

# RapidRide Characteristics

RapidRide includes design elements based on the existing Metro RapidRide service, including:

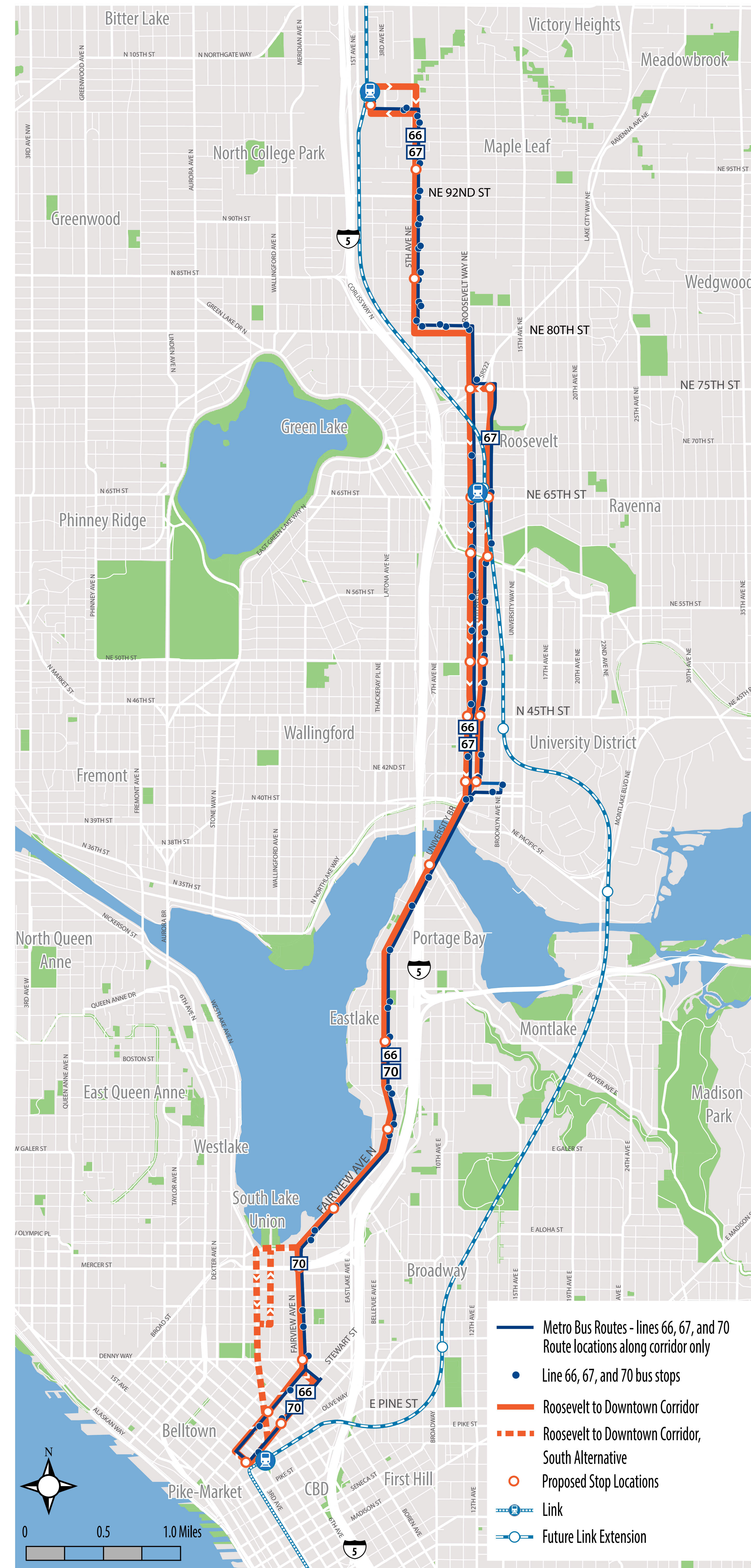
- Curb-running service with right-door loading articulated vehicles
- Stop consolidation
- Transit signal priority and communications
- Enhanced stations with shelters, off-board fare collection, real time arrival information, lighting and level boarding
- Station area pedestrian enhancements

## Peak Hour Speed

	North of Denny	South of Denny	Corridor
Existing	7.0 mph	2.5 mph	6.5 mph
RapidRide	8.9 mph	2.7 mph	7.7 mph
% Increase	26%	10%	17%

## Cost Magnitude

\$\$\$\$\$



## Station Types

### Urban Station with canopy



### Full Station



### Neighborhood Station



### Low-Impact Station



# Targeted Investment Characteristics

Targeted investment characteristics include the existing Metro RapidRide design elements as a starting point and incorporates Full BRT design elements at select locations along the corridor, including:

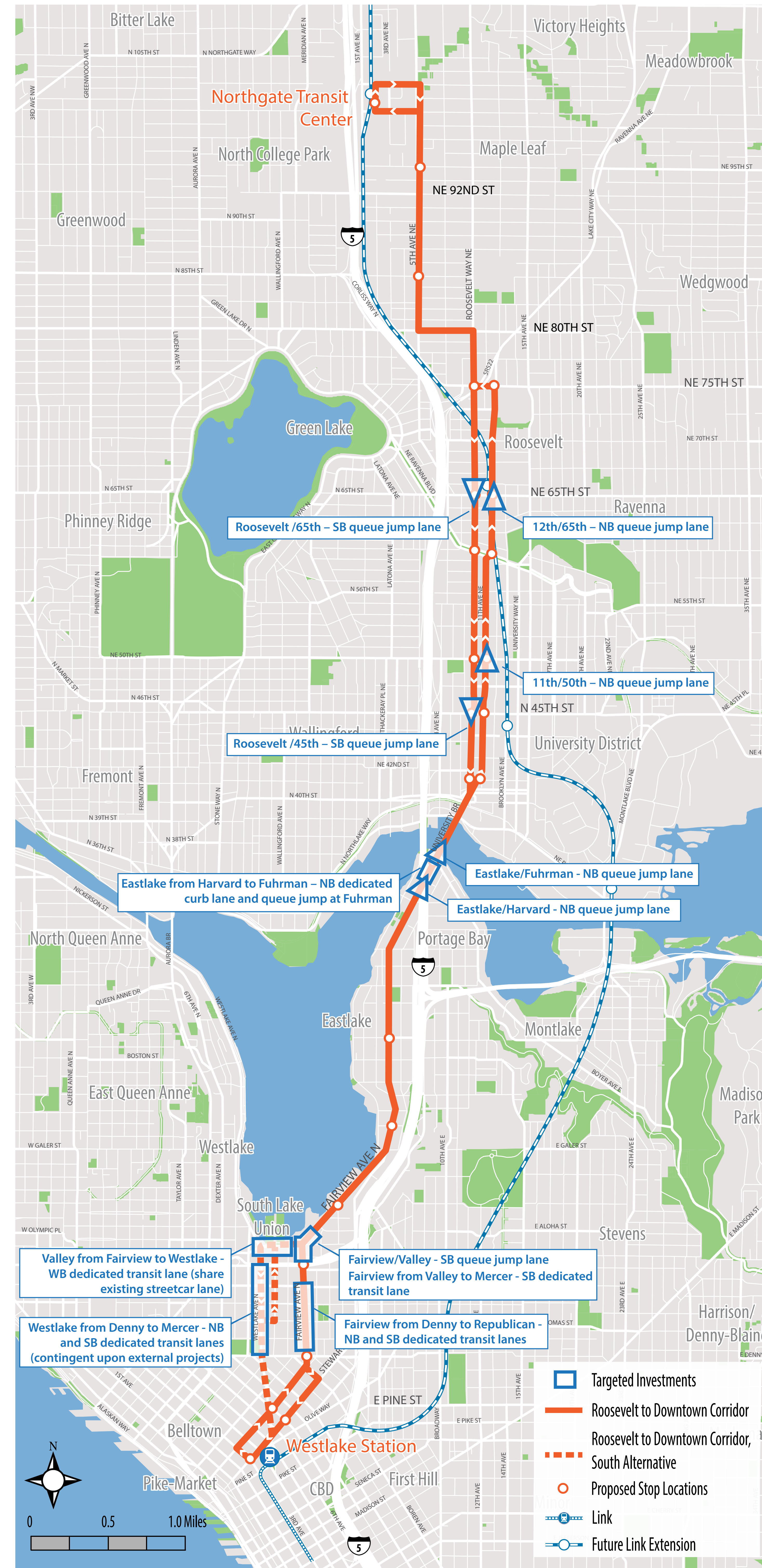
- Curb-running service with right-door loading articulated vehicles
- Potential for left-door loading vehicles
- Stop consolidation
- Transit signal priority and communications
- Enhanced stations with shelters, off-board fare collection, real time arrival information, lighting and level boarding
- Potential electric trolley bus extension
- Minor roadway geometric changes that may include use of queue jump, business access and transit lanes, or dedicated transit lanes
- Station area pedestrian enhancements
- Corridorwide pedestrian facility improvements
- Corridorwide bicycle facility improvements
- Limited/targeted parking and access modifications

## Peak Hour Speed

	North of Denny	South of Denny	Corridor
Existing	7.0 mph	2.5 mph	6.5 mph
Transit Investment	9.7 mph	2.7 mph	8.3 mph
% Increase	38%	10%	26%

## Cost Magnitude

\$\$\$\$\$



## Improvement Opportunities

Location	Improvement	Justification
Roosevelt & 65th	Southbound queue jump lane	Existing southbound congestion present in both AM and PM peak hours. Queue jump would bypass intersection delay and allow BRT to access station south of intersection.
12th & 65th	Northbound queue jump lane	Existing NB congestion present in PM peak hour. Queue jump would bypass intersection delay and allow BRT to access station north of intersection.
11th & 50th	Northbound queue jump lane	Existing NB congestion present in PM peak hour. Queue jump would bypass intersection delay and allow BRT to access station north of intersection.
Roosevelt & 45th	Southbound queue jump lane	Existing SB congestion present in AM peak hour. Queue jump would bypass intersection delay and allow BRT to access station south of intersection.
Eastlake & Fuhrman	Northbound queue jump lane	Existing NB congestion present in PM peak hour. Queue jump would bypass traffic backups south of U bridge.
Eastlake from Harvard to Fuhrman	Northbound dedicated curb lane and queue jump at Fuhrman	Position bus for Eastlake/Fuhrman NB queue jump at Eastlake/Fuhrman and allow BRT to access station south of Fuhrman.
Eastlake & Harvard	Northbound queue jump lane	Position bus for Harvard to Fuhrman dedicated curb lane. Existing NB congestion due to backups south of U bridge.
Fairview & Valley	Southbound queue jump lane	Existing SB congestion present in both AM and PM peak hours. Queue jump would bypass SB traffic backups.
Fairview from Valley to Mercer	Southbound dedicated transit lane	Existing SB congestion present in both AM and PM peak hours along this segment. Queue jump would bypass SB traffic backups.
Fairview from Denny to Republican	Northbound and southbound dedicated transit lanes	Existing NB and SB congestion at Fairview/Mercer in both AM and PM along this segment. Dedicated lanes would bypass NB traffic backups associated with Fairview/Mercer and allow BRT to access stations at Fairview/Denny. Also provide higher bus speeds both directions through CBD portion of the corridor.
Valley from Fairview to Westlake (South Alternative)	Westbound dedicated transit lane (share streetcar lane)	Existing WB congestion present in both AM and PM peak hours along this segment. Dedicated transit lane would bypass WB traffic backups.
Westlake from Denny to Mercer (South Alternative)	Northbound and southbound dedicated transit lanes (contingent upon other projects currently under development)	Existing NB and SB congestion at Westlake/Mercer in both AM and PM along this segment. Dedicated lanes would bypass NB traffic backups associated with Westlake/Mercer. Also provide higher bus speeds both directions through CBD portion of the corridor.

# Full BRT Characteristics

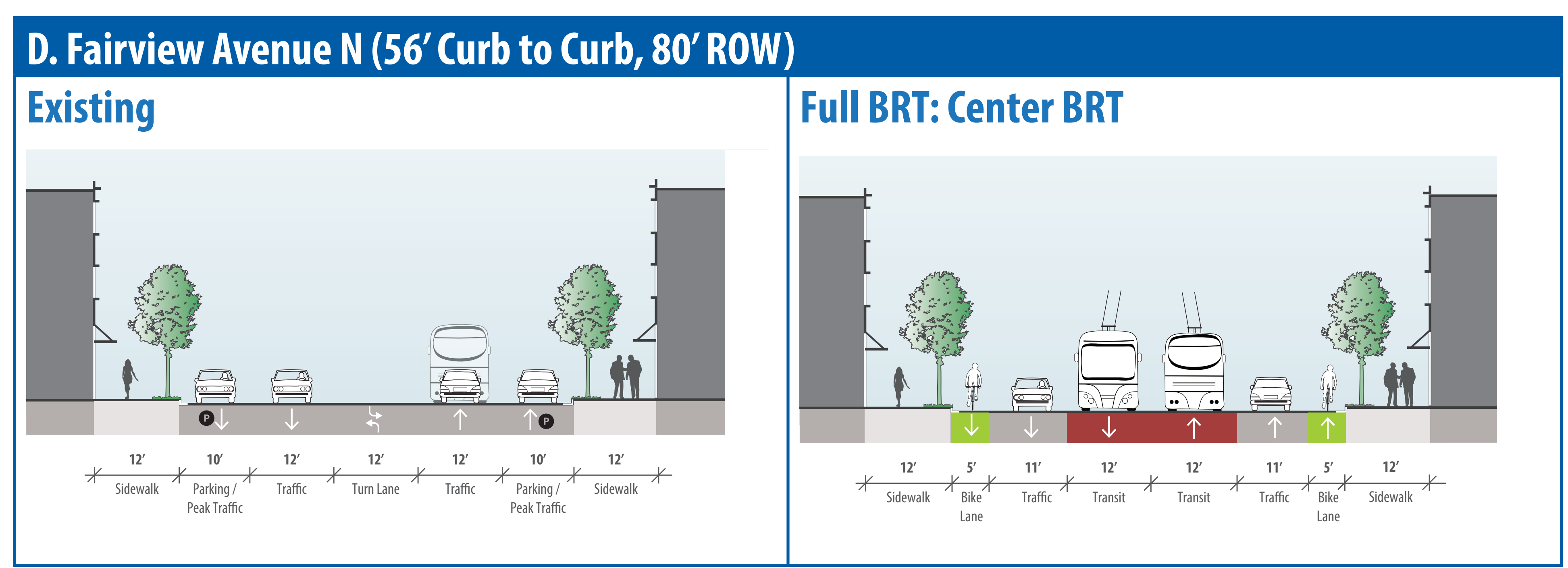
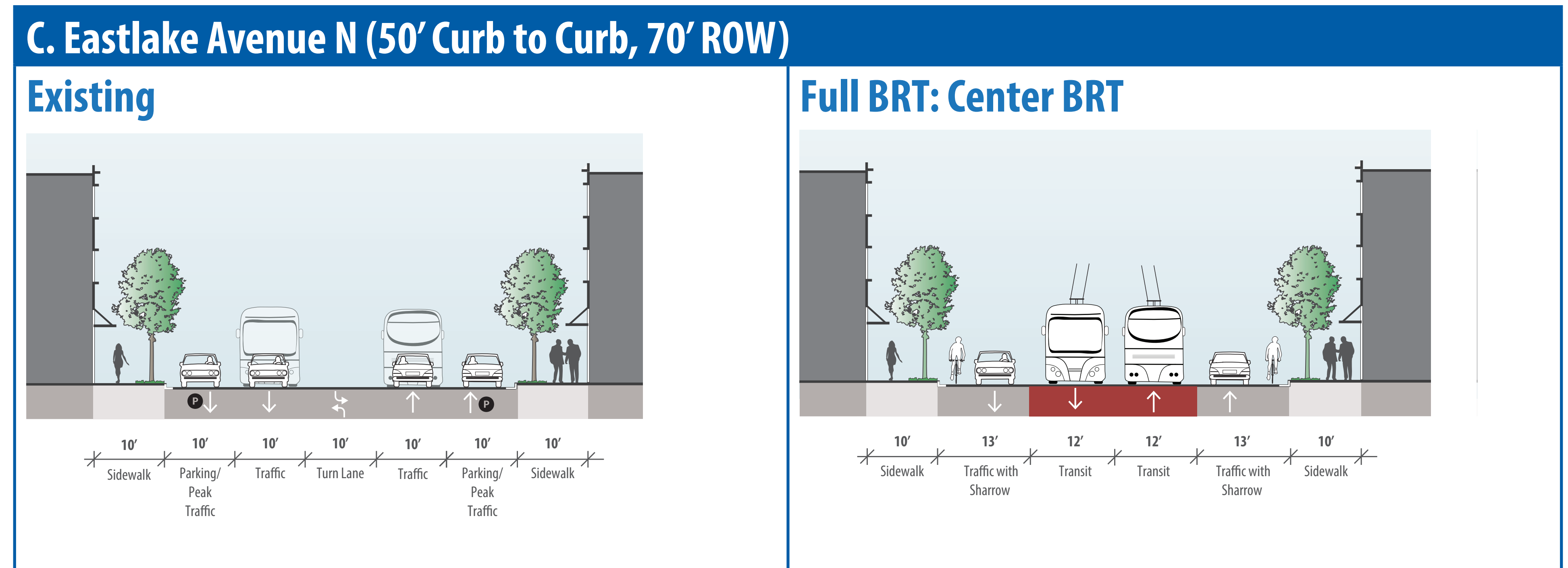
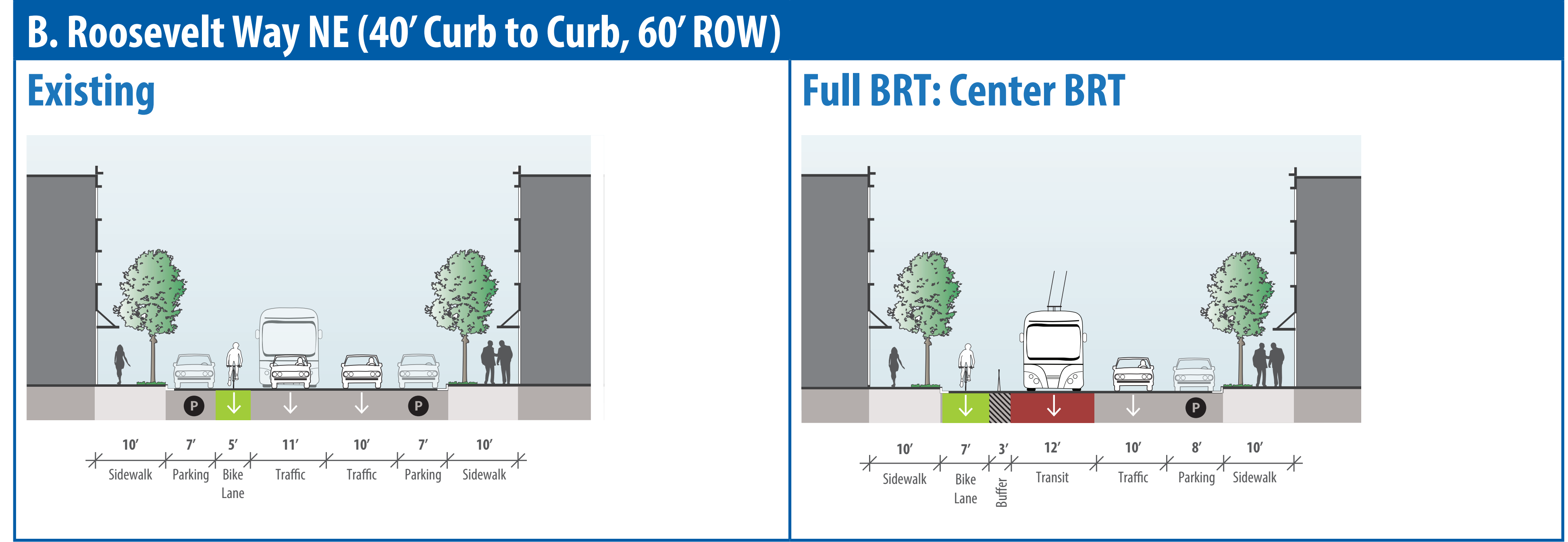
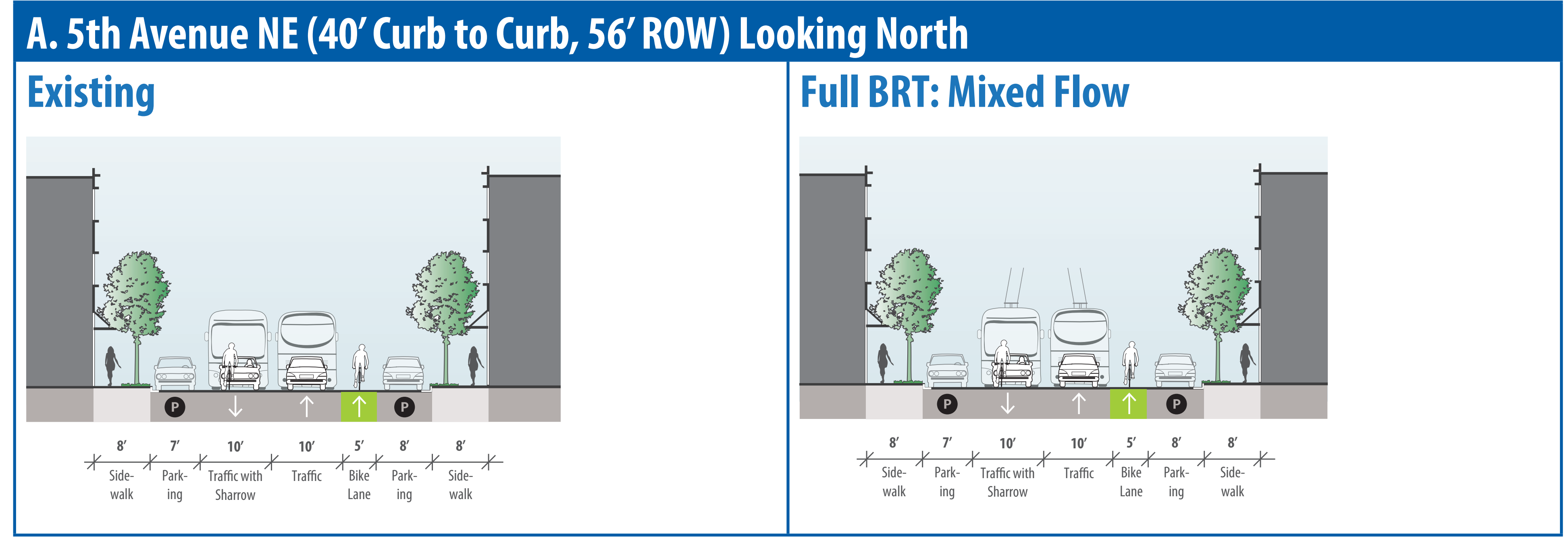
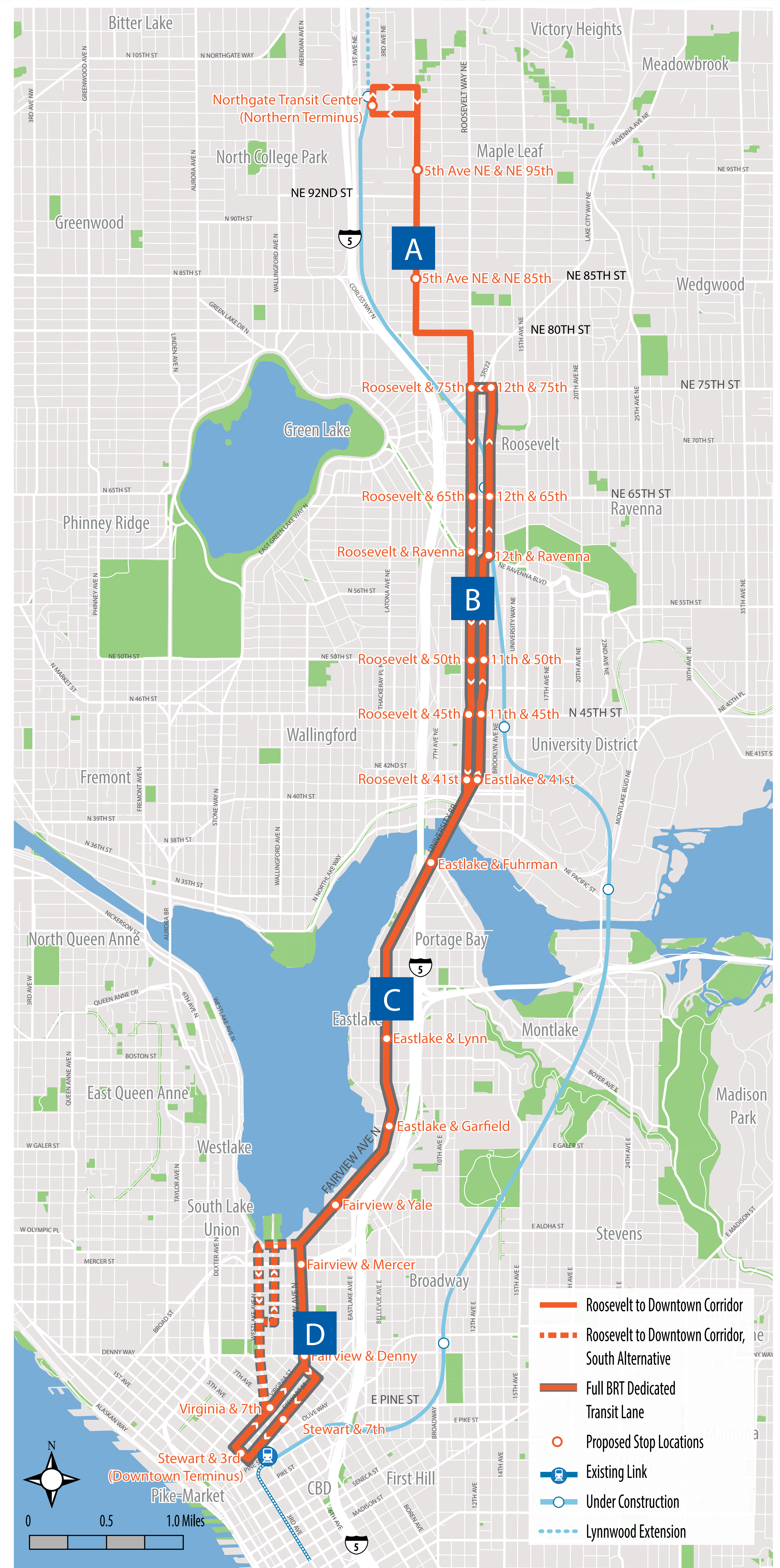
Full BRT incorporates premium design elements along the entire corridor that may include:

- Maximize median-running service with left-door loading articulated vehicles
- Stop consolidation
- Transit signal priority and communications
- Major roadway geometric changes that may include use of queue jump, business access and transit lanes, or dedicated transit lanes
- Enhanced stations with shelters, off-board fare collection, real time arrival information, lighting and level boarding
- Potential electric trolley bus extension
- Station area pedestrian enhancements
- Corridorwide pedestrian facility improvements
- Corridorwide bicycle facility improvements
- Redistribution of curb-to-curb or ROW width allocation by travel mode
- Significant parking and access modifications

## Peak Hour Speed

	North of Denny	South of Denny	Corridor
Existing	7.0 mph	2.5 mph	6.5 mph
Full BRT	21.3 mph	25.1 mph	21.5 mph
% Increase	203%	905%	229%

Cost Magnitude  
**\$\$\$\$\$**



# Existing Conditions and Areas for Improvement

The findings presented here show transit, traffic, bicycle and pedestrian, and jobs and population growth data that was revealed in the existing conditions analysis as challenges along the corridor.

Existing mode share of residents is presented below to show how residents living within a 1/2-mile of the corridor are getting to and from work.

## Existing Mode Share (workers 16+)

	1/2 -mile of Corridor	Percent of Total
Drive Alone	23,473	39%
Carpool	3,946	7%
Public Transportation	14,100	23%
Bicycle	2,527	4%
Walked	11,917	20%
Taxi, motorcycle, work from home, other	4,212	7%
<i>Total</i>	<i>60,174</i>	<i>100%</i>

Source: 2013 American Community Survey (5-year estimates)

## Transit

### Transit Peak Hour Speed

- 7.0 mph

### Reliability:

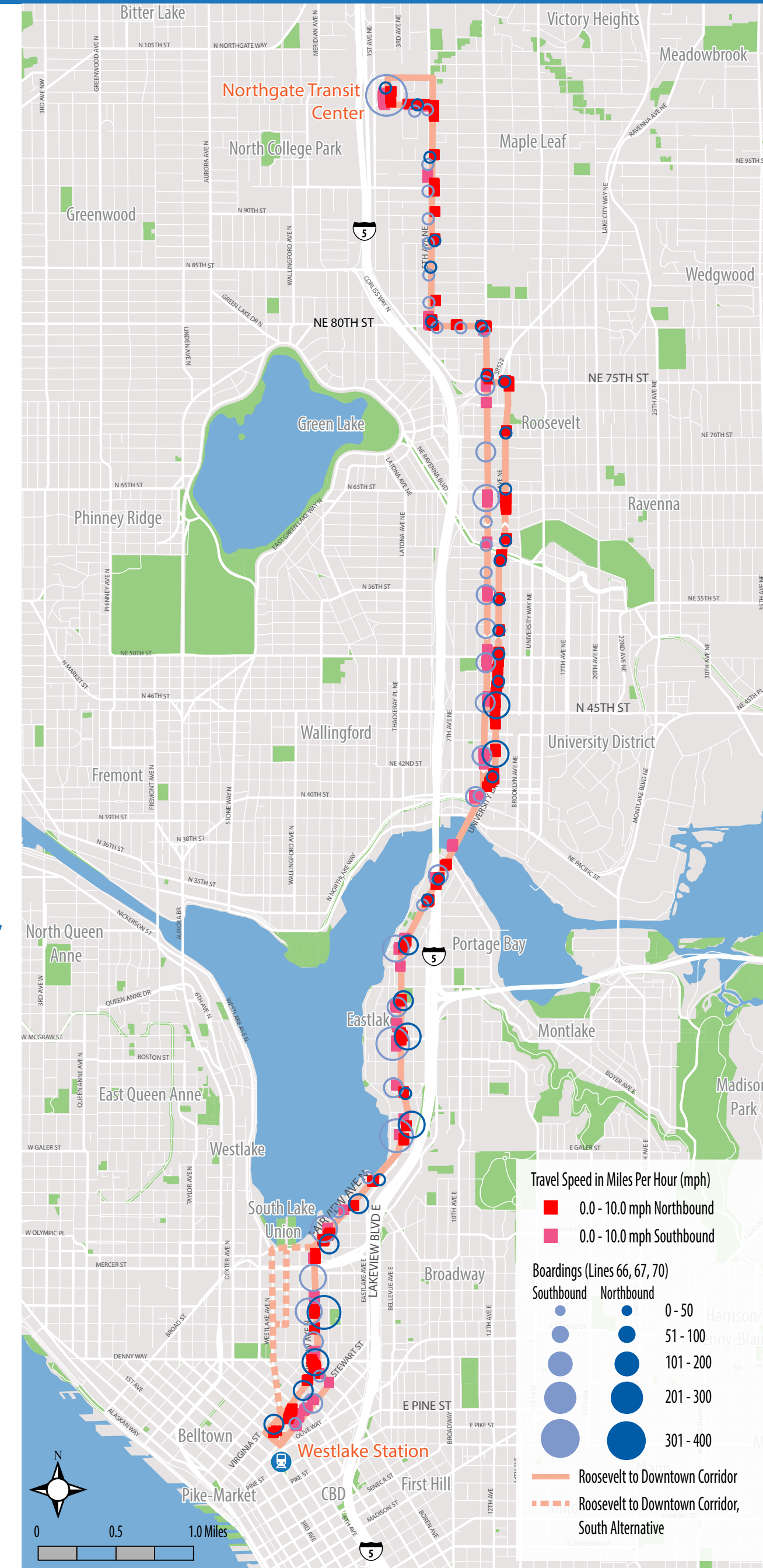
- On-time performance of transit is below 70% for routes 66 and 70 during the morning or evening peaks

### Overcrowding:

- Occurs on 32% of trips throughout the day and 63% of trips in the morning peak

### Average Weekday Ridership:

- Total - 8,270 daily riders



## Bicycle and Pedestrian

### Pedestrian Network

- Missing sidewalk at six locations along corridor
- Fair or poor sidewalk conditions along portions of Roosevelt, 11th Ave NE, and Eastlake.

### High Pedestrian Collisions:

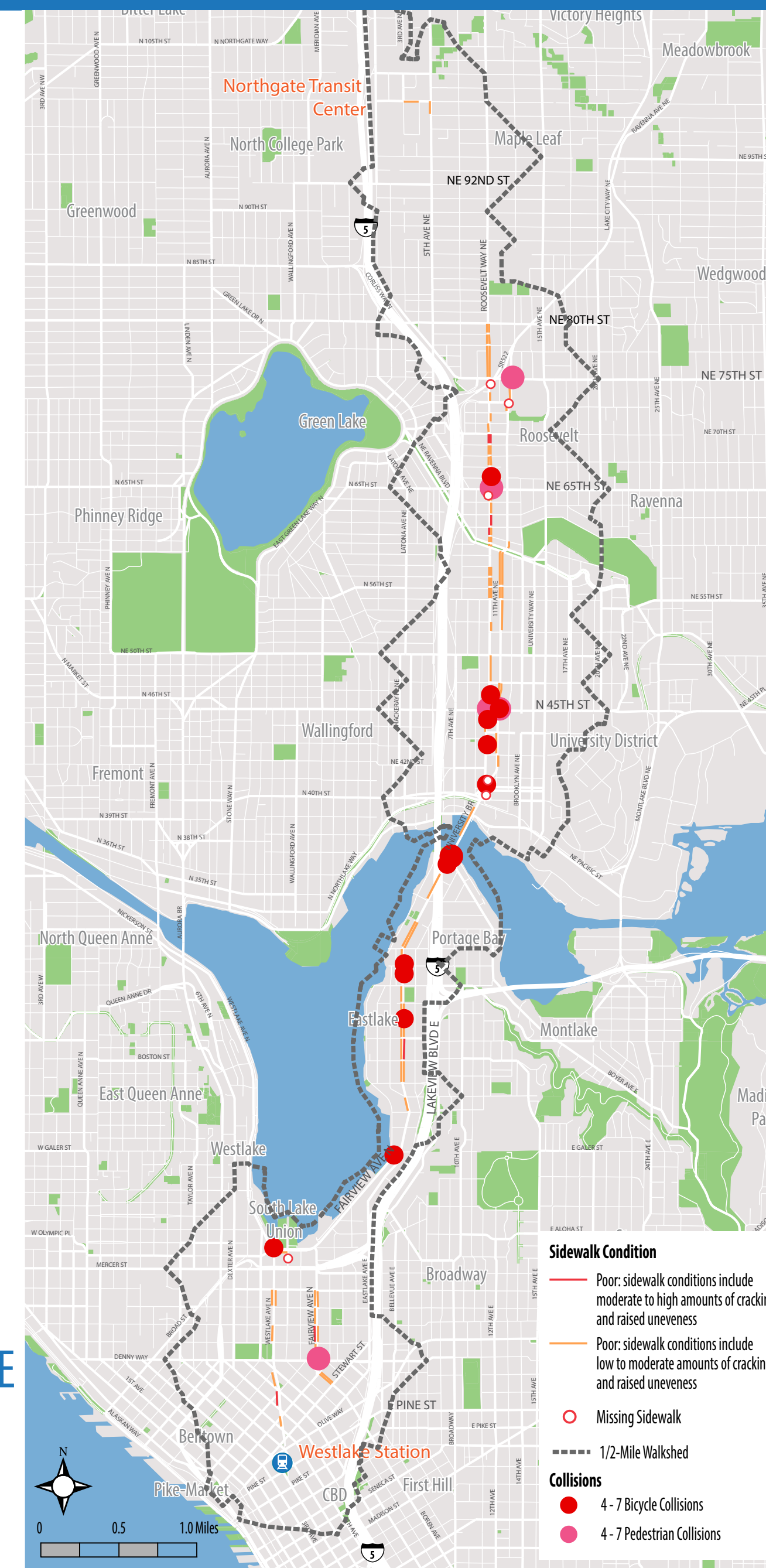
- Roosevelt Way NE and NE 45th Street
- Denny Way and Fairview Avenue
- 12th Avenue NE and NE 75th Street
- Roosevelt Way NE and NE 65th Street

### Bicycle Network:

- Need for continuous network

### High Bicycle Collisions:

- Eastlake Avenue E and Fuhrman Avenue E
- 11th Avenue NE and NE 45th Street
- Eastlake Avenue E between Harvard Avenue E and Fuhrman Avenue E
- Roosevelt Way NE and NE 66th Street
- Eastlake Avenue E and E Edgar Street



## Traffic

### Northgate:

- All intersections operate at LOS D or better

### Roosevelt and University:

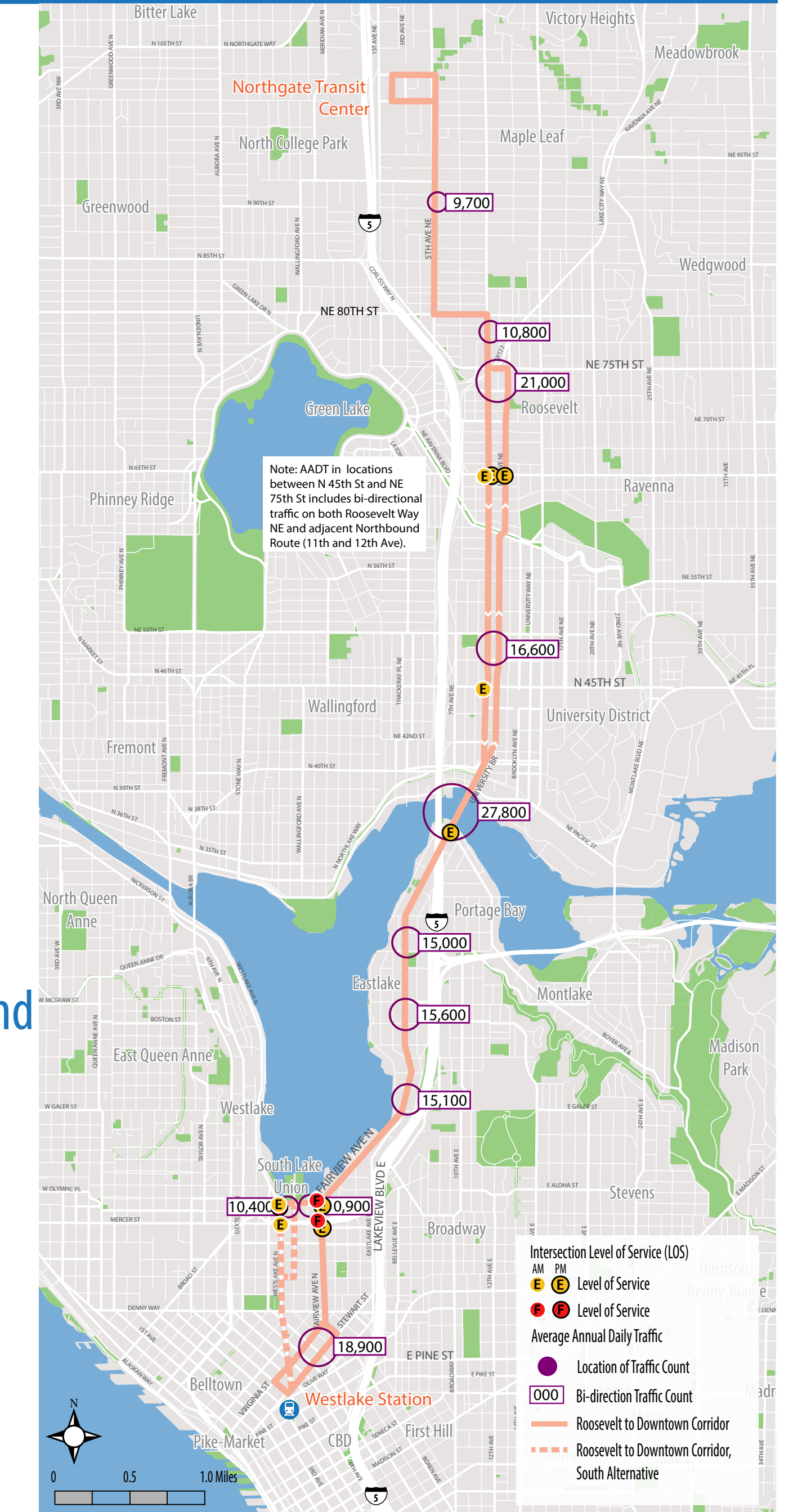
- Roosevelt Ave & NE 65th St: LOS E (AM and PM)
- 12 Ave NE & NE 65th St: LOS E (PM)
- Roosevelt Ave & NE 45th St: LOS E (AM)

### Eastlake:

- Fairview Ave and Fuhrman Ave: LOS E (PM)

### Downtown and South Lake Union:

- Valley St and Westlake Ave: LOS E (AM and PM)
- Mercer St and Westlake Ave: LOS E (AM and PM)
- Valley St and Fairview Ave: LOS F (AM) and LOS E (PM)
- Mercer St and Fairview Ave: LOS F (AM) and LOS E (PM)



## Jobs and Population

### Existing

	1/2 -mile of Corridor	City of Seattle	Percent
Population	83,920	624,681	13.4%
Jobs	169,710	469,566	36.1%

Source: 2013 American Community Survey (5-year estimates)

### Future Growth

Three urban centers, Northgate, U District, and South Lake Union, are identified as areas of employment and residential growth, including up to **21,000** new households and **36,000** new jobs (growth projections for the year 2030-2035).

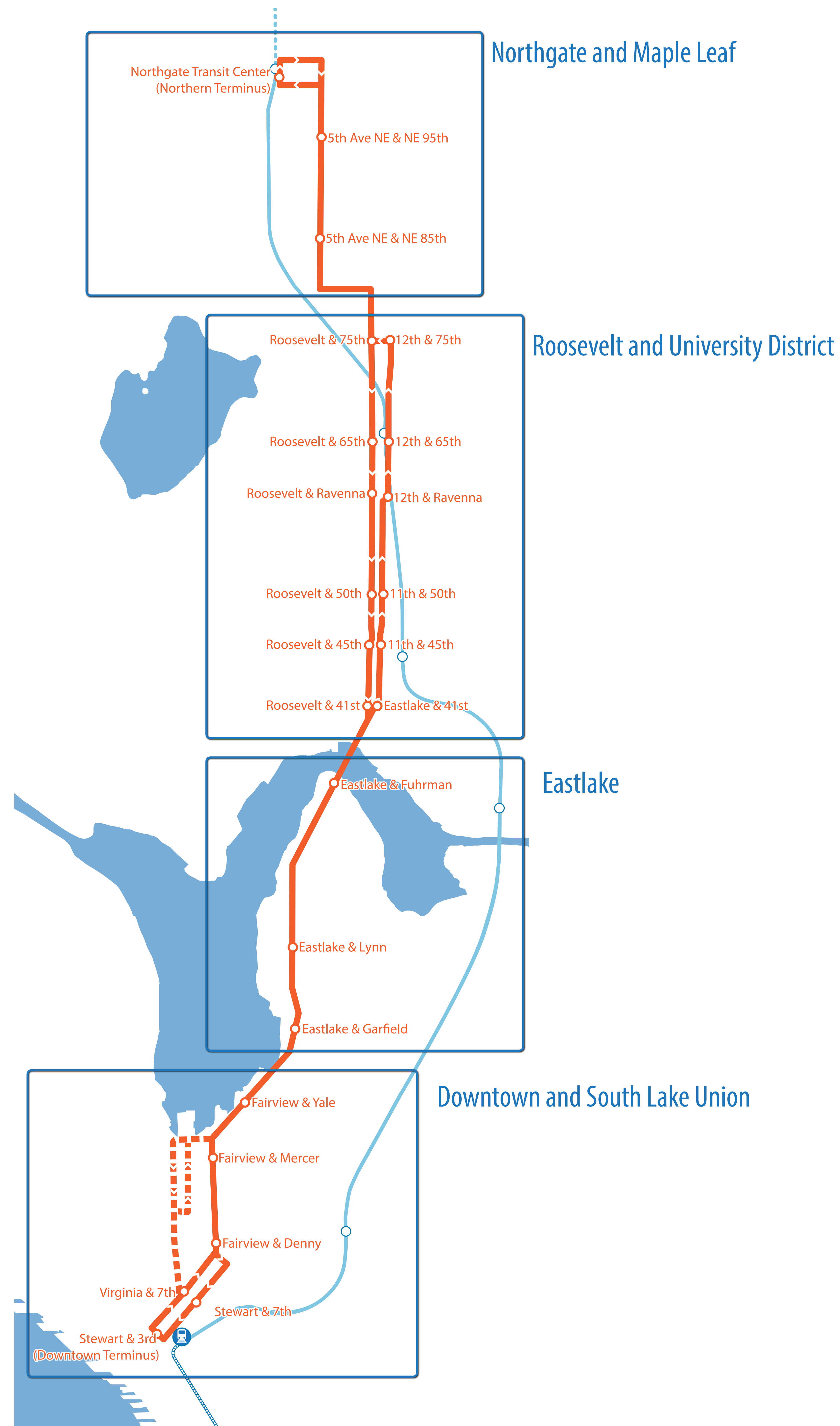


# Focus Areas

The high capacity transit corridor has been segmented into four geographic focus areas:

- Northgate and Maple Leaf: Northgate Transit Center to NE 80th Street
- Roosevelt and University District: NE 80th Street to U Bridge
- Eastlake: U Bridge to Fairview Avenue Bridge
- Downtown and South Lake Union: Fairview Avenue Bridge to Westlake Station

There is a kiosk for each focus area with preliminary station locations, layouts, and additional detail on various right-of-way allocation options.



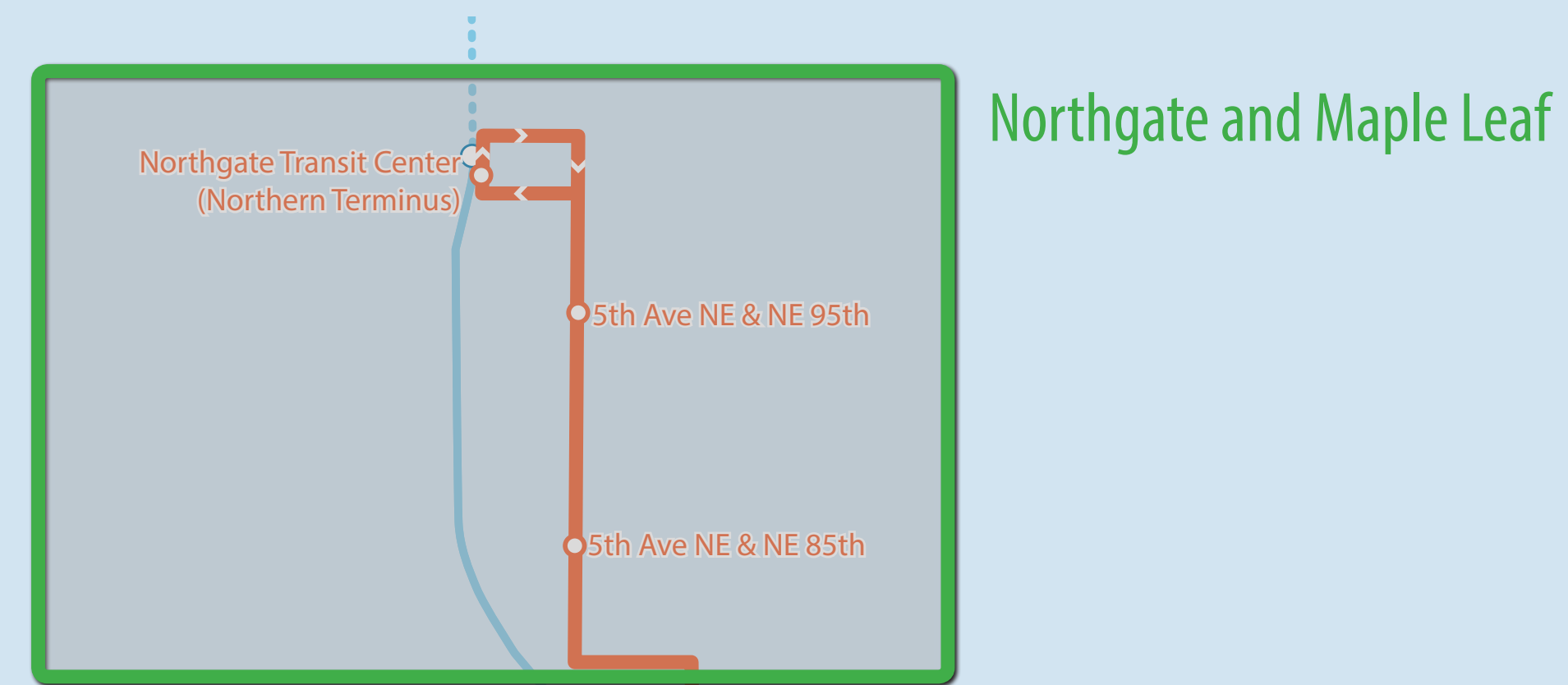
# Northgate and Maple Leaf: Station Concepts



Northgate Transit Center Station

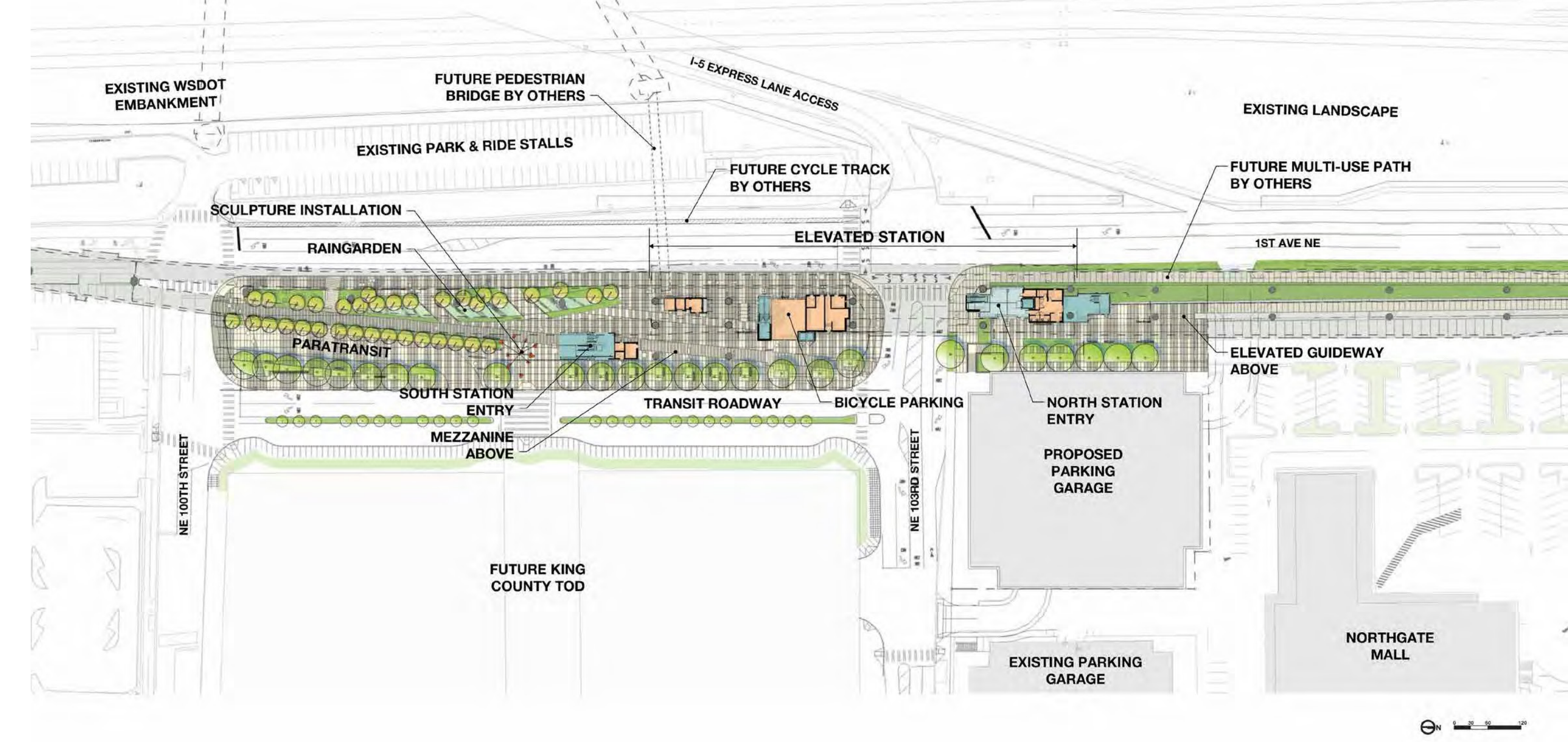


5th Ave NE & NE 85th St - Southbound Station

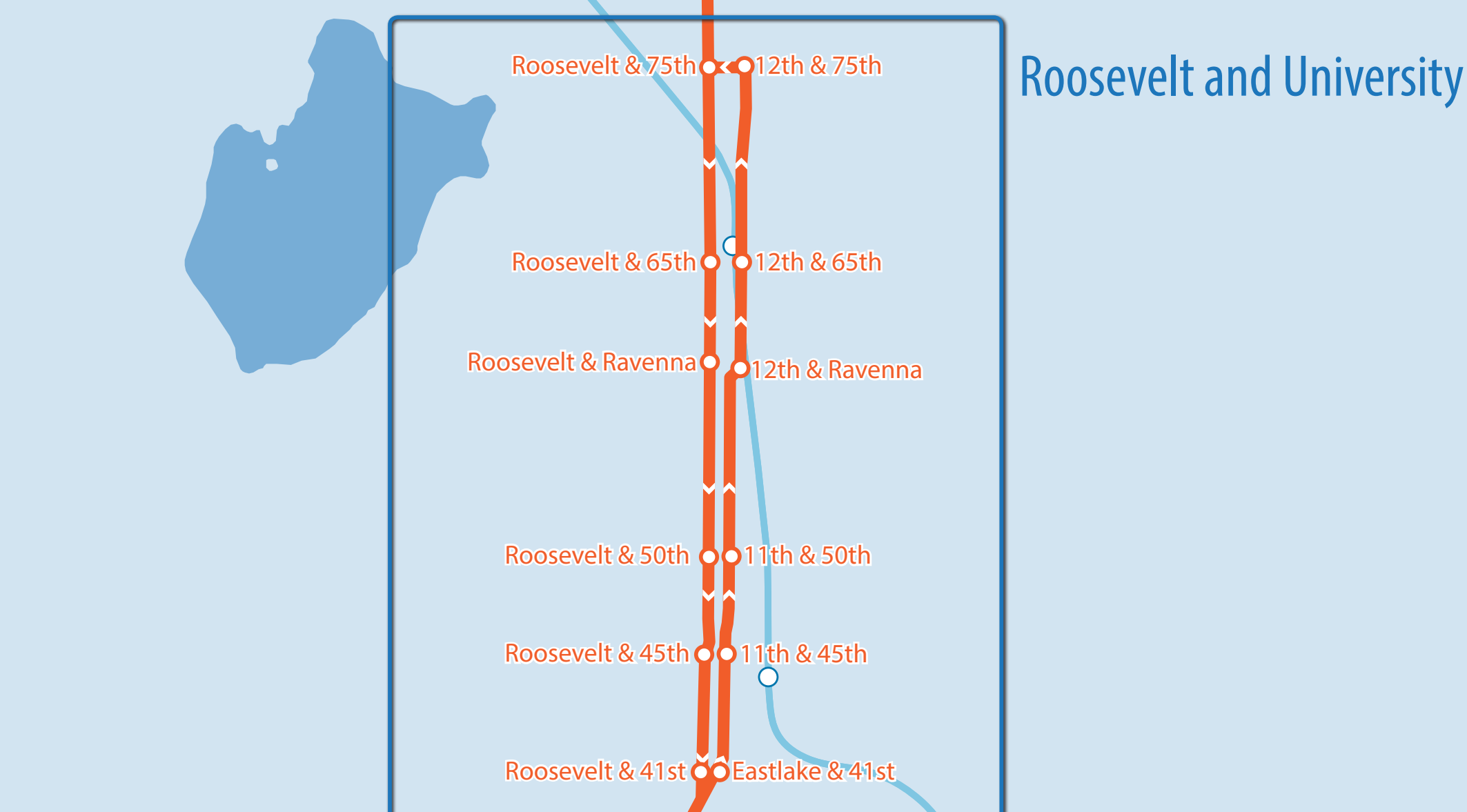
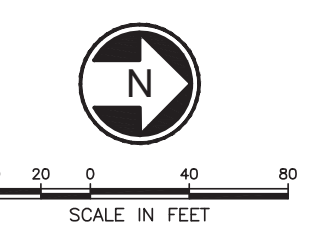
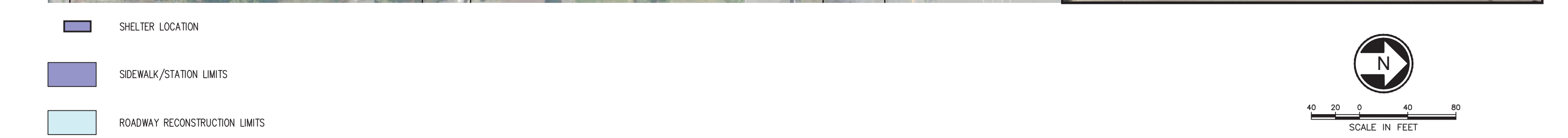
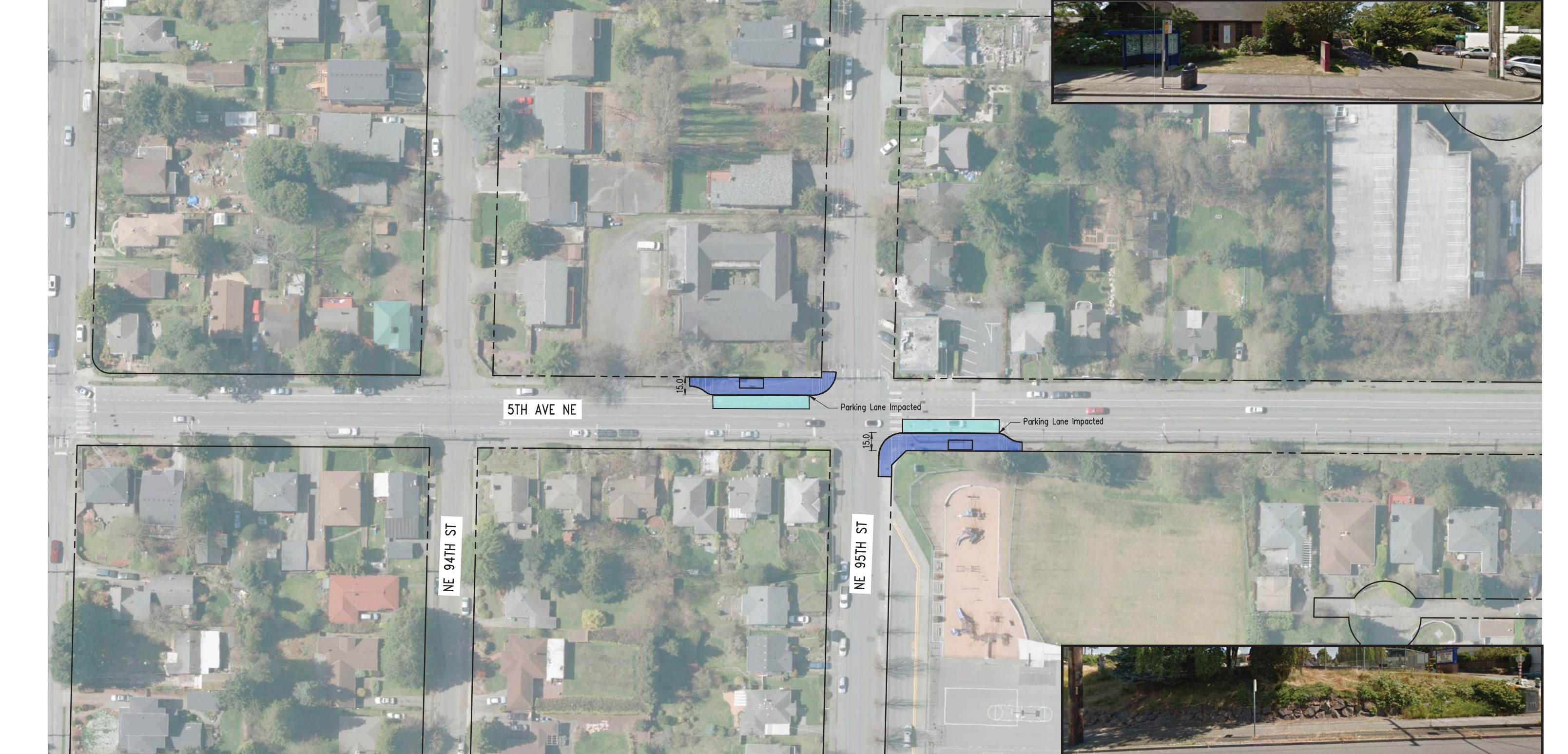


Northgate and Maple Leaf

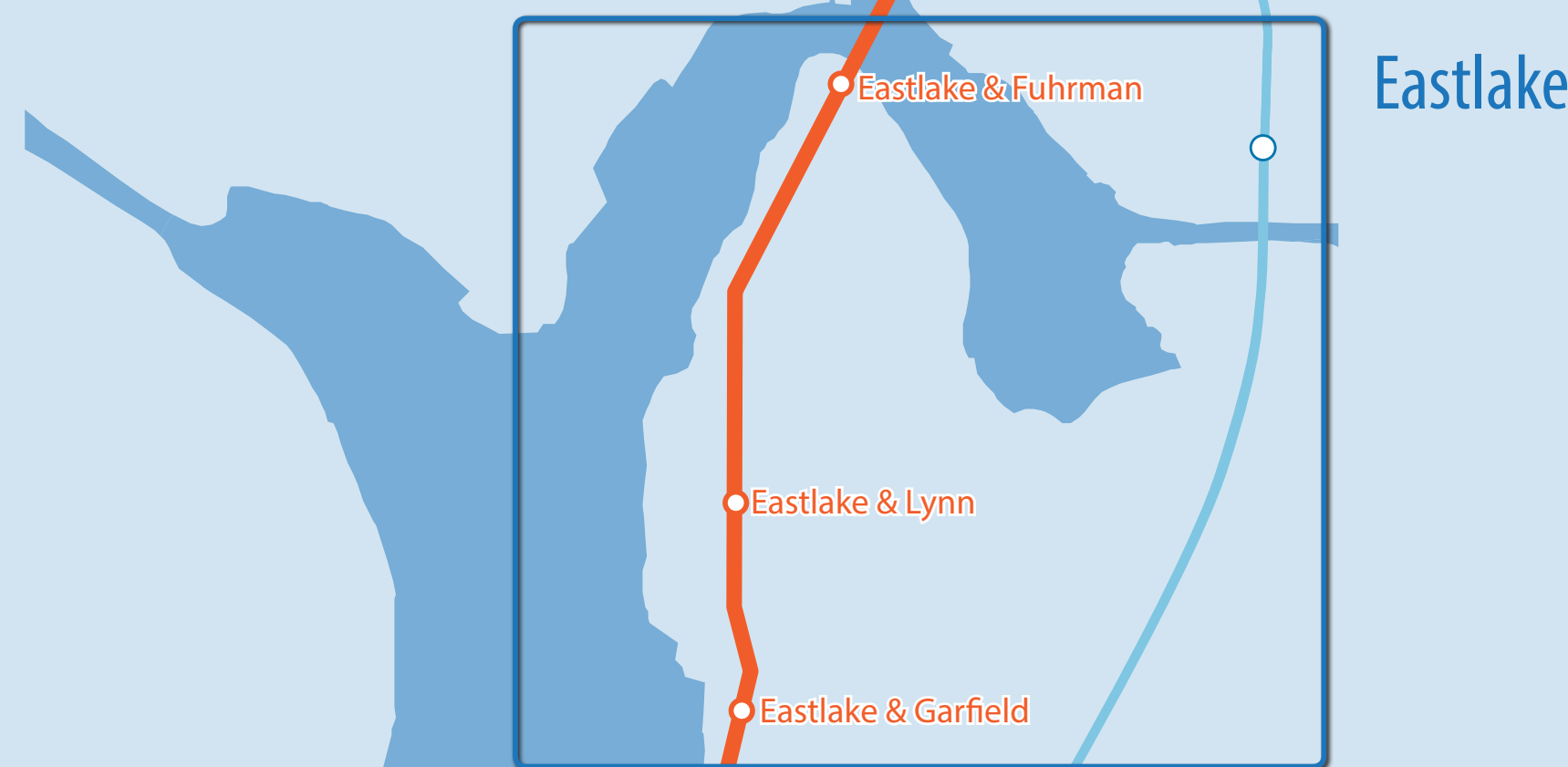
## Northgate Transit Center



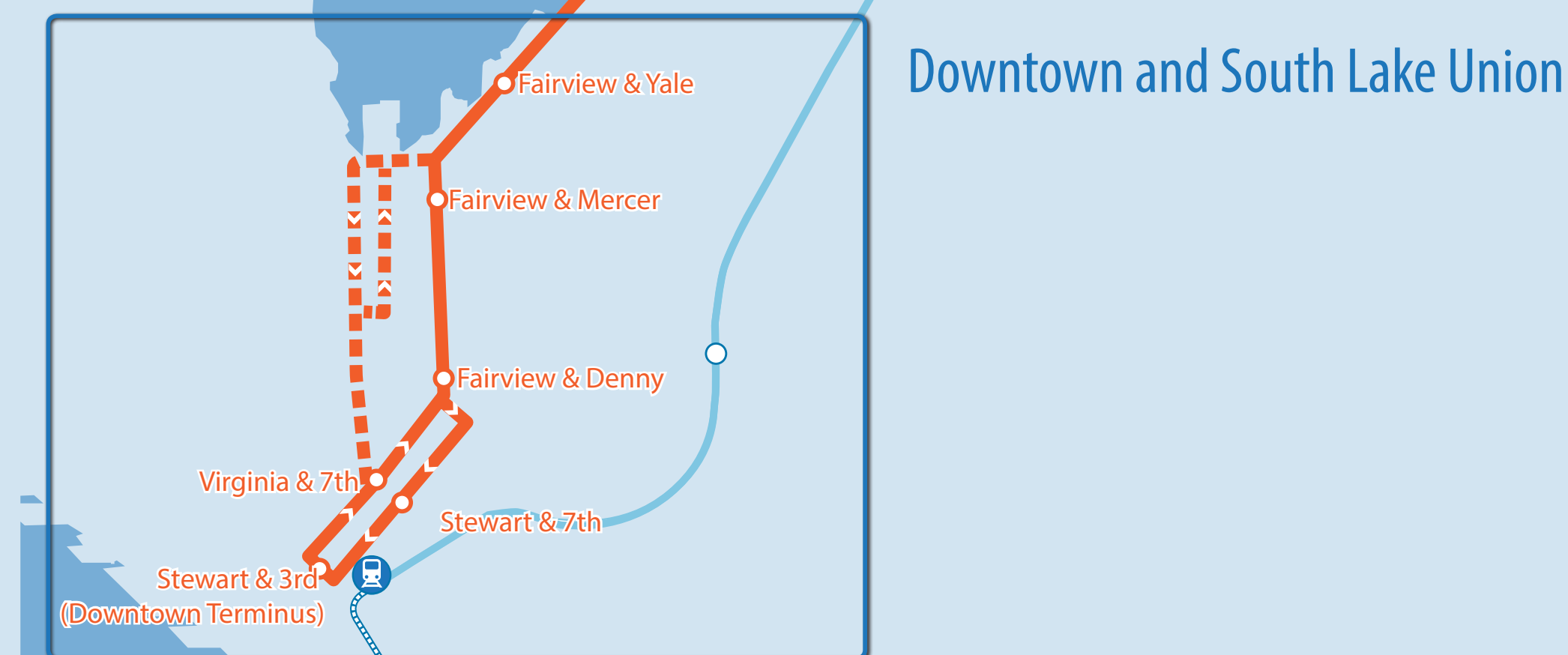
## 5th Ave NE & NE 95th St



Roosevelt and University

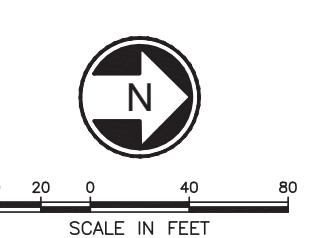
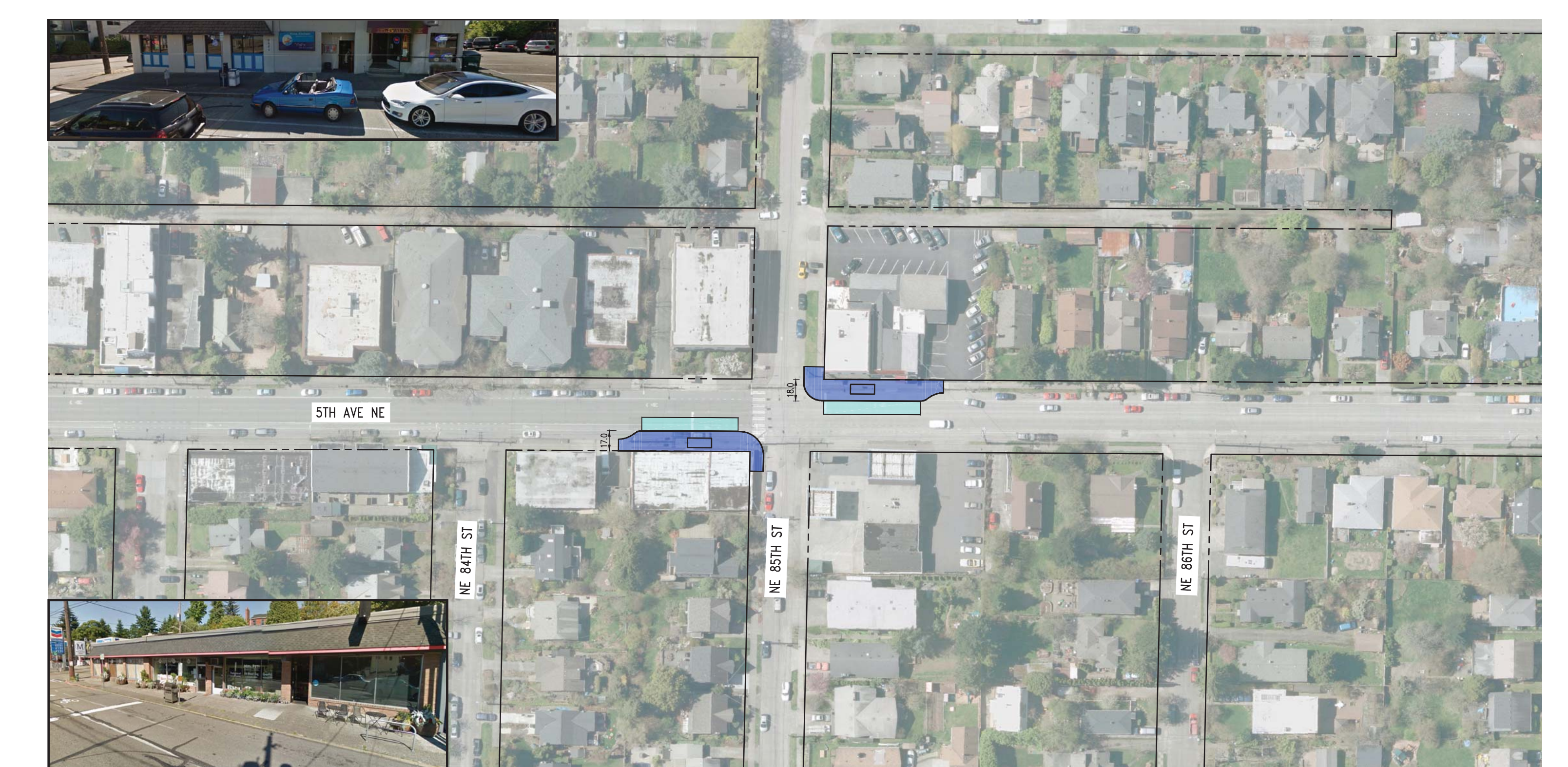


Eastlake



Downtown and South Lake Union

## 5th Ave NE & NE 85th St

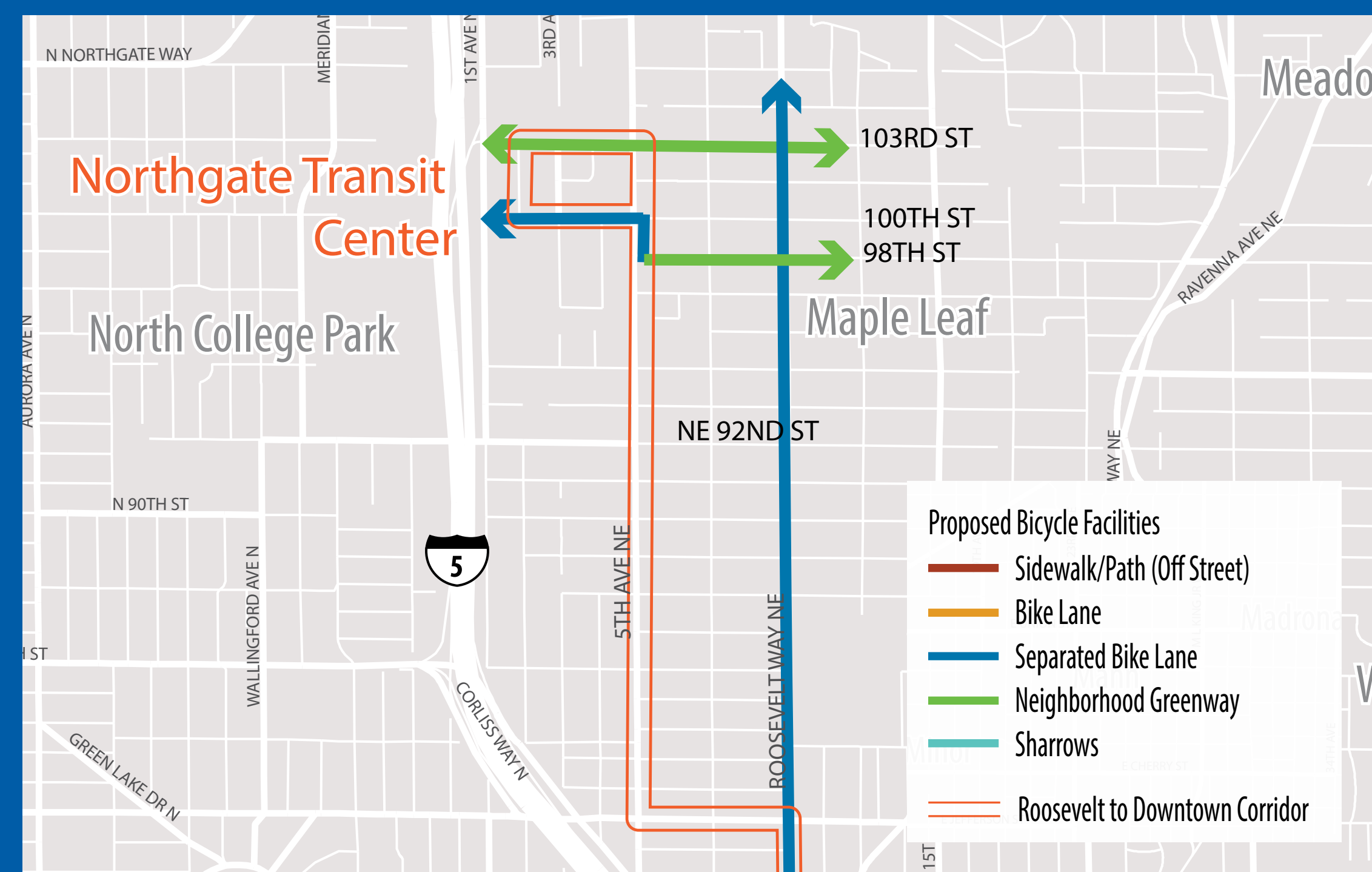


# Northgate and Maple Leaf

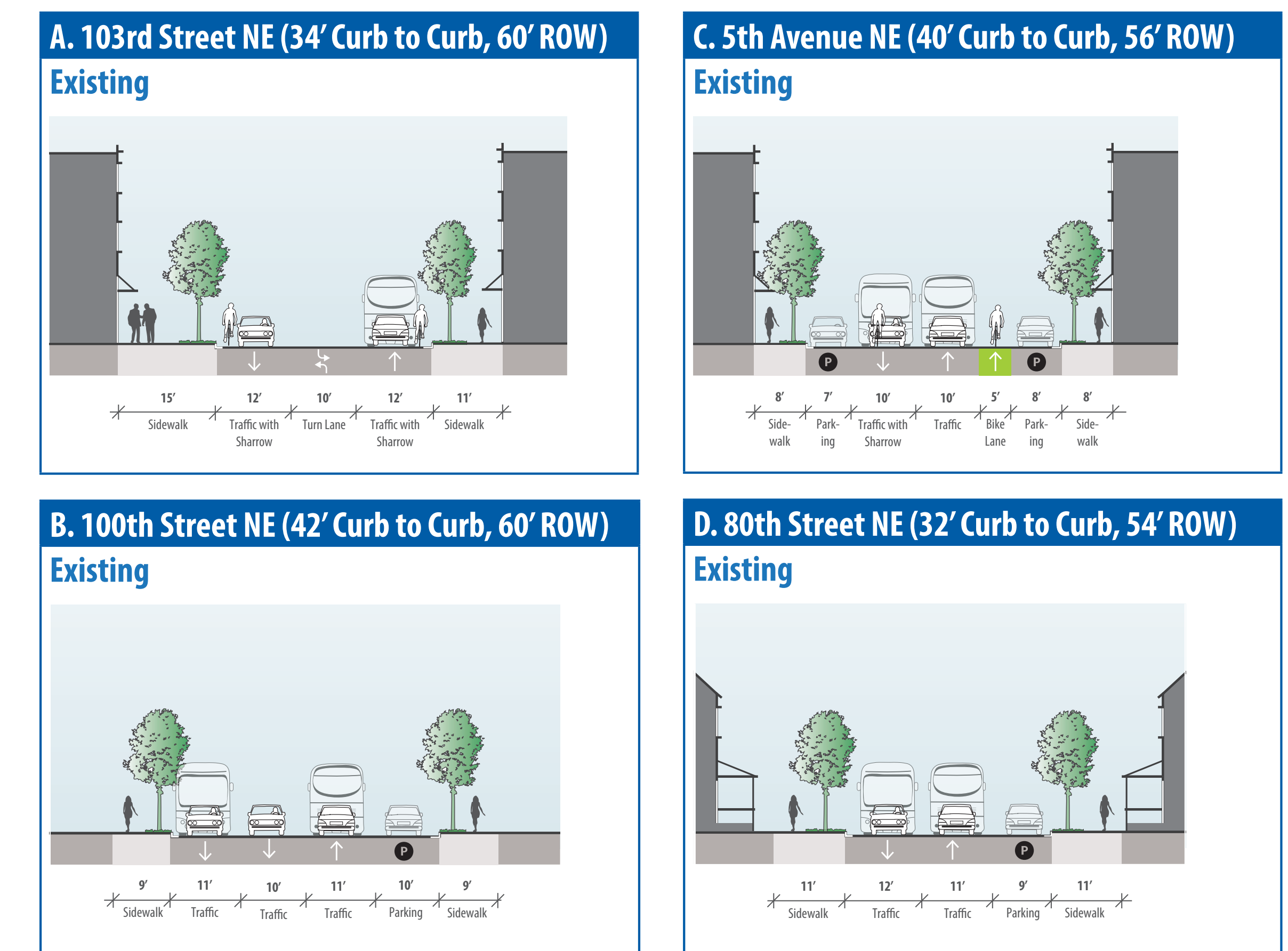
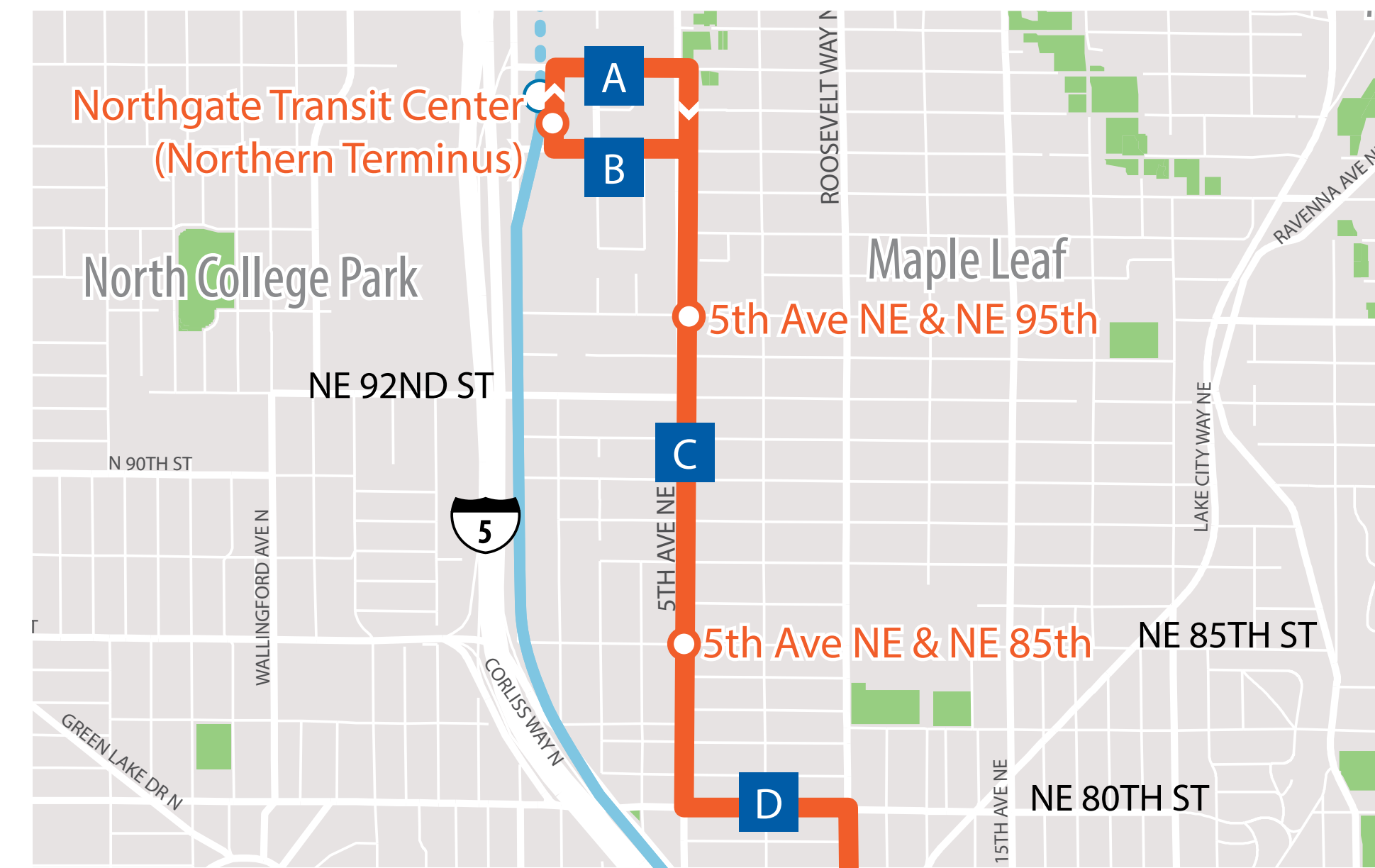
This portion of the corridor connects the Northgate and Maple Leaf neighborhoods, extending from Northgate Transit Center to NE 80th Street.

## Proposed Bicycle Facilities

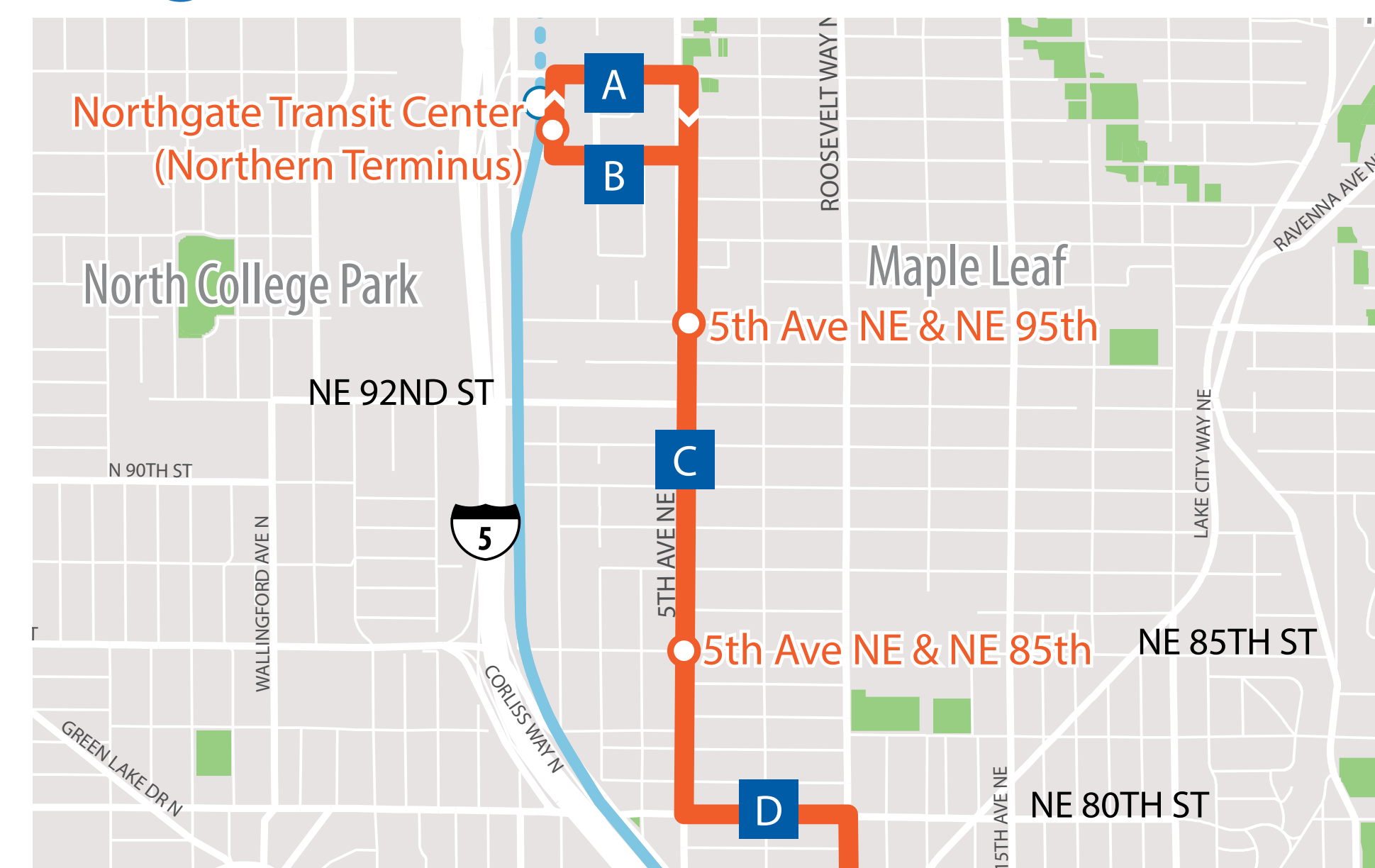
- Roosevelt Way NE: Protected bike lane (Bicycle Master Plan)
- NE 100th Street: Protect bike lane (Bicycle Master Plan)
- NE 103rd Street: Neighborhood greenway (Bicycle Master Plan)



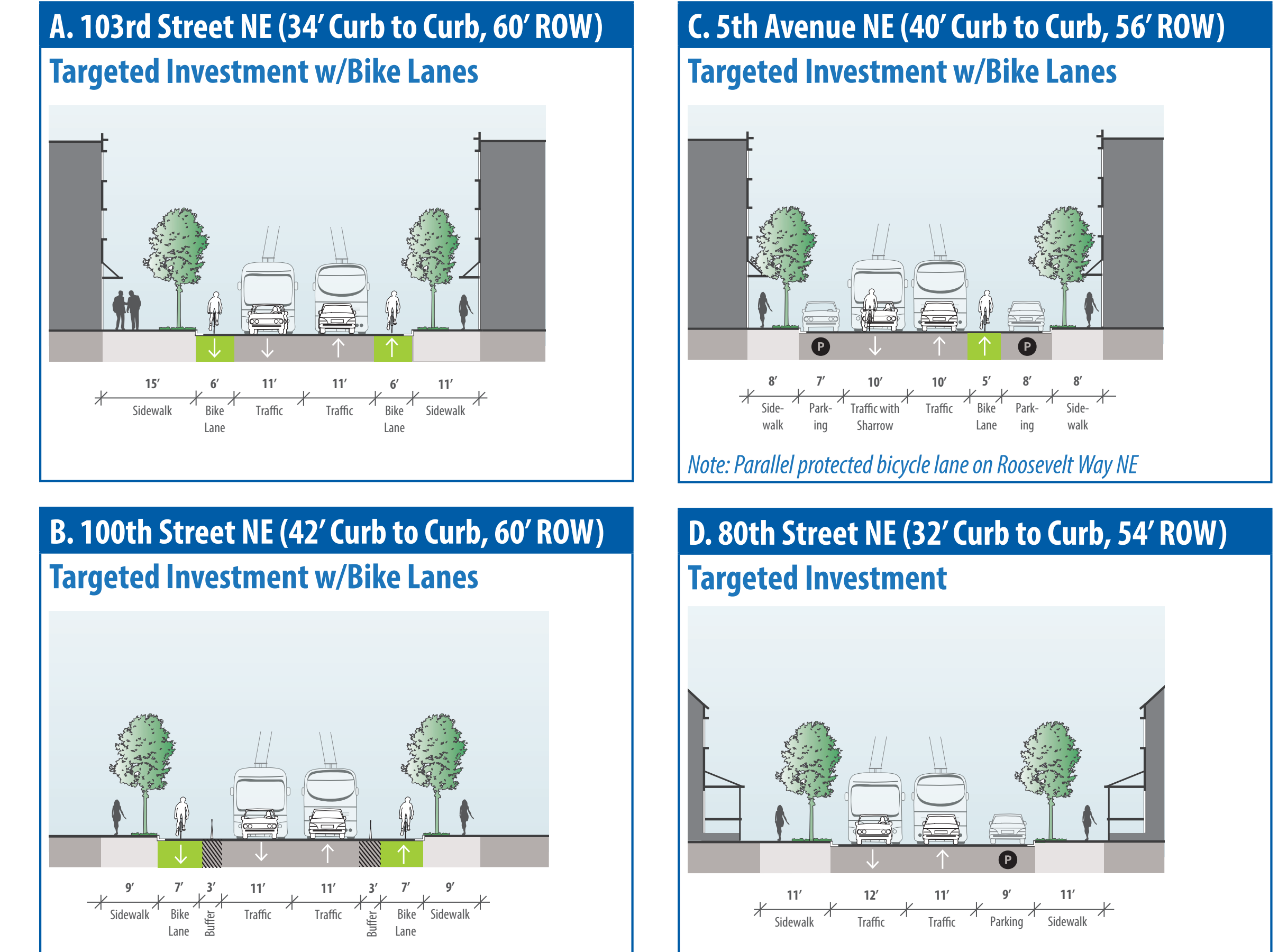
## RapidRide



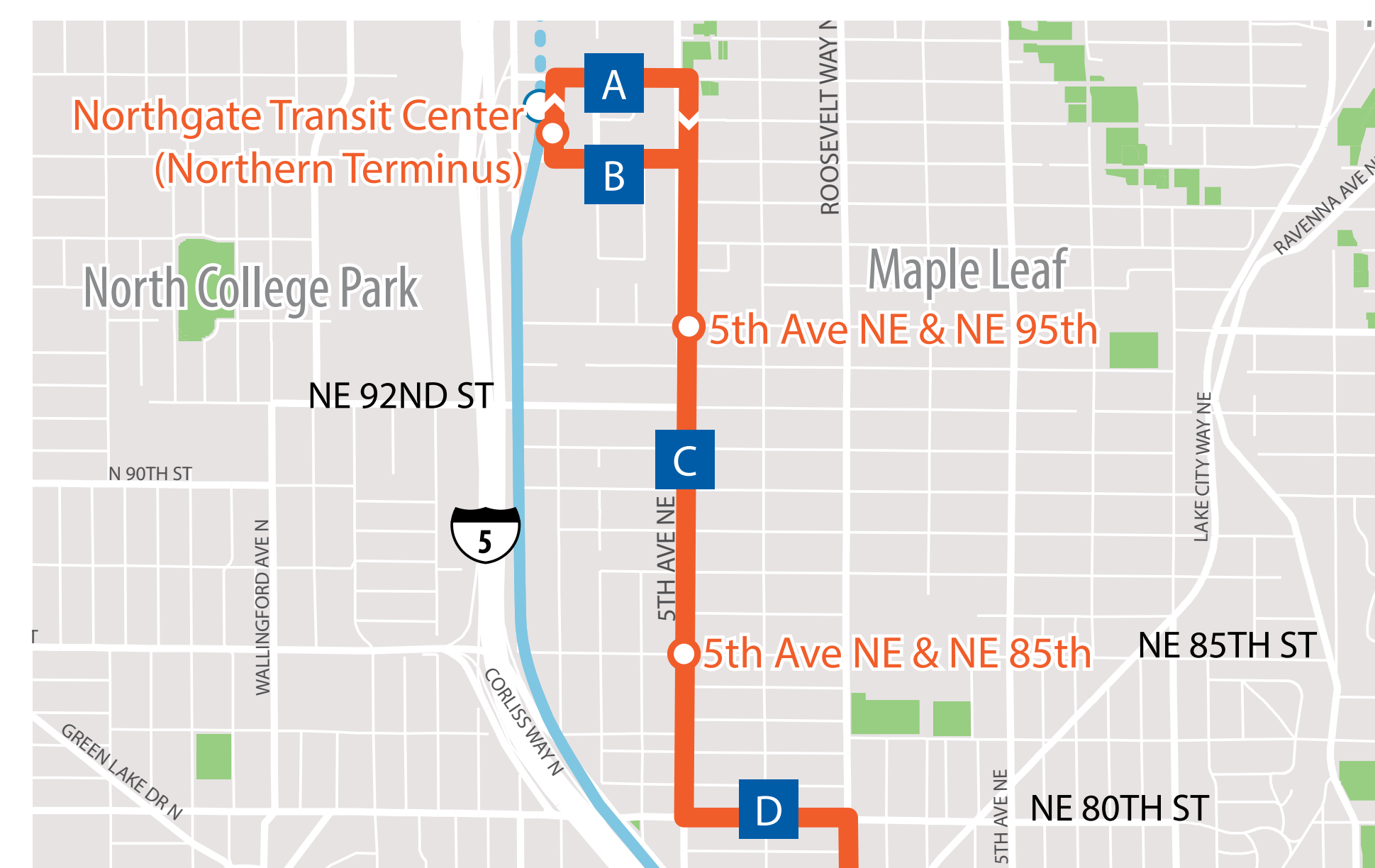
## Targeted Investment



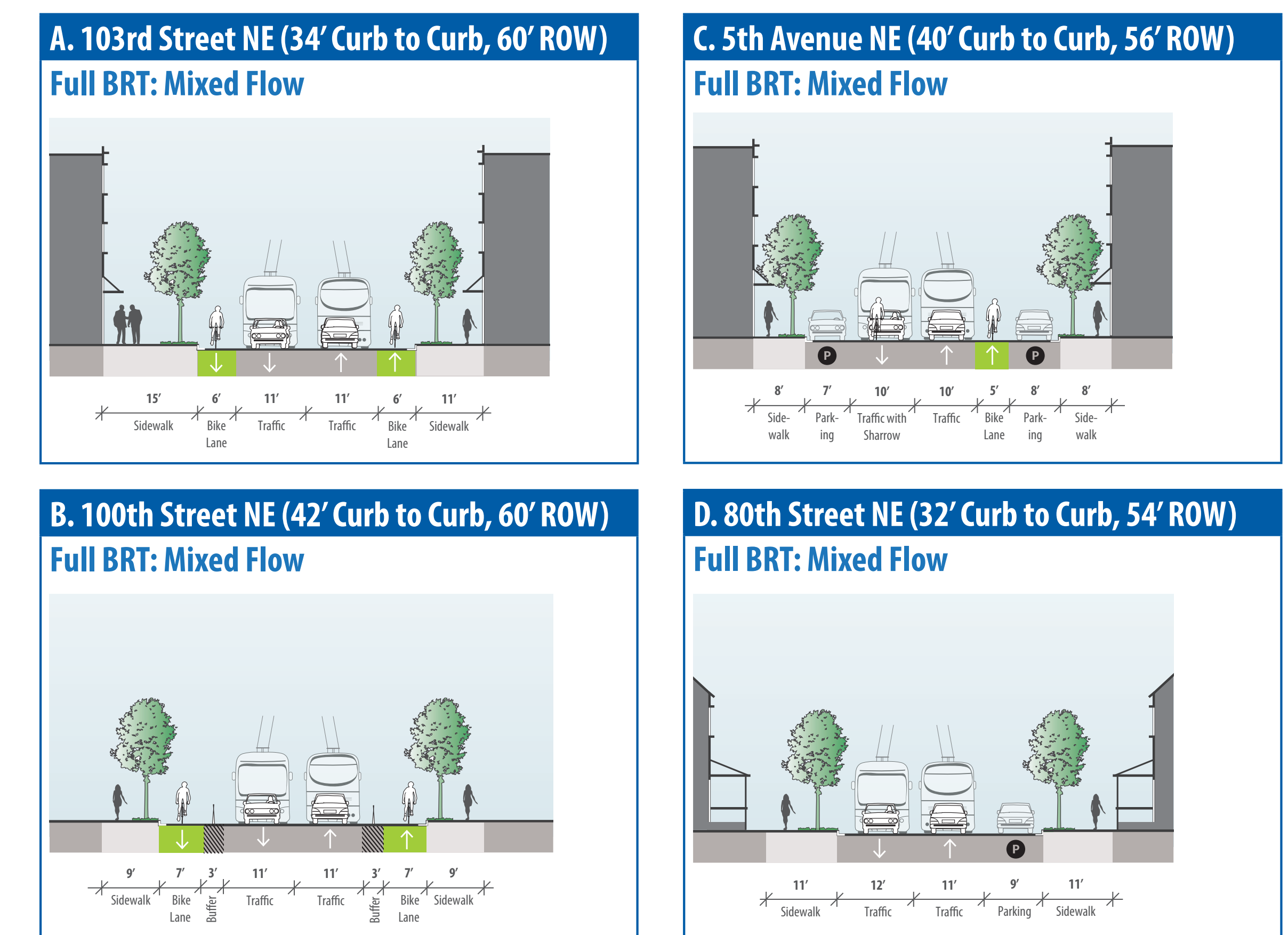
Note: There are no targeted transit investments in the Northgate and Maple Leaf area.



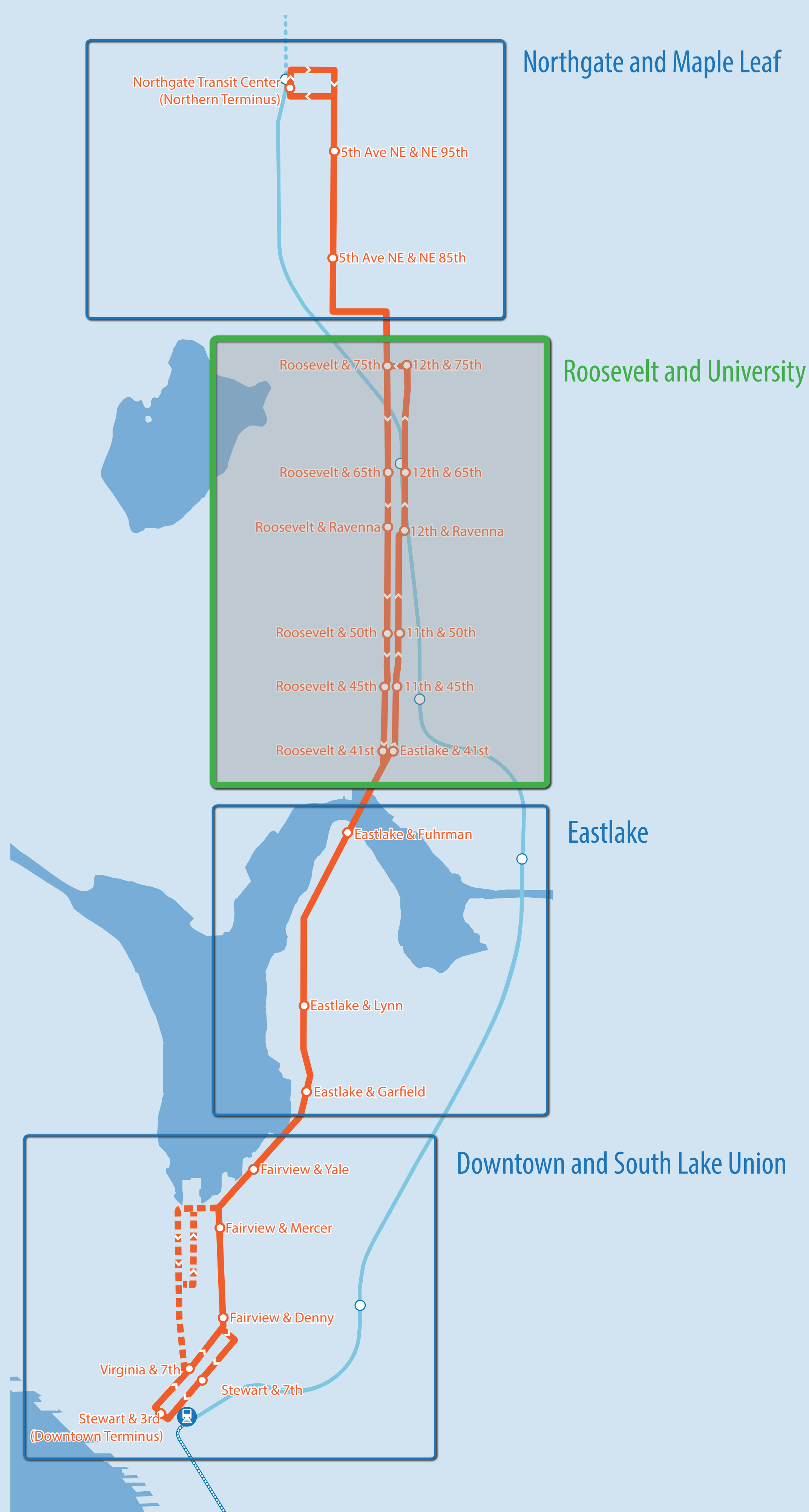
## Full BRT



Note: There are no targeted dedicated transit lanes in the Northgate and Maple Leaf area.



# Roosevelt and University: Station Concepts



Roosevelt Way & NE 45th St - Southbound Station



11th Ave NE & NE 45th St - Southbound Station

## Roosevelt Way & NE 75th St/12th Ave NE & NE 75th St



## Roosevelt Way & NE 65th St/12th Ave NE & NE 65th St



## Roosevelt Way & Ravenna/12th Ave NE & Ravenna Blvd

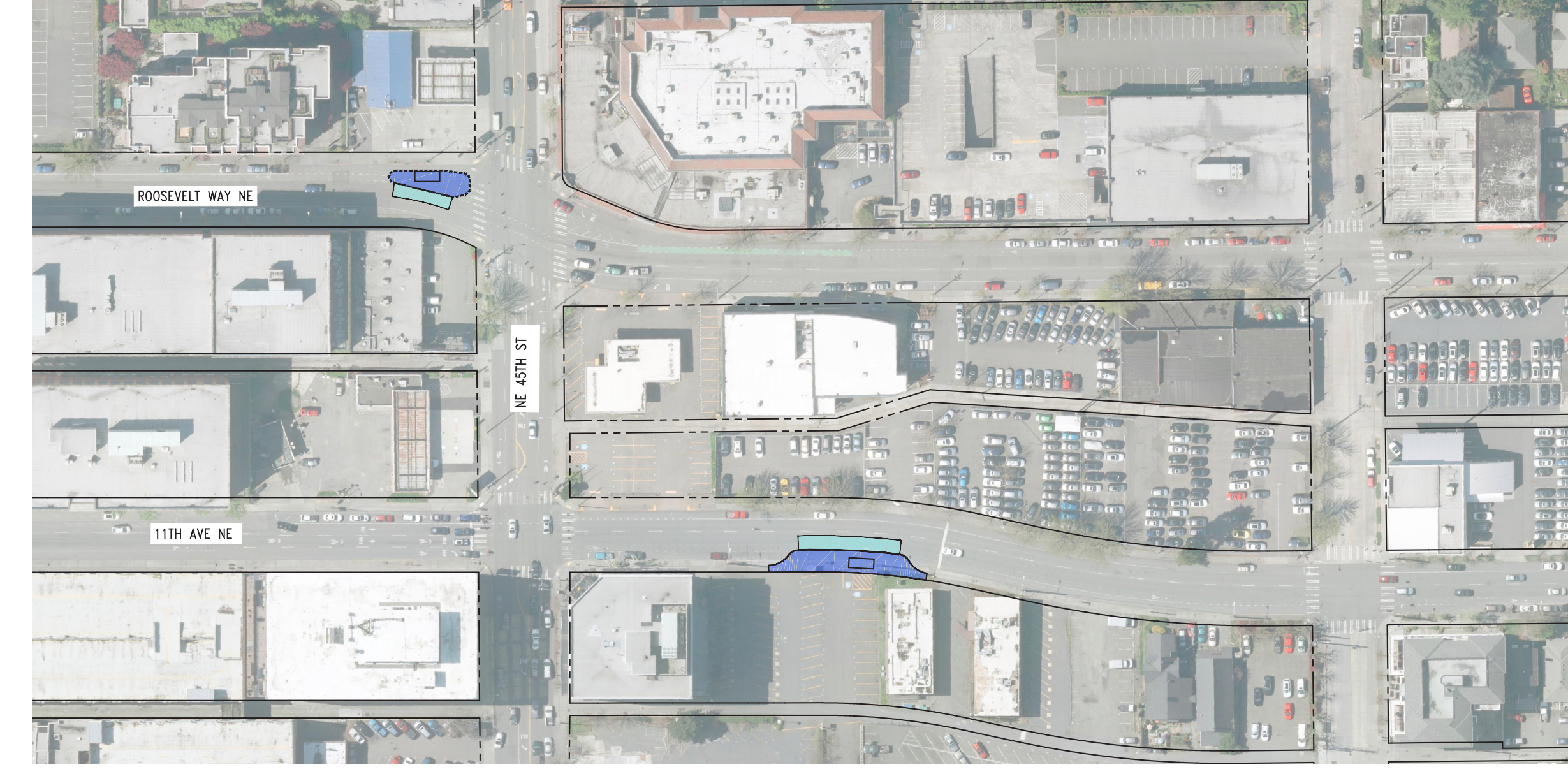


SHELTER LOCATION  
 STATION LIMITS  
 ROADWAY RECONSTRUCTION LIMITS

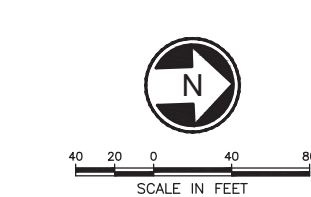
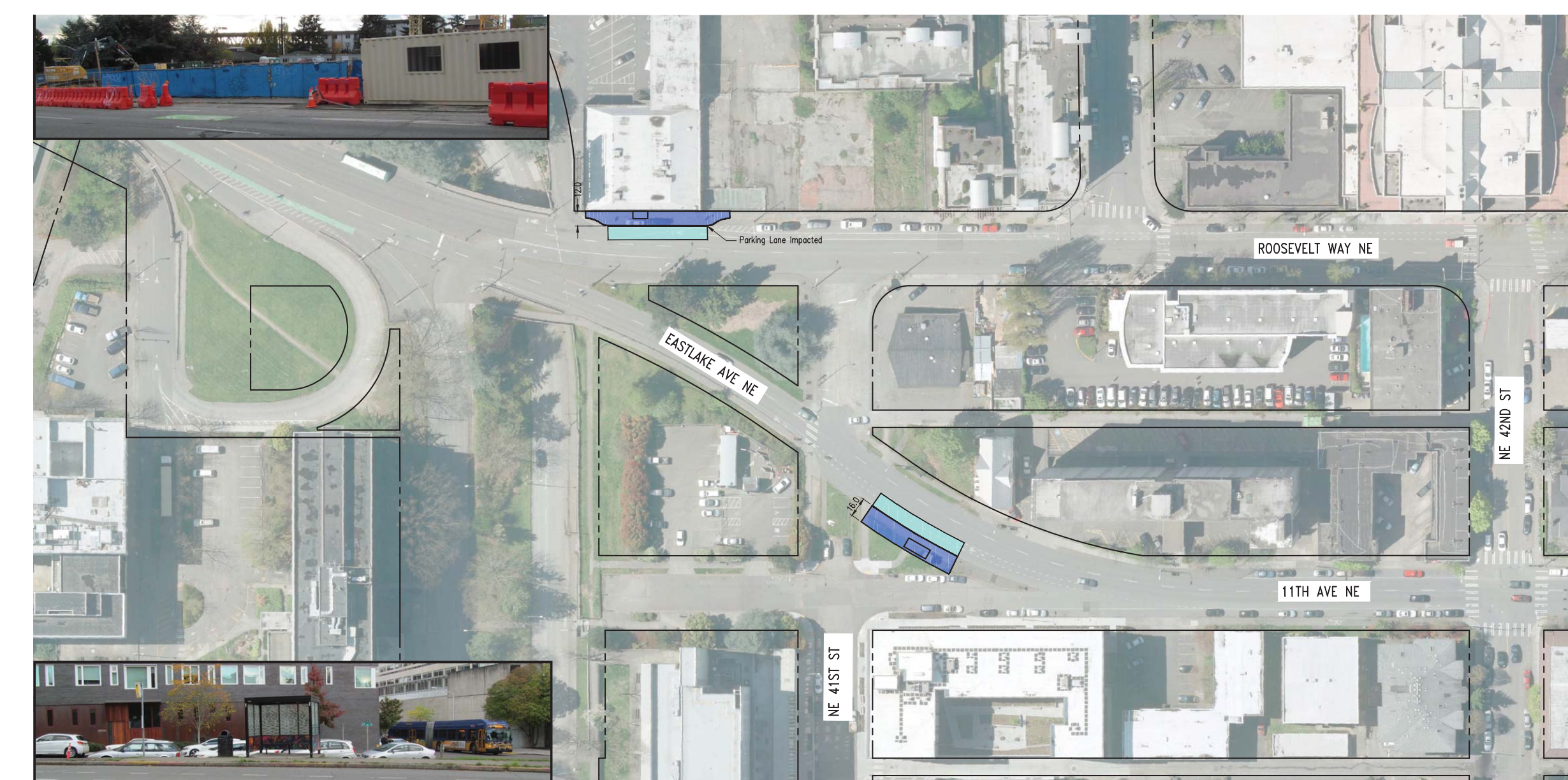
## Roosevelt Way & NE 50th St/11th Ave NE & NE 50th St



## Roosevelt Way & NE 45th St/11th Ave NE & NE 45th St



## Roosevelt Way & NE 41st St/11th Ave NE & NE 41st St





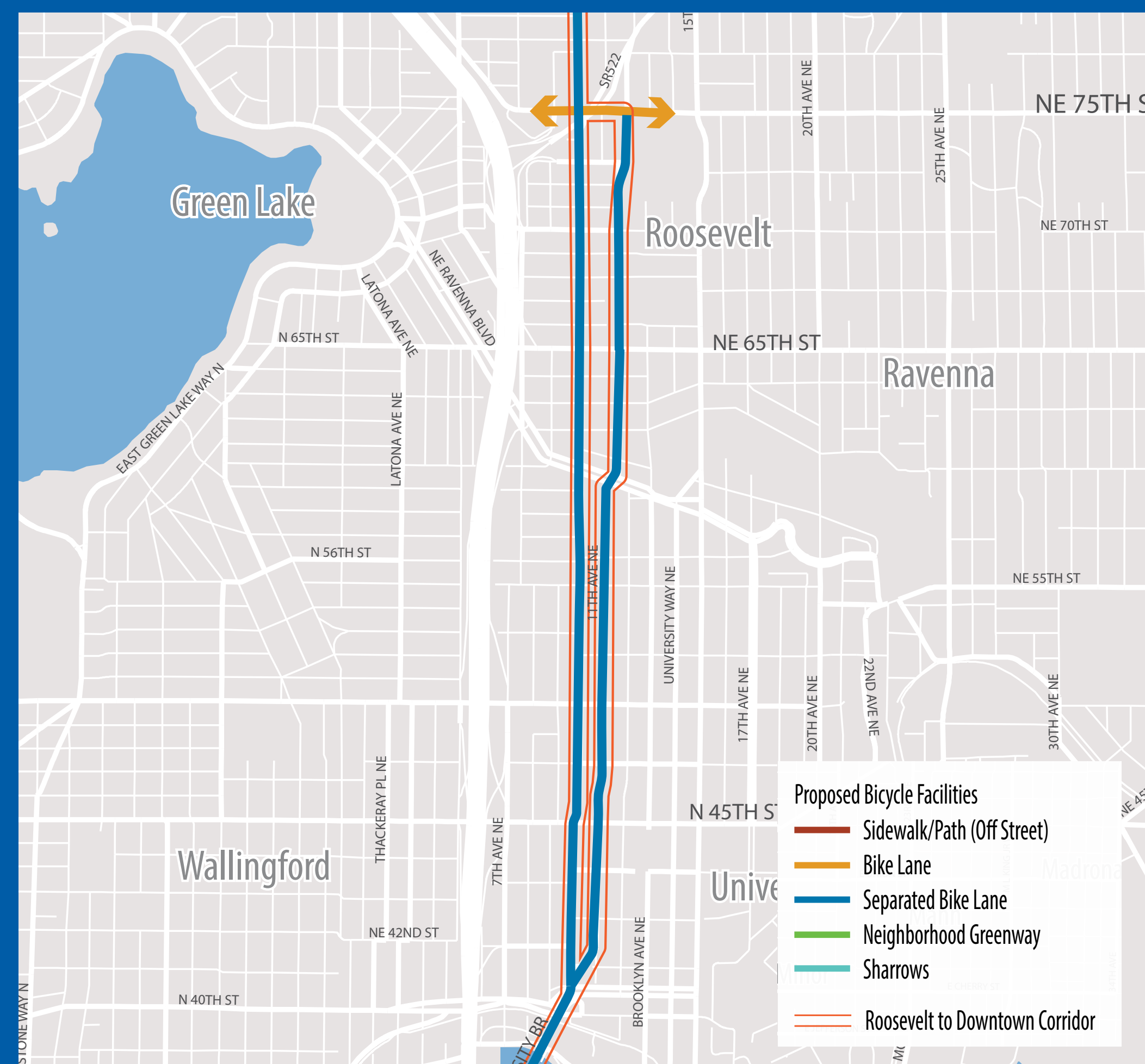
# Roosevelt and University

This portion of the corridor connects the Roosevelt and University District neighborhoods, extending from NE 80th Street to the U Bridge.

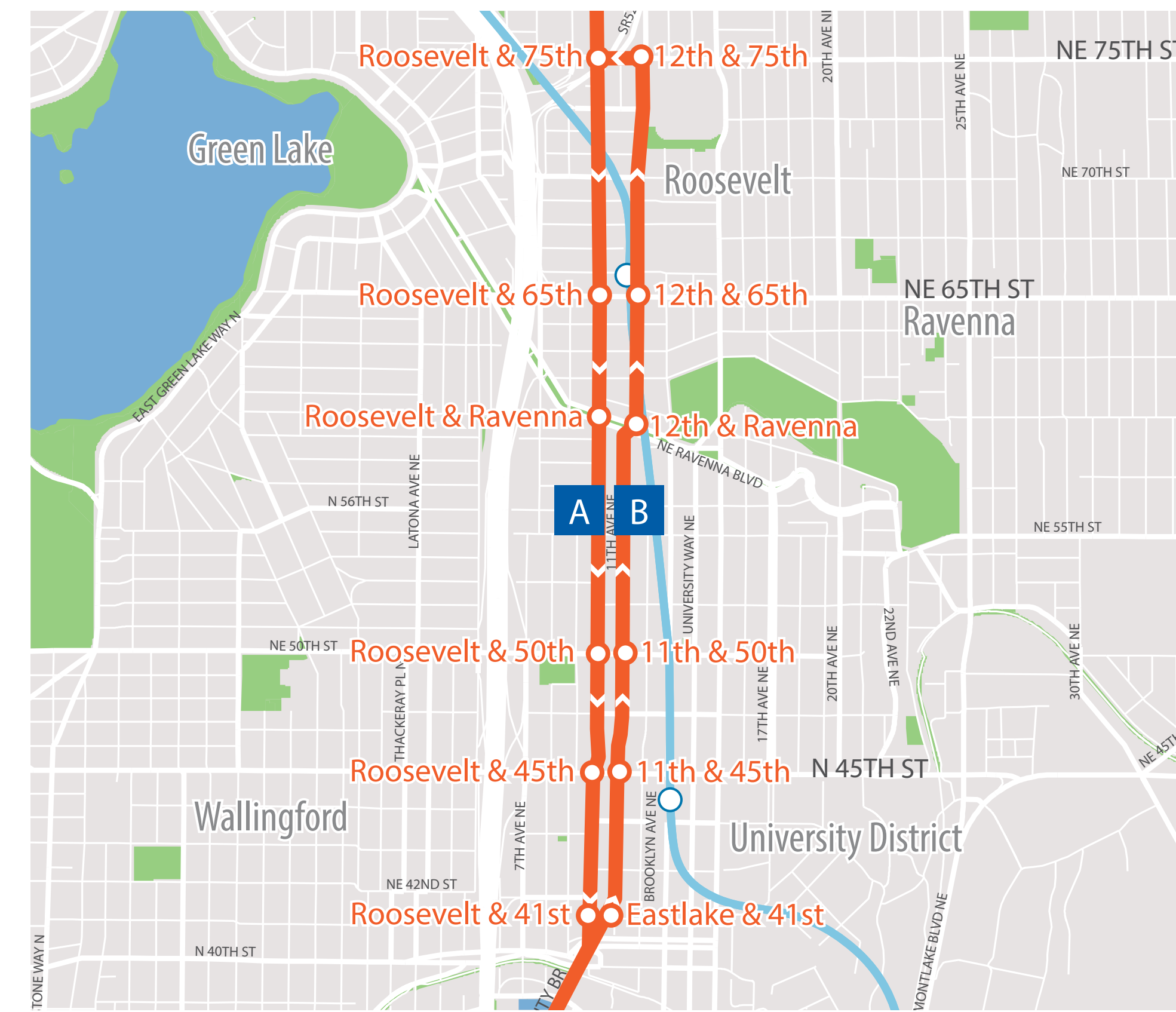
This portion of the corridor has high transit ridership and traffic issues, impacting transit speed and reliability. Roosevelt Way NE and 11th Avenue NE also have poor sidewalk conditions.

## Proposed Bicycle Facilities

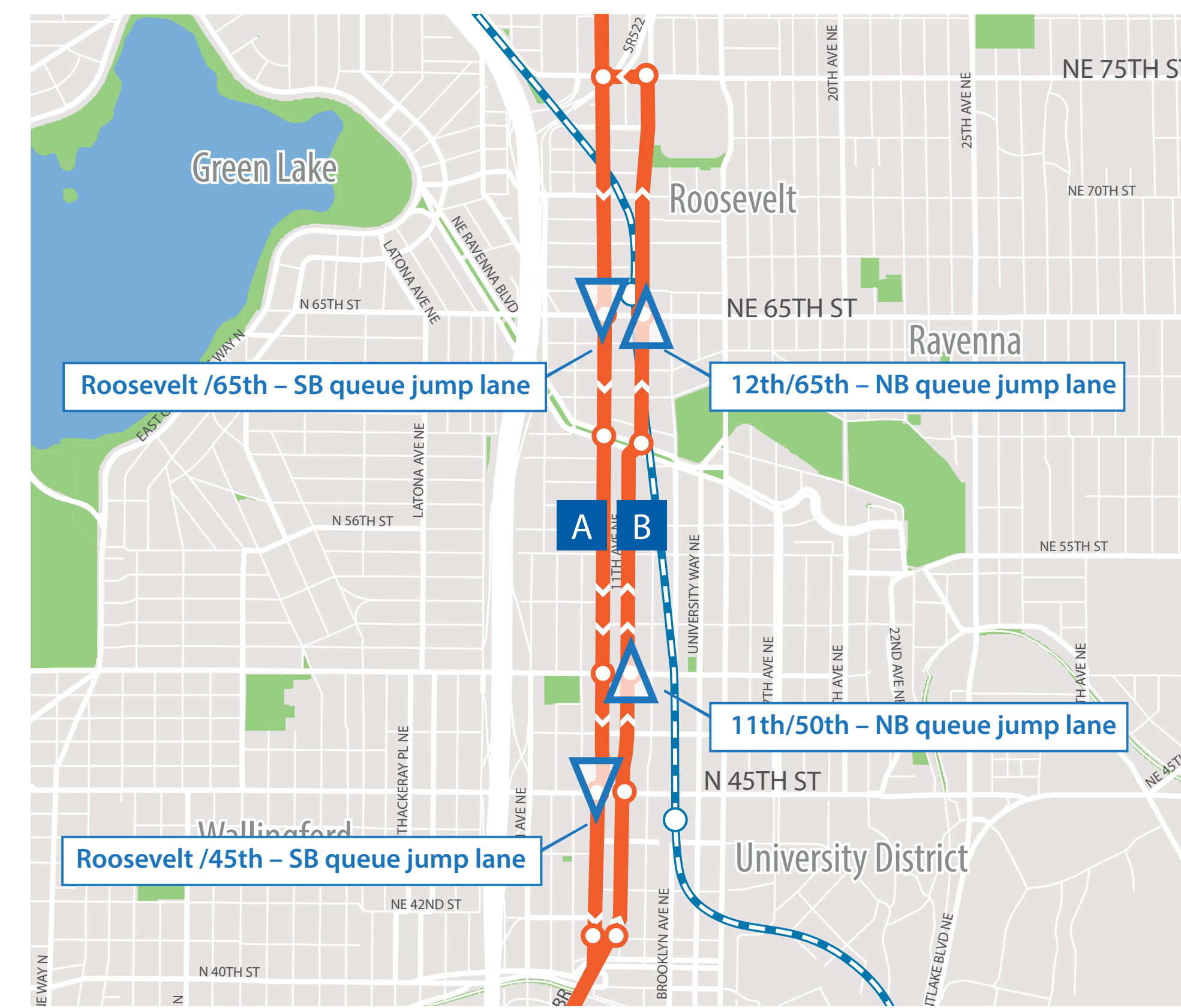
- Roosevelt Way NE: Protected bike lane (Bicycle Master Plan, construction 2016)
- 11th/12th Avenue NE: Protected bike lane (Bicycle Master Plan)
- NE 75th Street: Bike lane (Bicycle Master Plan, 2016)



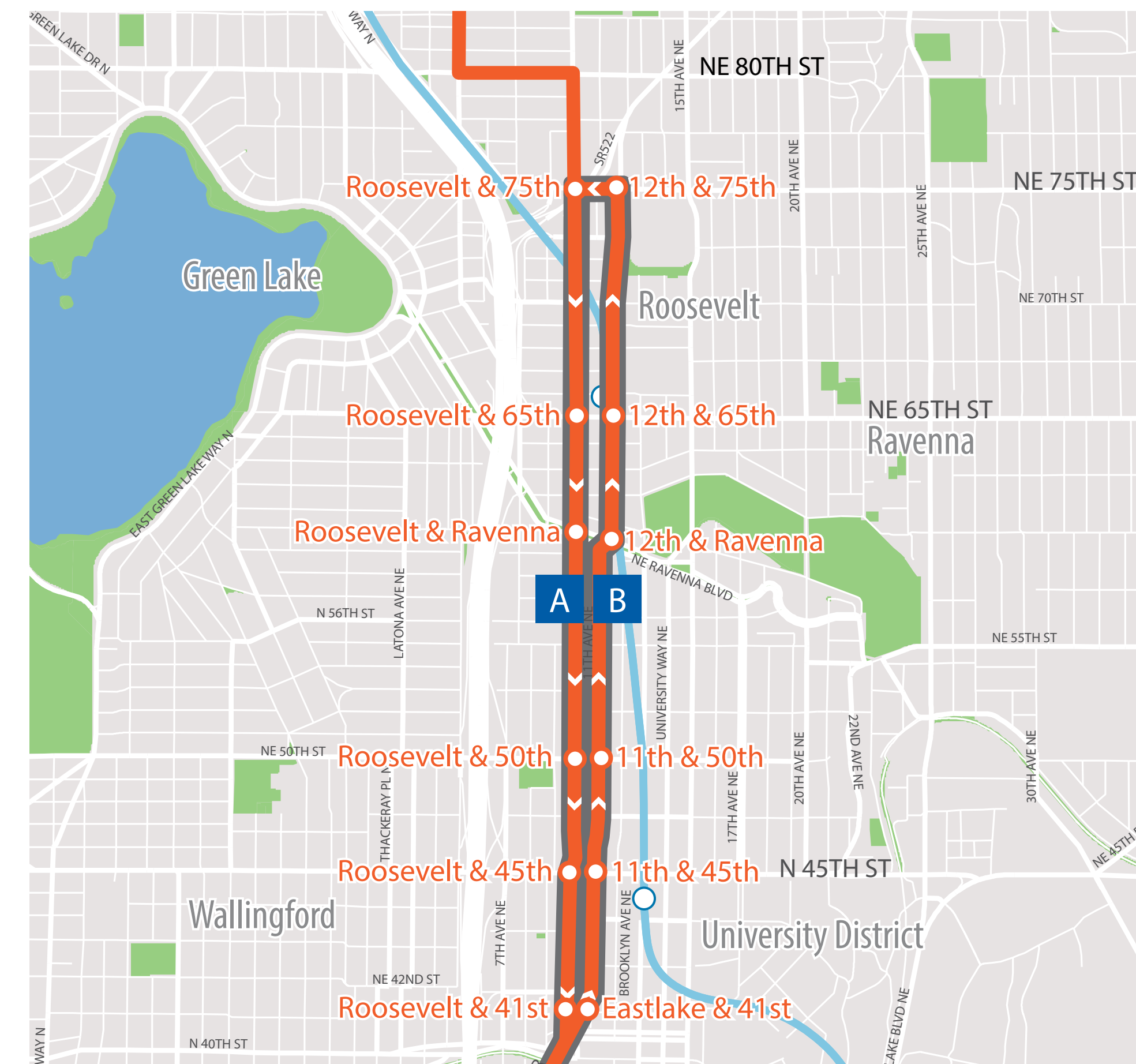
## RapidRide



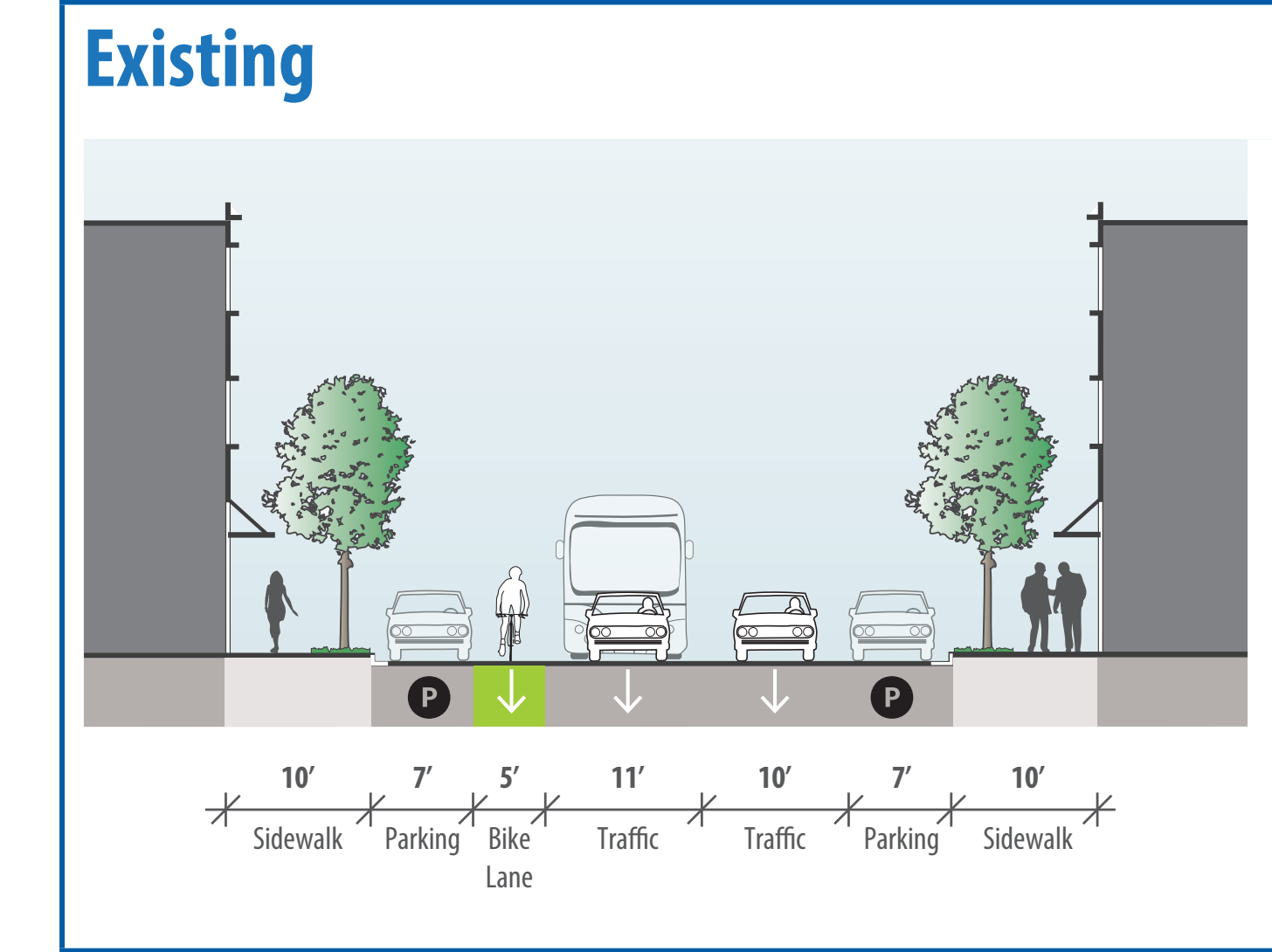
## Targeted Investment



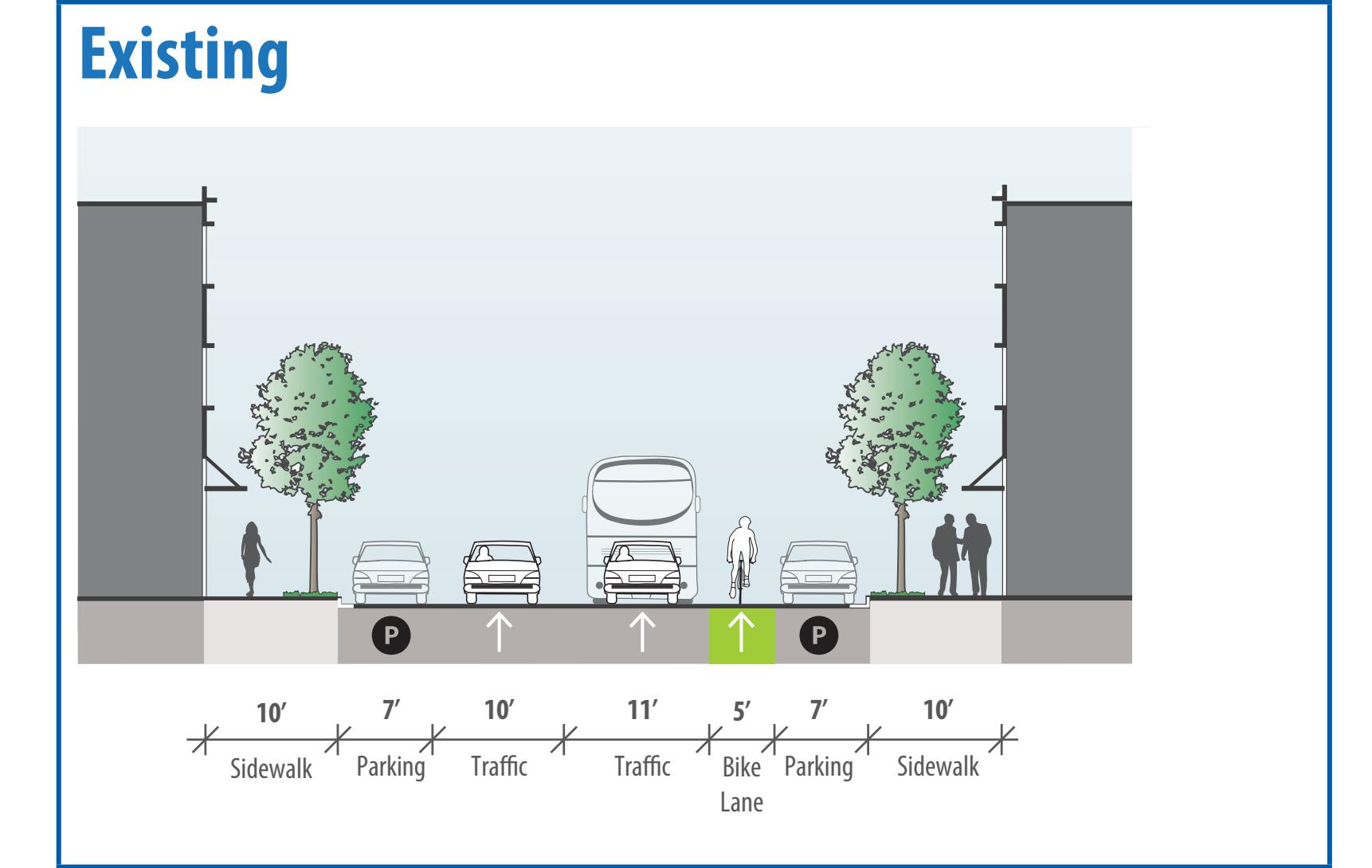
## Full BRT



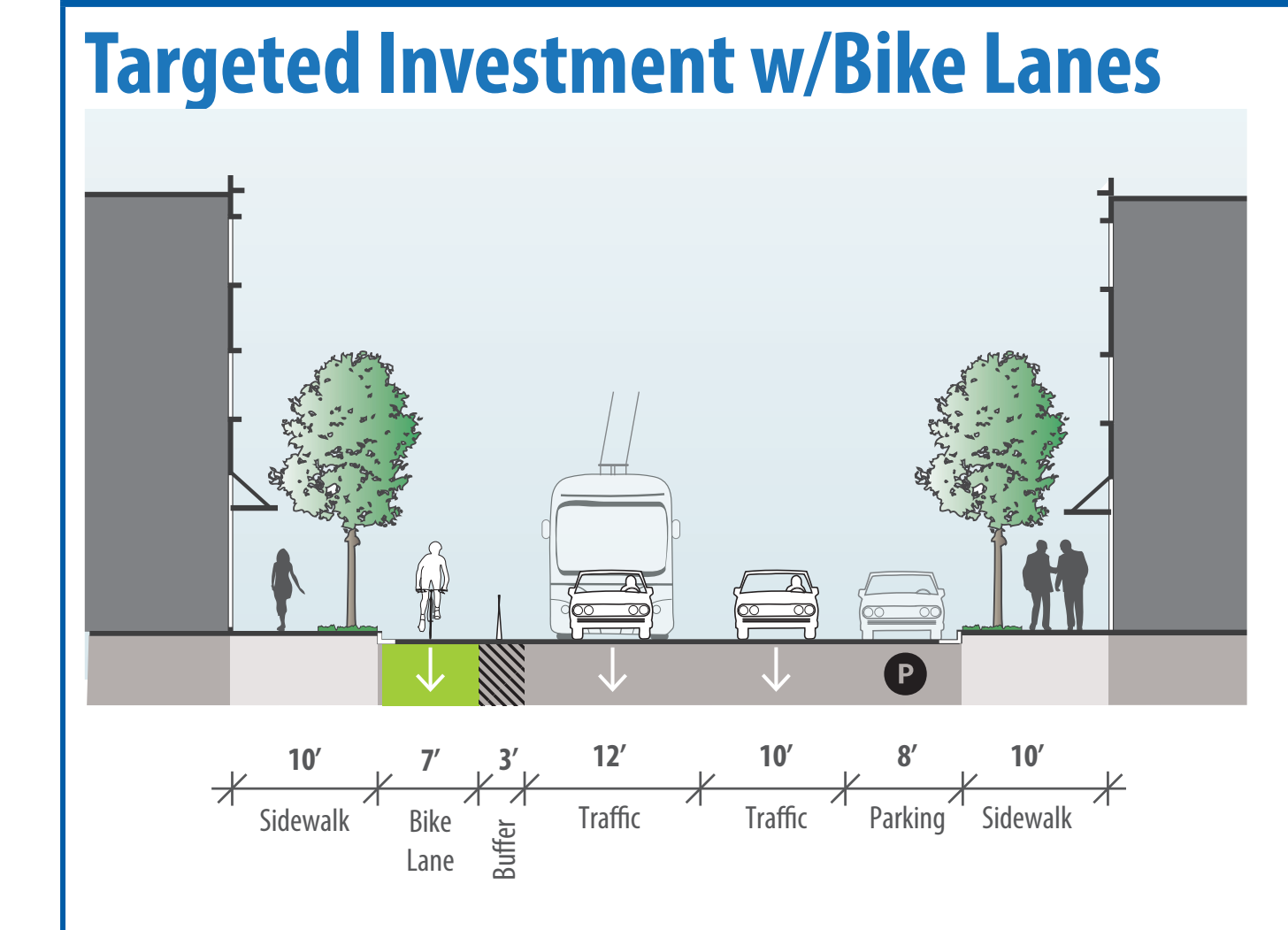
### A. Roosevelt Way NE (40' Curb to Curb, 60' ROW)



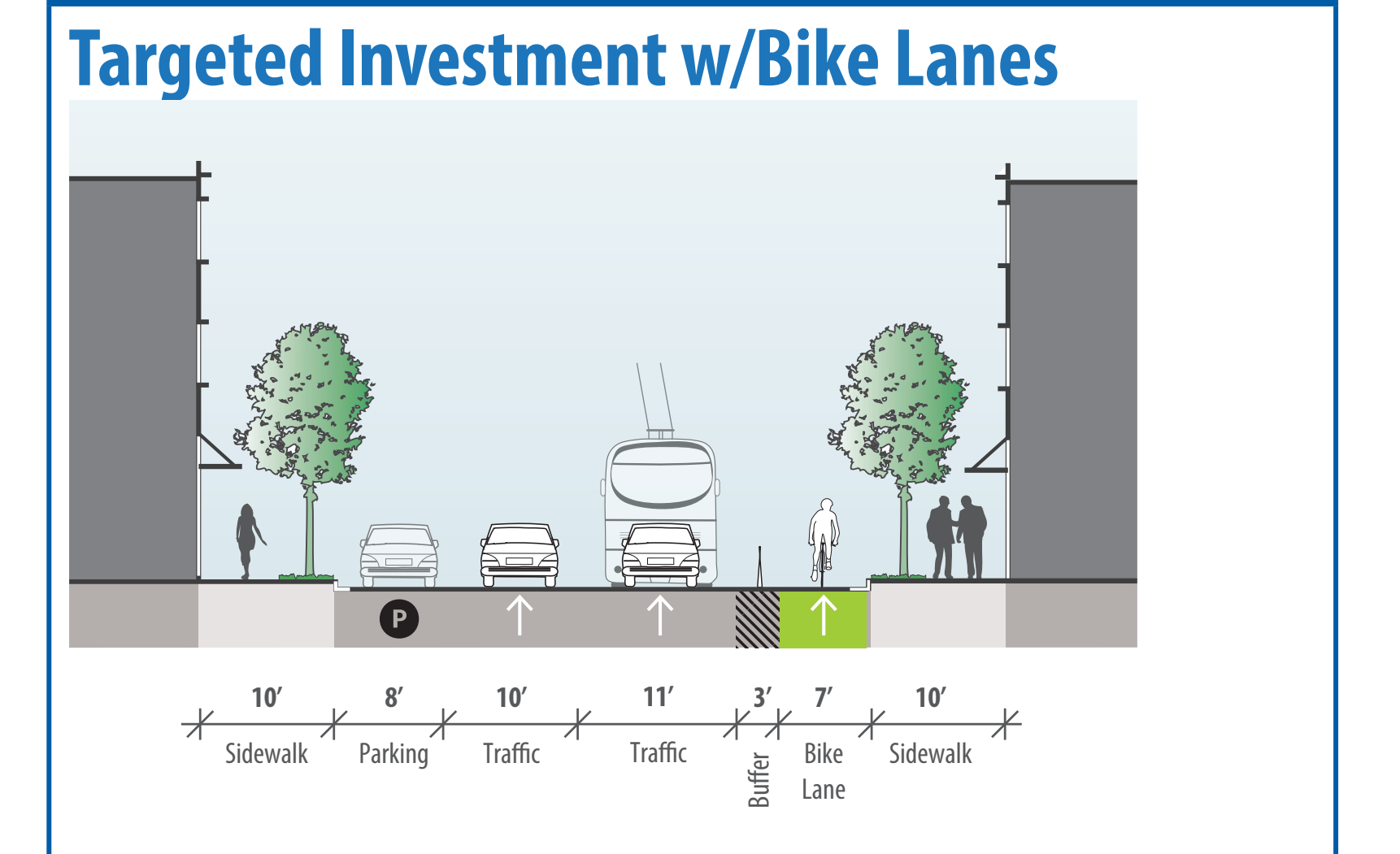
### B. 11th and 12th Avenue NE (40' Curb to Curb, 60' ROW)



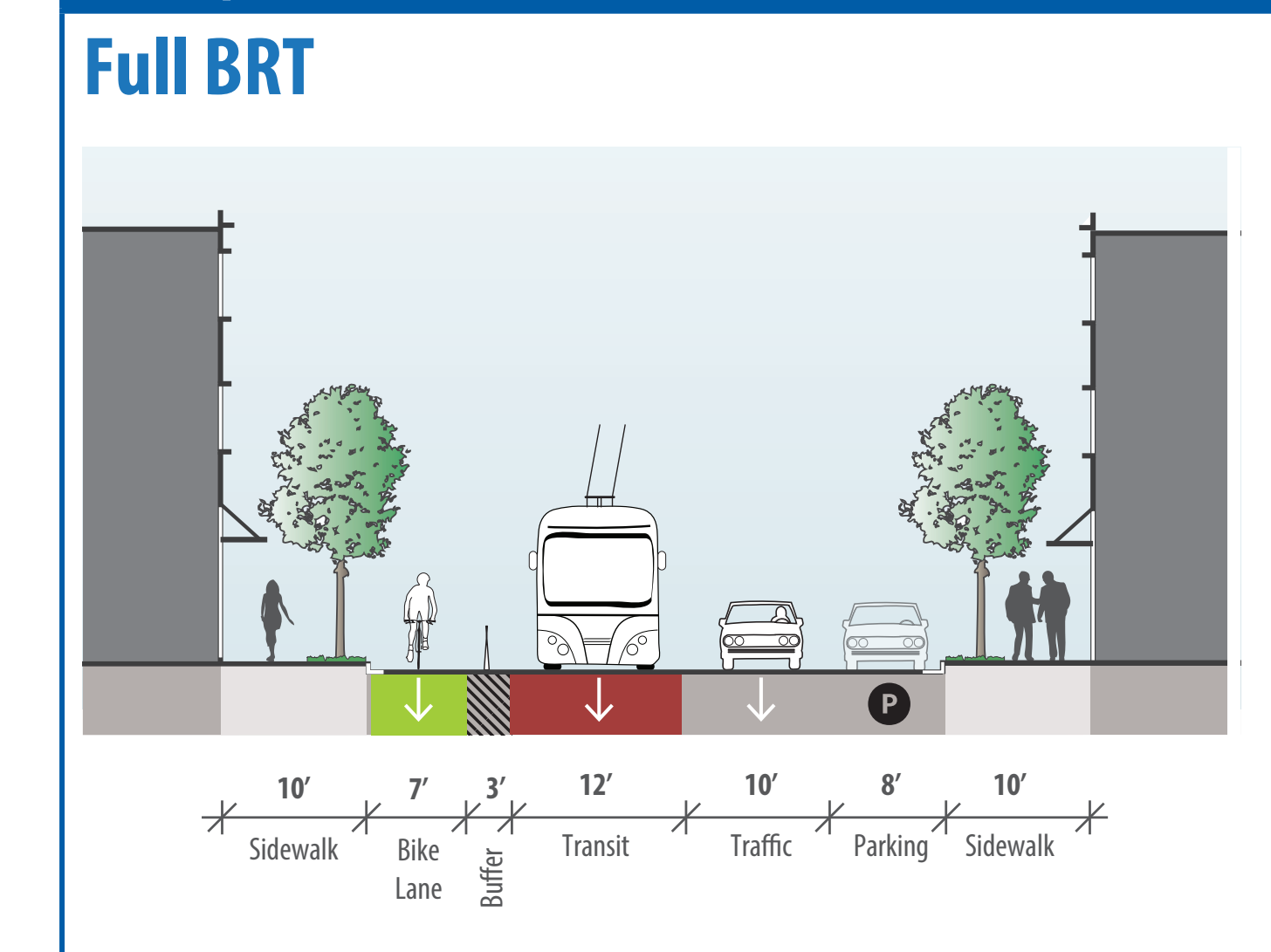
### A. Roosevelt Way NE (40' Curb to Curb, 60' ROW)



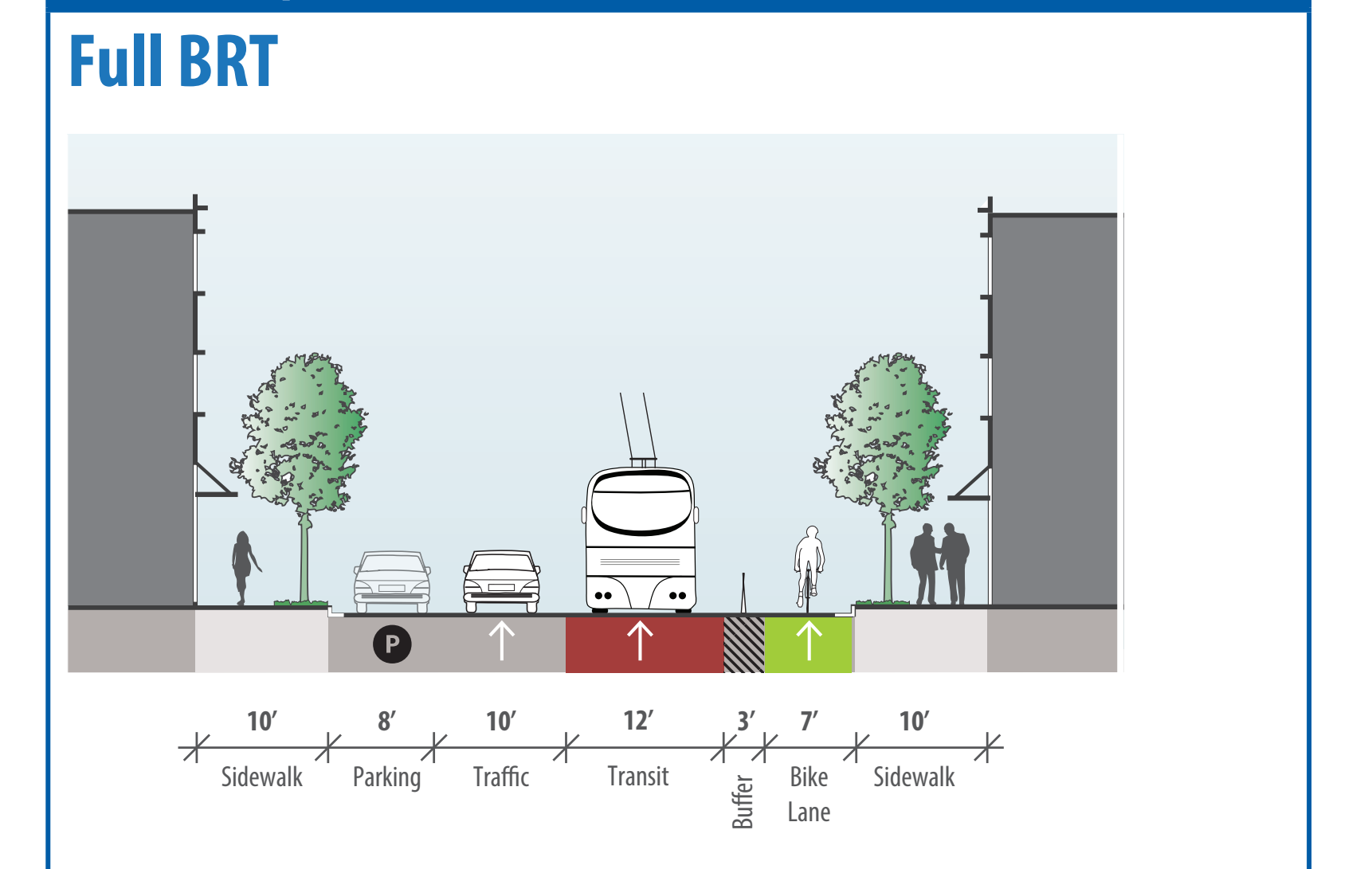
### B. 11th and 12th Avenue NE (40' Curb to Curb, 60' ROW)



### A. Roosevelt Way NE (40' Curb to Curb, 60' ROW)



### B. 11th and 12th Avenue NE (40' Curb to Curb, 60' ROW)



# Eastlake: Station Concepts



Eastlake Ave E and E Lynn St Southbound Station

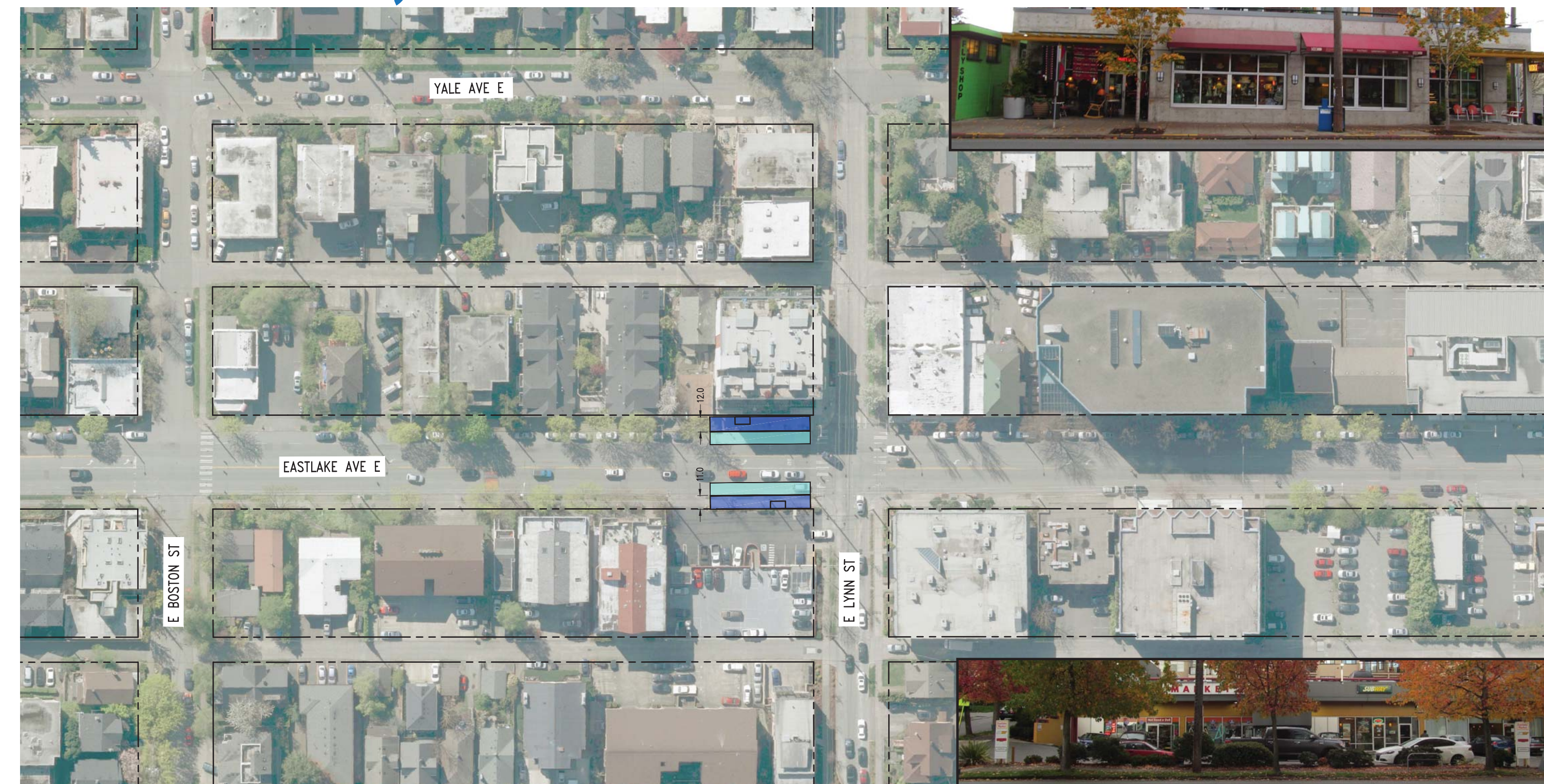


Eastlake Ave E and E Lynn St Northbound Station

## Eastlake Ave & Fuhrman Ave

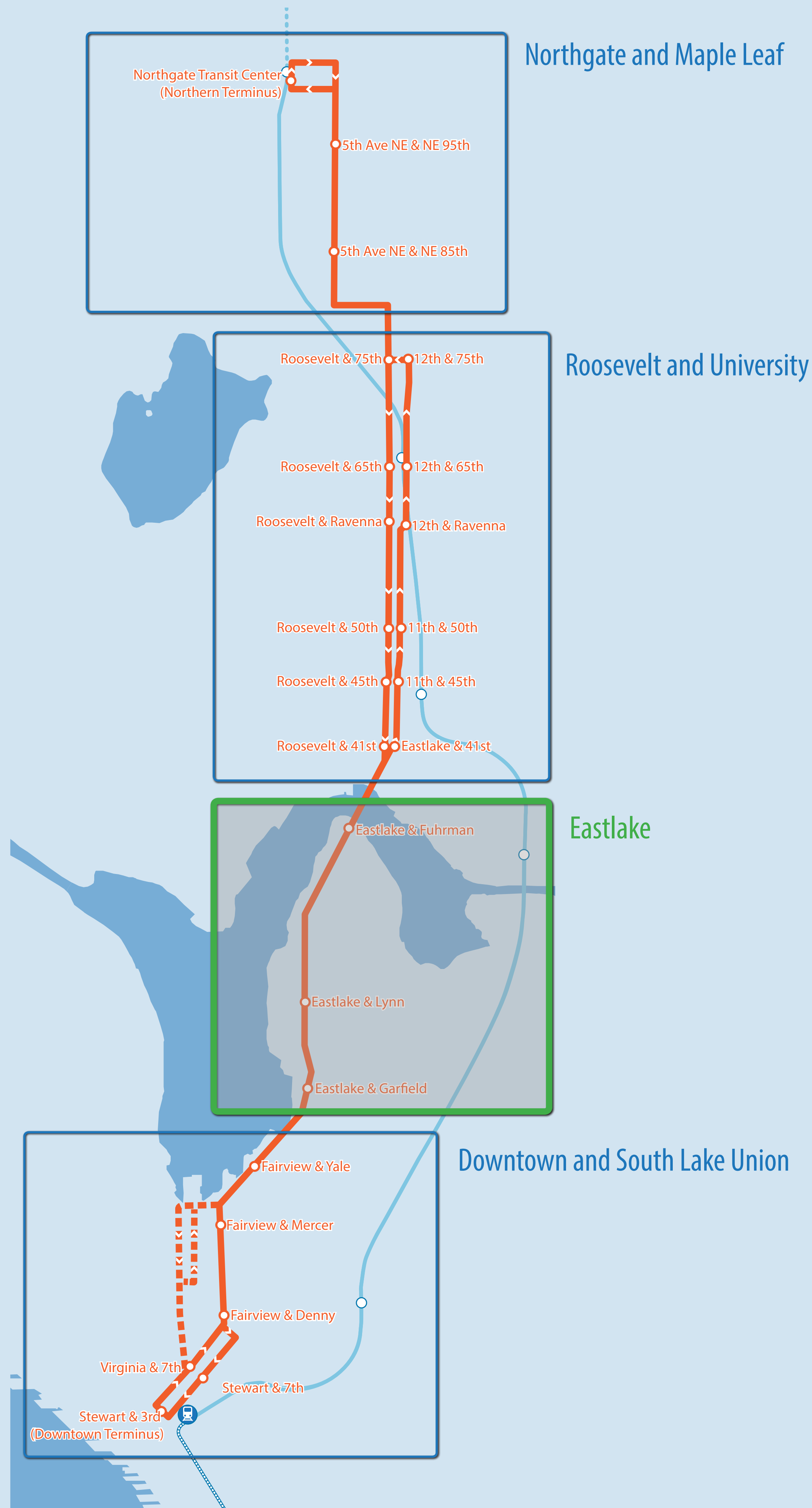
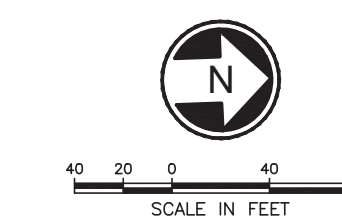


## Eastlake Ave & Lynn St



- SHELTER LOCATION
- SIDEWALK/STATION LIMITS
- ROADWAY RECONSTRUCTION LIMITS

## Eastlake Ave & Garfield St



# Eastlake

This portion of the corridor connects the Eastlake neighborhood, extending from the U Bridge to the Fairview Bridge.

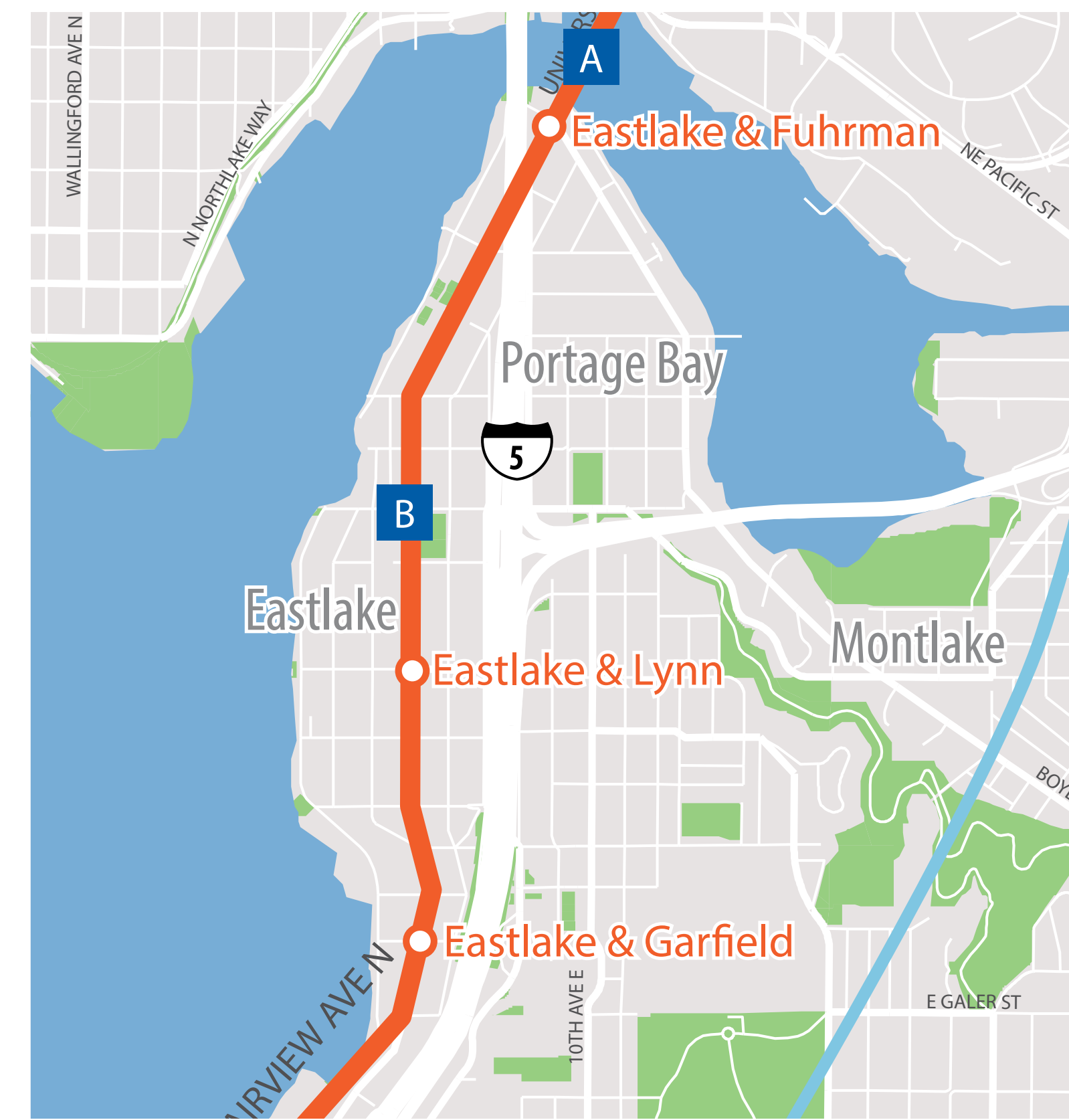
This portion of the corridor has high transit ridership and traffic issues, impacting transit speed and reliability.

## Proposed Bicycle Facilities

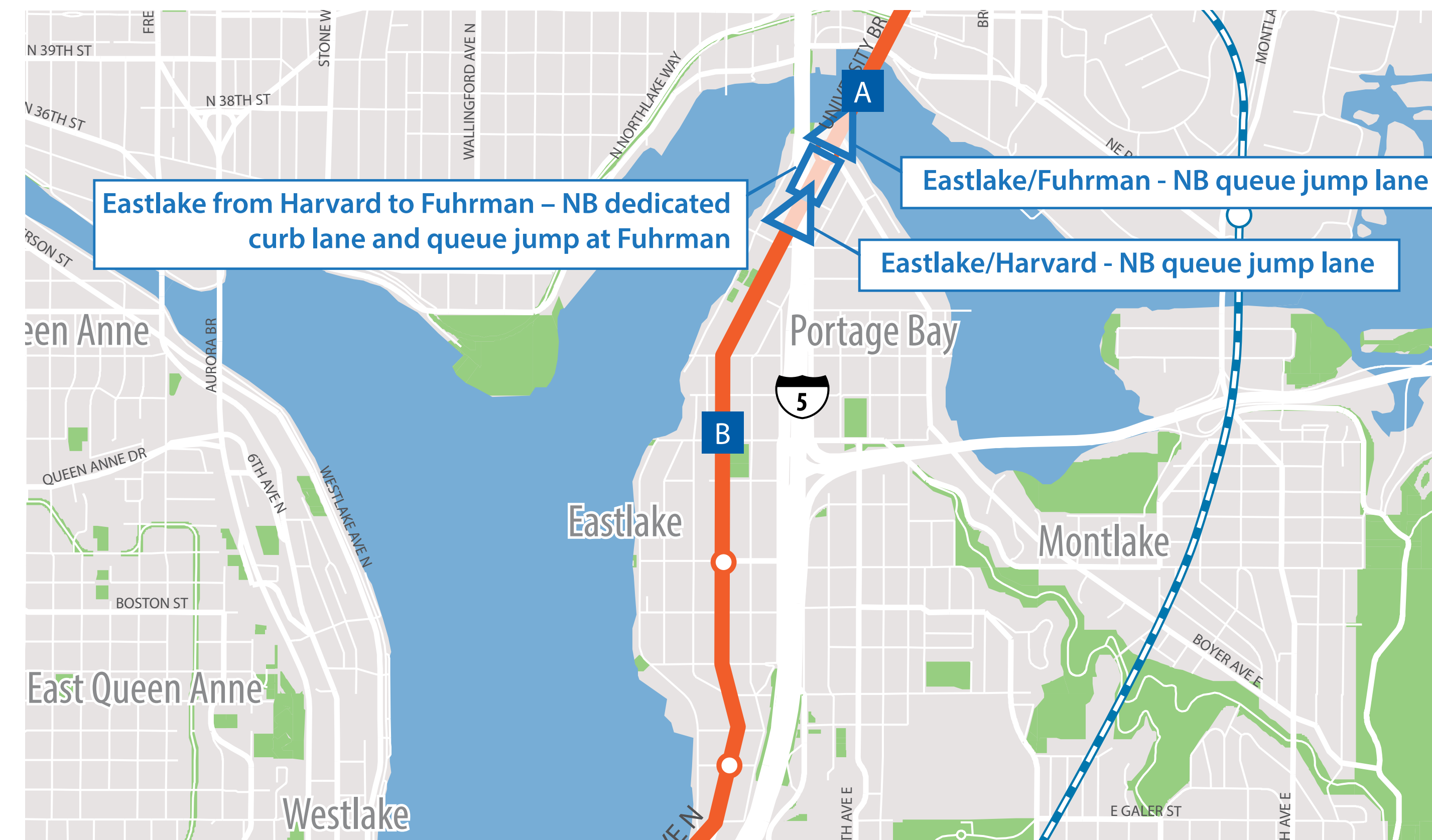
- Eastlake Avenue N (E Galer Street and Fuhrman Avenue E): Bike lane, two-way protected bike lane, or protected bike lane (Roosevelt Project, Bicycle Master Plan)
- Fairview Avenue N (E Galer Street and Fuhrman Avenue E): Neighborhood greenway (Bicycle Master Plan)
- University Bridge: Protected bike lane (Bicycle Master Plan, construction 2016)



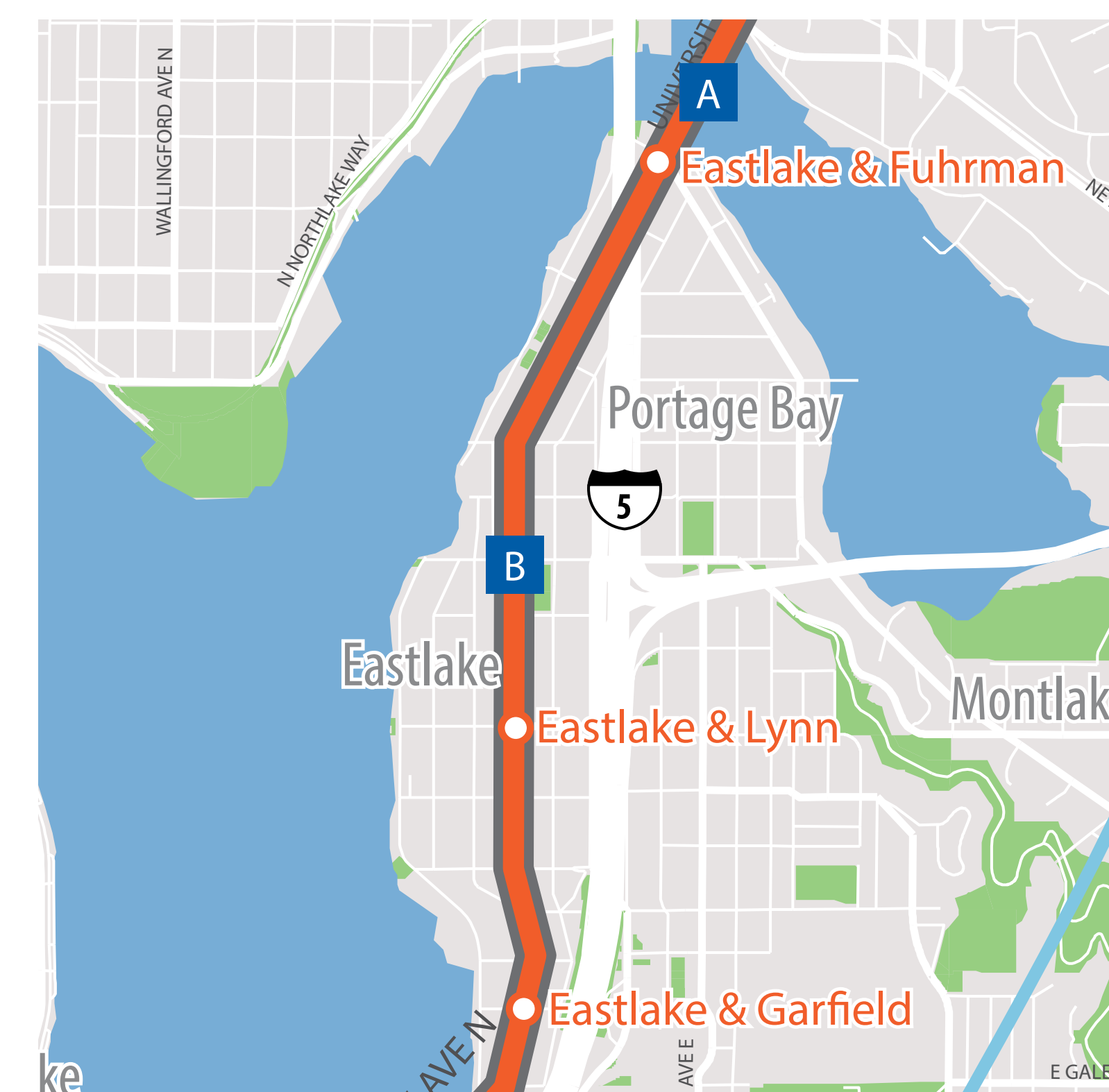
## RapidRide



## Targeted Investments

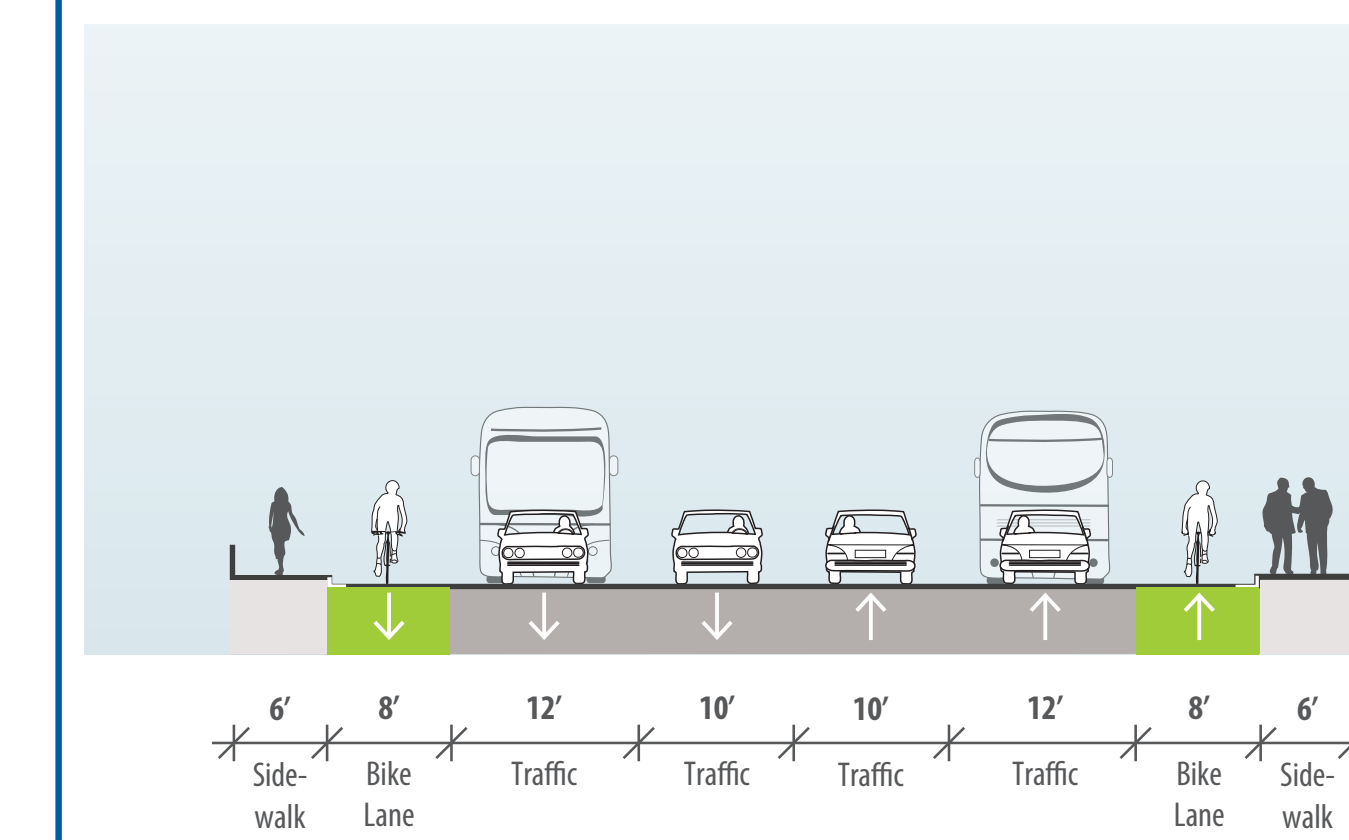


## Full BRT



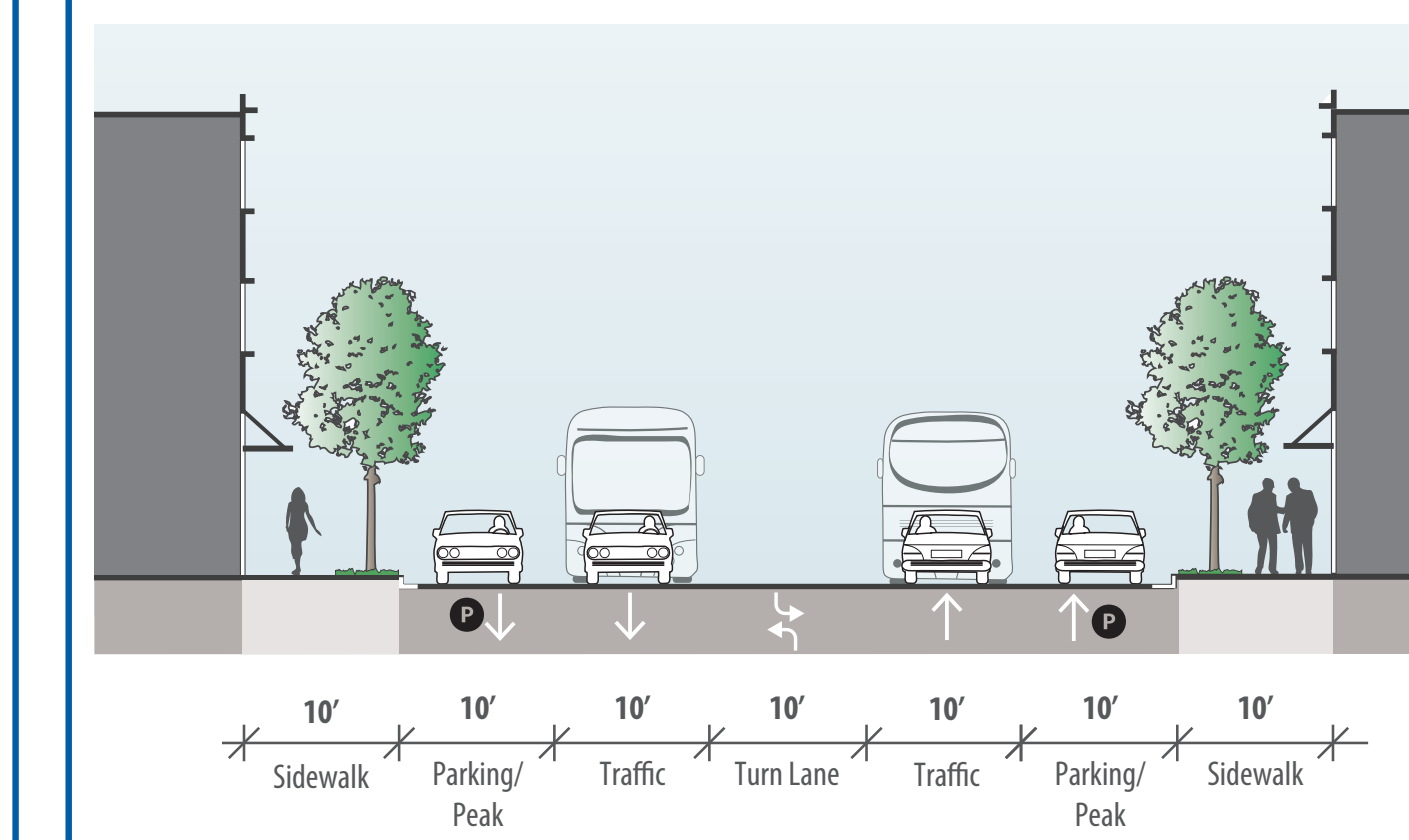
### A. University Bridge (60' Curb to Curb, 72' ROW)

#### Existing



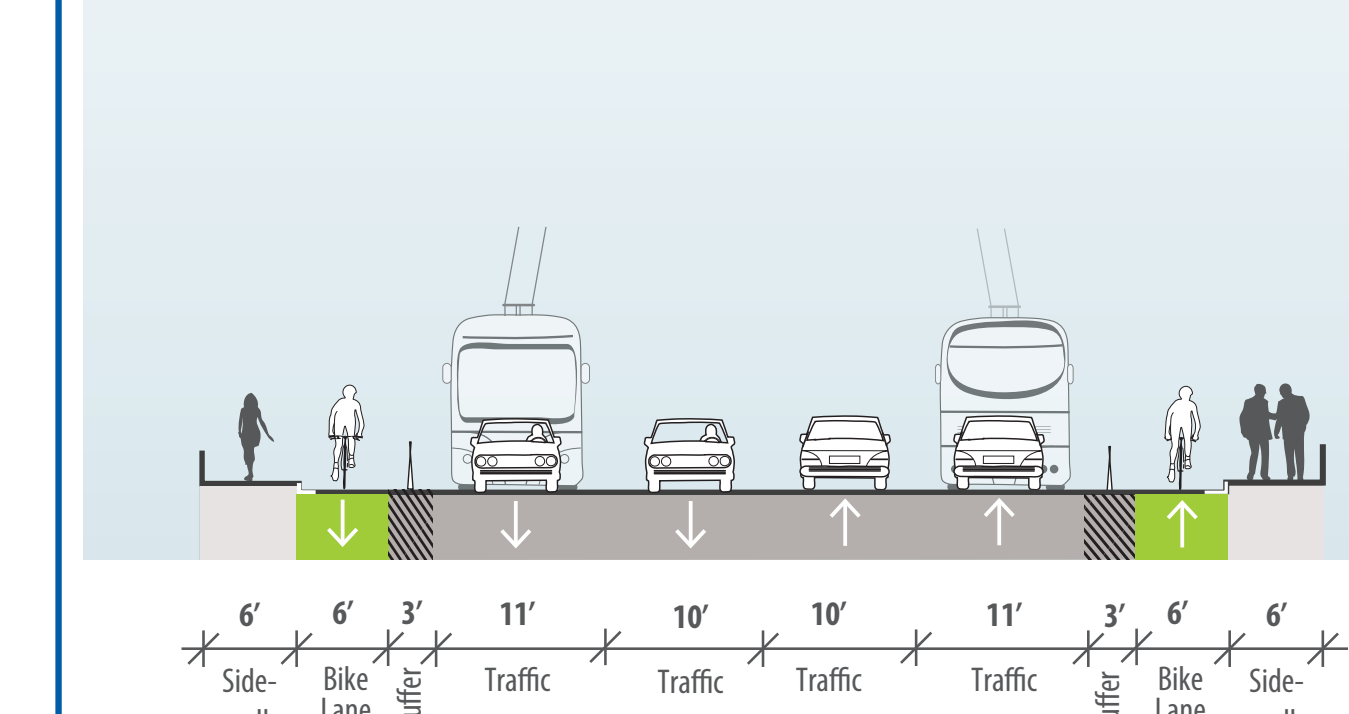
### B. Eastlake Avenue N (50' Curb to Curb, 70' ROW)

#### Existing



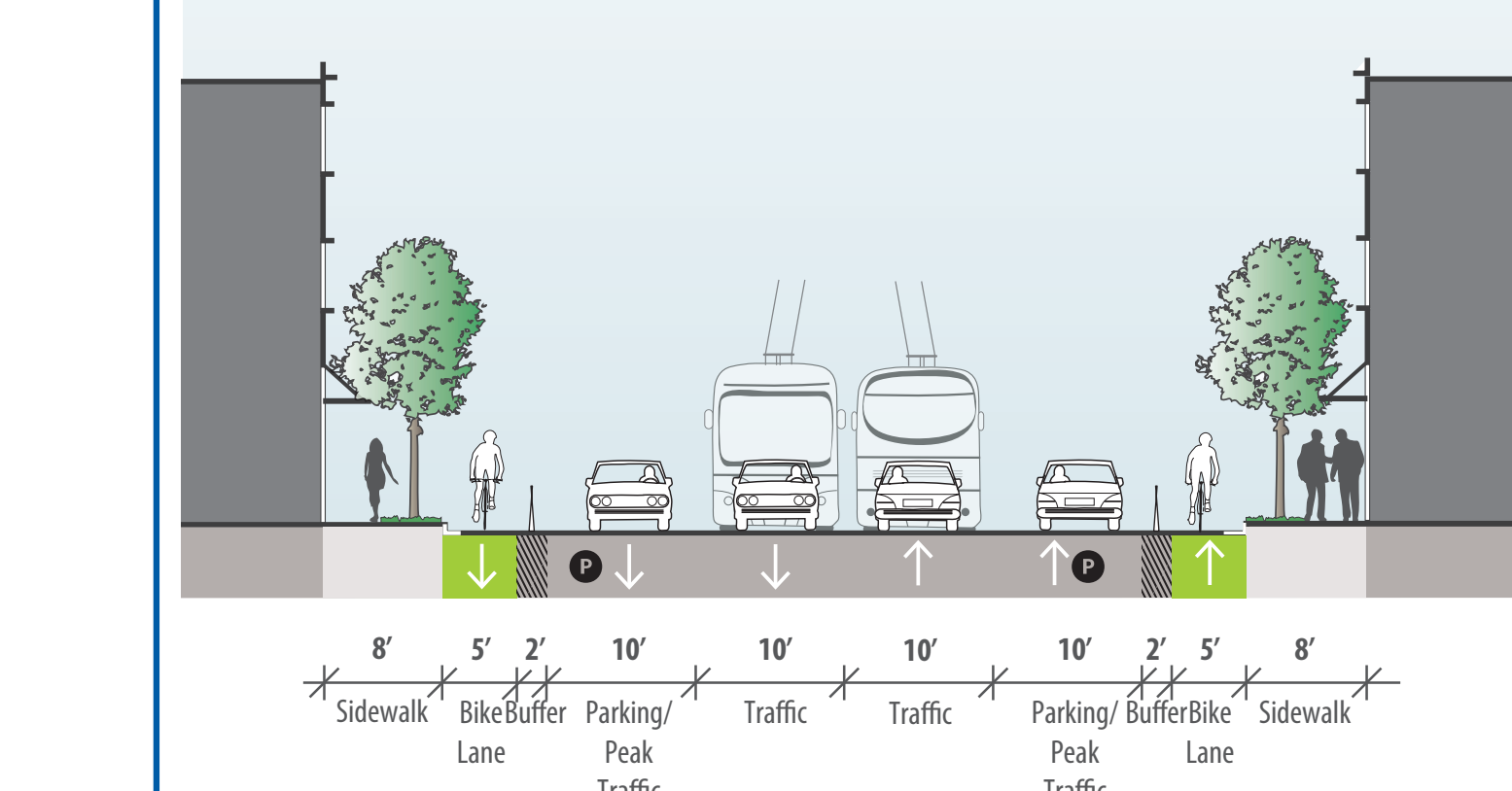
### A. University Bridge (60' Curb to Curb, 72' ROW)

#### Targeted Investment w/Bike Lanes

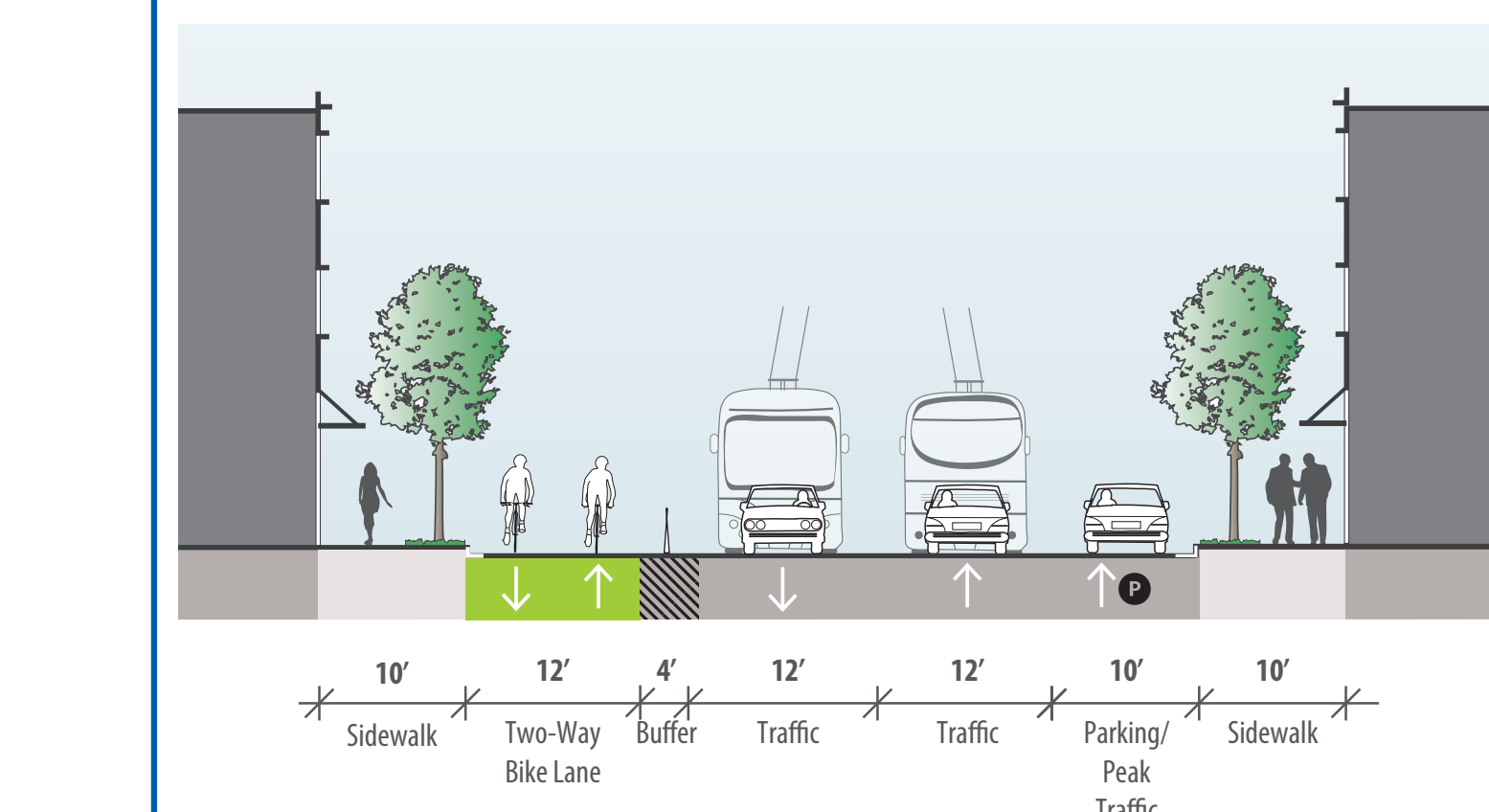


### B. Eastlake Avenue N (50' Curb to Curb, 70' ROW)

#### Targeted Investment w/Bike Lanes (2 options)

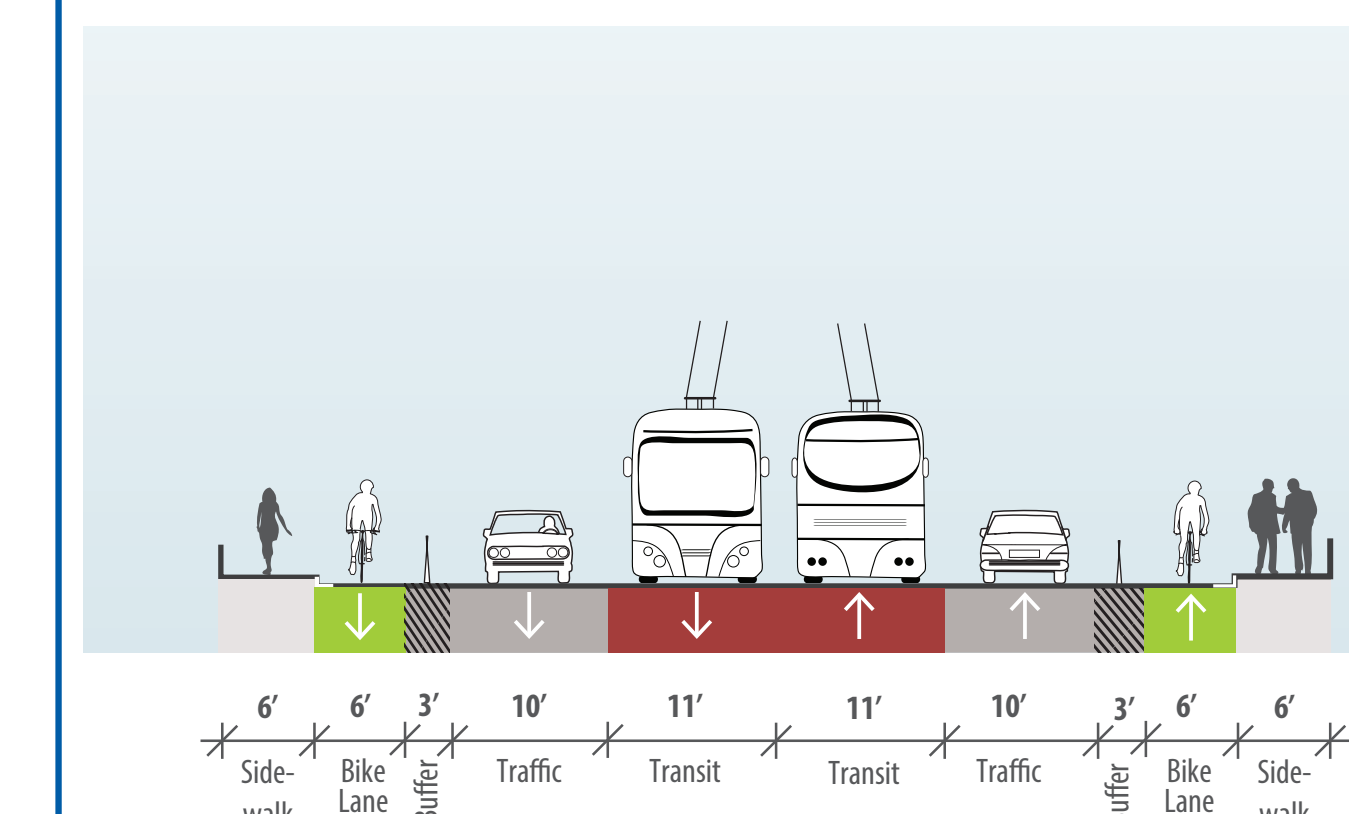


Note: Above cross section design requires 54' curb to curb width



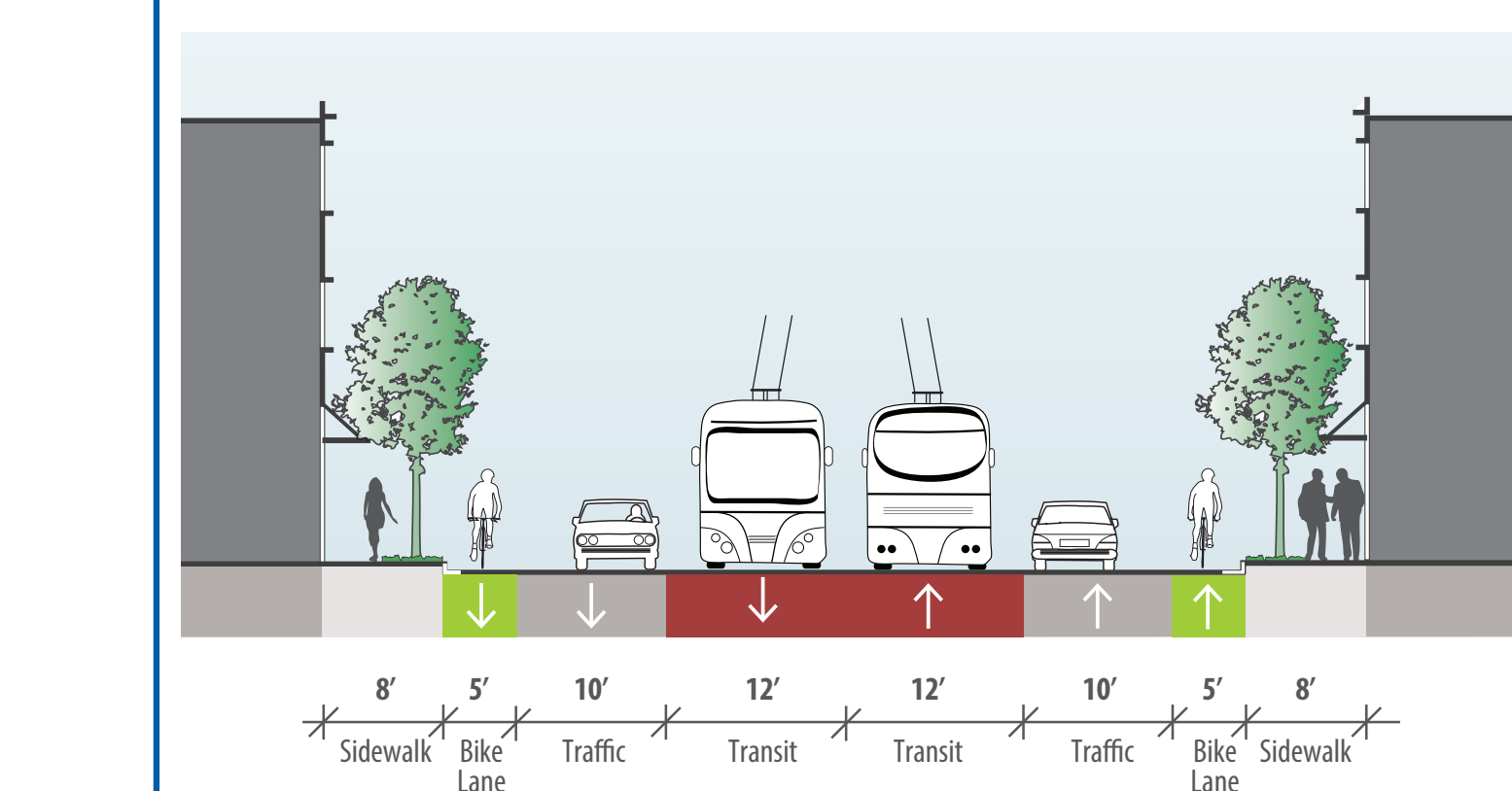
### A. University Bridge (60' Curb to Curb, 72' ROW)

#### Full BRT: Center



### B. Eastlake Avenue N (50' Curb to Curb, 70' ROW)

#### Full BRT: Center



Note: This design requires 54' curb to curb width

# Downtown and South Lake Union: Station Concepts

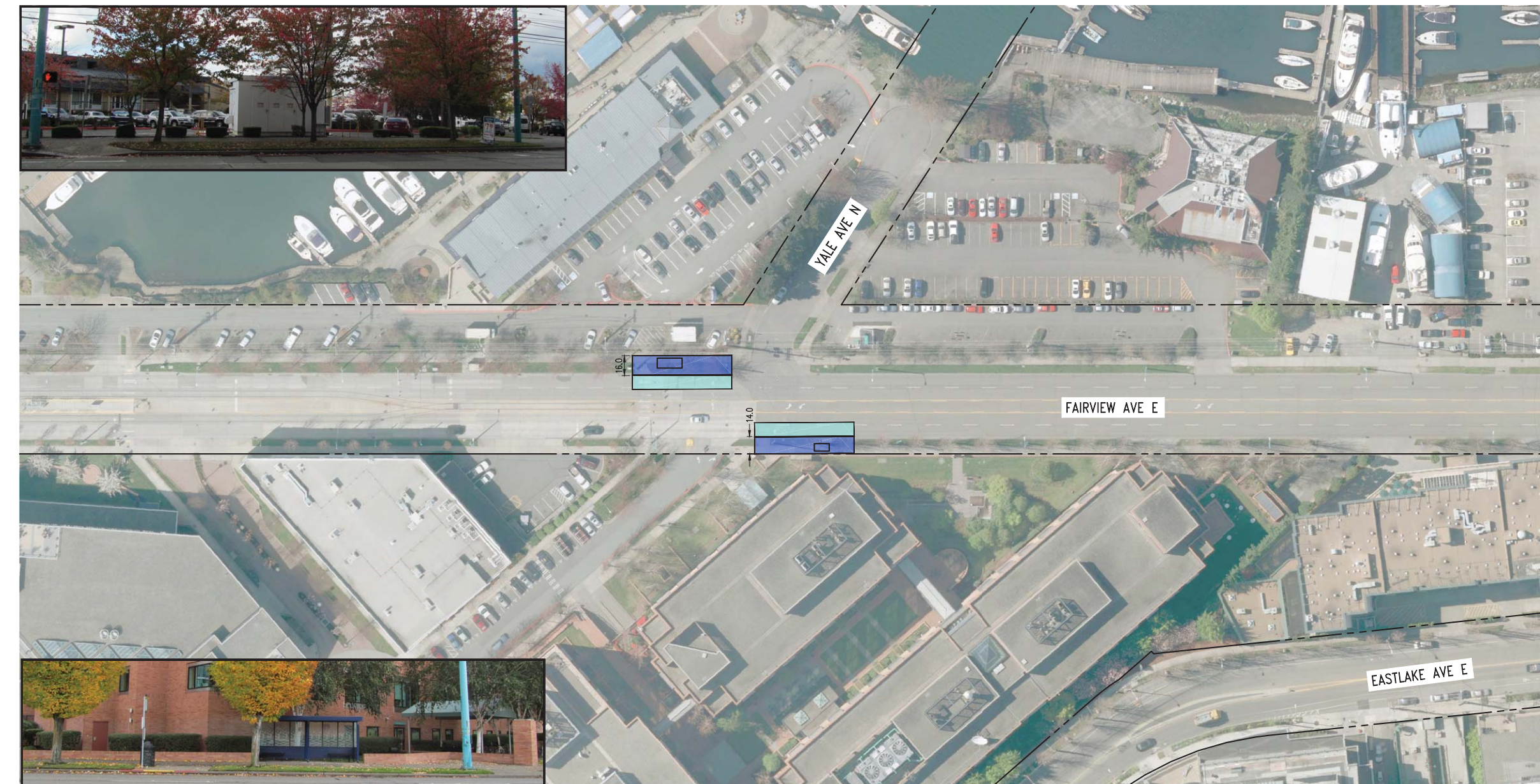


Fairview Ave and Denny Way - Southbound Station



Fairview Ave and Denny Way - Northbound Station

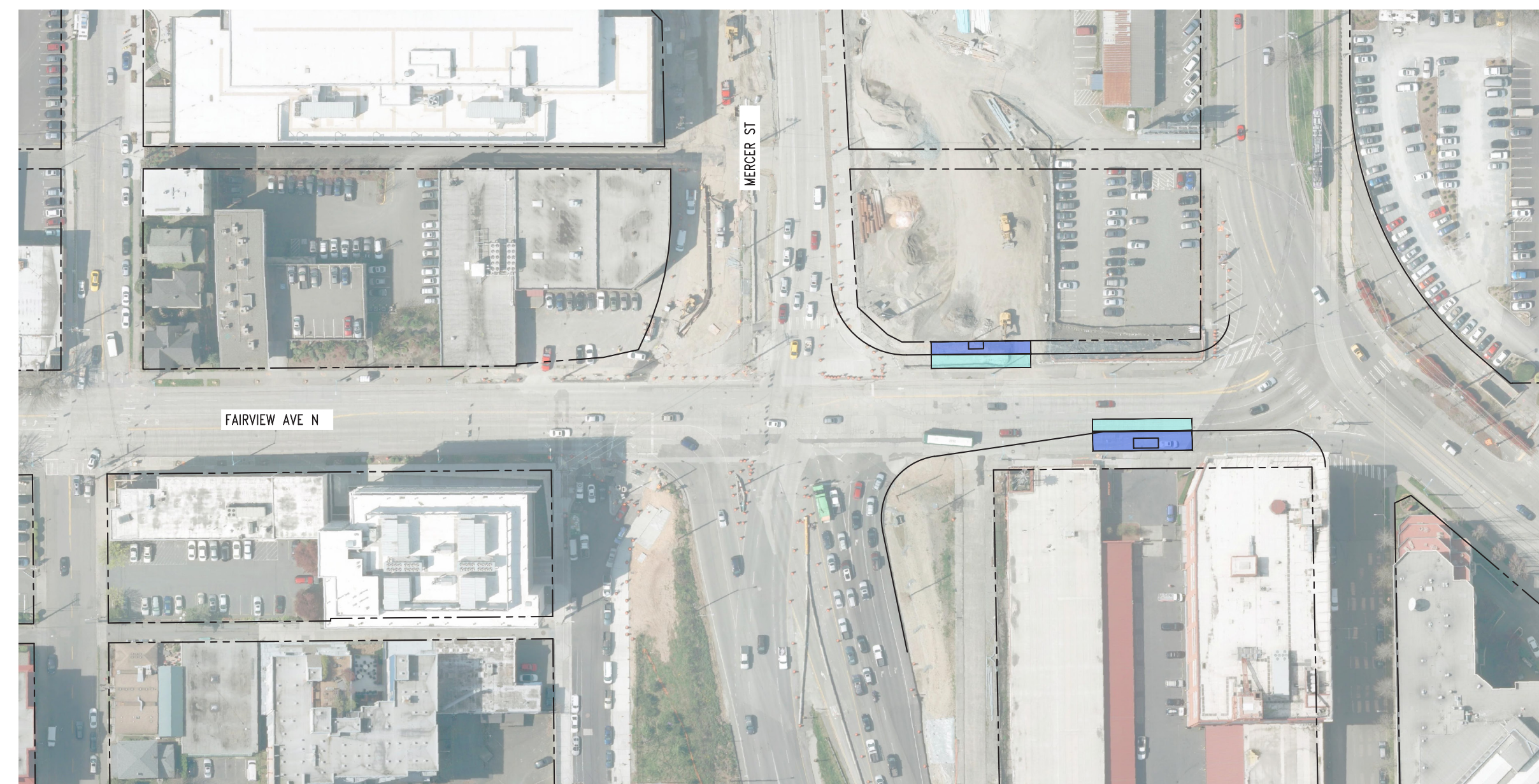
## Fairview Ave & Yale Ave



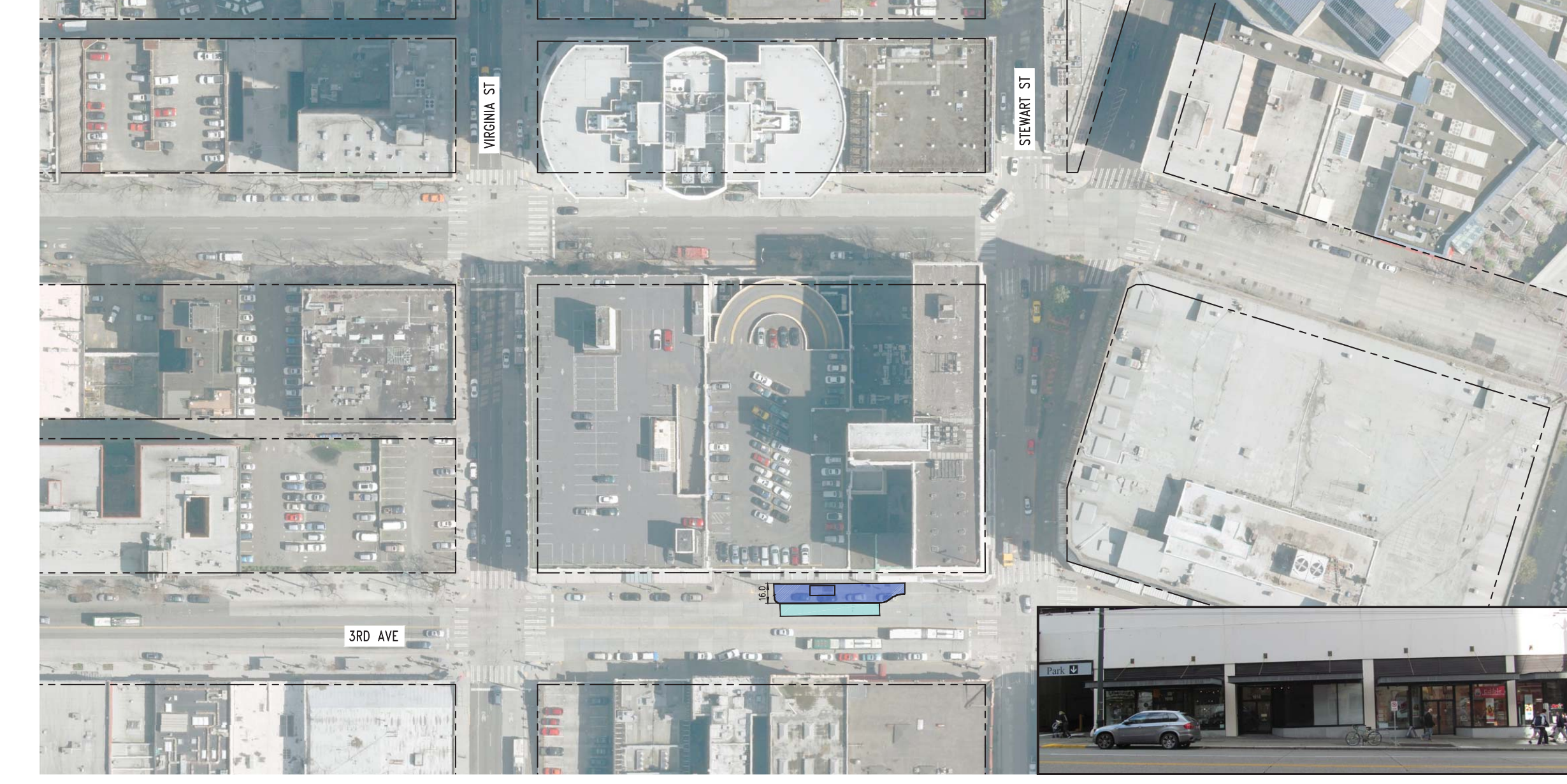
## Stewart St & 7th Ave



## Fairview Ave & Mercer St



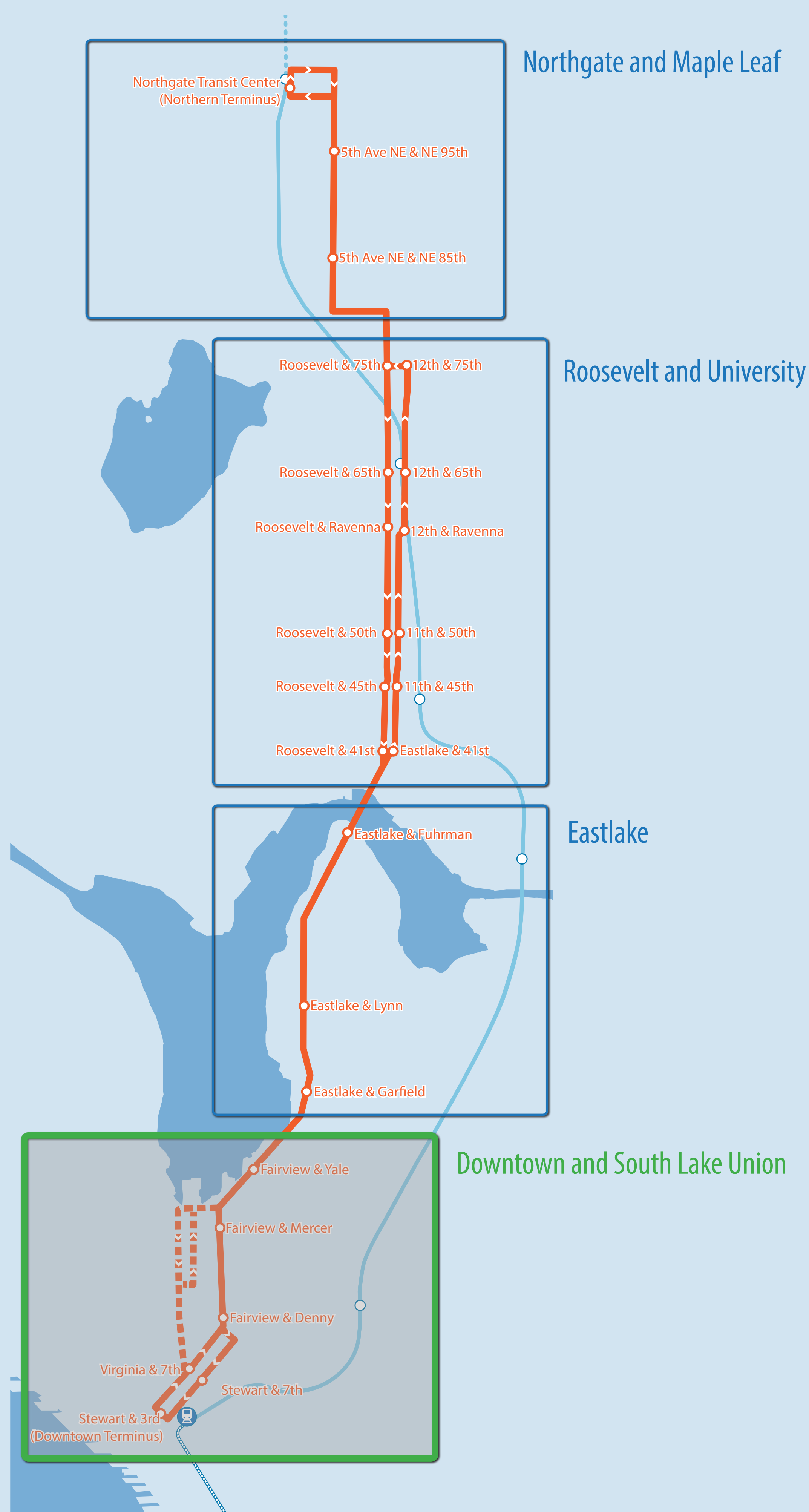
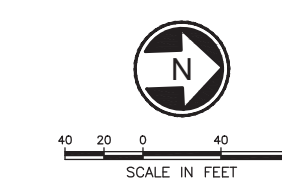
## 3rd Ave & Stewart St



## Fairview Ave & Denny Way



STATION LOCATION  
 STATION LIMITS  
 STREET RECONSTRUCTION LIMITS

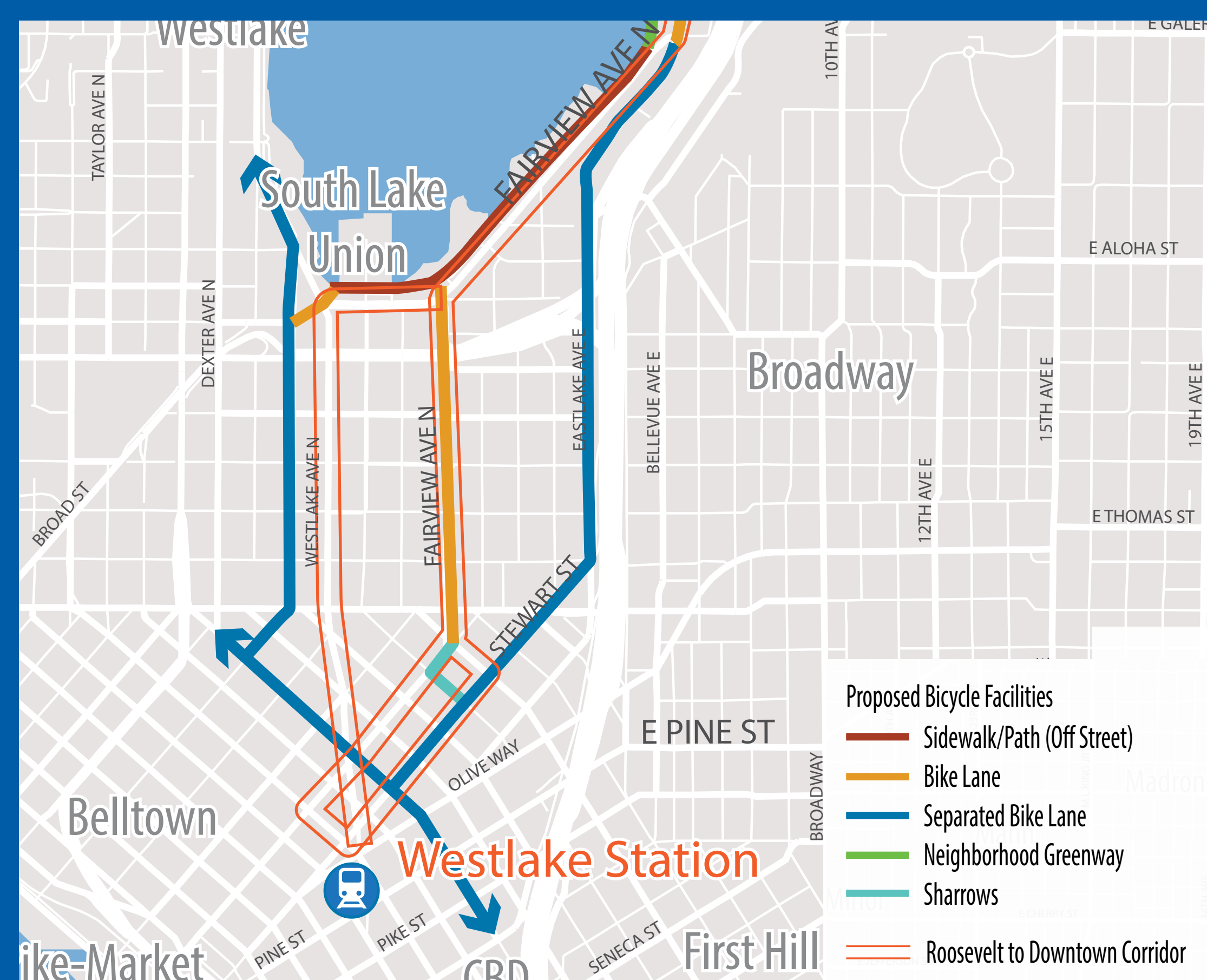


# Downtown and South Lake Union

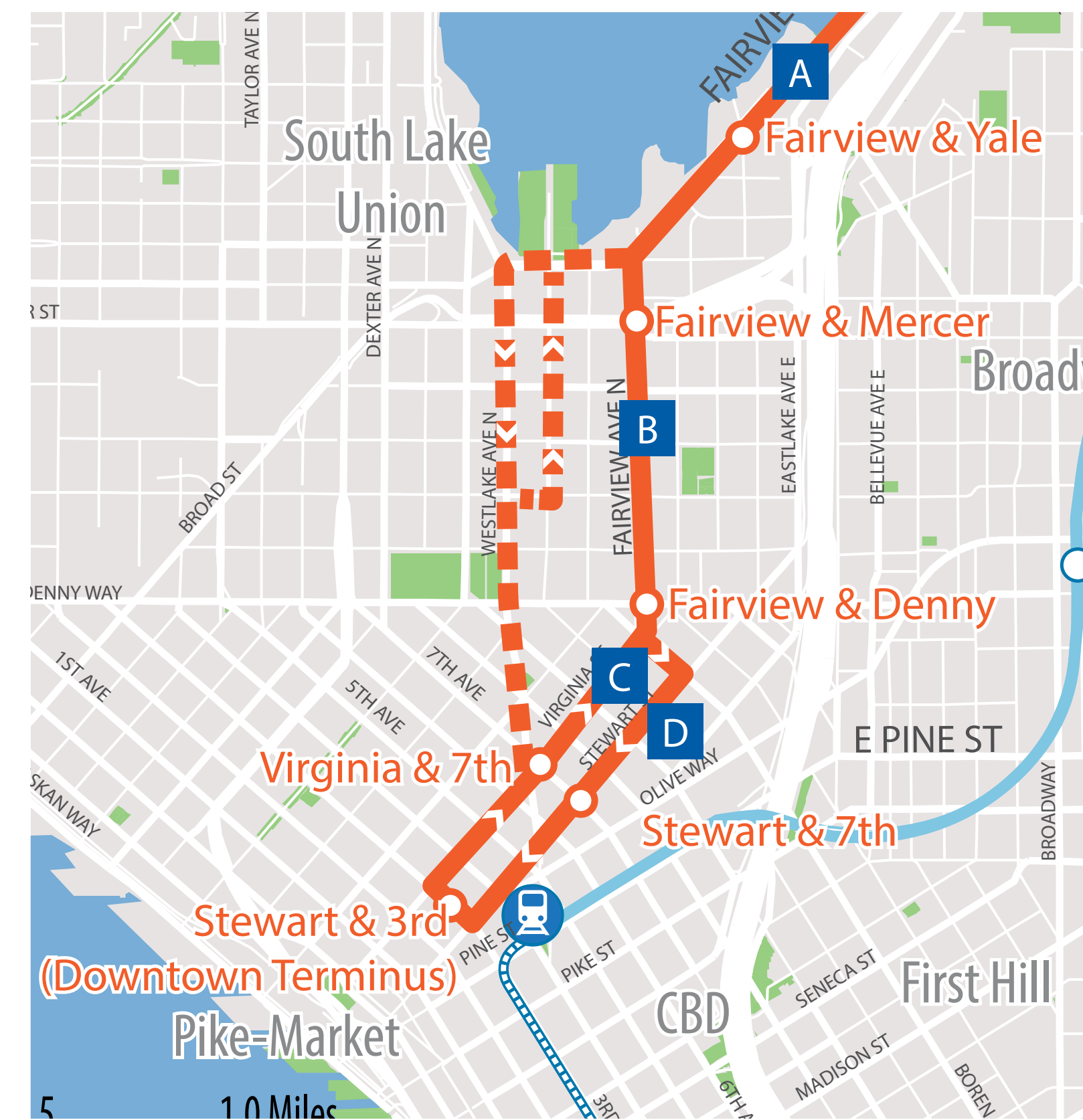
This portion of the corridor connects Downtown and the South Lake Union neighborhood, extending from the Fairview Bridge to the Westlake Station.

## Proposed Bicycle Facilities

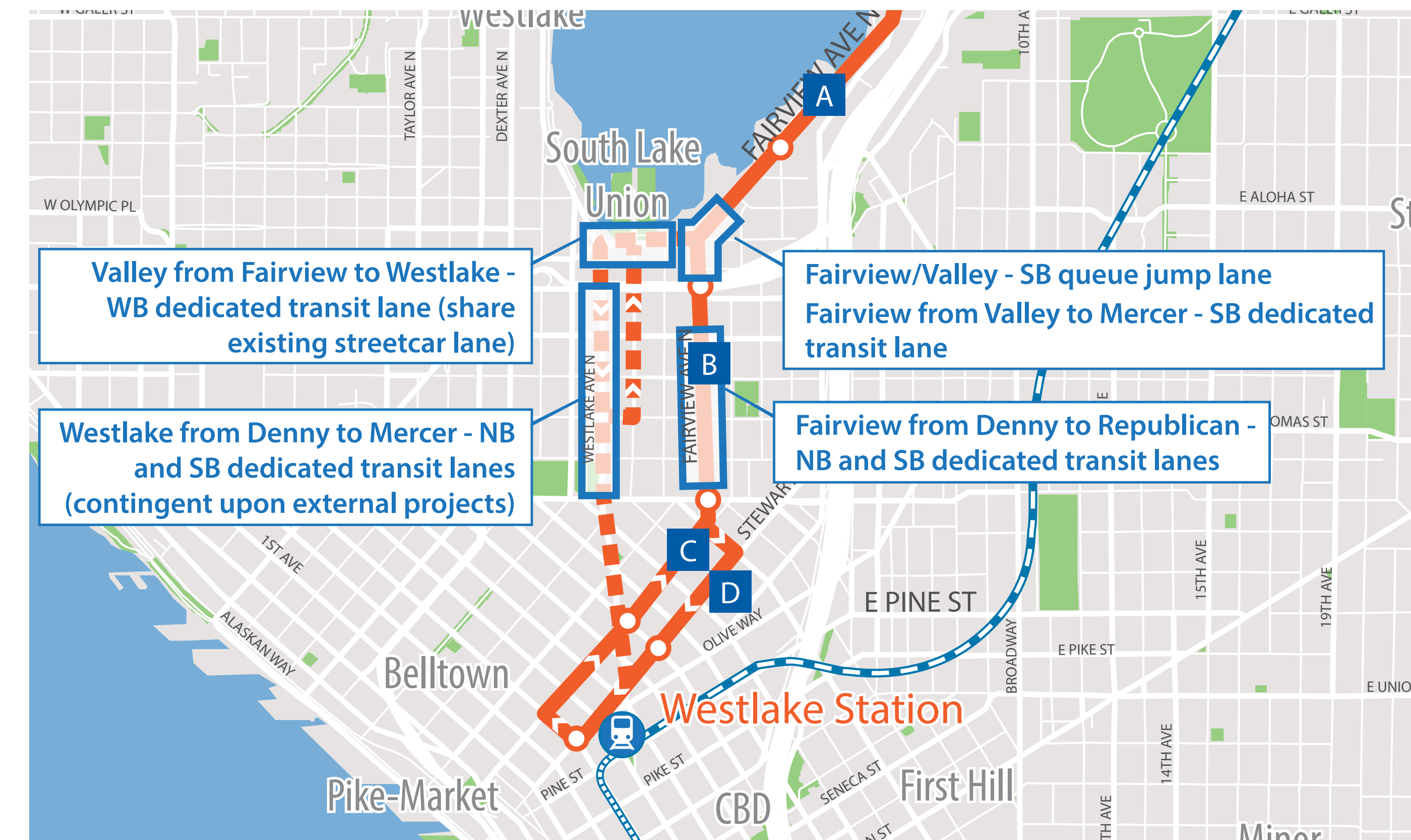
- Fairview Avenue N: Off-street bike pathway (Bicycle Master Plan)
- Fairview Avenue N: Bike Lane (Roosevelt Project)
- Virginia St and Terry Ave: Sharrow (Roosevelt Project)
- Stewart Street: Protected Bike Lane (Bicycle Master Plan, 2018)
- Valley Street: Protected Bike Lane (Bicycle Master Plan, 2017)
- 9th Avenue N: Protected bike lane (Bicycle Master Plan)
- 7th Avenue: Protected bike lane (Bicycle Master Plan)



## RapidRide



## Targeted Investments



## Full BRT

