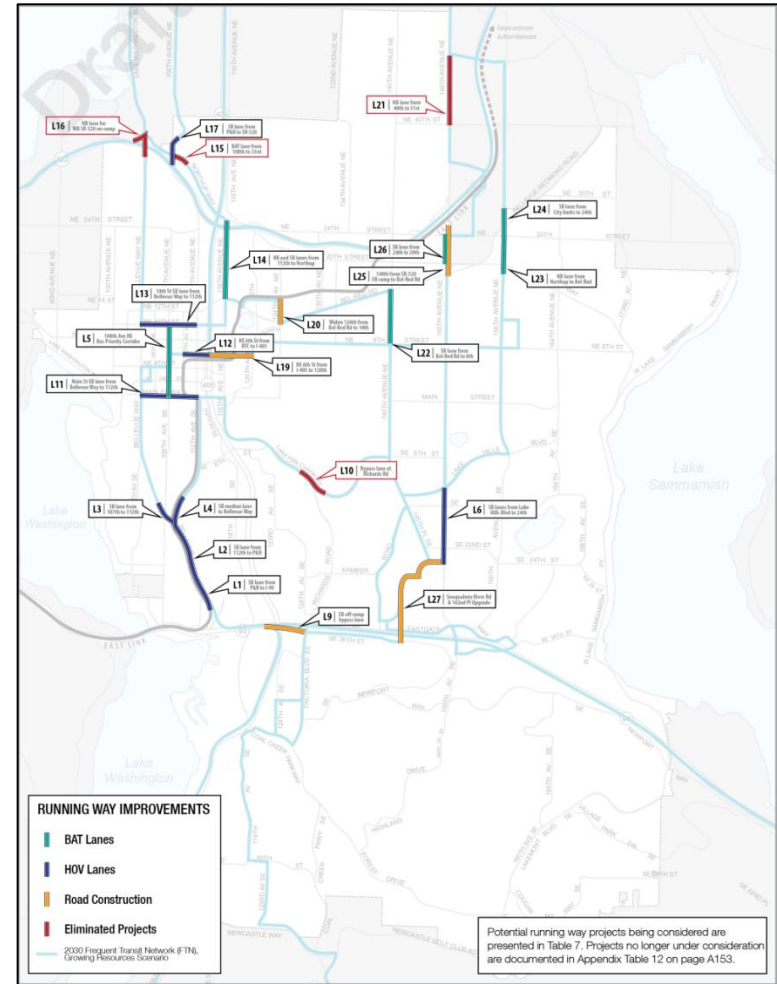
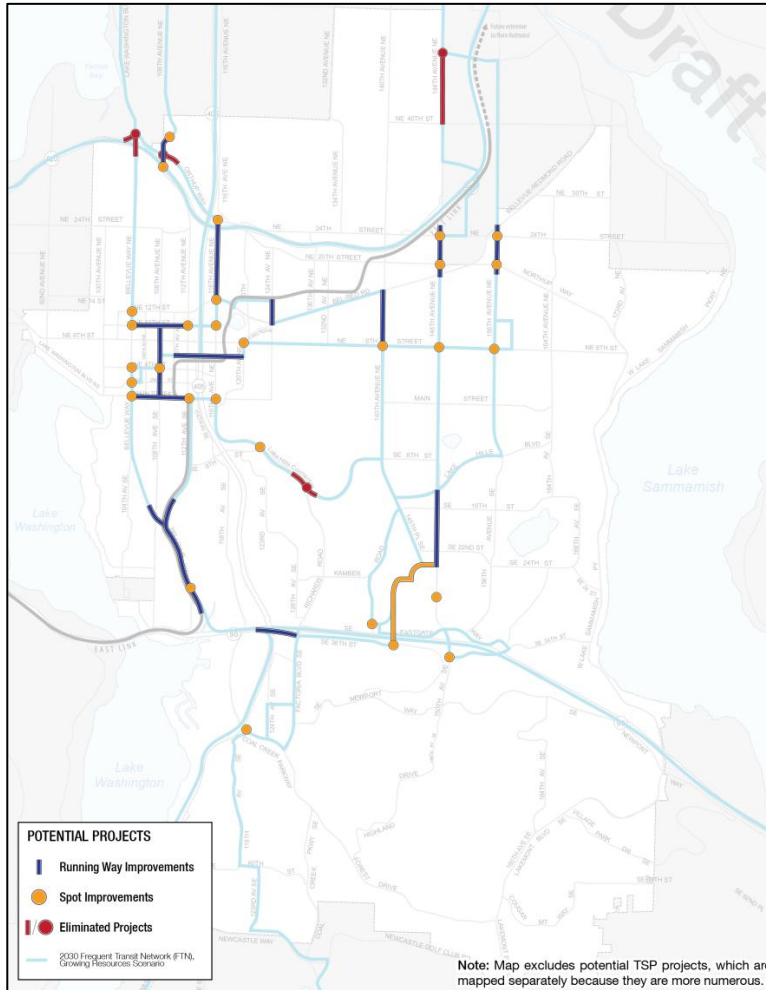
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# Summary of Speed & Reliability Projects by Cost & Type

Project Type	No. of Projects
Running Way Improvements	19
HOV Lanes	8
BAT Lanes	6
Roadway Construction	5
Spot Improvements	39
Queue Jump Lanes	16
Intersection and Roadway Improvements	13
Signalization Improvements	10
TSP Projects (Near-term)	44
Tracking & Additional Study	5
<b>Total</b>	<b>107</b>

Estimated Project Cost	No. of Projects
<b>No Cost (NC)</b> These projects primarily require staff time to track, review, or revise using existing City resources and staff time.	6
<b>Tens of Thousands (\$)</b> These projects primarily include low-cost changes like striping or signal equipment additions or modifications. These projects do not involve any physical changes.	66
<b>Hundreds of Thousands (\$\$)</b> These projects include more significant striping or signal modification, which could include some small physical modifications to an intersection or signal. More significant projects include lane construction at intersection approaches assuming minimal land acquisition, environmental mitigation, and slope stabilization.	16
<b>Millions (\$\$\$)</b> These projects include construction of new lanes through multiple intersections and/or construction of new lanes along intersections where constraints exist.	18
<b>Not Applicable (N/A)</b> This project highlights a need for improvement but does not recommend a specific solution. Further study of the situation will only require staff time to complete (i.e., no cost), and the cost of subsequent actions can only be estimated after the chosen solution is identified.	1
<b>Total</b>	<b>107</b>

# Potential Spot & Running-Way Improvement Projects

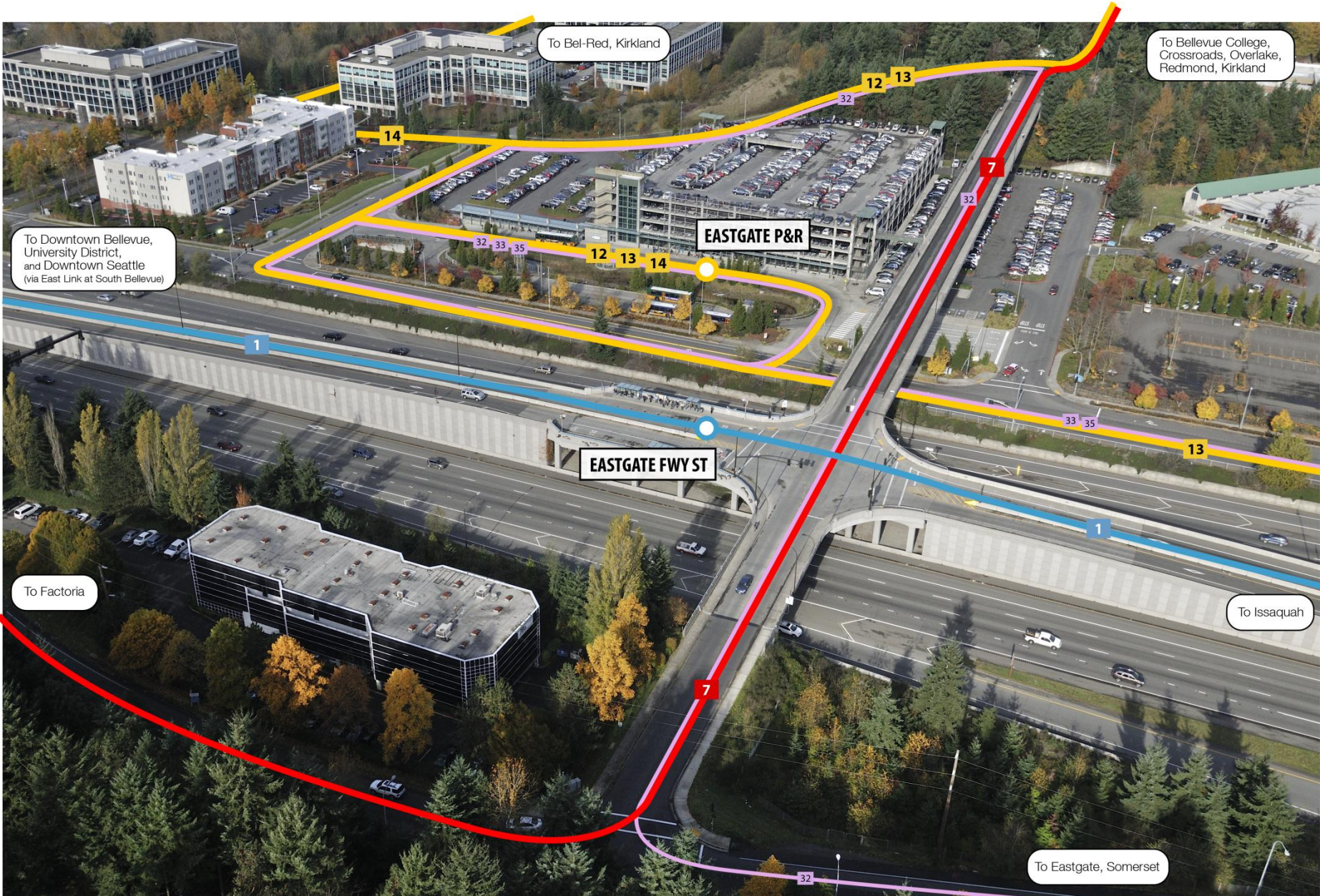


# 2030 PM Peak Hour Signalized Intersection LOS Before & After HOV/BAT Implementation

		2030 Reduced Funding w/o HOV/BAT Projects	2030 Growing Resources w/o HOV/BAT Projects	2030 Growing Resources with HOV/BAT Projects
Level of Service (LOS)	A	8	8	8
	B	27	31	28
	C	49	49	54
	D	50	53	52
	E	33	30	33
	F	28	24	20
Citywide LOS		D	D	D
Citywide Average Vehicle Delay (sec)		51.8	49.9	48.3
Citywide Total Delay Hours		8,141	7,665	7,350

Source: Dynameq model D30R1.0.3, for November 14, 2013 Transportation Commission meeting.





To Bel-Red, Kirkland

To Bellevue College, Crossroads, Overlake, Redmond, Kirkland

To Downtown Bellevue, University District, and Downtown Seattle (via East Link at South Bellevue)

EASTGATE P&R

EASTGATE FWY ST

To Factoria

To Issaquah

To Eastgate, Somerset





# Impacts of the Multimodal Transportation Corridor Preliminary Design on Parking Stalls by Segment

	Segment 1 Kelsey Creek Rd/ SE 24th St to Kelsey Creek Rd/Snoqualmie River Rd	Segment 2 Snoqualmie River Rd/ Kelsey Creek Rd to Delivery Zone	Segment 3 Delivery Zone to Greenhouse	Segment 4 Bellevue College Transit Center on Snoqualmie River Road	Segment 5 142nd PI SE/SE 32nd St	Total
Proposed	301	296	156	16	105	<b>874</b>
Current	227	203	173	108	77	<b>788</b>
Difference	+74	+93	-17	-92	+28	<b>+86</b>

Note: Segments 6 and 7 correspond to the 142nd PI SE Bridge, which currently does not and will not include any parking.

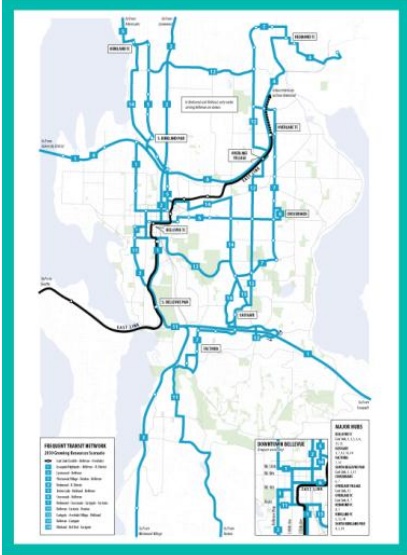




## ***Draft Ped-Bike Access Report***

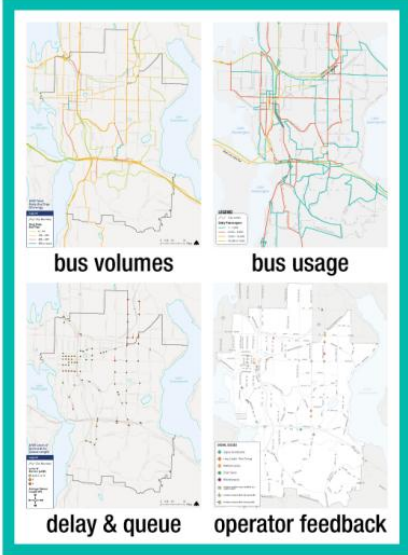


# FREQUENT TRANSIT NETWORK (FTN)



Where is bus service expected to be convenient, reliable, easy-to-use?

# CURRENT and FUTURE CONDITIONS



What are the current and future conditions on FTN corridors?

# EVALUATION of COSTS and BENEFITS



What are the costs and benefits of different levels of operational exclusivity?

# CAPITAL-ORIENTED STRATEGIES



What strategies can influence the public's decision to use transit?



# City of Bellevue Influence



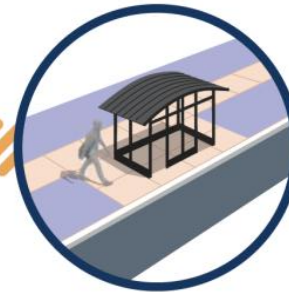
The Rider



The Development Lot



The Pedestrian & Bicycle Environment



The Transit Stop



The Transit Vehicle and Infrastructure

“Accessibility (or just ‘access’) is the ability to reach desired goods, services, activities and destinations (together called opportunities).”

- Button, Vega, and Nijkamp, *A Dictionary of Transport Analysis* (2010: 1)

One of the “essential ingredients of an accessible bus system” is the “[p]rovision of an accessible pedestrian network.”

- Nick Tyler, *Accessibility and the Bus System: From Concepts to Practice* (2002: 63)

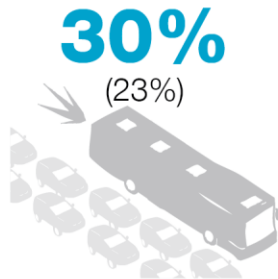
## Why access to transit matters:

- All transit customers are pedestrians at some point
- Increased ridership and revenue
- Improved user safety
- More efficient fixed-route service
- Increased value of development
- More balanced transportation choices

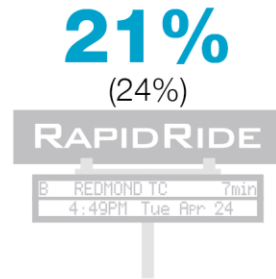
- APTA, *Design of On-street Transit Stops and Access from Surrounding Areas* (2012: iii)

# HOW SHOULD THE CITY INVEST?

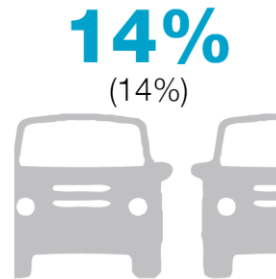
ACCORDING TO CURRENT TRANSIT USERS



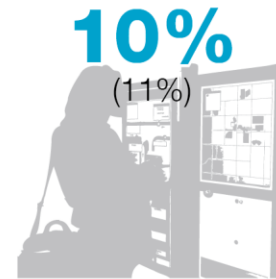
Improve service speed and reliability by investing in roadway and traffic signal infrastructure. (595)



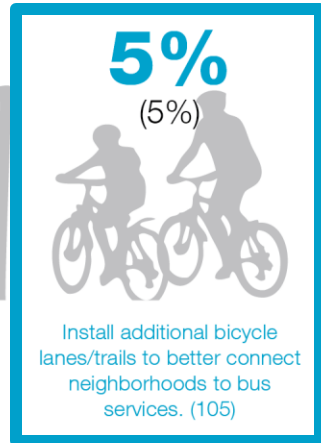
Provide real-time bus arrival information signs at major stops, similar to the RapidRide B Line at Bellevue Transit Center. (405)



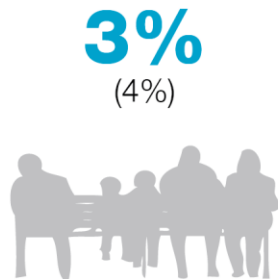
Increase vehicle parking capacity at Park and Ride lots. (264)



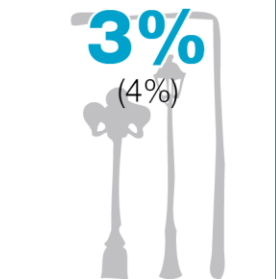
Provide additional route, schedule, and wayfinding information at bus shelters. (189)



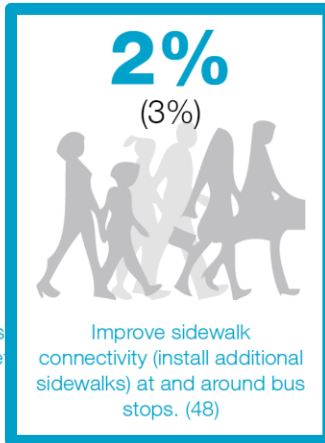
Install additional bicycle lanes/trails to better connect neighborhoods to bus services. (105)



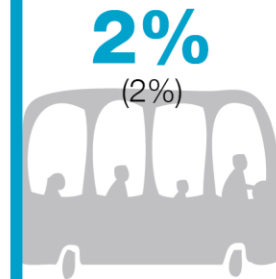
Improve comfort at bus stops with improvements like additional seating and other street furniture. (60)



Improve safety at bus stops by providing additional street lighting. (60)



Improve sidewalk connectivity (install additional sidewalks) at and around bus stops. (48)



Repair City-owned streets used as transit corridors to improve ride quality/comfort. (31)

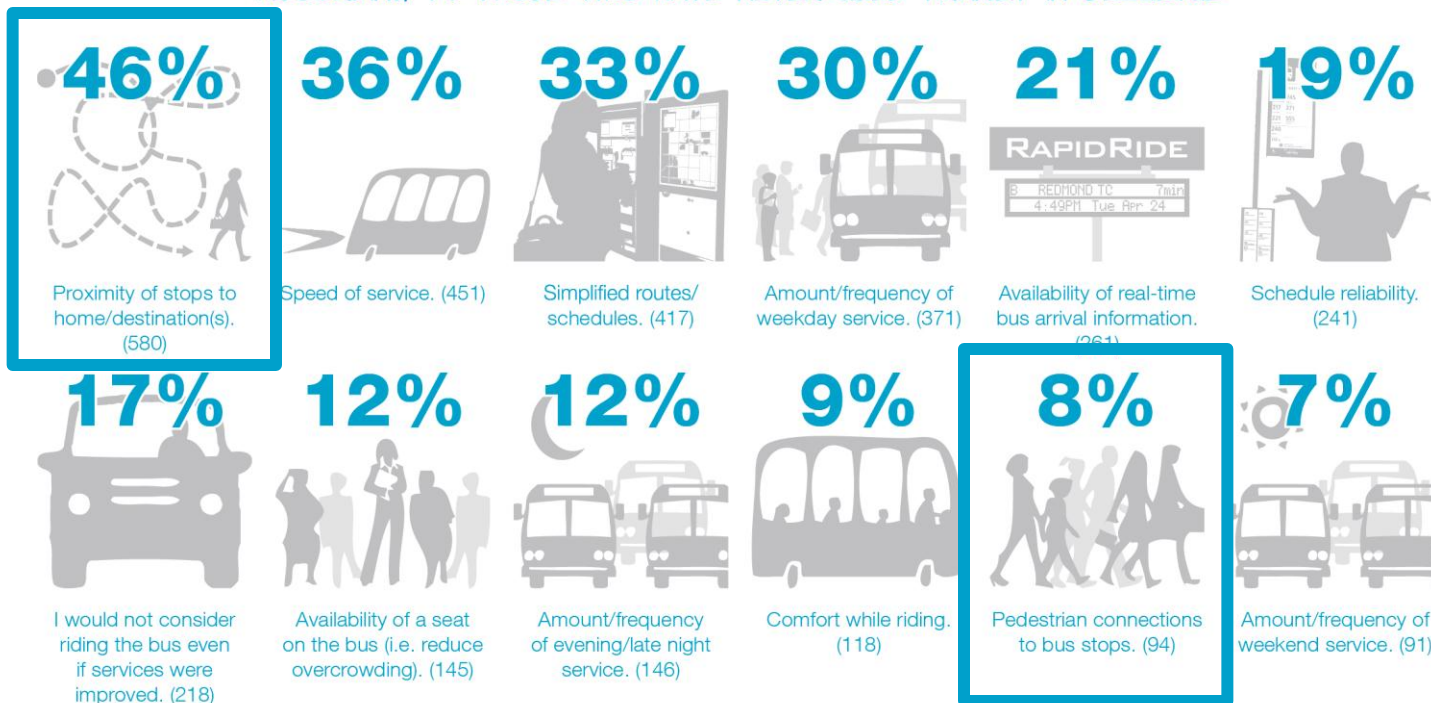


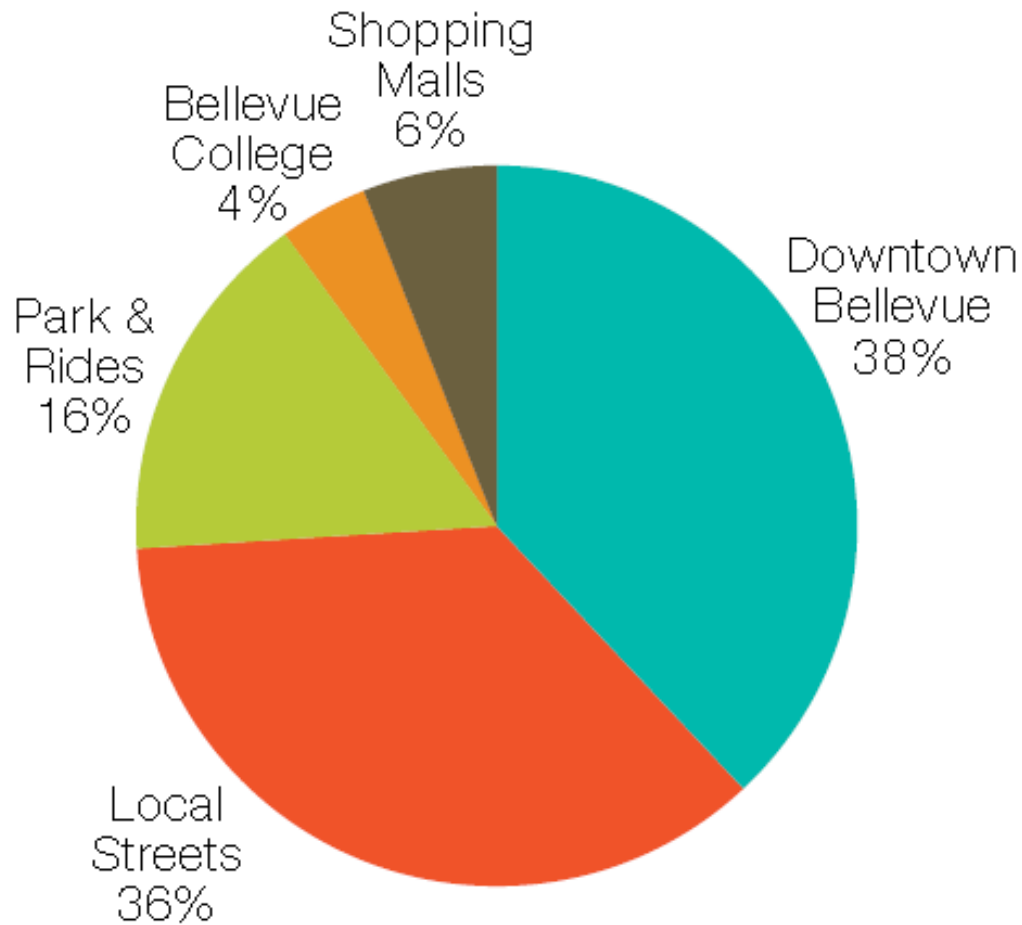
Increase bicycle parking capacity at Park and Ride lots. (3)



# WHAT IMPROVEMENTS WOULD GET YOU TO CONSIDER RIDING THE BUS?

ACCORDING TO THOSE WHO HAVE NEVER USED TRANSIT IN BELLEVUE



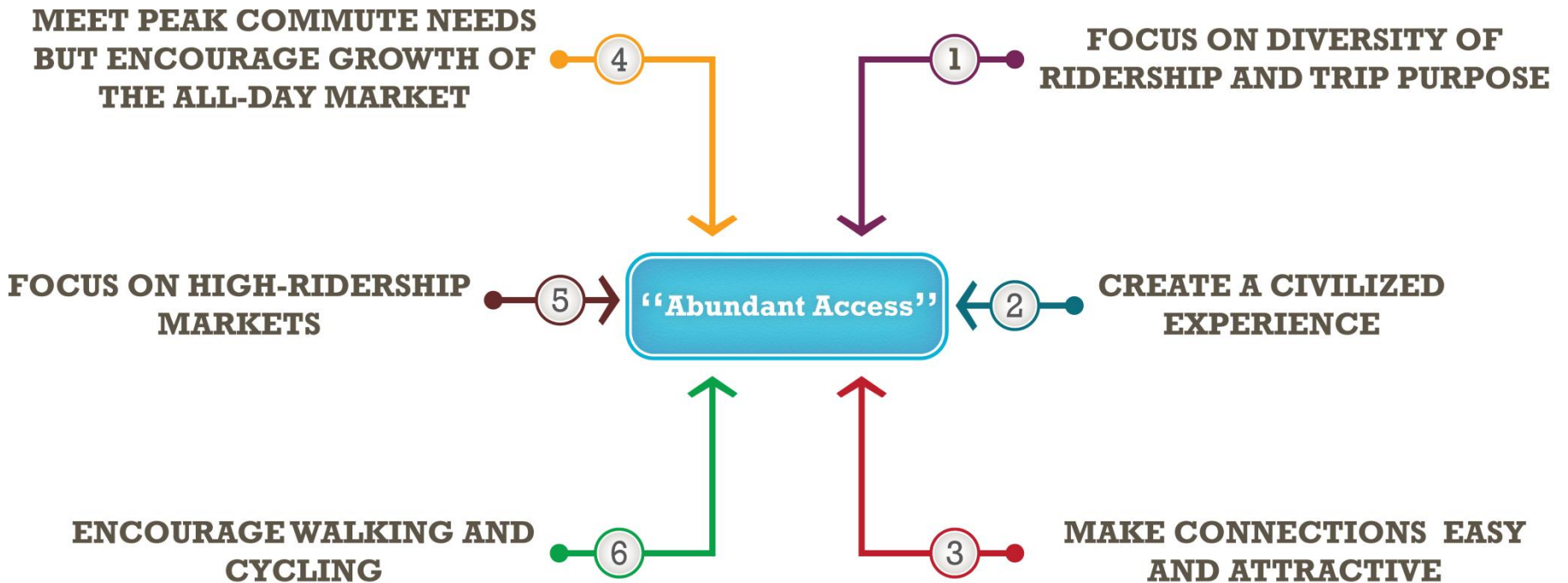


## Comprehensive Plan Policies:

- **TR-77:** Consider pedestrians and bicycles along with other travel modes in all aspects of developing the transportation system.
- **TR-79:** Assign high priority to pedestrian and bicycle projects that... [p]rovide accessible linkages to the transit and school bus systems.
- **TR-56:** Develop partnerships with transit providers to implement projects providing neighborhood-to-transit links that improve pedestrian and bicycle access to transit service and facilities.

## Comprehensive Plan Policies:

- **TR-80:** Encourage transit use by improving pedestrian and bicycle linkages to existing and future transit and school bus systems, and by improving the security and utility of park-and-ride lots and bus stops.
- **UD-49:** Design and coordinate the proximity of bike racks, wheelchair access, pedestrian amenities, and other modes of transportation with transit facilities.



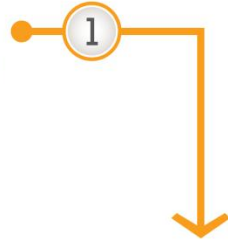




## Encourage Walking and Cycling

As the transit network moves towards attracting more patrons who take transit by choice, it will be increasingly important to factor in the pedestrian and bicycle experience as part of a more holistic ridership strategy so that transit can run more efficiently.

**USE URBAN DESIGN AND DEVELOPMENT REGULATIONS TO SUPPORT TRANSIT USE**



1

**DESIGN TRANSIT FACILITIES TO ENHANCE ACCESSIBILITY, CONNECTIVITY, AND USER COMFORT**

2

**“Abundant Access”**

**INVEST IN TRANSIT PRIORITY MEASURES**

3

**EMPLOY BEST PRACTICES AND CONTEXT SENSITIVITY WHEN IMPLEMENTING TRANSIT PRIORITY MEASURES**

4



## Design Transit Facilities to Enhance Accessibility, Connectivity, & User Comfort

The location and design of transit stops, centers, and park-and-ride facilities is an important factor in determining how far pedestrians, cyclists, and drivers must travel to reach transit services and the quality of the wait once they get there. These facilities are the most consistently visible image of a city's transit system.



**2009**

city of bellevue  
pedestrian & bicycle  
transportation plan report



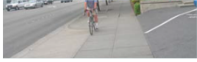
The *2009 Pedestrian & Bicycle Transportation Plan*.

- Provides a single resource for all bicycle and pedestrian-related policies and projects
- Is the principle reference for planning, designing, constructing, and maintaining pedestrian and bicycle facilities in Bellevue



**Bellevue Transit  
Master Plan**

**2009 Pedestrian & Bicycle Plan**



City of Bellevue



### Pedestrian and Bicycle Transportation Plan

Adopted May, 1993  
Reprinted July, 1996  
with the Newport Hills Amendment



TRANSPORTATION DEPARTMENT



### Pedestrian and Bicycle Transportation Plan Update

Adopted October, 1999



TRANSPORTATION DEPARTMENT

*The 2009 Plan Update is the third in a series of similar efforts that began in the 1993 Plan and then was updated in 1999.*

in 1993 and later updated in 1999 as required by Comprehensive Plan policy (which calls for periodic updates).

At its March 12, 2007 meeting the City Council initiated the update to the 1999 Pedestrian and Bicycle Transportation Facilities Plan. Council charged the Transportation Commission with overseeing the update process, which included reviewing the Plan's policies, projects, and priorities to ensure they were consistent with the City's transportation needs. By way of example, the Pedestrian and Bicycle Transportation Facility Plan recommendations include new projects (such as projects in the Bel-Red Corridor which were not envisioned in 1999) and revisions to earlier projects that respond to developments underway in Bellevue. It also includes deletion of projects that are in the 1999 Plan; these deletions, such as trail projects in the Bridle Trails area, were in response to community input.

#### What did people tell us?

Working closely with interested citizens, boards, commissions, and the City Council, the Transportation Department led the development of the Plan with the assistance of a multi-departmental workgroup. The policy and project recommendations referenced in the Plan update are the product of public outreach, research, inter-agency coordination, and field work. The outreach effort included on-line surveys, focus groups, and conversations with citizens at public events and over the Internet.

## The *2009 Pedestrian & Bicycle Transportation Plan*.

- Updates the *Pedestrian and Bicycle Transportation Facility Plan*
  - Addition of new projects
  - Revisions to earlier projects
  - Deletions of projects in response to community input





Off-Street Path



Bike Lane



Bike Shoulder



Wide Outside Lane



5 ft. walk without planter



6 ft. walk and 4 ft. planter



8 ft. walk and 4 ft. planter



12 ft. walk and 4 ft. planter



Primitive Hiking Trail



Walking Trail



Multi-Use Gravel Trail



Boardwalk

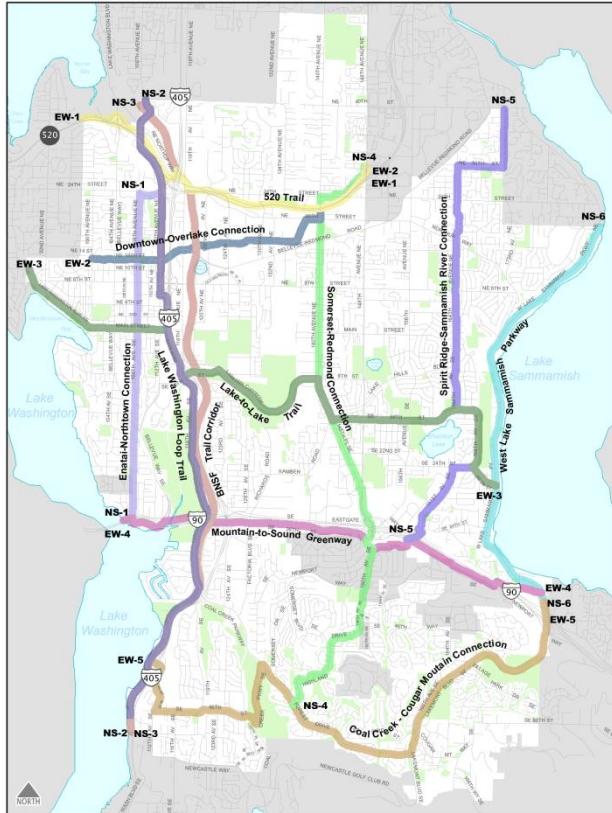
## The *2009 Pedestrian & Bicycle Transportation Plan*.

- Describes a variety of non-motorized facility typologies





Bicycle Priority Corridors

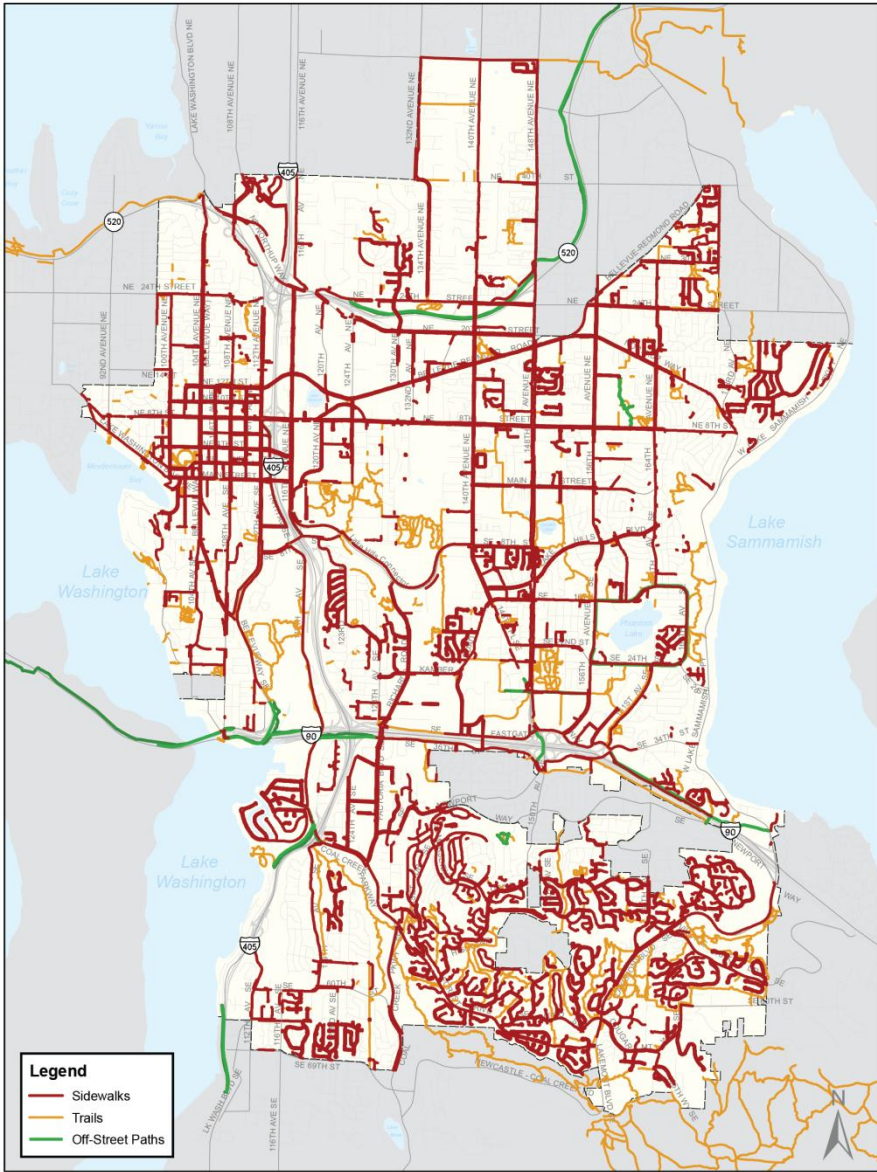


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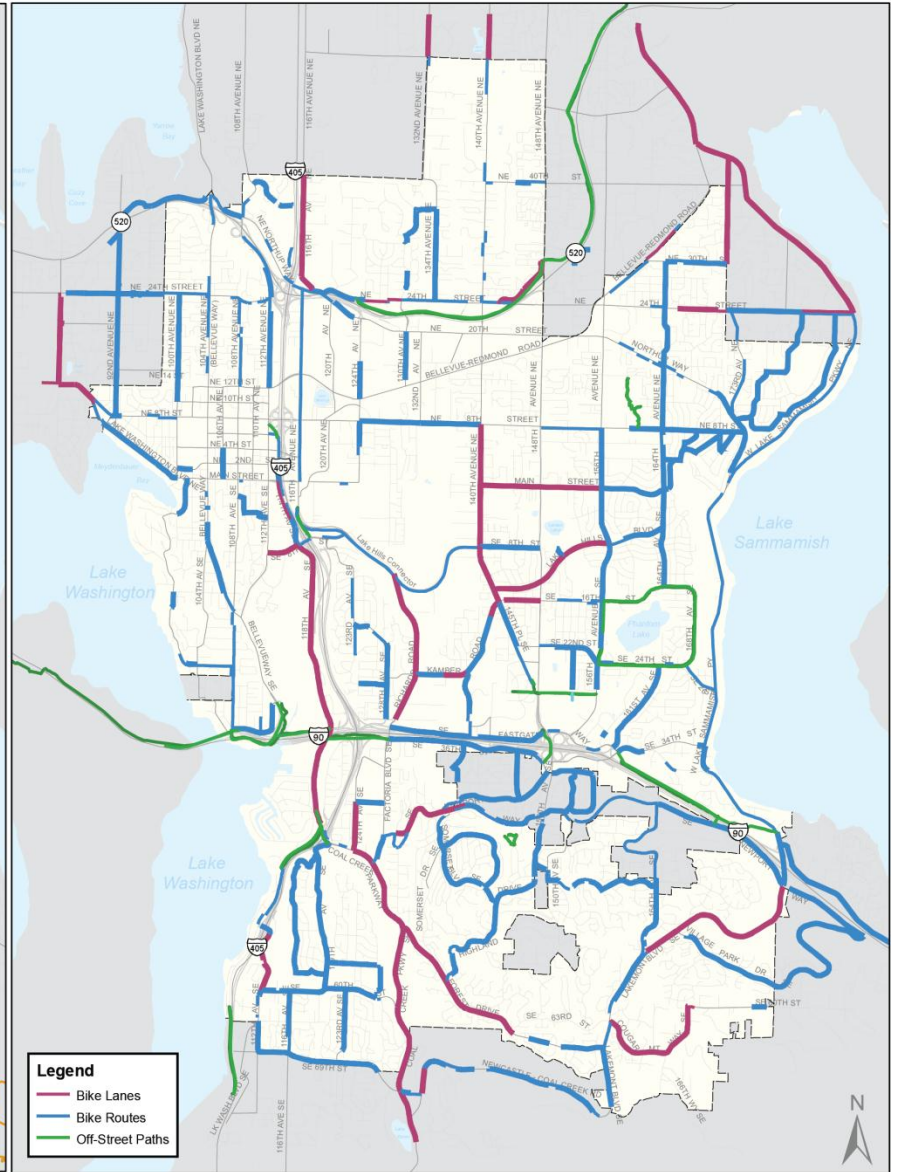
The *2009 Pedestrian & Bicycle Transportation Plan*.

- Defines 11 primary bicycle corridors throughout the city

# Existing Sidewalk and Trail Facilities

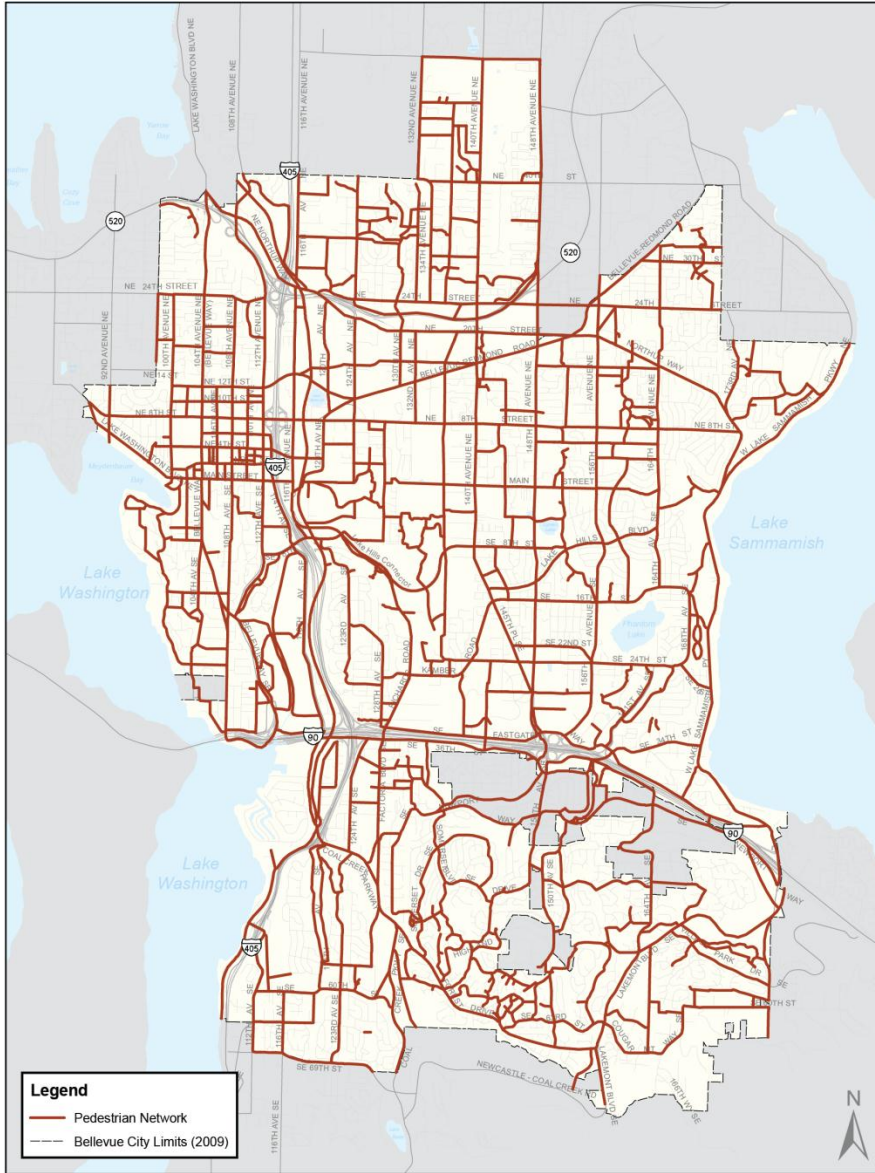


# Existing Bicycle Facilities

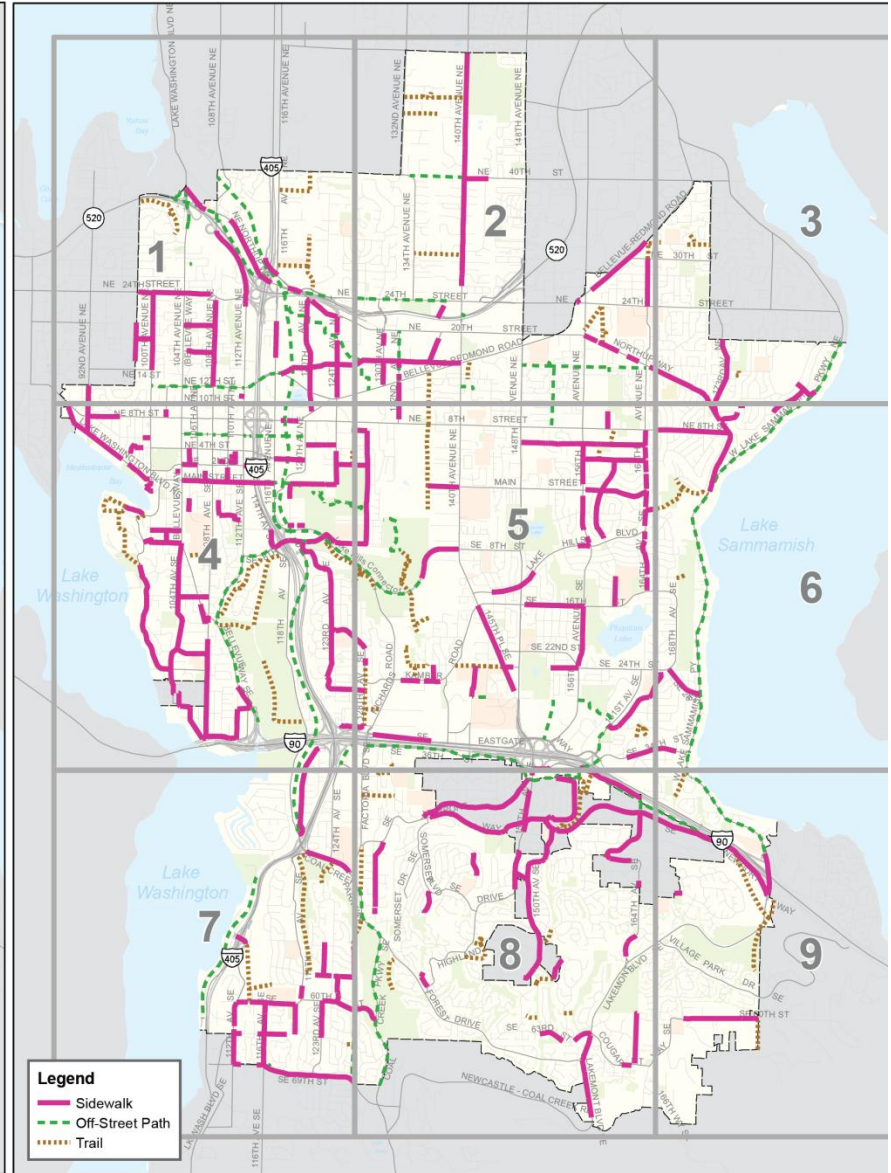




# Pedestrian Network Map

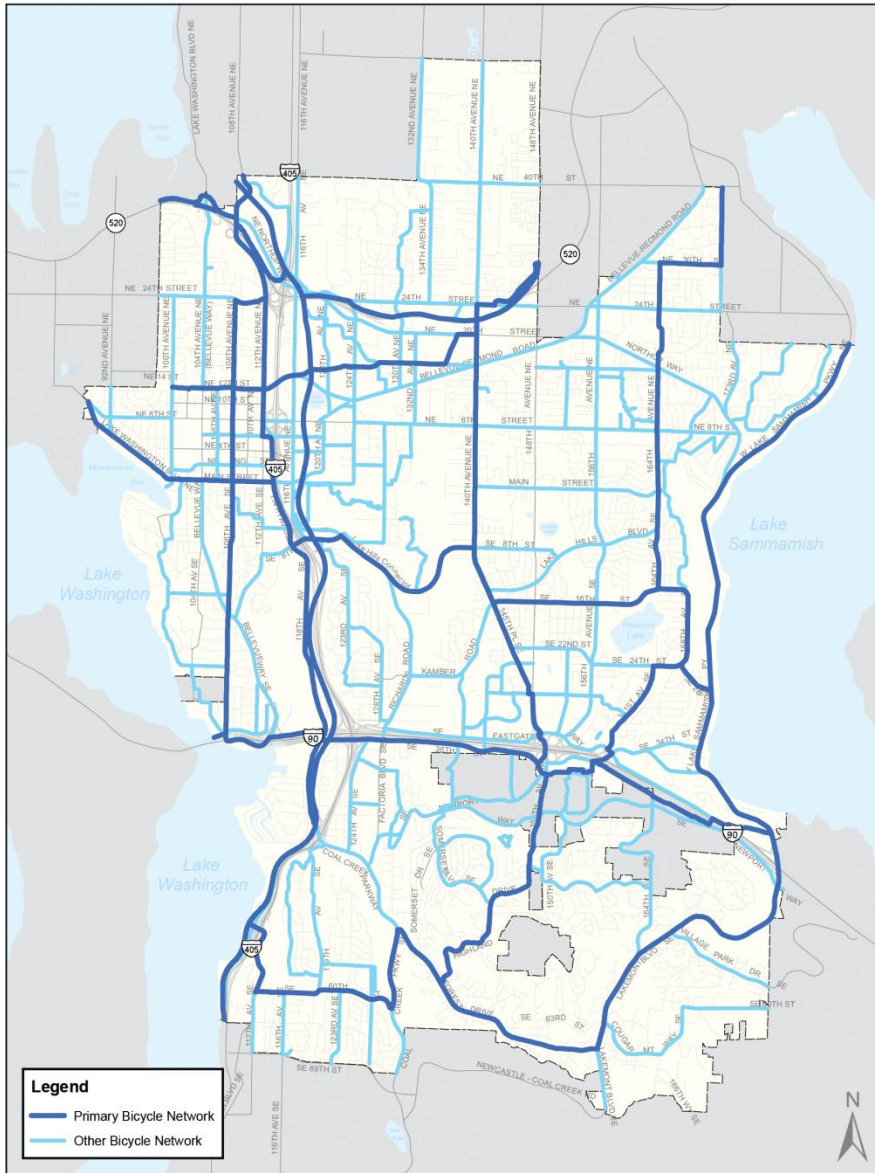


# Pedestrian Project Map

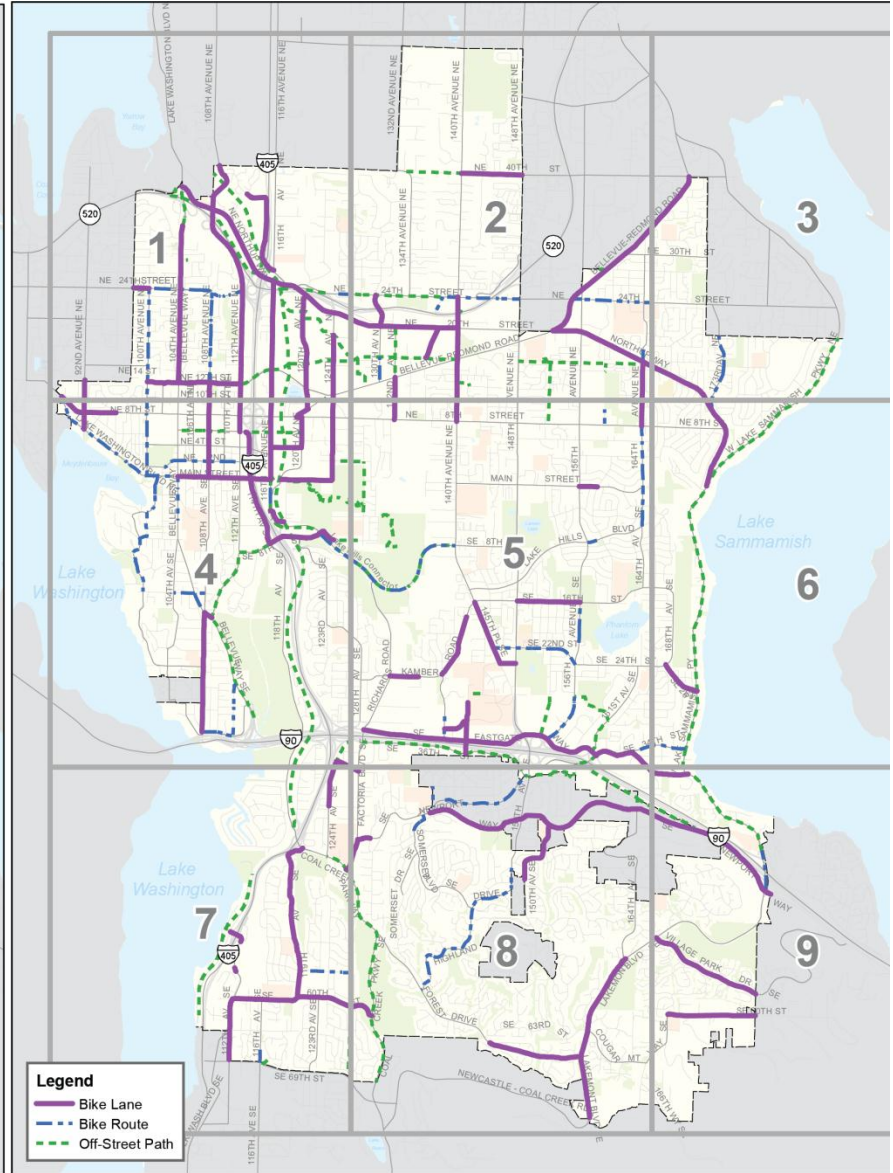




# Bicycle Network Map

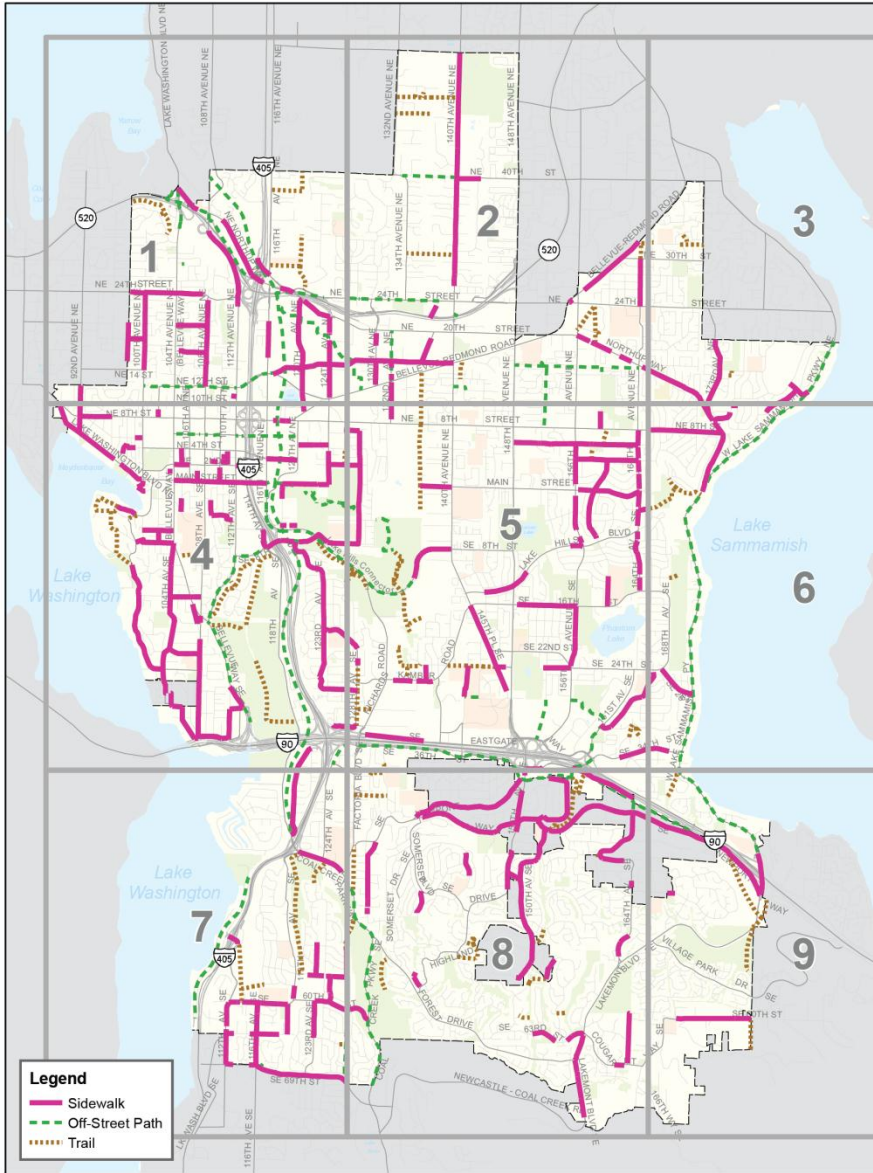


# Bicycle Project Map

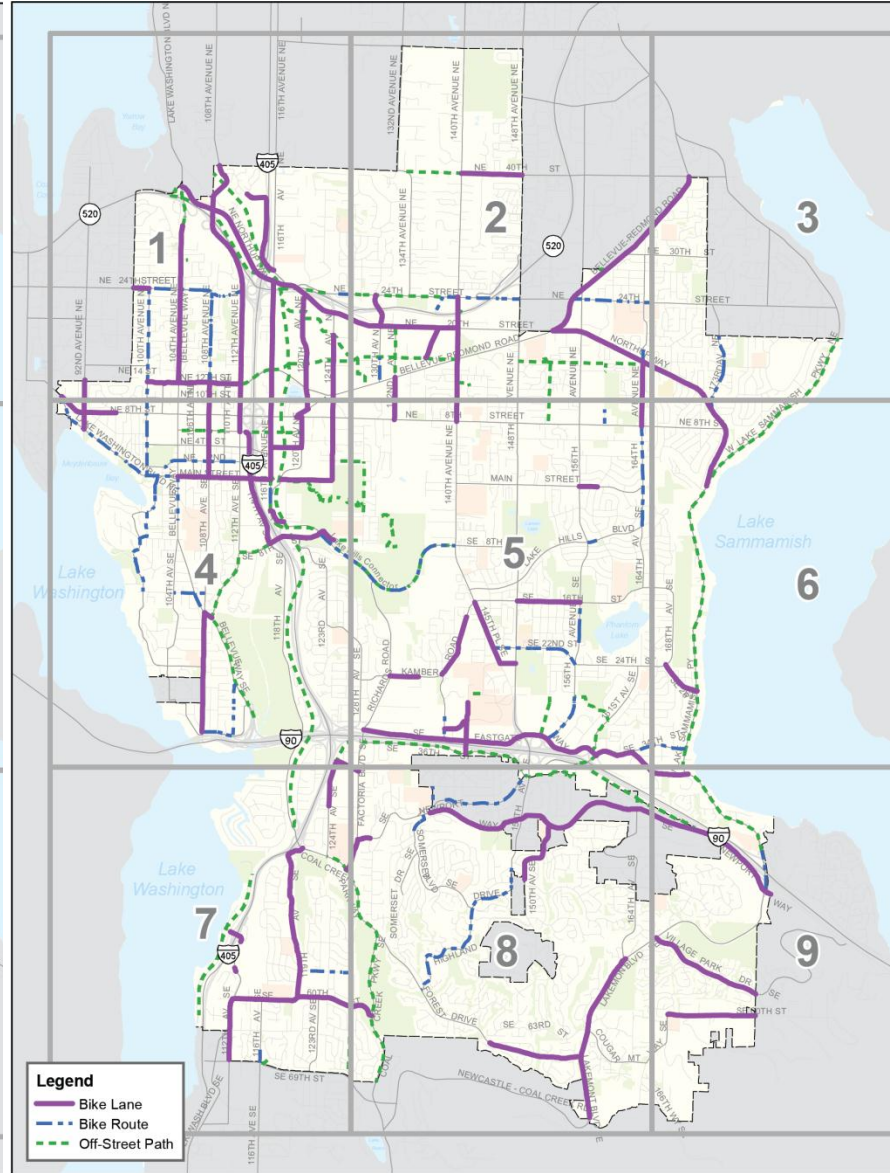


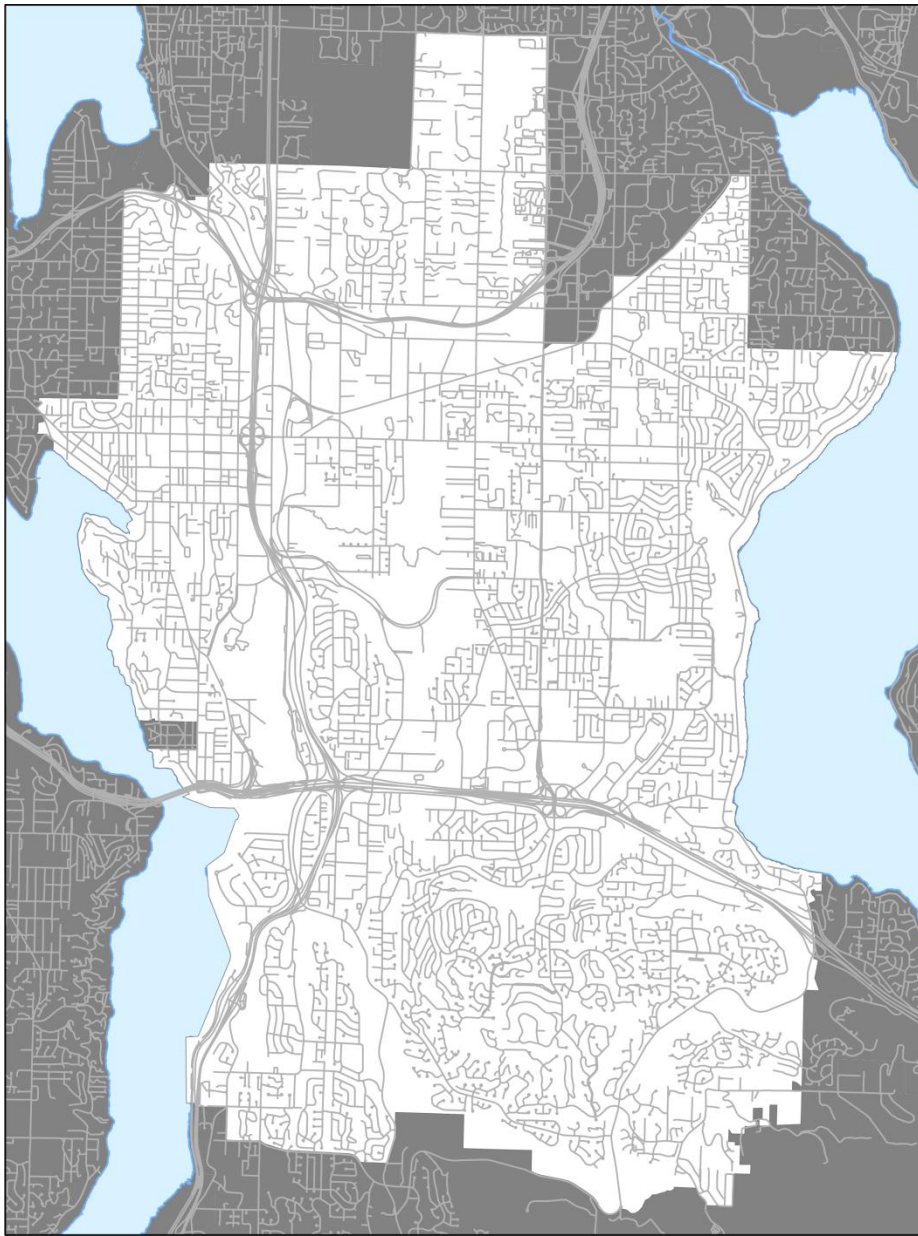


# Pedestrian Project Map



# Bicycle Project Map





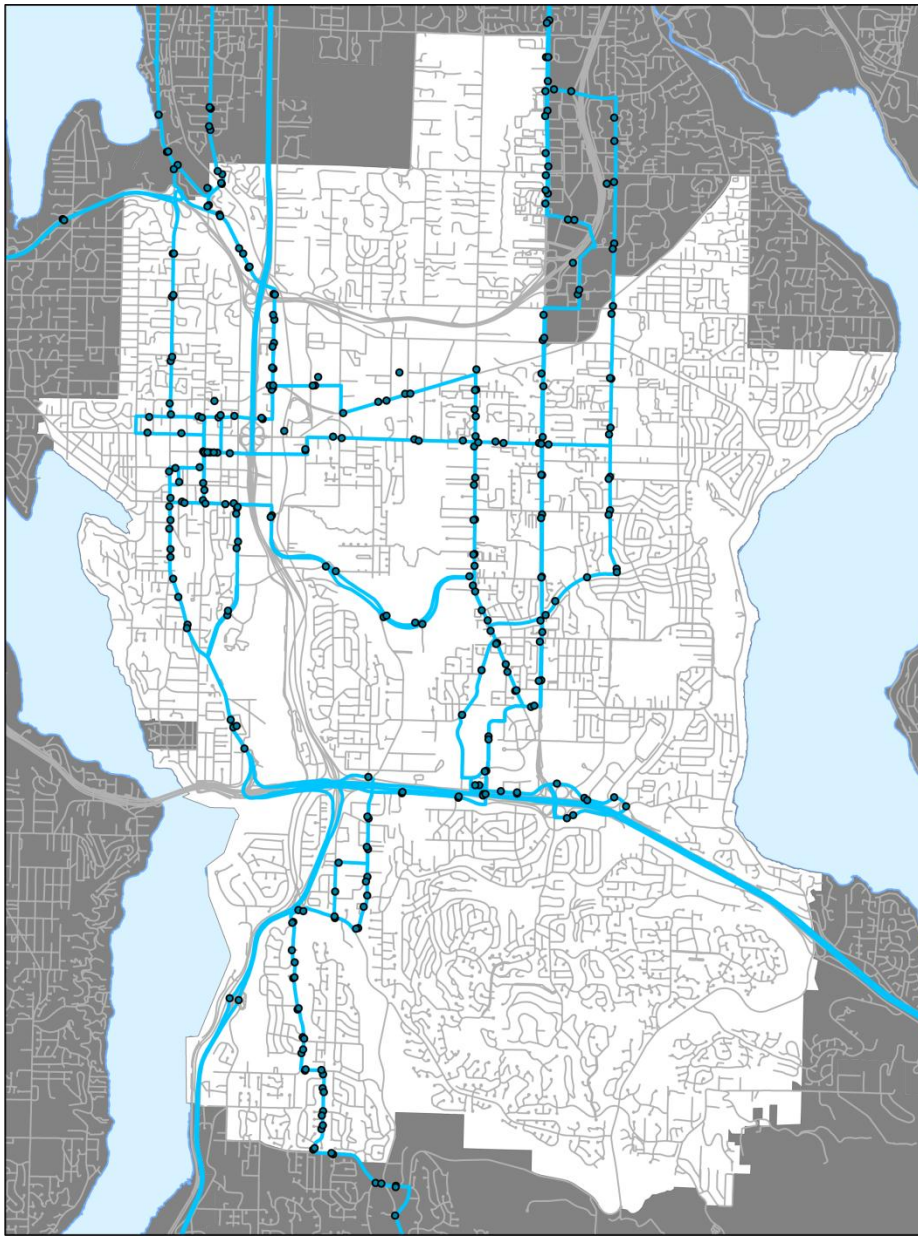
## Methodology

Identifying Transit Priority Pedestrian-Bicycle  
Projects

— City of Bellevue Base Map







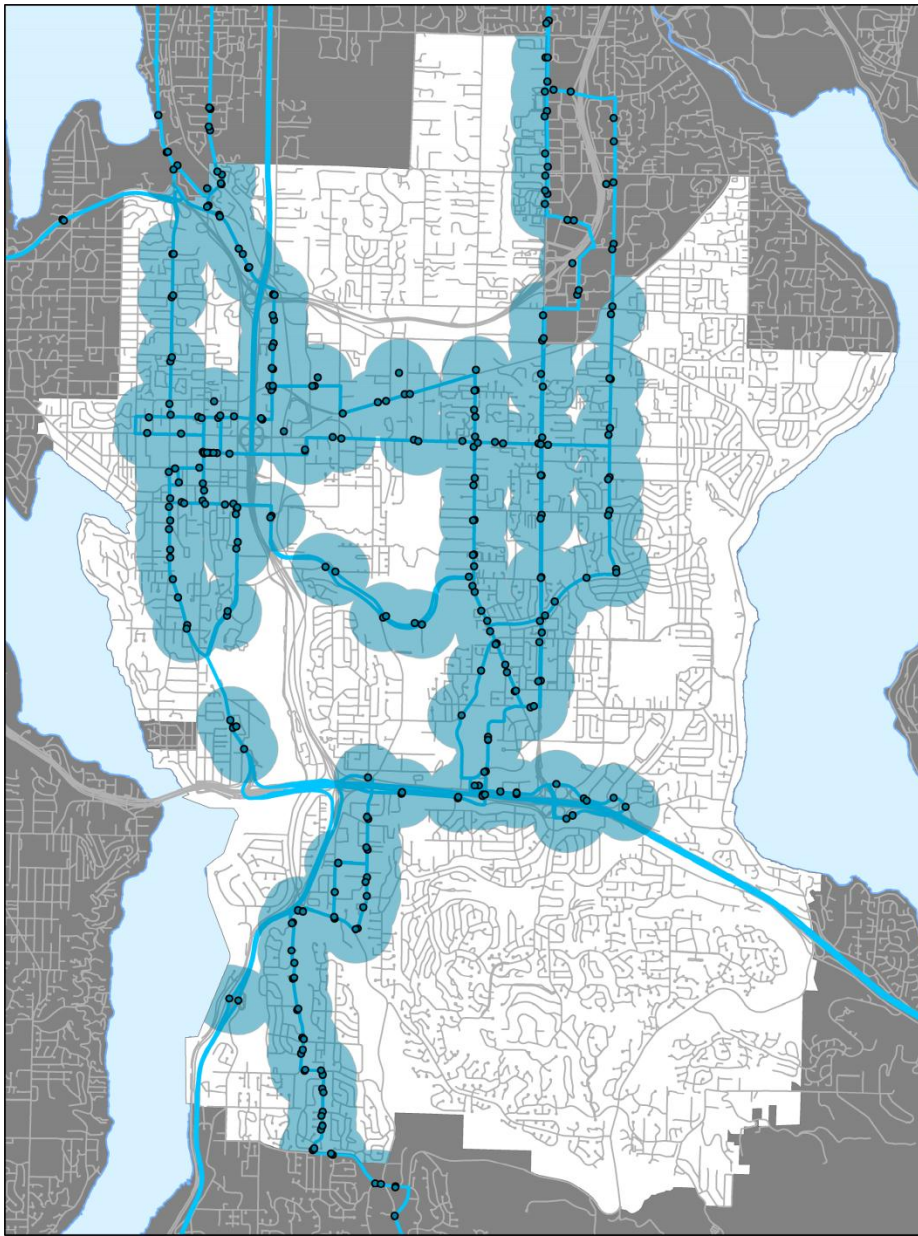
## Methodology

Identifying Transit Priority Pedestrian-Bicycle Projects

— City of Bellevue Base Map

— 2030 Frequent Transit Network





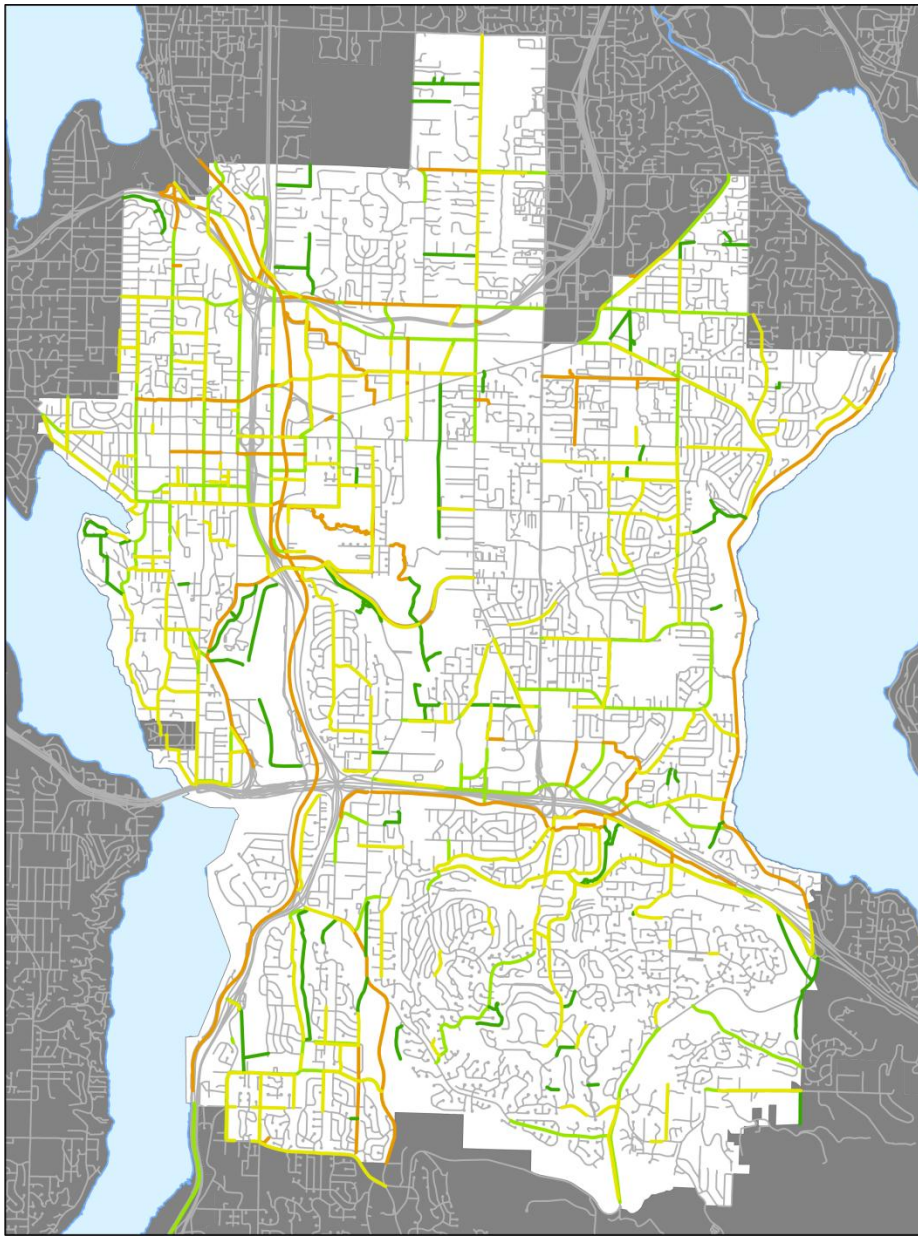
## Methodology

Identifying Transit Priority Pedestrian-Bicycle Projects

- City of Bellevue Base Map
- 2030 Frequent Transit Network
- FTN Quarter-Mile Access Areas





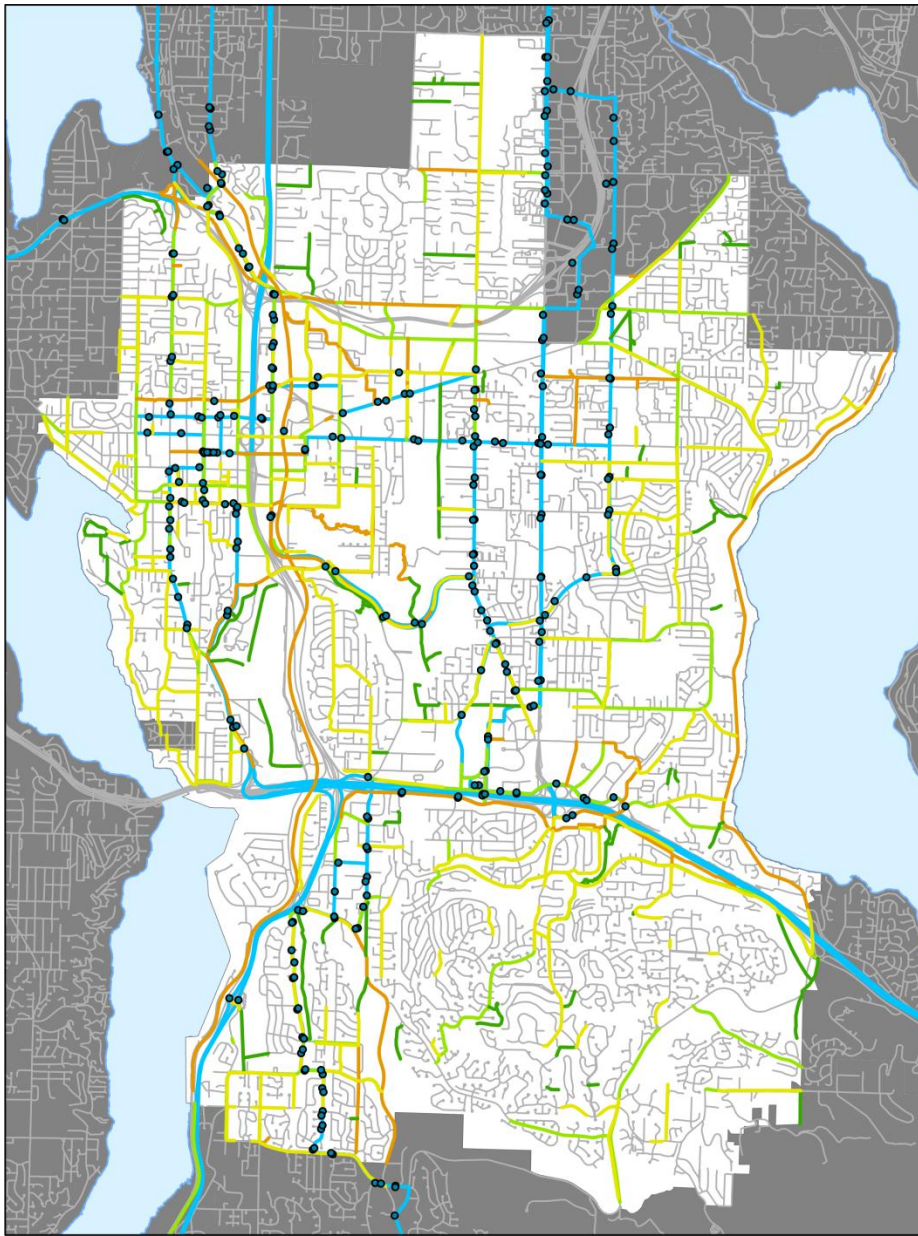


## Methodology

### Identifying Transit Priority Pedestrian-Bicycle Projects

- City of Bellevue Base Map
- 2030 Frequent Transit Network
- FTN Quarter-Mile Access Areas
- Pedestrian-Bicycle Projects





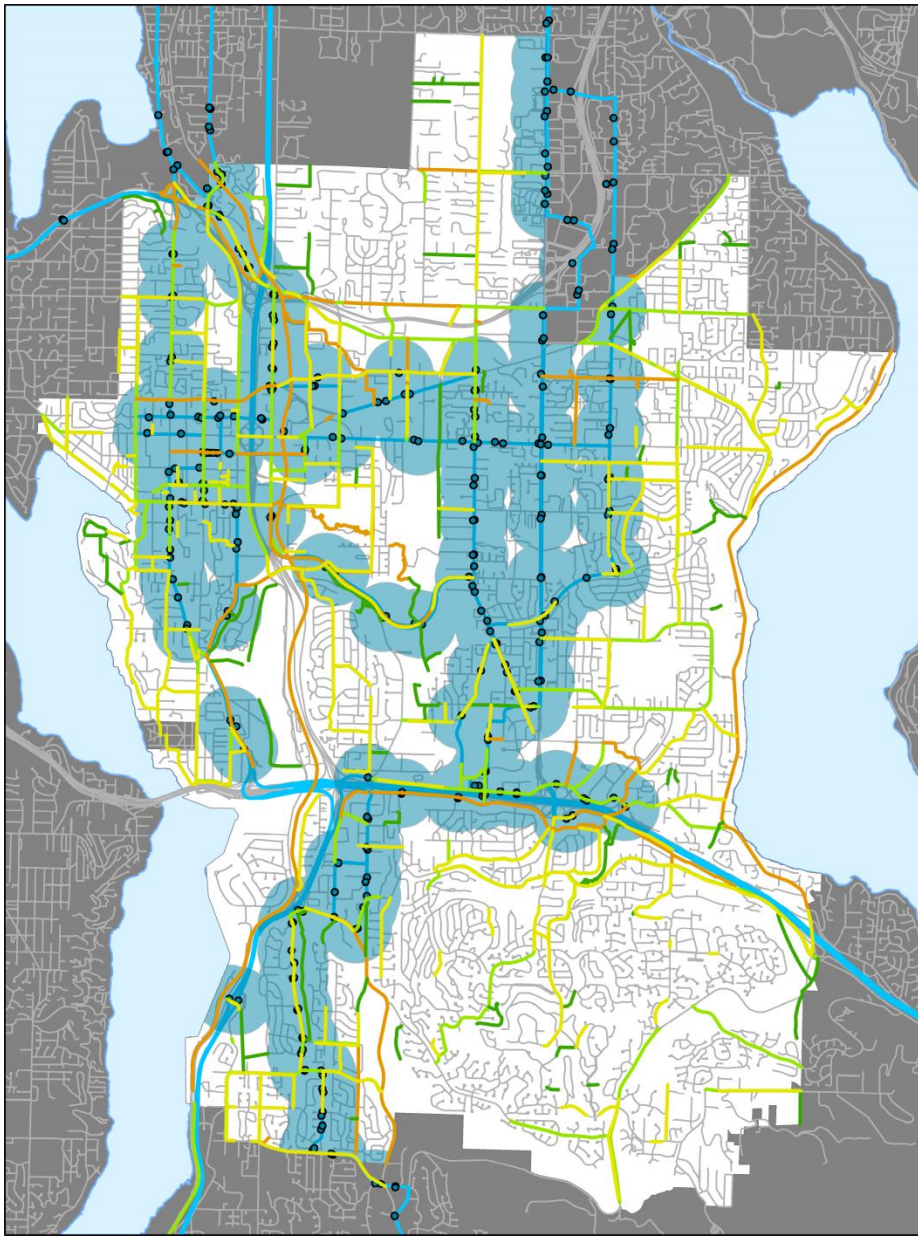
## Methodology

### Identifying Transit Priority Pedestrian-Bicycle Projects

- City of Bellevue Base Map
- 2030 Frequent Transit Network
- FTN Quarter-Mile Access Areas
- Pedestrian-Bicycle Projects
- Ped-Bike Projects + FTN





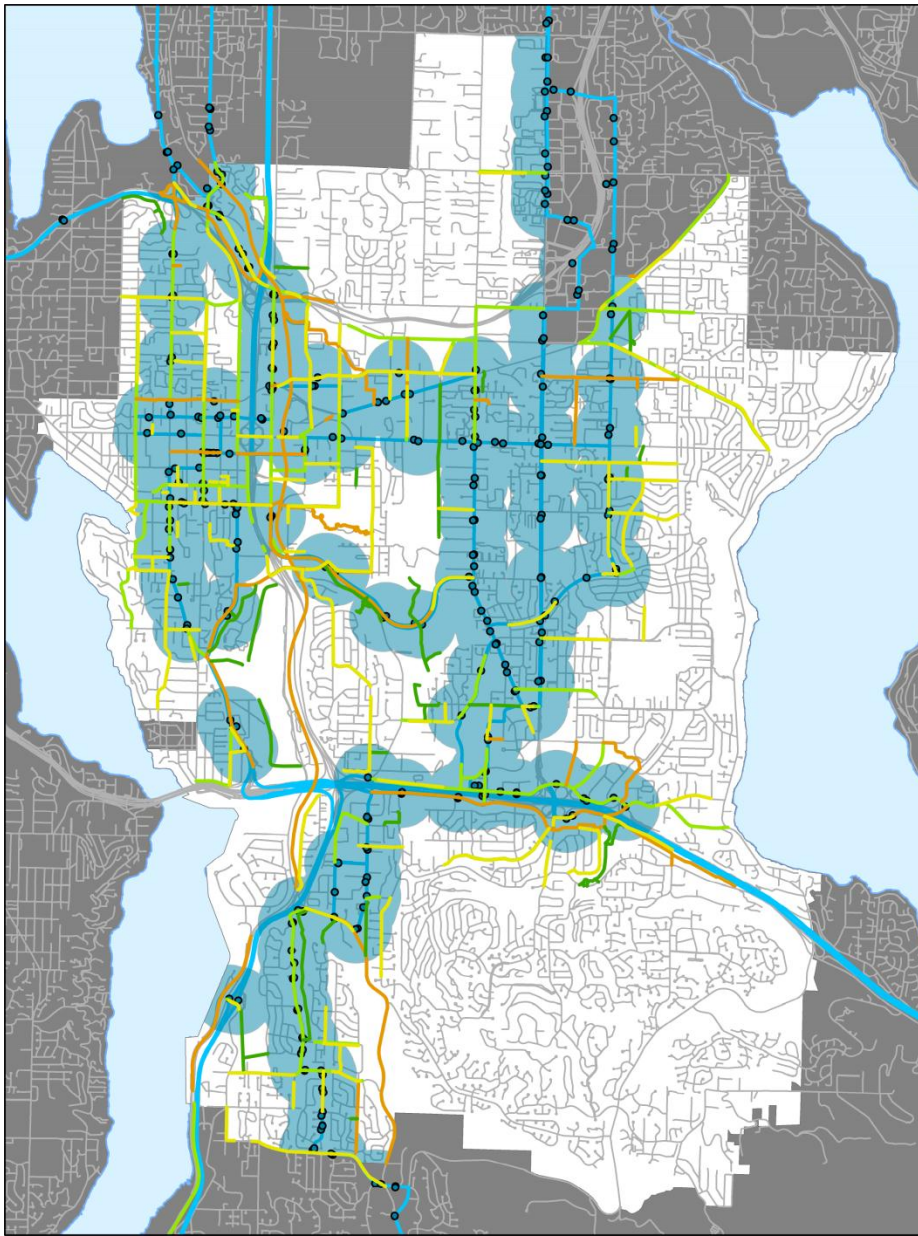


## Methodology

### Identifying Transit Priority Pedestrian-Bicycle Projects

- City of Bellevue Base Map
- 2030 Frequent Transit Network
- FTN Quarter-Mile Access Areas
- Pedestrian-Bicycle Projects
- Ped-Bike Projects + FTN
- Ped-Bike Projects + FTN Access



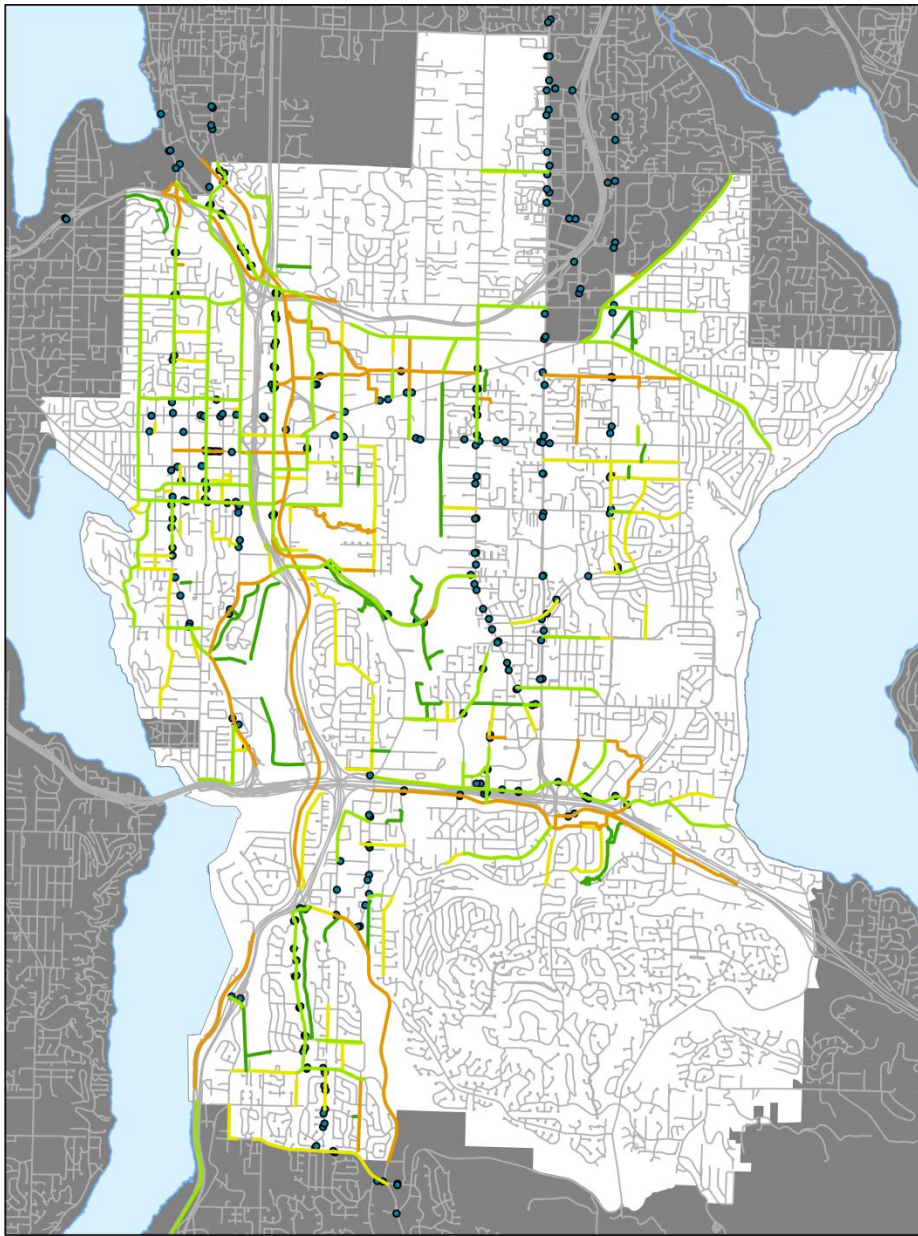


## Methodology

### Identifying Transit Priority Pedestrian-Bicycle Projects

- City of Bellevue Base Map
- 2030 Frequent Transit Network
- FTN Quarter-Mile Access Areas
- Pedestrian-Bicycle Projects
- Ped-Bike Projects + FTN
- Ped-Bike Projects + FTN Access
- Transit Priority Ped-Bike Projects



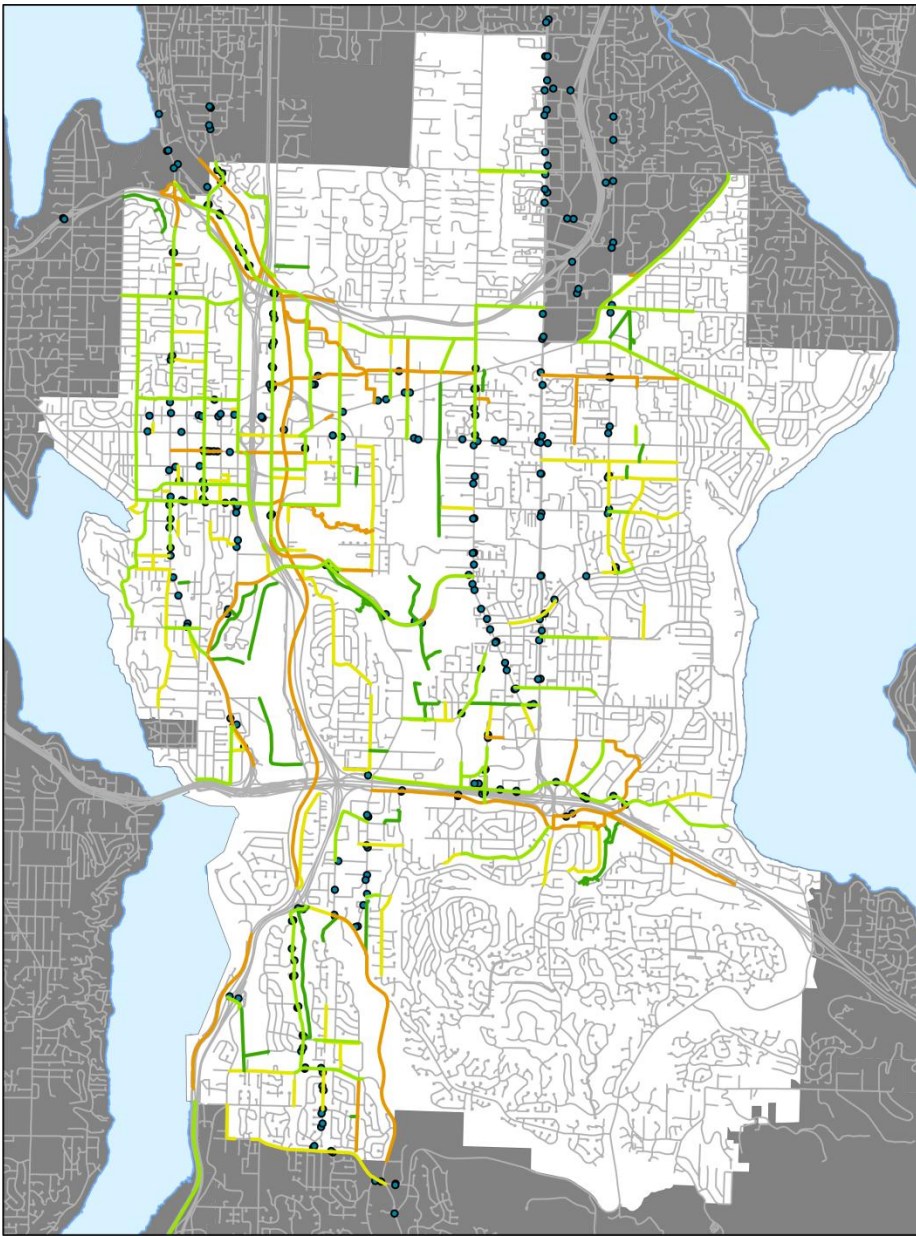


## Methodology

### Identifying Transit Priority Pedestrian-Bicycle Projects

- City of Bellevue Base Map
- 2030 Frequent Transit Network
- FTN Quarter-Mile Access Areas
- Pedestrian-Bicycle Projects
- Ped-Bike Projects + FTN
- Ped-Bike Projects + FTN Access
- Transit Priority Ped-Bike Projects





## Results

Transit Priority

Pedestrian-Bicycle Projects

Total Projects: 335 (233)

- Sidewalk: 153 (103)
- Bicycle: 118 (66)
- Off-street Path: 36
- Trail: 28

Note: Numbers in parentheses indicate the number of projects irrespective of the side(s) of the street they are planned for; other figures reflect the total number of projects as identified in the 2009 *Ped-Bike Plan*.



## GIS-Based Prioritization Framework

Category	Indicator	Points
<b>Corridor Conditions</b>	System linkage (connectivity to other sidewalk/bikeway facilities)	20
	Severity of problem (how many collisions have occurred)	10
	Roadway arterial classification	10
	Bus stop level ridership (1/4 mile proximity)	10
<b>Social Justice</b>	Vehicle ownership (%)	5
	Below poverty level (%)	5
	Under 18, 65 or over (%)	5
<b>Destination Network</b>	Park proximity (%)	5
	School proximity (%)	5
	Community center/social service/library proximity (%)	5
	Retail proximity (%)	5
	Major employment center (Comprehensive Plan)	5
	Housing density (Comprehensive Land Use Plan)	10

Source: 2009 Pedestrian & Bicycle Transportation Plan Report

Project Type	2009 Pedestrian Bicycle Plan Project Priority			Total Transit Priority Projects
	Low	Med	High	
Sidewalk	14	50	89	153
Bicycle	31	39	48	118
Offstreet Path	12	13	11	36
Trail	3	7	18	28
<b>All Projects</b>	<b>60</b>	<b>109</b>	<b>166</b>	<b>335</b>

## What does this analysis aim to achieve?

- Quantify the degree of network connectivity
  - Anywhere to anywhere within Bellevue's transit network
- Quantify the accessibility of all parcels in Bellevue
  - Route directness under multiple access network regimes
- Provide indices for various destinations and user groups
  - Access to jobs, public services, land use types, demographic groups, etc.
- Provide transit access-based prioritization of ped-bike projects
  - Identify which projects would provide the greatest benefits

“(T)he accessibility of a bus system is... heavily concerned with the distance it is necessary to walk to reach a bus”

- Nick Tyler, *Accessibility and the Bus System: From Concepts to Practice* (2002: 79)



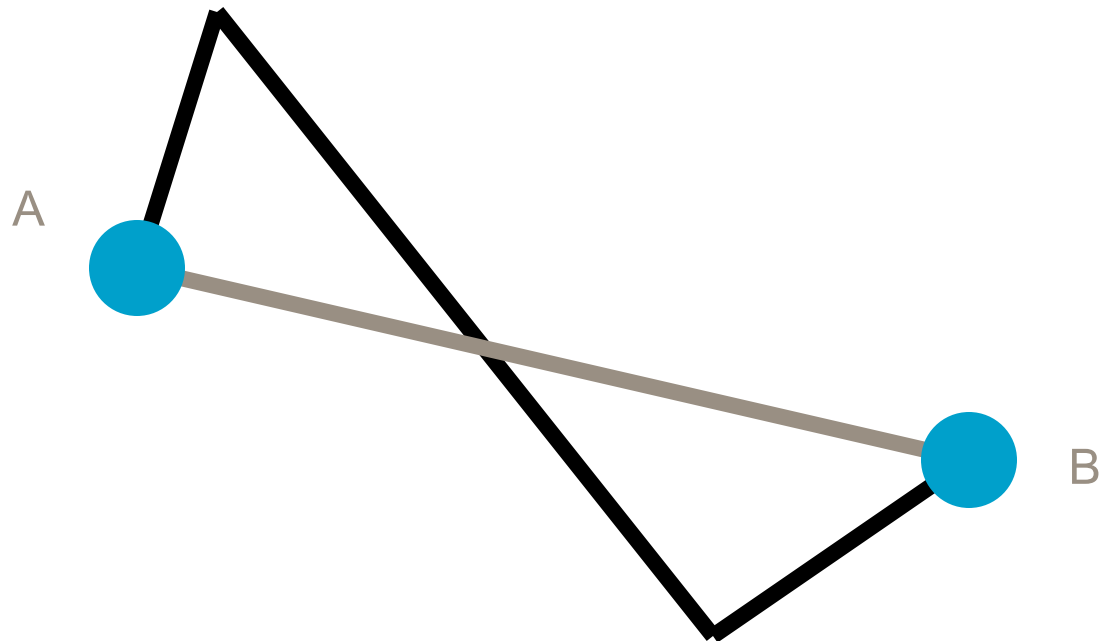
Network-Based



Euclidean



Ratio of actual (network-based) travel distance to direct (straight line) distance.



Lake Washington

NE 12th St

NE 10th St

NE 8th St

MEDINA

84th Ave NE

96th Ave NE

NE 10th St

Lake Washington Blvd NE

NE 1st St

Meydenbauer Bay

Vineyard Crest  
Evergreen Dr

Lincoln Square

Bellevue Square

Downtown Park

BELLEVUE

102nd Ave SE

104th Ave SE

SE 6th St

SE 8th St

Chism Beach Park

98th Ave SE

WEST BELLEVUE

SE 16th St

104th Ave SE

SE 22nd St

SE 23rd St

SE 25th St

BEAUX ARTS

Bellefield Office Park

Mercer Slough Nature Park

Mercer Slough

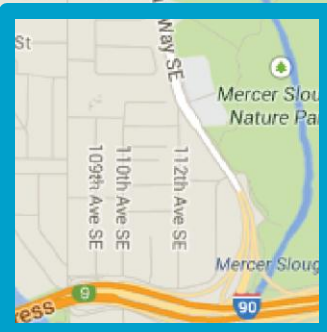
110th Ave SE

109th Ave SE

112th Ave SE

I-90 Express

90



110th Ave SE

109th Ave SE

112th Ave SE

111th Ave SE

110th Ave SE

109th Ave SE

112th Ave SE

111th Ave SE

110th Ave SE

109th Ave SE

Bellevue Botanical Garden

Wilburton Hill Park

Glendale Country

Kelsey Cr

Kelsey Creek Park

Lake Hills Connector

SE 14th St

125th Ave SE

127th Ave SE

123rd Ave SE

SE 14th St

125th Ave SE

127th Ave SE

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127th Ave SE

SE 14th St

125th Ave SE

127th Ave SE

SE 14th St

125th Ave SE

127th Ave SE

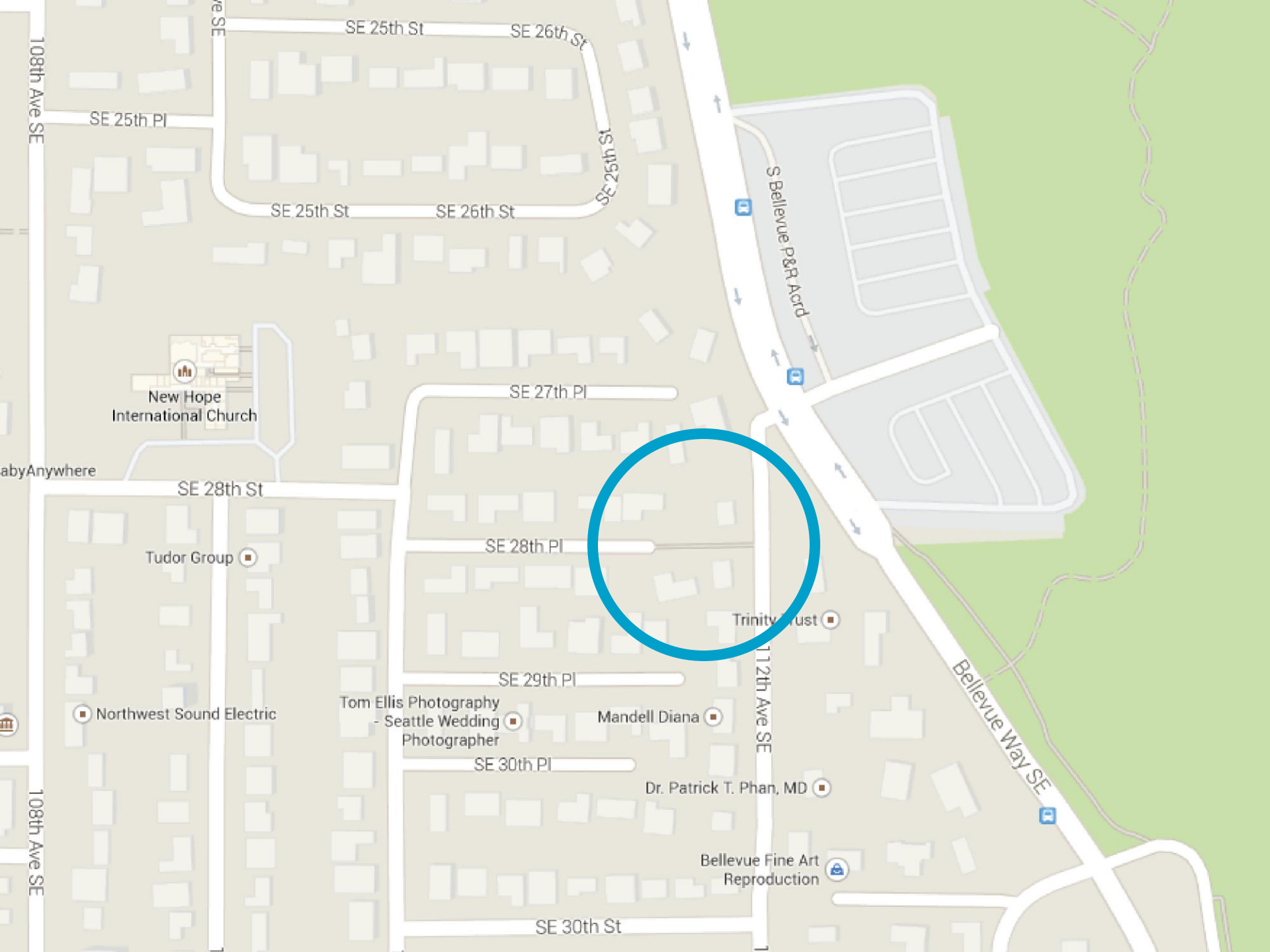
SE 14th St

SE 32nd St

Newport Corporate Cent

SE 38th St

EASTOMA



108th Ave SE

SE 25th Pl

SE 25th St

SE 26th St

SE 25th St

SE 26th St

SE 25th St

New Hope International Church

SE 27th Pl

abyAnywhere

SE 28th St

Tudor Group

SE 28th Pl

Northwest Sound Electric

Tom Ellis Photography - Seattle Wedding Photographer

Mandell Diana

Trinity Trust

SE 30th Pl

Dr. Patrick T. Phan, MD

Bellevue Fine Art Reproduction

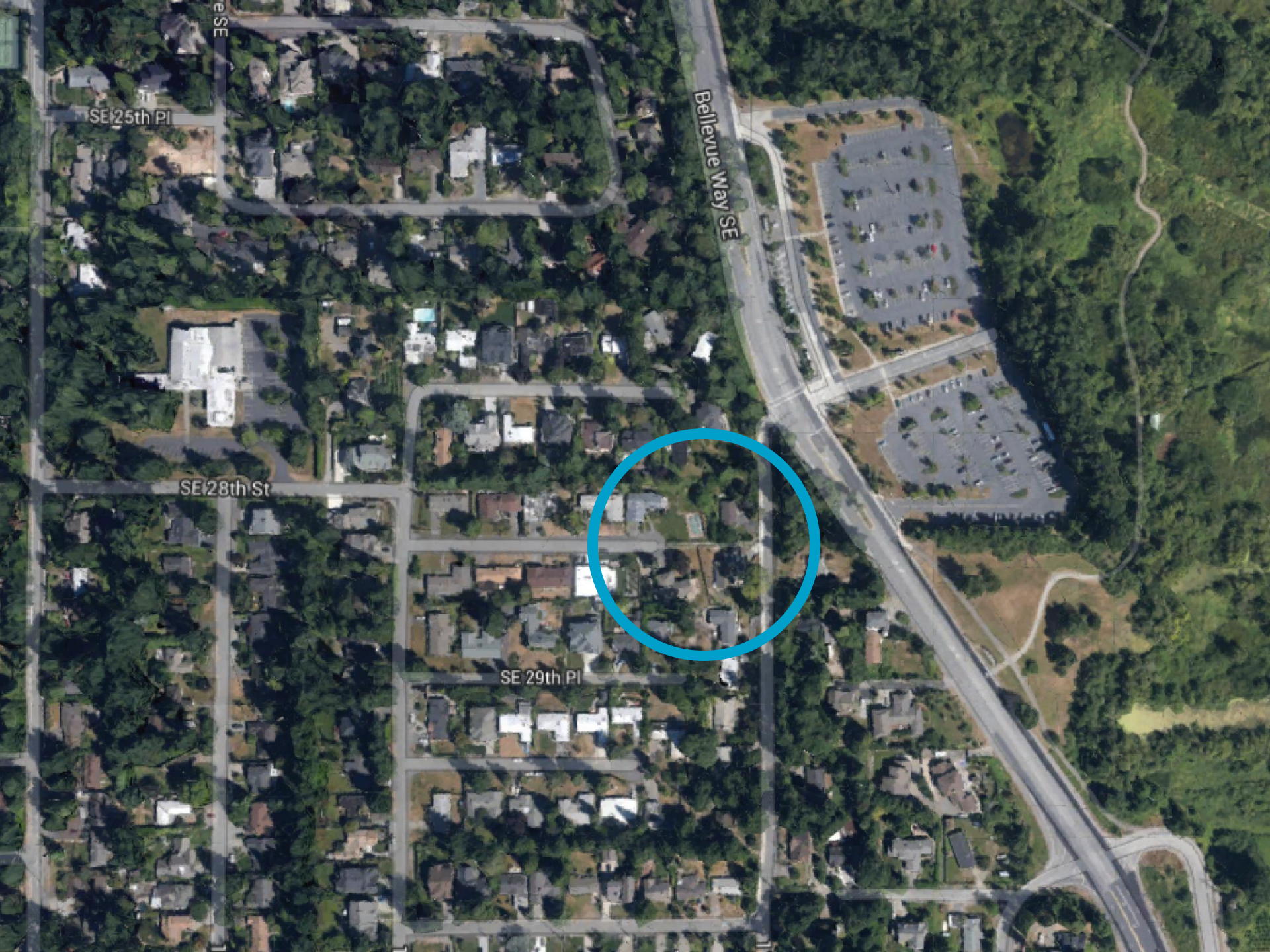
108th Ave SE

SE 30th St

112th Ave SE

Bellevue Way SE





SE 25th Pl

Bellevue Way SE

SE 28th St

SE 29th Pl





Bellevue P&R Aerd

712th Ave SE

Google



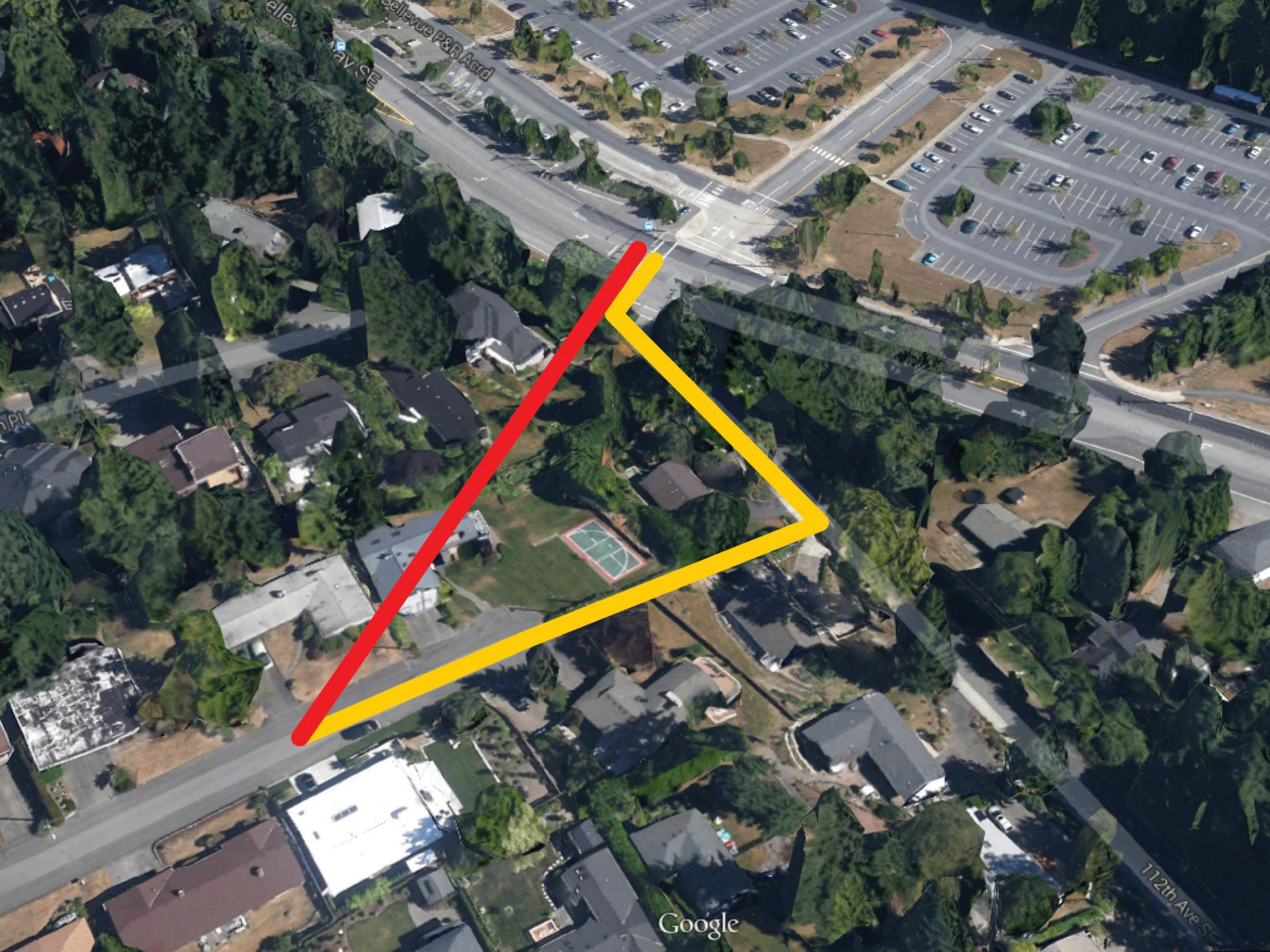


Bellevue P&P Aerd  
Way SE

7726 Ave SE

Google



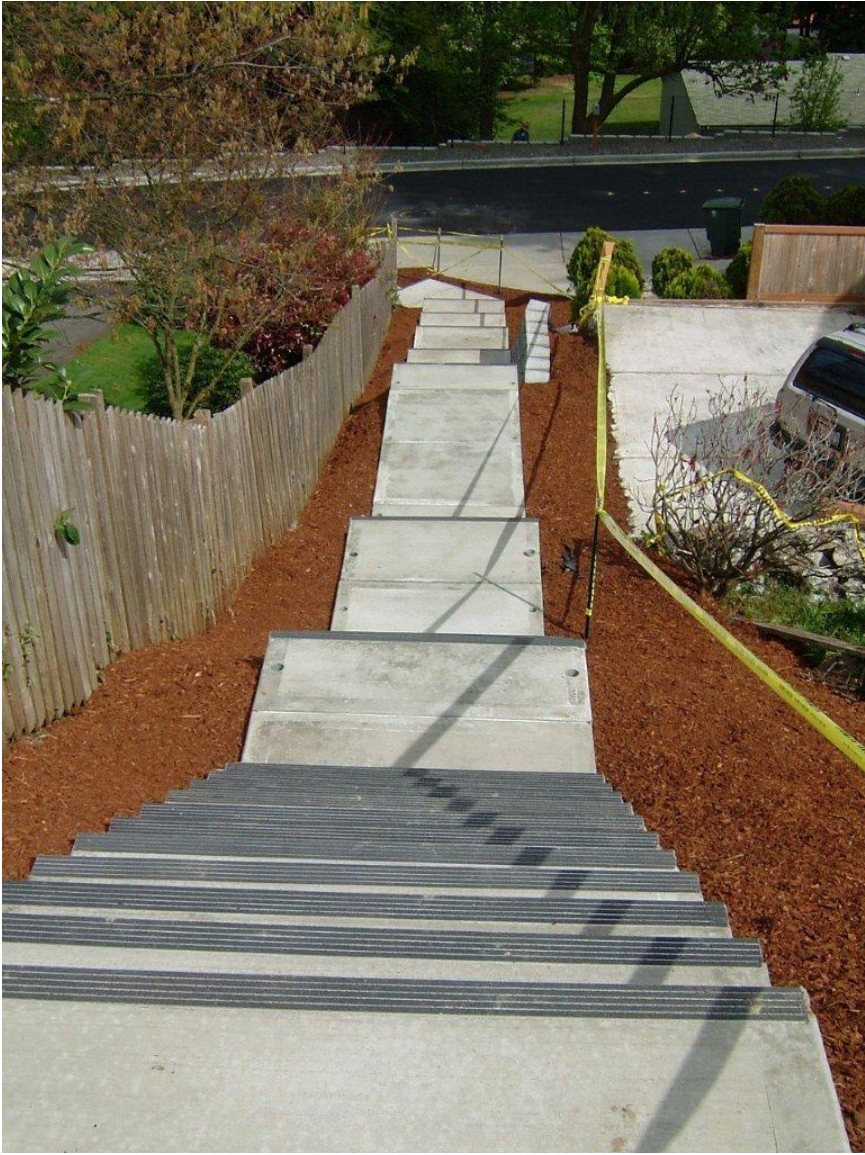


Bellevue P&P Aerd  
Way SE

7726 Ave SE

Google









SE 29th Pl

112th Ave SE



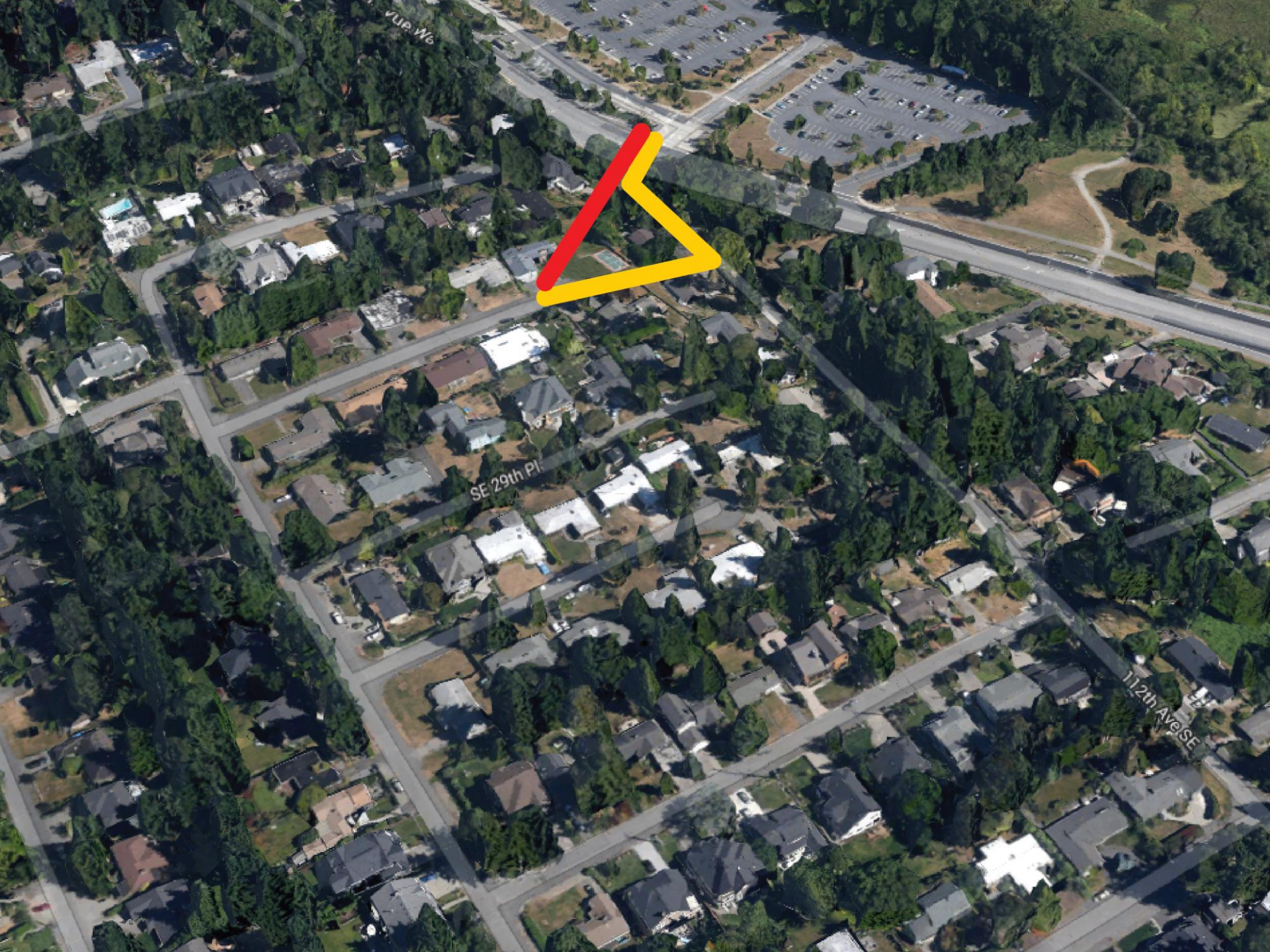


112th Ave

SE 29th Pl

112th Ave SE



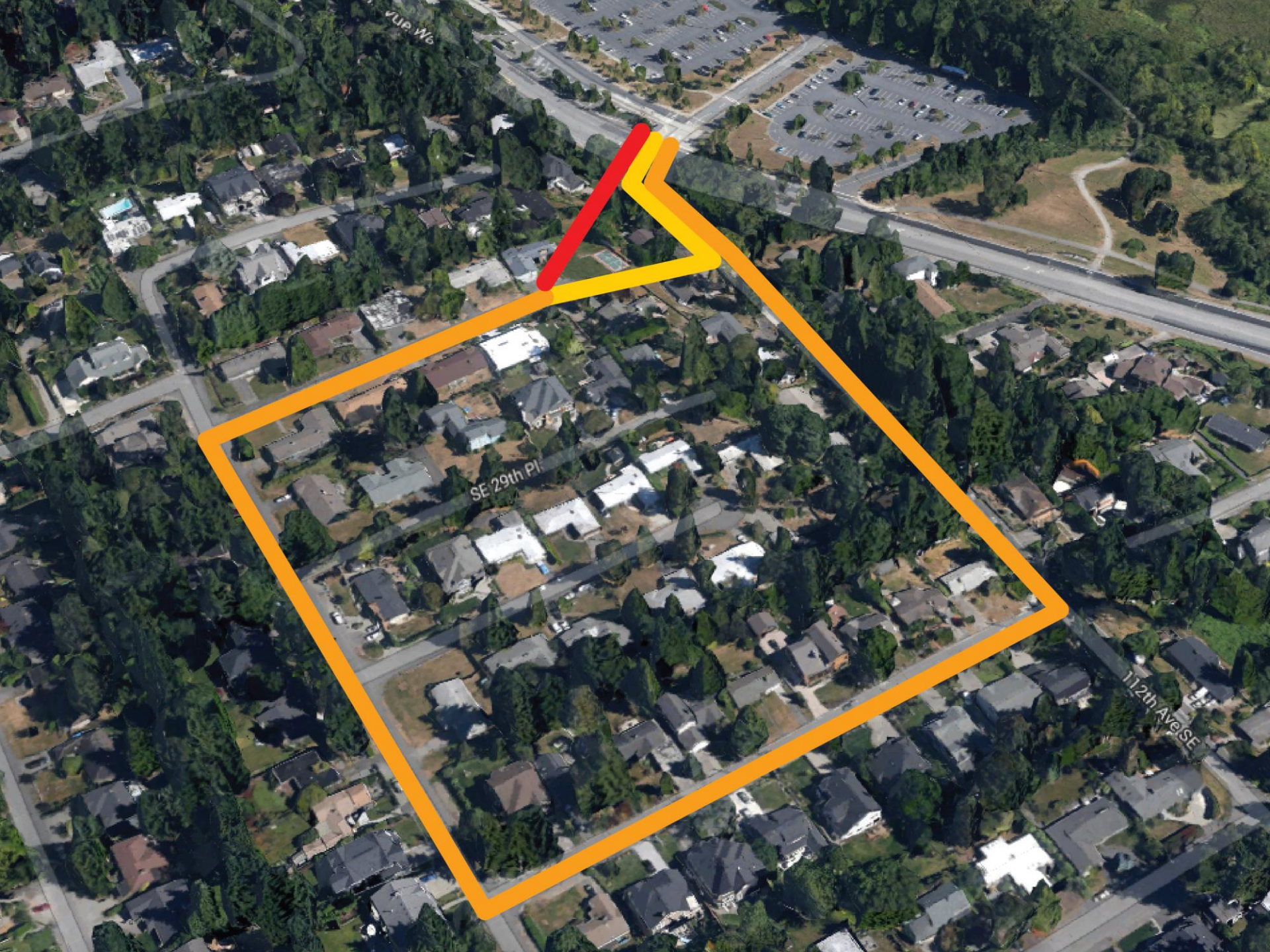


Wup. W6

SE 29th Pl

112th Ave SE





SE 29th Pl

112th Ave SE

VLP W6



**What will the outcomes of this analysis be?**

- Provide indices for various destinations and user groups
  - Access to jobs, public services, land use types, demographic groups, etc.
- Provide transit access-based prioritization of ped-bike projects
  - Identify which projects would provide the greatest benefits

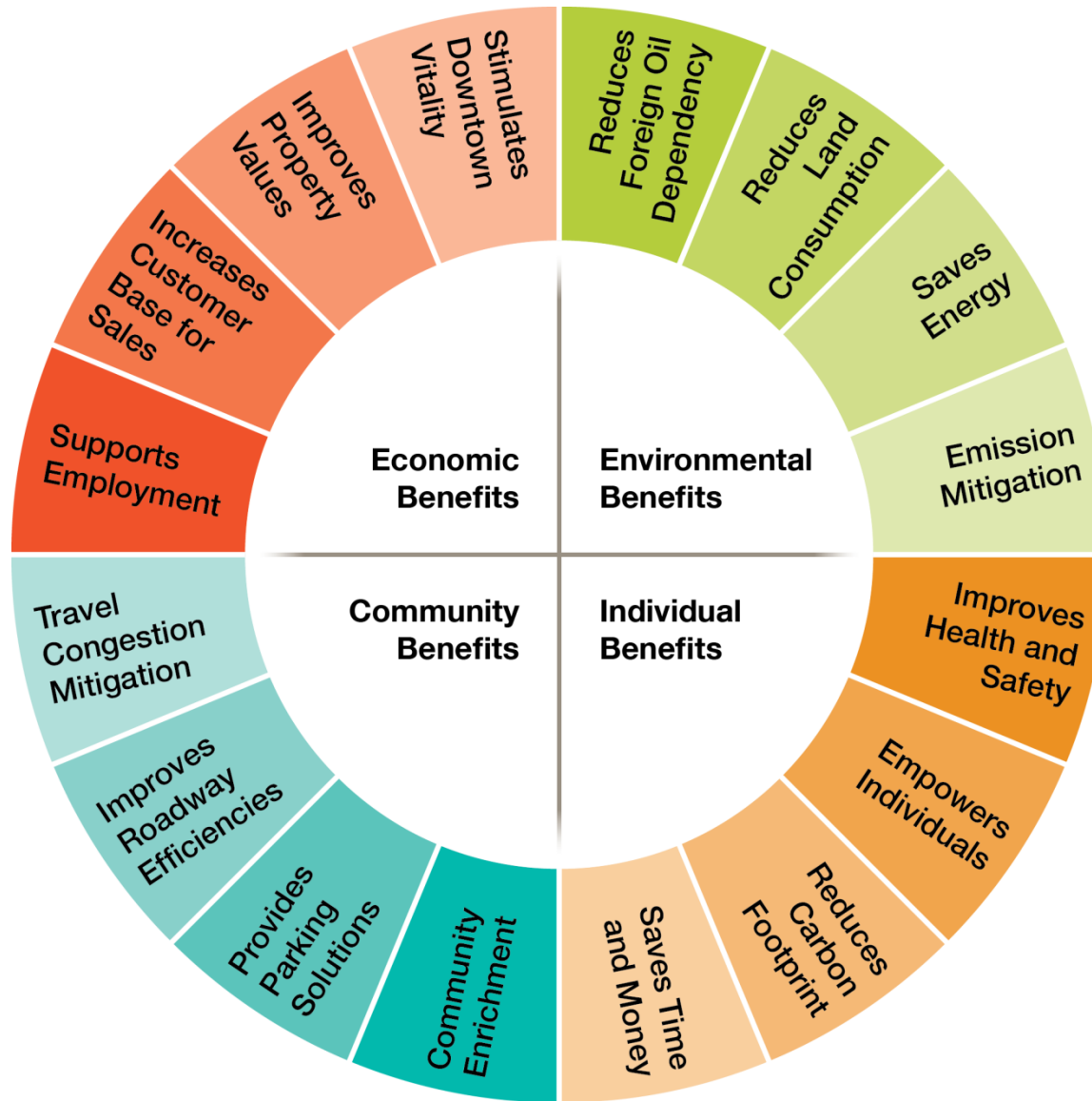


“Accessibility is not just about being ‘nice’ to people with difficulties, it is about ensuring that the benefits and responsibilities of living in society are truly available to, and are shared between, the vast majority of its members.”

- Nick Tyler, *Accessibility and the Bus System: From Concepts to Practice* (2002: 2)



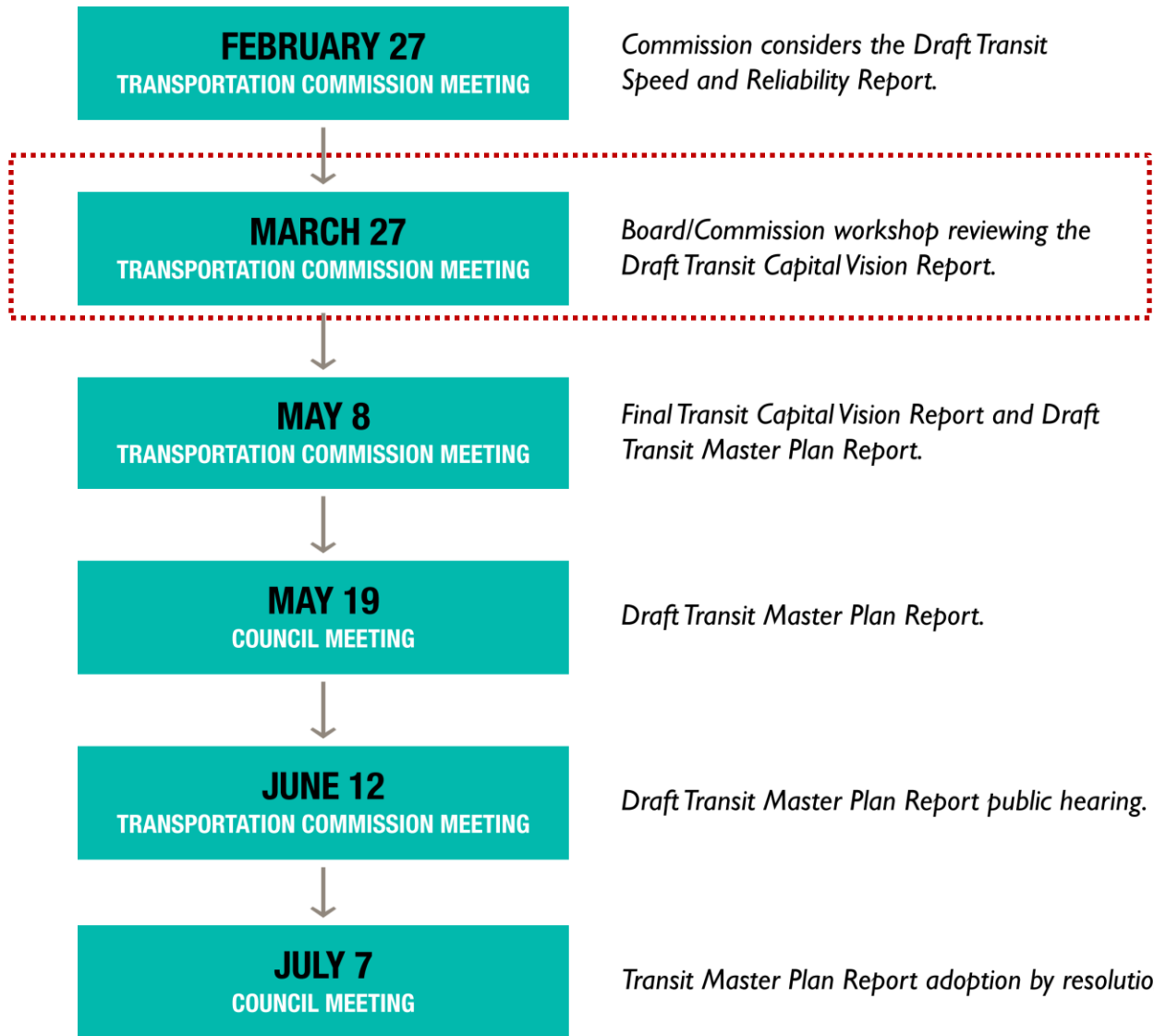
## ***Draft Benefits of Transit Report***





## *Next Steps*





## **1. Review Draft Capital Vision Report:**

- **Transit Layover**
- **Bus Shelter**
- **Commuter Parking**
- **Pedestrian & Bicycle Access**
- **Speed & Reliability**

## **2. Review Updated Benefits of Transit Reports?**

## **3. Project Prioritization Exercise?**

<http://www.bellevuewa.gov/bellevue-transit-plan.htm>



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**425-452-4077**



**Bellevue Transit  
Master Plan**

**Additional Information**