

**ATTACHMENT N: L200 CITY OF SHORELINE STATION
AREA ACCESS ASSESSMENT REPORT**

**Lynnwood Link Extension | Northgate Station to
Lynnwood Transit Center
Contract No. RTA/AE 0010-15**

**Contract L200
City of Shoreline Station Area Access
Assessment Report**

January 10, 2017

Prepared for:



Prepared by:



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1.0 EXECUTIVE SUMMARY

1.1 Report Purpose

An access assessment report is required by the City of Shoreline for light rail transit system/facilities. The access assessment report will analyze, identify and prioritize multimodal access improvements. The access assessment report is intended to supplement the analysis and mitigation included in any environmental review document prepared for the proposed project. In general, the access assessment report will address: improvements near the stations for pedestrians and bicyclists, transit and paratransit riders, motorists, and “kiss and ride” users. This report is not intended to address non-transportation-related elements such as trees, noise, etc. Construction impacts and mitigation are not addressed by this report.

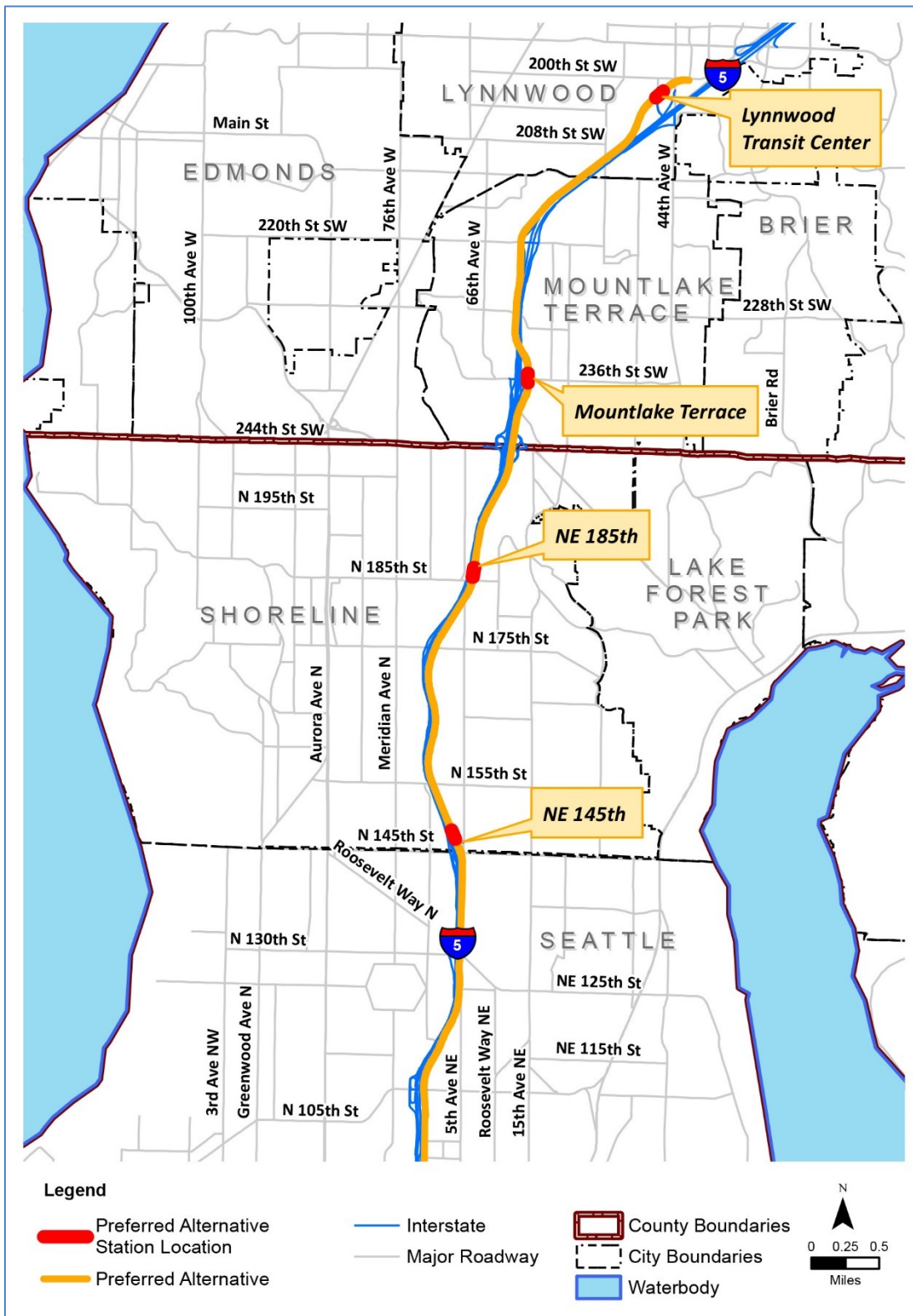
1.2 Background

The Lynnwood Link Extension (LLE) project is an 8.5-mile extension to Sound Transit’s current light rail transit system. It will begin at the Northgate Station in the City of Seattle just north of the Northgate Transit Center and terminate at the Lynnwood Transit Center in the City of Lynnwood. It will essentially follow the route of I-5 and be primarily within the I-5 transportation corridor. In areas where there is not sufficient public right-of-way within the I-5 corridor, WSDOT, City, and/or private right-of-way will be acquired. The extension will follow the east side of I-5 for approximately 5.8 miles from Northgate to the Mountlake Terrace Transit Center. It will then cross I-5 to the west side and continue north along the west side of I-5 for the remaining 2.7 miles into the Lynnwood Transit Center. Figure 1 shows the LLE Preferred Alternative guideway alignment and the station locations.

The project will be on exclusive right-of-way without at-grade crossings. Approximately four miles of the guideway will be an elevated structure and approximately 4.5 miles will be on grade or in retained cut or fill. There will be four stations. Two will be located in the City of Shoreline—an elevated station north of NE 145th Street and a retained cut station at NE 185th Street. One elevated station will be located in the City of Mountlake Terrace at the site of the existing Mountlake Terrace Transit Center. One elevated station will be located in the City of Lynnwood at the existing Lynnwood Transit Center. The project includes the potential for two future stations: one elevated station in the City of Seattle immediately north of NE 130th Street and one retained fill/elevated station in the City of Mountlake Terrace immediately south of 220th Street SW.

New structured park-and-ride facilities for approximately 500 cars at each location will be provided at the NE 145th Street Station and near the NE 185th Street Station. Existing parking will be retained at the Mountlake Terrace Transit Center. The existing Lynnwood Transit Center park-and-ride facility will be expanded by approximately 500 cars to a capacity of approximately 1,900 cars by constructing a new parking structure for approximately 1,600 cars. The potential future station at 220th Street SW will include surface parking. Bicycle parking facilities will also be provided at each passenger station.

Figure 1: Lynnwood Link Extension Alignment and Stations



In addition to the infrastructure required for the light rail system, some I-5 infrastructure and various arterial and residential streets will need to be modified to support motorized and non-motorized access to the station areas and in locations where the guideway alignment would interfere with existing roadways. Various existing utilities will also need to be relocated, including several that cross I-5. New stormwater management facilities will be provided to serve the transit facility and new or modified roadways. Existing trees and vegetation along the I-5 corridor displaced by the transit facilities will be replaced and/or mitigated.

1.3 Station Area Existing Conditions

1.3.1 NE 145th Street Station Area

Sidewalks and amenity zones are located along the east side of 5th Avenue NE north of NE 145th Street and along the west side north of the North Jackson Park and Ride driveway. The NE 145th Street interchange has pedestrian pathways and crossings under NE 145th Street on both sides of the bridge over I-5. These access northbound and southbound freeway station bus stops. Outside of the interchange area, NE 145th Street has sidewalks with no amenity zones, and some sidewalk sections with usable width of less than five feet. West of I-5 and within one-quarter mile of the station site, 1st Avenue NE has limited sections with sidewalks.

NE 155th Street west of 5th Avenue NE is the only street with designated bicycle lanes within one-half mile of the station site.

Transit routes operate on 5th Avenue NE north of NE 145th Street, NE 145th Street, and I-5.

1.3.2 NE 185th Street Station Area

NE 185th Street has amenity zones and sidewalks between 2nd Avenue NE and 10th Avenue NE within one-quarter mile of the station site. There are no sidewalks on 5th Avenue NE north of NE 185th Street or on 5th/7th Avenue NE south of NE 185th Street within one-quarter mile of the station, except for a short segment on the west side north of NE 189th Street.

Several local streets within one-quarter mile of the station have amenity zones and sidewalks. These are NE 188th Street, NE 189th Street, NE 190th Street, 8th Avenue NE, and 9th Avenue NE.

NE 185th Street has designated bicycle lanes in both directions within one quarter mile of the station site between 2nd Avenue NE and 10th Avenue NE.

Metro transit operates one route on NE 185th Street west of 7th Avenue NE and on 5th/7th Avenue NE south of NE 185th Street.

1.4 Station Area Future Conditions

1.4.1 NE 145th Street Station Area

A) Station Access

The construction and operation of the NE 145th Street Station requires modifications to the station frontage along 5th Avenue NE between the existing I-5 on-ramp and the NE 148th Street intersection. These modifications will include new traffic signals at the intersections of the I-5 northbound on-ramp and NE 148th Street with 5th Avenue NE. All vehicle access to the station will be from a relocated west approach to the NE 148th Street intersection with 5th Avenue NE. The NE 145th Street intersection at 5th Avenue NE will be modified to add a westbound right-only turn lane. LLE-provided improvements at this intersection will allow future implementation of the 145th Street Multimodal Corridor preferred design concept.

The existing amenity zone and sidewalk on the east of 5th Avenue NE will remain. An amenity zone and shared-use (multi-use) path will be provided on the west side. A delineated 5-foot wide northbound bike lane will be provided on the east side. Southbound bicycles will use an improved off-street shared-use path along the station frontage and in WSDOT right-of-way between NE 145th Street and the I-5 northbound on-ramp. Both the northbound and southbound bike facilities will be compatible with the City of Shoreline's planned bicycle facilities for 5th Avenue NE north of NE 148th Street.

Pedestrians will access the station from the east on NE 145th Street using the NE 145th Street sidewalks and the east 5th Avenue NE sidewalk to the north crosswalk at the I-5 northbound on-ramp intersection. From the west on NE 145th Street, most pedestrians will use the existing NE 145th Street north sidewalk and the new shared-use path on the west side of 5th Avenue NE to the station entrance north of the I-5 northbound on-ramp. Pedestrians using the NE 145th Street south sidewalk west of 5th Avenue NE may use the existing pedestrian undercrossings at the east and west I-5 crossing bridge abutments for access to the NE 145th Street north sidewalk. Table 10 describes and Figure 6 shows LLE-provided access improvements.

The existing sidewalks on both sides of 5th Avenue NE north of NE 148th Street will be the primary pedestrian access from the north. Report Section 4.1.1 describes City of Shoreline-planned station area access improvements including sidewalks on NE 148th Street east of 5th Avenue NE which would provide access from areas east of 5th Avenue NE and north of NE 145th Street.

All station pick-up and drop-off will be internal to the station site and accessed from the 5th Avenue NE intersection with NE 148th Street.

Bus transfers will be internal to the station site. Active and layover transit bays will be accessed from the 5th Avenue NE intersection with NE 148th Street. The King County Metro Connects long range transit plan shows two high frequency routes that will serve the NE 145th Street Station. A potential Sound Transit bus rapid transit (BRT) line would use NE 145th Street between 5th Avenue NE and Lake City Way (SR 522) and would enter the NE 145th Street Station site. Roadway reconstruction in the station vicinity will not preclude the ability to use on-street bus zones on 5th Avenue NE or NE 145th Street.

B) Station Subarea Zoning

NE 145th Street Station subarea zoning within one-quarter mile of the station is Mixed Use Residential (MUR) with allowable building heights of 70 feet closest to the station and 45 feet west of 1st Avenue NE and east of 8th Avenue NE. A phased zoning approach leaves much of the area between 10th Avenue NE and 14th Avenue NE in single family zoning. This area would change to MUR with varying height limits ten years after the light rail station opens in 2023. The area south of NE 145th Street within one-quarter mile of the station is in the City of Seattle and will remain as public park property east of 5th Avenue NE and private school property west of I-5. The NE 145th Street Station Subarea Plan adopted zoning map is available at <http://www.shorelinewa.gov/home/showdocument?id=29084>.

1.4.2 NE 185th Street Station Area

A) Station Access

Construction and operation of the station and parking garage requires modifications to several streets and intersections:

- NE 185th Street between 5th Avenue NE and 8th Avenue NE.
- Relocation of 5th/7th Avenue NE between about NE 182nd Court and NE 185th Street.
- Relocation of 5th Avenue NE north of NE 185th Street along the parking garage frontage.
- Improvement of the west side of 8th Avenue NE along the station pick-up/drop-off area.

The 5th Avenue NE and 7th Avenue NE intersections with NE 185th Street will be signalized. The north leg of the 7th Avenue NE intersection will be a transit-only access to the station. Pick-up/drop-off station access will be from separate entrance and exit driveways on the west side of 8th Avenue NE, north of the NE 185th Street intersection, which will remain stop sign controlled on the 8th Avenue NE approaches.

The existing NE 185th Street I-5 crossing structure will remain and will be reconfigured to provide a wider sidewalk on the north side. The north sidewalk will have weather protection. There will be one travel lane and one buffered bike lane in each direction on the bridge structure.

The existing parking will be removed from the south side of NE 185th Street between the west approach to the 5th Avenue NE intersection on the west side of I-5 to the east approach to the 8th Avenue NE intersection. Except on the bridge over I-5, NE 185th Street will have one bike lane and one travel lane in each direction and a two-way left turn lane with left turn lanes at the intersections.

Bus transfers will be internal to the station site. Active and layover transit bays will be accessed from the 7th Avenue NE intersection with NE 185th Street. The King County Metro Connects long range transit plan shows two high frequency routes and one local route that will serve the NE 185th Street Station. The Community Transit Swift service from Everett may terminate at the station.

B) Station Subarea Zoning

Most of the area within one-quarter mile of the NE 185th Street Station, and both east and west of I-5, has MUR-70 high density mixed-use zoning adopted in 2015. MUR zoning also extends west along N/NE 185th Street to Ashworth Avenue N, along 5th/7th Avenue NE between NE 175th Street and NE 185th Street, and along 5th Avenue NE between NE 185th Street and NE 195th Street.

1.5 Station Areas Access Enhancements

Station area pedestrian, bicycle and vehicle access enhancements are described in report Section 7.0. Sound Transit cost responsibility for improvements identified in this report is limited to a proportional share of those resulting directly from implementation of the light rail project.

1.5.1 Candidate Projects

A) NE 145th Street Station Area

Figure 10 shows 21 project segments that are candidates for LLE station area access enhancements. These are drawn primarily from the 2011 Transportation Master Plan, the NE 145th Street Station Subarea Plan, and the 145th Street Multimodal Corridor Study.

B) NE 185th Street Station Area

Figure 11 shows 23 project segments that are candidates for LLE station area access enhancements. These are drawn primarily from the 2011 Transportation Master Plan and the NE 185th Street Station Subarea Plan.

1.5.2 Improvement Priority

Each access enhancement has been evaluated against the following criteria:

- Proximity to station.
- Safety (ped/bike crash history, speed limit and arterial; classification).
- Pedestrian accessibility.
- Pedestrian connectivity.
- Bicycle connectivity.
- Transit connectivity.
- Travel routes to schools.
- Trip generators and attractions.
- Density (station subarea plan zoning).

A) NE 145th Street Station Area

Table 16 lists the 21 candidate access enhancement project segments in order of descending priority. The highest priority projects are improvements to N/NE 145th Street and 5th Avenue NE in the station vicinity.

B) NE 185th Street Station Area

Table 16 lists the 23 candidate access enhancement project segments in order of descending priority. The highest priority projects are improvements to 5th Avenue NE between NE 180th Street and NE 185th Street, 5th Avenue between NE 185th Street and NE 195th Street, NE 185th Street between 7th Avenue NE and 10th Avenue NE, and 10th Avenue NE between NE 180th Street and NE 185th Street.

1.5.3 Planning-Level Cost Estimates

Planning-level costs have been estimated for each of the 44 candidate access enhancement projects segments. Table 18 has the costs for NE 145th Street Station area projects and Table 19 has the costs for projects in the NE 185th Street Station area. These estimates are presented for three project categories:

- **LLE Direct Impact** – street frontage projects required for station operation.
- **LLE Mitigation** – projects required to mitigate LLE station operation impacts
- **City Access Improvement Projects** – Planned access improvement projects in the station vicinity

2.0 STATION AREA EXISTING CONDITIONS

2.1 Pedestrian, Bicycle and Transit Access

2.1.1 NE 145th Street Station Area

A) Pedestrian Facilities

Three arterial streets provide pedestrian access to the NE 145th Street Station site.

- NE 145th Street (SR 523) is classified as a City of Seattle Principal Arterial and Major Truck Street, and by Washington State Department of Transportation (WSDOT) as an Urban Principal Arterial (functional classification U1).
- 1st Avenue NE is a City of Seattle Collector Arterial south of NE 145th Street and a City of Shoreline Collector Arterial north of NE 145th Street.
- 5th Avenue NE is a City of Seattle Minor Arterial south of NE 145th Street and a City of Shoreline Minor Arterial north of NE 145th Street.

Pedestrian facilities and activity generators in the NE 145th Street Station area are shown in Figure 2.

1) NE 145th Street

Outside of the I-5 right-of-way, NE 145th Street (SR 523) within one-quarter mile of the station has cement concrete curbs and five-foot wide asphalt concrete pavement sidewalks on both the north and south sides. Sidewalks are adjacent to traffic lanes. The available right-of-way width results in the location of some utility poles, traffic signs, and mail boxes in the sidewalk area and reduces the usable sidewalk width to three feet or less at some locations. The sidewalks are not compliant with the Americans with Disabilities Act (ADA).

Within the I-5 right-of-way and on the I-5 crossing structure, 6-foot wide cement concrete sidewalks are provided on both sides of NE 145th Street. Between the crossing structure and 5th Avenue NE, the south sidewalk widens to 11 feet where a King County Metro bus stop was formerly located in the eastbound right-only turn lane. The north sidewalk is also widened east of the I-5 crossing structure at an active King County Metro bus stop. All sidewalks are adjacent to traffic lanes.

Westbound NE 145th Street east of 5th Avenue NE and within the I-5 right-of-way has a 5-foot wide sidewalk that is separated from the travel lane by a 4-foot wide amenity zone.

2) *5th Avenue NE*

I-5 right-of-way continues along 5th Avenue NE for about 500 feet north of NE 145th Street. The east sidewalk is Portland cement concrete (PCC), 4-foot wide and separated from the northbound travel lane by parking, a curb, and an amenity zone. The amenity zone is about 10 feet wide near NE 145th Street and reduces to about 2.5 feet wide north of the North Jackson Park and Ride entrance on the west side of 5th Avenue NE. The parking, curb, 2.5-foot wide amenity zone and 4-foot wide sidewalk continue north on the east side of 5th Avenue NE to and beyond NE 152nd Street. Some sections of the east sidewalk do not meet current ADA requirements for vertical discontinuities and slopes at driveway crossings.

South of NE 152nd Street, the west sidewalk is similar to the east sidewalk: PCC 4 feet wide, and separated from the southbound travel lane by a 2.5-foot-wide amenity zone, a curb, and on-street parking. Southbound parking is prohibited near the NE 149th Street intersection and south of NE 148th Street. The west sidewalk continues from the south side of the North Jackson Park and Ride entrance as a 6-foot wide asphalt concrete pavement to NE 145th Street.

3) *Jackson Park Freeway Station – I-5 and NE 145th Street*

The Jackson Park Freeway Station bus stops in the I-5 NE 145th Street interchange are south of the NE 145th Street bridge on northbound and southbound transit-only roadways. The stops are accessed by 6-foot-wide walkways from the NE 145th Street eastbound and westbound sidewalks. Walkways under the bridge on both sides of I-5 provide access across NE 145th Street. Near the east and west ends of the NE 145th Street bridge, stairways connect the north and south NE 145th Street sidewalks to the walkways.

4) *1st Avenue NE*

In the City of Shoreline, 1st Avenue NE between NE 145th Street and approximately NE 152nd Street is within one-quarter mile of the NE 145th Street Station. There are sections of PCC sidewalk on the east side of 1st Avenue NE south of N 148th Street along the Shoreline Unitarian Church property frontage and north of NE 149th Street. Most of the sidewalk is separated from the travel lane by parking, a curb and an amenity zone.

B) Bicycle Facilities

NE 155th Street has 5-foot wide designated bicycle lanes west of 5th Avenue NE. The section between approximately Corliss Avenue N and 5th Avenue NE is within one-half mile of the NE 145th Street Station.

C) Pedestrian and Bicycle Counts

Pedestrian and bicycle counts were included in the peak AM and PM period traffic turning movement counts for the LLE EIS. Most of these counts were conducted in May 2012.

Pedestrian activity in the NE 145th Street Station area, shown in Table 1, is generated at the I-5 northbound and southbound freeway flyer stops, the NE 145th Street bus stops and the 5th Avenue NE bus stops north of NE 145th Street. The highest pedestrian volumes on 5th Avenue NE, 15 pedestrians in the AM peak hour and 24 pedestrians in the PM peak hour, are associated with North Jackson Park-and-Ride crosswalk at the I-5 northbound on-ramp and northbound transit-only off-ramp. The I-5 southbound on-ramp crossing at NE 145th Street has 16 pedestrians per hour. This may be associated with the Lakeside School campus located south of NE 145th Street between 1st Avenue NE and 4th Avenue NE and access to the freeway bus stops. Other crosswalks have fewer than 10 pedestrians per hour.

Table 1: NE 145th Street Station Area Pedestrian and Bicycle Counts

Intersection	Peak Hour	Count Date	Approach Pedestrians/Bicycles per Hour			
			East	West	North	South
NE 145th St/Meridian Ave N	AM	5/17/2012	5/4	4/2	1/1	5/5
	PM	5/17/2012	1/1	2/1	3/1	1/0
NE 145th St/1st Ave NE	PM	5/17/2012	2/0	0/1	3/1	2/1
NE 145th St/4th Ave NE	PM	5/17/2012	n/a	n/a	n/a	0/0
NE 145th St/I-5 southbound ramps	AM	5/17/2012	0/2 ¹	0/0 ¹	2/0	16/0
	PM	5/17/2012	0/0 ¹	0/1 ¹	5/0	6/0
NE 145th St/5th Ave NE	AM	5/17/2012	9/3	1/0 ³	6/1	3/0
	PM	2/17/2011	0/1	0/0	6/0	8/0
NE 145th St/6th Ave NE	PM	5/17/2012	0/1 ²	0/0 ²	4/0	n/a
NE 145th St/8th Ave NE	PM	5/17/2012	0/1	0/1	5/0	n/a
5th Ave NE/I-5 northbound off-ramp	AM	3/17/2010	No pedestrian counts or crosswalks at this location.			
	PM	4/15/2010				
5th Ave NE/I-5 northbound on-ramp & transit-only off ramp	AM	5/17/2012	3/0 ³	15/0	0/1	0/1
	PM	5/17/2012	13/0 ³	24/0	6/1	1/1
5th Ave NE/N Jackson P&R driveway	PM	5/17/2012	N/A	6/0	0/1	1/0

¹There is no pedestrian crosswalk on the approach. There is a pedestrian undercrossing of the NE 145th Street bridge over I-5.

²There is no crosswalk on this approach.

³The east approach is a private driveway.

D) Transit Access

Figure 2 shows the bus stops on streets with transit service and the North Jackson Park-and-Ride Lot on 5th Avenue NE south of NE 148th Street. Within one-quarter mile of the station, bus stops are located on 5th Avenue NE between NE 145th Street and NE 152nd Street, and on NE 145th Street between 1st Avenue NE and 8th Avenue NE.

I-5 Jackson Park Freeway Station bus stop access at the NE 145th Street interchange is described above under “Pedestrian Facilities.”

2.1.2 NE 185th Street Station Area

A) Pedestrian Facilities

The NE 185th Street Station has pedestrian access from several City of Shoreline arterials within one-quarter mile of site (Figure 3). NE 185th Street and 5th/7th Avenue NE south of NE 185th Street are Minor Arterials. North of NE 185th Street, 1st Avenue NE and 5th Avenue NE are Collector Arterials. 10th Avenue NE is a Collector Arterial north and south of NE 185th Street.

1) *NE 185th Street*

NE 185th Street has PCC sidewalks on both sides west from 10th Avenue NE. These are separated from the roadway by amenity zones except on the I-5 crossing structure. Eastbound NE 185th Street has a marked bicycle lane and parking providing further separation between the travel lane and the sidewalk. Westbound NE 185th Street has a marked bicycle lane adjacent to the curb and no parking.

2) *5th/7th Avenue NE*

There are no sidewalks on 5th Avenue NE north of NE 185th Street or on 5th/7th Avenue NE south of NE 185th Street within one-quarter mile of the station, except for a short segment on the west side north of NE 189th Street.

3) *8th Avenue NE*

The east side of 8th Avenue NE north of NE 185th Street has a wide amenity zone and a sidewalk within one-quarter mile of the station.

4) *9th Avenue NE*

The section of 9th Avenue NE south of NE 185th Street and within one-quarter mile of the station has amenity zones and sidewalks on both sides.

5) *10th Avenue NE*

There are no sidewalks on 10th Avenue NE north or south of NE 185th Street within one-quarter mile of the station.

6) *NE 188th Street and NE 189th Street*

Both NE 188th Street and NE 189th Street have amenity zones and sidewalks on both sides between 8th Avenue NE and 10th Avenue NE within one-quarter mile of the station.

7) *NE 190th Street*

NE 190th Street has an amenity zone and sidewalk on the south side and a wide sidewalk on the north side. The north sidewalk is a school bus loading/unloading zone for the North City Elementary School. This school is scheduled to reopen for the 2017-2018 school year.

B) Bicycle Facilities

NE 185th Street has designated bicycle lanes in both directions within one-half mile of the station site between Meridian Avenue N and 10th Avenue NE, and on 10th Avenue NE between NE 175th Street and NE 195th Street.

C) Pedestrian and Bicycle Counts

The pedestrian activity shown in Table 2 is generated at the bus stops located on each leg of NE 185th Street between the bridge and 7th Avenue NE, as well as other neighborhood pedestrian activity. Pedestrian volumes were one to six pedestrians per hour along NE 185th Street from 5th Avenue NE to 8th Avenue NE, resulting in an LOS A rating for the existing sidewalks. (LLE FEIS Transportation Technical Report [TTR] page 4-46).

Table 2: NE 185th Street Station Area Pedestrian and Bicycle Counts (May 2012)

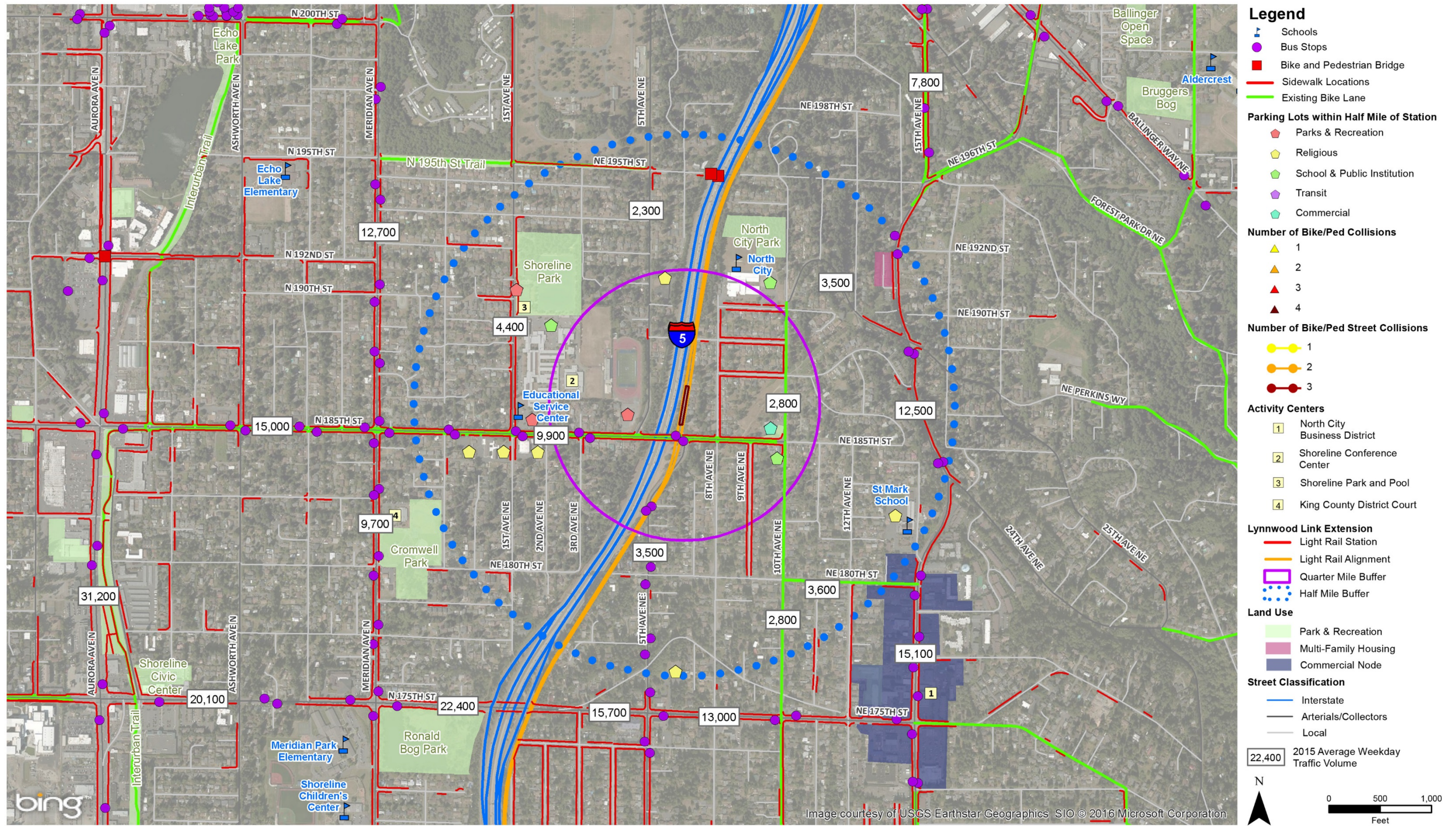
Intersection	Peak Hour	Count Date	Approach Pedestrians/Bicycles			
			East	West	North	South
N 185th St/Meridian Ave N	AM	11/17/2010	2/na	2/na	0/na	5/na
	PM	11/17/2010	8/na	4/na	0/na	2/na
NE 185th St/3rd Ave NE	PM	5/15/2012	1/2	2/8	0/1	0/0
NE 185th St/5th Ave NE	PM	5/15/2012	1/1	4/5	0/0	N/A
NE 185th St/7th Ave NE	PM	5/15/2012	0/5	0/5	2/0	4/0
NE 185th St/8th Ave NE	PM	5/15/2012	1/6	6/5	4/0	3/2
NE 185th St/9th Ave NE	PM	5/15/2012	0/4	1/4	N/A	2/0
NE 185th St/10th Ave NE	AM	5/15/2012	2/0	2/5	5/1	3/4
	PM	5/15/2012	8/1	0/5	2/6	0/0

na Bicycle counts were not made at this location.

D) Transit Access

Metro transit operates Route 348 between Richmond Beach and Northgate on NE 185th Street west of 7th Avenue NE and on 5th/7th Avenue NE south of NE 185th Street.

Figure 3: NE 185th Street Station Area Existing Conditions



2.2 School Walking Routes

2.2.1 NE 145th Street Station Area

The NE 145th Street Station is within the attendance boundary of Briarcrest Elementary School located at 2715 NE 158th Street, approximately 2 miles from the station site. Students in the station vicinity are beyond the maximum walking distance from Briarcrest School and have Shoreline School District bus transportation to and from the school.

Parkwood Elementary School, located at 1815 N 155th Street, is about 1.1 miles from the station site (Figure 4). Areas west of I-5 and north of NE 145th Street are within this school's walk boundary. NE 145th Street between I-5 and 1st Avenue NE is within one-quarter mile of the NE 145th Street Station. Walking routes for students along this segment of NE 145th Street are to the west to 1st Avenue NE and then to low volume local access streets leading to the school.

2.2.2 NE 185th Street Station Area

The NE 185th Street Station is in the Ridgecrest Elementary School attendance area and the NE 185th Street Station parking garage is in the Echo Lake Elementary School attendance area. I-5 is the north-south attendance boundary between the two schools. The area west of I-5 and south of NE 185th Street is the attendance area for Meridian Park Elementary School. Both the station and parking garage are outside of the school walk boundaries for all three elementary schools (Figure 5).

The North City Elementary School is about one-quarter mile north of the station site. It closed after the 2006-2007 school year and is scheduled to reopen for the 2017-2018 school year.

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Figure 4: NE 145th Street Station Area School Walking Routes

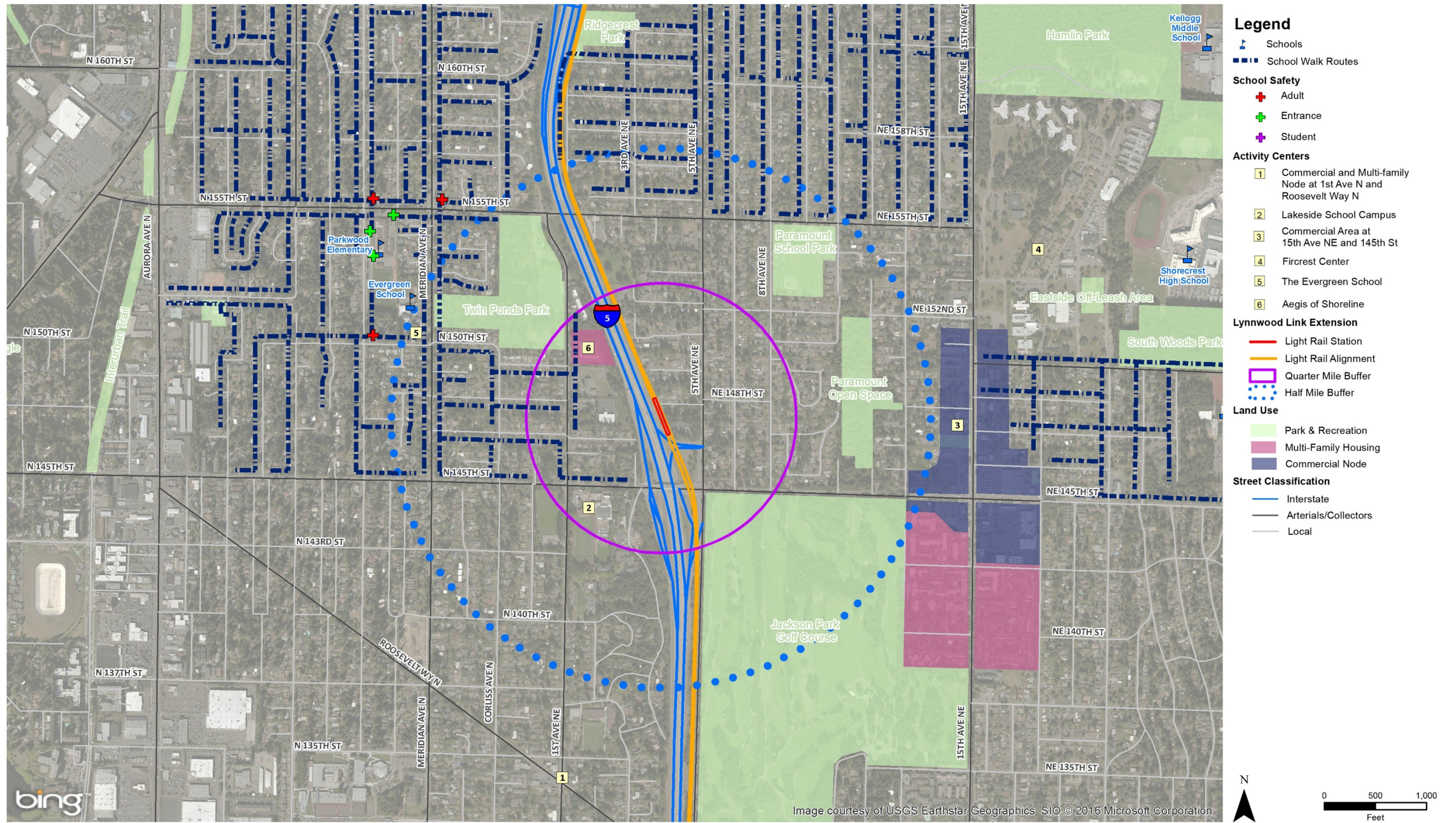
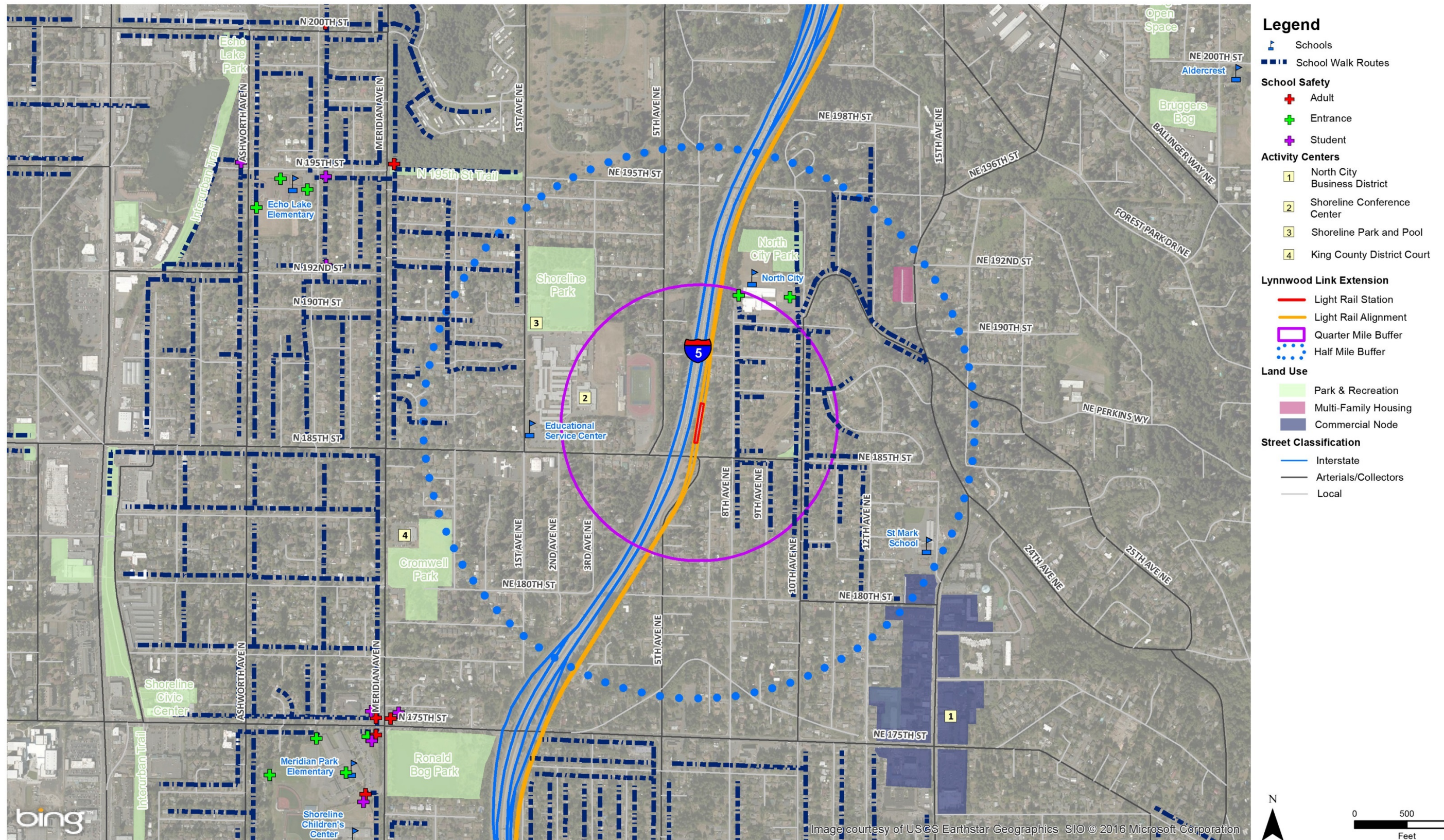


Figure 5: NE 185th Street Station Area School Walking Routes



2.3 Pedestrian and Bicycle Collisions

City of Shoreline bicycle and pedestrian collision data is available for the 2011 to 2015 five-year period.

2.3.1 NE 145th Street Station

Figure 2 shows the location of City of Shoreline intersection and street segment collisions involving pedestrians and bicycles. For the 2011 to 2015 period, one collision within one-half mile of the proposed station site was recorded at the NE 155th Street and 10th Avenue NE intersection.

2.3.2 NE 185th Street Station

There were two collisions involving pedestrians or bicycles at the NE 185th Street intersection with 8th Avenue NE in the 2011 to 2015 period (see Figure 3). The 5th/7th Avenue NE street segment south of NE 185th Street had one collision. Further away from the station site, but within one-half mile, the intersections of NE 185th Street at 1st Avenue NE, and NE 195th Street at 5th Avenue NE each had one collision. The street segment of 14th Avenue NE north of NE 185th Street also had one collision.

2.4 Street and Pedestrian-Scale Lighting

2.4.1 NE 145th Street Station

A) NE 145th Street

Street lighting is located along the north side of NE 145th Street east of 5th Avenue NE, and along the south side west of the I-5 interchange.

B) 1st Avenue NE

All four corners of the NE 145th Street intersection have street lights. North of NE 145th Street, the street is illuminated at the NE 147th Street intersection and between NE 148th Street and NE 149th Street. Street lights are located along the west side south of NE 145th Street.

C) 5th Avenue NE

Street lighting is located along both sides 5th Avenue NE north of NE 145th Street. South of NE 145th Street, both sides are illuminated through the I-5 north off-ramp intersection and within one-quarter mile of the station.

D) I-5 Interchange

The interchange ramp roadways and ramp intersections are illuminated. The NE 145th Street I-5 crossing structure is illuminated on both sides. Pedestrian-scale lighting is located along the pedestrian paths accessing the freeway flyer stops from NE 145th Street. The pedestrian paths under the NE 145th Street structure are illuminated by structure column-mounted lighting on the east side, and lighting attached to the underside of the roadway deck on the west side.

2.4.2 NE 185th Street Station**A) NE 185th Street**

Street lighting is located along the south side of NE 185th Street. There is additional lighting on all corners of the 1st Avenue NE intersection, at the 5th Avenue NE intersection and on the I-5 crossing structure.

B) 5th Avenue NE

There is no street lighting on 5th Avenue NE south of NE 185th Street within one-quarter mile of the station, or along 5th Avenue NE between NE 185th Street and NE 190th Street. The intersections with NE 185th Street and NE 190th Street have lighting.

C) 10th Avenue NE

Street lighting is located along the east, northbound roadway.

2.5 Parking

Parking surveys were conducted in May 2012 for the Lynnwood Link Extension Environmental Impact Statement. The survey area was within one-quarter mile of the station sites. Parking use was surveyed for midday (9 a.m. to 11 a.m.).

2.5.1 NE 145th Street Station Area

Table 3 shows the results of the May 2012 parking survey. Existing on-street parking utilization in the NE 145th Street Station area was approximately 26% at 116 of the 449 on-street parking spaces.

Off-street parking lots within one-half mile of the station are shown on Figure 2.

Table 3: NE 145th Street Station Area On-Street Parking Inventory (May 2012)

Street	Street Segments	Parking Spaces	Occupied Spaces	Restrictions
1st Ave NE	north of NE 145th St	12	1	
1st Ave NE	south of NE 145th St	13	12	no parking on west side
3rd Ave NE	north of NE 145th St	12	0	
4th Ave NE	south of NE 145th St	120	44	
5th Ave NE	NE 145th St to P&R driveway	6	6	no parking on west side
5th Ave NE	north of P&R driveway	29	4	
5th Ave NE	south of NE 145th St	0	0	no parking
6th Ave NE	north of NE 145th St	72	13	
8th Ave NE	north of NE 145th St	49	2	
9th Ave NE	north of NE 145th St	15	0	
NE 145th St	west of I-5	0	0	no parking
NE 145th St	east of I-5	0	0	no parking
NE 146th St	east of I-5	10	3	
NE 147th St	west of I-5	34	15	
NE 147th St	east of I-5	15	3	
NE 148th St	east of I-5	49	9	
NE 149th St	east of I-5	13	4	
		449	116	

Source: Parking survey spreadsheet provided by North Corridor Transit Partners. May 2016.

2.5.2 NE 185th Street Station Area

On street parking supply within one-quarter mile of the NE 185th Street Station site was 695 spaces with about 12% utilization, or 80 spaces, in the 9 a.m. to 11 a.m. period during the May 2012 survey (Table 4).

Table 4: NE 185th Street Station Area On-Street Parking Inventory (May 2012)

Street	Street Segments	Parking Spaces	Occupied Spaces	Restrictions
2nd Ave NE	South of NE 185th St	23	0	
3rd Ave NE	South of NE 185th St	55	4	
3rd Ave NE	North of NE 185th St	3	0	no parking on west side
5th Ave NE	South of NE 183rd Ct	11	0	
5th Ave NE	NE 183rd Ct to NE 185th St	6	6	no parking on west side
5th Ave NE	NE 185th St to NE 189th Ct	39	1	no parking on west side
5th Ave NE	NE 189th Ct to NE 190th St	4	0	
5th Ave NE	North of NE 190th St	3	0	no parking on east side
7th Ave NE	South of NE 185th St	41	6	
7th Ave NE	North of NE 185th St	23	5	
8th Ave NE	South of NE 185th St	74	1	
8th Ave NE	North of NE 185th St	68	11	
9th Ave NE	South of NE 185th St	57	8	
10th Ave NE	South of NE 185th St	40	7	
10th Ave NE	North of NE 185th St	45	5	
NE 182nd Ct	East of I-5	6	0	
NE 183rd Ct	East of I-5	2	0	
NE 183rd St	East of I-5	1	0	
NE 185th St	I-5 to 5th Ave NE	0	0	no parking west of I-5
NE 185th St	5th Ave NE to 2nd Ave NE	32	1	See note 1.
NE 185th St	West of 2nd Ave NE	0	0	no parking
NE 185th St	East of I-5	58	5	
NE 188th St	East of I-5	44	10	
NE 189th Ct	West of I-5	6	0	
NE 189th St	West of I-5	7	3	
NE 189th St	East of I-5	35	7	
NE 190th St	West of I-5	12	0	
		695	80	

Source: May 2012 parking survey spreadsheet provided by North Corridor Transit Partners. May 2016.

1. There is a westbound bicycle lane and no parking on the north side of NE 185th Street (July 2016). This is a changed condition from the May 2012 survey.

Figure 3 shows off-street parking lots within one-half mile off the station.

2.5.3 Parking Action Plans

The City of Shoreline and Sound Transit will develop an action plan to address potential unmet parking demand within one-quarter mile of the stations. Both stations will provide 500-space parking garages. Consideration of a restricted parking zone (RPZ) program would include both the benefits and adverse impacts. Benefits such as reduced commuter parking in the neighborhoods would be weighed against adverse impacts such as cost and effectiveness of enforcement. See 6.0 Neighborhood Impacts for a discussion of the Neighborhood Action Plans that will address anticipated impacts and neighbor concerns specific to station impacts.

2.6 Pedestrian and Bicycle Trip Generators

2.6.1 NE 145th Street Station Area

The LLE FEIS identified trip generators and activity centers within one-quarter mile of the station for pedestrians and one-half mile for bicycles. These are shown on Figure 2. A commercial area and multifamily housing is located along NE 145th Street east of 12th Avenue NE and along 15th Avenue NE north and south of NE 145th Street. The Fircrest Center is east of 15th Avenue NE north of NE 150th Street. Both of these areas are more than one-half mile from the station.

The Lakeside School Upper School campus (9th through 12th grade) is located within one-quarter mile of the station, south of NE 145th Street between 1st Avenue NE and 4th Avenue NE.

The parking lots located on Figure 2 indicate parks, churches and schools that are pedestrian and bicycle trip generators.

2.6.2 NE 185th Street Station Area

Figure 3 shows trip generators and activity centers within one-quarter mile for pedestrians and one-half mile for bicycles. A commercial area is located along 15th Avenue NE between NE 172nd Street and 15th Place NE. A northern portion of this area, along NE 180th Street, is within one-half mile of the station. The FEIS identifies one multifamily housing area on the west side of 15th Avenue NE north of the NE Perkins Way intersection.

Shoreline Stadium, Shoreline Spartan Recreation Center, and the Shoreline Conference Center are within one-quarter mile of the station north of NE 185th Street and between 1st Avenue NE and 5th Avenue NE.

The parking lots located on Figure 3 indicate parks, churches and schools that are pedestrian and bicycle trip generators.

3.0 STATION AREA FUTURE CONDITIONS

Future conditions for the scheduled Lynnwood Link Extension opening in 2023 include FEIS-committed roadway reconstruction projects. The 2023 conditions also include City of Shoreline zoning adopted in 2015 for the NE 185th Street Station Subarea Plan and scheduled for late 2016 adoption for the NE 145th Street Station Subarea Plan. Planned King County Metro transit route revisions for 2025 represent service changes to integrate with the light rail stations and service frequencies.

The LLE FEIS Transportation Technical Report Appendix A describes methods used to evaluate the LLE project motorized and non-motorized impacts. Sound Transit 2035 daily forecasts of light rail boardings and alightings were used to estimate pedestrian volumes and access and circulation in the station vicinity. Appendix D to this report contains the "Summary of Pedestrian

Forecasting and Analysis” (April 2015) which shows baseline and forecast pedestrian volumes on station vicinity sidewalks.

3.1 NE 145th Street Station Area

3.1.1 Station Access

The construction and operation of the NE 145th Street Station requires improvements to the station frontage along 5th Avenue NE between the existing I-5 on-ramp and the NE 148th Street intersection. These are labeled as intersection projects #1, #2, and #3, and roadway projects #4 and #5 on Figure 6. Traffic signals will be added to the I-5 on-ramp and NE 148th Street intersections with 5th Avenue NE.

All vehicle access to the station will be from a relocated west approach to the NE 148th Street intersection with I-5. The NE 145th Street intersection with 5th Avenue NE will be modified to add a westbound right-only lane. LLE-provided improvements at this intersection will allow future implementation of the 145th Street Multimodal Corridor preferred design concept.

The existing amenity zone and sidewalk on the east of 5th Avenue NE will remain. An amenity zone and shared-use path will be provided on the west side. A delineated 5-foot wide northbound bike lane will be provided on the east side. Southbound bicycles will use the shared-use path along the station frontage and in WSDOT right-of-way between NE 145th Street and the I-5 northbound on-ramp. Both the northbound and southbound bike facilities will be compatible with the City of Shoreline’s planned bicycle facilities for 5th Avenue NE north of NE 148th Street.

All station pick-up and drop-off will be internal to the station and accessed from the 5th Avenue NE intersection with NE 148th Street. Roadway reconstruction will not preclude the ability to provide on-street bus zones on 5th Avenue NE and NE 145th Street.

Bus transfers will be internal to the station site. Active and layover transit bays will be accessed from the 5th Avenue NE intersection with NE 148th Street. The King County Metro Connects long range transit plan shows two high frequency routes that will serve the NE 145th Street Station. A potential Sound Transit bus rapid transit (BRT) line would use NE 145th Street between 5th Avenue NE and Lake City Way (SR 522) and would enter the NE 145th Street Station. Figure 6 also shows a City of Shoreline concept for a potential multi-use trail located immediately east of the LLE guideway and running north from the NE 145th Street Station.

Figure 6 shows the off corridor bike network elements identified in the 145th Street Multimodal Corridor Study (adopted April 11, 2016) and within one-half mile of the NE 145th Street Station site.

West of I-5, off corridor bikeways are proposed on NE 143rd Street in the City of Seattle west of 1st Avenue NE, and in the City of Shoreline on NE 147th Street west of 3rd Avenue NE. The NE 147th Street bikeway would connect to a potential future pedestrian/bicycle crossing of I-5 to the NE 145th Street Station. Both the NE 143rd Street and NE 147th Street bikeways would connect to a Meridian Avenue N bikeway. East of 1st Avenue NE, a bikeway is planned for the south side of NE 145th Street crossing I-5 to 5th Avenue NE.

East of I-5, bikeways within one-half mile of the station are planned for 5th Avenue NE connecting south to a future City of Seattle 5th Avenue NE bikeway and north to a NE 155th Street east-west bikeway. The NE 145th Street bikeway would potentially connect to the Jackson Park perimeter trail between NE 5th Street and NE 12th Street and then south to NE 143rd Street where it would continue east crossing 15th Avenue NE. The off corridor bike network also shows a potential future multi-use trail along the east side of I-5. All newly constructed or reconstructed walkways and crosswalks will provide ADA accessibility.

3.1.2 Station Subarea Zoning

Figure 6 shows station area conditions with the first phase of Mixed Use Residential (MUR) zoning. The highest density, MUR-70, allows buildings 70 feet high which would typically be six stories with five residential floors over a commercial floor. The MUR-70 area is located north of NE 145th Street between 1st Avenue NE and 6th Avenue NE, and between 12th Avenue NE and 17th Avenue NE. Areas of MUR-45 zoning are located next to the MUR-70 zone and extend west to along NE 145th Street to Meridian Avenue N and east to 8th Avenue NE. There are two smaller areas of MUR-35 zoning. A second phase of zoning, ten years after the light rail is operational in 2023, would infill remaining low density portions of the subarea with MUR-35 zoning.

3.2 NE 185th Street Station Area

3.2.1 Station Access

Construction and operation of the station and parking garage requires improvements to several streets and intersections:

- NE 185th Street between 5th Avenue NE and 8th Avenue NE.
- Relocation of 5th/7th Avenue NE between about NE 182nd Court and NE 185th Street.
- Relocation of 5th Avenue NE north of NE 185th Street along the parking garage frontage.
- Modification of the west side of 8th Avenue NE along the station pick-up/drop-off area.

All newly constructed or reconstructed walkways and crosswalks will provide ADA accessibility.

The relocated 5th Avenue NE and 7th Avenue NE intersections will be signalized. The north leg of the 7th Avenue NE intersection will be a transit-only access to the station. Pick-up/drop-off station access will be from separate entrance and exit driveways on the west side of 8th Avenue NE, north of the NE 185th Street intersection which will remain stop sign controlled on the 8th Avenue NE approaches.

The existing NE 185th Street I-5 crossing structure will remain and will be reconfigured to provide a 12-foot-wide north sidewalk for access between the station and parking garage. The existing 6-foot-wide south sidewalk will remain. There will be one travel lane and one bike lane in each direction.

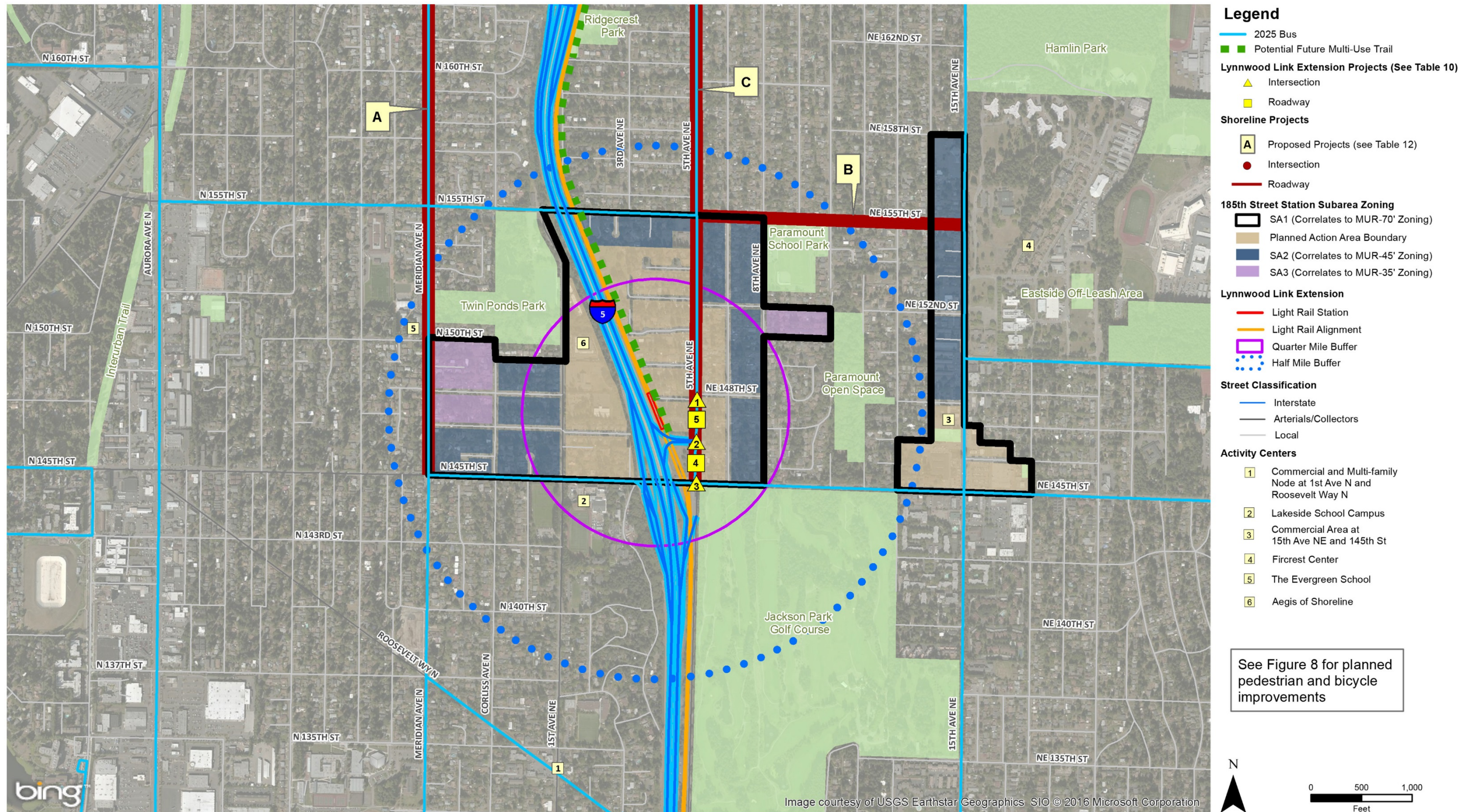
The existing parking will be removed from the south side of NE 185th Street between the west approach to the 5th Avenue NE intersection on the west side of I-5 to the east approach to the 8th Avenue NE intersection. Except for on the bridge over I-5, the roadway will have one bike lane and one travel lane in each direction and a two-way left turn with left turn lanes at the intersections.

Bus transfers will be internal to the station site. Active and layover transit bays will be accessed from the 7th Avenue NE intersection with NE 185th Street. The King County Metro Connects long range transit plan shows two high frequency routes and one local route that will serve the NE 185th Street Station. The Community Transit Swift service from Everett may terminate at the station. Figure 7 shows a City of Shoreline concept for a potential multi-use trail located immediately east of the LLE guideway and running between the NE 145th Street Station and NE 195th Street.

3.2.2 Station Subarea Zoning

Figure 7 shows station area conditions with the adopted NE 185th Street Station Subarea zoning. The highest density MUR-70 zoning is located north and south of NE 185th Street between 1st Avenue NE and 10th Avenue NE. MUR-45 zoning extends west along NE 185th Street from 3rd Avenue NE to Ashworth Avenue N.

Figure 6: NE 145th Street Station Area Future Conditions



4.0 PLANNED PEDESTRIAN AND BICYCLE IMPROVEMENTS

4.1 City of Shoreline Planned Pedestrian Improvements

4.1.1 NE 145th Street Station Area

Figure 8 shows the City of Shoreline planned pedestrian facility improvements in the station area. Within one-quarter mile of the station, the 2011 Transportation Master Plan (TMP) includes completion of sidewalks along both sides of 1st Avenue NE between NE 145th Street and NE 152nd Street.

The City of Shoreline's NE 145th Street Station Subarea Plan, scheduled for adoption in fall 2016, includes a "Green Network" which would add amenity zones and sidewalks. In addition to the TMP projects and arterials with existing sidewalks, other "Green Network" streets segments within one-quarter mile of the station are:

- N/NE 147th Street between Sunnyside Avenue N and 3rd Avenue NE.
- 3rd Avenue NE (alignment) between NE 145th Street and NE 147th Street.
- NE 148th Street between 5th Avenue NE and 8th Avenue NE.
- 8th Avenue NE between NE 147th Street and NE 151st Street.
- NE 147th Street between 8th Avenue NE and 9th Avenue NE.

The City of Shoreline's Preferred Design Concept for the 145th Street Multimodal Corridor Study includes replacing the existing sidewalk on the north side of the I-5 crossing bridge with a new, separate but adjacent non-motorized bridge. The City of Shoreline's preferred concept also provides 8-foot sidewalks on both sides of NE 145th Street, typically separated from the travel lanes by a 5-foot wide amenity zone.

4.1.2 NE 185th Street Station Area

Figure 9 shows the City of Shoreline's planned pedestrian facility improvements in the station area. Within one-quarter mile of the station, the 2011 Transportation Master Plan (TMP) includes completion of sidewalks along both sides of the following streets:

- 5th Avenue NE between NE 185th Street and NE 191st Street.
- 5th/7th Avenue NE between approximately NE 182nd Court and NE 185th Street.
- 8th Avenue NE between the 18100 block and NE 185th Street.
- 10th Avenue NE between approximately NE 182nd Street and NE 190th Street.

4.2 City of Shoreline Planned Bicycle System Improvements

Bicycle infrastructure gaps have been identified from the Bicycle Plan element of the City of Shoreline 2011 Transportation Master Plan (2011 TMP). Gaps are the differences between existing conditions and the Bicycle System Plan. Recommended projects are identified by their project number and prioritization total score in 2011 TMP Appendix I.

4.2.1 NE 145th Street Station Area

The NE 145th Street Station area has designated bike lanes on NE 155th Street west of 5th Avenue NE and within one-half mile of the station. The 2011 TMP includes three bicycle projects within one-half mile of the station (see Figure 8):

- Designated Bike Lane on Meridian Avenue N between NE 145th Street and NE 153rd Street (included in TMP #34, Priority Total 4)
- Designated Bike Lane on NE 155th Street between 5th Avenue NE and 10th Avenue NE (included in TMP #40, Priority Total 4)
- The City of Shoreline City Council adopted (April 11, 2016) Preferred Design Concept for the 145th Street Multimodal Corridor Study includes replacing the existing sidewalk on the north side of the I-5 crossing bridge with a new, separate but adjacent non-motorized bridge that will tie into the off-corridor bike network and will connect to the light rail station

4.2.2 NE 185th Street Station Area

Existing bicycle facilities within one-half mile of the station are on N/NE 185th Street between Meridian Avenue N and 10th Avenue NE, and the NE 195th Street bicycle/pedestrian bridge crossing I-5 (see Figure 9). The eastbound bike lanes on N/NE 185th Street are adjacent to on-street parking. Sharrows are marked on 10th Avenue NE south of NE Perkins Way within one-half mile of the station.

Figure 8: NE 145th Street Station Area Planned Pedestrian and Bicycle Improvements

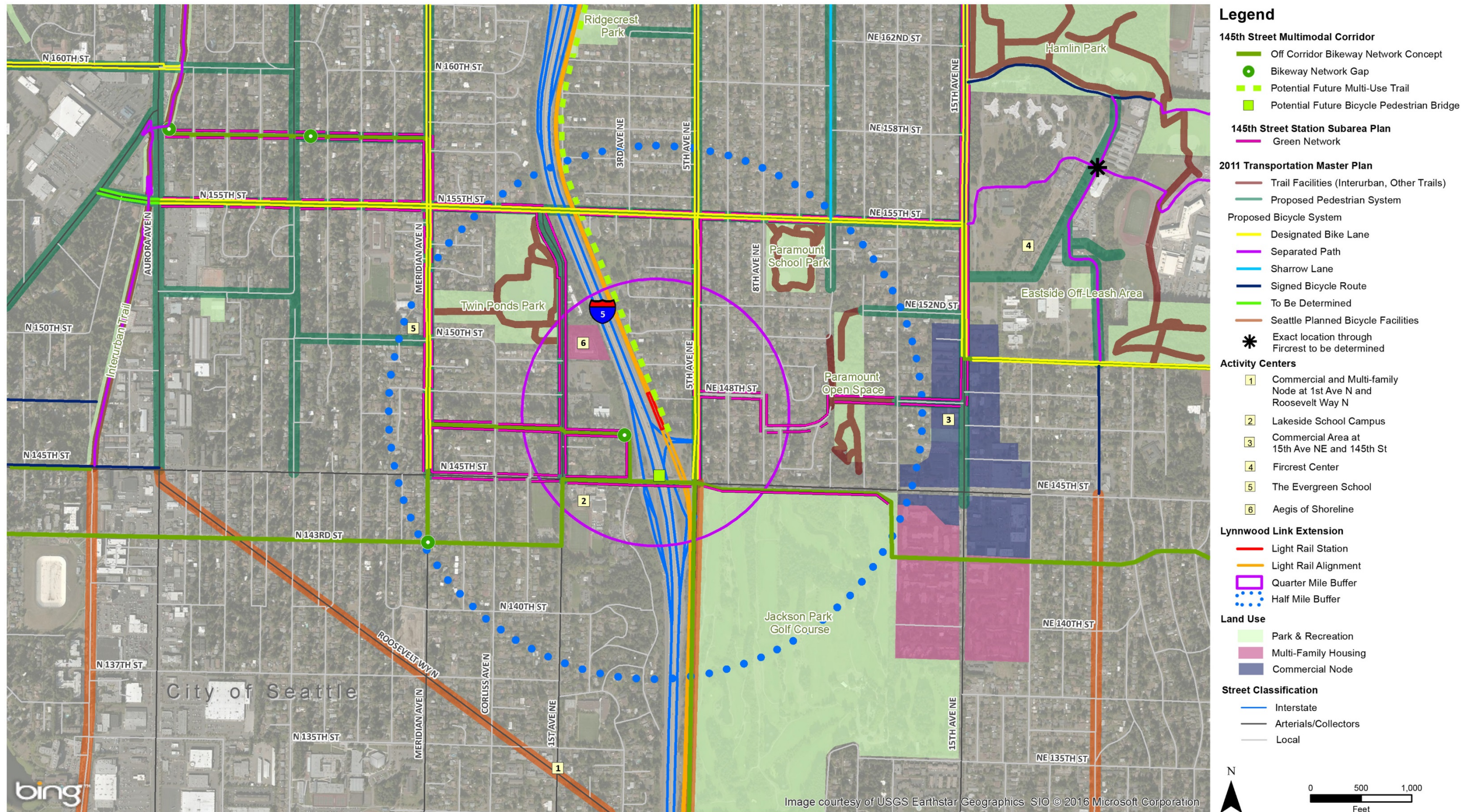
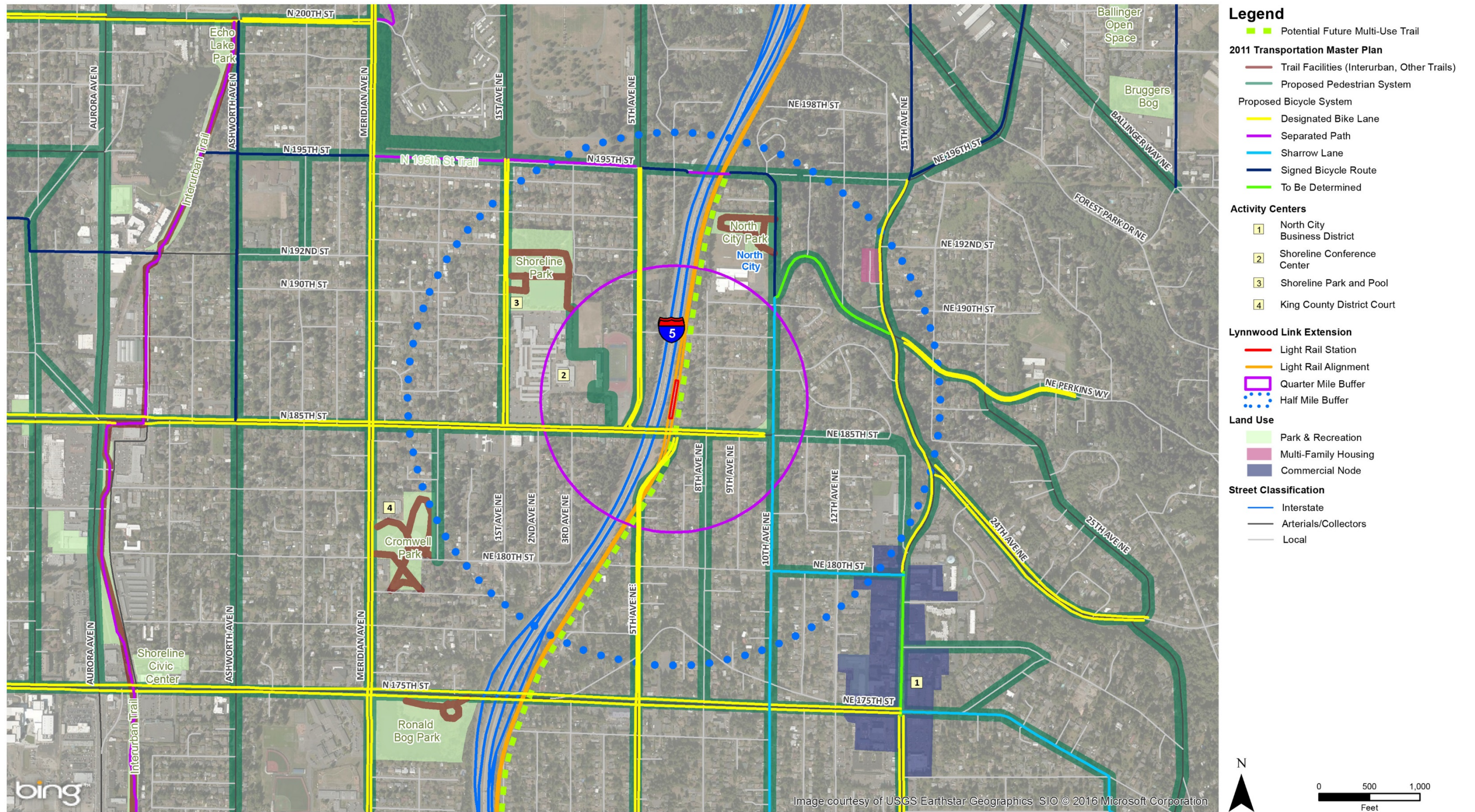


Figure 9: NE 185th Street Station Area Planned Pedestrian and Bicycle Improvements



The 2011 TMP includes several bicycle projects within one-half mile of the station:

- Separated Bike Path on NE 195th Street at the I-5 crossing and between 1st Avenue NE and 5th Avenue NE (TMP #38, Priority Total 1)
- Signed Bicycle Route on 10th Avenue NE between NE 185th Street and NE 195th Street, and on NE 195th Street between 10th Avenue NE and the I-5 crossing (TMP #39, Priority Total 4)
- Designated Bike Lane on 15th Avenue NE between NE 180th Street and 14th Avenue NE (included in TMP #41, Priority Total 3)
- Designated Bike Lane on 5th 7th Avenue NE between NE Serpentine Place and NE 195th Street (included in TMP #37, Priority Total 3)
- Sharrow lanes on 1st Avenue NE between NE 185th Street and NE 193rd Street (Bicycle System Implementation
<http://www.shorelinewa.gov/home/showdocument?id=22225>)
- Designated Bike Lane on NE Perkins Way between 15th Avenue NE and 16th Avenue NE; construct bicycle lanes in the uphill direction and install signage to indicate a bicycle route in the downhill direction (included in TMP #49, Priority Total 2)
- Sharrow Lane on 10th Avenue NE between NE 177th Place and NE 185th Street (included in TMP #64, Priority Total 2)
- Sharrow Lane on 180th Avenue NE between 10th Avenue NE and 14th Avenue NE (included in TMP #65, Priority Total 1)

5.0 TRAFFIC OPERATIONS

5.1 Critical Intersections

City of Shoreline critical intersections do not meet City of Shoreline level of service standards. Level of Service (LOS) D is the adopted standard for City of Shoreline signalized intersections on arterials and unsignalized intersecting arterials¹. Regionally significant state highways including N/NE 145th Street (SR 523) have a LOS E/mitigated service standard. I-5, SR 99 (Aurora Avenue N), and SR 522 (Lake City Way) are highways of statewide significance (HSS) and have a LOS D service standard. Table 5 shows the average vehicle delay ranges associated with each LOS for signalized and unsignalized intersections.

¹ City of Shoreline 2011 Transportation Master Plan. Policy T39. Page 192.

Table 5: Intersection Level of Service Criteria

Level of Service	Control Delay* – Average Seconds per Vehicle	
	Signalized	Unsignalized
A	≤10	0 to 10
B	>10 to 20	>10 to 15
C	>20 to 35	>15 to 25
D	>35 to 55	>25 to 35
E	>55 to 80	>35 to 50
F	>80	>50

Source: Transportation Research Board. Highway Capacity Manual 2010. Exhibit 18-4 and Exhibit 19-1.

* Control delay is time spent slowing, stopping, moving up in a queue, and accelerating back to desired speed.

5.1.1 NE 145th Street Station Area

A) Critical Intersections Level of Service (LOS)

Table 6 lists the NE 145th Street Station area intersections not meeting City of Shoreline or Washington State Department of Transportation (WSDOT) level of service standards for the LLE Preferred Alternative in 2035. NE 145th Street (SR 523) has a LOS E/mitigated standard except at its intersections with highways of statewide significance (HSS) where LOS D is the standard. HSS facilities in the NE 145th Street Station vicinity include Aurora Avenue (SR 99), I-5, and Lake City Way (SR 522).

Table 6: NE 145th Street Station Area Critical Intersections

Intersection	Control	LOS Standard	Preferred Alternative 2035	
			LOS	
			AM	PM
N 145th St and Aurora Ave N (SR 99) ¹	signal	D	D	E
NE 145th St and 3rd Ave NE ¹	none	E	n/a	F
NE 145th St and I-5 southbound ramps ²	signal	D	E	E
5th Ave NE and I-5 northbound off-ramp ²	stop	D	D	F
NE 145th St and 6th Ave NE ¹	stop	E	n/a	E/F
NE 145th St and 10th Ave NE ¹	stop	E	n/a	F
NE 145th St and 12th Ave NE ¹	stop	E	n/a	F
NE 145th St and Lake City Way (SR 523) ¹	signal	D	n/a	F
NE 155th St and 1st Ave NE ³	stop	D	n/a	F
NE 155th St and 8th Ave NE ³	stop	D	n/a	E
NE 155th St and 15th Ave NE ³	signal	D	n/a	F

n/a: This intersection not evaluated for AM peak hour operation

Critical intersections do not meet level of service standards for the AM or PM peak hour.

Sources:

¹Lynnwood Link Extension Final Environmental Impact Statement Transportation Technical Report. April 2015. Tables 5-26 and 5.27.

²Lynnwood Link Extension NE 145th Street Interchange Justification Report. May 2015. Tables 3-22 (AM) and 3-24 (PM).

³North Corridor Transit Partners. 155th Station Summary volumes and LOS_May2016. May 2016.

B) No Build and Preferred Alternative Critical Intersection Volume Differences

For each of the critical intersections listed in Table 6, Table 7 shows the peak hour traffic volumes for the No Build Alternative and the Preferred Alternative, the number of trips added by the Preferred Alternative and the percent change from the No Build volumes.

Table 7: NE 145th Street Station Area Critical Intersection 2035 Peak Period Traffic Volumes

Intersection	Peak Period	Alternative (LOS)	Approach Entering Volumes (vph)				Total
			East	West	North	South	
N 145th St and Aurora Ave N	PM	No Build (E)	1,035	655	1,330	1,770	4,790
		Preferred (E)	1,090	665	1,335	1,775	4,865
		Project Trips	55	10	5	5	75
		Change	5%	2%	<1%	<1%	2%
NE 145th St and 3rd Ave NE	PM	No Build (F)	1,300	1,200	1	n/a	2,501
		Preferred (F)	1,355	1,210	1	n/a	2,566
		Project Trips	55	10	-	-	65
		Change	4%	1%	-	-	3%
NE 145th St and I-5 southbound ramps	AM	No Build (F)	1,595	1,610	725	n/a	3,930
		Preferred (E)	1,605	1,685	725	n/a	4,015
		Project Trips	10	75	-	-	85
		Change	1%	5%	-	-	2%
NE 145th St and I-5 southbound ramps	PM	No Build (C)	1,250	1,205	975	n/a	3,430
		Preferred (E)	1,300	1,235	975	n/a	3,510
		Project Trips	50	30	-	-	80
		Change	4%	2%	-	-	2%
NE 145th St and 5th Ave NE	AM	No Build (F)	1,120	1,040	660	1,065	3,885
		Preferred (E)	1,155	1,115	720	1,100	4,090
		Project Trips	35	75	60	35	205
		Change	3%	7%	9%	3%	5%
5th Ave NE and I-5 northbound off-ramp	PM	No Build (F)	-	780	295	285	1,360
		Preferred (F)	-	780	315	305	1,400
		Project Trips	-	-	20	20	40
		Change	-	-	7%	7%	3%
NE 145th St and 6th Ave NE	PM	No Build (F)	1,110	1,515	10	0	2,635
		Preferred (F)	1,135	1,545	10	0	2,690
		Project Trips	25	30	-	-	55
		Change	2%	2%	-	-	2%
NE 145th St and 10th Ave NE	PM	No Build (F)	1,105	1,528	5	0	2,640
		Preferred (F)	1,130	1,558	5	0	2,695
		Project Trips	25	30	-	-	55
		Change	2%	2%	-	-	2%
NE 145th St and 12th Ave NE	PM	No Build (F)	1,095	1,505	10	15	2,625
		Preferred (F)	1,120	1,535	10	15	2,680
		Project Trips	25	30	-	-	55
		Change	2%	2%	-	-	2%

Intersection	Peak Period	Alternative (LOS)	Approach Entering Volumes (vph)				
			East	West	North	South	Total
NE 145th St and Lake City Way	PM	No Build (F)	260	1,190	1,890	2,010	5,350
		Preferred (F)	265	1,205	1,895	2,015	5,380
		Project Trips	5	15	5	5	30
		Change	2%	1%	<1%	<1%	1%
NE 155th St and 1st Ave NE	PM	No Build (F)	570	675		355	1,600
		Preferred (F)	590	680		355	1,625
		Project Trips	20	5	-	-	25
		Change	4%	1%	-	-	2%
NE 155th St and 8th Ave NE	PM	No Build (F)	470	630	40	75	1,215
		Preferred (F)	475	640	40	75	1,230
		Project Trips	5	10	-	-	15
		Change	1%	2%	-	-	1%
NE 155th St and 15th Ave NE	PM	No Build (F)	75	470	715	1,735	2,995
		Preferred (F)	75	480	715	1,735	3,005
		Project Trips	-	10	-	-	10
		Change	-	2%	-	-	<1%

vph: vehicles per hour

Critical intersections do not meet level of service standards for the AM or PM peak hour.

Source: North Corridor Transit Partners. Spreadsheet file: "145th Station Summary volumes _Nov 2014.xls".

5.1.2 NE 185th Street Station Area

A) Critical Intersections Level of Service (LOS)

Five intersections in the NE 185th Street Station area are projected to exceed level of service standards in the 2035 AM or PM peak hour for the LLE Preferred Alternative (Table 8).

Table 8: NE 185th Street Station Area Critical Intersections

Intersection	Control	LOS Standard	Preferred Alternative 2035 LOS	
			AM	PM
N 185th St and Aurora Ave N (SR 99)	signal	D	F	E
N 185th St and Meridian Ave N	signal	D	E	E
NE 185th St and 2nd Ave NE	stop	D	n/a	E
N 175th St and Meridian Ave N	signal	D	n/a	E
NE 175th St and I-5 northbound ramps	signal	D	D	E

n/a: This intersection not evaluated for AM peak hour operation

Source: Lynnwood Link Extension Final Environmental Impact Statement Transportation Technical Report.

April 2015. Tables 5-26 and 5.27.

B) No Build and Preferred Alternative Critical Intersection Volume Differences

Table 9 shows the No Build Alternative and Preferred Alternative peak hour volumes, and the trips added by the Preferred Alternative, for the critical intersections listed in Table 8.

Table 9: NE 185th Street Station Area Critical Intersection 2035 Peak Period Traffic Volumes

Intersection	Peak Period	Alternative (LOS)	Approach Entering Volumes (vph)				
			East	West	North	South	Total
N 185th St and Aurora Ave N (SR 99)	AM	No Build (F)	360	880	1,555	730	3,525
		Preferred (F)	390	915	1,570	750	3,625
		Project Trips	30	35	15	20	100
		Change	8%	4%	1%	3%	3%
N 185th St and Aurora Ave N (SR 99)	PM	No Build (F)	605	895	1,160	1,945	4,605
		Preferred (F)	670	905	1,170	1,950	4,695
		Project Trips	65	10	10	5	90
		Change	11%	1%	1%	<1%	2%
N 185th St and Meridian Ave N	AM	No Build (D)	510	465	765	280	2,020
		Preferred (E)	560	535	775	305	2,175
		Project Trips	50	70	10	25	155
		Change	10%	15%	1%	9%	8%
N 185th St and Meridian Ave N	PM	No Build (D)	515	500	420	905	2,340
		Preferred (E)	625	525	430	915	2,495
		Project Trips	110	25	10	10	155
		Change	21%	5%	2%	1%	7%
N 185th St and 2nd Ave NE	PM	No Build (C)	550	470	70	20	1,110
		Preferred (E)	705	525	75	20	1,325
		Project Trips	155	55	5	-	215
		Change	28%	12%	7%	-	19%
N 175th St and Meridian Ave N	PM	No Build (E)	1,372	1,005	525	890	3,792
		Preferred (E)	1,373	1,005	530	895	3,803
		Project Trips	1	-	5	5	11
		Change	<1%	-	1%	1%	<1%
N 175th St and I-5 northbound ramps	PM	No Build (F)	791	1,100	n/a	1,345	3,236
		Preferred (E)	793	1,102	n/a	1,346	3,241
		Project Trips	2	2	-	1	5
		Change	<1%	<1%	-	<1%	<1%

vph: vehicles per hour

Critical intersections do not meet level of service standards for the AM or PM peak hour.

Source: North Corridor Transit Partners. Spreadsheet file :“185th Station Intersection Summary Volumes for LLE FEIS.xls”.

5.2 Critical Intersections with Permissive Left Turns

5.2.1 NE 145th Street Station Area Critical Intersections

Table 6 lists 11 critical intersections evaluated for the NE 145th Street Station area. One of these, NE 155th Street and 15th Avenue NE, has signalized permissive left turns on the NE 155th Street approaches. The three NE 145th Street signalized intersections at Aurora Avenue N, I-5 southbound ramps, and Lake City Way do not have permissive left turns. Permissive left turn phases are prohibited at these locations. The remaining seven intersections are unsignalized.

A) NE 145th Street and Aurora Avenue N

All left turns at this signalized intersection are protected and are made from dedicated left turn lanes. Marked crosswalks are provided on all four approaches.

B) NE 145th Street and 3rd Avenue NE

The 3rd Avenue NE is signed as a “Private Road” and provides access to four residential properties north of NE 145th Street. Left turns at this signalized intersection are made from shared lanes. Marked crosswalks are not provided at this location.

C) NE 145th Street and I-5 Southbound Ramps NE

All left turns at this signalized intersection are protected and are made from dedicated left turn lanes. Marked crosswalks are provided for east-west movements only. North-south movements are via a pathway crossing under NE 145th Street.

D) 5th Avenue NE and I-5 northbound off-ramp

The 5th Avenue NE northbound and southbound through movements are stop-sign controlled. The I-5 northbound off-ramp continues through the intersection without stopping onto northbound 5th Avenue NE. There are no left turns at this intersection. Neither sidewalks nor marked crosswalks are provided at this location.

E) NE 145th Street and 6th Avenue NE

Eastbound to northbound left turns from NE 145th Street are from a shared lane. Southbound to eastbound left turns from 6th Avenue NE are stopped controlled. Marked crosswalks are not provided at this location.

F) NE 145th Street and 10th Avenue NE

King County Assessor maps show 10th Avenue NE providing access to two residential properties. The street is signed “Dead End.” Eastbound to northbound left turns from NE 145th Street are made from a shared lane. Southbound to eastbound left turns from 10th Avenue NE are stop controlled. Marked crosswalks are not provided at this location.

G) NE 145th Street and 12th Avenue NE

Eastbound to northbound left turns from NE 145th Street are made from a shared lane. Southbound to eastbound left turns from 12th Avenue NE are stopped controlled. Marked crosswalks are not provided at this location.

H) NE 145th Street and Lake City Way

All left turns at this signalized intersection are made from left turn lanes with protected signal phases.

I) NE 155th Street and 1st Avenue NE

NE 155th Street has a center, continuous two-way left turn lane. The turn lane striping is broken at the 1st Avenue NE “T” intersection. Westbound left turns from NE 155th Street are made from the left turn lane. Northbound to westbound left turns from 1st Avenue NE are stop controlled. Marked crosswalks are provided on the south and west approaches.

J) NE 155th Street and 8th Avenue NE

Left turns from NE 155th Street are made from a shared lane. Left turns from 8th Avenue NE are stop-controlled. Marked crosswalks are provided on the north, south, and east approaches.

K) NE 155th Street and 15th Avenue NE

This intersection is signal controlled with permissive left turns from the NE 155th Street approaches and protected-permissive left turn from the 15th Avenue NE approaches. The left turns from NE 155th Street are made from shared left-through lanes. The left turns from 15th Avenue NE are made from dedicated left turn lanes. Marked crosswalks are provided on all four approaches. The NE 155th Street minor arterial from the west ends at 15th Avenue NE principal arterial. The east approach is access to the Fircrest Residential Habilitation Center. The LLE FEIS TTR reported a four-year (2010-2013) accident rate of 0.49 accidents per million entering vehicles at this location. This rate is somewhat lower than the 0.60 reported at the NE 155th Street and 5th Avenue NE intersection for the same period.

5.2.2 NE 185th Street Station Area Critical Intersections

Five of the intersections evaluated in the FEIS would have critical operation in the 2035 AM or PM peak hour. All four signalized intersections have protected left turn phases and do not allow permissive left turns.

A) N 185th Street and Aurora Avenue N (SR 99)

All left turns at this signalized intersection are protected and provided with dedicated left turn lanes. Marked crosswalks are provided on all approaches.

B) N 185th Street and Meridian Avenue N

All left turns at this signalized intersection are protected and have dedicated left turn lanes. Protected-permissive phasing is provided for left turns off of N 185th Street. Marked crosswalks are provided on all intersection approaches.

C) NE 185th Street and 2nd Avenue NE

Left turns are made from the stop-controlled 2nd Avenue NE south approach, the stop-controlled Shoreline Center driveway north approach, and eastbound and westbound NE 185th Street from shared lanes. A marked crosswalk is provided on the west approach.

D) N 175th Street and Meridian Avenue N

All left turns at this signalized intersection are made from dedicated left turns lanes and have protected signal phasing. Southbound left turns are provided with a left turn and shared left-through lane. Marked crosswalks are provided on all approaches.

E) NE 175th Street and I-5 northbound ramps

All left turns at this signalized intersection are made from dedicated left turn lanes and have protected signal phases. Marked crosswalks are provided on the north, south and east approaches. Northbound right turns are prohibited and “turning traffic must yield to pedestrians” signs are posted for the right turn movement from the ramp.

6.0 NEIGHBORHOOD IMPACTS

As identified by the LLE FTA Record of Decision (July 2015), Sound Transit will work with the City of Shoreline to address impacts to neighborhood streets. This section within the Station Area Access Assessment Report serves to broadly outline the process that will be developed to address these impacts. Efforts to develop plans and mitigation implementation strategies are expected to begin in late 2018. Undertaking this effort closer to station construction and opening will help to more accurately capture existing conditions and anticipated impacts. Sound Transit and the City of Shoreline will establish the final scope and funding responsibilities for these efforts through a negotiated agreement.

6.1 Neighborhood Action Plans

Through a series of joint meetings to occur before station openings, Sound Transit and City of Shoreline staff will work closely with communities surrounding the stations to develop an action plan identifying anticipated problem areas on local streets and potential mitigation strategies. Previously developed City Neighborhood Traffic Action Plans will provide the baseline for these discussions. Action Plans will be updated for current conditions and to reflect anticipated impacts and neighborhood concerns specific to station impacts. The updated Neighborhood Traffic Action Plans will be used to inform a streamlined Neighborhood Traffic Safety Program (NTSP) process for traffic calming project implementation. Baseline Neighborhood Traffic Action Plans for the Parkwood, Ridgecrest, Meridian Park, North City, and Echo Lake neighborhoods are shown in Appendix B.

6.2 Neighborhood Traffic Calming Project Implementation

During construction and after station opening, residents will be able to initiate a Sound Transit-specific Neighborhood Traffic Safety Program (NTSP) process to address impacts occurring on local streets. The Sound Transit-specific process will be based on the City of Shoreline's existing NTSP guidelines and physical device implementation criteria; however a streamlined method will be developed with residents during the joint Sound Transit and City of Shoreline meetings in order to address impacts in a timely manner. Current City of Shoreline Neighborhood Traffic Safety program criteria are provided in Appendix C.

7.0 STATION AREA ACCESS ENHANCEMENTS

Pedestrian, bicycle, and vehicle access enhancements, primarily within a quarter mile of the LLE stations, will be provided by Sound Transit, the City of Shoreline, Washington State Department of Transportation, and King County Metro Transit. Sound Transit cost responsibility for improvements identified in this report is limited to a proportional share of those resulting directly from implementation of the light rail project.

7.1 Lynnwood Link Extension Access Improvements

7.1.1 NE 145th Street Station Area

Table 10 lists NE 145th Street Station area improvements required for the operation of the station. These improvements are also shown on Figure 8 and are primarily along 5th Avenue NE between and including the NE 145th Street and NE 148th Street intersections. These improvements reflect the location of the station and parking garage as provided in the September 2016 In-Progress 60% Submittal. The existing I-5 northbound on-ramp will remain at its existing location on 5th Avenue NE and all station and parking garage vehicle access will be from the NE 148th Street intersection with the west leg realigned opposite the existing east leg.

Table 10: Lynnwood Link Extension NE 145th Street Station Area Improvements

Location (numbers refer to Figure 6)	Description
<p>1. NE 148th Street and 5th Avenue NE</p>	<ul style="list-style-type: none"> • Add traffic signal. • Approach lane arrangements: <ul style="list-style-type: none"> ○ North– provide one left turn lane and one through/right lane; transition north of the intersection to the existing roadway cross section with one lane each direction and parking both sides; replace north cross walk. ○ South – one left lane turn and one through/right lane; bike lane; retain existing amenity zone and sidewalk; add south crosswalk. ○ East – one left/through/right lane; replace east crosswalk . ○ West – realign to match east approach centerline; one left/through lane and one right-only lane; amenity zone and sidewalk on north side; amenity zone and shared-use path on south side. • Provide northbound bike lane south of intersection, transition to existing cross section north of intersection.
<p>2. I-5 northbound on ramp and 5th Avenue NE</p>	<ul style="list-style-type: none"> • Add traffic signal. • Approach lane arrangements: <ul style="list-style-type: none"> ○ North– remove existing southbound to westbound right turn traffic island; add north crosswalk; widen roadway to the west to accommodate 2 southbound lanes; operate existing right-only lane as a through/right lane. ○ South – no change. ○ West – remove existing I-5 transit-only off ramp; replace west crosswalk. • Provide northbound bike lane (parking removed).
<p>3. NE 145th Street and 5th Avenue NE</p>	<ul style="list-style-type: none"> • Modify traffic signal for east approach right turn lane. • Approach lane arrangements: <ul style="list-style-type: none"> ○ North – Reconstruct west curb line, amenity zone and sidewalk. ○ South – no change. ○ East – Add right turn lane. ○ West - no change. • Provide northbound bike lane north of NE 145th Street.
<p>4. 5th Avenue NE – NE 145th Street to I-5 northbound on ramp</p>	<ul style="list-style-type: none"> • Two lanes each direction. • Northbound bike lane on east side. • Maintain existing east side amenity zone and address existing sidewalk ADA deficiencies. • West side amenity zone and off-street shared-use path.
<p>5. 5th Avenue NE – I-5 northbound on ramp to NE 148th Street</p>	<ul style="list-style-type: none"> • Two lanes southbound and one lane northbound. • Northbound bike lane on east side. • Maintain existing east side amenity zone and address existing sidewalk ADA deficiencies. • Provide off-street shared-use path along station frontage.

7.1.2 NE 185th Street Station

Table 11 lists the vehicle, pedestrian and bicycle access improvements required for operation of the NE 185th Street Station and parking garage. These improvements include potential traffic mitigation identified in the ROD at the NE 185th Street intersections with Meridian Avenue N and 2nd Avenue NE.

The station and garage locations remain the same as developed in the preliminary engineering phase and evaluated in the FEIS and ROD. Development of the station final design has changed the station access. Bus transit access into the station remains at the relocated 7th Avenue NE intersection on NE 185th Street. Pick-up and drop-off access is relocated to entrance and exit driveways on the west side of 8th Avenue NE.

Table 11: Lynnwood Link Extension NE 185th Street Station Area Improvements

Location (numbers refer to Figure 7)	Description
1. NE 185 th Street and NE 185 th Street Station/5 th Avenue NE east of I-5	<ul style="list-style-type: none"> • Add traffic signal • Approach lane arrangements: <ul style="list-style-type: none"> ○ North (transit only) – left/through/right lane ○ South– left turn lane, through (transit only)/right turn lane ○ East – left turn lane, through/right (transit only) lane ○ West – left turn (transit only) lane, through/right lane • Provide eastbound and westbound buffered bike lanes on NE 185th Street
2. NE 185 th Street and 5 th Avenue NE west of I-5	<ul style="list-style-type: none"> • Add traffic signal with bike-activated signal detection or bicycle push button • Approach lane arrangements: <ul style="list-style-type: none"> ○ North approach – left turn lane, right turn lane ○ South approach – existing driveway ○ East approach –through/right lane ○ West approach – left turn lane, through/right lane • Provide eastbound and westbound buffered bike lanes on NE 185th Street.
3. NE 185 th Street and 8 th Avenue NE	<ul style="list-style-type: none"> • Approach lane arrangements: <ul style="list-style-type: none"> ○ North, stop sign controlled – left/through/right lane ○ South, stop sign controlled – left/through/right lane ○ East– left turn lane, through/right lane ○ West– left turn lane, through/right lane • Eastbound and westbound buffered bike lanes on NE 185th Street.
4. NE 185 th Street and 2 nd Avenue NE (Record of Decision Table B-1 mitigation)	<ul style="list-style-type: none"> • Add a two-way left-turn lane or refuge area on NE 185th Street
5. N 185 th Street and Meridian Avenue N (Record of Decision Table B-1 mitigation)	<ul style="list-style-type: none"> • Add protected-permissive phasing to the Meridian Avenue N northbound and southbound left turns.

Location (numbers refer to Figure 7)	Description
6. 5 th Avenue NE east of I-5 – from about 200’ south of NE 182 nd Court to NE 185 th Street*	<ul style="list-style-type: none"> • Two lanes • Bike lanes each side • West and east sides amenity zone and sidewalk
7. NE 185 th Street – 5 th Avenue NE to 7 th Avenue NE (including I-5 crossing)	<ul style="list-style-type: none"> • Provide widened sidewalk on north side of existing I-5 crossing bridge • Two lanes • Buffered bike lanes in both directions • No planted amenity zone on bridge
8. NE 185 th Street – 7 th Avenue NE to 8 th Avenue NE	<ul style="list-style-type: none"> • Two lane lanes including left turn lanes at intersections • Maintain existing south side amenity zone and sidewalk • Provide amenity zone and 8’ wide sidewalk on north side • Buffered bike lanes in both directions
9. 5 th Avenue NE west of I-5 – NE 185 th Street to south of NE 189 th Street**	<ul style="list-style-type: none"> • Two lanes • Bike lanes each side • West side amenity zone and sidewalk • East side sidewalk and amenity zone along parking garage
10. 8 th Avenue NE – NE 185 th Street to south of NE 188 th Street	<ul style="list-style-type: none"> • Add curb and gutter on west side off roadway along station property. • Add driveways on west side to station pick-up/drop-off area. • Add amenity zone and sidewalk on west side along station property

* *An alternative cross section would omit the east sidewalk and extend the non-motorized facilities south to NE 180th Street.*

** *An alternative cross section would extend 5th Avenue NE non-motorized facilities north to NE 190th Street.*

7.2 City of Shoreline Projects

Table 12 lists seven projects funded by City of Shoreline Transportation Impact Fees (TIFs) and three capital improvement projects for bicycle plan implementation projects within one-half mile of the LLE stations. TIFs can only be used for projects that add traffic capacity. Project B is an intersection that is identified in the LLE FEIS and ROD for traffic impact mitigation (see location #5 in Table 11 and on Figure 7).

Table 12: City of Shoreline Projects

Figures 6 & 7 ID	Description	Growth Project*
A	Add Two-way Left Turn Lane: Meridian Ave N (N 145th St to N 205th St)	Yes
B	Interurban Trail to Burke Gilman Trail Connector (NE 155th St, 5th Ave NE to 15th Ave NE bike lanes)	No
C	Re-channelize 5th Avenue NE from NE 145th Street to NE 195th Street for bicycle lanes as part of bicycle plan implementation	No
D	Intersection Improvement: Meridian Ave N / N 185th St	Yes
E	Add Two-way Left Turn Lane: N 175th St (Stone Ave N to Meridian Ave N)	Yes
F	Intersection Improvement: Meridian Ave N / N 175th St	Yes
G	Increase Turn-pocket Length: N 175th St (Meridian Ave N to I-5)	Yes
H	Intersection Improvement: 15th Ave NE / NE 175th St	Yes
I	Add Two-way Left Turn Lane: NE 185th St (1st Ave NE to 7th Ave NE)	Yes
J	Re-channelize 1st Ave NE from NE 185th St to NE 195th St for bicycle lanes as part of bicycle to plan implementation	No

**Growth projects funded by City of Shoreline Transportation Impact Fees (TIFs)*

Source: City of Shoreline transportation growth projects

<http://www.shorelinewa.gov/home/showdocument?id=18733>

7.3 City of Shoreline Station Area Candidate Access Enhancement Projects

The City of Shoreline has identified 44 project segments that are candidates for LLE station area access enhancements. These are drawn from the 2011 Transportation Master Plan, the City of Shoreline’s station area subarea planning, and the 145th Street Multimodal Corridor Study.

7.3.1 NE 145th Street Station Area

Figure 10 and **Error! Reference source not found.** show 21 candidate enhancement project segments within one-half mile of the NE 145th Street Station. These include 15 of the “Green Network” projects that are shown in Figure 6 as projects to support the station subarea mixed-use residential redevelopment.

Project #17 includes 5th Avenue NE roadway and intersection improvements required for operation of the LLE project.

7.3.2 NE 185th Street Station Area

There are 23 candidate enhancement project segments within one-half mile of the NE 185th Street Station (see Figure 11 and Table 14). Project improvements required for operation of the LLE are as follows:

- The NE 185th Street segment of #5 between relocated 5th Avenue NE and 7th Avenue NE intersections.
- The 5th Avenue NE segment of #6 along the LLE parking garage frontage.
- The 8th Avenue NE segment of #11 along the NE 185th Street Station pick-up/drop-off area frontage.
- The NE 185th Street segment of #12 between the relocated 7th Avenue NE intersection and 8th Avenue NE.
- The 5th/7th Avenue NE segment of #13 between approximately NE 182nd Court and NE 185th Street.

Most of the other candidate projects are City of Shoreline 2011 Transportation Master Plan pedestrian and bicycle system projects.

Figure 10: NE 145th Street Station Area Potential Access Enhancement Project Elements

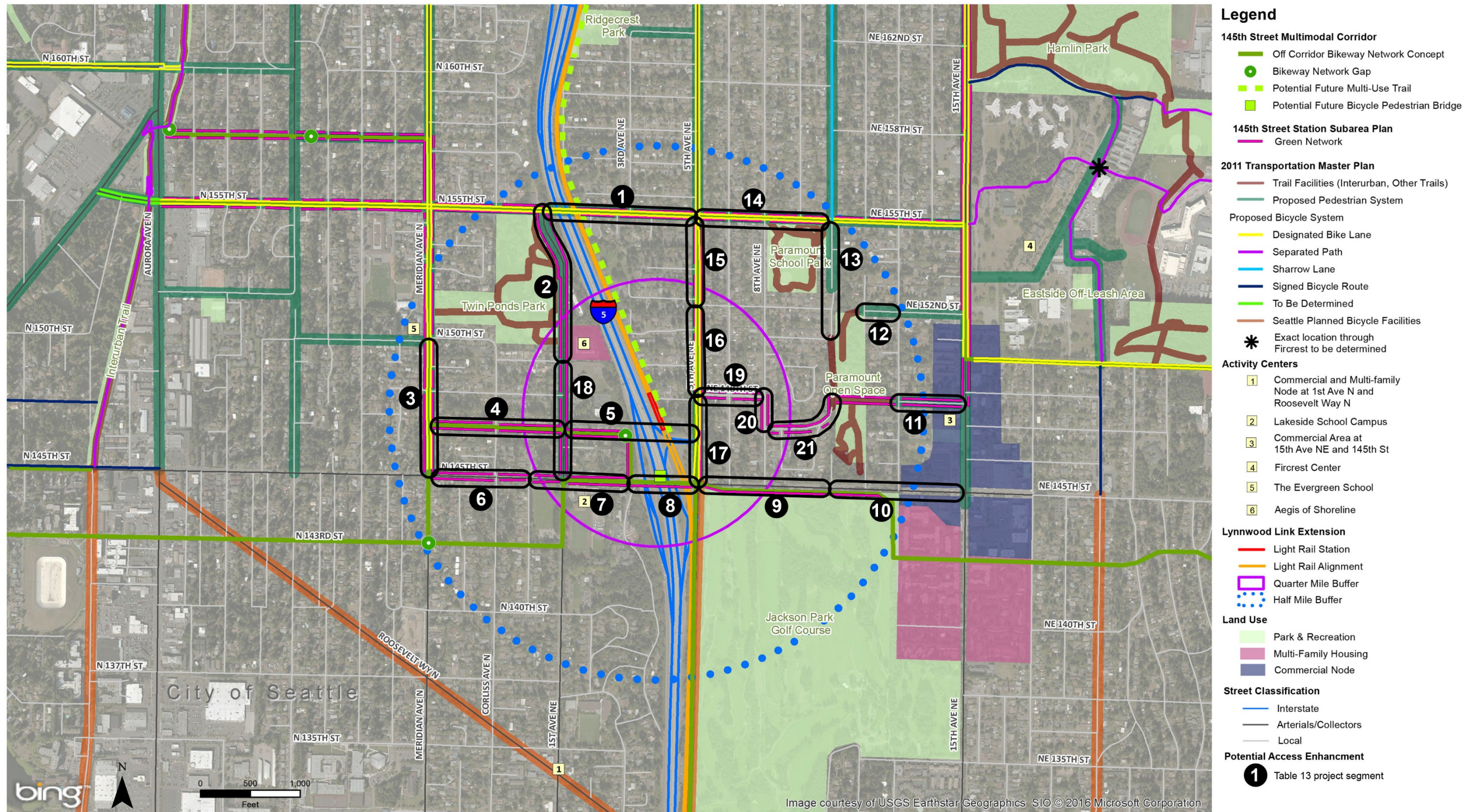


Table 13: NE 145th Street Station Area Potential Access Enhancement Project Elements

Project #	Street	From	To	Sidewalks	Amenity Zone	Designated Bike Lanes	Combined Bike & Parking Lane	Center Two-Way Turn Lane	Left Turn Lanes	BAT Lane/Queue Jump Lane	Green Network	Bridge Widening	New Bridge	Major Preservation Project
1	N 155th St	1st Ave NE	5th Ave NE			X					X			X
2	1st Ave NE	N 149th St	N 155th St	X	X	X					X			
3	Meridian Ave N	N 145th St	N 150th St			X		X	X					X
4	N 147th St	Meridian Ave N	1st Ave NE	X	X	X					X			
5	N 147th St	1st Ave NE	5th Ave NE	X	X	X					X		X*	
6	N 145th St	Meridian Ave N	Sunnyside Ave N	X	X				X					
7	N 145th St	Sunnyside Ave N	3rd Ave NE	X	X									
8	N 145th St	3rd Ave NE	5th Ave NE	X							X	X	X	
9	NE 145th St	5th Ave NE	10th Ave NE	X	X					X				
10	NE 145th St	10th Ave NE	15th Ave NE	X	X					X				
11	NE 148th St	12th Ave NE	15th Ave NE	X	X									
12	NE 152 nd St	11th Ave NE	12th Ave NE	X	X						X			
13	10th Ave NE	NE 151st St	NE 155th St	X	X						X			
14	NE 155th St	5th Ave NE	10th Ave NE	X	X	X		X	X		X			
15	5th Ave NE	NE 152nd	NE 155th St			X	X				X			
16	5th Ave NE	NE 148th St	NE 152nd St			X	X				X			
17	5th Ave NE	NE 145th St	NE 148th St	X	X	X					X			
18	1st Ave NE	N 145th St	NE 149th St	X	X	X					X			
19	NE 148th St	5th Ave NE	8th Ave NE	X	X						X			
20	8th Ave NE	NE 147th St	NE 148th St	X	X						X			
21	NE 147th St	8th Ave NE	Paramount Park	X	X						X			

* The City of Shoreline is evaluating the feasibility of an I-5 non-motorized crossing on alignment at NE 147th Street, NE 148th Street, or NE 149th Street.

Figure 11: NE 185th Street Station Area Potential Access Enhancement Project Elements

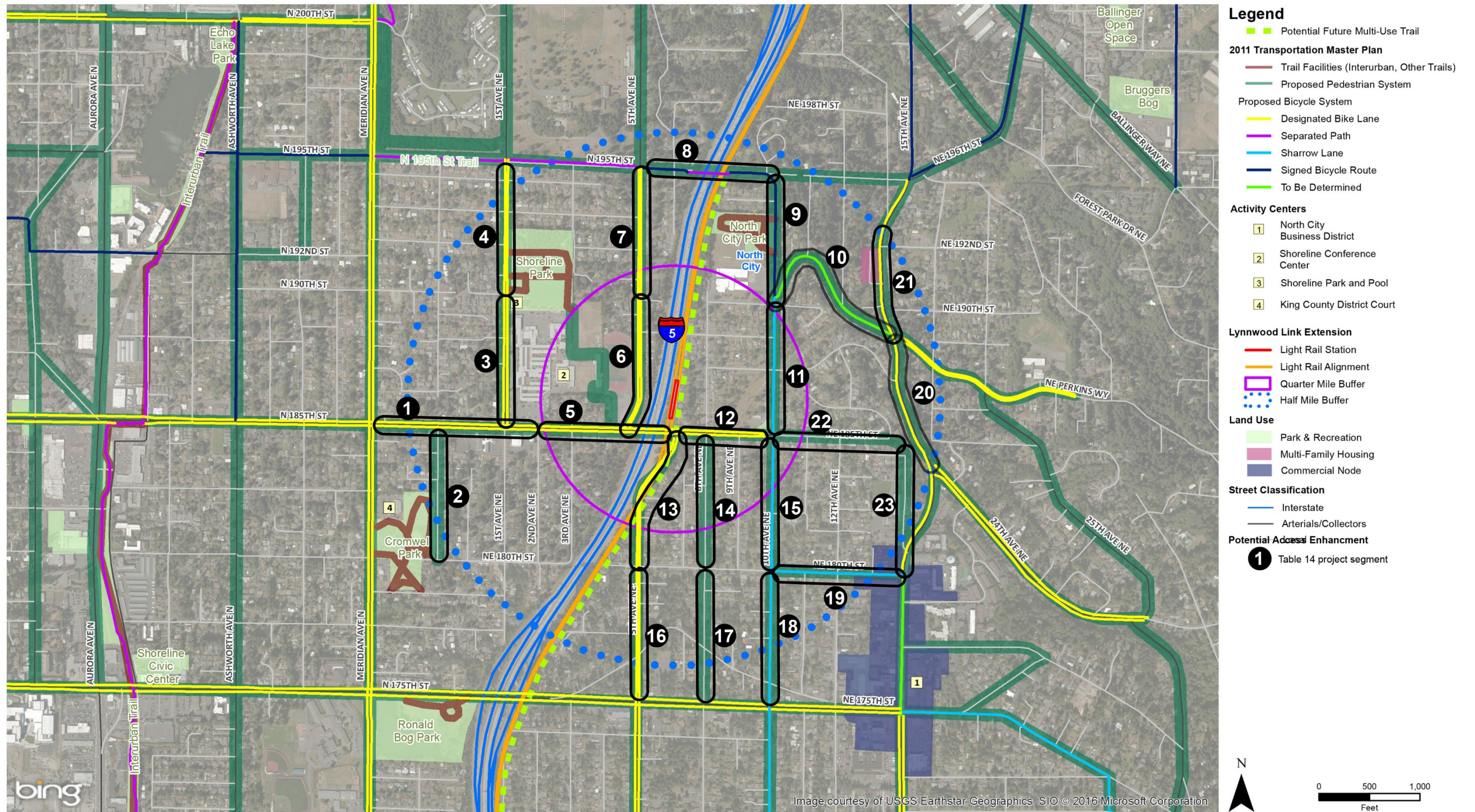


Table 14: NE 185th Street Station Area Potential Access Enhancement Project Elements

Project #	Street	From	To	Sidewalks	Amenity Zone	Designated Bike Lanes	Combined Bike & Parking Lane	Bike Route Signage	Sharrows	Center Two-Way Turn Lane	Intersection Turn Lanes	Left Turn Lanes	BAT Lane/Queue Jump Lane	Bridge Widening	New Bridge	Major Preservation Project
1	NE 185th St	Meridian Ave N	2nd Ave NE			X				X	X					X
2	Corliss Ave N	NE 180th St	NE 185th St	X	X				X							
3	1st Ave NE	NE 185th St	N 190th St			X										
4	1st Ave NE	N 190th St	NE 193rd St	X	X	X										
5	NE 185th St	2nd Ave NE	7th Ave/5th Ave NE	X	X	X				X						X
6	5th Ave NE	NE 185th St	NE 190th St	X	X	X										
7	5th Ave NE	NE 190th St	NE 195th St	X	X	X										
8	NE 195th	5th Ave NE	10th Ave NE	X	X	X		X							X	
9	10th Ave NE	NE 190th St	NE 195th St	X	X			X								
10	NE Perkins Way	10th Ave NE	15th Ave NE	X		X	X									
11	10th Ave NE	NE 185th St	NE 190th St					X								
12	NE 185th St	7th Ave/5th Ave NE	10th Ave NE			X				X						X
13	5th Ave NE	NE 180th St	NE 185th St	X	X	X										
14	8th Ave NE	NE 180th St	NE 185th St	X	X											
15	10th Ave NE	NE 180th St	NE 185th St		X				X							
16	5th Ave NE	NE 175th St	NE 180th St	X	X	X										
17	8th Ave NE	NE 175th St	NE 180th St	X	X											
18	10th Ave NE	NE 175th St	NE 180th St		X											
19	NE 180th St	10th Ave NE	15th Ave NE	X	X											
20	15th Ave NE	24th Ave NE	NE Perkins Way	X	X	X										
21	15th Ave NE	NE Perkins Way	NE 192nd St	X	X	X										
22	NE 185th St	10th Ave NE	15th PI NE	X	X											
23	15th PI NE	NE 108th St	NE 185th St	X	X											

* Specific arterials and local streets long-term mitigation measures identified in the Lynnwood Link Extension Record of Decision, Appendix B Mitigation Plan (July 2015).

** Add protected-permissive phasing to the northbound and southbound left turns at the N 185th Street and Meridian Avenue N intersection.

*** Add a two-way left-turn lane or refuge area on NE 185th Street.

7.4 Improvement Priority

7.4.1 Prioritization Criteria

Table 15 lists City of Shoreline criteria to prioritize the candidate access projects. The criteria are applicable to both stations except for the “Green Network” which is only in the NE 145th Street Station subarea.

Table 15: Draft Prioritization Criteria

Criterion	Max Points
Proximity to Station	
Improvement is within ¼ mile of station	2 Points
Safety	
Location has a ped/bicycle crash history (at least one collision within the past five years)	2 Points
Location is along a street with speed limit : ≥35 mph = 2 points 30 mph = 1 point	2 Points
Location is along a street with classification : Principal Arterial = 3 points Minor Arterial = 2 points Collector Arterial = 1 point	3 Points
Pedestrian Accessibility	
Upgrades an existing pedestrian facility	1 Point
Pedestrian Connectivity	
Closes gap or extends an existing pedestrian facility	2 Points
Improvement is located along the 145 th St Station Subarea Plan’s Green Network	2 Points
Bicycle Connectivity	
Closes gap or extends an existing bicycle facility	2 Points
Improvement is located on the 145 th St Corridor Study’s Off Corridor Bicycle Network	2 Points
Transit Connectivity	
Improvement is located on a street served by transit.	2 Points
Travel Routes to Schools	
Improvement is along a school’s suggested routes to schools map	3 Points
Travel Routes to Parks	
Improvement is along a ped/bike route to a park	2 Points
Trip Generators and Attractors	
Connects to an activity center (employment center, retail/business center, civic buildings, community services, transit stop, existing p-n-r or surface parking lot)	2 Points
Density	
Location is along a street with a subarea plan zoning of: > MUR-70’ Zoning = 3 points >MUR-45’ Zoning = 2 points >MUR-35’ Zoning = 1 point	3 Points
Total Project Score	Max Points
	30 Points

Source: City of Shoreline, September 15, 2016

7.4.2 Improvement Priority Ranking

A) NE 145th Street Station Area

Table 16 shows the results of applying the Table 15 prioritization criteria to the 21 candidate project segments within one-half mile of the station. The segments are ordered in descending priority with the five NE 145th Street segments included in the top ten scoring segments. All three 5th Avenue NE segments between NE 145th Street and NE 155th Street were at or above the median score of 15. Project segment #17, which is included in NE 145th Street Station roadway improvement, scored 18.

B) NE 185th Street Station Area

Priority scores for the 23 candidate project segments within one-half mile of the NE 185th Street Station are presented in Table 17 in descending order. Scores range from a low of 4 to a high of 18 with a median score of 11.

Table 16: NE 145th Street Station Area Candidate Project Segment Priority

Project #	Street	From	To	1/4 Mile	Ped/Bike Crash History	Speed 30	Speed 35	Principal Arterial	Minor	Collector	Ped Upgrade	Ped Gap	Green Network	Bike Gap	Off Corridor Bike Network	Transit	School Route	Park Route	Activity Center	MUR 35	MUR 45	MUR 70	Score
8	N 145th St	3rd Ave NE	5th Ave NE	2	2		2	3			1		2		2	2		2	2			3	23
7	N 145th St	Sunnyside Ave N	3rd Ave NE	2	2		2	3			1				2	2	3		2			3	22
9	NE 145th St	5th Ave NE	10th Ave NE	2	2		2	3			1				2	2		2	2			3	21
16	5th Ave NE	NE 148th St	NE 152nd St	2		1			2				2	2	2	2			2			3	18
17	5th Ave NE	NE 145th St	NE 148th St	2		1			2				2	2	2	2			2			3	18
18	1st Ave NE	N 145th St	NE 149th St	2		1				1		2	2				3	2	2			3	18
3	Meridian Ave N	N 145th St	N 150th St				2		2					2	2	2	3		2		2		17
6	N 145th St	Meridian Ave N	Sunnyside Ave N		2		2	3			1					2	3		2		2		17
10	NE 145th St	10th Ave NE	15th Ave NE		2		2	3			1				2	2		2	2			3	17
14	NE 155th St	5th Ave NE	10th Ave NE		2	1			2				2		2		3	2			2		16
15	5th Ave NE	NE 152nd	NE 155th St			1			2				2	2	2	2			2			3	16
1	N 155th St	1st Ave NE	5th Ave NE			1			2				2		2	2		2	2		2		15
2	1st Ave NE	N 149th St	N 155th St			1				1		2	2				3	2				3	14
5	N 147th St	1st Ave NE	5th Ave NE	2									2		2				2			3	11
4	N 147th St	Meridian Ave N	1st Ave NE										2		2		3				2		9
11	NE 148th St	12th Ave NE	15th Ave NE									2						2	2			3	9
13	10th Ave NE	NE 151st St	NE 155th St		2							2	2					2		1			9
19	NE 148th St	5th Ave NE	8th Ave NE	2									2					2				3	9
12	NE 152nd	11th Ave NE	12th Ave NE									2	2					2					6
20	8th Ave NE	NE 147th St	NE 148th St	2									2					2					6
21	NE 147th St	8th Ave NE	Paramount Park	2									2					2					6

Table 17: NE 185th Street Station Area Candidate Project Segment Priority

Project #	Street	From	To	1/4 Mile	Ped/Bike Crash History	Speed 30	Speed 35	Principal Arterial	Minor	Collector	Ped Upgrade	Ped Gap	Green Network	Bike Gap	Transit	School Route	Park Route	Activity Center	MUR 35	MUR 45	MUR 70	Score
13	5th Ave NE	NE 180th St	NE 185th St	2	2	1			2			2		2	2			2			3	18
12	NE 185th St	7th Ave/5th Ave NE	10th Ave NE	2	2	1			2						2	3		2			3	17
15	10th Ave NE	NE 180th St	NE 185th St	2		1				1		2			2	3		2			3	16
6	5th Ave NE	NE 185th St	NE 190th St	2		1				1		2		2	2			2			3	15
7	5th Ave NE	NE 190th St	NE 195th St		2	1				1		2		2	2			2			3	15
4	1st Ave NE	N 190th ST	NE 193rd St							1		2		2		3	2				3	13
16	5th Ave NE	NE 175th St	NE 180th St			1			2			2		2	2			2		2		13
3	1st Ave NE	NE 185th St	N 190th St		2					1				2			2	2			3	12
5	NE 185th St	2nd Ave NE	7th Ave/5th Ave NE	2		1			2						2			2			3	12
11	10th Ave NE	NE 185th St	NE 190th St	2		1				1		2				3					3	12
14	8th Ave NE	NE 180th St	NE 185th St	2	2							2				3					3	12
1	NE 185th St	Meridian Ave N	2nd Ave NE		2	1			2						2			2		2		11
19	NE 180th St	10th Ave NE	15th Ave NE		2					1		2			2			2		2		11
8	NE 195th	5th Ave NE	10th Ave NE		2						1	2		2							3	10
9	10th Ave NE	NE 190th St	NE 195th St									2		2		3	2					9
20	15th Ave NE	24th Ave NE	NE Perkins Way				2	3				2		2								9
10	NE Perkins Way	10th Ave NE	15th Ave NE							1		2		2		3						8
22	NE 185th St	10th Ave NE	15th Pl NE	2								2				3			1			8
21	15th Ave NE	NE Perkins Way	NE 192nd St				2	3				2										7
18	10th Ave NE	NE 175th St	NE 180th St			1				1		2								2		6
2	Corliss Ave N	NE 180th St	NE 185th St									2								2		4
17	8th Ave NE	NE 175th St	NE 180th St									2								2		4
23	15th Pl NE	NE 180th St	NE 185th St									2						2				4

7.5 Final Design Changes Affecting Access Improvements

7.5.1 NE 145th Street Station

The NE 145th Street Station, site, and parking garage configuration described and evaluated in the report is not expected to substantially change as final design proceeds.

7.5.2 NE 185th Street Station

The NE 185th Street Station parking garage and NE 185th Street roadway corridor, including the I-5 crossing, are currently undergoing design refinement, but are not expected to materially affect the assessments in this report.

7.6 Planning-Level Cost Estimates

Planning-level costs have been estimated for each of the 44 candidate access enhancement projects segments. These estimates are presented for three project categories:

- **LLE Direct Impact** – street frontage projects required for station operation.
- **LLE Mitigation** – projects required to mitigate LLE station operation impacts
- **City Access Improvement Projects** – Planned access improvement projects in the station vicinity

7.6.1 NE 145th Street Station Area

Table 18 contains the planning-level costs estimates for the 21 candidate access improvement projects. The 5th Avenue NE project segment between NE 145th Street and NE 148th Street has improvements required for station direct impacts and mitigation, including new traffic signals at the I-5 northbound on-ramp and the NE 148th Street intersections.

7.6.2 NE 185th Street Station Area

Table 18 contains the planning-level costs estimates for 23 candidate access improvement projects. The LLE station direct impact and mitigation projects are included in six of the project segments on N/NE 185th Street and 5th Avenue NE.

Peak pedestrian flows on NE 185th Street between the station east of I-5 and the parking garage west of I-5 will be accommodated by a wider north sidewalk on the existing I-5 crossing structure. The vehicle and bicycle lanes on the existing bridge deck will be reconfigured to allow the wider sidewalk.

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Table 18: NE 145th Street Station Area Access Improvements Planning-Level Costs

Project #	Street	From	To	Draft Priority Score	LLE Direct Impact	LLE Mitigation	City Access Improvement Project	Notes
1	N 155th St	1st Ave NE	5th Ave NE	15			\$1,443,000	Within 1/2 mile of station
2	1st Ave NE	N 149th St	N 155th St	14			\$1,217,000	Within 1/2 mile of station
3	Meridian Ave N	N 145th St	N 150th St	17			\$ 921,000	Within 1/2 mile of station
4	N 147th St	Meridian Ave N	1st Ave NE	9			\$1,256,000	Within 1/2 mile of station
5	N 147th St	1st Ave NE	5th Ave NE	11			\$5,087,000	Within 1/4 mile of station
6	N 145th St	Meridian Ave N	Sunnyside Ave N	17			\$7,435,000	N 145th St corridor requires major reconstruction
7	N 145th St	Sunnyside Ave N	3rd Ave NE	22			\$6,279,000	N/NE 145th St corridor requires major reconstruction
8	N 145th St	3rd Ave NE	5th Ave NE	23			\$21,000,000	NE 145th St corridor requires major reconstruction
9	NE 145th St	5th Ave NE	10th Ave NE	18		\$107,000	\$12,917,000	LLE adds westbound right turn lane
10	NE 145th St	10th Ave NE	15th Ave NE	17			\$13,340,000	NE 145th St corridor requires major reconstruction
11	NE 148th St	12th Ave NE	15th Ave NE	9			\$651,000	Less than half within 1/2 mile of station
12	NE 152nd	11th Ave NE	12th Ave NE	6			\$387,000	Within 1/2 mile of station
13	10th Ave NE	NE 151st St	NE 155th St	9			\$633,000	Within 1/2 mile of station
14	NE 155th St	5th Ave NE	10th Ave NE	16			\$1,464,000	Within 1/2 mile of station
15	5th Ave NE	NE 152nd	NE 155th St	16			\$1,439,000	Within 1/2 mile of station
16	5th Ave NE	NE 148th St	NE 152nd St	18			\$1,707,000	Within 1/4 mile of station
17	5th Ave NE	NE 145th St	NE 148th St	18	\$588,000	\$1,278,000		LLE rebuilds entire segment west from east curb. 2 new signals included as mitigation for LLE
18	1st Ave NE	N 145th St	NE 149th St	18			\$1,343,000	Within 1/4 mile of station
19	NE 148th St	5th Ave NE	8th Ave NE	9			\$629,000	Within 1/4 mile of station
20	8th Ave NE	NE 147th St	NE 148th St	6			\$257,000	Within 1/4 mile of station
21	NE 147th St	8th Ave NE	Paramount Park	6			\$755,000	Within 1/2 mile of station
Total Costs					\$588,000	\$1,385,000	\$80,160,000	

LLE Direct Impact and LLE Mitigation costs are access improvements for the LLE FEIS Conceptual Plans for the Preferred Alternative (April 2016) including further final design development to approximately 60 percent.

Table 19: NE 185th Street Station Area Access Improvements Planning-Level Costs

Project #	Street	From	To	Draft Priority Score	LLE Direct Impact	LLE Mitigation	City Access Improvement Project	Notes
1	NE 185th St	Meridian Ave N	2nd Ave NE	11		\$23,000	\$1,187,000	Meridian Ave N signal phasing ROD mitigation (modify existing signal heads and controller for protected/permissive turn phases); 2nd Ave NE left turn lane ROD mitigation (no added cost to City Access Improvement Project). N 185 th Street and Meridian Avenue N (500 feet northbound and southbound) is a \$5.28 million project providing capacity for future growth.
2	Corliss Ave N	NE 180th St	NE 185th St	4			\$621,000	Within 1/2 mile of station
3	1st Ave NE	NE 185th St	N 190th St	12			\$465,000	Within 1/2 mile of station
4	1st Ave NE	N 190th ST	NE 193rd St	13			\$714,000	Within 1/2 mile of station
5	NE 185th St	2nd Ave NE	7th Ave/5th Ave NE	12	\$1,662,000		\$1,008,000	LLE rebuilds 5th Ave NE and 7th Ave NE intersections and sidewalks east of 5th Ave NE, City Access Improvement Project is west of 5th Ave NE
6	5th Ave NE	NE 185th St	NE 190th St	15	\$1,524,000	\$639,000	\$876,000	LLE reconstructs with bike lanes and sidewalks along garage frontage, adds signal for mitigation
7	5th Ave NE	NE 190th St	NE 195th St	15			\$1,986,000	Within 1/2 mile of station
8	NE 195th	5th Ave NE	10th Ave NE	10	\$24,000		\$441,000	Within 1/2 mile of station.
9	10th Ave NE	NE 190th St	NE 195th St	9			\$603,000	Within 1/2 mile of station
10	NE Perkins Way	10th Ave NE	15th Ave NE	8			\$1,334,000	Within 1/2 mile of station
11	10th Ave NE	NE 185th St	NE 190th St	12			\$1,245,000	Within 1/4 mile of station
12	NE 185th St	7th Ave/5th Ave NE	10th Ave NE	17	\$404,000	\$852,000	\$627,000	LLE adds turn lanes and widens north sidewalk west of 8th Ave NE, adds 7th Ave NE signal for mitigation. City Access Improvement Projects are east of 8th Ave NE.
13	5th Ave NE	NE 180th St	NE 185th St	18	\$1,418,000		\$258,000	LLE realigns with bike lanes, amenity zone and sidewalks north of NE 182nd Ct. City Access Improvement Project is on the existing alignment south of NE 182nd Ct.
14	8th Ave NE	NE 180th St	NE 185th St	12			\$1,305,000	Within 1/4 mile of station
15	10th Ave NE	NE 180th St	NE 185th St	16			\$1,731,000	North portion within 1/4 mile of station
16	5th Ave NE	NE 175th St	NE 180th St	13			\$2,717,000	Within 1/2 mile of station
17	8th Ave NE	NE 175th St	NE 180th St	4			\$633,000	Within 1/2 mile of station
18	10th Ave NE	NE 175th St	NE 180th St	6			\$1,293,000	Within 1/2 mile of station
19	NE 180th St	10th Ave NE	15th Ave NE	11			\$1,108,000	Within 1/2 mile of station
20	15th Ave NE	24th Ave NE	NE Perkins Way	9			N.A.	Within 1/2 mile of station. Project has not been scoped by City; no cost is included.
21	15th Ave NE	NE Perkins Way	NE 192nd St	7			N.A.	Within 1/2 mile of station. Project has not been scoped by City; no cost is included.
22	NE 185th St	10th Ave NE	15th PI NE	8			\$540,000	Within 1/2 mile of station
23	15th PI NE	NE 180th St	NE 185th St	4			\$449,000	Within 1/2 mile of station
Total Costs					\$5,032,000	\$1,514,000	\$21,141,000	

LLE Direct Impact and LLE Mitigation costs are access improvements for the LLE FEIS Conceptual Plans for the Preferred Alternative (April 2015) including further final design development to approximately 60 percent.

APPENDIX A: INTERSECTIONS EVALUATED IN THE NE 145TH STREET STATION AREA

Table A-1 lists the 24 intersections evaluated in the NE 145th Street Station area for the Lynnwood Link Extension for 2035 PM peak hour operation. None of the intersections were evaluated to have level of service that would not meet City of Shoreline or Washington State Department of SDOT level of service standards and be worse than no build conditions.

Table A-1: Forecast Year 2035 PM Peak Hour Intersection Level of Service

Intersection	LOS Standard	No Build	Preferred Alternative
N 145th St and Aurora Ave N	D	E	E
N 145th St and Meridian Ave N	E	B	C
N 145th St and Corliss Ave N	E	D	D
N 145th St and 1st Ave NE	E	D	D
NE 145th St and 3rd Ave NE	E	F	F
NE 145th St and I-5 southbound ramps	D	C	C
5th Ave NE and park-and-ride driveway	D	A	A
5th Ave NE and I-5 northbound on-ramp	D	B	B
NE 145th St and 5th Ave NE	E	D	D
5th Ave NE and I-5 northbound off-ramp	D	F	F
NE 145th St and 6th Ave NE	E	E/F	E/F
NE 145th St and 8th Ave NE	E	D	D
NE 145th St and 10th Ave NE	E	F	F
NE 145th St and 12th Ave NE	E	F	F
NE 145th St and 15th Ave NE	E	E	E
NE 145th St and Lake City Way NE	D	F	F
N 155th St and Aurora Ave N	D	E	*
N 155th St and Ashworth Ave N	D	C	*
N 155th St and Meridian Ave N	D	D	*
N 155th St and Corliss Ave N	D	C	*
N 155th St and 1st Ave NE	D	F	*
NE 155th St and 3rd Ave NE	D	B	*
NE 155th St and 4th Ave NE	D	B	*
NE 155th St and 5th Ave NE	D	B	*

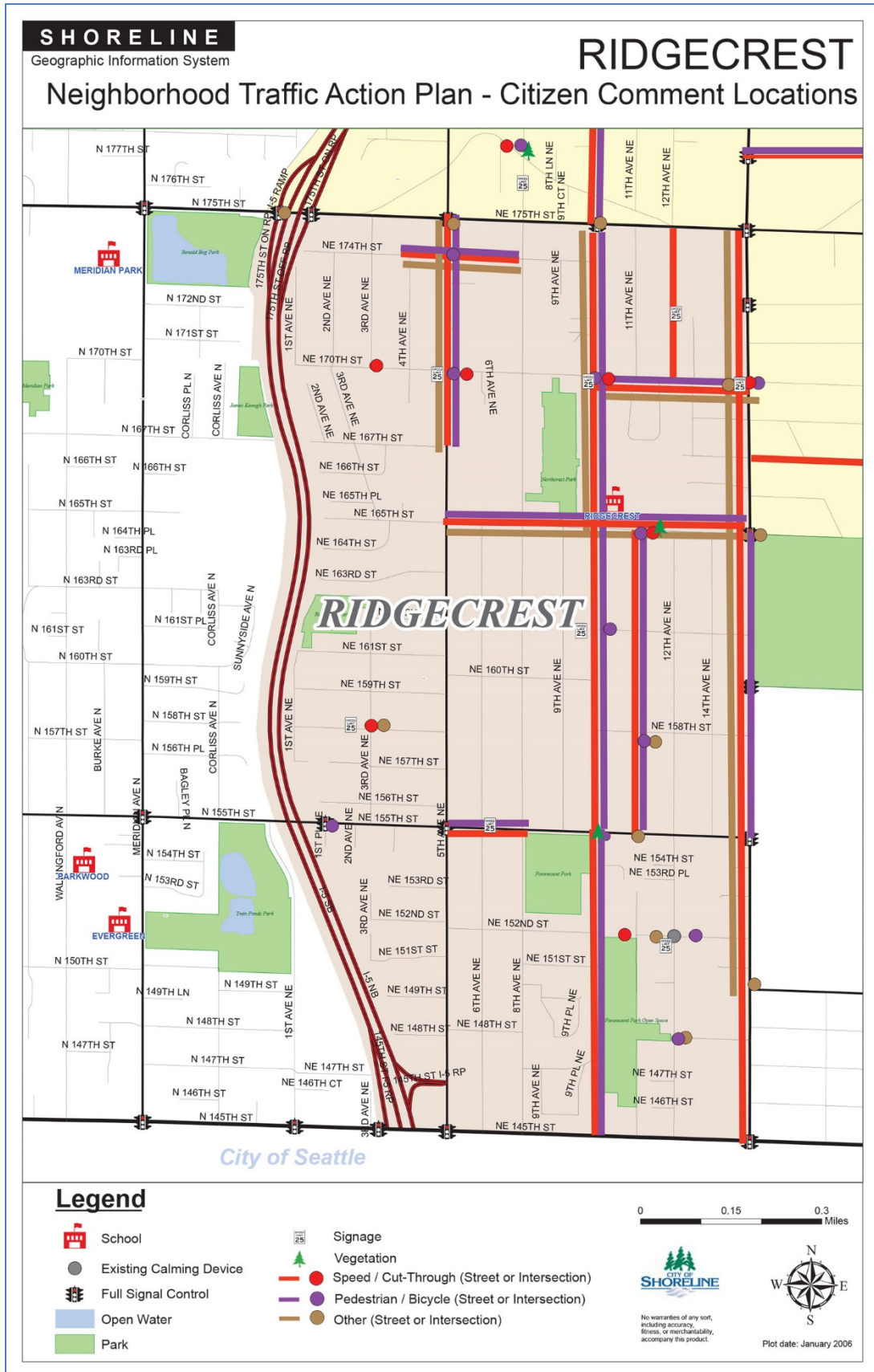
** Location not analyzed for specified alternative. Intersection would be expected to operate similar to No Build Alternative.*

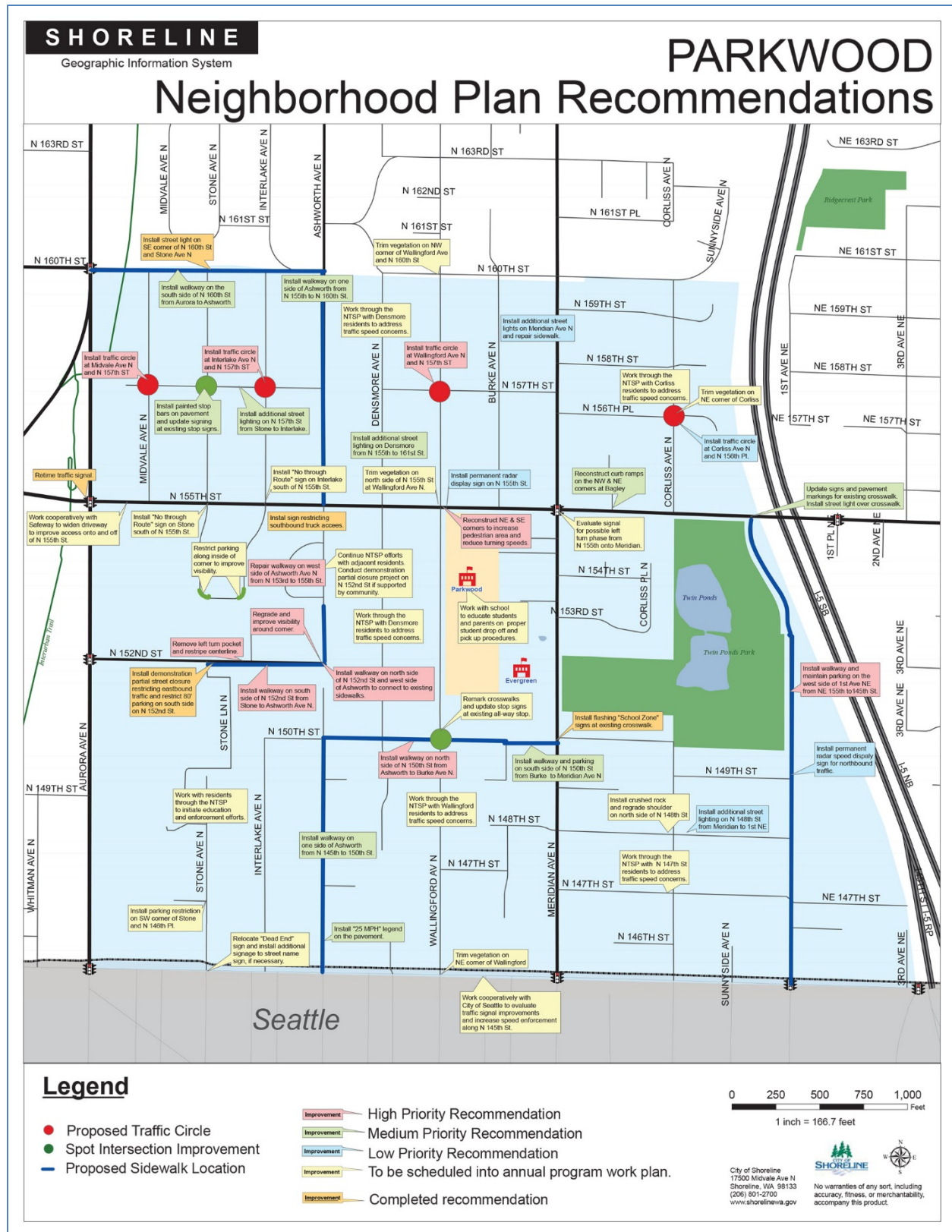
Source: Lynnwood Link Extension Final Environmental Impact Statement Transportation Technical Report, Table 5-26. April 2015.

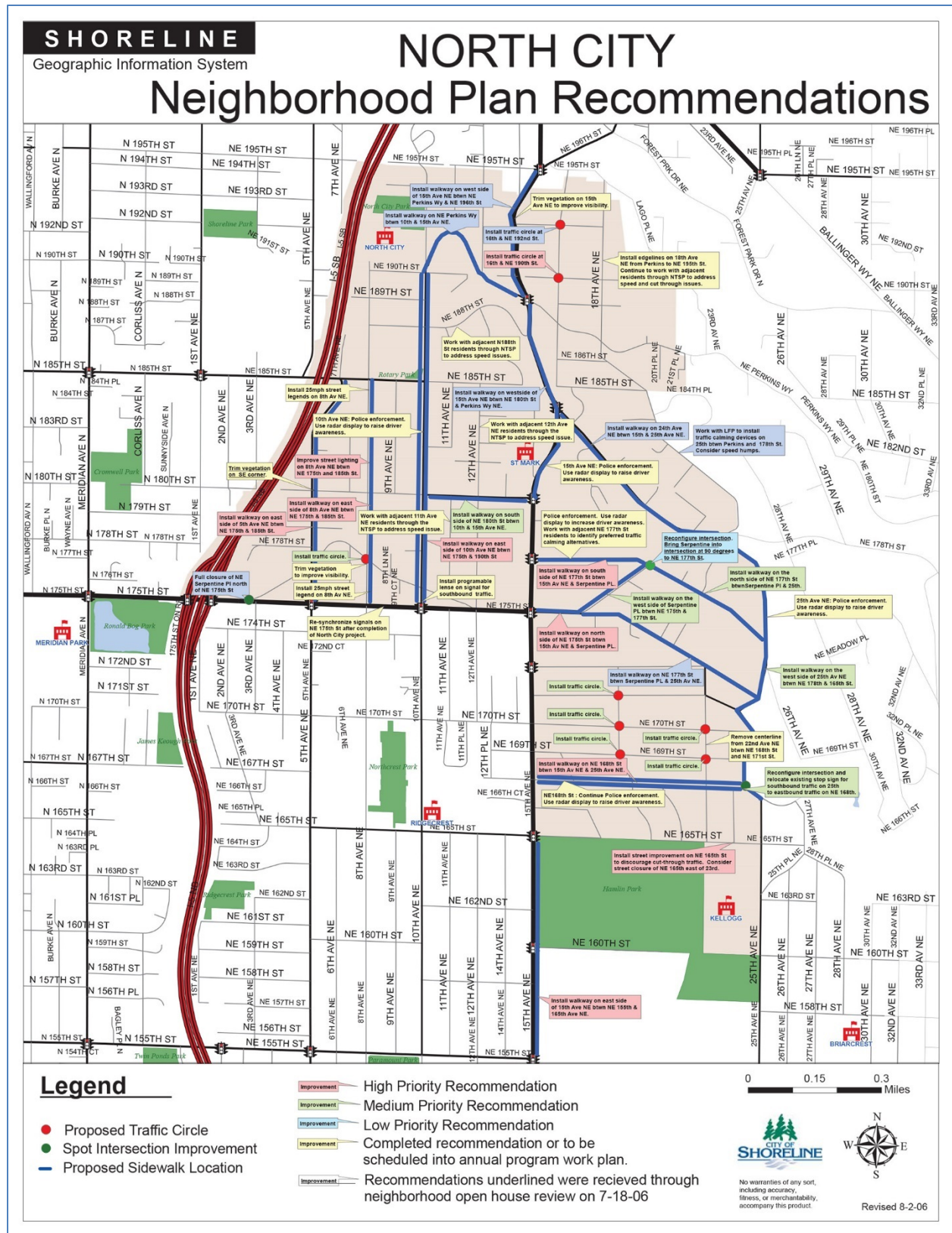
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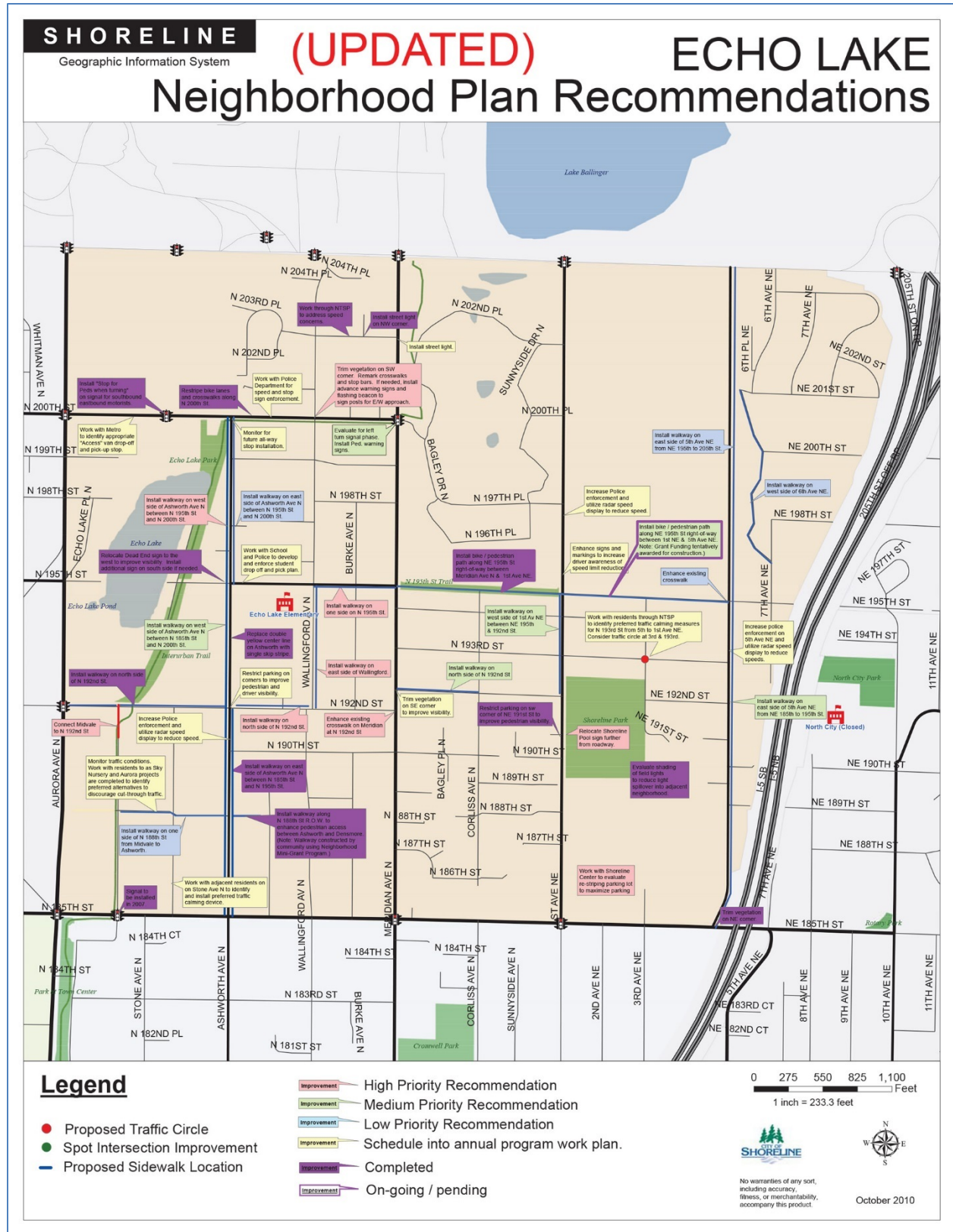
APPENDIX B: BASELINE NEIGHBORHOOD TRAFFIC ACTION PLANS

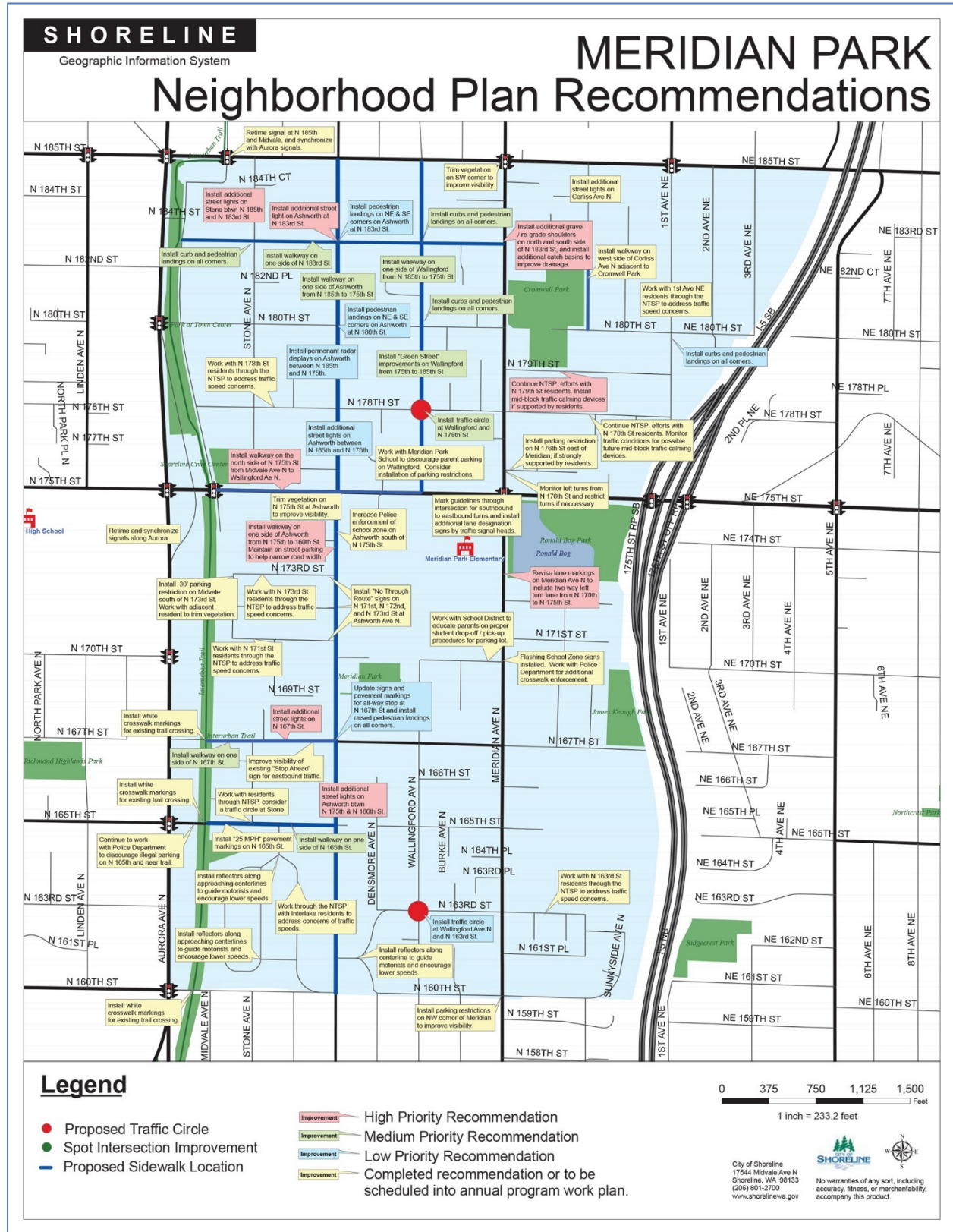
The following pages show the Neighborhood Traffic Action Plans for the Ridgecrest and Parkwood neighborhoods in the vicinity of the Lynnwood Link Extension NE 145th Street Station, and the North City, Echo Lake, and Meridian neighborhoods in the NE 185th Street Station vicinity. These plans are the baseline for the station-specific action plans that will be updated to reflect anticipated impacts and neighborhood concerns specific to station operation impacts.











APPENDIX C: CITY OF SHORELINE NEIGHBORHOOD TRAFFIC SAFETY PROGRAM (NTSP) CRITERIA

Figure C-1: NTSP Phase 2 Criteria for Consideration of Physical Device Implementation

Criteria	Points Possible	Measured Data	Points Awarded
Average Weekday Daily Traffic Counts (AWDT) Up to 700 AWDT 700 – 2,500 AWDT 2,500 and over	Devices not recommended Devices considered Devices not recommended		
Traffic Cut-Through Volumes ⁽¹⁾ 25.00% - 49.99% 50.00% - 74.99% 75.00% +	1 2 4		
Traffic Speeds ⁽²⁾ 0-5 mph over posted limit 5.01 - 7 7.01 - 9 9.01+	0 2 4 6		
Sight Distance Limitations ⁽³⁾	2		
Average Accident History (AAH) ⁽⁴⁾ 0.5 - 1.0 accidents/year 1.1 - 1.5 1.6 - 2.0 2.1 - 2.5 2.6 - 3.0 Over 3.0	1 2 3 5 6 7		
Street Conditions No sidewalks Sidewalks on one side of street only	2 1		
Parks, Schools (Public or Private, K-12) Within 1/4 mile Between 1/4 and 1/2 mile	3 2		
Total			0

¹As a percentage of the total AWDT on primary roadway between arterials.

²85th percentile of all vehicles, both directions, over a 24-hour period.

³Limited vertical or horizontal sight distance, such as the inability to see over a hill or around a curve. Points will be given if stopping sight distance for crest and sag curves per WSDOT Design Manual are not met.

⁴Reported collisions over past three years at intersections and mid-block for study area. AAH = Total Collisions / ((# of intersections + # of Mid-Block Segments)/(# of Years Data))

Note: The minimum number of points required for a neighborhood to qualify for consideration is 8.

All physical devices shall be subject to technical feasibility as determined by the City Engineer. Majority approval and approval from residents adjacent to physical device(s) is required before implementation of permanent traffic calming measures.

*Updated September 2015

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APPENDIX D: SUMMARY OF PEDESTRIAN FORECASTING AND ANALYSIS (APRIL 2015)

Lynnwood Link Extension Summary of Pedestrian Forecasting and Analysis April 7, 2015

The Sound Transit forecasting model includes a 2035 daily forecast of light rail transit (LRT) boardings and alightings, and the mode of access or egress.

Pedestrian traffic is generated between the light rail train and mode of access including:

- LRT to/from Bus
- LRT to/from auto (park-and-ride)
- LRT to/from kiss-and-ride
- LRT to/from bicycle
- LRT to/from walk trips to surrounding destinations

The Sound Transit model includes daily volumes for the LRT to bus mode transfer and the walk mode transfer. Mode of access and egress forecasts for 2035 are shown in Figure 1. Daily trips are generated by adding trips from a PM peak period model run and an off-peak period model run. Approximately 40% of peak period trips occur in the peak hour. The total peak hour walk trips for the AM peak hour were assumed to be the same as the PM peak hour but in the reverse direction.

Figure 1: 2035 Shoreline Station Rider Access/Egress My Mode

Station Name	Daily					
	Ons			Offs		
	Total	Walk	Bus	Total	Walk	Bus
Shoreline (NE 185th St)	5,800	1,000	4,800	5,800	1,000	4,800
NE 145th St	5,400	1,400	4,000	5,400	1,400	4,000

* Data from Sound Transit's Daily Model Run

Station Name	3-Hour PM Peak Period*					
	Ons			Offs		
	Total	Walk	Bus	Total	Walk	Bus
Shoreline (NE 185th St)	500	100	400	1,100	300	800
N/E 145th St	1,100	200	900	1,900	700	1,200

* Data from Sound Transit's PM Peak Period Model Run

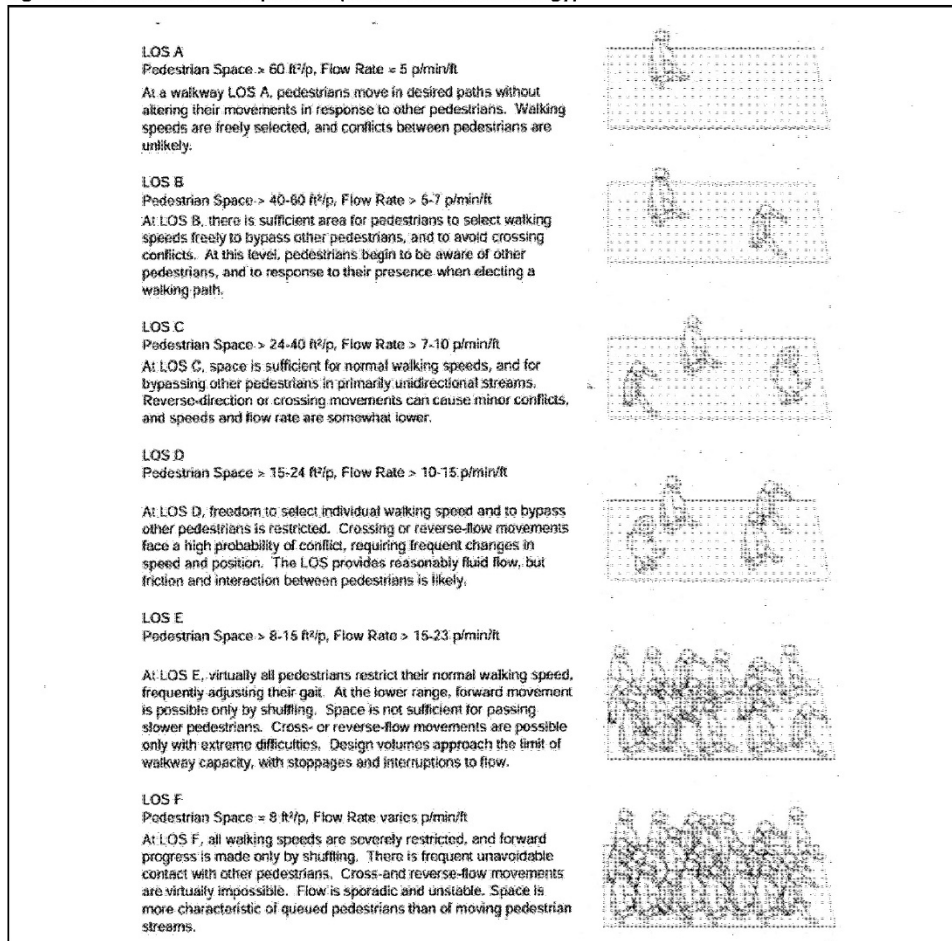


Station Name	PM Peak Hour					
	Ons			Offs		
	Total	Walk	Bus	Total	Walk	Bus
Shoreline (185th)	200	40	160	440	120	320
N 145th St	440	80	360	760	280	480

Pedestrian trips to the park-and-ride were estimated based on the park-and-ride emptying in three hours and the arriving park-and-ride based on the ratio of boardings to alightings. Pedestrian trips between the station platform and the kiss-and-ride load zones were estimated from prior studies.

The hourly pedestrian volume is applied to estimate pedestrian level of service (LOS). Pedestrian LOS is in terms of a volume to capacity ratio (V/C) as a pedestrian flow rate per width of sidewalk. Depictions of pedestrian levels of service are shown in Figure 2.

Figure 2: Pedestrian LOS depictions (HCM 2000 Methodology)



Source: HCM 2000

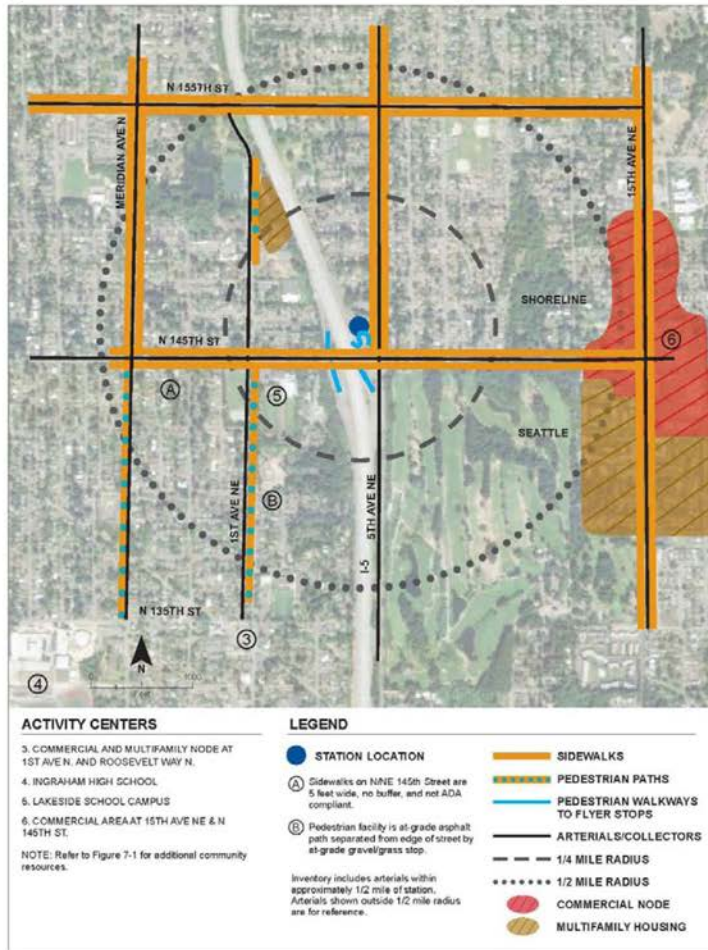
At each Lynwood Link station pedestrian trips were assigned to pedestrian facilities based on the walk route from the LRT station to and from their destination. Destinations include the bus platform, park-and-ride, kiss-and-ride, activity centers and neighborhoods. The two-way volume of pedestrians and the

narrowest point in the pedestrian route were used to calculate pedestrian V/C and estimate level of service.

NE 145th Street Station Pedestrian Movements

Figure 3 shows the existing pedestrian facilities and nearby activity centers within one-quarter and one-half mile radius of the station. Existing conditions and expected future changes in land use were used to estimate the number of pedestrian trips from the LRT station to the walk mode – to and from the neighborhoods and activity centers. NE 145th Street pedestrian flows for the preferred alternative are shown in Figure 4 with relevant pedestrian LOS notes.

Figure 3: NE 145th Street Station Pedestrian Facility Inventory



At the NE 145th Street station the estimated 2035 PM peak hour pedestrian trips from the LRT platform to all modes is 952 trips. The estimated 2035 PM peak hour pedestrian trips from all modes to the platform

are 548 trips. As a frame of reference, the number of alighting passengers at the NE 145th Street station equates approximately a full train leaving Northgate (all seats occupied no standing) and approximately 25% alighting at the NE 185th Street station.

The highest volume of pedestrians to and from the station platform occurs to and from the bus bays adjacent to the platform. For the preferred alternative the second highest volume occurs to and from the park-and-ride garage. The highest pedestrian flow was estimated to and from the west. The estimated pedestrian LOS on the north side of NE 145th Street east of 5th Avenue NE is LOS C with a 5-foot sidewalk. The PM peak hour pedestrian distribution and LOS at key locations near the station are shown in Figure 4.

NE 185th Street Station Pedestrian Movements

Figure 5 shows the existing pedestrian facilities and nearby activity centers within one-quarter and one-half mile radius of the station. Figures 6 and 7 show the PM peak hour pedestrian distribution and LOS at key locations near the station for two 185th Street Station options: 1) park-and-ride garage located on the west side of I-5, and 2) park-and-ride garage located on the east side of I-5.

At the NE 185th Street station the estimated 2035 PM peak hour pedestrian trips from the LRT platform to all modes is 644 trips. The estimated 2035 PM peak hour pedestrian trips to the LRT platform from all modes is 284. As a frame of reference, the number of alighting passengers at the NE 185th Street station equates approximately a full train leaving Northgate (all seats occupied, no standing) and 20% alighting at the NE 185th Street Station.

The highest volume of pedestrians to and from the station platform occurs to and from the bus bays adjacent to the platform. For the preferred alternative, the second highest volume occurs on the NE 185th Street Bridge, which includes pedestrians to and from the parking garage and walking destinations to the west. The estimated LOS over the bridge with a 12-foot walkway would be LOS C during the PM Peak Hour. The third highest pedestrian volume would be across NE 185th Street to and from the eastbound bus bay. An 8-foot or 10-foot sidewalk would be LOS B during the PM peak hour. Sound Transit design standards for pedestrian facilities at transit stops would achieve LOS B conditions

Figure 5: NE 185th Street Station Pedestrian Facility Inventory

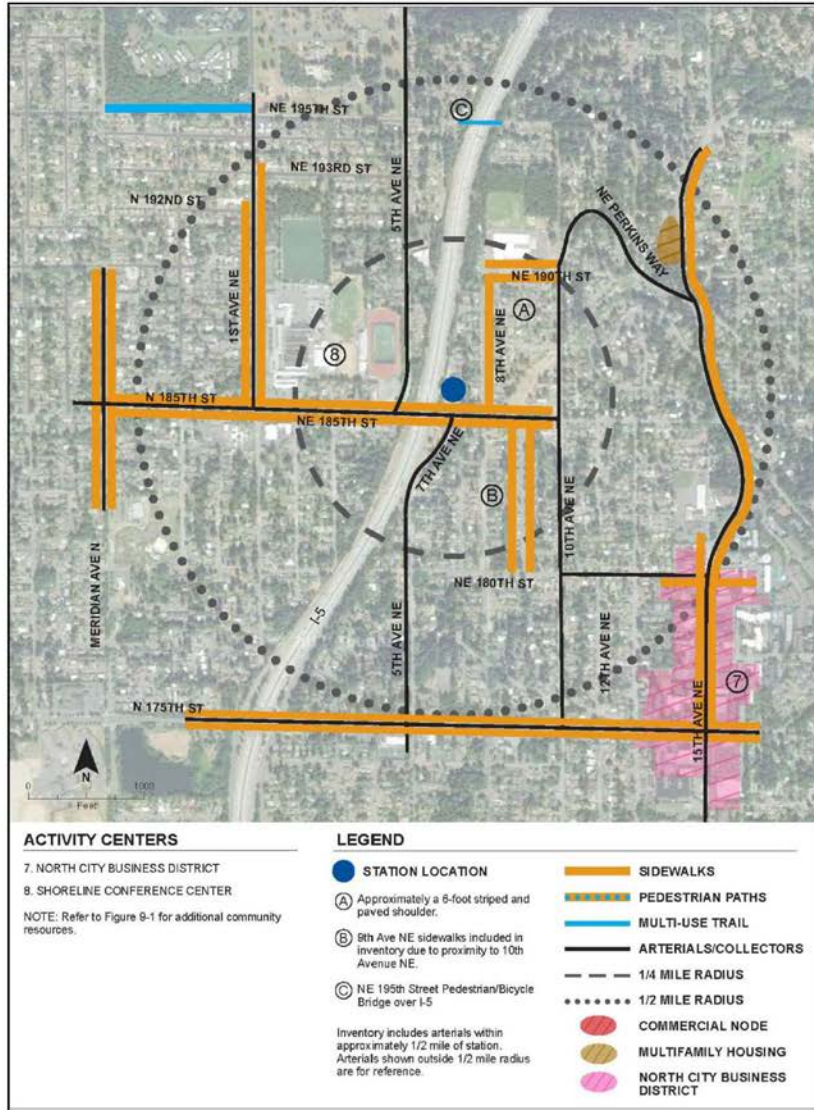


Figure 6: NE 185th Street Station with west side garage - PM Peak Hour Pedestrian Movements

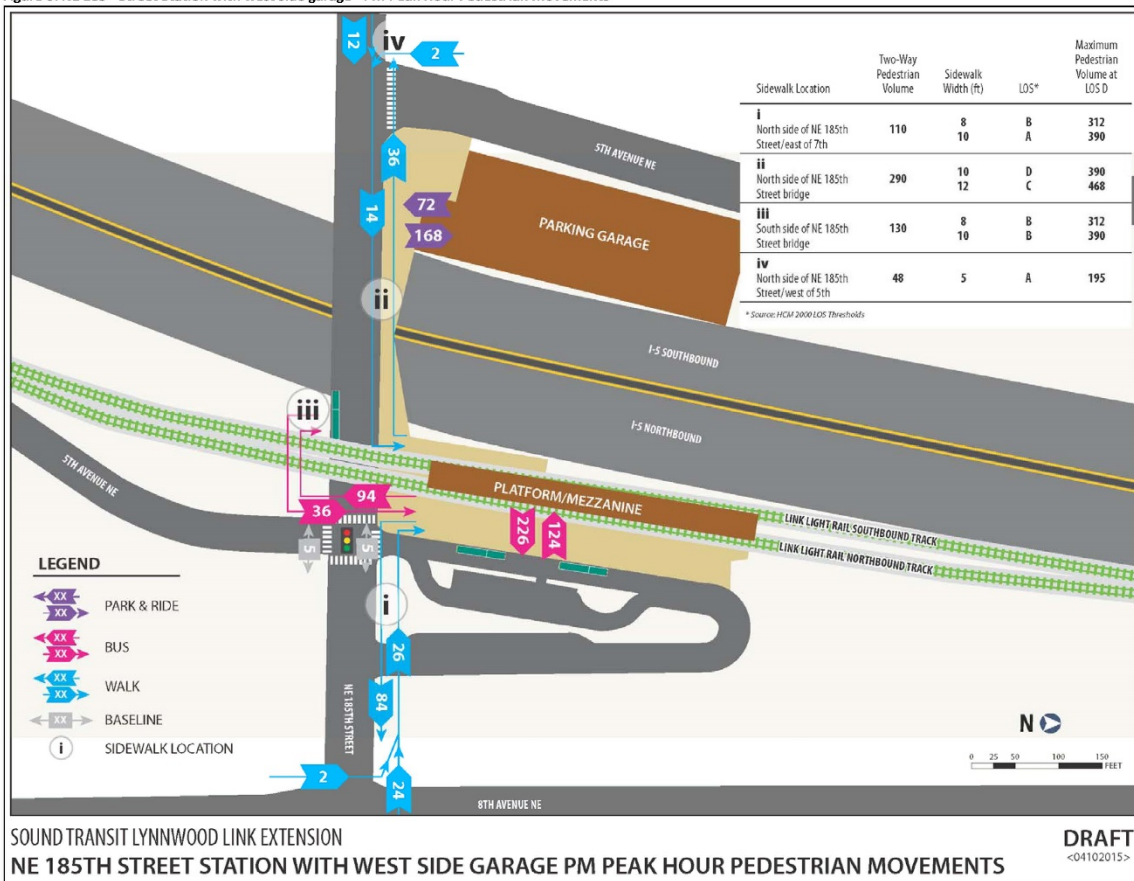


Figure 7: NE 185th Street Station with east side garage - PM Peak Hour Pedestrian Movements

