# *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



# Tonight's Agenda

**FEBRUARY 27**
**TRANSPORTATION COMMISSION MEETING**

*Commission considers the Draft Transit Speed and Reliability Report.*

**MARCH 27**
**TRANSPORTATION COMMISSION MEETING**

*Board/Commission workshop reviewing the Draft Transit Capital Vision Report.*

**MAY 8**
**TRANSPORTATION COMMISSION MEETING**

*Final Transit Capital Vision Report and Draft Transit Master Plan Report.*

**MAY 19**
**COUNCIL MEETING**

*Draft Transit Master Plan Report.*

**JUNE 12**
**TRANSPORTATION COMMISSION MEETING**

*Draft Transit Master Plan Report public hearing.*

**JULY 7**
**COUNCIL MEETING**

*Transit Master Plan Report adoption by resolution.*



# Project Timeline

**Draft Transit Layover Report**

**Draft Ped-Bike Access Report**

**Draft Commuter Parking Report**

**Draft Bus Shelter Analysis**

**Draft Speed & Reliability Report**

Bellevue Transit Master Plan

# Capital Vision Report

# *Draft Speed & Reliability Report*

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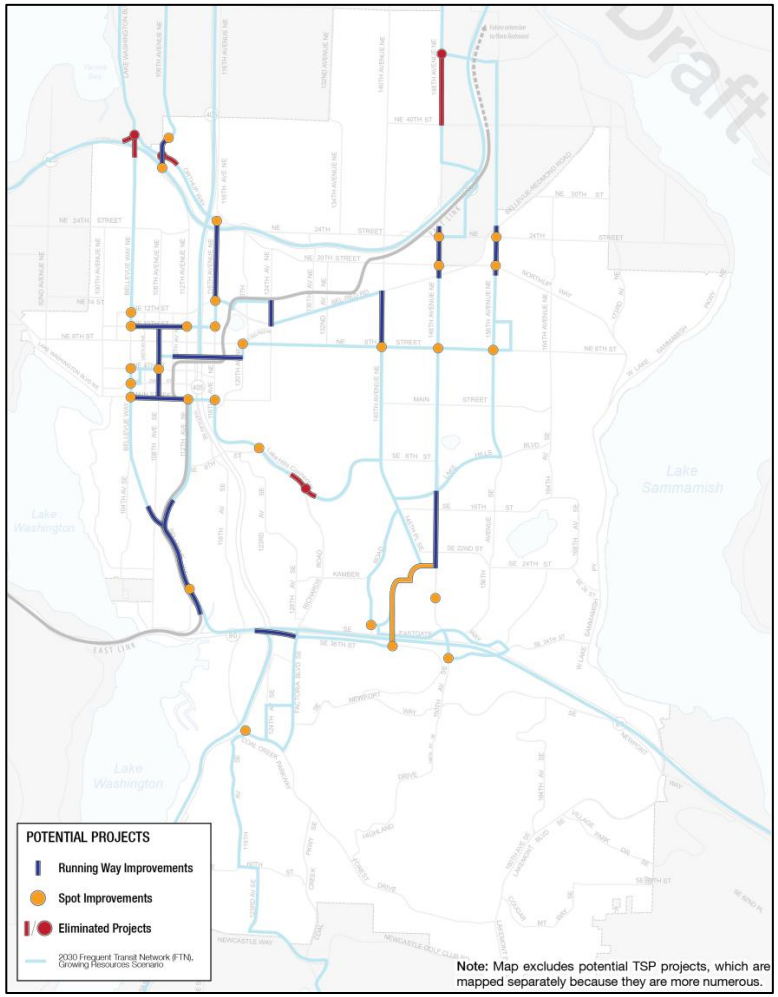
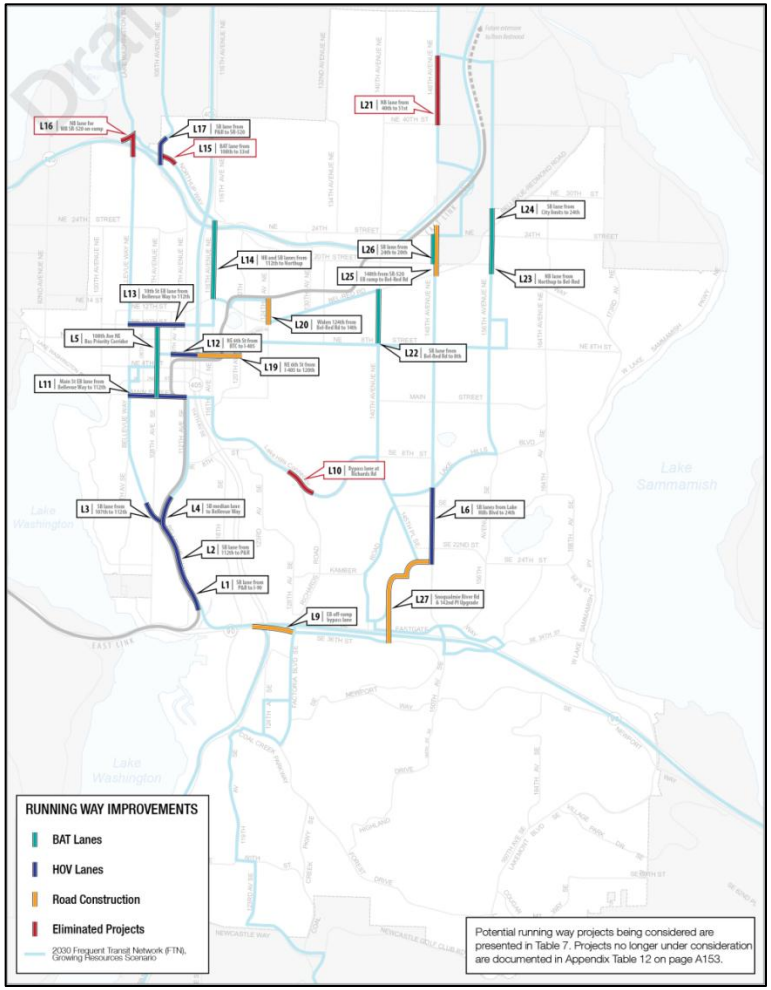
# Summary of Speed & Reliability Projects by Cost & Type

| 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 |
| Total | 107 |

| Estimated Project Cost | No. of Projects |
|---|---|
| No Cost (NC)<br>These projects primarily require staff time to track, review, or revise using existing City resources and staff time. | 6 |
| Tens of Thousands ($)<br>These projects primarily include low-cost changes like striping or signal equipment additions or modifications. These projects do not involve any physical changes. | 66 |
| Hundreds of Thousdands ($$)<br>These projects include more significant striping or signal modification, which could include some small physical modifications to an intersection or signal. More significant projects include lane construction at intersection approaches assuming minimal land acquisition, environmental mitigation, and slope stabilization. | 16 |
| Millions ($$$)<br>These projects include construction of new lanes through multiple intersections and/or construction of new lanes along intersections where constraints exist. | 18 |
| Not Applicable (N/A)<br>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 |
| Total | 107 |

# Potential Spot & Running-Way Improvement Projects

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**Report, Page 57 & 60**

# 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 Avgerage 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.

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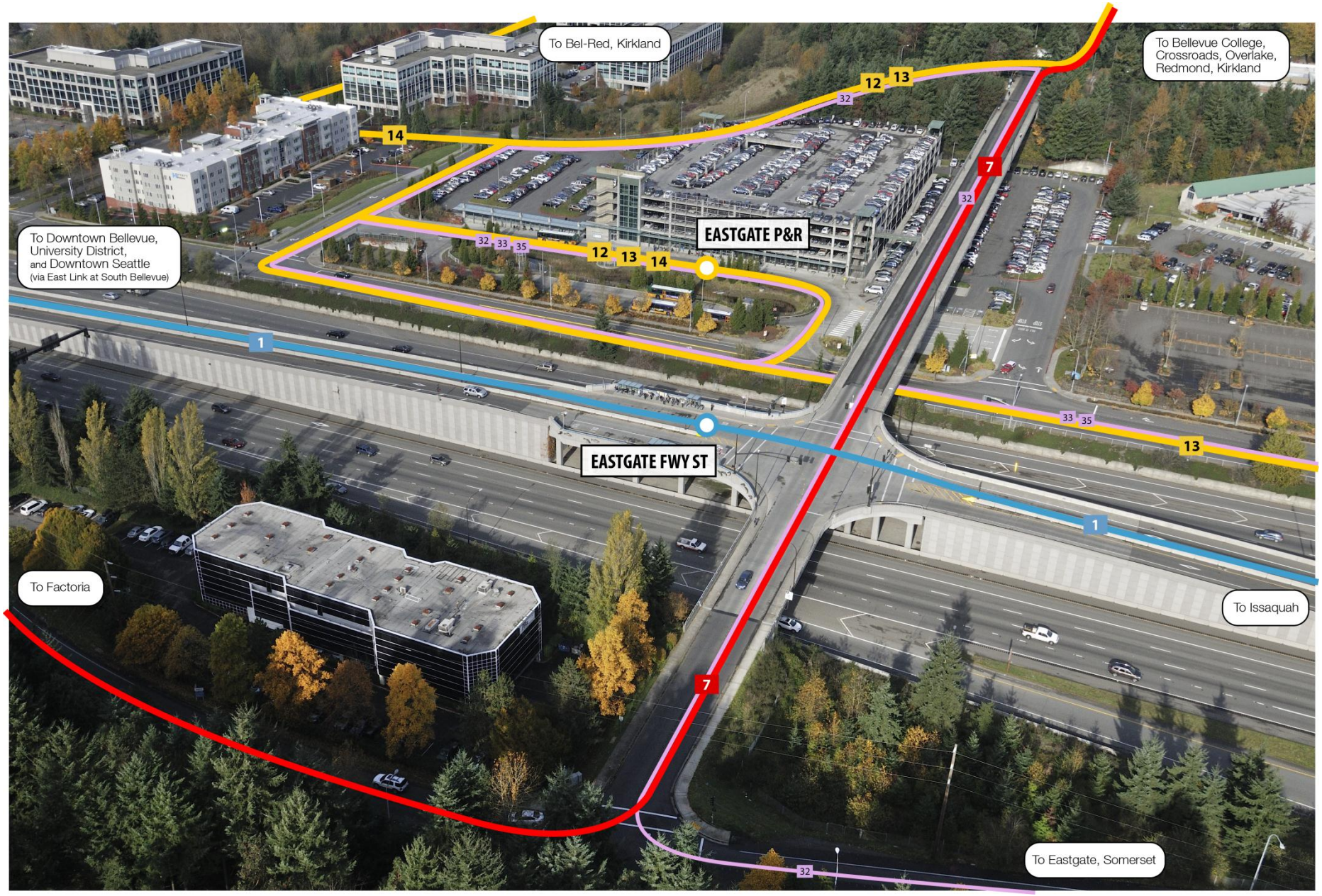
Report, Page 80

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# Report, Page A133

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

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

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

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# Report, Page A152 – A153

# *Draft Ped-Bike Access Report*

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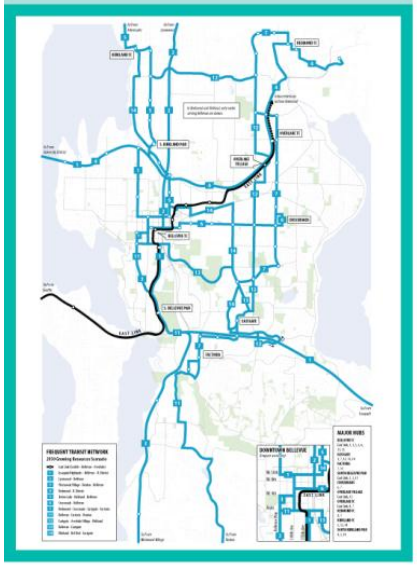
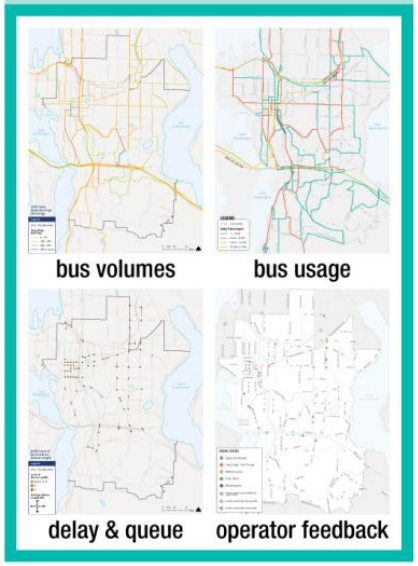
## FREQUENT TRANSIT NETWORK (FTN)



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?

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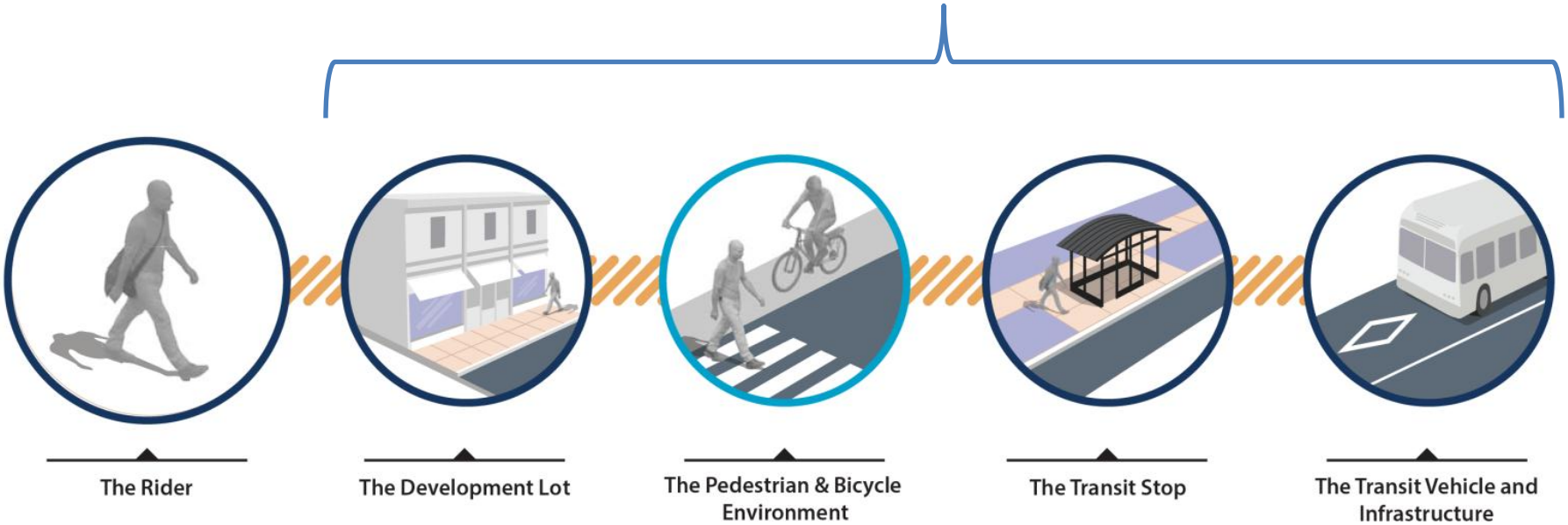
# Capital Element Process

## City of Bellevue Influence



"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)



# Access to Transit

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:**

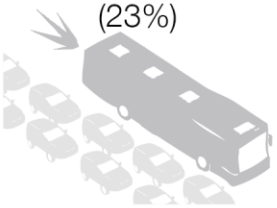
- All transit customers are pedestrians at some point
- Increased ridership and revenue
- Improved user safety
- More efficient fixed-route service
- Increased value of development
- More balanced transportation choices

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

# HOW SHOULD THE CITY INVEST?

ACCORDING TO CURRENT TRANSIT USERS

**30%** (23%)



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

**21%** (24%)

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

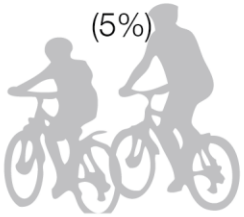
**14%** (14%)

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

**10%** (11%)

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

**5%** (5%)

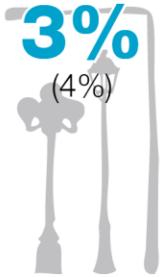


Install additional bicycle lanes/trails to better connect neighborhoods to bus services. (105)

**3%** (4%)

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

**3%** (4%)

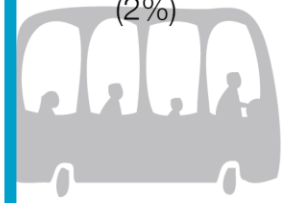


Improve safety at bus stops by providing additional street lighting. (60)

**2%** (3%)

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

**2%** (2%)



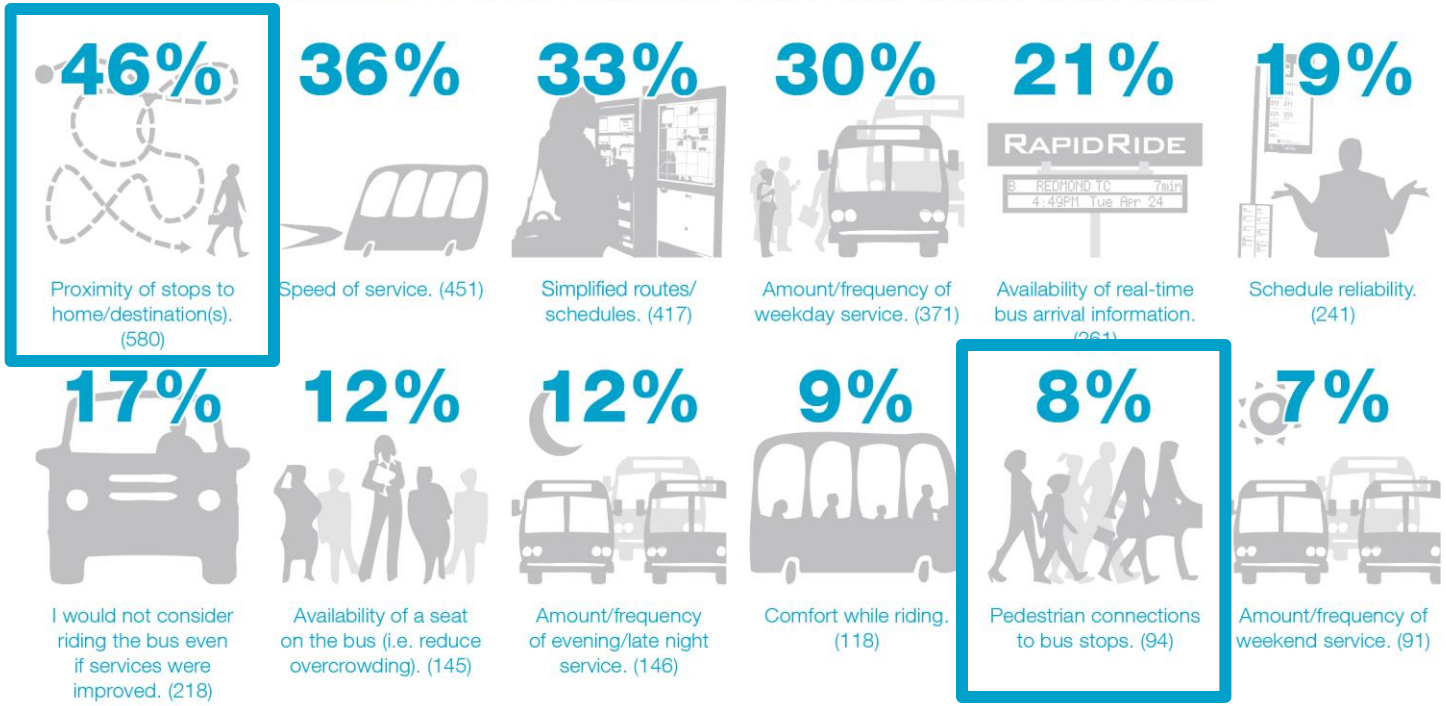
Repair City-owned streets used as transit corridors to improve ride quality/comfort. (31)

**<1%** (0%)

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

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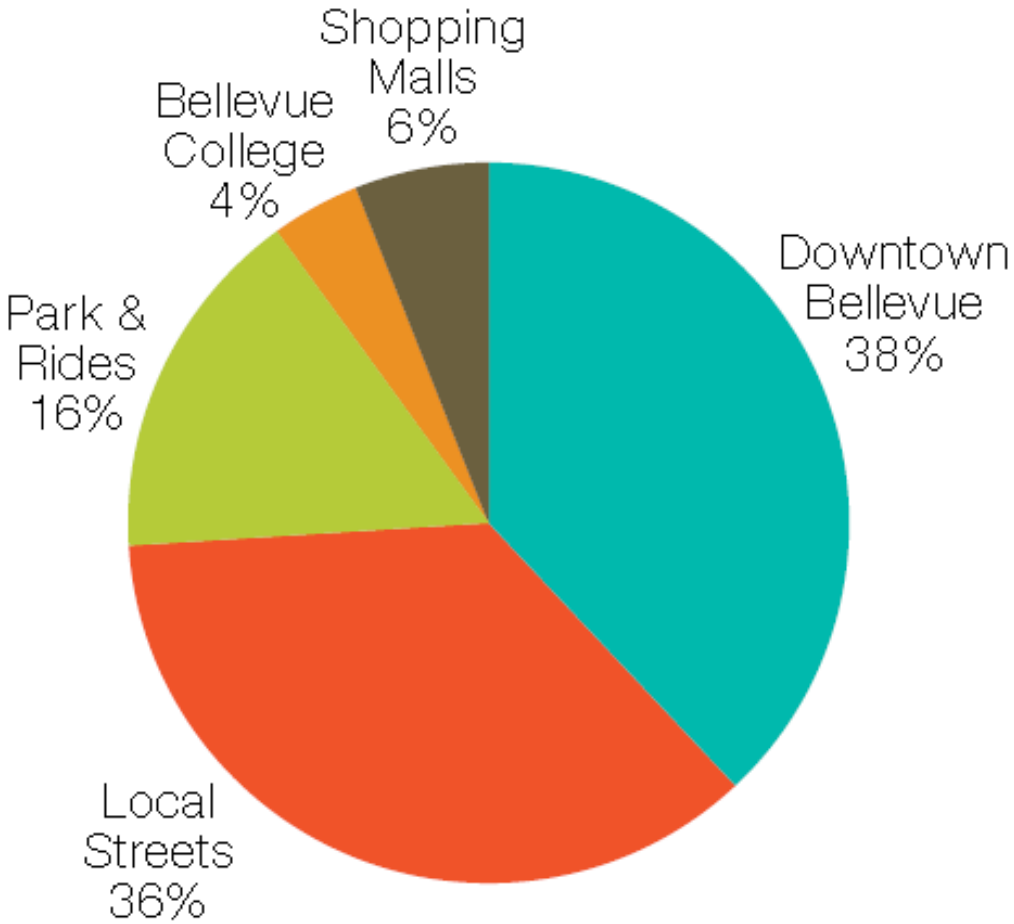
## Community Input

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# Access to Transit in Bellevue

**Comprehensive Plan Policies:**

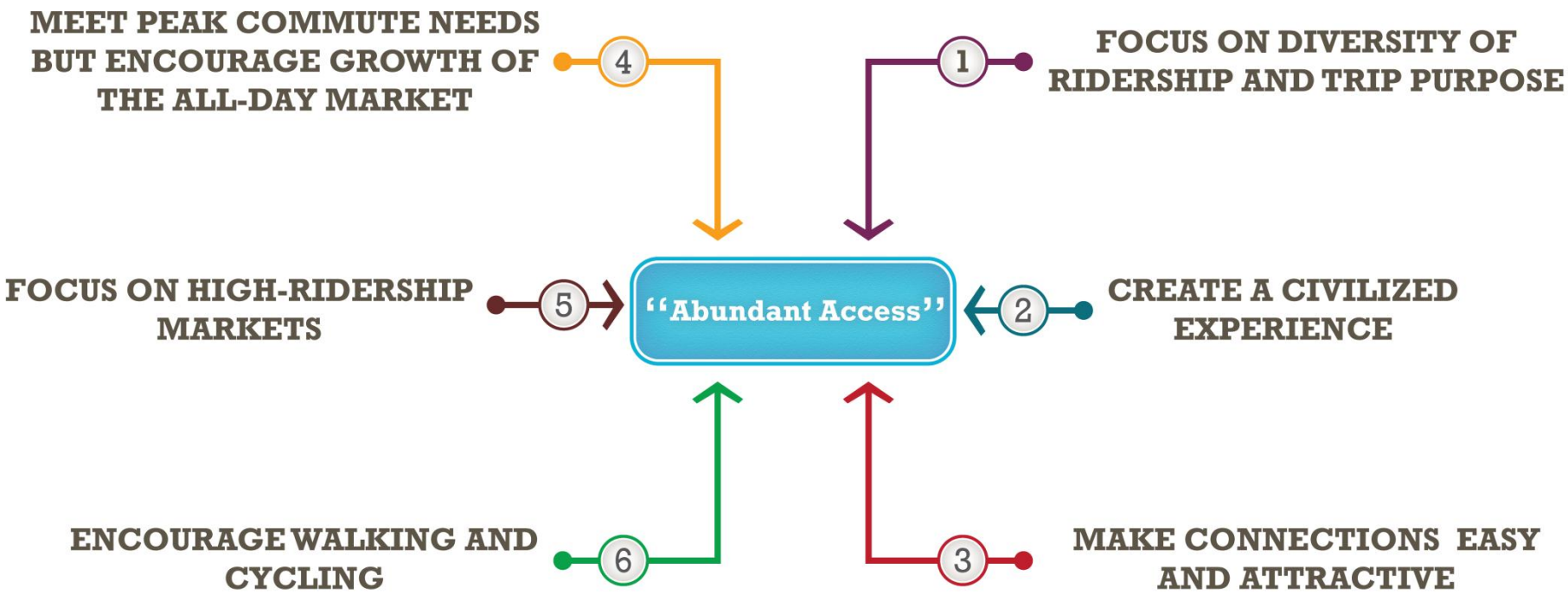
- **TR-77:** Consider pedestrians and bicycles along with other travel modes in all aspects of developing the transportation system.
- **TR-79:** Assign high priority to pedestrian and bicycle projects that… [p]rovide accessible linkages to the transit and school bus systems.
- **TR-56:** Develop partnerships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



# Comprehensive Plan Policies

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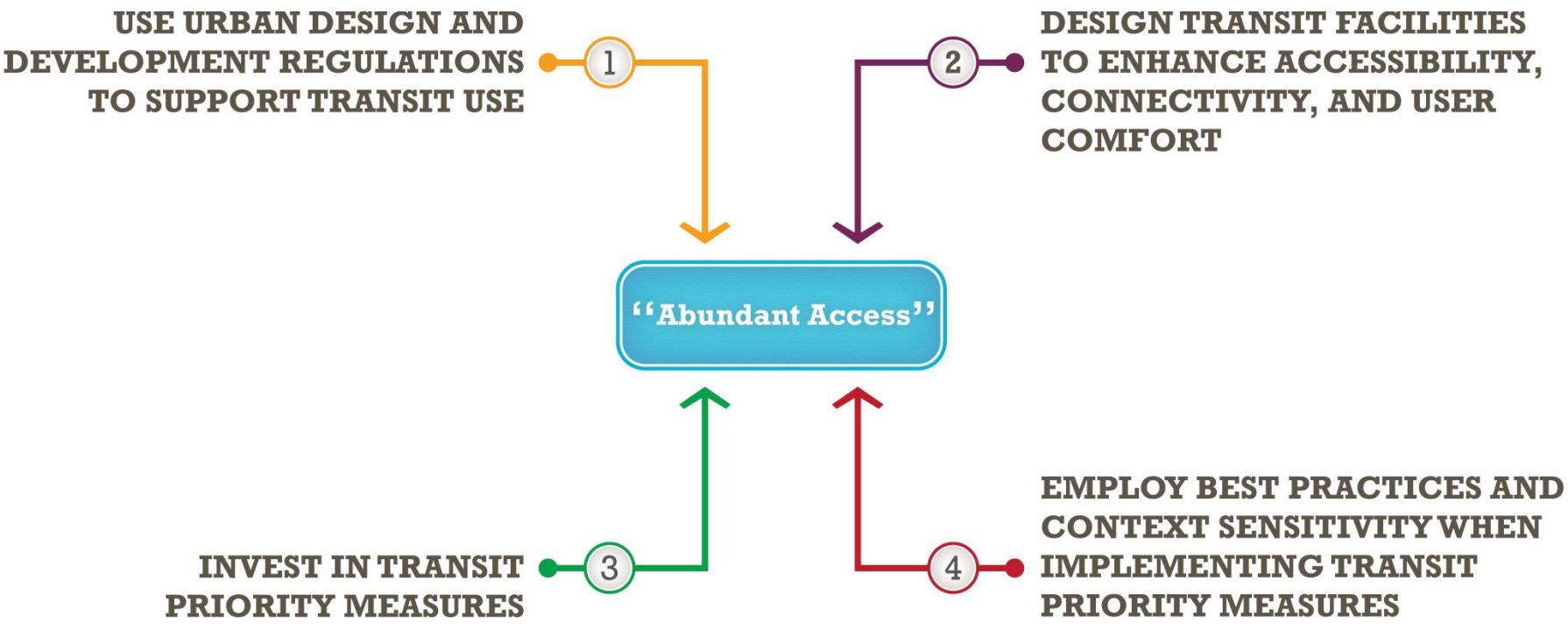
# Service-Oriented Strategies

# 6 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.

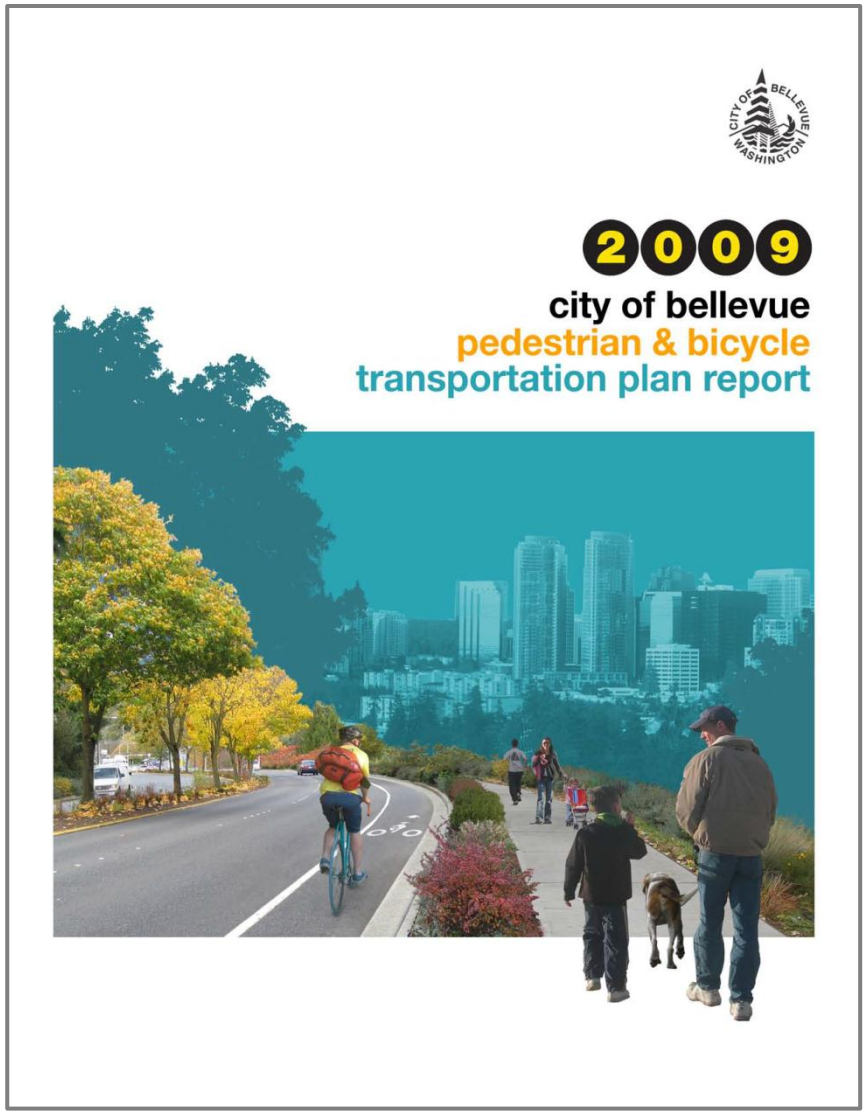





# Capital-Oriented Strategies

# 2 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.




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



# 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.

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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



# 2009 Pedestrian & Bicycle Plan

The *2009 Pedestrian & Bicycle Transportation Plan*:

— Describes a variety of non-motorized facility typologies

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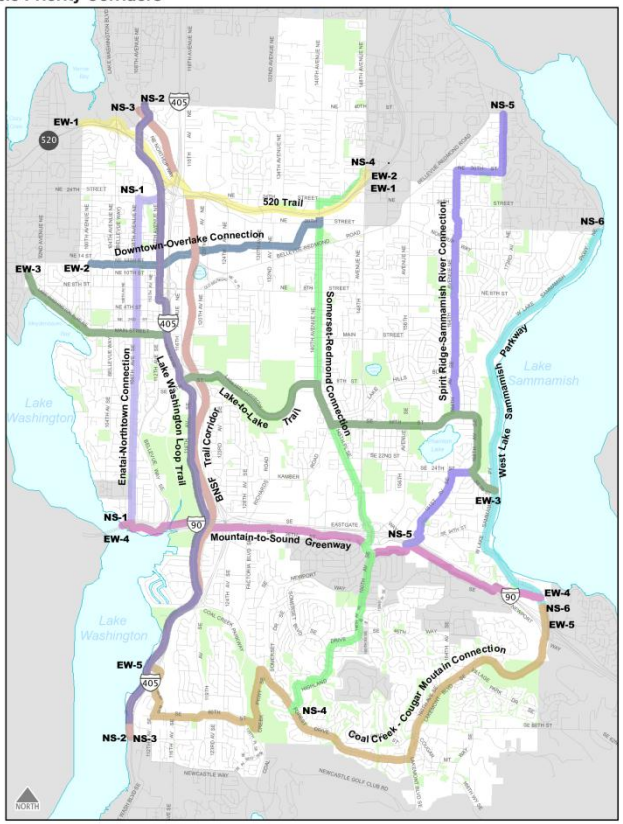
# 2009 Pedestrian & Bicycle Plan

City of Bellevue

**Bicycle Priority Corridors**

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The *2009 Pedestrian & Bicycle Transportation Plan*:

— Defines 11 primary bicycle corridors throughout the city

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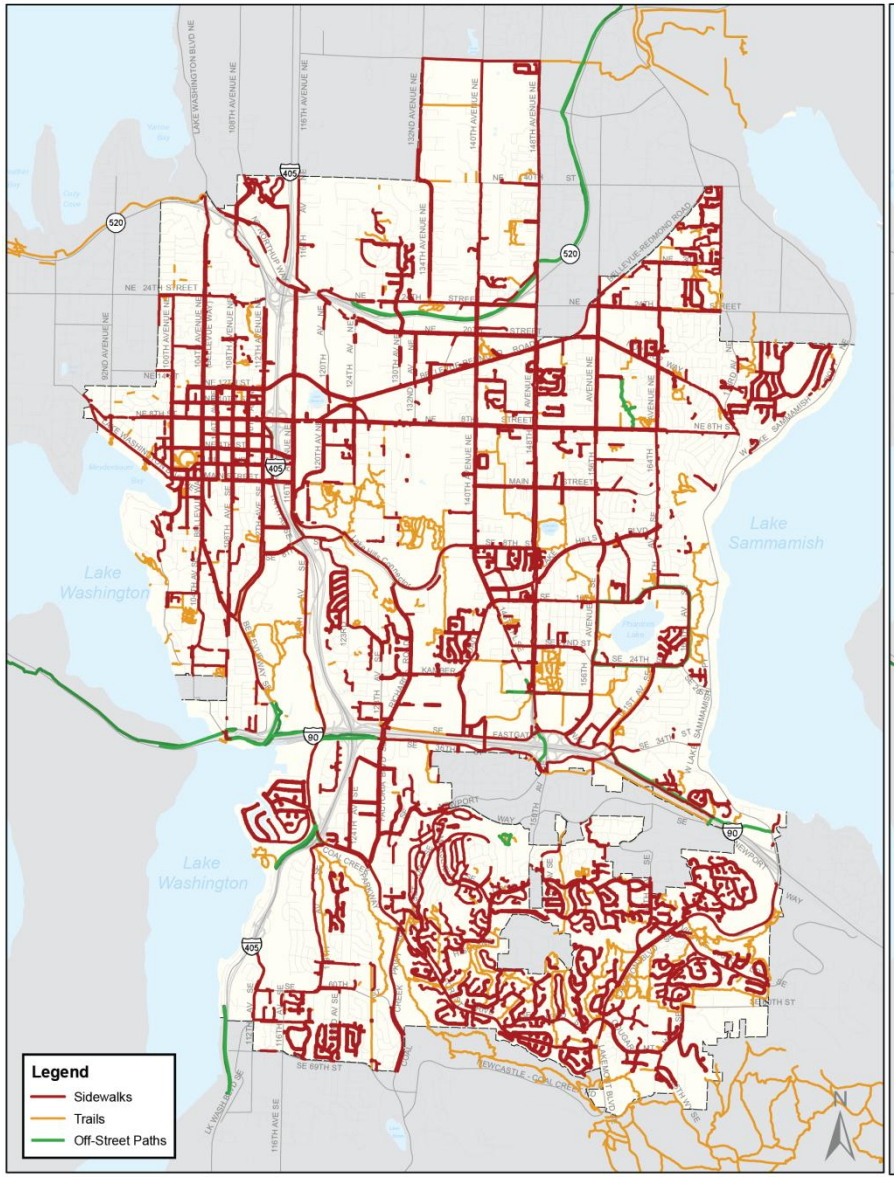
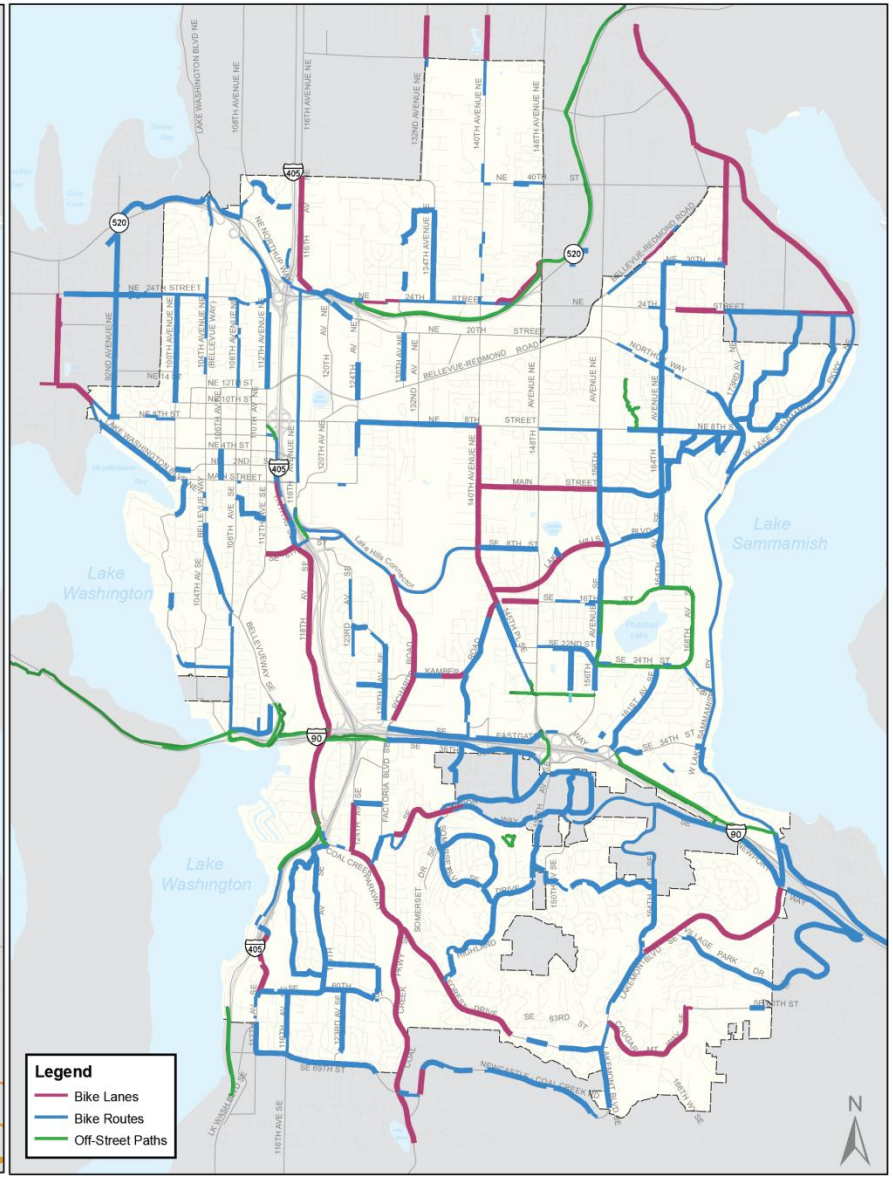
# 2009 Pedestrian & Bicycle Plan

## Existing Sidewalk and Trail Facilities




## Existing Bicycle Facilities

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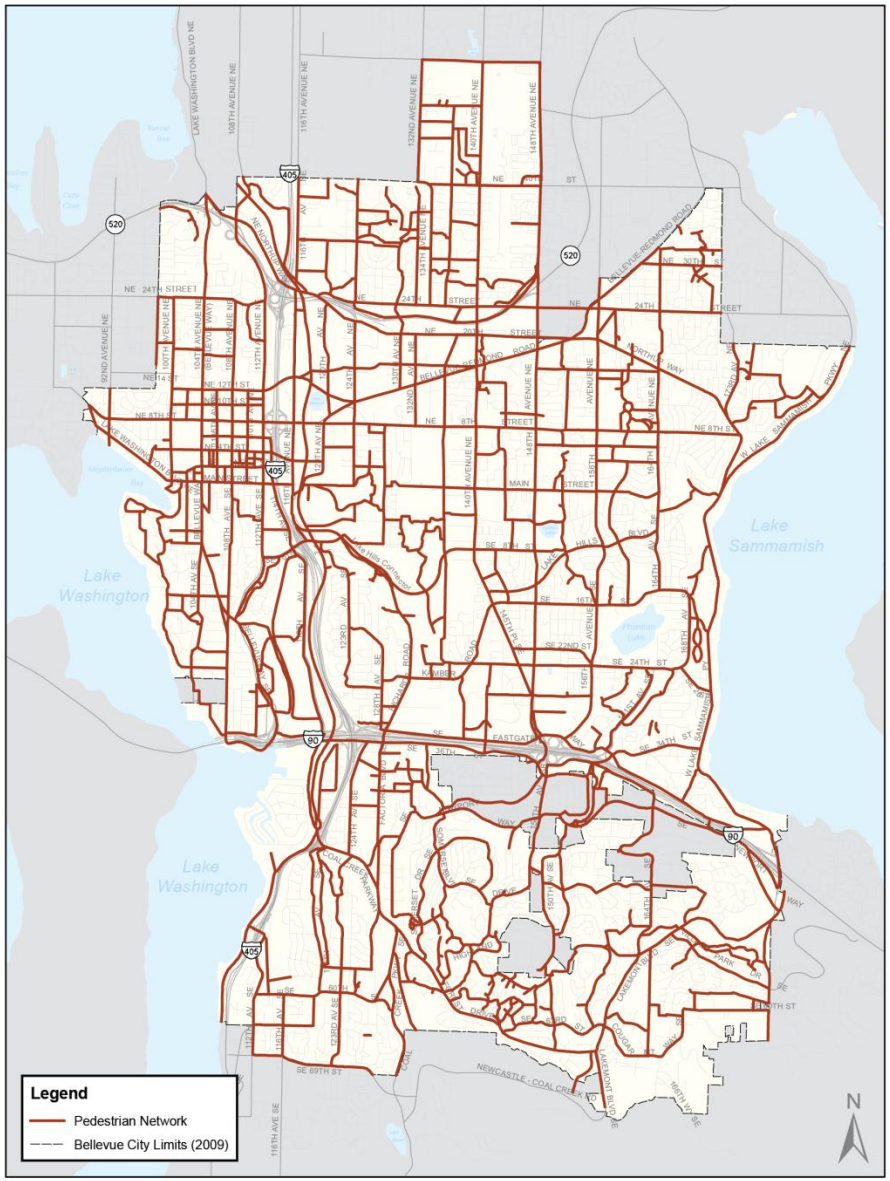
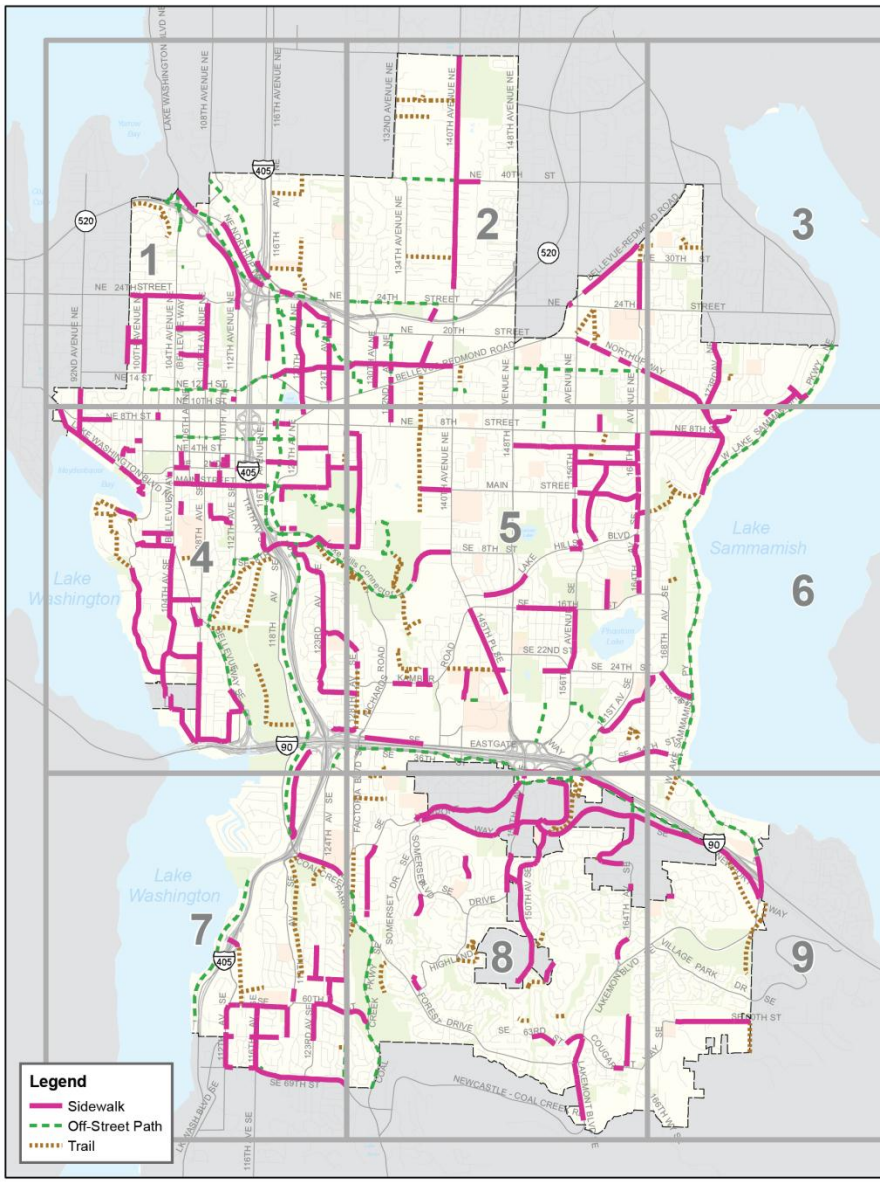
# 2009 Existing Facilities

## Pedestrian Network Map




## Pedestrian Project Map

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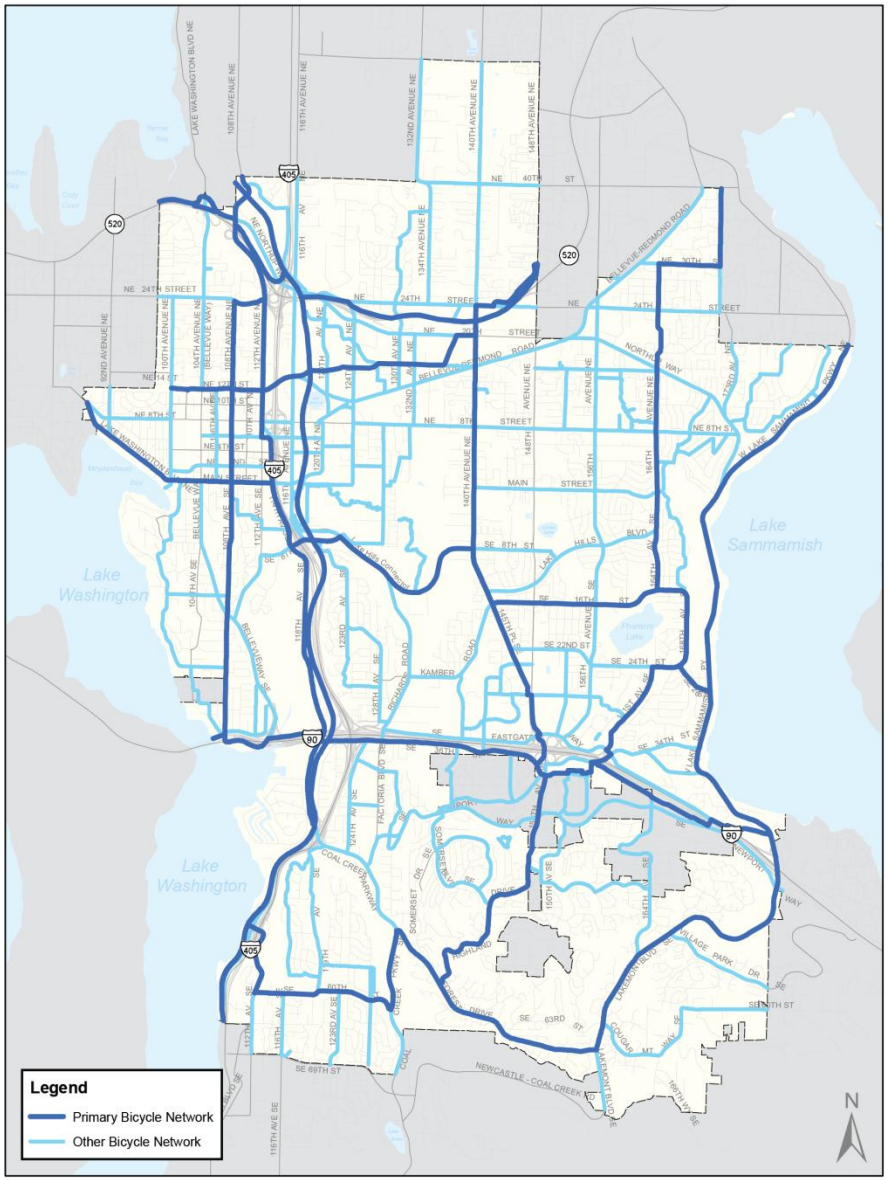
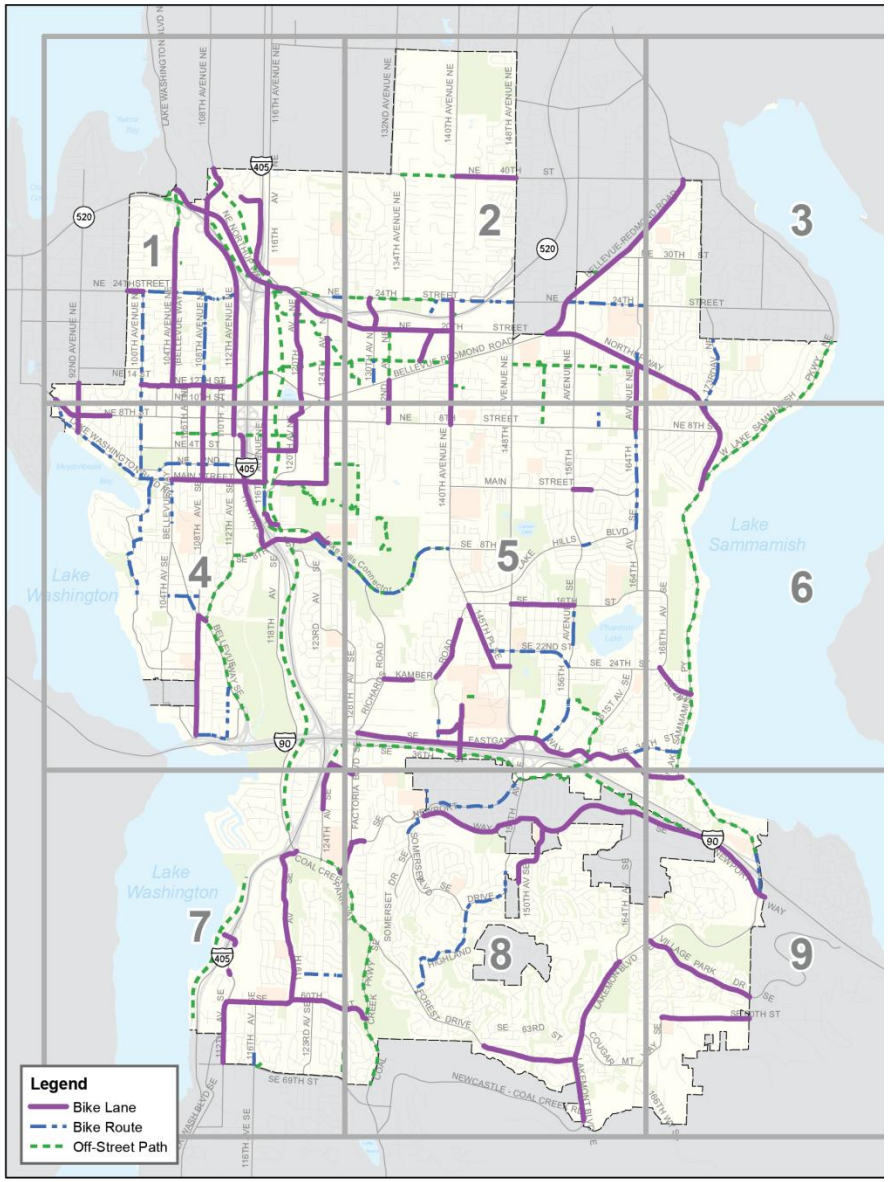
# 2009 Proposed Networks

## Bicycle Network Map




## Bicycle Project Map

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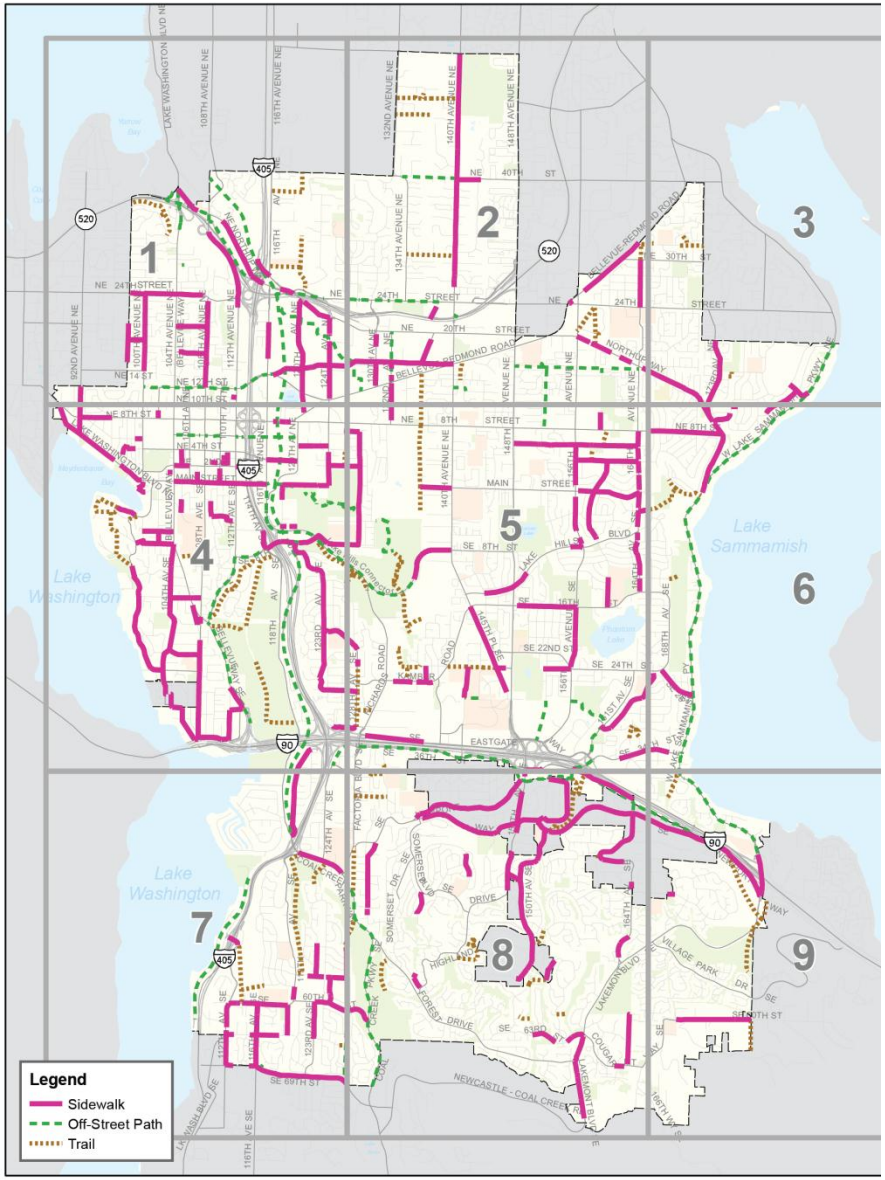
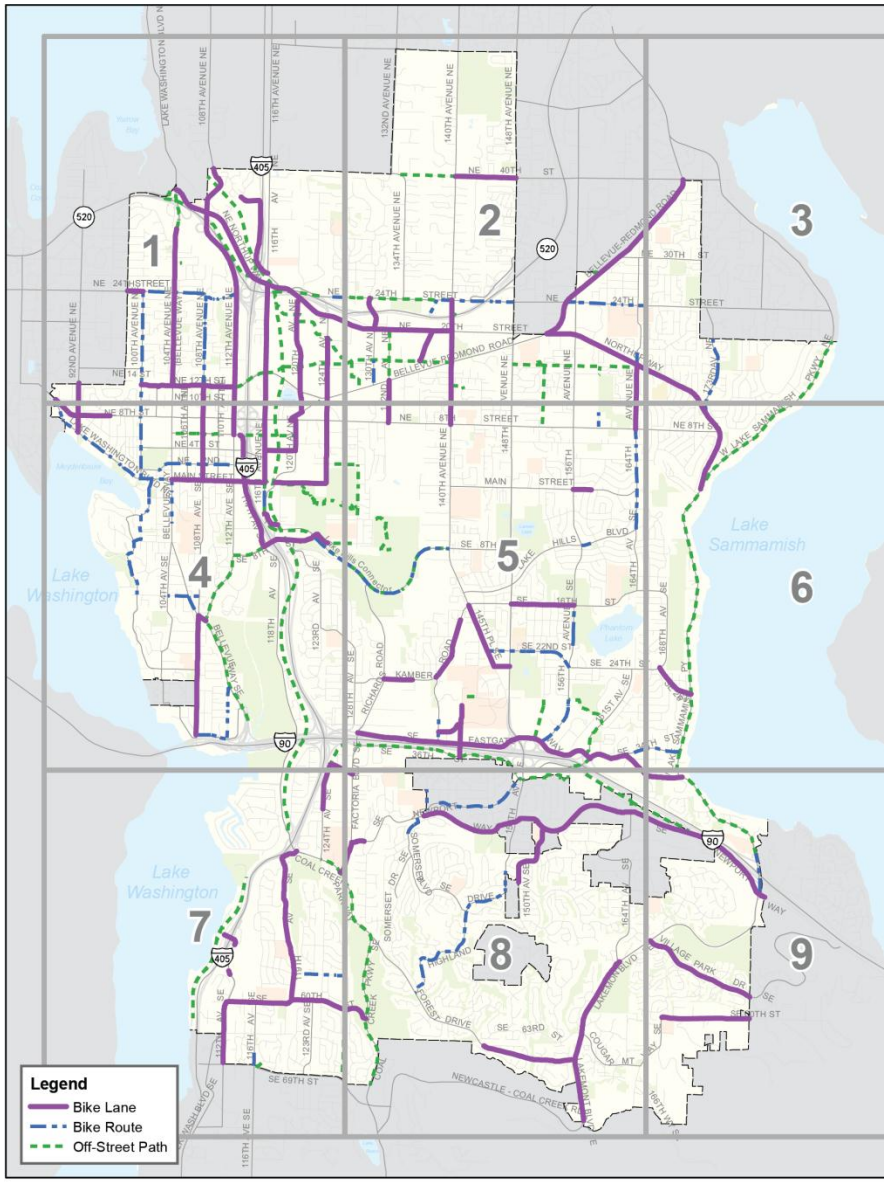
# 2009 Proposed Networks

## Pedestrian Project Map




## Bicycle Project Map

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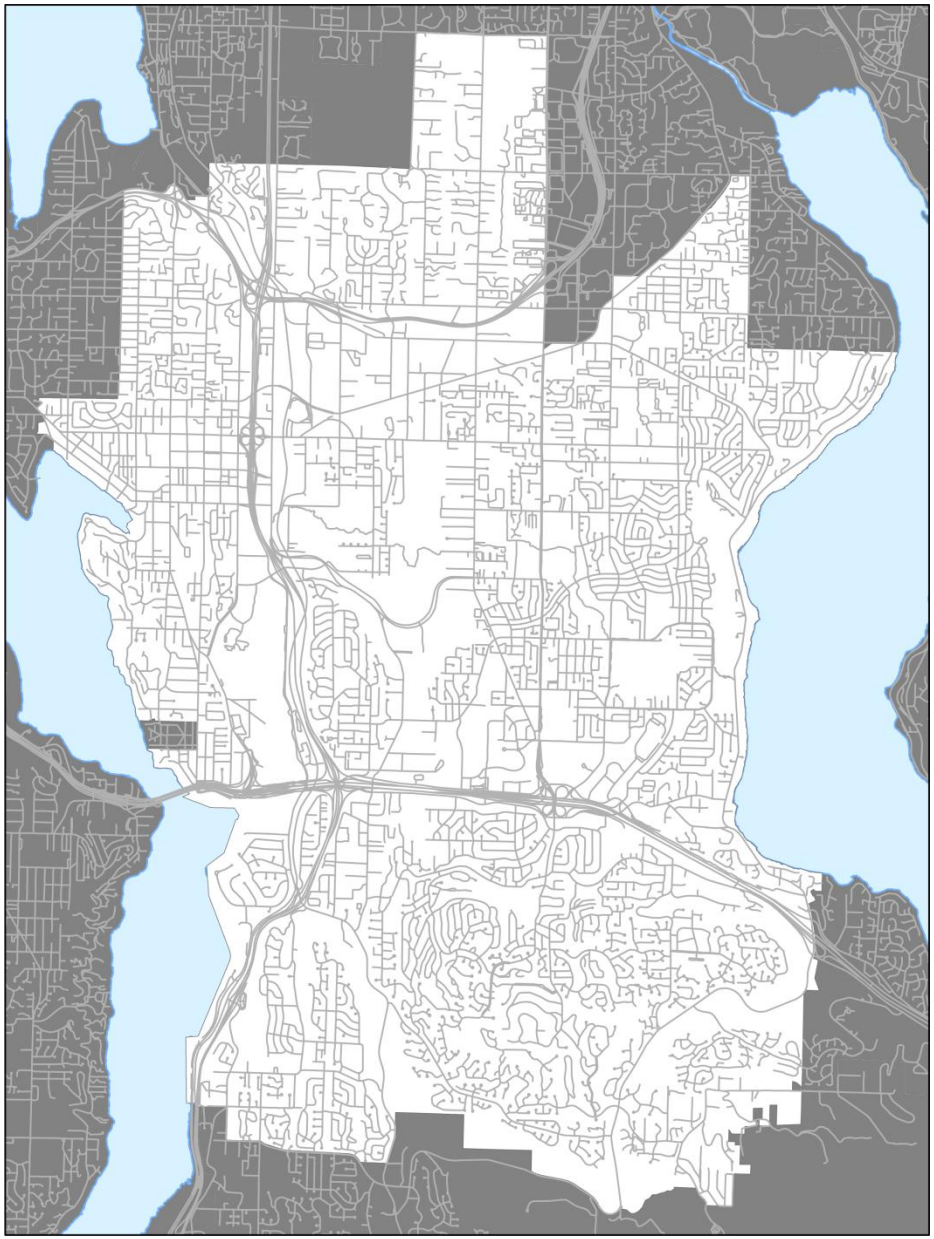
# 2009 Existing Ped-Bike Facilities



## Methodology

Identifying Transit Priority Pedestrian-Bicycle Projects

— City of Bellevue Base Map

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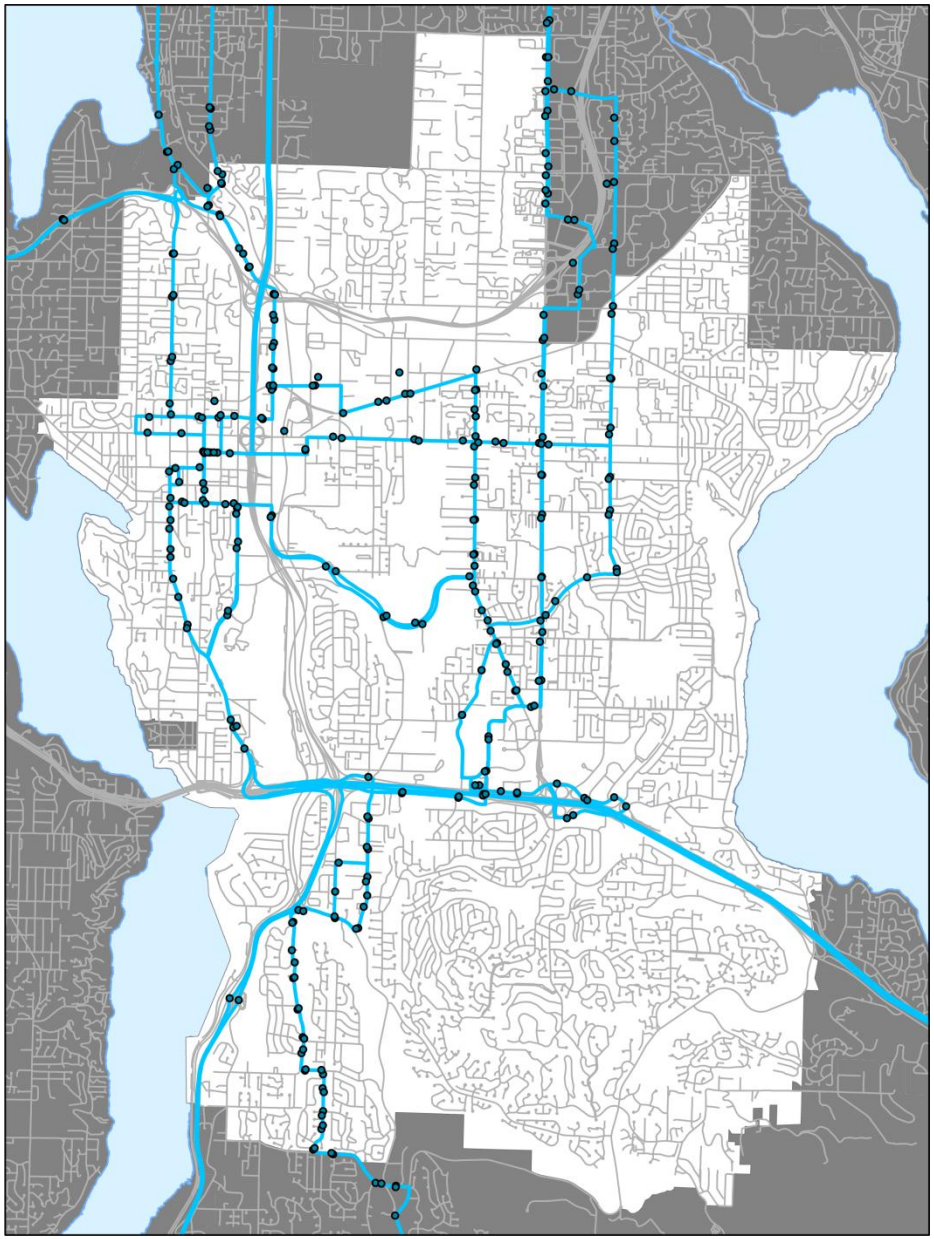
# Transit Priority Ped-Bike Projects



## Methodology

Identifying Transit Priority Pedestrian-Bicycle Projects

— City of Bellevue Base Map

— 2030 Frequent Transit Network

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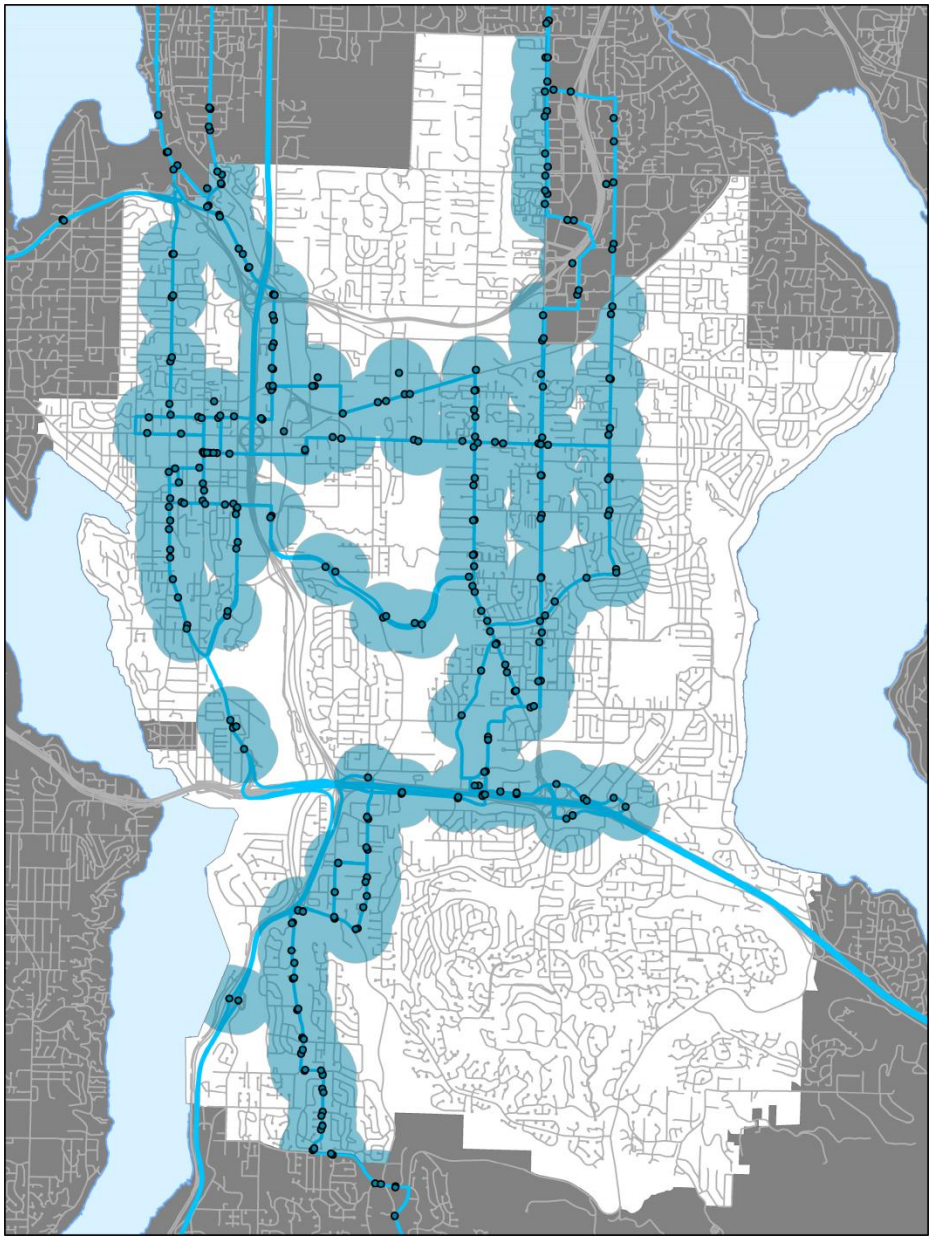
# Transit Priority Ped-Bike Projects



## Methodology

Identifying Transit Priority Pedestrian-Bicycle Projects

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

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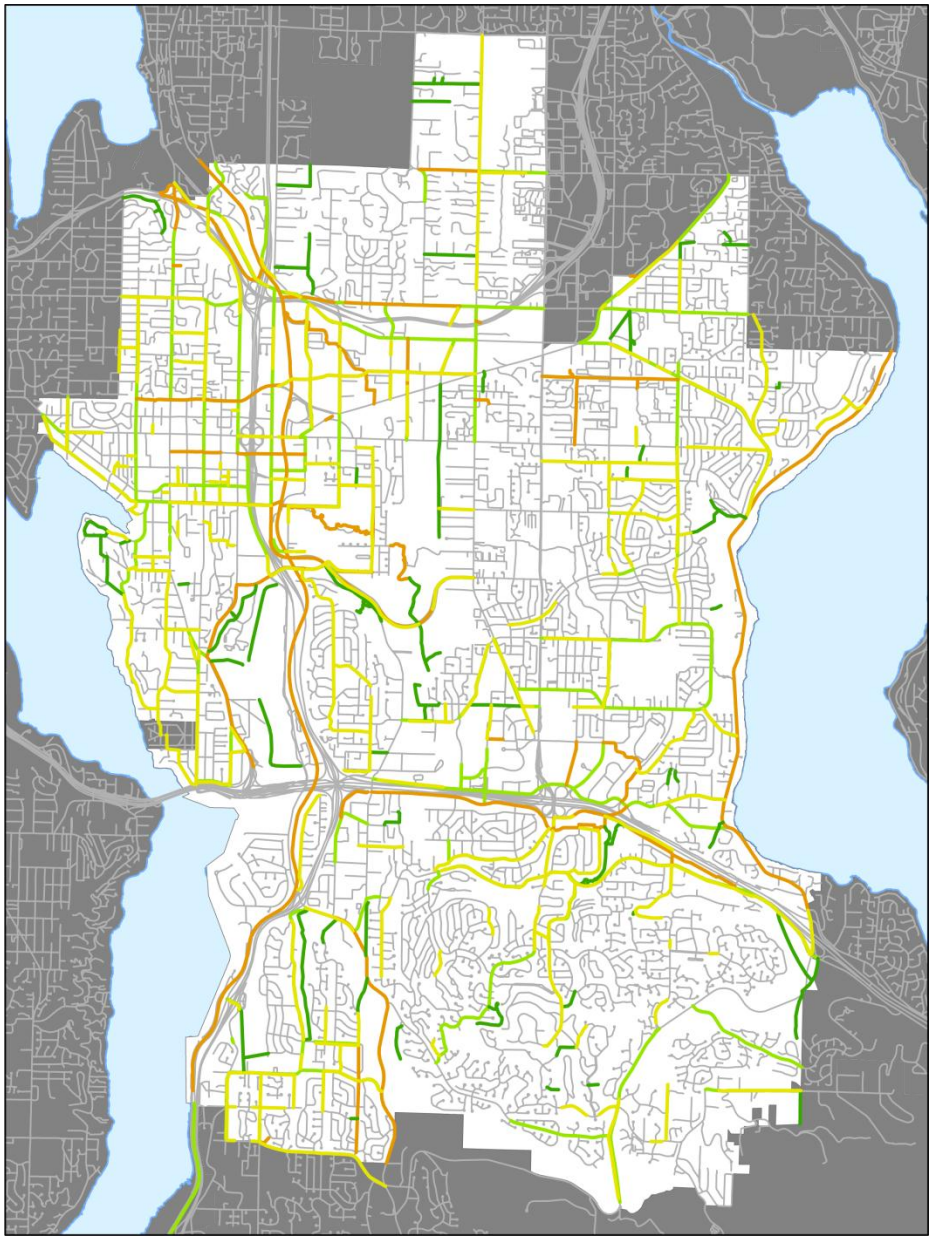
# Transit Priority Ped-Bike Projects



## Methodology

Identifying Transit Priority Pedestrian-Bicycle Projects

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

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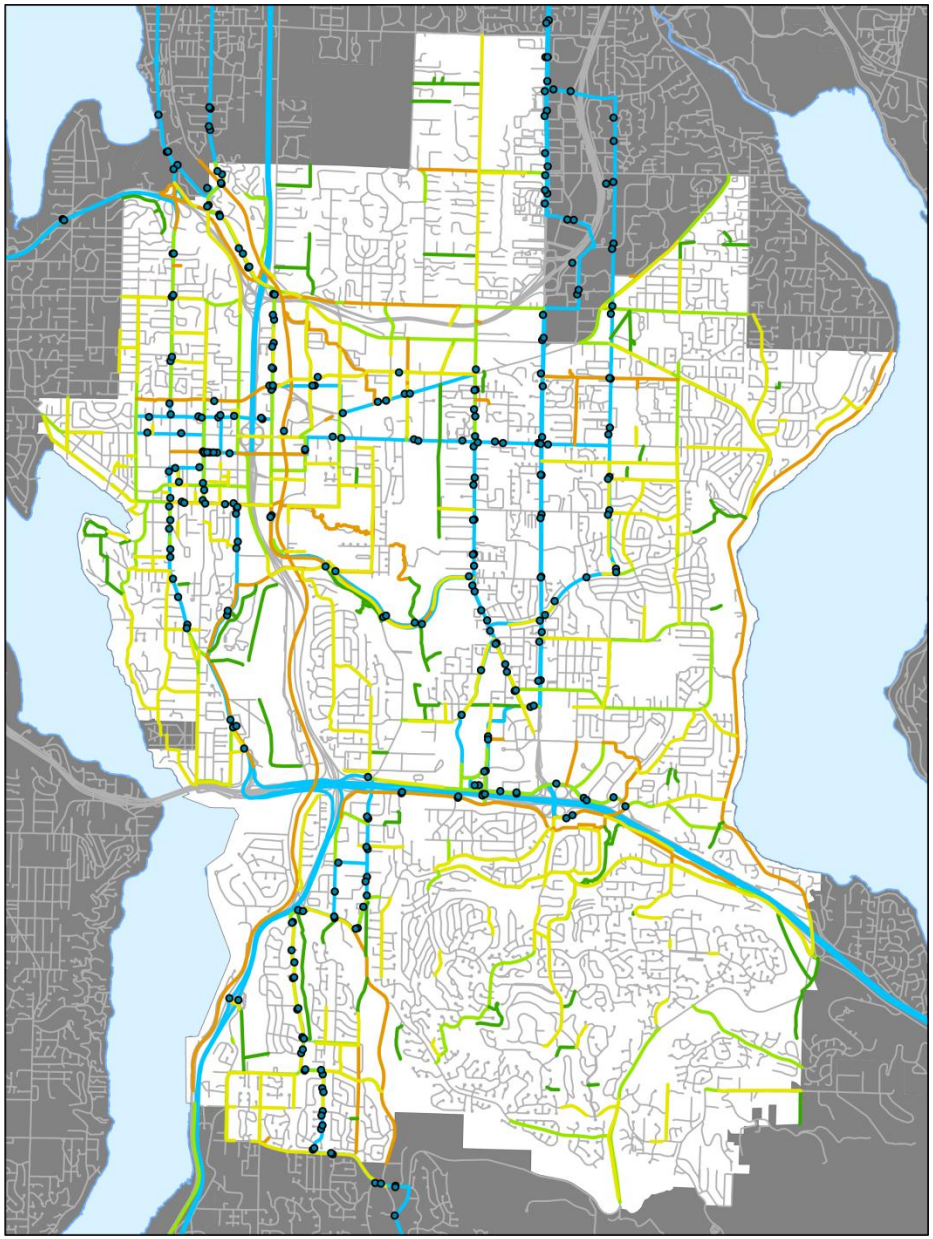
# Transit Priority Ped-Bike Projects



## 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

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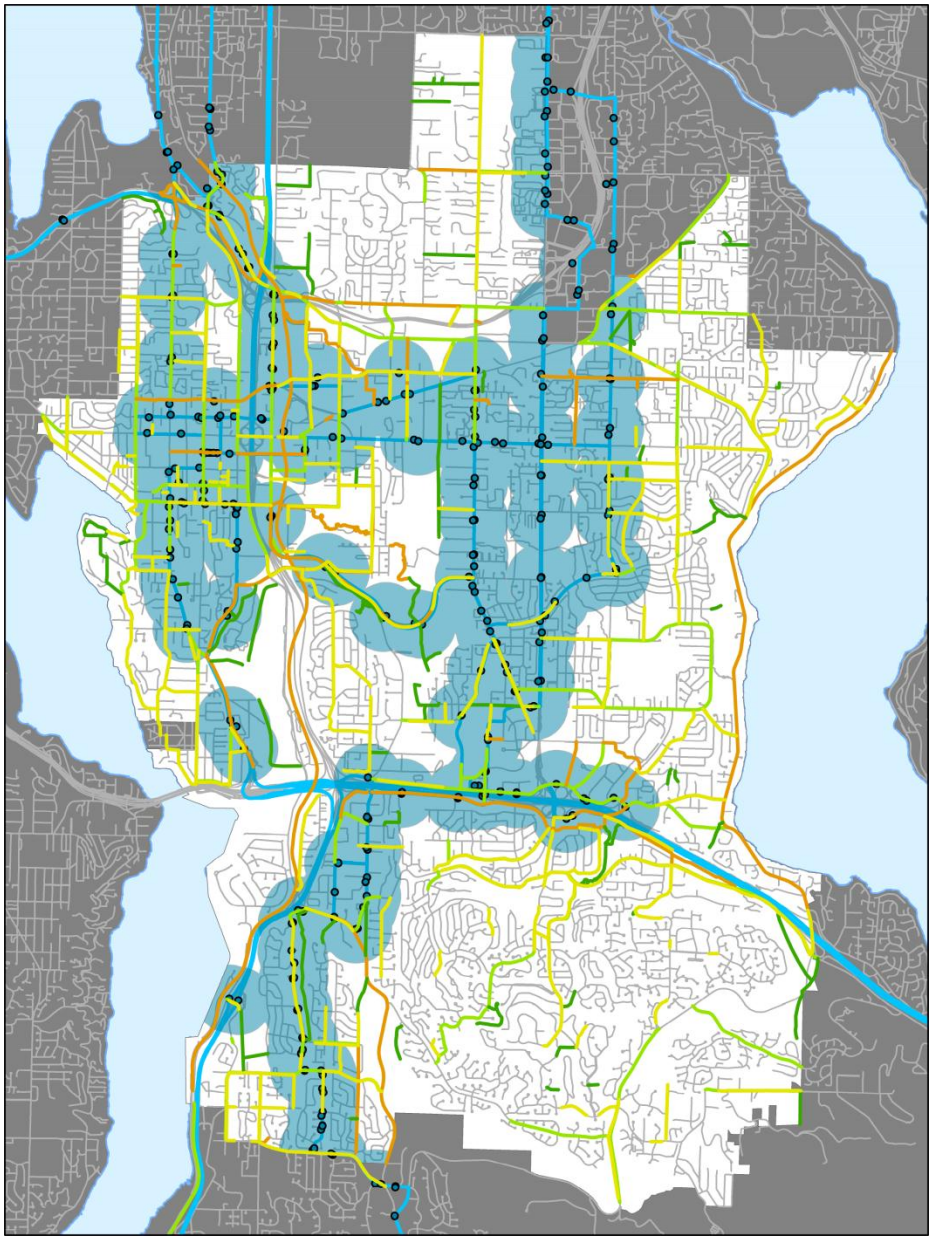
# Transit Priority Ped-Bike Projects



## 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

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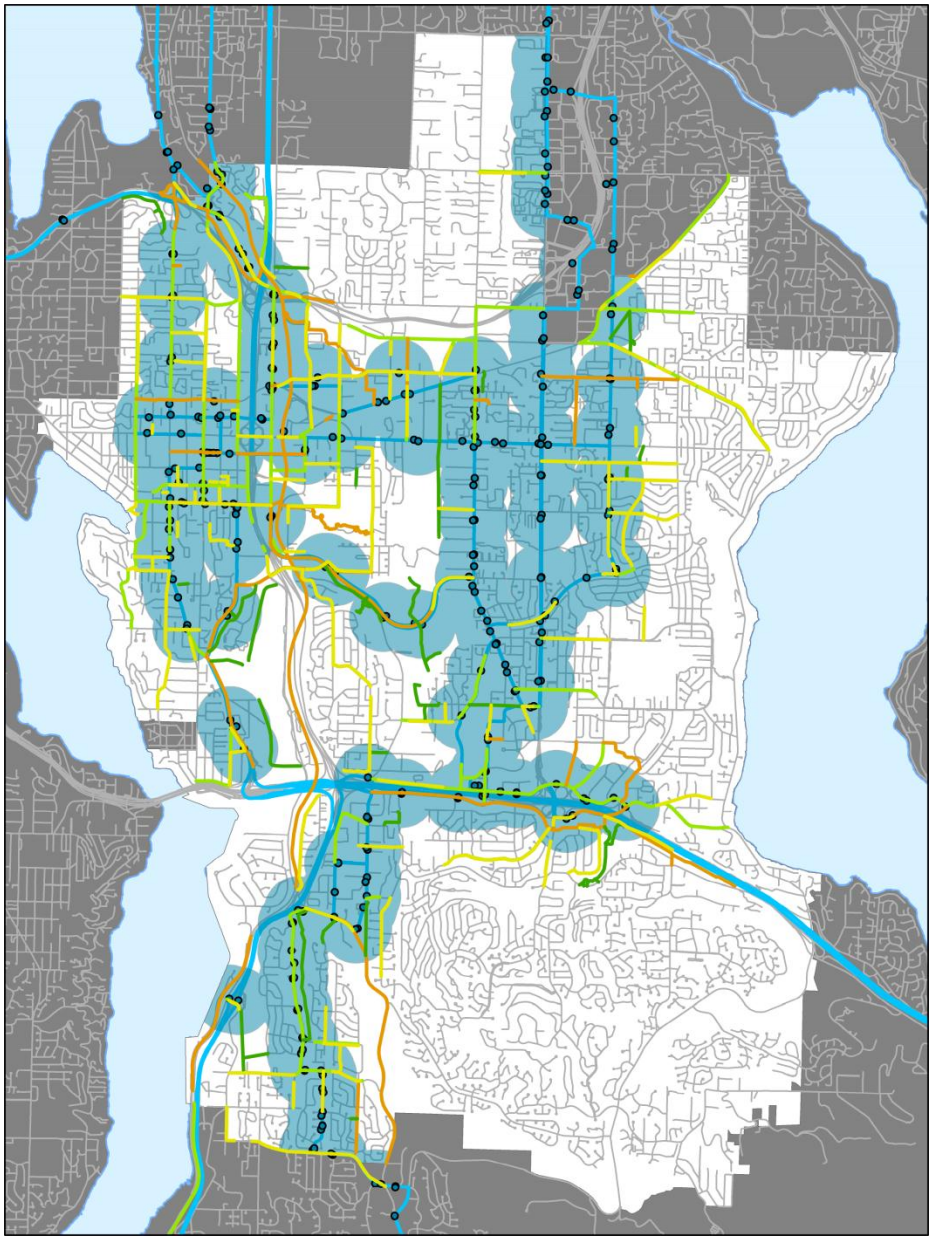
# Transit Priority Ped-Bike Projects



## 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

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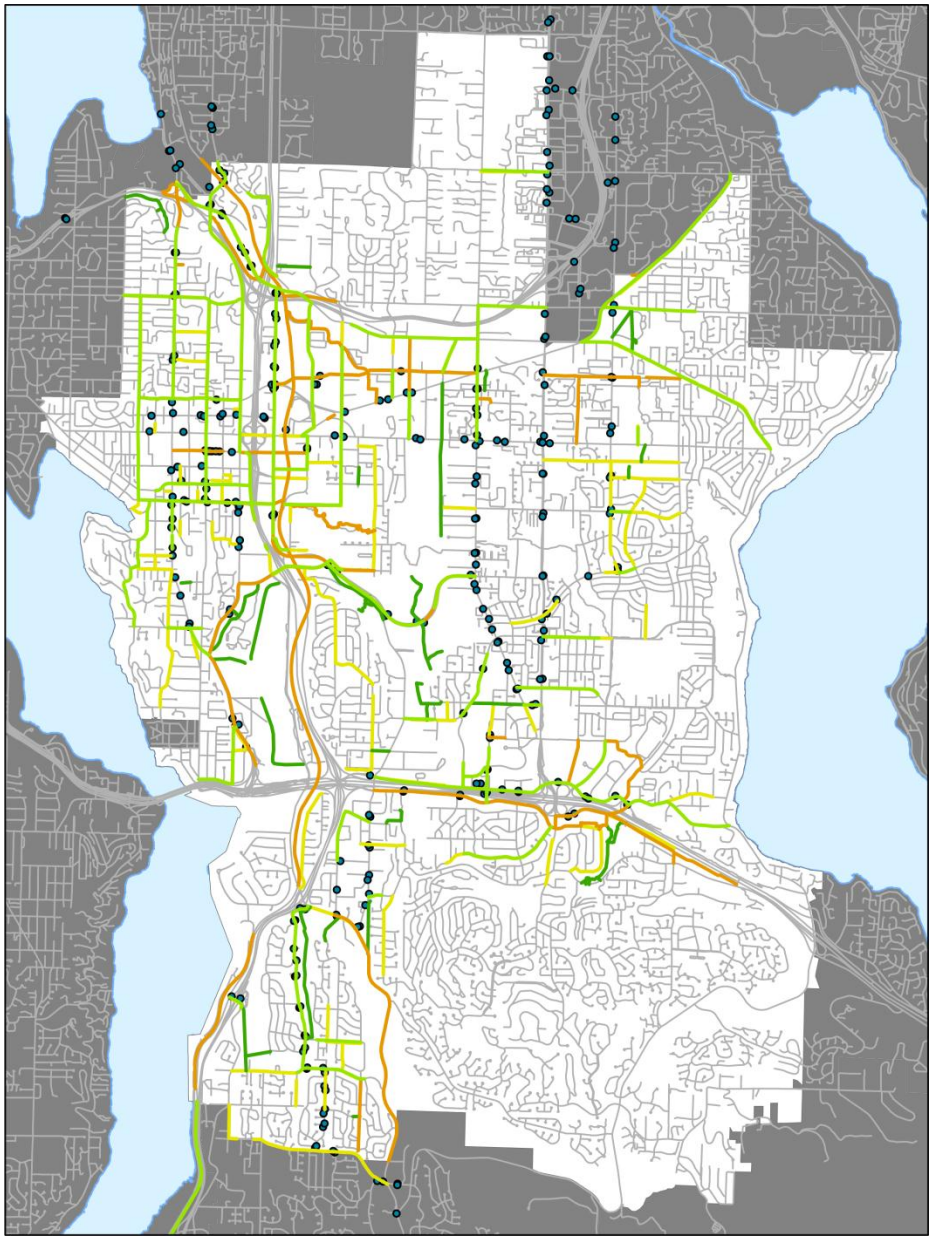
# Transit Priority Ped-Bike Projects



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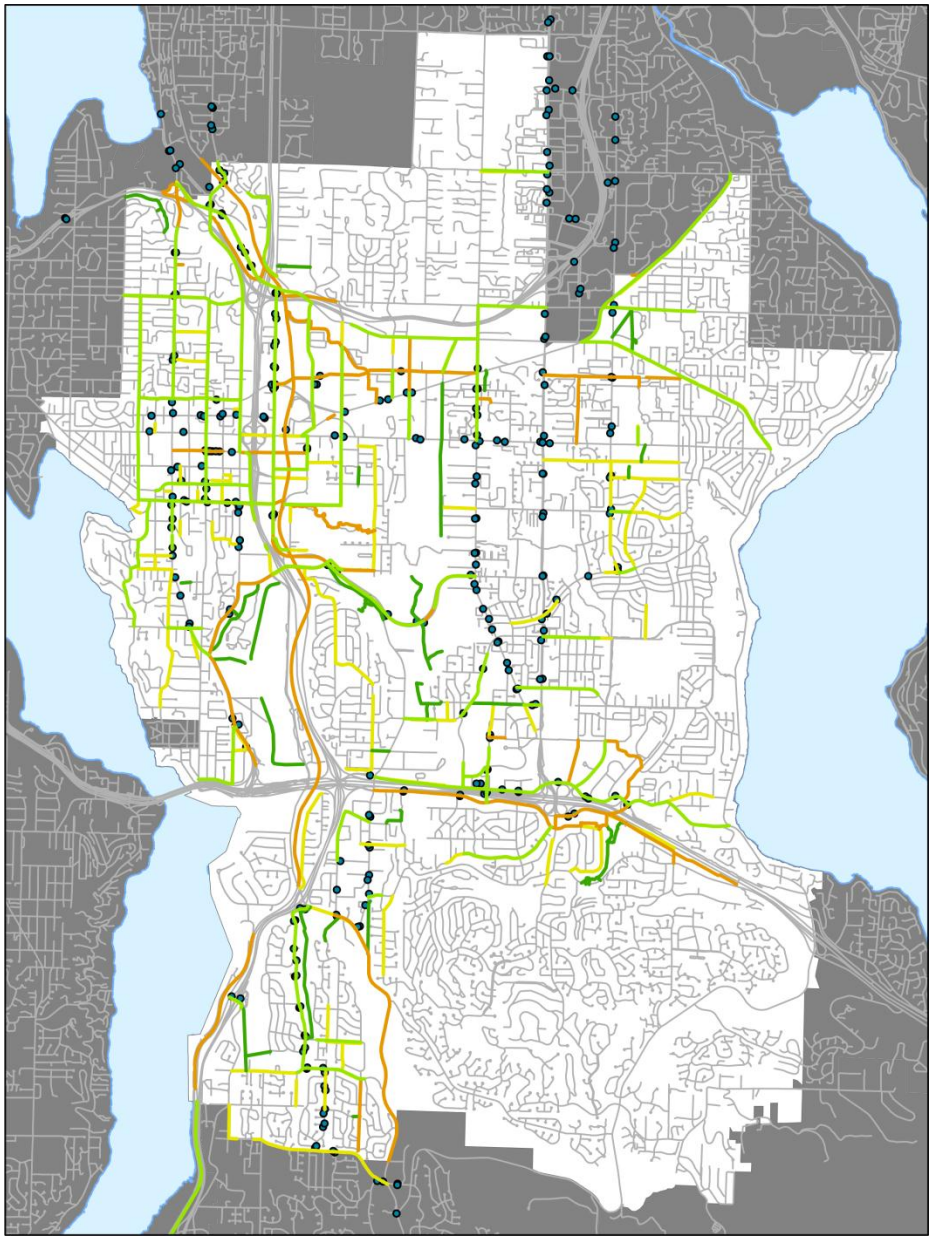
# Transit Priority Ped-Bike Projects



## 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*.



# Transit Priority Ped-Bike Projects

**GIS-Based Prioritization Framework**

| Category | Indicator | Points |
|---|---|---|
| **Corridor Conditions** | 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 |
| **Social Justice** | Vehicle ownership (%) | 5 |
| | Below poverty level (%) | 5 |
| | Under 18, 65 or over (%) | 5 |
| **Destination Network** | 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*



# Ped-Bike Project Prioritization

| 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 |
| **All Projects** | **60** | **109** | **166** | **335** |

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# Transit Priority Ped-Bike Projects

**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



# Accessibility & Connectivity

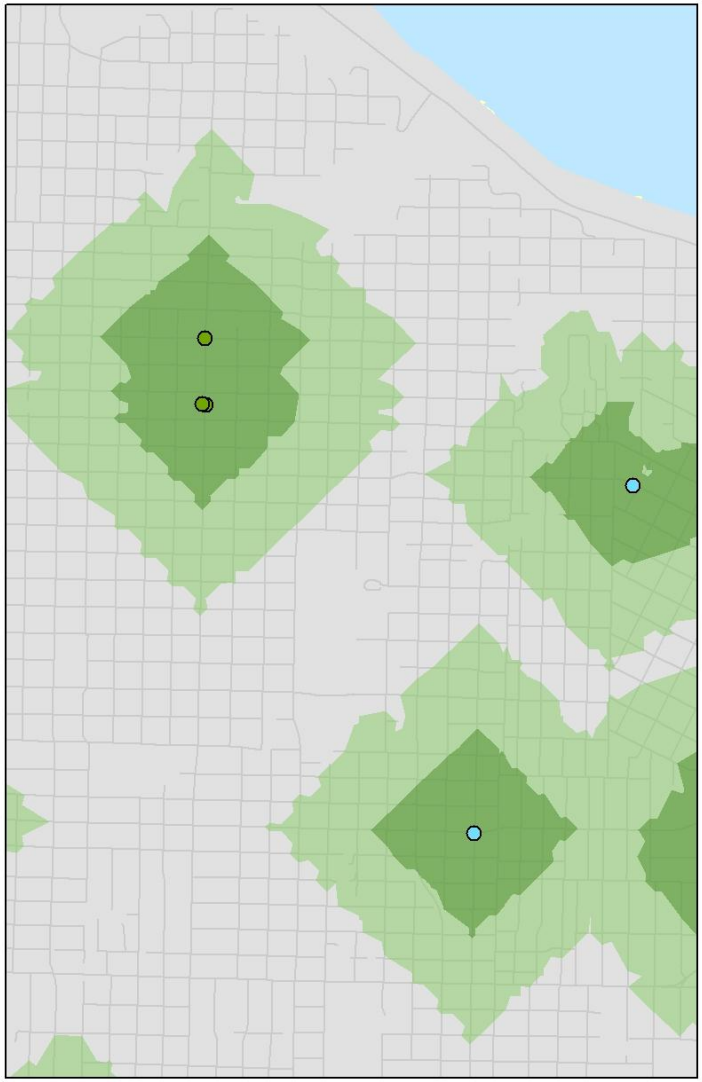
"[T]he accessibility of a bus system is… heavily concerned with the distance it is necessary to walk to reach a bus"

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

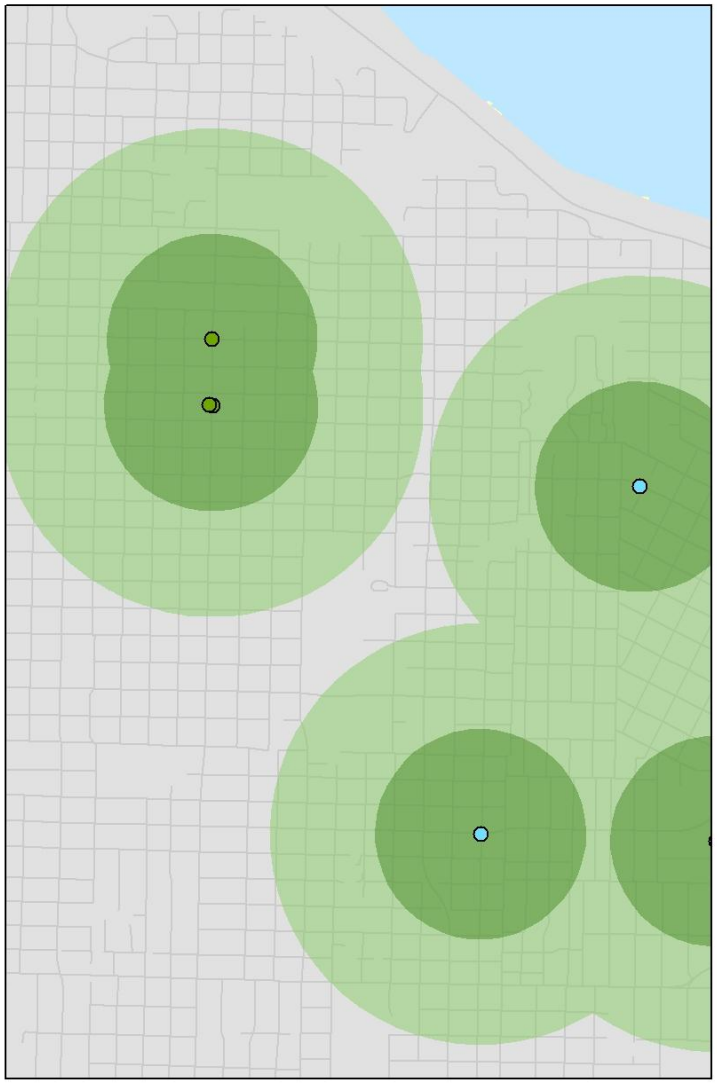


# Access to Transit

Network-Based



Euclidean



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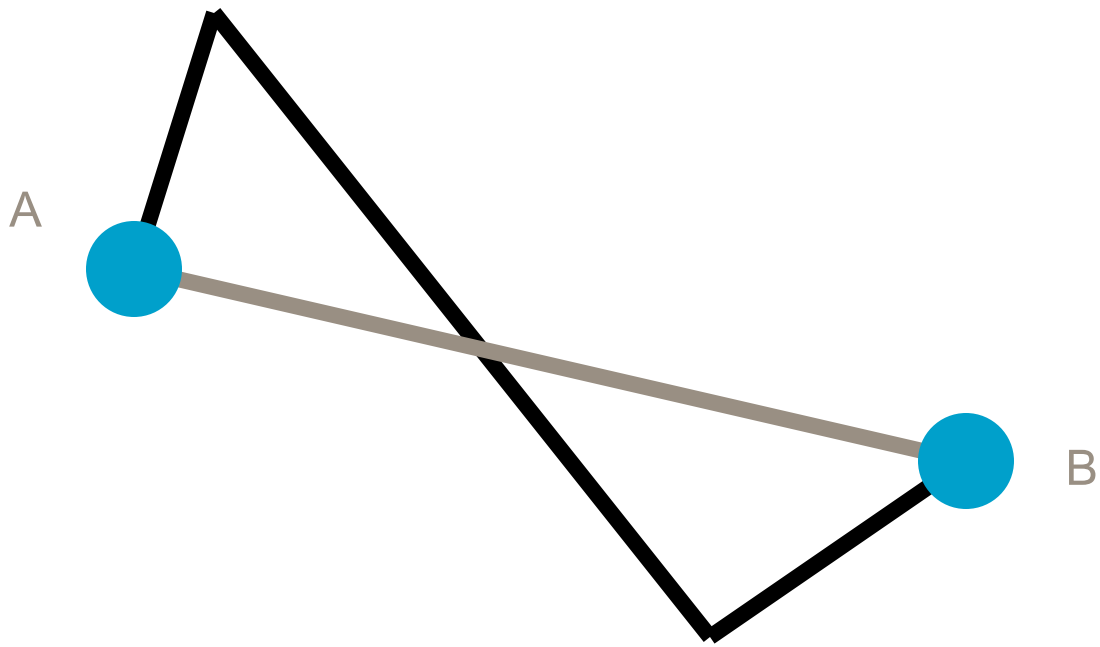
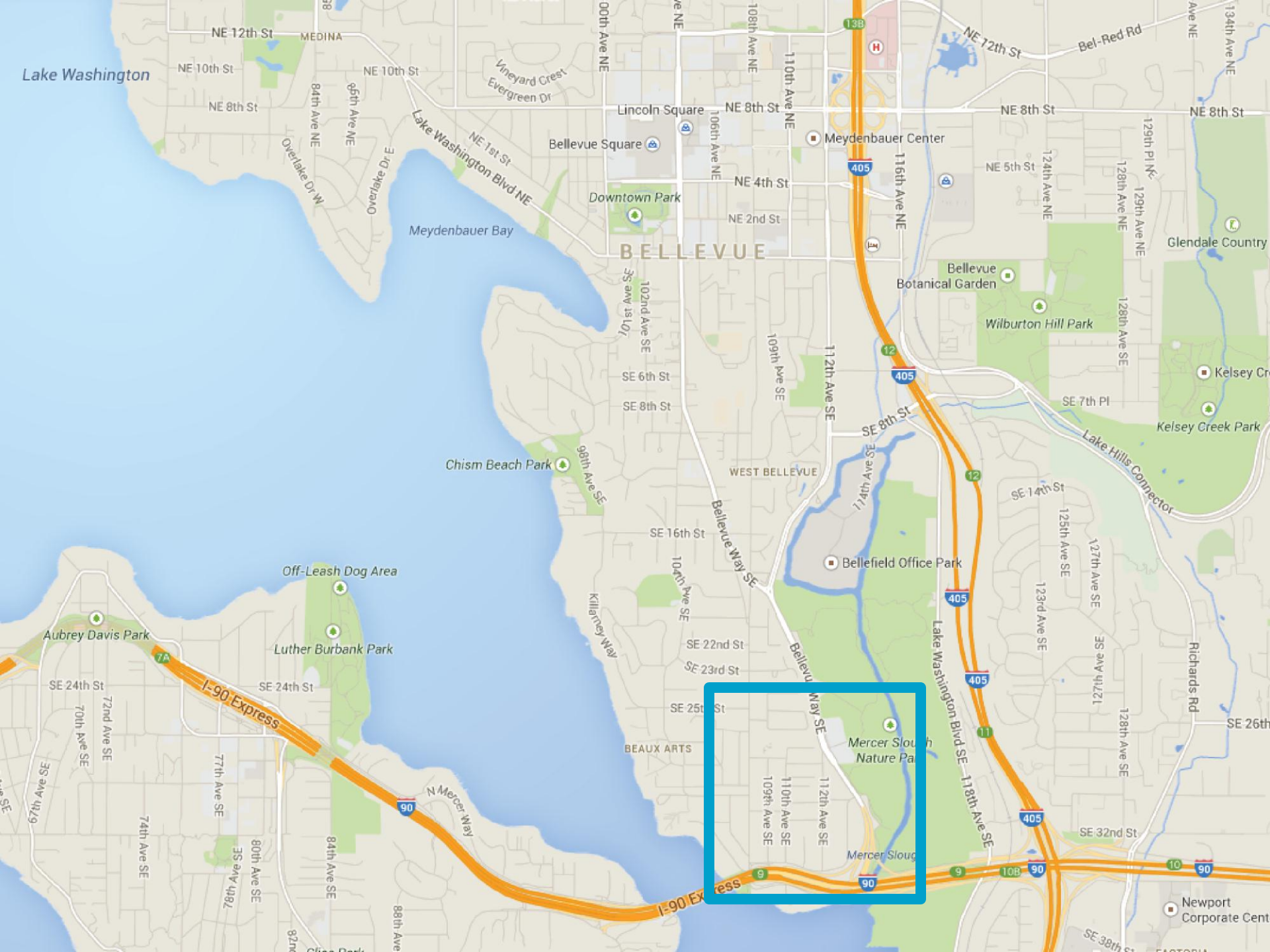
# Network-Based Analysis

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






# Route Directness


Lake Washington
NE 12th St
MEDINA
NE 10th St
NE 8th St
84th Ave NE
Overlake Dr W
Overlake Dr E
Vineyard Crest
Evergreen Dr
Lake Washington Blvd NE
NE 1st St
Lincoln Square
Bellevue Square
Meydenbauer Bay
Downtown Park
NE 4th St
NE 2nd St
BELLEVUE
Meydenbauer Center
Bel-Red Rd
NE 5th St
Bellevue Botanical Garden
Wilburton Hill Park
Glendale Country
Kelsey Cr
Kelsey Creek Park
SE 7th Pl
Lake Hills Connector
SE 6th St
SE 8th St
Chism Beach Park
WEST BELLEVUE
SE 14th St
SE 16th St
Bellevue Way SE
Bellefield Office Park
Off-Leash Dog Area
Aubrey Davis Park
Luther Burbank Park
SE 24th St
I-90 Express
SE 22nd St
SE 23rd St
SE 25th St
Killarney Way
BEAUX ARTS
Mercer Slough Nature Park
Mercer Slough
N Mercer Way
Lake Washington Blvd SE
118th Ave SE
SE 32nd St
Richards Rd
SE 26th
Newport Corporate Cent
SE 38th St
67th Ave SE
70th Ave SE
72nd Ave SE
74th Ave SE
77th Ave SE
78th Ave SE
80th Ave SE
84th Ave SE
88th Ave
98th Ave SE
100th Ave NE
101st Ave SE
102nd Ave SE
104th Ave SE
106th Ave NE
108th Ave NE
109th Ave SE
110th Ave NE
112th Ave SE
114th Ave SE
116th Ave NE
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124th Ave NE
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128th Ave SE
129th Pl NE
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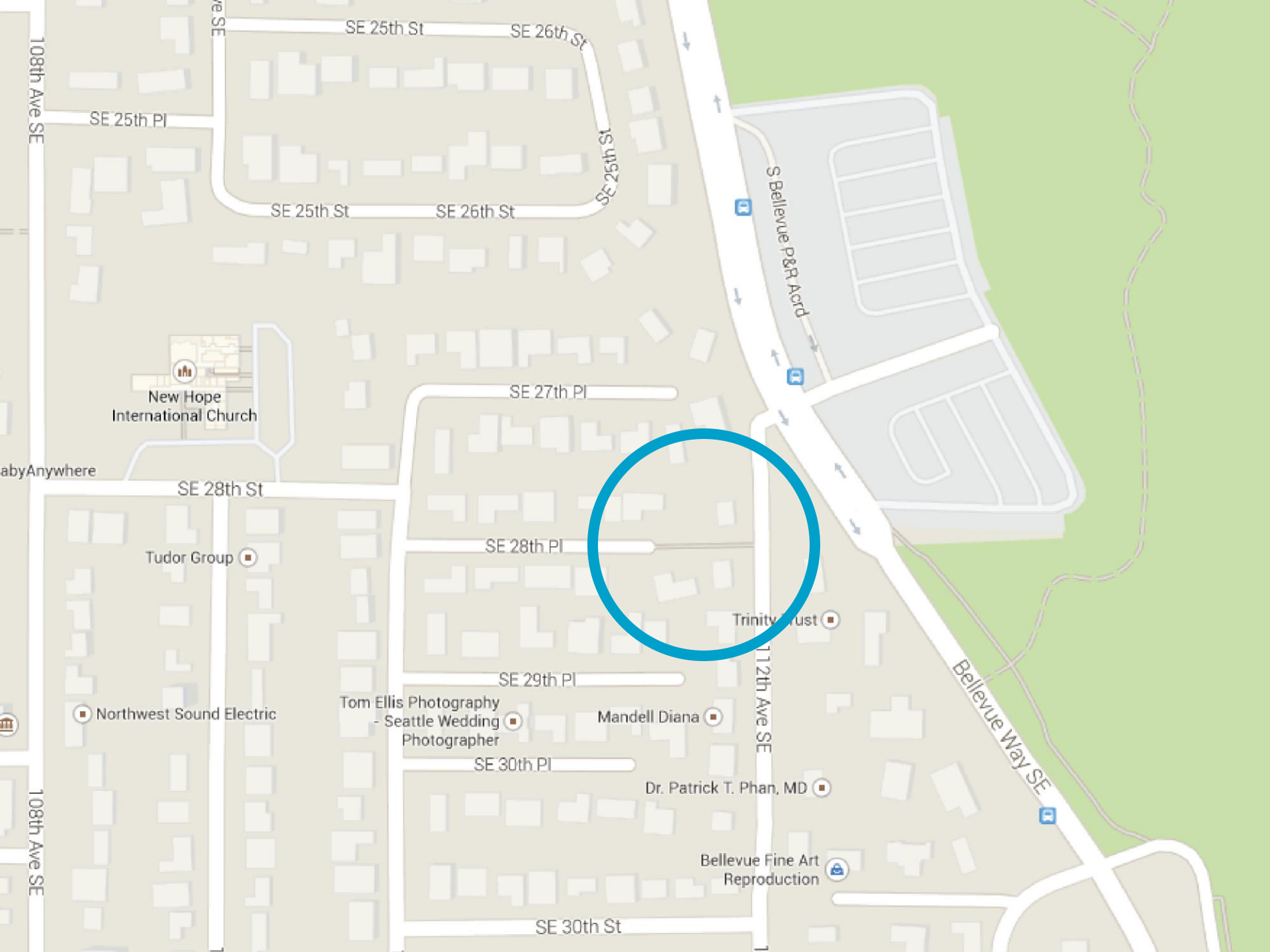
134th Ave NE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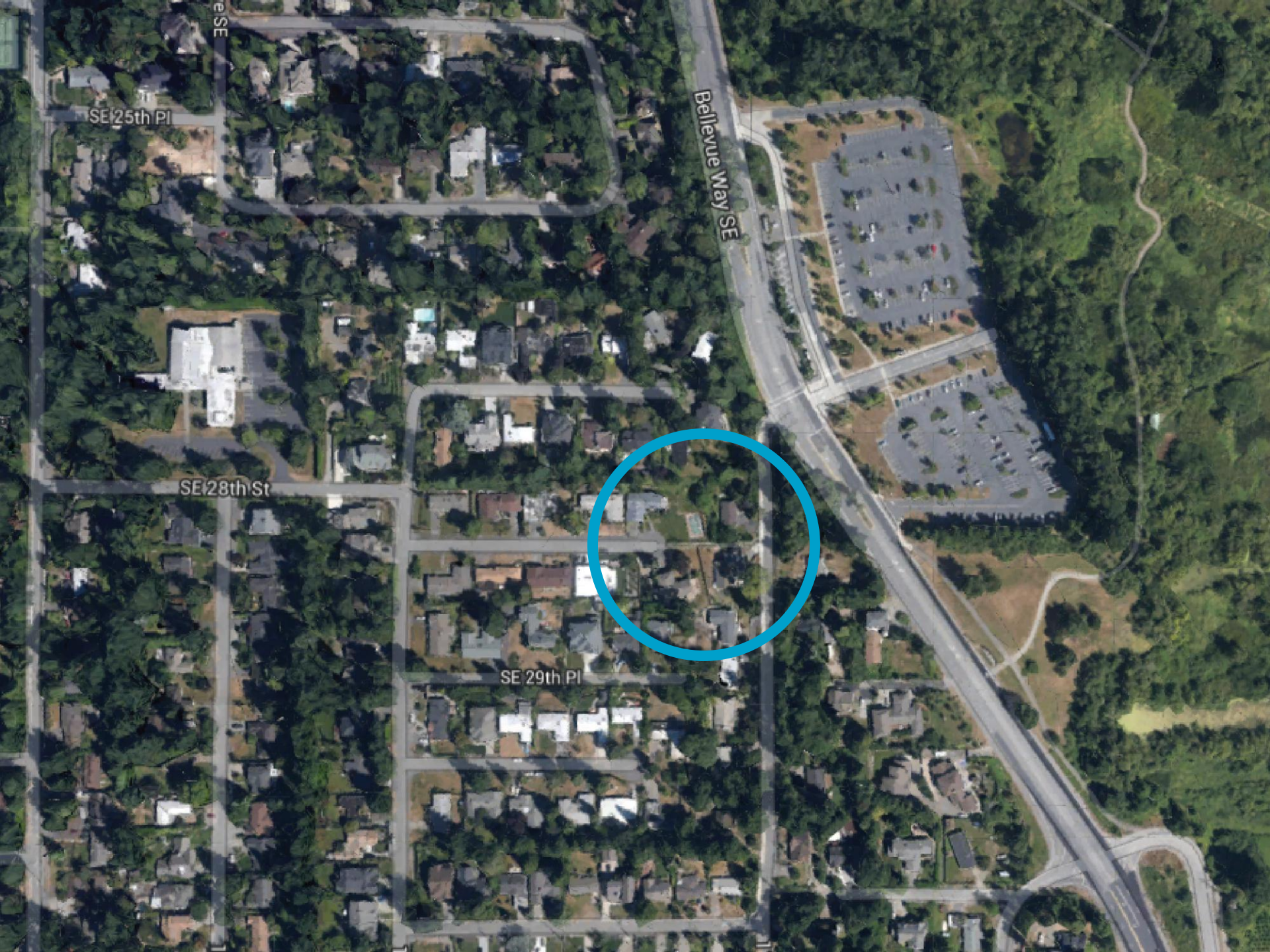
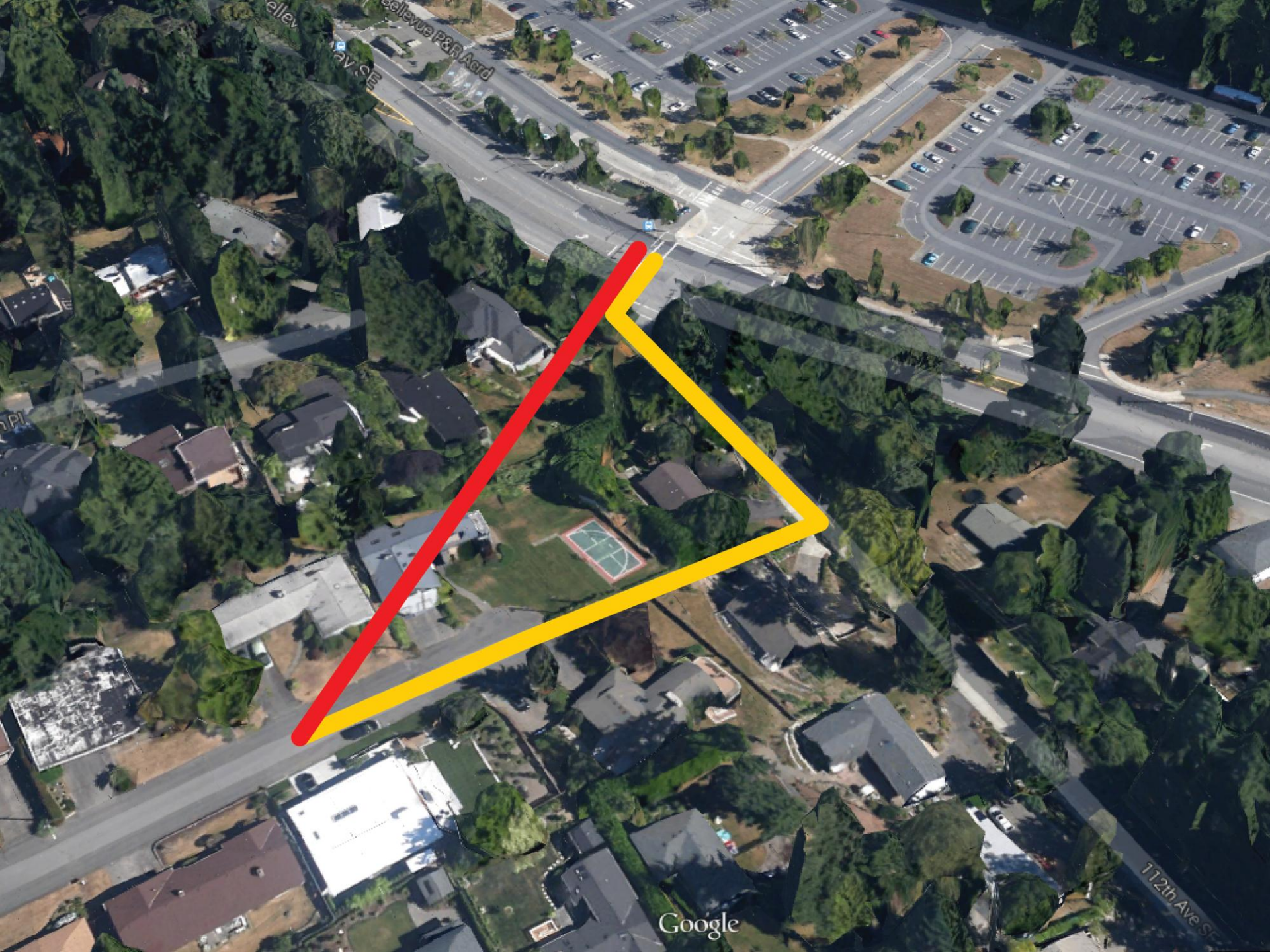
SE 26th St
108th Ave SE
SE 25th Pl
SE 25th St
SE 26th St
SE 25th St
S Bellevue P&R Acrd
New Hope
International Church
SE 27th Pl
abyAnywhere
SE 28th St
SE 28th Pl
Tudor Group
Trinity Trust
SE 29th Pl
112th Ave SE
Bellevue Way SE
Northwest Sound Electric
Tom Ellis Photography
- Seattle Wedding
Photographer
Mandell Diana
SE 30th Pl
Dr. Patrick T. Phan, MD
108th Ave SE
Bellevue Fine Art
Reproduction
SE 30th St


SE 25th Pl
Bellevue Way SE
SE 28th St
SE 29th Pl

Bellevue P&R Acrd
112th Ave S
Google

Bellevue P&R Acrd
112th Ave S
Google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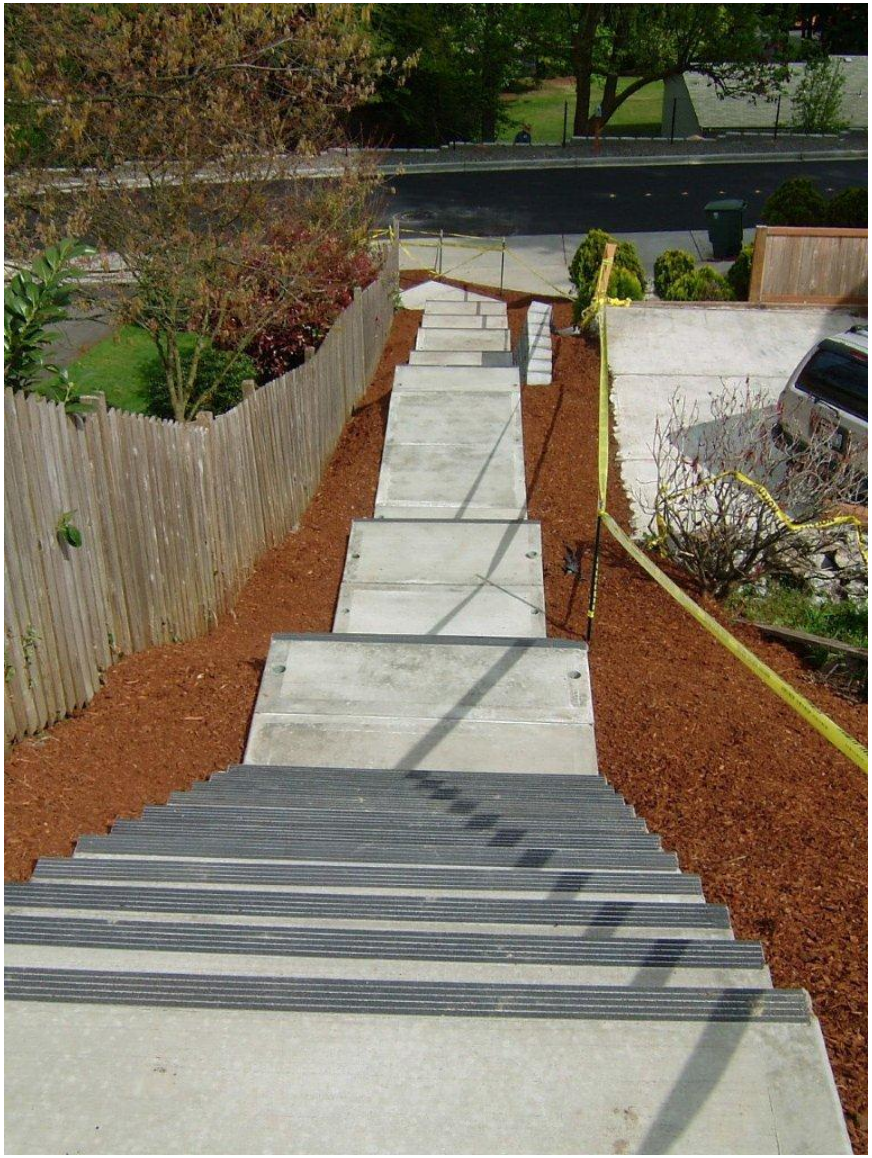

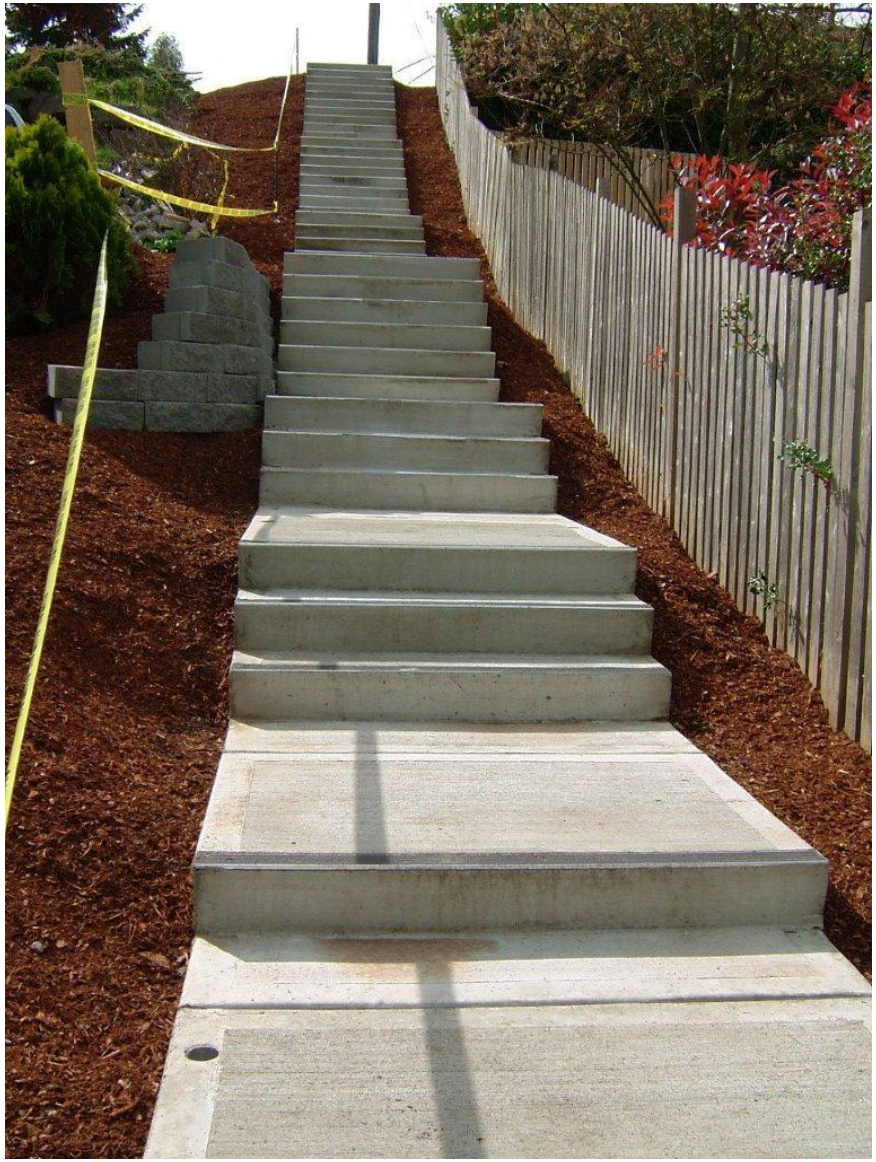

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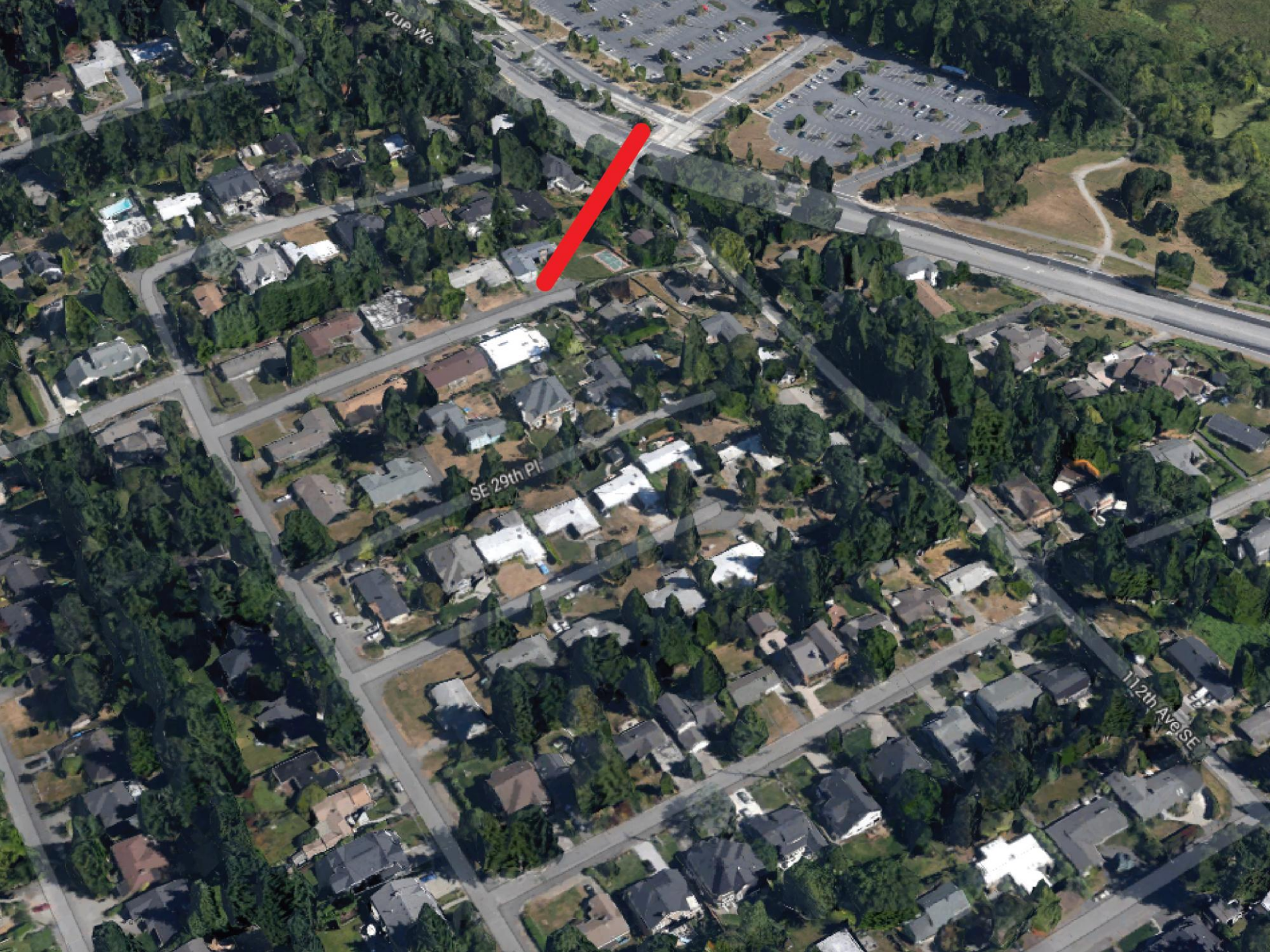
# SE 28th Pl Stairs

SE 29th Pl
112th Ave SE


SE 29th Pl
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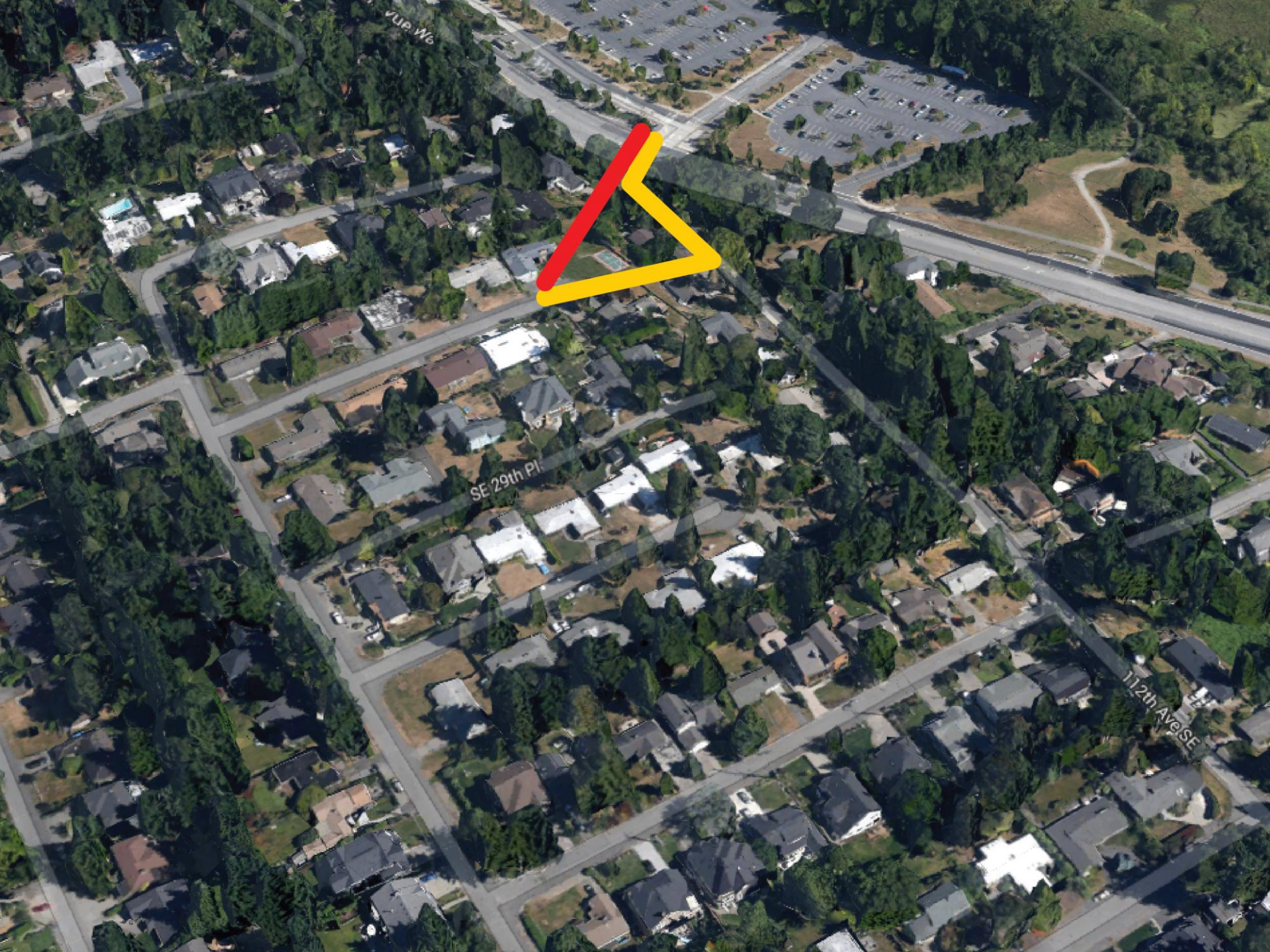
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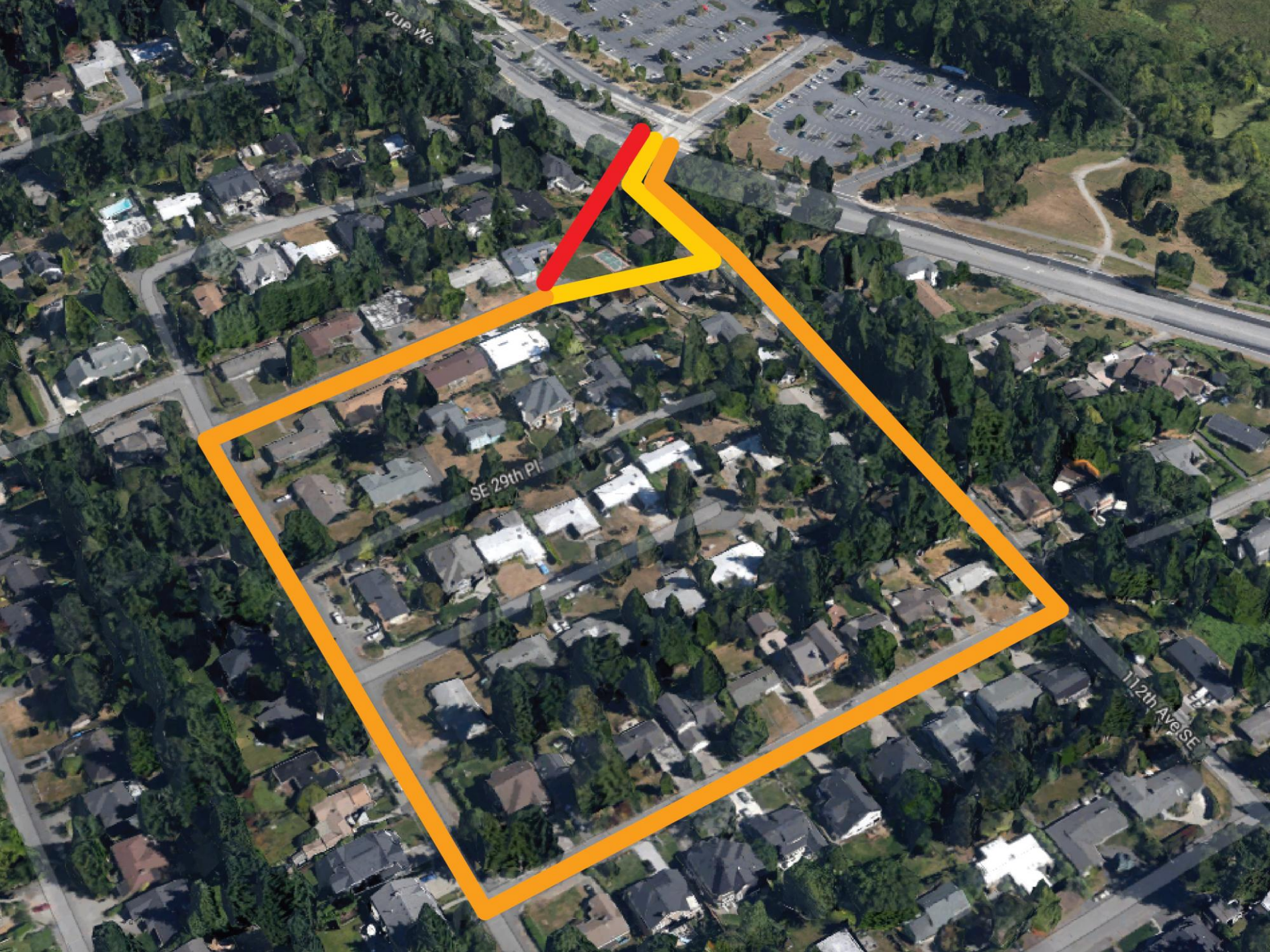
112th Ave SE


SE 29th Pl
112th Ave SE

**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 & Connectivity

"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*

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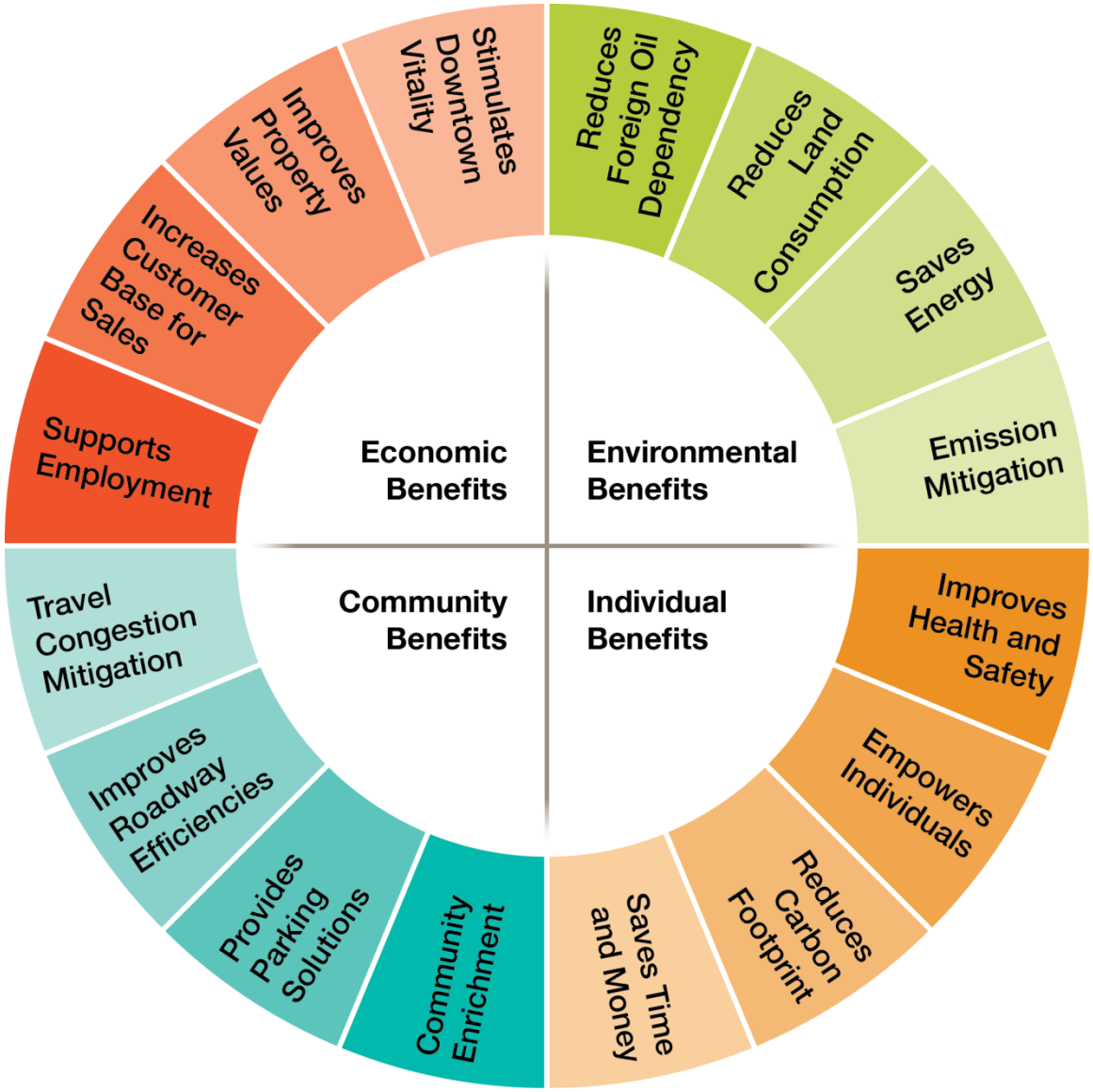


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# Benefits of Transit Report

# *Next Steps*

**FEBRUARY 27**
**TRANSPORTATION COMMISSION MEETING**

*Commission considers the Draft Transit Speed and Reliability Report.*

**MARCH 27**
**TRANSPORTATION COMMISSION MEETING**

*Board/Commission workshop reviewing the Draft Transit Capital Vision Report.*

**MAY 8**
**TRANSPORTATION COMMISSION MEETING**

*Final Transit Capital Vision Report and Draft Transit Master Plan Report.*

**MAY 19**
**COUNCIL MEETING**

*Draft Transit Master Plan Report.*

**JUNE 12**
**TRANSPORTATION COMMISSION MEETING**

*Draft Transit Master Plan Report public hearing.*

**JULY 7**
**COUNCIL MEETING**

*Transit Master Plan Report adoption by resolution.*

Bellevue Transit Master Plan

# Project Timeline

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?



# March 27 Workshop Agenda?

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

**Franz Loewenherz**
Transportation Department
floewenherz@bellevuewa.gov
**425-452-4077**

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# Additional Information