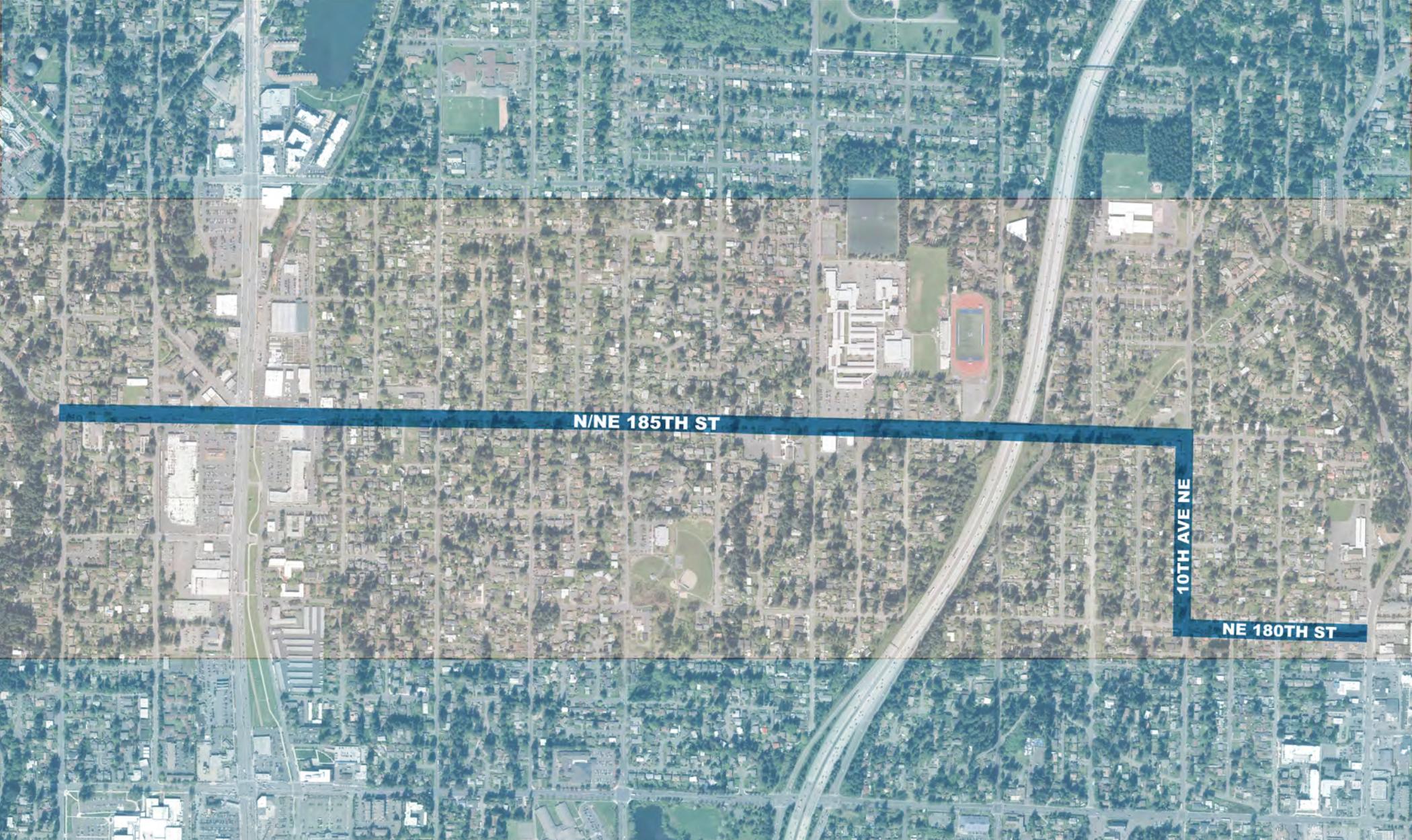


185TH STREET

Multimodal Corridor Strategy 



ACKNOWLEDGMENTS

The 185th Street Multimodal Corridor Strategy Team would like to thank all of the community members and stakeholders who attended meetings and provided comments as well as the following agencies, groups, and individuals:

SHORELINE CITY COUNCIL

At the time of Council adoption of the 185th Street Multimodal Corridor Strategy.

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Evergreen Baptist Church
Feet First
Shoreline Community Church
Shoreline Covenant Church
St. Mark Church
Shoreline Council of Neighborhoods
Shoreline-Lake Forest Park Arts Council
Shoreline Parks, Recreation & Cultural Services and Tree Board
Youth Outreach and Leadership Opportunities (YOLO)

UTILITIES

Century Link
Comcast
North City Water District
Puget Sound Energy
Ronald Wastewater District
Seattle City Light
Seattle Public Utilities

SHORELINE FIRE DEPARTMENT

SHORELINE POLICE DEPARTMENT

SHORELINE SCHOOL DISTRICT

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ACRONYMS

ADA - Americans with Disabilities Act

AASHTO - American Association of State Highway and Transportation Officials

BAT - Business Access and Transit

CIP - Capital Improvement Plan

CMAQ - Congestion Mitigation and Air Quality

CT - Community Transit

EB - East Bound

EDM - Engineering Design Manual

GSI - Green Stormwater Infrastructure

HMA - Hot Mix Asphalt

LED - Light-Emitting Diode

LID - Low Impact Development

LOS - Level of Service

MCS - Multimodal Corridor Strategy

MMLOS - Multimodal Level of Service

MUTCD - Manual on Uniform Traffic Control Devices

MUR - Mixed-Use Residential

NACTO - National Association of City Transportation Officials

PRCS - Parks, Recreation, and Cultural Services, City of Shoreline

PROS - Parks, Recreation, and Open Space, City of Shoreline

PSE - Puget Sound Energy

PSRC TAP - Puget Sound Regional Council Transportation Alternatives Program

ROW - Right-of-way

RRFB - Rectangular Rapid Flash Beacon

SCL - Seattle City Light

SD - Standard Detail

SPU - Seattle Public Utilities

ST - Sound Transit

STP - Surface Transportation Program

TIB - Transportation Improvement Board

TMP - Transportation Master Plan

TOD - Transit Oriented Development

V/C - Volume to Capacity

WB - West Bound

WSDOT - Washington State Department of Transportation

0 EXECUTIVE SUMMARY



EXECUTIVE SUMMARY

Shoreline is growing, and light rail and increased bus service are coming in 2024. To meet the needs of tomorrow, City of Shoreline (City) needs to start planning today. The 185th Street Multimodal Corridor Strategy (MCS) sets a vision for the corridor that is safe for pedestrians and bicyclists, supports frequent and reliable bus and light rail service, addresses traffic flow, creates gathering spaces, and encourages Transit Oriented Development (TOD). The 185th MCS takes into consideration the future Shoreline North/185th Station and the additional transportation demands created as a result of the light rail station, as well as new demands based on anticipated population growth from the 185th Street Station Subarea rezoning.

The 185th Street Corridor is anchored by the future light rail station on the east side of Interstate 5 (I-5) and composed of three roads: N/NE 185th Street, 10th Avenue NE, and NE 180th Street. For this study, the 185th Street Corridor is used to succinctly describe the collection of these three streets. The 185th Street Corridor was defined during the 185th Street Station Subarea Plan community workshops with the intent to better connect the Aurora Corridor, the future Shoreline North/185th Station, and the North City Business District.

OUTREACH PROCESS

Over a year-long process, the study team used a variety of outreach events and activities to engage and inform the community throughout the 185th MCS process. These included walk and bike tours, community drop-in meetings, stakeholder meetings, and two open houses coupled with online surveys that offered similar exercises to those offered at in-person outreach events.

The City used public and stakeholder feedback from Outreach Series 1 (Fall 2018) and 2 (Spring 2019), stakeholder meetings, two online surveys, as well as technical analysis to develop and refine the Preferred Option of roadway design cross sections that will guide the vision for the 185th Street Corridor redevelopment. To help keep the public informed and engaged throughout the process, the City used multiple methods to notify the public of outreach events including yard signs, posters in multiple languages, the Currents newsletter, and email alerts. The study's web page was regularly updated and a Frequently Asked Questions (FAQs) was disseminated at public and stakeholder meetings, City Hall's Public Work's information carousel, and posted to the web page.



Spring Outreach event

CORRIDOR OPTIONS

The 185th Street Corridor has distinct characteristics throughout. No “One Size Fits All” design can work along the entire corridor, so the study team divided the corridor into five segments from A through E (FIGURE E.1). The study team developed potential mid-block cross-section design options for each corridor segment and shared them with community members and stakeholders during the Outreach Series 2. These options served as bookend opportunities and demonstrated different ways that multimodal components could be incorporated into different parts of the corridor.



FIGURE E.1 185th Street Corridor segments map

PREFERRED OPTION

Currently, the Puget Sound region’s population is approximately four million people and is expected to grow to approximately six million people by 2050. With population growth comes increased demand on transportation systems. Cities throughout the region are facing challenges with growing traffic issues, limited funds, and the overarching challenge to keep all transportation users safe and moving.

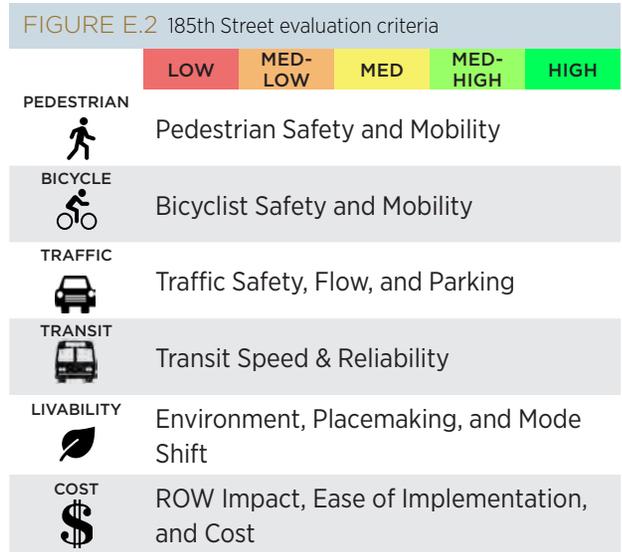
By 2035, the City of Shoreline expects to have about a third of its population living within walking distance of a light rail station. Traffic volume projections for general-purpose vehicle trips along the 185th Street Corridor are estimated to more than double by 2035. However, this assumes the perpetuance of high automobile dependency. With the opening of two light rail stations in 2024 and the anticipated growth around the stations, the City is working to shape the future of multimodal transportation within the community. Mode shift will happen gradually over time. With the presence of safe, connected, and easy to use bike and pedestrian facilities, and the availability of reliable, frequent, and efficient transit service, mode shift will be incentivized thereby reducing general-purpose traffic demand on the corridor.

When looking at how the 185th Street Corridor functions now and into the future, the 185th MCS considers not only motor vehicles such as cars and trucks, but transit, pedestrians, and bicyclists. The 185th MCS approach addresses multiple types of transportation modes and users of all ages and abilities that will be found along its well-functioning corridor.

The study team developed a set of criteria (FIGURE E.2) to evaluate how well each design option benefited pedestrians, bicyclists, transit operators and riders, and motorists; as well as overall environmental and community benefits; high-level ROW impacts; and construction costs. Each of the corridor segment design options included a scorecard which rated its components with the set of evaluation criteria. These evaluation ratings helped visually show the types of benefits and challenges associated with each option. The team shared the preliminary evaluation analysis of draft mid-block cross-section options with the community and stakeholders so they could compare the benefits and trade-offs of options. The team used the results of preliminary evaluation analysis as well as public and stakeholder feedback to develop the best of the best hybrid option that evolved into the Preferred Option.

On October 28, 2019, City Council adopted a Preferred Option of mid-block cross-sections for N/NE 185th Street, 10th Avenue NE, and NE 180th Street that shows travel lanes for automobiles and future frequent bus service, bicycle facilities, sidewalks, and amenity zones.

Cross-sections will typically be wider approaching and through intersections to accommodate left, right, and U-turns. As part of the preliminary roadway design analysis, the team analyzed two intersection control scenarios for the corridor; Scenario 1 utilized traffic signals for Segment B, where as Scenario 2 utilizes a mix of roundabouts and traffic signals for Segment B. Both utilize the same intersection control treatments from 5th Avenue NE (west of I-5) onward. The team confirmed that both scenarios would work with the Preferred Option mid-block cross-sections. Additional analysis during design engineering will



be required to determine the best treatment for controlled intersections.

The following descriptions and illustrations highlight the key components of each corridor segment’s mid-block cross-section:

**PREFERRED OPTION SEGMENT A
N 185TH STREET**

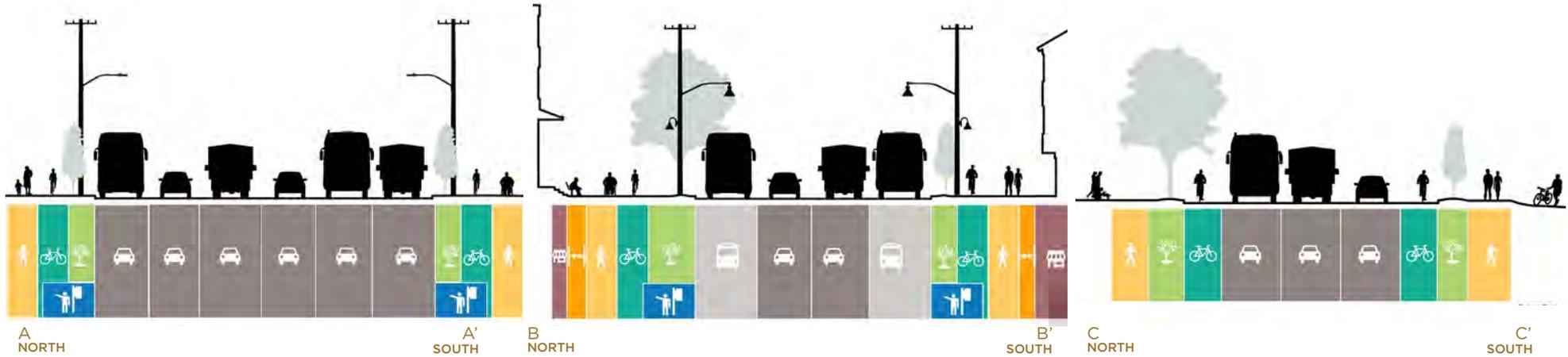
(FREMONT AVENUE N TO MIDVALE AVENUE N)

**PREFERRED OPTION SEGMENT B
N/NE 185TH STREET**

(MIDVALE AVENUE N TO 5TH AVENUE NE [WEST OF I-5])

**PREFERRED OPTION SEGMENT C
NE 185TH STREET**

(5TH AVENUE NE [WEST OF I-5] TO 10TH AVENUE NE)



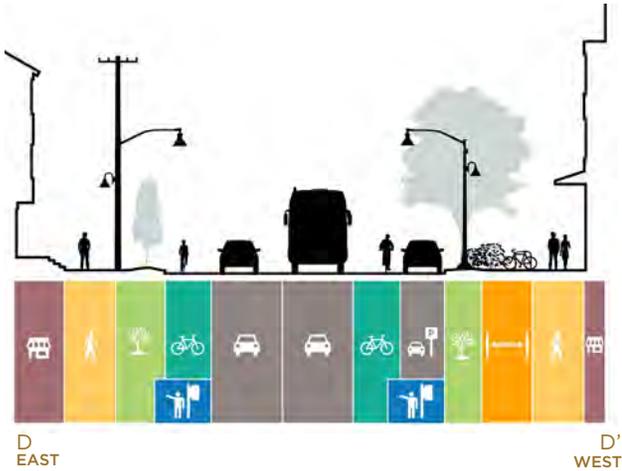
- No curb-to-curb changes since current lane configuration sufficiently accommodates present and future traffic volumes.
- Amenity zone, off-street bike path, and six-foot wide minimum sidewalk on both sides of the street. Transit stops where needed.

- Four-lane section (two travel lanes and two Business Access and Transit or “BAT” lanes for frequent bus service and vehicles making right turns).
- Amenity zone, off-street bike path, and six-foot wide minimum sidewalk on both sides of the street. Transit stops where needed.
- Holds the north side curb to retain existing trees where feasible.

- Three-lane section (two travel lanes and a center turn lane).
- Buffered bike lanes.
- Amenity zones and sidewalks.
- The Sound Transit Lynnwood Link Light Rail Extension project will be constructing a significant portion of improvements in this segment. Gaps in this segment will be completed over time through the City’s capital improvements and/or redevelopment frontage improvements.

**PREFERRED OPTION SEGMENT D
10TH AVENUE NE**

(NE 185TH STREET TO NE 180TH STREET)



- Two-lane section (two travel lanes).
- Buffered bike lanes, on-street parking (west side only).
- Amenity zones, and sidewalks, and a flex zone (west side only). Transit stops where needed.

**PREFERRED OPTION SEGMENT E
NE 180TH STREET**

(10TH AVENUE NE TO 15TH AVENUE NE)



- Two-lane section (two travel lanes).
- Enhanced bike lanes.
- Amenity zones and sidewalks. Transit stops where needed.

COMMUNITY GATHERING PLACES

The study team developed and shared draft concepts for potential Community Gathering Places (FIGURE E.3) along the 185th Street Corridor. These sites could provide better multimodal connections, placemaking, and enhanced open spaces within the Corridor's local vicinity.

- Site 1: Aurora Avenue N and N 185th Street
 - City-owned parcel identified in the Shoreline Public Art Plan as part of a series of art-themed spaces along Aurora Avenue N.
- Site 2: Ashworth Avenue N and NE 185th Street (mid-block on south side of 185th Street)
 - Parcel identified as a potential nature-based open space during the 185th Street Station Subarea planning process.

- Site 3: Trailhead at the Station
 - City right-of-way that could serve as a trailhead for the Trail Along the Rail at the intersection of NE 185th Street and 5th Avenue NE (east of I-5).
- Site 4: Rotary Park
 - Collection of parcels and utility right-of-way identified in the Shoreline Parks, Recreation, and Open Space (PROS) Plan as an opportunity site for adding more public space within the light rail station areas.

The City gathered public and stakeholder feedback on what programming elements are best suited for the four identified Community Gathering Places. Overall, outreach participants responded favorably to activating these sites while being mindful of maintenance and security needs. Currently, there is no funding for programming these sites. The intent was to gather feedback from Council, stakeholders, and the public about how these sites could benefit the community and the environment as fodder for a future planning process.

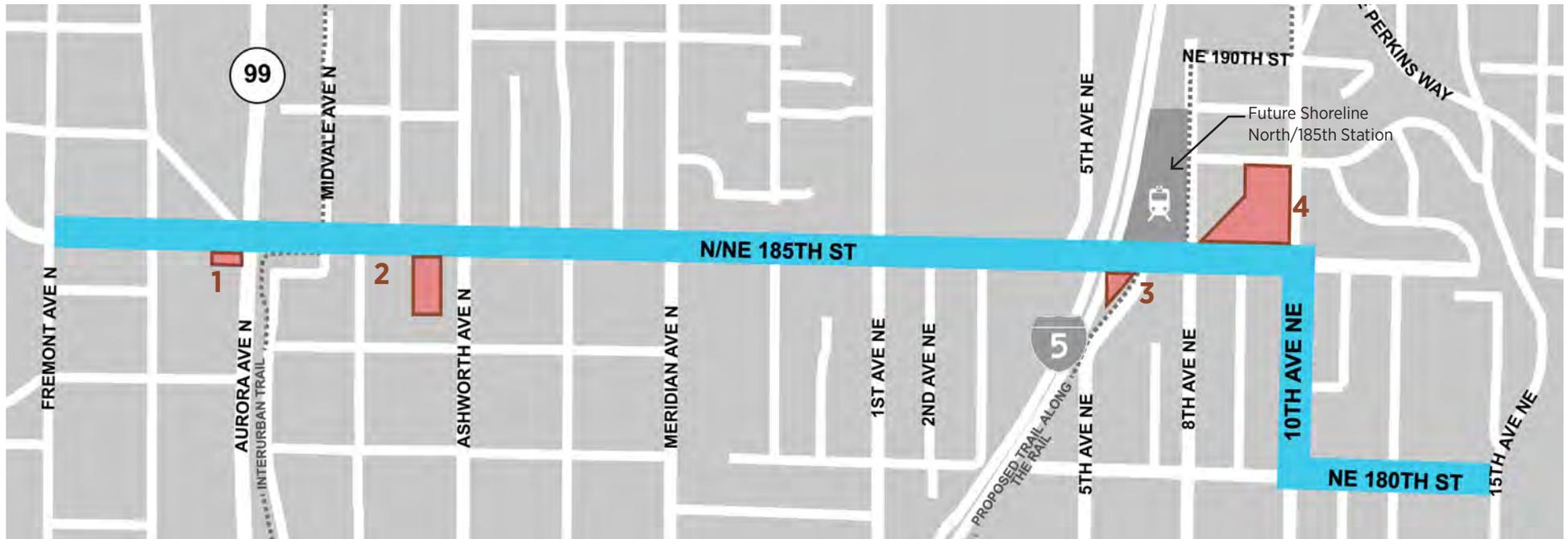


FIGURE E.3 Community Gathering Places

185th STREET CORRIDOR

PROJECT DELIVERY AND FUNDING STRATEGY

Changes to the 185th Street Corridor will happen incrementally over time. Currently, there is no designated project in the Capital Improvement Plan (CIP) to improve the corridor as incremental improvements are anticipated to be initially constructed through development with the City to fill gaps left by developments at some time in the future. The 185th MCS will serve as a guide to ensure that future public and private development projects contribute to a cohesive vision and will help the City competitively seek funding opportunities. The 185th MCS will serve as a basis for design for a future design engineering phase when the City advances this study into a CIP project.

It is important for the City to maintain a balanced and paced approach to implementing capital projects in order to ensure that the City has the resources, both funding and staffing, to complete projects successfully. The 185th MCS project delivery approach and funding strategy looks at implementing the corridor vision in logical, incremental, and strategic steps in the near term (zero to five years), mid term (five to 10 years), and long term (10+ years).

- Near Term (zero to five years): During the near term, the Engineering Development Manual (EDM) update to the Street Matrix and Standard Plans will direct the construction of incremental redevelopment frontage improvements (i.e. amenity zones, bike paths, and sidewalks, etc.) to be forward compatible with the ultimate 185th MCS vision. The 2020 Transportation Improvement Plan (TIP) will include an update to the 185th Street Corridor entry based on the Preferred Option. The City may consider adding 185th Street and Meridian Avenue intersection to the CIP because it is already a designated growth project to

accommodate future transportation demand that collects Transportation Impact Fees (TIF). During the Transportation Master Plan (TMP) update process, the City may consider lowering the 185th Street Corridor's acceptable general-purpose vehicle Level of Service (LOS) or shifting to a Multimodal Level of Service (MMLOS) as well as consider restructuring TIFs and associated growth projects to help fund the design and construction of additional roadway segments and intersections along the 185th Street Corridor in the mid term and long term. In addition, the City will engage with Community Transit (CT) and King County Metro's (Metro) frequent transit service planning and capital investments along the 185th Street Corridor.

- Mid Term (five to 10 years): During the Mid Term, the City may use restructured TIFs from newly assigned growth projects along the 185th Street Corridor, potential transit agency partnership funding, and/or grants to fund design and potentially construct portions of the 185th Street Corridor.
- Long Term (10+ years): During the long term, the City may use local funds such as TIFs and pursue grants and loans to help fund the implementation of the full 185th Street Corridor vision.

1 INTRODUCTION



2017, 574 0774

INTRODUCTION

The 185th MCS sets a vision for the corridor that is safe for pedestrians and bicyclists, supports frequent and reliable bus and light rail service, addresses traffic flow, creates gathering spaces, and encourages transit-oriented development (TOD). The 185th MCS takes into consideration the future Shoreline North/185th Station, which is expected to open in 2024 and the additional transportation demands created as a result of the light rail station, as well as new demands based on anticipated population growth from the 185th Street Station Subarea rezoning.

The 185th Street Corridor is anchored by the future

light rail station on the east side of Interstate 5 (I-5) and composed of three roads: N/NE 185th Street, 10th Avenue NE, and NE 180th Street. For this study, the 185th Street Corridor is used to succinctly describe the collection of these three streets. The “Z” shaped corridor (FIGURE 1.1) was defined during the 185th Street Station Subarea Plan community workshops with the intent to better connect the Aurora Corridor, the future Shoreline North/185th Station, and the North City Business District.

Currently, there is no designated CIP funding for improvements to the corridor. Changes to the 185th Street Corridor will happen incrementally over time. 185th Street Corridor improvements will be initially implemented through private development and followed by a series of City capital projects that will reconstruct roadway segments and intersections and fill in gaps in the pedestrian/bicycle/amenity zones left behind by development.



FIGURE 1.1 185th Street Corridor map

The 185th MCS will serve as a guide to ensure that future public and private development projects contribute to a cohesive vision and will help the City competitively seek funding opportunities. The 185th MCS will serve as the basis of design for the future engineering design phase of corridor segments and intersection improvements when the City advances this study into a series of CIP projects.

BUILDING ON PAST WORK

The City has worked with the community for many years to plan for the arrival of regional light rail transit. Between 2013 and 2015, the City engaged the community in the 185th Street Station Subarea planning process around the future Shoreline North/185th Station. The planning process concluded with an update to Shoreline's Comprehensive Plan to guide future land use and development in the Station Subarea. Zoning updates for the 185th Street Station Subarea were approved by Shoreline's City Council in March 2015.

One of the specific action steps identified in the 185th Street Station Subarea Plan was for the development of a corridor plan for 185th Street/10th Avenue/180th Street that includes the concept design of multimodal transportation facilities necessary to support projected growth in the subarea, a phasing plan for implementation, and a funding plan for improvements. The 185th MCS fulfills this action step.

The 185th Street Station Subarea Plan looked at how the future light rail station and nearby redevelopment could affect traffic and multimodal access. To perform



FIGURE 1.2 Initial 185th Street cross-section. The City of Shoreline 185th Street Station Subarea Plan created a general street cross-section in order to begin a preliminary analysis of multimodal transportation and traffic in this neighborhood. This cross-section served as a starting point only for the 185th MCS and is now superseded.

that analysis, the City developed one potential cross-section to accommodate all transportation users (FIGURE 1.2). However, this was just an initial concept and was never intended to be the final. Through the 185th MCS process, the City and the community developed additional options and compared them against each other in order to ultimately create the Preferred Option of mid-block cross-sections for each segment of the 185th Street Corridor.

FUTURE TRANSIT PLANNING

The expected opening of the future Shoreline North/185th Station in 2024 has been the impetus for planning efforts to provide frequent and reliable bus connections to and from the light rail station. N/NE 185th Street is currently served by Metro. Part of Metro’s long-range plan is to provide both local and frequent service connections (a bus every 15 minutes or less during weekdays) to and from the Shoreline North/185th Station. In addition, Metro is considering a frequent service route from the Shoreline North/185th Station east to 10th Avenue to 180th Street to North City Business District and beyond to Lake Forest Park. CT is studying an extension of it’s Swift Blue Line (bus rapid transit line) that would make frequent connections (a bus every 10 minutes during weekdays) to and from the Shoreline North/185th Station. The 185th MCS presents the opportunity to support future bus service by considering corridor improvements that would optimize the speed and reliability of bus service, as well as strengthen pedestrian and bicycle access to/ from transit stops.

PROCESS AND SCHEDULE

The study team developed the 185th MCS over a year-long process (FIGURE 1.3). In fall 2018, the study team assessed the corridor’s existing conditions and conducted Outreach Series 1 events to receive initial community and stakeholder input. During winter 2019, the study team developed draft mid-block cross-section options and evaluation criteria and shared them at the March 25, 2019 City Council meeting and Outreach Series 2 events. The study team used public and stakeholder feedback from Outreach Series 2 to develop a hybrid set of mid-block cross-sections along the corridor reflecting the best mix of elements from the draft options.

On July 22, 2019, City Council selected the Preferred Option of mid-block cross-sections for staff to further analyze and refine. Over summer and fall 2019, the team refined the Preferred Option’s mid-block cross-sections and further analyzed the Preferred Option. On October 28, 2019, City Council adopted the Preferred Option of mid-block cross-sections for the 185th MCS.

The culmination of the study’s process and outcome is documented in the 185th MCS Report. The 185th MCS Report will guide how future developments, both public and private, relate to the 185th Street Corridor vision and ensure that it is developed in a cohesive way. The 185th MCS project delivery approach and funding strategy outlines the implementation of the corridor vision in logical, incremental, and strategic steps in the near term, mid term, and long term.

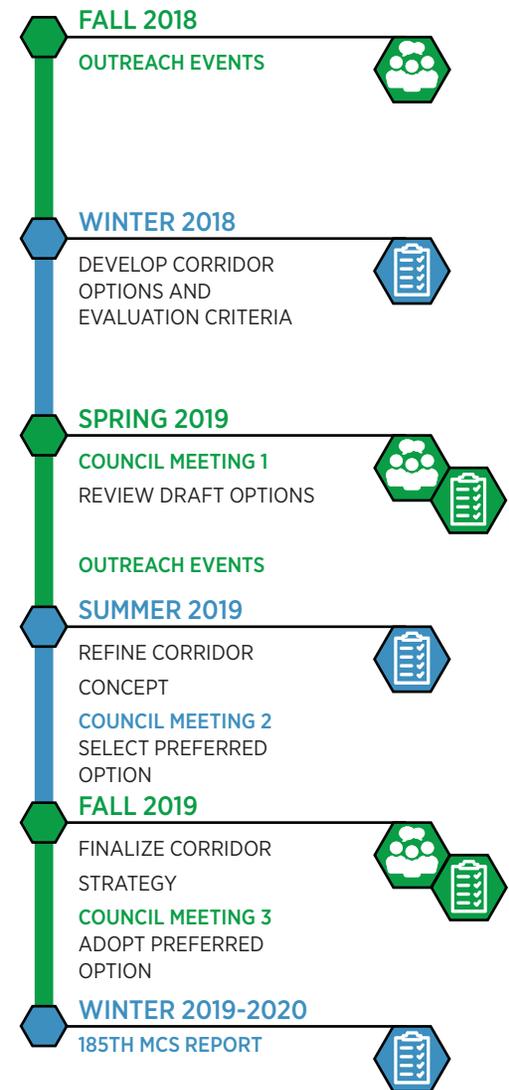


FIGURE 1.3 Project schedule

REPORT CONTENTS

This report features the Preferred Option and its supporting documents, including existing conditions, public outreach process, analysis of draft options, Preferred Option's mid-block cross-sections, future transit service compatibility, traffic LOS analysis, preliminary roadway design, preliminary intersection control analysis, incremental redevelopment coordination, ROW needs, planning-level cost estimate, SEPA non-project checklist, conceptual design guidelines, Community Gathering Places concepts, project delivery approach, and funding strategy.

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2 EXISTING CONDITIONS AND PLANNING CONTEXT



This chapter described how the interplay of the local planning context and existing conditions helped inform the development of roadway design options for each corridor segment and ultimately informed the selection of the Preferred Option. For additional information refer to [APPENDIX D Existing and Future Projected Traffic Operations](#).

EXISTING CONDITIONS AND PLANNING CONTEXT

There are a number of existing plans and policies affecting the 185th Street Corridor and general street design that form the basis of this report ([FIGURE 2.1](#)). Each of the plans referenced herein involved substantial public involvement and process. The relevant policies of these plans are summarized in order to show how this study is rooted in the City's broader planning context.

185TH STREET STATION SUBAREA PLAN

In 2013, the City of Shoreline entered into community-based visioning and planning to address future land use, transportation, and neighborhood enhancements in the community's light rail station subareas at NE 185th and NE 145th Streets along Interstate 5. The *185th Street Station Subarea Plan Station* (Station Subarea Plan) was shaped by extensive public and stakeholder engagement as well as technical analysis. The planning process concluded with a Final Environmental Impact Statement and an update to Shoreline's Comprehensive Plan to guide future land use and development in the Station Subarea. Legislative rezoning and Development Code updates for the Station Subarea were approved by Shoreline's City Council in March 2015.

Generally, the Station Subarea Plan called for:

- A variety of housing options that fit varying income levels.
- Enhanced quality of life and reduced household costs related to transportation.
- Family-friendly parks and amenities as part of new developments and capital investments.
- Improved streets that enhance walking and bicycling in the subarea and create safer conditions for all modes of travel.
- Updated utility systems and improved stormwater management and surface water quality.
- Positive environmental effects such as reduced energy use and greenhouse gas emissions from less vehicle miles traveled.

Specifically, the Station Subarea Plan called for the development of a multimodal corridor plan for 185th Street/10th Avenue/180th Street with an emphasis on:

- 185th Street to become a well designed main street.
- A strong/strengthened identity for the 185th Street Corridor through the use of public art, gathering spaces, amenities, and thoughtful transition between land use zones.
- Complete streets with safe and easy bicycle and pedestrian connections for all ages and abilities.

COMPREHENSIVE PLAN

Development of the 185th Street Station Subarea Plan and the 185th MCS was guided by policies in the City's Comprehensive Plan, specifically Land Use policies 23-46. Many other Comprehensive Plan policies throughout the Transportation, Community Design, Housing, Economic Development, Natural Environment, Capital Facilities, and Utilities elements

also guided development of the Station Subarea Plan and Corridor Strategy. Some of the more relevant policies are listed below:

Light Rail Station Areas Land Use policies that are being implemented through the 185th MCS include:

- LU23: Collaborate with regional transit providers to design transit stations and facilities that further the City's vision by employing superior design techniques, such as use of sustainable materials; inclusion of public amenities, open space, and art; and substantial landscaping and retention of significant trees.
- LU24: Work with Metro Transit, Sound Transit, and CT to develop a transit service plan for the light rail stations. The plan should focus on connecting residents from all neighborhoods in Shoreline to the stations in a reliable, convenient, and efficient manner.
- LU26: Work with neighborhood groups, business owners, regional transit providers, public entities, and other stakeholders to identify and fund additional improvements that can be efficiently constructed in conjunction with light rail and other transit facilities.
- LU27: Maintain and enhance the safety of Shoreline's streets when incorporating light rail, through the use of street design features, materials, street signage, and lane markings that provide clear, unambiguous direction to drivers, pedestrians, and bicyclists.
- LU42: Use the investment in light rail as a foundation for other community enhancements.

- A rechannelization of NE 185th Street into a three-lane section with buffered bicycle lanes between 2nd Avenue NE and 8th Avenue NE.
- A signalized intersection at 5th Avenue (east of I-5).
- A single lane roundabout at 8th Avenue.
- A 500 space parking garage at the station.
- Realignment of 5th Avenue NE (east of I-5) that will include a five block segment of the Trail Along the Rail.
- Shared-use path along the perimeter of the station.

greenhouse gas emissions in Shoreline.

- **Surface Water Master Plan**
The 2018 Surface Water Master Plan addresses drainage and water quality challenges associated with growth, increasing regulations, and aging infrastructure in the city.

ADDITIONAL PLANS

Additional City of Shoreline plans (FIGURE 2.2) consulted as part of the 185th MCS planning process include:

- **Parks, Recreation, and Open Space Plan (PROS)**
The PROS Plan is a 20-year vision and framework for providing Shoreline’s recreation and cultural programs and facilities, and for maintaining and investing in park and open spaces. The PROS Plan identifies the need for increased parks, recreation, and open spaces in and around the two future light rail stations to support the expected increase of people living, working, and playing within the Light Rail Station Subareas.
- **Public Art Plan**
The Public Art Plan presents the City’s comprehensive vision for a greater diversity of programs and forms of public art.
- **Shoreline Climate Action Plan**
The Climate Action Plan sets the City’s action steps to reduce climate change-causing

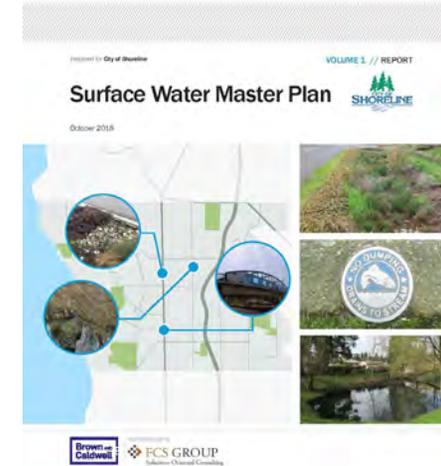
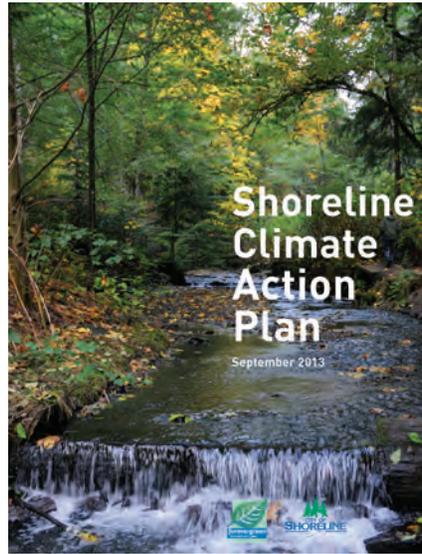


FIGURE 2.2 Additional guiding plans. Above are the covers of the City of Shoreline PROS, Climate Action, and Public Art plans also guided the vision of the 185th MCS.

URBAN DESIGN AND NEIGHBORHOOD ANALYSIS

The 185th Street Corridor is bounded on both ends by significant commercial areas with Aurora Avenue to the west and 15th Avenue NE to the east. Between these commercial areas, the study area consists of largely single-family residential neighborhoods interspersed with institutional uses and open space. 185th Street crosses over I-5 which runs north and south and physically divides neighborhoods on this corridor. With rezoning near the future light rail station, the largely single-family neighborhoods close to the station will see incremental changes over many years. Changes will be initially driven by redevelopment.

GATEWAYS AND MIXING ZONE

Functionally there are many points of entry to 185th Street, but three stand out as “gateway” points of entry to the 185th Street Corridor - from Aurora Avenue, from 15th Avenue NE, and from the Shoreline North/185th Station. Each of these locations should be thought of and treated as a ‘front door’ to the corridor and receive special treatment in the form of signage, wayfinding, or other special features. It should also be noted that on both ends of the 185th Street study area there exists parcels of open space, which may provide enhanced gateway opportunities.

In addition to the corridor gateways, there are a number of mixing zones (areas where more than one transportation mode come together) that will require special attention, especially in terms of enhanced features for bicycle and pedestrian mobility. These are:



Aerial Photo of the 185th Street Corridor
Near Aurora Avenue, Looking east

- Aurora Avenue: Aurora is a busy state route (SR-99) with north/south express transit service. The physical width of the streets at this intersection can present crossing challenges for pedestrians and bicyclists. In Addition, Aurora is an irregular 5-way intersection that further complicates crossing on the north side of the street.
- Midvale Avenue: This mixing zone includes the Interurban Trail crossing along the west side. The interface with this existing north/south multimodal trail is an important node for the citywide bicycle network.
- Meridian Avenue: Traffic analysis shows major vehicular turning movements to/from Meridian. This presents a challenge for east/west bicycle and pedestrian movements across the corridor.
- 1st Avenue: Shoreline School District facilities, Senior Center, Spartan Gym, and Shoreline Stadium has surges of high use.
- 5th Avenue (east of I-5): The intersection with

- 5th Avenue will accommodate the future Trail Along the Rail crossing along the west side. This intersection will be signalized as a result of Sound Transit station improvements and will become a vital connection with the citywide bicycle network.
- 8th Avenue: Sound Transit Lynnwood Link Light Rail project will be constructing a single lane roundabout at this intersection. The roundabout will be designed for maximum bicycle and pedestrian safety with clear markings and signage.

Finally, due to the “Z” configuration of the corridor that is formed by 185th Street, 10th Avenue, and 180th Street, several intersections may require special wayfinding attention.

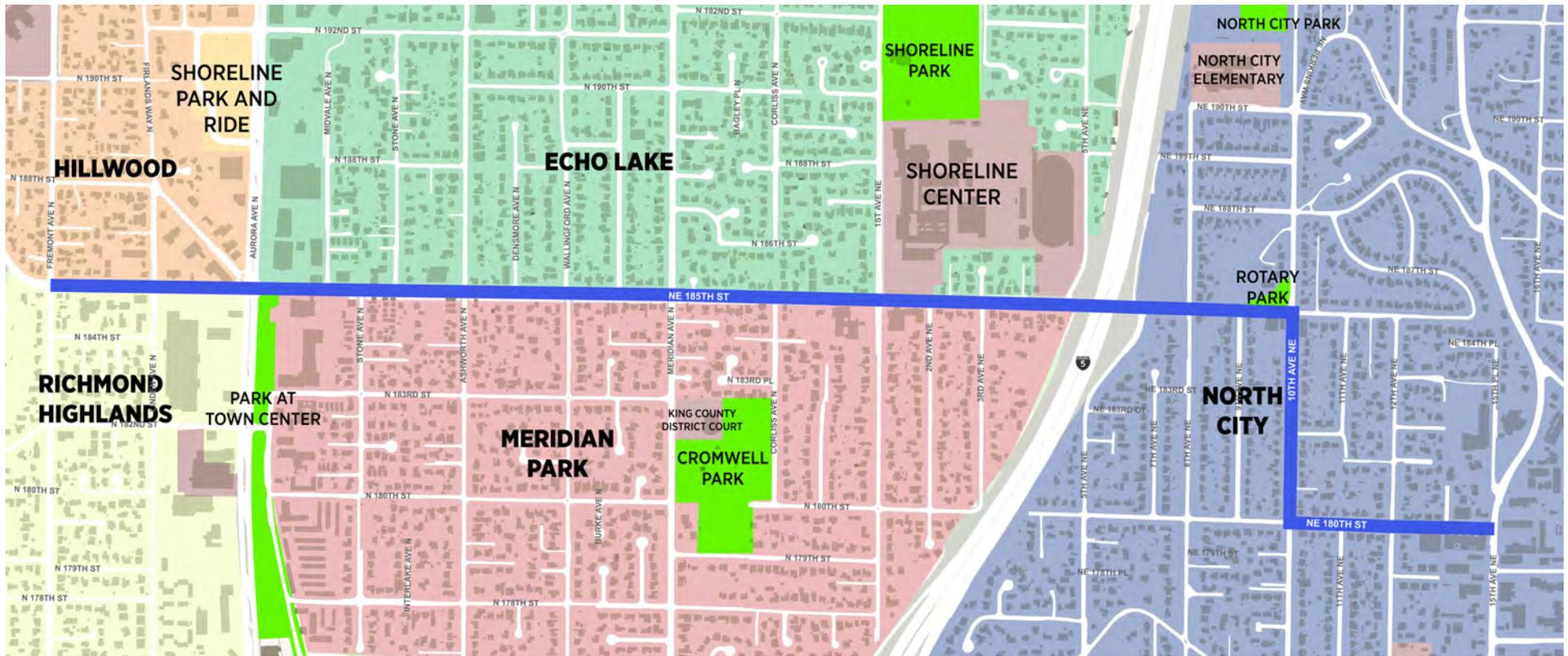


FIGURE 2.3 City of Shoreline neighborhoods

LAND USE AND NEIGHBORHOODS

Significant residential construction in the study area was built during the post-World War II era. Residential development is largely single-family dwellings on 1/5-1/3 acre lots. Several parcels in the rezoned area (from the *Station Subarea Plan*) have been redeveloped or are in the process of being redeveloped. The multifamily residential tends to be located in proximity to the two commercial areas. Commercial uses along Aurora Avenue are a mixture of businesses that tend to serve populations living in the surrounding neighborhoods and attracting shoppers from a larger regional area, whereas commercial uses on 15th Avenue NE are more neighborhood related.

The study area overlaps with five City of Shoreline neighborhoods - Hillwood, Richmond Highlands, Echo Lake, Meridian Park, and North City (FIGURE 2.3).

The three neighborhoods that encompass the largest portion of the study area are:

- Echo Lake: Located north of N/NE 185th Street and between Aurora Avenue and I-5, the neighborhood is largely a residential neighborhood with primarily single-family development. The neighborhood includes the Shoreline Conference Center, Shoreline Stadium, Senior Center, Spartan Recreation Center, and swimming pool and sports fields.
- Meridian Park: Located south of N/NE 185th Street

and between Aurora Avenue and I-5. Like Echo Lake, the neighborhood is largely residential with primarily single-family development. The neighborhood includes Cromwell Park and a King County District Court facility.

- North City: Located east of I-5 and north and south of 185th Street, the neighborhood is largely single-family residential. There are multifamily developments including new apartment buildings located in proximity to 15th Avenue NE, which has a number of commercial uses adjacent including restaurants and small retail stores as well as a large grocery store. The neighborhood includes two parks: North City and Rotary Park, and North City Elementary School.

The adopted zoning for the 185th Street Station Subarea (FIGURE 2.4) calls for increased multi-family housing and mixed use development.

Council adopted phased zoning for this station subarea to focus initial development closer to the light rail station. Phase 1 zoning is currently in effect. Phase 2 is planned to activate in 2021 and Phase 3 is planned to take effect in 2033.



New multi-family housing has constructed frontage improvements on 180th Street.

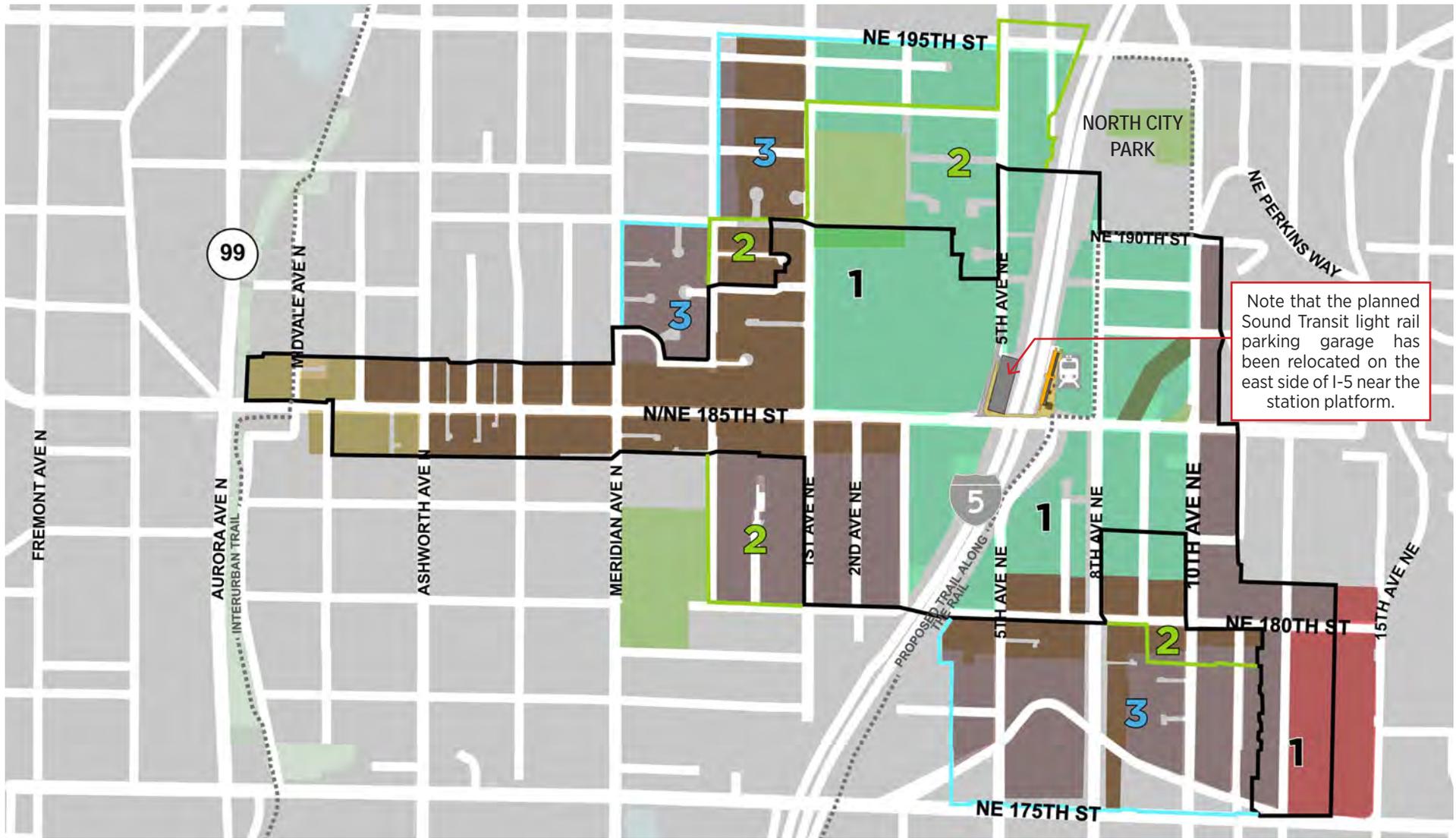


FIGURE 2.4 185th Street Station Subarea Plan zoning



TC - 1, 2, 3, 4

R-12; 12 UNITS/ACRE

CB

MIXED-USE RESIDENTIAL (MUR 35')

MIXED-USE RESIDENTIAL (MUR 45')

MIXED-USE RESIDENTIAL (MUR 70')

PARK

UTILITY CORRIDOR

PROPOSED LIGHT RAIL PARKING GARAGE



SHORELINE NORTH/185TH STATION

PHASED ZONING STRUCTURE

PHASE 1 (UNLOCKED 2015)

PHASE 2 (UNLOCKS 2021)

PHASE 3 (UNLOCKS 2033)

REDEVELOPMENT OUTLOOK

It is assumed that the implementation of this strategy will be a mix of private redevelopment and public capital projects. The redevelopment outlook across the study area faces the following challenges with this mixed approach:

- Parcel redevelopment will be intermittent with a number of parcels that are unlikely to redevelop in the near term. Many parcels have already been purchased and combined by developers - those are considered likely to redevelop in the short term.
- No whole blocks are currently identified to redevelop at the same time. This patchwork nature of private redevelopment prospects creates difficulty phasing utilities, curbs, and drainage, but could be compatible with sidewalk and amenity zone implementation.

Changes to the 185th Street Corridor will happen incrementally over time. The goal of the 185th MCS is to serve as guide to ensure that future public and private projects contribute to a cohesive vision.

DEMOGRAPHIC ANALYSIS OVERVIEW

The demographic analysis for the 185th Street Corridor study area demonstrates the following (FIGURE 2.5):

- A total population of approximately 37,167 live in the study's targeted demographic area.
- Approximately 10% of the population is limited-English speaking.

- The most common languages spoken at home, aside from English, include Spanish (6%), Chinese (3%), and Korean (2%).
- The primary countries of immigration include the Philippines (10%), Mexico (10%), Korea (9%), China (6%), and Vietnam (6%).
- Approximately 24.3% of households have annual income less than \$35,000/year, and approximately 9.4% of the population lives at or below the poverty line.
- Approximately 12% of the population identifies as living with a disability, and, of those, 34% are over the age of 65.
- Approximately 15% of the population identifies using public transit.

FIGURE 2.6 and FIGURE 2.7 on the following pages show images and sources of data analyzed.



FIGURE 2.5 Demographic analysis study area

The study area encompasses 205th Street to 165th Street (north to south) and roughly the eastern City limits to Puget Sound (east to west). One Census tract in the NE corner of the City was not included as it fell mostly outside City limits and could skew results.

STRATEGIES

Based on the demographic analysis of the Shoreline North /185th Station area, the following strategies were useful and/or could be useful in the future for engaging historically underrepresented community members in corridor strategy conversations:

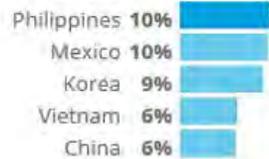
- Translate and transcreate vital outreach materials based on language needs (when over 5% or 1,000 people- whichever is less- of the population within a service area speak a language other than English and self-identify as speaking English “not well” or “not at all.”). The identified language for proactive translation currently is Spanish; additional translations can be offered by request.
- Connect with local community organizations that provide human and social services to seniors, youth, populations that currently have low incomes, communities of color, immigrants, refugees, people with varying abilities, and people who are currently limited-English speaking.
- Identify public gathering places and places of worship near the 185th Street Corridor area, especially places frequented by communities with limited English proficiency.
- Liaise with City of Shoreline Community Services Division and Neighborhood Programs.
- Engage ethnic and/or in-language media (e.g. display ads, radio, social media, etc.) when advertising for engagement opportunities.
- Coordinate with City of Shoreline Diversity and Inclusion Coordinator regularly to ensure that the best and/or preferred outreach practices are being used when communicating information and promoting engagement opportunities to potentially interested and/or affected communities.



TOP INDUSTRIES BY NUMBER OF JOBS



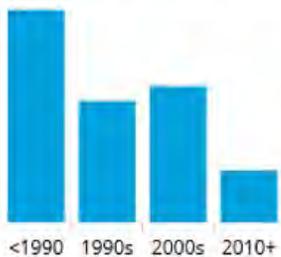
COUNTRIES OF IMMIGRATION



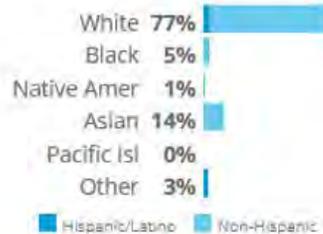
AT HOME LANGUAGES



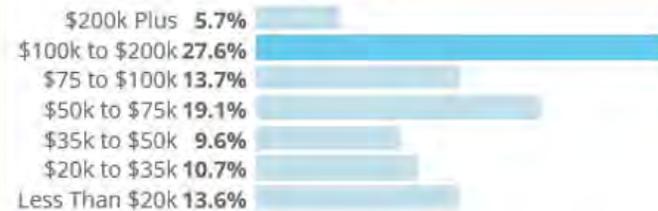
YEAR OF IMMIGRATION



RACE



HOUSEHOLD INCOME (Annual)



Sources: US Census Bureau, American Community Survey (ACS) 5-year dataset, 2012-2016.

Sources: US Census Bureau, American Community Survey (ACS) 5-year dataset, 2012-2016. Longitudinal Employer-Household Dynamics, 2015.

FIGURE 2.6 Service area population and economics

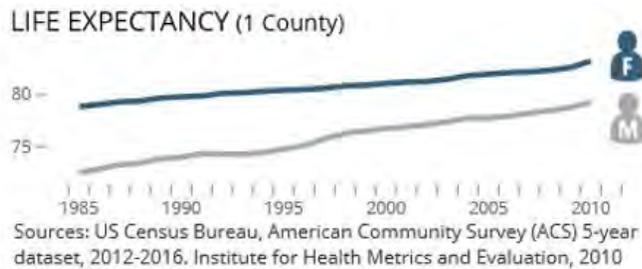
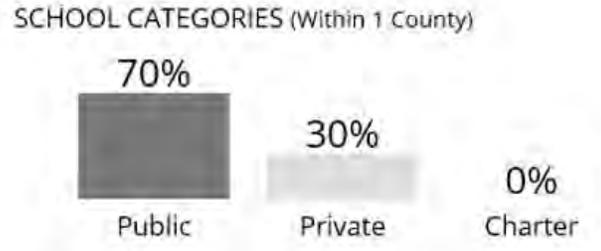
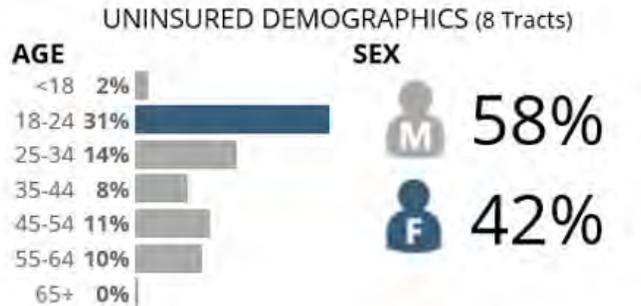
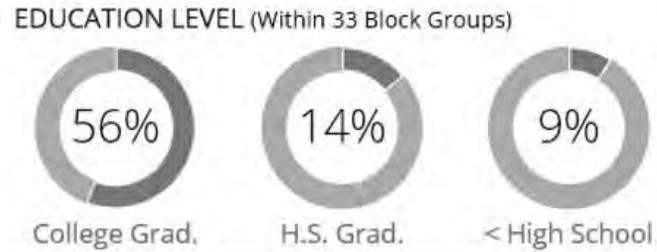


FIGURE 2.7 Service area health and education

STREET CONFIGURATION

185th Street intersects SR 99 (Aurora Avenue) and continues east with an overpass across I-5. While 185th Street does not provide direct access to I-5, many users utilize the 185th corridor to cross I-5 which creates a physical barrier to Shoreline neighborhoods with few crossing options. The 185th Street study corridor provides access to numerous community gathering places and neighborhood destinations.

As a minor arterial, 185th Street has a posted speed limit of 30 miles per hour through the study corridor. At either end of the 185th Street Corridor speed limits are a bit higher. 15th Avenue NE (east end) and west of Fremont Avenue (west end) have posted speed limits of 35 mph. 10th Avenue is classified as a collector arterial and has a posted speed limit of 30 mph. 180th Street is also classified as collector arterial and has a posted speed limit of 25 mph.

There is a substantial street grid network within the neighborhoods north and south of 185th Street on the west side of I-5. There is a discontinuous street grid network to the east of I-5 with few streets connecting up the hill to 15th Avenue NE given the existing terrain. This limits the number of parallel routes that could be used to provide access to 185th Street and the future Sound Transit light rail station. The use of parallel routes on either side of 185th Street is further interrupted by I-5, which provides an east-west barrier and requires traffic to use 185th Street to cross over I-5. Alternative east-west routes are 175th Street to the south and sporadic connections from the north.

The west to east alignment of 185th Street is essentially straight for the 1.5-mile portion of the corridor between Fremont Avenue and 10th Avenue. The alignment along 10th Avenue and 180th Street are also essentially straight along each of those corridor study segments.

The general topography of the corridor is gentle, declining slightly west to east along 185th Street from Fremont Avenue to 10th Avenue NE, with an overall elevation difference of approximately 100 feet. The corridor follows along 10th Avenue NE to 180th Street with relatively little change in overall grade. The steepest grades on the corridor occur on 180th Street with the grade reaching approximately 12 percent approaching 15th Avenue NE.

ROADWAY NETWORK

The roadway area network is composed of a grid network with notable gaps across I-5. The only east-west crossings are located along N/NE 175th Street, N/NE 185th Street, N/NE 195th Street (pedestrian/bicycle only), and 205th Street/Ballinger Way. Along 185th Street, access is provided to the Echo Lake neighborhood to the north, Meridian Park neighborhood to the south, and North City on the east side of I-5. The Hillwood and Richmond Highlands neighborhoods also connect to the corridor on the west end.

The 185th Street Corridor study area is approximately 2.0 miles long, including portions of 185th Street, 10th Avenue, and 180th Street. The 185th Street Corridor connects with local and regional roads and highways, including Aurora Avenue (SR 99), Meridian Avenue, 5th Avenue (east of I-5), and 15th Avenue NE.

I-5 is a limited access freeway classified as a highway of statewide significance. While 185th Street provides access across I-5 via an overpass, there is no direct access to I-5. The nearest access points to I-5 from the study corridor are the 175th Street and 205th Street interchanges.

Aurora Avenue (SR 99) is a managed access highway and is also classified as a highway of statewide significance. It serves as a principal arterial through Shoreline, providing north-south mobility, frequent bus service, and significant business access. The Interurban Trail roughly parallels Aurora Avenue on the east side from 185th Street north serving as mixed-use sidewalk on the south side of 185th Street from Aurora to Midvale Avenue.

Meridian Avenue and 5th Avenue (east of I-5) are classified as minor arterials. Located between and parallel to SR 99 and I-5 from Seattle north to across the county line, Meridian Avenue can see high volumes, especially when used as a substitute route when there is a blockage on SR 99 or I-5. 5th Avenue (east of I-5 and south from 185th Street) will have several blocks re-aligned and improved by Sound Transit as part of their station mitigation.

15th Avenue NE is classified as a principal arterial and serves as the primary north-south corridor on the east side of I-5. 15th Avenue NE is the primary commercial hub for the North City neighborhood and represents the eastern boundary of the study corridor. 185th Street does not provide direct access to 15th Avenue NE. 10th Avenue and 180th Street are classified as collector arterials and are a part of the project corridor to provide connection to 15th Avenue NE and the North City Business District.

Other notable collector arterials intersecting the study corridor, from west to east, include Fremont Avenue, Linden Avenue, Midvale Avenue, Ashworth Avenue, 1st Avenue, and 5th Avenue (west of I-5).

There are currently seven signalized intersections along 185th Street Corridor:

- Fremont Avenue N
- Linden Avenue N
- Aurora Avenue N (SR 99)
- Midvale Avenue N
- Meridian Avenue N
- 1st Avenue NE
- 15th Avenue NE

5th Avenue east of I-5 will become a signalized intersection as a result of Sound Transit station mitigation.

The remaining intersections are unsignalized with various levels of control. Intersection locations are denoted in [FIGURE 2.8](#). A schematic depiction of each intersection with lane configuration is shown in [FIGURE 2.9](#). Both figures are found on the following pages.



FIGURE 2.8 Intersection location map (letters correspond with intersection graphics on page 21).



185th Street and Aurora Avenue intersection



185th Street and 1st Avenue intersection



185th Street and 10th Avenue intersection

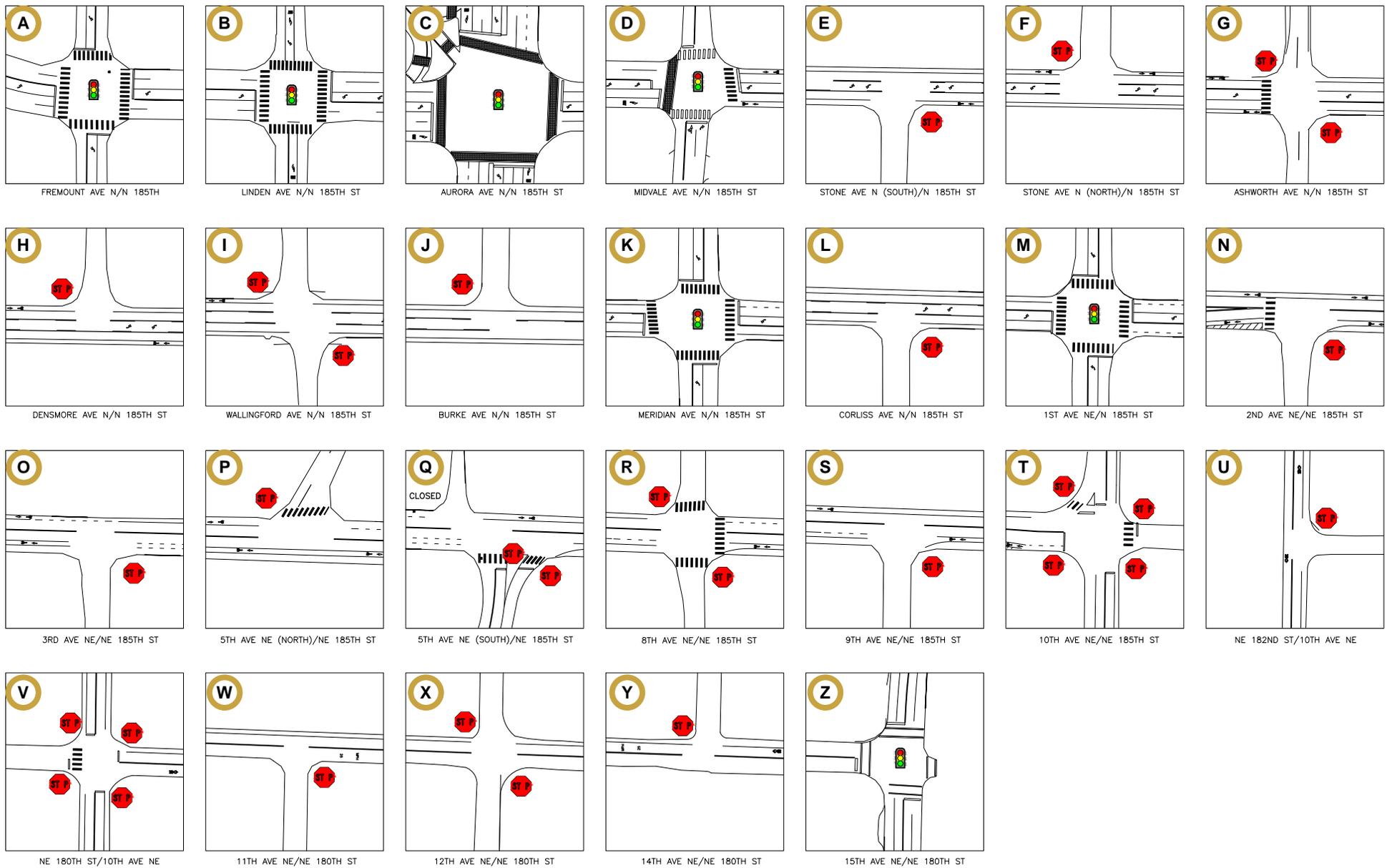


FIGURE 2.9 Existing corridor channelization. Letters correspond with locations shown on map in Figure 2.8.

STREET SECTIONS

In examining a city street, there are different things to consider. The roadway itself from curb to curb, which may be asphalt or concrete, contains various types of automobile or transit travel lanes and can include elements such as bicycle lanes. Other features of a street are elements that are outside of the curbs and may include sidewalks, shared-use paths, planting strips, trees, bus stops, street furnishings, and utilities. So, a street is not only the space between the curbs for vehicular movement, but also the associated elements outside of the curb supporting safety, multimodal use, and urban vitality. Due to the types of features present, street widths vary.

ROW OVERVIEW

Roadway right-of-way (ROW) is the easement for public travel that the City has rights to. ROW widths vary. A city street may not use all the available ROW (which allows for future expansion), but a street cannot be greater than the available ROW unless additional ROW is acquired.

The general ROW conditions of the 185th Street Corridor are described below.

- 185th Street is typically a 60-foot ROW, but has pockets over 70 feet and irregular ROW width near 10th Avenue and the I-5 overpass.
- 10th Avenue has a consistent ROW of approximately 80 feet.
- 180th Street has a consistent ROW of approximately 60 feet.

EXISTING STREET ELEMENTS

There are many current street elements along the 185th Street Corridor to consider. These include such elements as the number and proximity of intersecting roadways and driveways, condition of sidewalks, size, condition and location of street trees, placement of utilities, lighting, and parking to name a few. Each adds its own set of challenges and opportunities.

- 185th Street contains numerous intersections with side streets spaced as close as 200 feet apart. In addition, numerous driveways serve businesses and residential homes. As traffic volumes increase along the roadway, implementation of driveway consolidation and access management may need to be considered in order to reduce vehicular conflicts.
- Currently from approximately Ashworth Avenue to 1st Avenue, a center two-way left-turn lane

is provided to facilitate left-turn movements at intersections and driveways. This serves as a refuge area for vehicles turning left or merging into through traffic.

- On the west side of I-5, sidewalks exist on both sides of the roadway, but are narrow due to roadway constraints and obstructions such as trees, signs, poles, garbage bins, utilities, etc. Sidewalks can be uneven due to existing tree roots and numerous driveways creating a challenge for the mobility impaired, wheel chair users, or those with strollers. Curb ramps exist at intersections but may not necessarily meet current ADA standards. Where new construction has built curb ramps, companion ramps on the opposite curb may not be present, limiting full accessibility at street crossings.
- Driveway aprons vary in design and width which impacts the relative safety and accessibility of the pedestrian environment. For pedestrians, each driveway is an intersection where motor vehicle movements can cause conflict. Between Fremont Avenue and Aurora, multiple 36-foot-wide commercial driveways create conflict zones for pedestrians and turning motor vehicles. Along 185th Street east of Aurora, where sidewalks are adjacent to narrow amenity zones, consecutive driveway aprons slope through the sidewalk to create an uneven pedestrian experience. On roadway sections where there are no sidewalks, such as 10th Avenue NE, there is often both paved (defined) and unpaved (undefined) residential driveways of varying widths, and gravel off-street parking areas adjacent to the shoulder.
- The quality of the amenity zone varies throughout the corridor. The presence of an adequate amenity zone is important because it buffers pedestrians from vehicle travel lanes by creating space and providing physical barriers such as trees and plantings and allowing space for street furniture and beautification. It also helps to organize street

elements such as signs, mailboxes, light poles, and vegetation. The three- to five-foot amenity zone along much of the corridor is not wide enough to accommodate all of the existing uses. The existing mature trees found in narrow amenity zones buckle the sidewalk in places. The narrow amenity zone and sidewalk prevents the installation of shelters and benches at transit stops. On trash pickup days, garbage receptacles can encroach onto the sidewalk where the amenity zone is not wide enough to contain them.

- Lighting varies significantly across the corridor.
- Above ground utilities are not consistent across the corridor in terms of placement in the ROW.
- A substantial portion of the study area is residential in character and allows for on-street parking in some segments. In general, residential on-street parking utilization is typically higher in the evenings and on weekends. On-street parking is provided on the south side of 185th Street between 2nd Avenue and 9th Avenue. This includes parking allowed on the bridge over I-5, but excludes driveway openings and transit stops. Sound Transit rechannelization of 185th Street from 2nd Avenue to 8th Avenue will remove the parking on south side of the street to accommodate two lanes, a center turn lane, and buffered bicycle lanes within the existing roadway's curb to curb width.
- Along 10th Avenue and 180th Street, the roadway shoulders are used for occasional parking to adjacent properties. In some areas, wider paved shoulders are provided and in other areas vehicles park off the pavement.
- Bicycle facilities are not continuous and vary in facility type throughout the 185th Street Corridor. Currently, there are no bicycle lanes on 185th Street from Fremont Avenue to Aurora Avenue. The Interurban Trail is accommodated as a shared-use path on the south side of 185th Street

between Aurora Avenue and Midvale Avenue. The signalized crossing at Midvale Avenue facilitates a pedestrian/bicycle connection to the Interurban Trail heading north along Midvale Avenue. East of Midvale Avenue, bicycle lanes on 185th Street are present all the way to 10th Avenue. Sharrows currently exist on 10th Avenue and 180th Street.

The following pages include **FIGURE 2.810 - 2.15** which indicate the location of five cross-sections throughout portions of the 185th Street Corridor and illustrate the current street configuration of each.



FIGURE 2.10 Existing conditions street cross-section and segment locator
 Segment B was extended from 2nd Avenue to 5th Avenue during the MCS process.

-  SECTION CUT
-  PARKS/OPEN SPACE

This map indicates the location of five street cross-sections throughout the corridor. Each of these cross-sections is illustrated on the following pages (see [FIGURE 2.11](#) - [FIGURE 2.15](#)). These cross-sections show what is typically found in its associated street Segment (note - there are variances in each Segment) along with overall characteristics of that corridor Segment.

SEGMENT A - N 185TH STREET FROM FREMONT AVE N TO MIDVALE AVE N (EXISTING CONDITION)

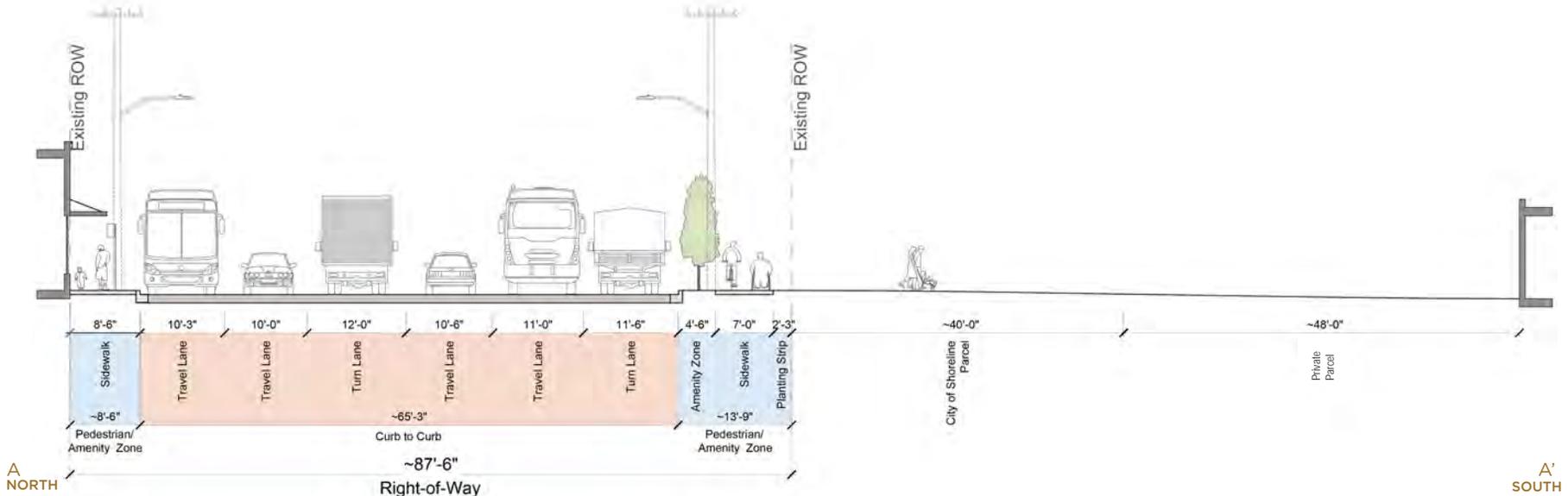
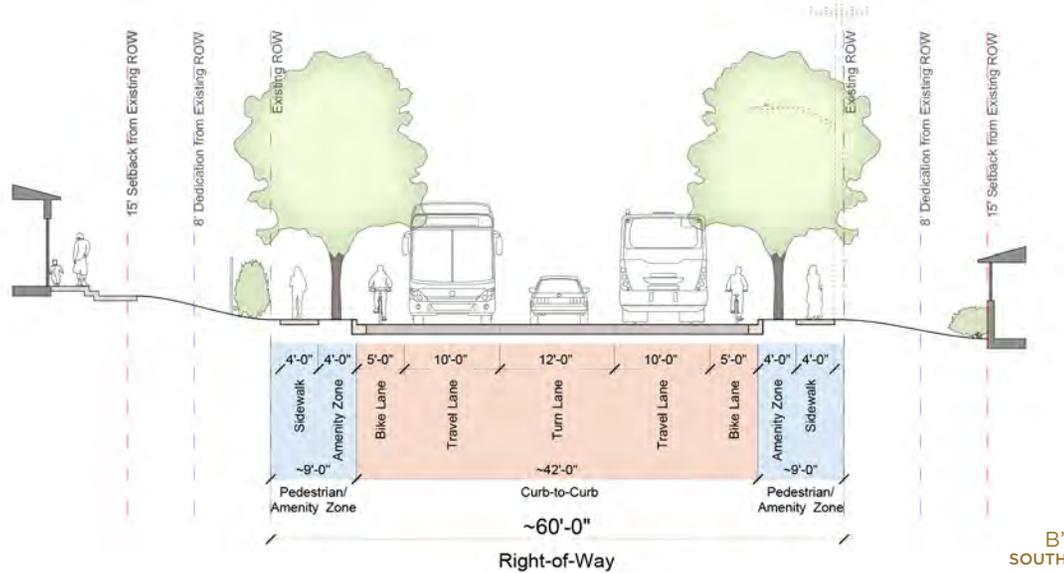


FIGURE 2.11 185th Street Segment A - typical cross-section
Looking East

185TH STREET SEGMENT A CHARACTERISTICS	
ROW WIDTH	70'-88'
CURB TO CURB WIDTH	65'
VEHICULAR LANES	Travel lanes 10'-11', Turn Lanes 11'-12'
PARKING	N/A
PEDESTRIAN FACILITIES	7'-9'
BICYCLE FACILITIES	No on-street bicycle lanes striped. From Aurora to Midvale Avenue N the Interurban Trail serves pedestrians and bicyclists on the south side of the roadway.
AMENITY ZONE FEATURES	Intermittent amenity zones (Fremont Avenue to Aurora). Amenity zone begins within one-half block of Aurora and is planted with young street trees and shrubs (south side). Transit stops and shelters on sidewalk, wide amenity zones and a planted area buffers property adjacent to the sidewalk (north side).
UTILITIES	LED cobra head fixtures in south amenity zone.
STORMWATER	Surface inlets to City's surface water system.
ADDITIONAL OBSERVATIONS	Cross-section location has development on north side at back of curb, south frontage is City owned parcel, which is used for pedestrian cut through.

SEGMENT B - N 185TH STREET FROM MIDVALE AVE N TO 2ND AVE NE (EXISTING CONDITION)



B NORTH
B' SOUTH

FIGURE 2.12 185th Street Segment B - typical cross-section
Looking East

185TH STREET SEGMENT B CHARACTERISTICS

ROW WIDTH	60'-70'
CURB TO CURB WIDTH	42'
VEHICULAR LANES	Travel Lane 10'-11', Turn Lane 11'-12'
PARKING	N/A
PEDESTRIAN FACILITIES	4'-10' (Sidewalks narrow, encroached upon by driveways and vegetation on north and south sides)
BICYCLE FACILITIES	5' striped bicycle lanes in each direction.
AMENITY ZONE FEATURES	Street trees constrained by narrow amenity zone and utilities on both sides. Mature street trees with branches that reach to the roadway centerline create a closed canopy, providing shade in the summer, some cover and buffering during rainy months, and brilliant fall color. Existing street trees on south side of road have been severely pruned over the years to avoid conflicts with power lines.
UTILITIES	Above grade utilities on wooden poles on both sides, south side includes LED cobra head fixtures on mast arms. Transit stops, mail boxes, trash, and curb cuts in amenity zones on both sides.
STORMWATER	Surface inlets to City's surface water system.
ADDITIONAL OBSERVATIONS	Primarily single-family residential and institutional (church) frontages.

SEGMENT C - N 185TH STREET FROM 2ND AVE NE TO 10TH AVE NE (EXISTING CONDITION)

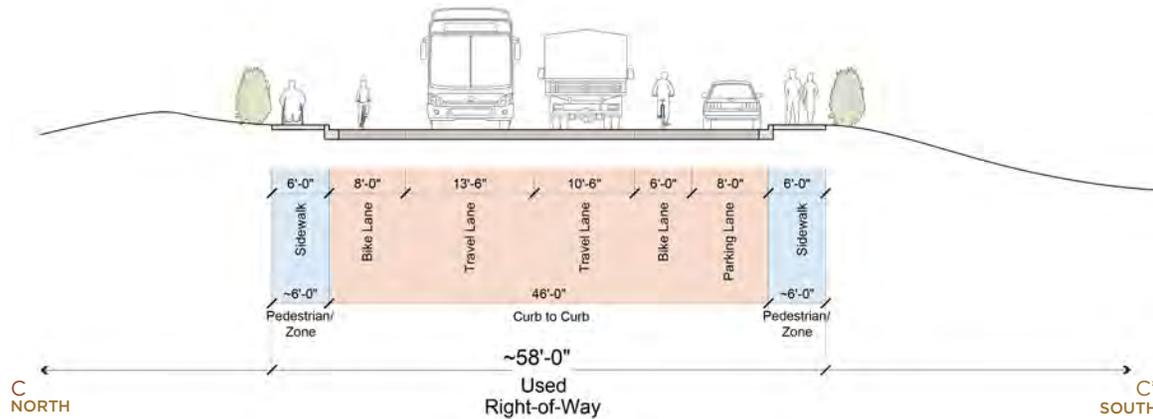


FIGURE 2.13 185th Street Segment C - typical cross-section
Looking East

185TH STREET SEGMENT C CHARACTERISTICS

ROW WIDTH	58'-70' (300' with additional airspace for potential bridge expansion and development over I-5)
CURB TO CURB WIDTH	46'
VEHICULAR LANES	Travel Lanes 10'-14'
PARKING	8' parking lane on south side
PEDESTRIAN FACILITIES	6' sidewalks
BICYCLE FACILITIES	6'-8' striped bicycle lanes in each direction
AMENITY ZONE FEATURES	Continuous planted amenity zone except on the I-5 overpass.
UTILITIES	LED cobra head fixtures on both sides.
STORMWATER	Surface inlets to City's surface water system.
ADDITIONAL OBSERVATIONS	Primarily single-family residential frontages, I-5 overpass included in this segment.

SEGMENT D - 10TH AVE NE FROM NE 185TH ST TO NE 180TH ST (EXISTING CONDITION)

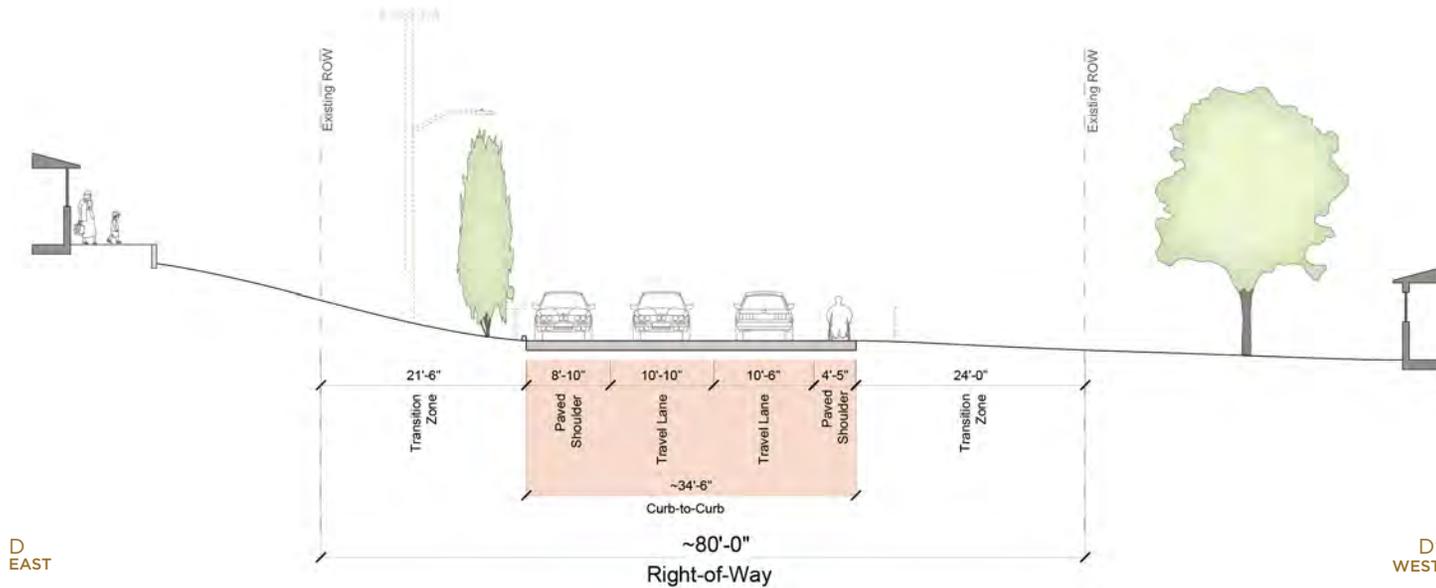


FIGURE 2.14 10th Avenue Segment D - typical cross-section
Looking South

10TH AVE SEGMENT D CHARACTERISTICS

ROW WIDTH	70'-80'
CURB TO CURB WIDTH	32'-35'
VEHICULAR LANES	Travel Lane 10'-11'
PARKING	Paved shoulder of varying width, some with adjacent gravel extension
PEDESTRIAN FACILITIES	Sidewalks on 10th Avenue for about one block on both sides of the street directly south of 185th Street. Otherwise, striped, paved shoulders serve as informal pedestrian walkways on both sides of the street.
BICYCLE FACILITIES	Sharrows
AMENITY ZONE FEATURES	Existing plantings, parking areas, fences, walls and mailboxes interrupt the informal pedestrian path along the roadway shoulders.
UTILITIES	Above grade utilities on wooden poles with LED cobra head fixtures on east side.
STORMWATER	Surface inlets to City's surface water system.
ADDITIONAL OBSERVATIONS	Primarily single-family residential frontages.

SEGMENT E - 180TH STREET NE FROM 10TH AVE NE TO 15TH AVE NE (EXISTING CONDITION)

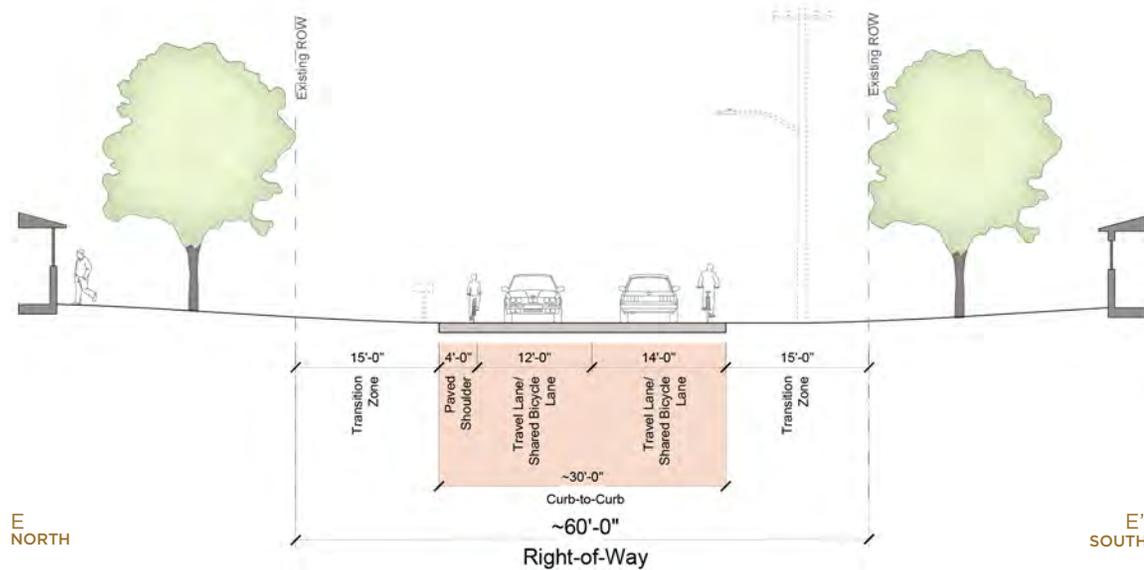


FIGURE 2.15 180th Street Segment E - typical cross-section
Looking East

185TH STREET SEGMENT E CHARACTERISTICS

ROW WIDTH	55'-60'
CURB TO CURB WIDTH	20'-35'
VEHICULAR LANES	Travel Lanes 10'-11.5' with Paved Shoulders 4'-8'
PARKING	On-street parking on south side of street between 14th and 15th Avenue.
PEDESTRIAN FACILITIES	0'-8' Recent redevelopment projects constructed sidewalks and amenity zones between 14th and 15th Avenue. On the north side of 180th Street from 10th to 14th Avenue, a striped, paved shoulder serves as a walkway for pedestrians traveling in both directions; there is no pedestrian zone on the south side of the street.
BICYCLE FACILITIES	Mainly sharrows
AMENITY ZONE FEATURES	New development along south side includes sidewalk and amenity zone.
UTILITIES	Above grade utilities on wooden poles with LED cobra head fixtures on south side.
STORMWATER	Surface inlets to City's surface water system.
ADDITIONAL OBSERVATIONS	Mix of single-family, multi-family, commercial, and institutional frontages.



Typical conditions along 185th Street in Segment B

UTILITIES

Existing utilities run along the study corridor within the roadway and sometimes under sidewalk and include storm drain, sanitary sewer, water, electricity, gas, telephone, cable, and communications. Utilities and their providers are described in the following subsections. The diagram that shows the location of existing utilities along the study corridor is located in [APPENDIX B Existing Utility Layout](#).

STORMWATER

When it rains, surface water along the study corridor is conveyed primarily in to catch basins located at existing cuts or openings in the curbs and piped downstream within each subbasin through 12-inch storm drain pipes. Along 10th Avenue, a 12-inch storm drain pipe runs along the east side of the roadway. Along 180th Street, a 12-inch storm drain pipe runs along the north side of the roadway.

The storm drain system is managed by the City of Shoreline. Based on the 185th Street Station Subarea Plan, existing storm drain pipes along 185th Street may need to be upsized to 18-inch or 24-inch diameter pipes and new storm drain pipes installed along 10th Avenue to accommodate estimated demand for the projected population in 2035.

Pump stations provide enough pressure to overcome the force of gravity on water in order to convey water across a service area. Existing Storm Pump Station 26 is currently located on the west side of 10th Avenue near the 185th Street intersection. The City is looking at plans to expand or build a larger flow control facility in order to accommodate projected future demand. More information on stormwater can be found in [APPENDIX C Stormwater and Drainage](#).

SANITARY SEWER

The sanitary sewer system is currently provided by Ronald Wastewater District (RWD). The City is contracted for operations and maintenance. The City expects to assume RWD in the future. An 8-inch gravity sewer main runs along most of the study corridor, on both the north and south sides, either under the roadway or the existing sidewalk. Based on the 185th Street Station Subarea Plan, existing sanitary sewer pipes along 185th Street may need to be upsized to 12-inch diameter pipes to accommodate estimated demand for the projected population in 2035. The Ronald Wastewater District has no current plans to upsize pipes. Improvements are expected to be driven by increased demand due to development.

Sewer Lift Station 15 is currently located on the west side of 10th Avenue near the 185th Street intersection serviced by a 12-inch force main. Lift Station 15 will need to increase capacity in order to accommodate projected demand for the subarea. Ronald Wastewater District is looking at future plans to expand or build a bigger wet well (holding space) along 10th Avenue, but no site has been identified yet.

WATER

Seattle Public Utilities (SPU) maintains the water system generally west of I-5 and North City Water District (NCWD) maintains the water system east of I-5. NCWD operates 20-inch to 30-inch water lines along 185th Street, connecting to a 66-inch water main in the Seattle City Light (SCL) transmission corridor on the east side of I-5. There are no existing water mains along 10th Avenue or 180th Street. In the future, installation of new water mains will need to be considered along 10th Avenue and 180th Street.

NCWD has a major water supply vault on the northwest side of I-5 along the front of the stadium parking lot. Two existing underground pump stations are located along 185th Street. SPU operates the one on the north side within the SCL corridor. NCWD operates the other on the south side in the eastbound travel lane between 8th Avenue and 9th Avenue.

ELECTRICITY AND GAS

Puget Sound Energy (PSE) manages the natural gas lines along the study corridor. Existing 6 inch gas mains run along 185th Street on the west side of I-5 from Fremont Avenue to 5th Avenue. On the east side of I-5, an existing 16 inch gas main runs along 10th Avenue from 180th Street to Perkins Way. Smaller parallel gas lines provide service along 10th Avenue and 180th Street.

Above ground joint-use utility poles run along both sides of 185th Street, on the east side of 10th Avenue, and on the south side of 180th Street. Existing duct banks run along 185th Street on the south side of the I-5 overpass. SCL maintains street lights along the study corridor. Street lights are primarily located on joint poles along the south side of 185th Street and at intersections. Street lighting spaced at greater intervals is provided along the east side of 10th Avenue and south side of 180th Street.

SCL transmission lines occupy a ROW that extends through the area from north to south, from the corner of 10th Avenue and 188th Street, diagonal through the block, and then extending down the east side of the 8th Avenue ROW.

TELEPHONE, CABLE, AND COMMUNICATIONS

Existing telephone, cable, and communication service providers, such as Comcast, Century Link, and Frontier, are present along the study corridor. Services are typically provided above ground on joint utility poles throughout the corridor.

UTILITY UNDERGROUNDING

Undergrounding of overhead utilities provides an opportunity for utility service providers to relocate their services under the sidewalk. This can be expensive for the City; a joint utility trench would have to be designed as part of a capital improvement project. Sound Transit expects to make utility improvements and underground utilities in the vicinity of the new Shoreline North/185th Station. For the most part, utilities are expected to be upgraded or built as development occurs.

3 MULTIMODAL TRANSPORTATION



MULTIMODAL TRANSPORTATION

When looking at how the 185th Street Corridor functions now and into the future, the 185th MCS considers not only motor vehicles such as cars and trucks, but transit, pedestrians, and bicyclists. The 185th MCS approach addresses multiple types of transportation modes and users of all ages and abilities that will be found on a well-functioning corridor. Through the 185th MCS process, a range of design options for each mode was developed and analyzed. The following pages look at the 185th Street Corridor’s existing multimodal transportation data as well as future plans and projections that informed development of the 185th MCS.

TRANSIT SERVICE

EXISTING

Transit service within the study area is provided by Metro. One primary transit route operates along 185th Street. This route, Route 348, provides service from the Richmond Beach neighborhood in Shoreline to the Northgate Transit Center in Seattle, currently traveling through the corridor on 185th Street to 5th Avenue NE. The route operates on both weekends and weekdays from approximately 5:30 AM to midnight. During weekdays and on Saturdays, buses serve the route with headways of approximately 30 minutes during the midday and commuter peak periods. During off peak periods and Sundays, buses serve the route every 60 minutes.

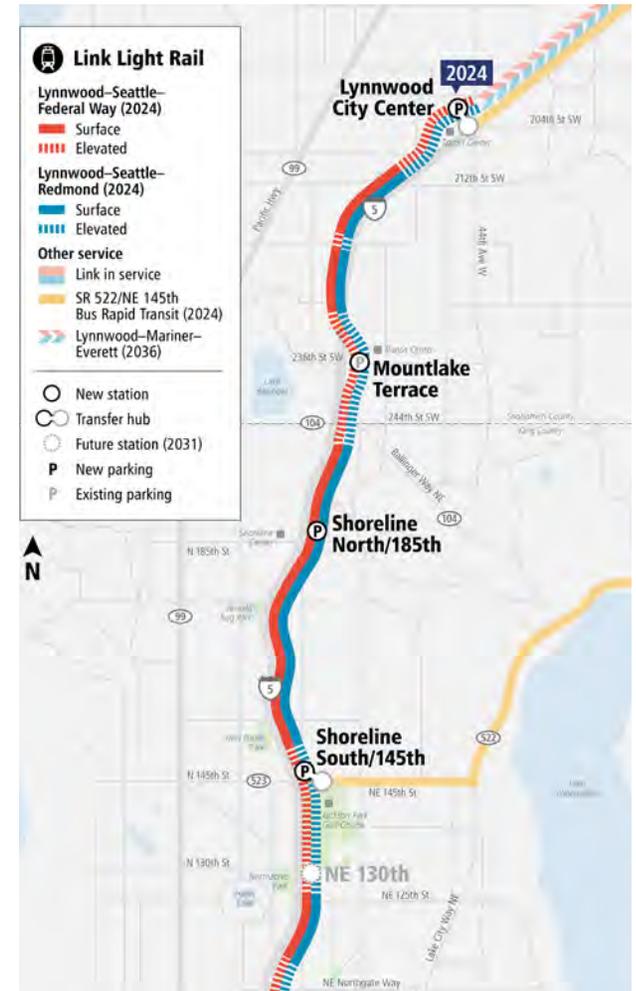
Route 373 also operates along limited segments of the study corridor. This route provides service from Aurora Village Transit Center in Shoreline to the University District in Seattle and travels along 185th Street for a few blocks between Aurora and Meridian Avenue. Route 373 operates only on weekdays during the peak commuter periods, from 5 AM to 10 AM

and from 2 PM to 8 PM with approximately 15- to 20-minute headways.

Several other Metro routes operate within the immediate vicinity of the study area and cross 185th Street at Aurora Avenue or Meridian Avenue. Some of these routes (specifically, Route 346 and the Rapid Ride E-Line) operate on both weekdays and weekends. Route 346 has approximately 30 minute peak and midday headways. The E-Line is more frequent at 10-15 minutes until late night. Other routes that serve the study area, like Route 303, serve only the peak direction (AM into Seattle, PM into Shoreline) on weekdays.

Along the study corridor, buses operate in mixed traffic and there are no exclusive bus lanes or Business Access and Transit (BAT) lanes (these types of transit-priority lanes help improve transit travel times, especially during peak periods). All bus stops located along the study corridor are in-lane stops. Each bus stop along 185th Street is accessible for persons in wheelchairs. Two bus shelters on the study corridor are located on the far-side of the 185th Street/Aurora Avenue intersection in both directions.

Daily boardings and alightings are highest at the transit stops near the intersection of 185th Street and Aurora Avenue. Transit stops at and east of Meridian Avenue typically have up to 25 riders boarding or alighting per day. FIGURE 3.1 shows a current transit route map with a rough comparison of daily transit boardings.



Sound Transit’s Lynnwood Link Extension and SR 522/SR 523 Bus Rapid Transit

FUTURE

The expected opening of the future Shoreline North/185th Station in 2024 has been the impetus for planning efforts to optimize bus connections to and from the light rail station. Planned programs and projects that affect transit demand and mobility for future conditions specifically along the 185th Street Corridor as well as generally in Shoreline include:

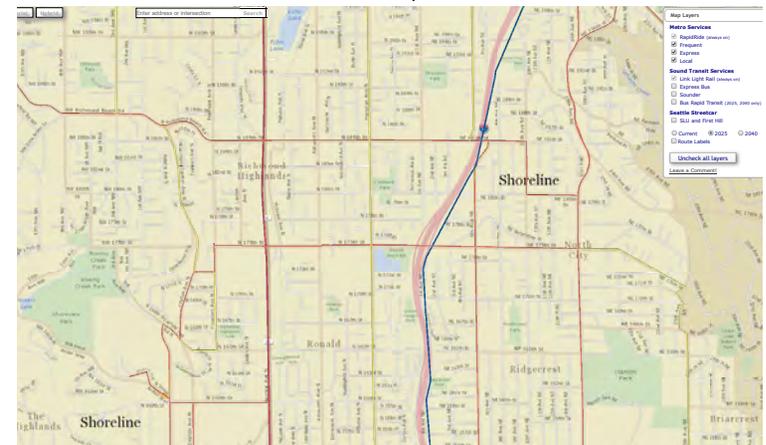
- Sound Transit: ST2 was adopted in July 2008 to extend light rail service from Seattle to Lynnwood through Shoreline, referred to as the Lynnwood Link Extension (LLE), by 2024. Shoreline North/185th Station location along the LLE was identified in July 2015. The ST3 Plan includes a bus rapid transit (BRT) line on State Route 522/State Route 523 (NE 145th Street) from Shoreline to Woodinville, to open in 2024.
- King County Metro: Adopted in 2017, Metro's long-range plan, Metro Connects, envisions both local and frequent service connections (a bus every 15 minutes or less on weekdays) to and from the Shoreline North/185th Station. In addition, Metro is considering a frequent service route from the Shoreline North/185th Station east to 10th Avenue NE, south to NE 180th Street, east to North City Business District and beyond to Lake Forest Park.

- Community Transit: Currently, CT operates the Swift Blue Line along the State Route (SR) 99 Corridor from the Aurora Village Transit Center north to Everett Station. Swift is CT's Bus Rapid Transit Service designed to move people quickly. CT intends to extend the Swift Blue Line to integrate with Sound Transit's Link Light Rail system, which will have new stations in Shoreline, Mountlake Terrace, and Lynnwood by 2024. As part of the Blue Line Expansion Study, CT is planning to extend Swift service to the Shoreline North/185th Station with buses every 10 minutes or less on weekdays, by 2024.

Integrated Future Network



CT's Integrated Future Network including the Blue Line Expansion



Metro Connects Plan envisions both local and frequent service connections to and from the Shoreline North/185th Station.

PEDESTRIAN AND BICYCLE FACILITIES

Currently, the lack of continuous, adequate facilities and lack of destinations are deterrents to pedestrian and bicycle travel along the study corridor. The American Community Survey (ACS) provides a snapshot of the percentage of men and women over the age of 16 who commute by transit, bicycle or by foot per year in the City of Shoreline (FIGURE 3.2). The results of the ACS found that over a six year period from 2012 to 2017, the average number of walking trips was 2.1 percent and the average number of bicycling trips was 1.1 percent. Taking a closer look at the trends in the number of people walking, bicycling, or using transit can help to identify some of the reasons why people choose or do not choose to take transit, walk, or bicycle. Lack of safe, convenient, and comfortable infrastructure is certainly part of the reason.

On 185th Street west of Aurora (Near Fremont and Linden Avenues), the pedestrian experience is uncomfortable. On this segment of the corridor the

sidewalks are narrow, there is little existing amenity zone and the sidewalk is adjacent to the highest volume and widest roadway of the corridor. Several wide commercial driveways are potential conflict zones. The sidewalk surface is uneven due to multiple driveways. The adjacent land use is commercial with large parking lots. The back of the sidewalk on the south side of the street drops off into the parking lot. These factors together make this segment feel exposed and uncomfortable for walking. A mix of somewhat narrow sidewalks in different states of repair with varying widths of amenity zones and driveway disruptions are encountered on most of the remainder of 185th Street. Pedestrians utilize shoulders on portions of 10th Avenue and 180th Street.

Currently, the 185th corridor does not accommodate all ages and abilities of bicycle riders. Bicycle facilities that do exist on the corridor, such as bicycle lanes, wide shoulders, and shared lane markings, accommodate experienced riders who may feel comfortable riding with or alongside motor vehicle traffic. Many intersections along the corridor do not provide dedicated lanes for bicyclists. Riders

who are new to bicycling may prefer facilities that separate them from traffic such as buffered bicycle lanes, shared-use paths, protected bicycle lanes, and protected or enhanced intersections.

The 185th corridor will serve as an important connection between the Interurban Trail, the proposed Trail Along the Rail, the Shoreline North/185th Station, and the North City Business District. Accommodating all ages and abilities with separated bicycle facilities and bicycle friendly intersections would provide for better access to these destinations while increasing bicycle comfort and ridership.

Pedestrian volumes in the vicinity of the Shoreline North/185th Station were studied by Sound Transit for the Lynnwood Link Extension EIS (Sound Transit 2015). The Shoreline North/185th Station will be a significant generator of pedestrian and bicycle trips on the 185th corridor. FIGURE 3.3 shows existing and projected volumes of pedestrians and bicyclists.

YEAR	TRANSIT			WALKING			BICYCLING		
	TOTAL	MEN	WOMEN	TOTAL	MEN	WOMEN	TOTAL	MEN	WOMEN
2017	12.9%	10.2%	15.9%	1.7%	2.7%	0.7%	0.5%	0.7%	0.2%
2016	12.7%	13.7%	11.7%	2.0%	1.9%	2.1%	1.1%	1.1%	1.1%
2015	13.6%	10.7%	16.9%	2.1%	1.7%	2.4%	1.0%	1.6%	0.2%
2014	13.7%	14.0%	13.4%	1.8%	1.0%	2.6%	2.8%	3.3%	2.2%
2013	17.4%	17.9%	16.9%	3.1%	1.7%	4.5%	0.5%	0.9%	0.0%
2012	12.1%	11.2%	13.5%	2.1%	2.2%	1.9%	0.8%	1.1%	0.6%
Average	13.7%	13.0%	14.7%	2.1%	1.9%	2.4%	1.1%	1.5%	0.7%

FIGURE 3.2 Multimodal commuting options. Annual percentage of Shoreline residents commuting by transit, foot, and bicycle as published by the US Census Bureau in 2017.



Sidewalk and amenity zone on north side of 185th Street just east of Aurora Avenue



Stormwater inlet adjacent to a tactile warning strip

The future projections consider the number of pedestrians and bicyclists accessing and exiting the Shoreline North/185th Station. The Shoreline North/185th Station will not be the only draw in the future. Most of the pedestrian and bicycle activity will be due to redevelopment within the 185th Street Station Subarea, not due to the light rail station itself. Other significant future pedestrian/bicyclist trip generators may include mixed-use developments built within the Station Subarea, bus stops along the corridor, the Trail Along the Rail, and the North City Business District.



Sidewalk transition from new development



Bicycle sharrow marking along the 180th Street hill climb



Sidewalk uplift caused by existing trees

MODE	TIMEFRAME	VOLUME (PER PEAK HOUR)	COUNT LOCATION
PEDESTRIAN	EXISTING	1-6	NE 185th St: 5th Avenue NE to 8th Avenue NE
PEDESTRIAN	FUTURE (2035)	165	185th Street light rail station vicinity
BICYCLE	EXISTING	N/A	N/A
BICYCLE	FUTURE (2035)	30	185th Street light rail station vicinity

FIGURE 3.3 Pedestrian and bicyclist projections. Existing and projected (2035) volumes of pedestrians and bicyclists from the Sound Transit EIS (2015).

Source: Sound Transit 2015.

TRAFFIC

The Puget Sound region's population is currently approximately four million people and is expected to grow to approximately six million people by 2050. With population growth comes increased demand on transportation systems. Cities throughout the region are facing challenges with growing traffic issues, limited funds, and the overarching challenge to keep all transportation users safe and moving. Current and projected traffic data provides direction for future corridor improvements.

TRAFFIC CONCURRENCY

The Growth Management Act (GMA) requires each local jurisdiction to identify traffic facility and service needs based on Level of Service (LOS) standards for all arterials and transit routes. LOS standards, an industry measure, are used to judge the performance of the transportation system. The City currently measures LOS for one mode of transportation, vehicle traffic, with LOS ratings ranging from A to F, A indicating free flow and F a breakdown in flow.

The relationship between LOS standards, funding needs to accommodate increased travel, and land use assumptions is referred to as "concurrency". Concurrency is balanced when growth is matched with needed transportation facilities. If any of the features are unbalanced, one of the following three actions must be taken:

- Reduce growth by denying or delaying land use permit applications.
- Increase funding for new facilities to address the desired LOS standard.
- Change the LOS standard.

The City of Shoreline has adopted an acceptable traffic LOS standard for measuring concurrency. The standard is defined as follows:

- LOS D (or better) at signalized intersections on arterial streets and at unsignalized intersecting arterials; and
- A volume to capacity (V/C) ratio of 0.90 or lower for principal and minor arterials. (V/C compares roadway demand by vehicle volume with roadway supply or carrying capacity. A V/C of 1.0 indicates the roadway facility is operating at its capacity).

The V/C ratio on one leg of an intersection may exceed 0.90 when the intersection operates at LOS D or better. These level of service standards apply throughout the City unless an alternative LOS for a particular street or streets has been adopted in the Comprehensive Plan Transportation Element. The V/C ratio LOS criteria tends to be the most constraining since it is based primarily on the number and type of lanes.

EXISTING TRAFFIC

Average daily traffic volumes on 185th Street range from approximately 14,000 to 15,000 vehicles per day, in both directions of travel (combined), on either side of Aurora Avenue. Volumes along 185th Street are highest near Aurora Avenue (Fremont Avenue N to Ashworth Avenue N) because the highest concentration of businesses/retail are located here, and because Aurora Avenue provides a regional connection to and from residential areas along the corridor. Daily traffic volumes drop east of Aurora Avenue as the corridor transitions to primarily residential. Average daily traffic volumes along the corridor between Meridian Avenue and 1st Avenue are approximately 12,000 vehicles per day, while traffic closer to 10th Avenue drops to approximately 8,000 vehicles per day.

Average daily traffic volumes on 10th Avenue NE and 180th Street are lower than 7,000 vehicles per day. Perkins Way which may feed into the study area is roughly the same. [FIGURE 3.4](#) depicts the existing average daily traffic volumes within the study area.

In addition to compiling the average daily traffic volumes, a detailed LOS and turning movement analysis was performed on each of the intersections in the study area. Each roadway segment was also analyzed using a volume to capacity ratio. These studies showed that both the signalized intersections and roadway segments are currently functioning at or above the City's adopted level of service. For more detailed information on the existing traffic analysis, see [APPENDIX D Existing and Future Projected Traffic Operations](#).

FUTURE TRAFFIC PROJECTIONS

Average daily traffic volumes for general-purpose vehicles for 2035, estimated based on growth rates applied to the 2018 average daily traffic volumes, are expected to more than double or triple existing volumes along certain corridor segments. The growth rates for different segments are assumed to be the same as the PM peak hour volume growth rates between existing and future. The resulting 2035 average daily traffic is shown in comparison to the existing average daily volumes in [FIGURE 3.4](#). Note that the 2035 number assumes no roadway or intersection improvements. Through the 185th MCS process, the team analyzed how improvements in each corridor design option and ultimately the Preferred Option would affect the flow of general-purpose vehicles in 2035 (see [Chapter 4 Corridor Design Options](#) and [Chapter 6 Preferred Option](#) for more details).

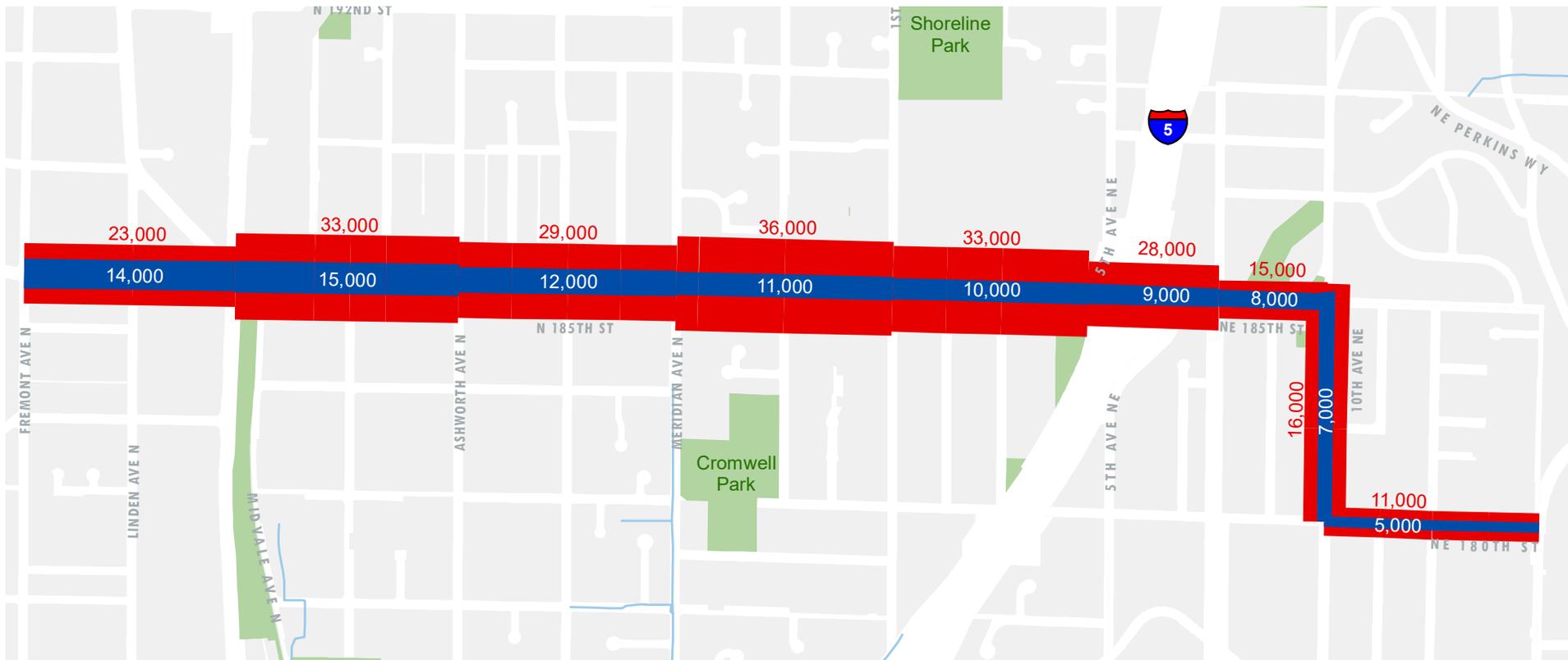


FIGURE 3.4 Collisions by severity 2010 - 2017

- EXISTING AVERAGE DAILY TRAFFIC VOLUMES (2018)
- PROJECTED AVERAGE DAILY TRAFFIC VOLUMES (2035)

Average daily traffic volumes along 185th Street are projected to range from approximately 15,000 to 36,000 vehicles per day, in both directions of travel. Eastbound and westbound daily traffic volumes are expected to be highest near Aurora Avenue and Meridian Avenue, remaining relatively high until east of 8th Avenue. Compared to existing volumes, growth is highest between Meridian Avenue and 8th Ave, which is expected due to construction of the light rail station. Sound Transit is making some improvements near the light rail station which will affect the level of service at those points. The average daily traffic on 185th Street between Meridian Avenue and 1st Avenue is projected to be 36,000 vehicles per day in 2035, compared to 12,000 vehicles per day currently. The lowest growth rates can be seen east of 8th Avenue and west of Aurora Avenue.

Due to the projected increase in population within the study area, the future traffic analysis showed a number of intersections and roadway segments that are projected to function below the City’s adopted level of service, most notably at Aurora Avenue and Meridian Avenue. Strategies for how to deal with future traffic volumes informed the development of corridor design options. By providing safe, connected, and easy to use multimodal transportation choices such as walking, biking, and taking transit, a mode shift from personal vehicles would be incentivized and help to reduce traffic demand on the corridor. In addition, roadway and intersection improvements will help the flow of vehicles. For more detailed information on the future traffic analysis, see [APPENDIX D Existing and Future Projected Traffic Operations](#).

TRAFFIC SAFETY

Collision data for the 185th Street Corridor was obtained from the Washington State Department of Transportation for years 2014-2017. During this period, a total of 158 vehicular collisions occurred along the study corridor. This included one fatal collision and one serious injury collision. The single fatal collision occurred in 2014 and involved a single truck colliding with a mailbox. A summary of collisions by severity is provided in [FIGURE 3.5](#). More detailed vehicular collision data may be found in [APPENDIX D Existing and Future Projected Traffic Operations](#).

A total of 13 reported collisions between vehicles and pedestrians occurred along the study corridor between 2010 and 2017. Each of the 13 incidents resulted in some injury to the pedestrian with one collision resulting in suspected serious injury ([FIGURE 3.5](#)). Six of the collisions involved cars and seven involved larger vehicles. The majority of the collisions occurred at intersections during daylight hours under clear or cloudy skies. Most of the collisions occurred when motor vehicles made turning movements and failed to yield to pedestrians. Four collisions resulted from left-turning vehicles at Linden Avenue and 185th

Street failing to yield to pedestrians in the crosswalk. Two collisions occurred at 8th Avenue and 185th Street.

A total of eight reported collisions between cyclists and vehicles occurred on the study corridor between 2010 and 2017. All of the reported collisions resulted in some degree of injury to the cyclists. One collision resulted in possible serious injury. Of the collisions that occurred at the same intersections, three occurred at the intersection of N 185th Street and Meridian Avenue, and two occurred at the intersection of N 185th Street and Midvale Avenue. All collisions except one occurred at intersections during daylight hours under clear or partially cloudy skies. There was no pattern to motor vehicle or bicycle maneuvers that resulted in collisions.

FIGURE 3.5 Existing and future average daily volumes

CRASH SEVERITY	DRIVERS (VEHICULAR COLLISIONS)	PEDESTRIANS	CYCLISTS
FATALITY	1	0	0
SERIOUS INJURY	1	1	1
MINOR INJURY	13	6	6
POSSIBLE INJURY	41	6	1
PROPERTY DAMAGE	100	0	0
UNKNOWN	2	0	0
TOTAL	158	13	8

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4 CORRIDOR DESIGN OPTIONS



CROSS-SECTION OPTIONS

Due to distinct characteristics that occur along the length of the 185th Street Corridor, no “One Size Fits All” design is sufficient to meet the future needs of the users of the corridor. Therefore, the corridor was divided into roadway segments based on the underlying land use, character, and transportation network (FIGURE 4.1).

The team developed a range of typical mid-block cross-section options for each of the study’s segments. Each study option is composed of two components, a roadway component (curb-to-curb) and a nonmotorized component that includes sidewalks, bicycle facilities, pedestrian amenity zones, stormwater features, and shared-use paths. The team shared these options with the public and stakeholders and used their feedback and technical analysis to eventually arrive at a Preferred Option for each segment of the corridor.

Due to projected increases in land use density in the 185th Street Subarea, general traffic in Segment B, C, and D is expected to operate below the City’s adopted Level of Service by 2035. Therefore, the options incorporated alternative transportation modes beyond single-occupancy vehicles. Improved conditions for pedestrians, cyclists, and transit riders along with land use changes, will help to initiate more service retail and amenities along the corridor. The balance of all the travel modes and activity along the corridor will encourage a lively and vibrant street environment and reduce the dependency on automobile trips.

Although not captured in the mid-block cross-sections analyzed, street cross-sections would typically be wider approaching and at intersection to accommodate left, right, and U-turns, as well as bicycle facilities. Each option shows a locator map to orient the reader to the location on the corridor.

There are three distinct segments on 185th Street that the team identified for this study. The 10th Avenue and 180th Street segments are mostly consistent and have one segment each.

N/NE 185TH STREET

• Segment A - Fremont Avenue N to Midvale Avenue N

- No roadway options are proposed for this segment. The current roadway lane configuration is needed to accommodate traffic volumes and turning movements through this segment.
- Proposed enhancements to the City-owned parcel on the southwest corner of the intersection of N 185th Street and Aurora Avenue N.
- Note: Segment A is not illustrated in the following pages because no roadway changes were proposed, but is included in the Preferred Option with pedestrian and bicycle facility improvements shown.

• Segment B - Midvale Avenue N to 2nd Avenue NE

There are three proposed options for this segment of the corridor:

- Enhanced three-lane section (two travel lanes and a center turn lane) with bicycle lanes.
- Four-lane section (two travel lanes and two BAT lanes) and protected bicycle lanes, and;
- Five-lane section (four travel lanes and a center turn lane), with a shared-use path.
- Note: Segment B and C’s extents were modified after the options analysis (see [Chapter 6 Preferred Option](#) for more details).

• Segment C - 2nd Avenue NE to 10th Avenue NE

Sound Transit LLE light rail project will be setting the roadway configuration and constructing a significant portion of this segment.

- Sound Transit will be restriping NE 185th Street to a three-lane section with buffered bicycle lanes between 2nd Avenue NE and 5th Avenue NE on the east side of I-5. Between 5th Avenue NE and 8th Avenue NE the lane configuration will consist of a two-lane section with buffered bicycle lanes and standard five-foot amenity zones and eight-foot sidewalks on both sides.
- New traffic controls to be installed by Sound Transit on NE 185th Street near the Shoreline North/185th Station include a four-way signal at the realigned intersection with 5th Avenue NE east of I-5 at the Transit Center entrance and a compact urban roundabout at the intersection with 8th Avenue NE.
- Sound Transit will be undergrounding electric power on the north side of NE 185th Street from west of the bridge to 8th Avenue NE and west side of 8th Avenue NE adjacent to the future Shoreline North/185th Station.
- East of 8th Avenue NE to 10th Avenue NE, Sound Transit is not required to make any permanent roadway improvements to NE 185th Street. Temporary traffic control measures may be needed at the intersection of NE 185th Street and 10th Avenue NE during reconstruction of NE 185th and 5th Avenue NE over multiple years. If the City would like to supplement Sound Transit’s improvements for this segment with additional pedestrian and bicycle improvements and a permanent upgrade to the intersection of NE 185th Street and 10th Avenue NE, the City will need to seek funding.
- Note: Segment B and C’s extents were modified after the options analysis (see [Chapter 6 Preferred Option](#) for more details).

10TH AVENUE NE

- **Segment D - NE 185th Street to NE 180th Street**

There are three proposed options for this segment of the corridor:

- Two-lane section (two travel lanes) with buffered bicycle lanes.
- Two-lane section (two travel lanes) with bicycle lanes and on-street parking (west-side only), and;
- Three-lane section (two travel lanes and a center turn lane).

NE 180TH STREET

- **Segment E - 10th Avenue NE to 15th Avenue NE**

There are two proposed options for this segment of the corridor:

- Two-lane section (two travel lanes) with bicycle lanes and;
- Two-lane section (two travel lanes) with buffered bicycle lanes and on-street parking (north-side only).

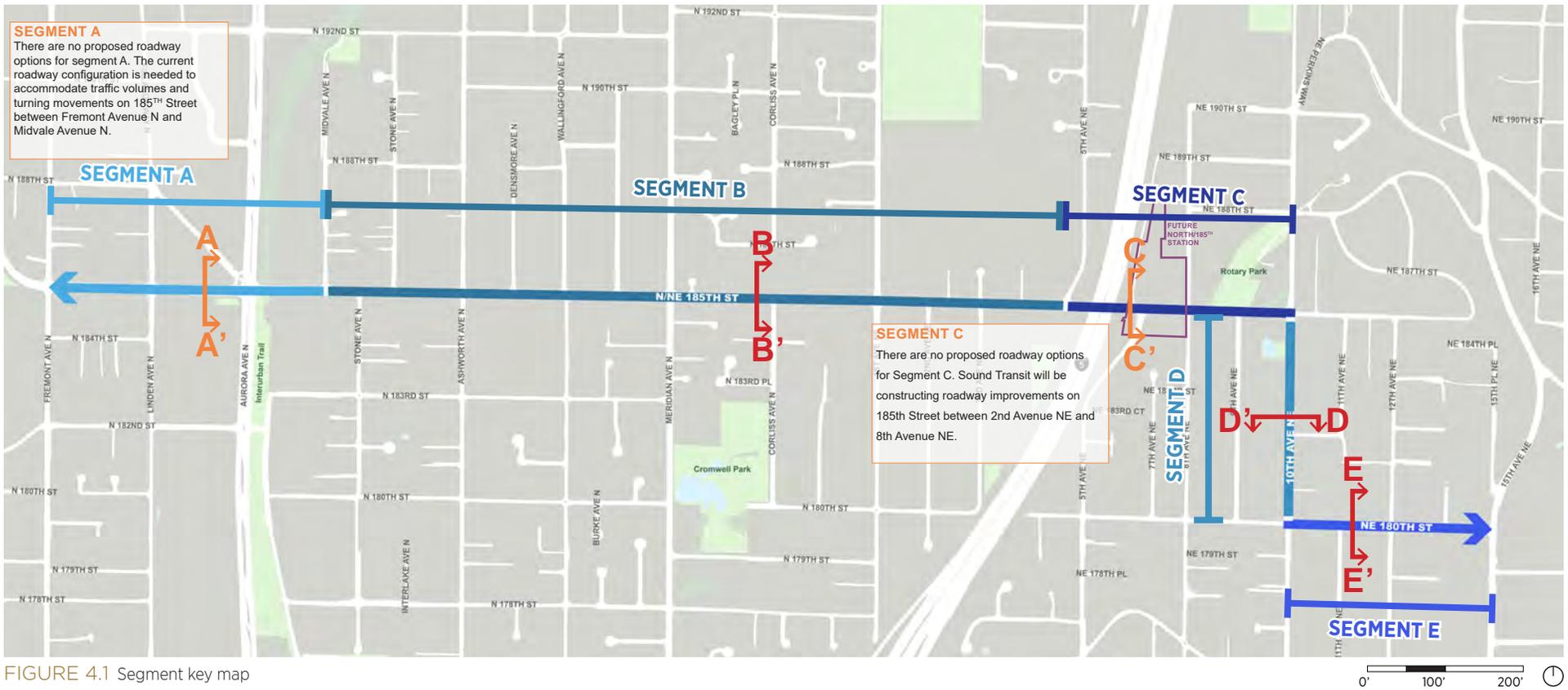


FIGURE 4.1 Segment key map

- TYPICAL CROSS-SECTION (NO PROPOSED CHANGES)
- TYPICAL CROSS-SECTION (DRAFT ROADWAY OPTIONS)

Mid-block cross-section options for each street segment are illustrated on the following pages. Note: During the development of the design options, no changes to the existing roadway layout in Segment A were proposed since its current traffic lane configuration is needed to accommodate existing and future traffic volumes and turning movements between Fremont Avenue and Midvale Avenue. However, during the refinement of the Preferred Option, improvements to the Segment A pedestrian/bicycle/amenity zones were added. Refer to [Chapter 6 Preferred Option](#) for more details.



Segment B at 1st Avenue NE



Intersection of Segment C and D



Intersection of Segment D and E

CROSS-SECTION DEVELOPMENT

The section options were developed through incorporating feedback from the public (during Outreach Series 1), stakeholders, and the City Council. The 185th Street Station Subarea Plan process identified the framework for a 90-foot planned ROW on 185th Street by establishing 15-foot setbacks from the existing 60-foot ROW on both sides of the street for new developments. The team developed a range of cross-section options of what could fit within the existing or planned ROW for each of the study's segments.

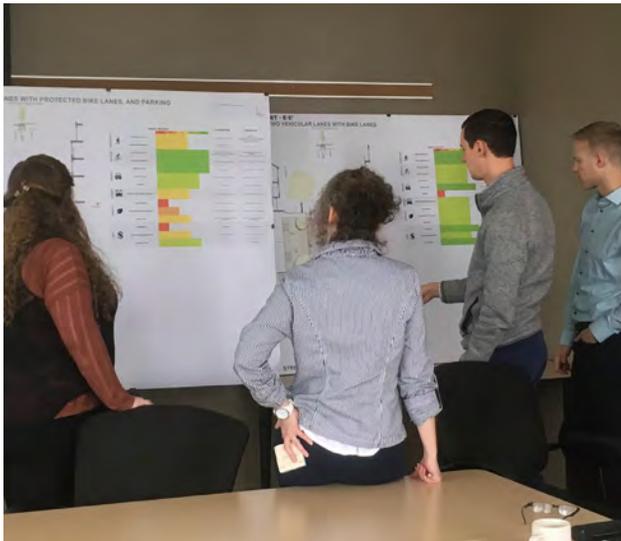
OPTIONS ANALYSIS

EVALUATION CRITERIA

The team developed a set of draft criteria to evaluate each option (FIGURE 4.2) to see how well it benefits pedestrians, bicyclists, transit operators and riders, and drivers. In addition, the team looked at how consistent each concept is with existing plans and evaluated the environmental and community benefits and potential impacts of each plan. Staff and the consultant team reviewed potential trade offs, including potential property impacts, and overall project costs.

COMPARATIVE ANALYSIS OF OPTIONS

Each segment has a page that includes a preliminary comparative analysis of the roadway cross-section options using the evaluation criteria.



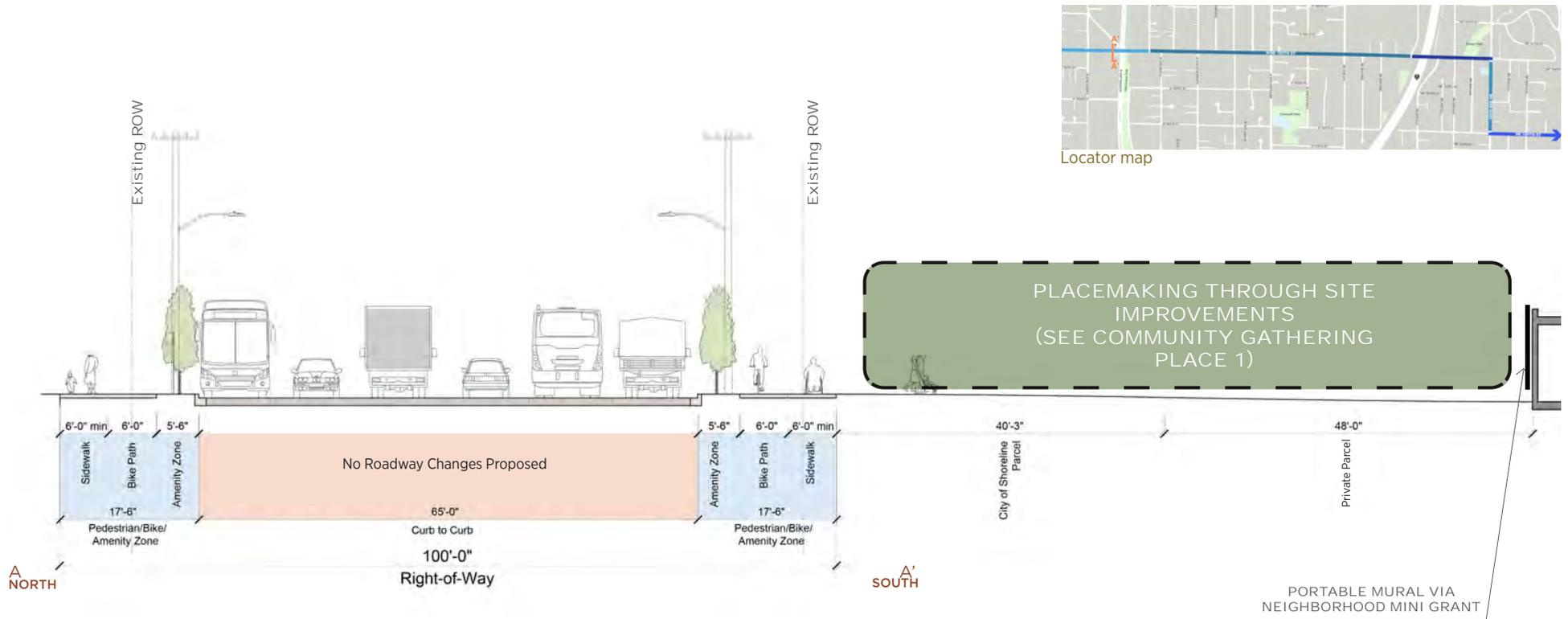
Transit Providers Meeting

FIGURE 4.2 Evaluation criteria descriptions

BENEFIT MEASURE		CRITERIA DESCRIPTIONS				
		LOW	MED-LOW	MED	MED-HIGH	HIGH
PEDESTRIAN	 PEDESTRIAN SAFETY	<ul style="list-style-type: none"> Wide street width makes pedestrian crossings challenging Little to no separation from bicycle and/or vehicle facilities 				<ul style="list-style-type: none"> Narrow street width supports frequent and safe pedestrian crossings Provides separation from bicycle and/or vehicular facilities.
	PEDESTRIAN MOBILITY	<ul style="list-style-type: none"> Sidewalk width is less than City standards Obstructions are present 				<ul style="list-style-type: none"> Sidewalk width is equal or greater than City standards Free of obstructions
BICYCLE	 BICYCLIST SAFETY	<ul style="list-style-type: none"> Obscured visibility of bicycles at crossings Little to no separation from pedestrian and/or vehicular facilities 				<ul style="list-style-type: none"> High visibility of bicycles at crossings Separation from pedestrian and/or vehicular facilities
	BICYCLIST MOBILITY	<ul style="list-style-type: none"> Bicycle facility makes abrupt connections to surrounding streets and trails 				<ul style="list-style-type: none"> Bicycle facility makes easy connections to surrounding streets and trails
TRAFFIC	 DRIVER SAFETY	<ul style="list-style-type: none"> Turn lanes absent Frequent stops and starts (i.e. shared lane with buses) Inconsistent speeds 				<ul style="list-style-type: none"> Turn lanes provided Encourages consistent speeds Mode separation
	TRAFFIC FLOW	<ul style="list-style-type: none"> Lower or similar vehicle capacity compared to existing roadway Level of Service \leq E or F 				<ul style="list-style-type: none"> Adds significantly more capacity for general purpose drivers Level of Service \geq C or D
	PARKING	<ul style="list-style-type: none"> Doesn't provide parking 				<ul style="list-style-type: none"> Provides parking or the potential to offer parking during non-peak travel hours
TRANSIT	 TRANSIT SPEED AND RELIABILITY	<ul style="list-style-type: none"> No dedicated BAT lanes reduce transit speed and reliability Narrow travel lanes are 10' 				<ul style="list-style-type: none"> Dedicated BAT lanes support consistent transit speed and reliability Wide travel lanes are 12'
LIVABILITY	ENVIRONMENT	<ul style="list-style-type: none"> Significant increase to impervious area Minimal room for trees and landscaping 				<ul style="list-style-type: none"> Little to no change in impervious surface Ample space for trees and landscaping
	 PLACEMAKING OPPORTUNITY	<ul style="list-style-type: none"> Minimal space beyond the curb Provides ped and/or bicycle facility only 				<ul style="list-style-type: none"> Significant space behind the curb i.e. allows for public art, street furniture, etc.
	MODE SHIFT	<ul style="list-style-type: none"> Discourages mode shift (i.e. less apt to walk, bicycle, or take transit) 				<ul style="list-style-type: none"> Encourages mode shift (i.e. more apt to walk, bicycle, or take transit)
COST	ROW IMPACT	<ul style="list-style-type: none"> Significant increase in street right-of-way Possible impacts to existing structures 				<ul style="list-style-type: none"> Little to no change to existing street right-of-way
	 EASE OF IMPLEMENTATION	<ul style="list-style-type: none"> Curblines significantly different than existing street Unlikely to be achieved through frontage improvements alone 				<ul style="list-style-type: none"> Curblines similar to existing Easier to transition from existing street to future design through frontage improvements
	CAPITAL COST	<ul style="list-style-type: none"> Most expensive 				<ul style="list-style-type: none"> Least expensive

N 185TH STREET - A-A'

OPTION 1: NO ROADWAY CHANGES



N 185TH STREET - A-A'

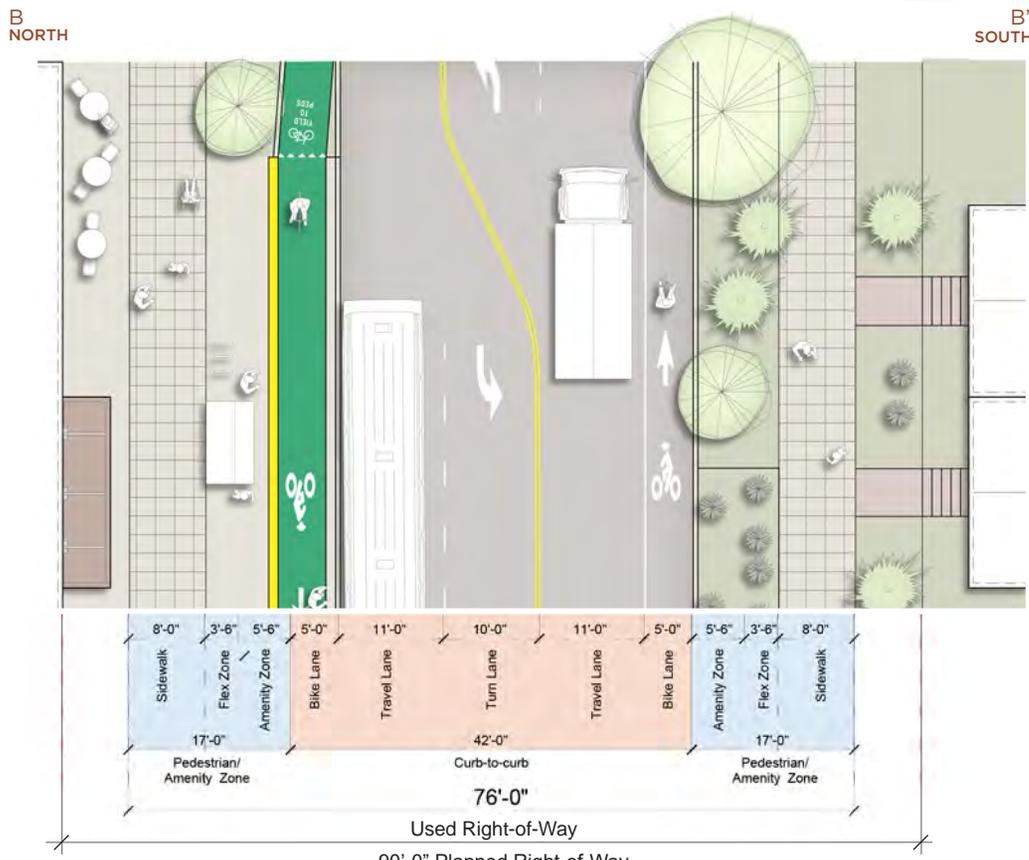
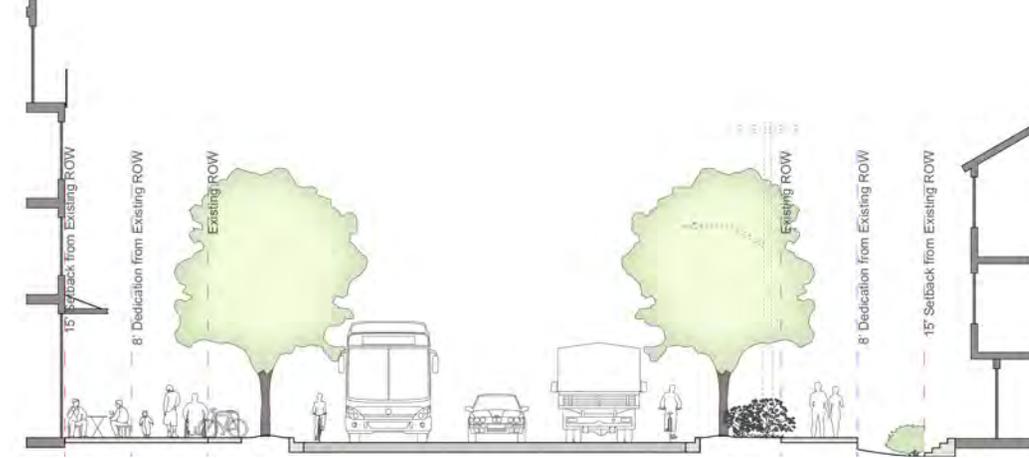
OPTION 1

During the development of the corridor design options, no roadway changes were proposed for Segment A since the current roadway lane configuration is needed to accommodate present and future traffic volumes and turning movements. **Therefore, there is no analysis for this segment.**

The City-owned parcel on the southwest corner of the intersection of 185th Street and Aurora Avenue was identified as a potential Community Gathering Place. Ideas for enhancing this space were shared with the community and stakeholders during Outreach Series 2.

During the refinement of the Preferred Option, the study team incorporated improvements to Segment A ped/bike/amenity zones based on feedback from City Council and the public.

OPTION 1: THREE-LANE SECTION (TWO TRAVEL LANES AND A CENTER TURN LANE) WITH BICYCLE LANES

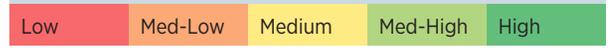


Locator map

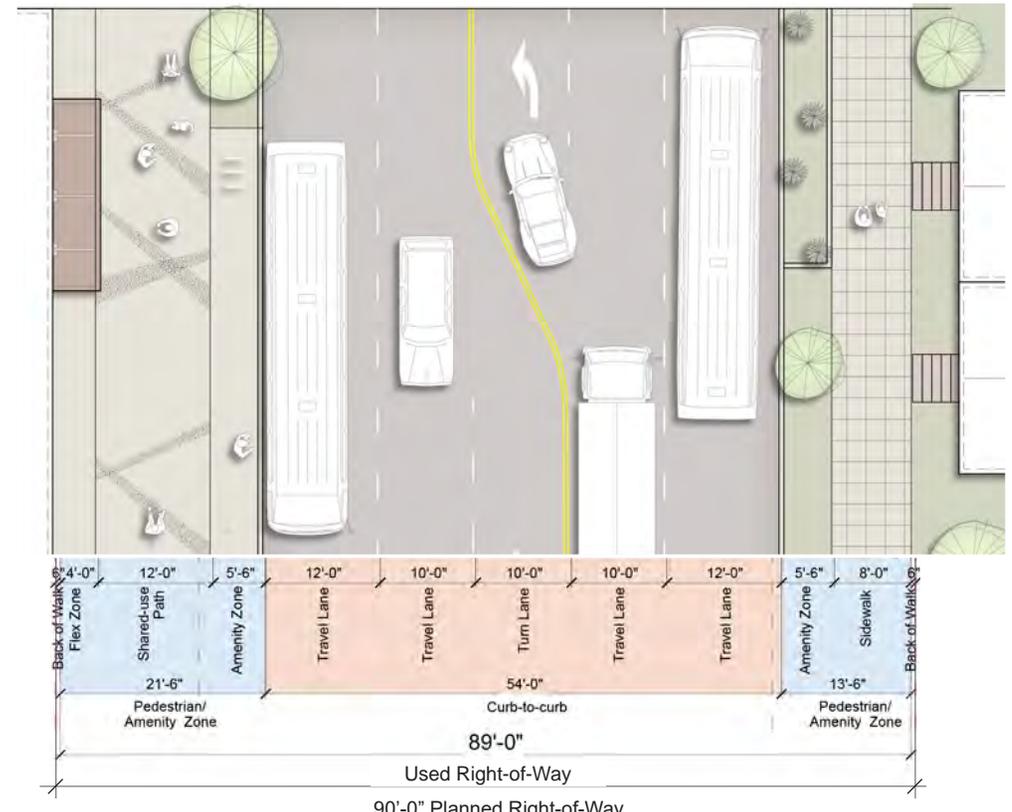
185TH STREET OPTION 1 EVALUATION TABLE

BENEFIT MEASURE		DESCRIPTION	DISTINCTIONS
PEDESTRIAN	PEDESTRIAN SAFETY	<ul style="list-style-type: none"> 42' street crossing 3.5' flex zone + 5.5' amenity zones 	<ul style="list-style-type: none"> Existing & Option 1 have narrow street crossing Flex zone + amenity zone provides best separation from vehicles
	PEDESTRIAN MOBILITY	<ul style="list-style-type: none"> 8' sidewalks 	<ul style="list-style-type: none"> 8' sidewalk meets City's standard
BICYCLE	BICYCLIST SAFETY	<ul style="list-style-type: none"> 5' bicycle lanes 	<ul style="list-style-type: none"> Minimal separation from vehicles Intersection improvements would enhance safety
	BICYCLIST MOBILITY	<ul style="list-style-type: none"> Pair of bicycle lanes for east/west travel 	<ul style="list-style-type: none"> Potential to enhance connections to Interurban Trail and surrounding streets
TRAFFIC	DRIVER SAFETY	<ul style="list-style-type: none"> Narrow street slows down drivers Center turn lane provided 	<ul style="list-style-type: none"> Turn pockets keep left turning vehicles out of travel lanes
	TRAFFIC FLOW	<ul style="list-style-type: none"> One general purpose lane in each direction 	<ul style="list-style-type: none"> Traffic Level of Service will fail by 2035, but intersections improvements will help traffic flow
	PARKING	<ul style="list-style-type: none"> No parking in this segment 	<ul style="list-style-type: none"> No room for parking
TRANSIT	SPEED AND RELIABILITY	<ul style="list-style-type: none"> Buses and cars share the same 11' lane 	<ul style="list-style-type: none"> No dedicated bus lanes
LIVABILITY	ENVIRONMENT	<ul style="list-style-type: none"> 3.5' flex zone provides room for more plantings 	<ul style="list-style-type: none"> Opportunity to assess preserving healthy existing trees
	PLACEMAKING OPPORTUNITY	<ul style="list-style-type: none"> 3.5' flex zone provides room for placemaking 	<ul style="list-style-type: none"> Greatest room for placemaking
	MODE SHIFT	<ul style="list-style-type: none"> Good spread of multimodal options, but doesn't support frequent transit service 	<ul style="list-style-type: none"> Encourages medium mode shift
COST	ROW IMPACT	<ul style="list-style-type: none"> Minimal impacts 	<ul style="list-style-type: none"> Keeps existing curb lines
	EASE OF IMPLEMENTATION	<ul style="list-style-type: none"> Easy to implement 	<ul style="list-style-type: none"> Roadway option dovetails with bridge's roadway configuration
	CAPITAL COST	<ul style="list-style-type: none"> -- 	<ul style="list-style-type: none"> Least expensive

COLOR KEY



OPTION 3: FIVE-LANE SECTION (FOUR TRAVEL LANES AND A CENTER TURN LANE) WITH A SHARED-USE PATH



Locator map

185TH STREET OPTION 3 EVALUATION TABLE

BENEFIT MEASURE		DESCRIPTION	DISTINCTIONS
PEDESTRIAN	PEDESTRIAN SAFETY	<ul style="list-style-type: none"> 54' street crossing 5.5' amenity zones 	<ul style="list-style-type: none"> Widest street crossing High separation from vehicles, but must share path with bicyclists
	PEDESTRIAN MOBILITY	<ul style="list-style-type: none"> 12' shared-use path on north side 8' sidewalk on south side 	<ul style="list-style-type: none"> 12' shared use path meets AASHTO standards 8' sidewalk meets City's standard
BICYCLE	BICYCLIST SAFETY	<ul style="list-style-type: none"> 12' shared-use path on north side 	<ul style="list-style-type: none"> High separation from vehicles, but must share path with pedestrians Intersections improvements would enhance safety
	BICYCLIST MOBILITY	<ul style="list-style-type: none"> East/west bicycle trips are both accommodated on shared-use path on north side 	<ul style="list-style-type: none"> Harder to transition from shared-use path to surrounding street network
DRIVER SAFETY		<ul style="list-style-type: none"> Center turn lane provided 	<ul style="list-style-type: none"> Autos and buses share the same lane Turn pockets keep left turning vehicles out of travel lanes
TRAFFIC	TRAFFIC FLOW	<ul style="list-style-type: none"> Two general purpose lanes in each direction Center turn lane reduces traffic back-ups 	<ul style="list-style-type: none"> Traffic Level of Service fail by 2035, but intersections improvements and center turn lane will help traffic flow Provides greatest capacity and lowest delay
PARKING		<ul style="list-style-type: none"> Option for parking during non-peak times 	<ul style="list-style-type: none"> Curb lanes could support parking during non-peak times
TRANSIT	SPEED AND RELIABILITY	<ul style="list-style-type: none"> Buses and cars share the 12' curb lanes 	<ul style="list-style-type: none"> No dedicated bus lane, but center turn lane will help keep all traffic flowing
LIVABILITY	ENVIRONMENT	<ul style="list-style-type: none"> Amenity zone provides room for new trees and plantings 	<ul style="list-style-type: none"> Potential new larger canopy trees, if utilities are undergrounded Option 2 & 3 offer the potential to preserve existing trees on the north side
	PLACEMAKING OPPORTUNITY	<ul style="list-style-type: none"> Potential placemaking opportunities in paving patterns, banners, and amenity zones 	<ul style="list-style-type: none"> Least room for placemaking
	MODE SHIFT	<ul style="list-style-type: none"> Encourages some mode shift 	<ul style="list-style-type: none"> Accommodates motor vehicle trips
ROW IMPACT		<ul style="list-style-type: none"> High impacts 	<ul style="list-style-type: none"> Option 2 or 3 have similar right-of-way impacts
COST	EASE OF IMPLEMENTATION	<ul style="list-style-type: none"> Difficult to transition 	<ul style="list-style-type: none"> Hardest to transition to bridge's roadway configuration
	CAPITAL COST	<ul style="list-style-type: none"> If undergrounding utilities were selected, this would be the most expensive option 	<ul style="list-style-type: none"> Moderately expensive

COLOR KEY

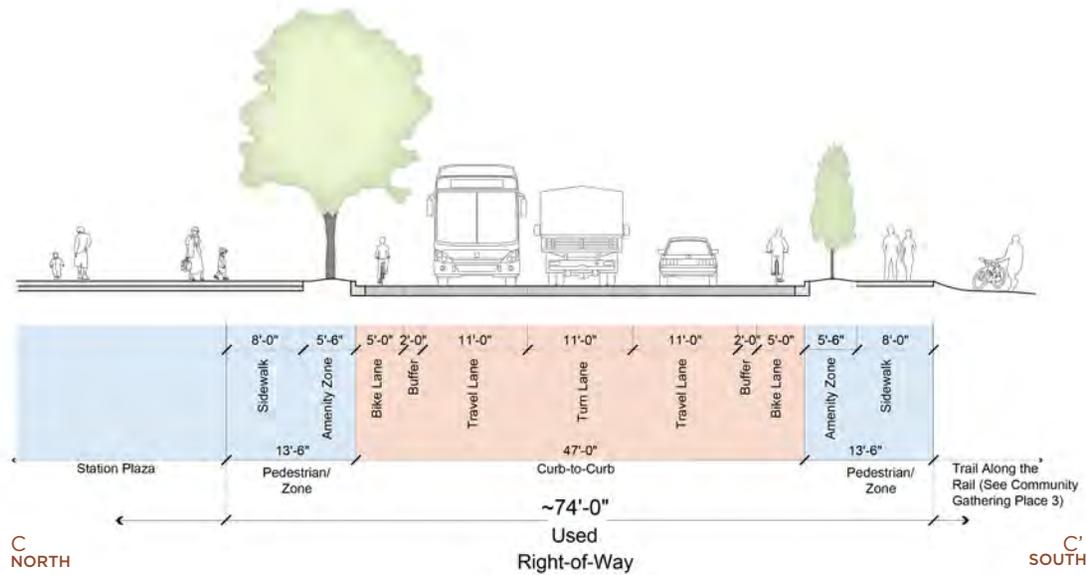
Low	Med-Low	Medium	Med-High	High
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NE 185TH STREET - C-C'

OPTION 1

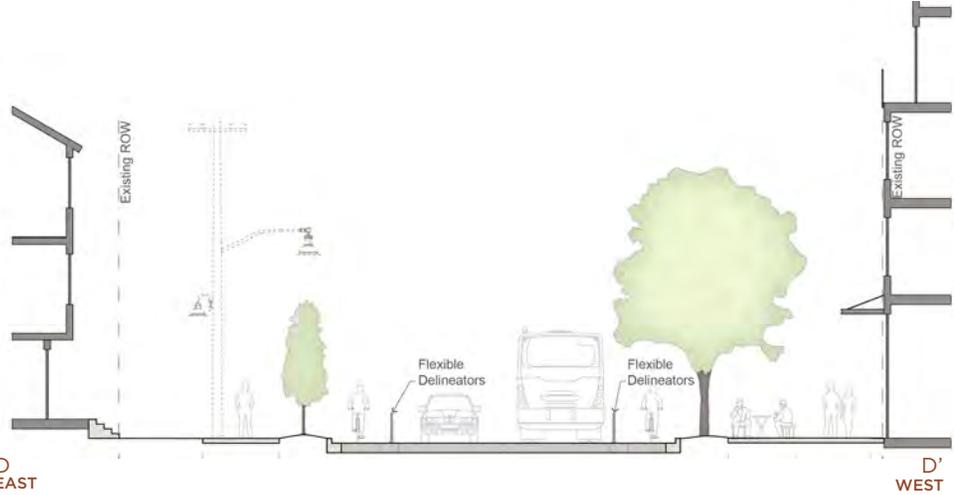


Locator map



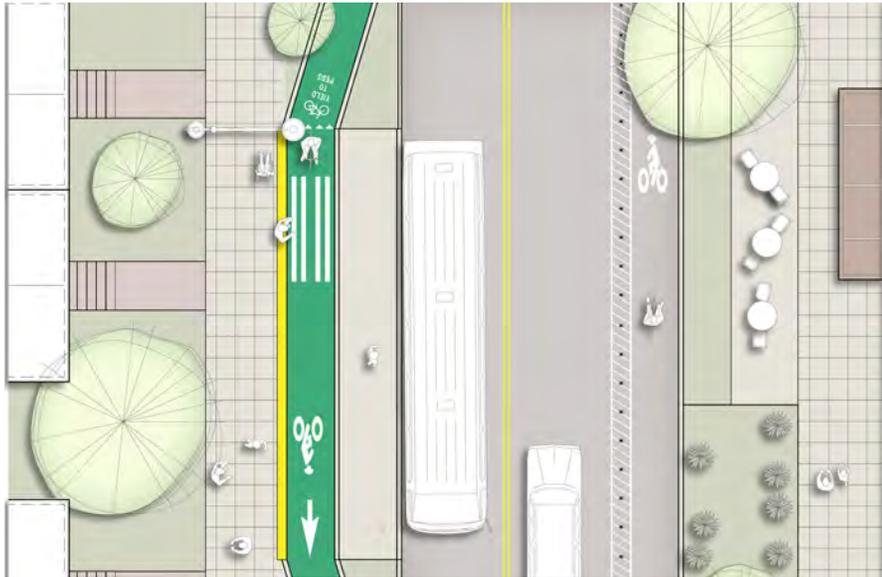
Sound Transit LLE light rail project will be constructing a significant portion of this segment. The 185th MCS effort assumed these improvements will remain in place. Therefore, there is no analysis for this segment.

OPTION 1: TWO-LANE SECTION (TWO TRAVEL LANES) WITH BUFFERED BICYCLE LANES



D EAST

D' WEST

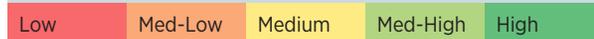


Locator map

10TH AVENUE OPTION 1 EVALUATION TABLE

		BENEFIT MEASURE	
PEDESTRIAN	PEDESTRIAN SAFETY	• 36' street crossing • 5.5' amenity zone on both sides plus 7' flex zone on west side	• Medium wide street crossing • Amenity zone provides good separation from vehicles
	PEDESTRIAN MOBILITY	• 8' sidewalks	• 8' sidewalk meets City's standard
BICYCLE	BICYCLIST SAFETY	• 5' bicycle lanes with 2' buffer	• Greatest separation from vehicles and pedestrians
	BICYCLIST MOBILITY	• Pair of buffered bicycle lanes	• Easy to connect to surrounding streets
TRAFFIC	DRIVER SAFETY	• No turn lanes	• Autos and buses share the same lane
	TRAFFIC FLOW	• One general purpose lane in each direction	• Traffic Level of Service will fail by 2035, but intersection improvements will help traffic flow
	PARKING	• No parking	• --
TRANSIT	SPEED AND RELIABILITY	• 11' lanes shared by transit and autos	• No dedicated bus lanes
LIVABILITY	ENVIRONMENT	• Amenity zones provide room for new trees and plantings	• Least amount of new paving
	PLACEMAKING OPPORTUNITY	• 7' flex zone and -8' transition zone provides room for placemaking	• Option 1 and 2 provide generous room for placemaking
	MODE SHIFT	• Good spread of multimodal options, including frequent transit service	• Encourages moderate mode shift
ROW IMPACT		• Low impacts	• All options have similar right-of-way impacts
EASE OF IMPLEMENTATION		• Easy to transition	• --
CAPITAL COST		• --	• Least expensive

COLOR KEY



OPTION 2: TWO-LANE SECTION (TWO TRAVEL LANES) WITH BICYCLE LANES AND ON-STREET PARKING

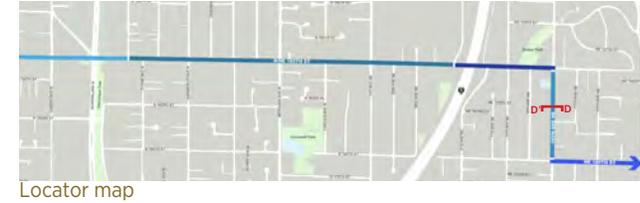


10TH AVENUE OPTION 2 EVALUATION TABLE

		BENEFIT MEASURE	
PEDESTRIAN	PEDESTRIAN SAFETY	High	<ul style="list-style-type: none"> 35' street crossing at curb bulbs Curb bulbs at crossing make it the narrowest crossing Narrowest crossing Amenity zones and flex zone on west side provides best separation from vehicles
	PEDESTRIAN MOBILITY	High	<ul style="list-style-type: none"> 5' sidewalk on east side 8' sidewalk on west side Sidewalk width meet City's standard for zoning
BICYCLE	BICYCLIST SAFETY	High	<ul style="list-style-type: none"> 5' bicycle lane on east side 6' bicycle lane on west side adjacent to parking Moderate separation from vehicles and pedestrians Parking next to bicycle lane creates potential conflicts
	BICYCLIST MOBILITY	High	<ul style="list-style-type: none"> Pair of bicycle lanes for north/south travel Potential to enhance connections to surrounding streets
TRAFFIC	DRIVER SAFETY	Medium	<ul style="list-style-type: none"> No turn lanes Parking slows down traffic
	TRAFFIC FLOW	Medium	<ul style="list-style-type: none"> One general purpose lane in each direction Traffic Level of Service will fail by 2035, but intersection improvements will help traffic flow
	PARKING	Low	<ul style="list-style-type: none"> Provides parking Only option that provides parking
TRANSIT	SPEED AND RELIABILITY	High	<ul style="list-style-type: none"> 12' lanes shared by transit and autos Parking creates conflicts for buses
LIVABILITY	ENVIRONMENT	High	<ul style="list-style-type: none"> Amenity zones, flex zone, and curb bulbs provide room for new trees and plantings Moderate amount of new paving
	PLACEMAKING OPPORTUNITY	High	<ul style="list-style-type: none"> 9' flex zone and parking bulb-outs provide room for placemaking Option 1 and 2 provide generous room for placemaking
	MODE SHIFT	High	<ul style="list-style-type: none"> Good spread of multimodal options, including frequent transit service Encourages mode shift
COST	ROW IMPACT	High	<ul style="list-style-type: none"> Low impacts All options have similar right-of-way impacts
	EASE OF IMPLEMENTATION	High	<ul style="list-style-type: none"> Moderate ease of transition --
	CAPITAL COST	High	<ul style="list-style-type: none"> -- Most expensive



OPTION 3: THREE-LANE SECTION (TWO TRAVEL LANES AND A CENTER TURN LANE) WITH BICYCLE LANES



Locator map

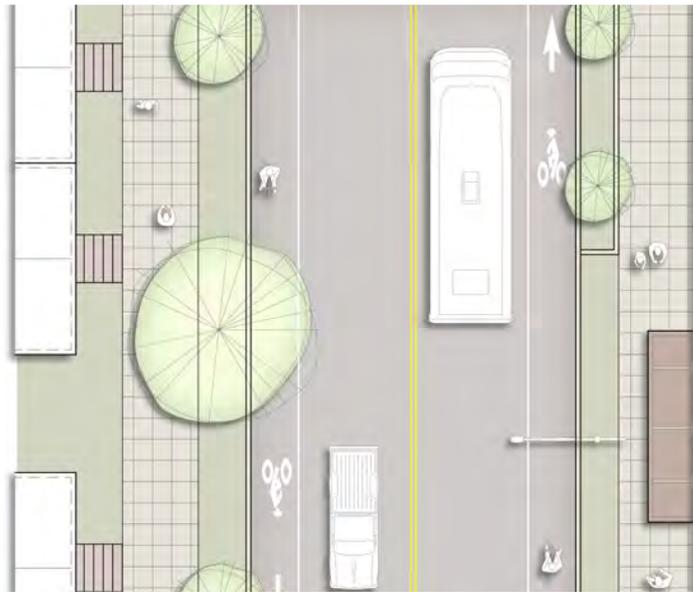


10TH AVENUE OPTION 3 EVALUATION TABLE

		BENEFIT MEASURE	
PEDESTRIAN	PEDESTRIAN SAFETY	42' street crossing at curb bulbs	• Widest crossing • Amenity zones and flex zone on west side provides best separation from vehicles
	PEDESTRIAN MOBILITY	5' sidewalk on east side 8' sidewalk on west side	• Sidewalk width meet City's standard for zoning
BICYCLE	BICYCLIST SAFETY	5' bicycle lanes	• Moderate separation from vehicles and pedestrians
	BICYCLIST MOBILITY	Pair of bicycle lanes for north/south travel	• Potential to enhance connections to surrounding streets
TRAFFIC	DRIVER SAFETY	Provides turn lanes	• Only option that provides center turn lane
	TRAFFIC FLOW	One general purpose lane in each direction Center turn lane reduces traffic back-ups	• Acceptable Traffic Level of Service in 2035
	PARKING	No parking	• --
TRANSIT	SPEED AND RELIABILITY	11' lanes shared by transit and autos	• Center turn lane supports frequent bus service
LIVABILITY	ENVIRONMENT	Amenity zones and flex zone provide room for new trees and plantings	• Most amount of new paving
	PLACEMAKING OPPORTUNITY	7' flex zone provides room for placemaking	• Moderate room for placemaking
	MODE SHIFT	Best spread of multimodal options, including frequent transit service	• Encourages highest mode shift
COST	ROW IMPACT	Low impacts	• All options have similar right-of-way impacts
	EASE OF IMPLEMENTATION	Easy to transition	• --
	CAPITAL COST	--	• Moderately expensive

COLOR KEY				
Low	Med-Low	Medium	Med-High	High

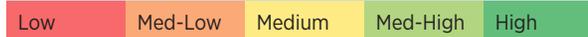
OPTION 1: TWO-LANE SECTION (TWO TRAVEL LANES) WITH BICYCLE LANES



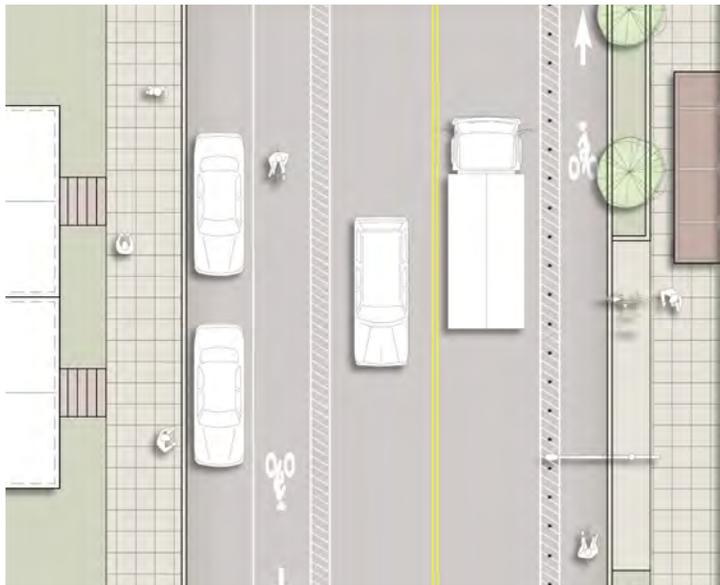
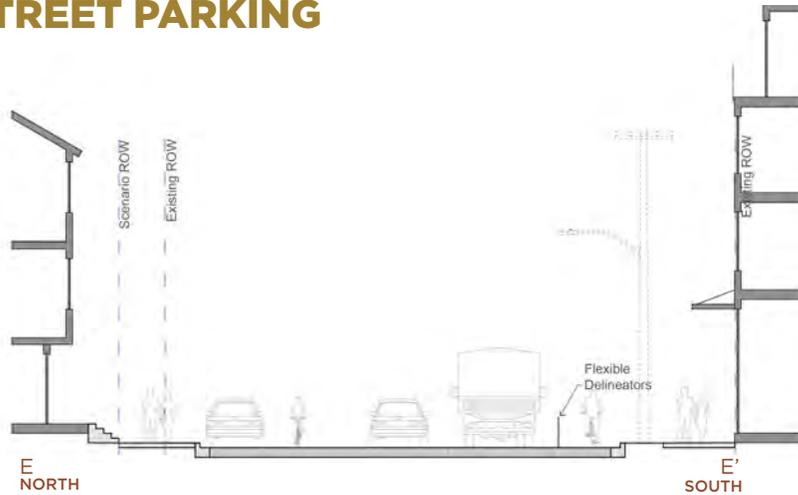
180TH STREET OPTION 1 EVALUATION TABLE

		BENEFIT MEASURE	
PEDESTRIAN	PEDESTRIAN SAFETY	High	<ul style="list-style-type: none"> 34' street crossing at curb bulbs 2nd narrowest crossing
	PEDESTRIAN MOBILITY	High	<ul style="list-style-type: none"> 8' sidewalks Sidewalk width meets City's standard
BICYCLE	BICYCLIST SAFETY	High	<ul style="list-style-type: none"> 5' bicycle lanes Moderate separation from vehicles and pedestrians
	BICYCLIST MOBILITY	High	<ul style="list-style-type: none"> Pair of bicycle lanes for east/west travel Potential to enhance connections to surrounding streets
TRAFFIC	DRIVER SAFETY	High	<ul style="list-style-type: none"> No turn lanes Added curbs provide traffic calming
	TRAFFIC FLOW	High	<ul style="list-style-type: none"> One general purpose lane in each direction Acceptable Traffic Level of Service in 2035
TRANSIT	PARKING	Low	<ul style="list-style-type: none"> No new parking --
	SPEED AND RELIABILITY	High	<ul style="list-style-type: none"> 12' lanes shared by transit and autos Supports transit service
LIVABILITY	ENVIRONMENT	High	<ul style="list-style-type: none"> Room for trees in amenity zone on north side Moderate amount of new paving
	PLACEMAKING OPPORTUNITY	High	<ul style="list-style-type: none"> Potential placemaking opportunities in paving patterns, banners, and amenity zones Some room for placemaking
	MODE SHIFT	High	<ul style="list-style-type: none"> Good spread of multimodal options, including transit service Encourages mode shift
COST	ROW IMPACT	High	<ul style="list-style-type: none"> Minimal impacts Stays within the right-of-way
	EASE OF IMPLEMENTATION	High	<ul style="list-style-type: none"> Easy to implement Some transition required to dovetail with existing
	CAPITAL COST	High	<ul style="list-style-type: none"> -- Least expensive

COLOR KEY



OPTION 2: TWO-LANE SECTION (TWO TRAVEL LANES) WITH BUFFERED BICYCLE LANES AND ON-STREET PARKING

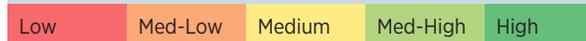


Locator map

180TH STREET OPTION 2 EVALUATION TABLE

		BENEFIT MEASURE	
PEDESTRIAN	PEDESTRIAN SAFETY	• 37' street crossing at curb bulbs	• Widest crossing • No amenity zone on north side and substandard amenity zone on south side provides minimal separation from vehicles
	PEDESTRIAN MOBILITY	• -8.5' sidewalk on north side • -7.5' sidewalk on south side	• Sidewalk width is less than 8'
BICYCLE	BICYCLIST SAFETY	• 5' bicycle lane with 2' buffer on east side • 6' bicycle lane with 2' buffer on west side adjacent to parking	• Moderate separation from vehicles and pedestrians • Parking next to bicycle lane creates potential conflicts
	BICYCLIST MOBILITY	• Pair of bicycle lanes for north/south travel	• Potential to enhance connections to surrounding streets
TRAFFIC	DRIVER SAFETY	• No turn lanes	• Parking creates conflicts with through traffic
	TRAFFIC FLOW	• One general purpose lane in each direction	• Acceptable Traffic Level of Service in 2035
	PARKING	• Provides parking	• Only option that provides parking
TRANSIT	SPEED AND RELIABILITY	• 11' lanes shared by transit and autos	• Parking creates conflicts for buses
LIVABILITY	ENVIRONMENT	• No room for trees in amenity zone	• Moderate amount of new paving
	PLACEMAKING OPPORTUNITY	• Potential placemaking opportunities in paving patterns, banners, and amenity zones	• Least amount of room for placemaking
	MODE SHIFT	• Good spread of multimodal options, including transit service	• Space for parking narrows travel lanes width of pedestrian zone
COST	ROW IMPACT	• Most impacts	• Exceeds the existing right-of-way
	EASE OF IMPLEMENTATION	• Moderate effort to implement	• Expansion of curb lines add complexity
	CAPITAL COST	• --	• Most expensive

COLOR KEY



5 OUTREACH AND ENGAGEMENT



OUTREACH AND ENGAGEMENT

OVERVIEW

In order to create a vision for the 185th Street Corridor, it was important to provide information to the public and stakeholder groups and receive their feedback. The study team used a variety of methods to notify and gather input from a wide range of stakeholder groups, including those who live, work, or travel in the area, and representatives from key organizations and partner agencies. The City conducted two outreach series of events, one in fall 2018 and one in spring 2019. Each series included various meetings and activities for providing input.

It is the City's policy to assure that no person shall, on the grounds of race, color, national origin or sex, as provided by Title VI of the Civil Rights Act of 1964, be excluded from participation in, be denied the benefits of, or be otherwise discriminated against under any of its federally funded programs and activities. This chapter outlines the methods implemented during Outreach Series 1 and 2 as well as a summary of feedback received.

OUTREACH SERIES 1

The City conducted events and activities during the fall of 2018 to engage local neighbors, the broader Shoreline community, and key stakeholder groups in the 185th MCS process. The purpose of Outreach Series 1 was to gather the community's thoughts to inform the early phases of the visioning process for this study. Outreach Series 1 objectives were to:

- Provide community members, interested organizations, and agency partners with various opportunities to learn about the 185th MCS and

share their early input on existing conditions and areas of special interest along the corridor.

- Provide members of the community with the opportunity to share ideas and review feedback shared by others.

IN PERSON AND ONLINE ENGAGEMENT

Outreach Series 1 (see following list of events) included unique engagement and learning opportunities for attendees. The events provided the community with diverse opportunities to share their feedback and early vision for the 185th MCS, as well as speak directly with City staff and the study team. Participants were invited to reflect on existing Corridor conditions and rate the Corridor.

CORRIDOR WALK/BICYCLE TOURS & COMMUNITY DROP-IN HOURS

Saturday, October 20, 2018, 1 - 3 PM
Spartan Recreation Center

- 32 Attendees.
- Included a guided biking tour and walking tour of the study corridor.

STAKEHOLDER BRIEFINGS & COMMUNITY DROP-IN HOURS

Tuesday, October 23, 2018, 9 AM - 5 PM
Spartan Recreation Center

- Included scheduled briefing times for agency and community partners.
- Included a drop-in time for public from 1 - 3 PM.
- 11 drop-in attendees and 3 stakeholder group briefings.

OPEN HOUSE 1

Thursday, October 25, 2018, 6 - 8 PM
Shoreline City Hall

- 65 attendees.
- Public event and City presentation.

NEIGHBORHOOD ASSOCIATION MEETING

- Presented to Richmond Highlands Neighborhood Association on October 10, 2018.
- Presented to Hillwood Neighborhood Association on November 28, 2018.

SHORELINE SCHOOL DISTRICT

- Briefing to Family Engagement Program Manager on September 12, 2018.
- Briefing to Family Advocate Team on November 6, 2018.

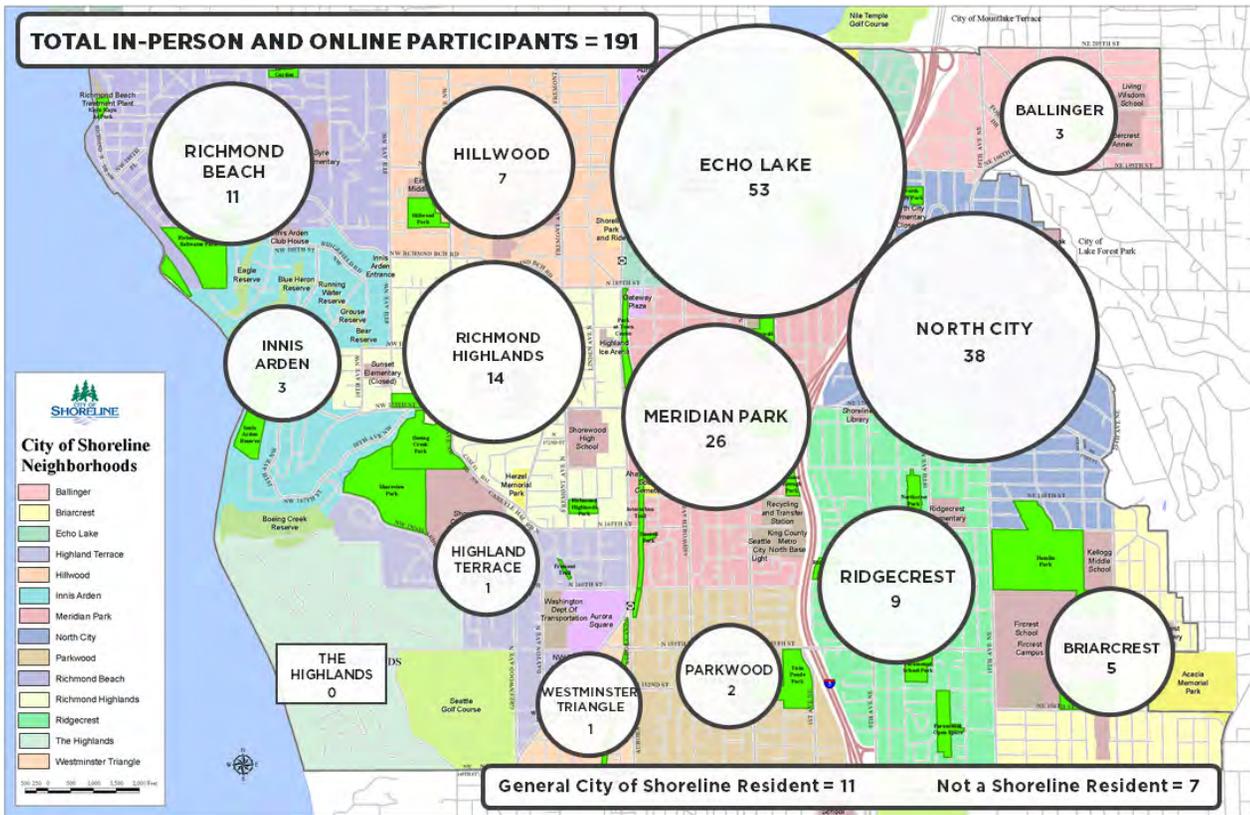
ONLINE COMMUNITY SURVEY

Available October 29 - November 25, 2018

- 83 respondents.
- Provided an extended opportunity for community members to share their feedback on existing conditions along the Corridor.
- Offered similar exercises to those available at in-person Outreach Series 1 events.



Community members reviewing information at Open House 1



NOTIFICATION STRATEGIES

Event announcement notifications were shared broadly with the community to provide notice of early 185th MCS engagement opportunities:

Web page

- Launched September 11, 2018.
- Provided study overview and purpose.
- Posted 185th MCS development documents and Outreach Series 1 materials.

FAQS

- Published FAQs as hardcopy and on web page.
- Included translation in several languages for how to communicate with the City.
- Distributed FAQs at all outreach events.

Shoreline Currents

- Released October 1, 2018.
- Distributed via mail to each household in Shoreline.

Flyer/Poster

- Distributed to local businesses and public locations beginning September 25, 2018.
- Included translation in several languages for how to communicate with the City.

Yard Signs

- Placed along the corridor on October 11, 2018.

Shoreline Alerts

- Emailed alert on October 11, 2018 to all who signed up for 185th MCS alerts.

Social media posts

- Posted October 12, 16, and 25, 2018.
- Event announcements and reminders via City's social media accounts.

Press releases and media advisory

- Released October 11 and 16, 2018.
- Announced events and linked to study web page.



Outreach Series 1 provided many public and stakeholder engagement activities.

WALK AND BICYCLE TOUR OBSERVATIONS

The walk and bicycle tour on Saturday, October 20, 2018 provided community members the opportunity to share their thoughts on the Corridor from the perspective of walking or biking. Tour guides led group discussions at various stops along the Corridor. These discussions resulted in the participants providing their thoughts on potential challenges that exist at each location while also identifying any opportunities that can be considered in the formation of the study.

Following is a summary of feedback captured during the tours, organized by identified challenges and opportunities.

CHALLENGES

- Residents are concerned about preserving the existing tree canopy as future development occurs.
- Existing vegetation along the corridor is poorly managed and provides challenges for people walking and biking.
- There are concerns over roadway safety and congestion on arterials; the City should have a plan to keep drivers out of neighborhoods and side-streets.
- Existing mature tree roots have damaged some sidewalks and consequently impede pedestrian access.
- Concerns over right-of-way expansion and impacts on property lines.
- Bicycle infrastructure is disconnected and in poor condition.
- Street parking is a concern for residents that live near the corridor.

OPPORTUNITIES

- Development potential for the Corridor and how it fits into the subarea plan and the 185th MCS (i.e. building townhomes, multifamily housing, or neighborhood retail).
- Opportunity to connect the existing bicycle infrastructure.



Cyclists participate in the biking tour of the 185th Street Corridor



Community members participate in the walking tour of the 185th Street Corridor

EXERCISE 1:

CORRIDOR COMPONENTS

To begin examining existing conditions and future design needs, the study team broke the 185th Street Corridor into four component segments, based on similar use and characteristics. These proposed Corridor components (shown in the map below) were:

- **CENTRAL SPINE**
- **AURORA CROSSING**
- **STATION ACCESS**
- **NEIGHBORHOOD CONNECTORS**

Community members who attended the 185th MCS Outreach Series 1 events or participated in the online survey were invited to provide comments on existing Corridor conditions as well as ideas they would like the study team to consider as concepts were developed.

In addition to general comments, community members provided responses to the following prompts:

- **Tell us something we need to know about each of the Corridor components.**
- **Do you think we divided the 185th Corridor into the right components?**

A summary of this feedback follows, organized by main themes per Corridor component.

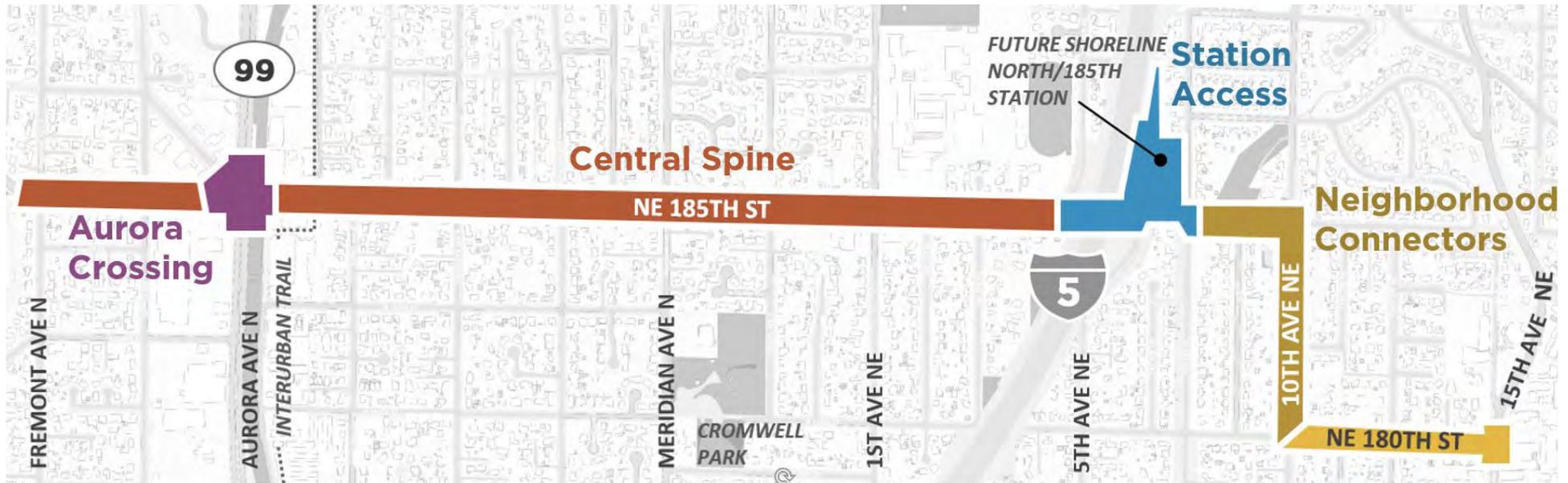
CORRIDOR OVERALL

- Future land use should preserve the existing community amenities, such as the Spartan Recreation Center, churches, and the Shoreline Stadium, and encourage more community businesses along the Corridor that are easy to walk to.
- The future Corridor should have amenities such as better sidewalks and easy roadway crossings to help improve the pedestrian experience.
- Separate biking and walking facilities are important.

- Street trees and canopy cover are important and should be preserved on 185th Street as much as possible.
- Existing community green space needs to be preserved and additional green space opportunities need to be explored in the future.

CENTRAL SPINE

- Street trees and canopy cover are highly valued on 185th Street and they should be preserved to the greatest extent possible.
- Focus on encouraging neighborhood businesses along the Central Spine and providing infrastructure to make them walkable/bikeable for neighborhood residents and those traveling from the station.
- Consider parking needs for the neighborhood businesses that may potentially be constructed along 185th Street. Think about how spaces can be used for accessing these businesses as well as for commuters accessing the station. Residents also need access to parking spaces.
- Determine strategies for slowing down traffic and



easing congestion. Vehicles currently travel too fast along 185th Street. Dedicated infrastructure for bicycles and pedestrians can help to improve safety for all.

- Design 185th Street so that it can effectively move transit and has appropriate infrastructure for loading and unloading riders safely and effectively.
- The center turn lanes are currently working well.
- It is important to have pedestrian infrastructure to ensure that this area is walkable. Consider incorporating wide sidewalks and adequate crosswalks for pedestrians.

AURORA CROSSING

- Bicycle infrastructure at the Aurora Crossing can be improved. Existing bicycle lanes end abruptly, and bicycle lanes are in-between traffic lanes. Consider ways to enhance existing crossings for cyclists.
- Focus on keeping east-west traffic moving on 185th Street across Aurora Avenue. There is currently congestion, and this is likely to increase as the station opens.
- Think about ways to better link the different quadrants of this busy intersection. Wait times for pedestrians crossing Aurora Avenue N and 185th Street are currently very long.
- Think about ways to keep traffic moving smoothly along both Aurora Avenue and 185th Street.
- This is an important hub for Shoreline. Are there any corridor improvements that can help to make this into more of a “downtown?”

STATION ACCESS

- Design the station area to be safe and accessible for all transportation modes, including crossings for pedestrians and bicycle access and parking. Provide separate facilities for different kinds of users where possible to keep things moving smoothly.

- Focus on improvements that help transit efficiently access the station.
- Work to calm traffic to keep the area safe for pedestrians and cyclists accessing the station.
- Consider vehicles accessing the station from 5th Avenue NE (coming from both the north and the south) and improve access to keep traffic moving.
- Keep in mind that many vehicles will be traveling east-west on 185th Street and not accessing the station.

NEIGHBORHOOD CONNECTORS

- This part of the Corridor has a strong neighborhood feel and includes street trees and green spaces. The neighborhood character should be retained and enhanced where possible. Traffic calming measures should be incorporated where possible to keep this area safe for residents and non-motorized users.
- Many pedestrians and cyclists from North City will be using these neighborhood connectors to access the station. Focus on providing safety for pedestrians (enhanced sidewalks, enhanced street lighting, and more crosswalks) and bicycle infrastructure (dedicated bicycle lanes) to facilitate these users.
- Enhanced pedestrian facilities could potentially provide opportunities for walkable neighborhood businesses in this area and an enhanced connection between North City and the station.
- Parking is a current challenge in this area, and it is likely to become more of an issue. Consider how future design could enhance parking opportunities in this area.
- Consider providing dedicated turn lanes at major intersections to keep traffic and transit moving.



Open House 1 provided attendees with the opportunity to hear a presentation about the study and engage in a question and answer session with City staff

EXERCISE 2:

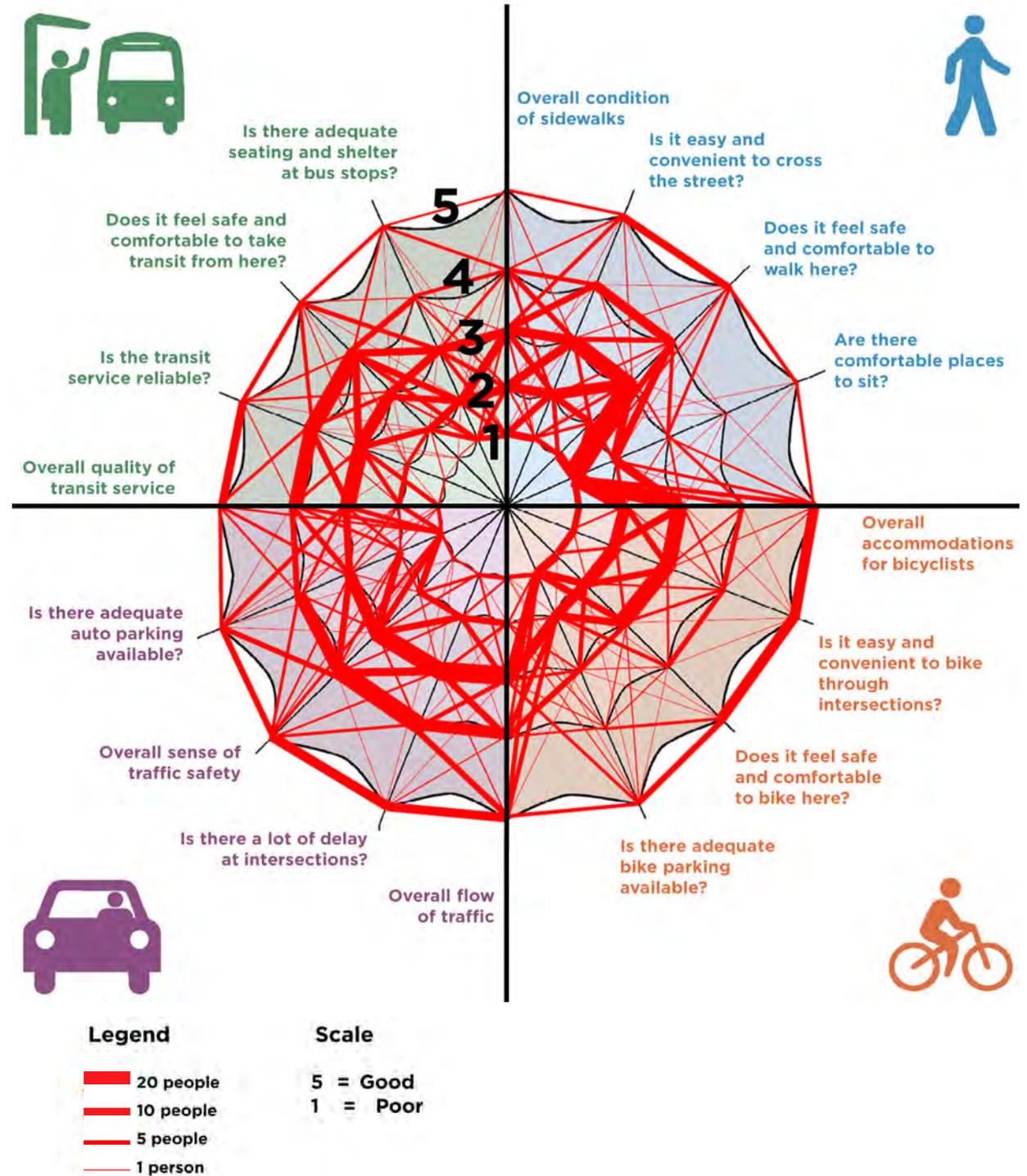
RATE THE CORRIDOR

Participants answered questions about how each mode of travel currently functions along the 185th Street Corridor. This exercise was called “Rate the Corridor” and included questions about current conditions of four transportation categories (pedestrians, bicycles, automobiles, and transit) with possible scores from 1 (poor) up to 5 (good).

During the Outreach Series 1 events, participants were asked to mark their scores on a spiderweb graph and then connect the dots with a marker. The completed spiderwebs were displayed in Council Chambers during the 185th MCS Open House on October 25, 2018. A similar “Rate the Corridor” exercise was included in the online survey to give people unable to attend an in-person event the opportunity to evaluate current conditions.

RATE THE CORRIDOR- SPIDER GRAPH

The compilation graph to the right helps visualize the aggregated responses of all participants (Fall Outreach events and online survey participants). This graphic illustrates the range of responses. The thicker the red line, the higher the frequency of a similar set of responses to the questions. While most of the answers for each topic fit within a concentrated score, the thinner red lines show where some participants’ answers fell outside of that average score. The majority of the participants gave the 185th Street Corridor’s pedestrian and bicycle conditions lower scores and its transit and automobile conditions higher scores.



RATE THE CORRIDOR- BAR CHARTS

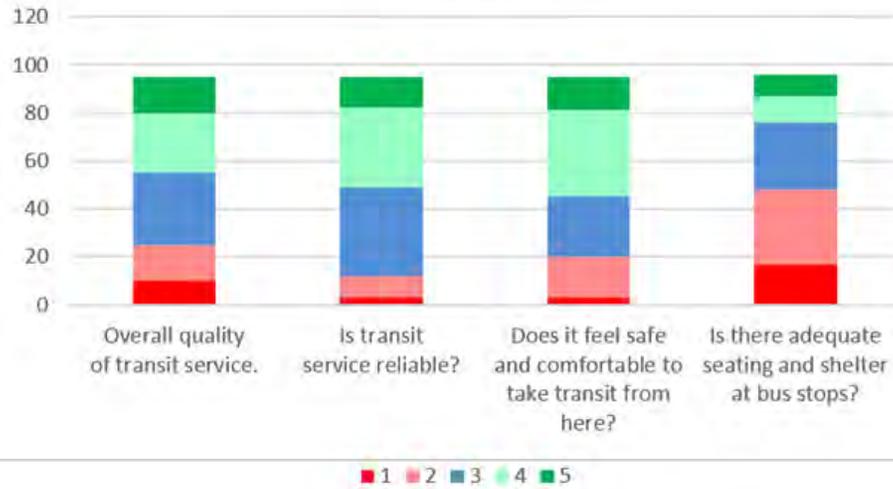
The following bar charts break down the “Rate the Corridor” exercise in a different way and show how participants rated current conditions along the 185th Street Corridor per travel mode.

The red shades indicate where respondents felt the current conditions are somewhat poor and the green shades indicate where respondents felt the current conditions are basically good.

The blue color in between red and green colors indicate where respondents gave a medium rating for current conditions.

The overall results show that the existing pedestrian and bicycle facilities are deficient in many ways and that there is room for improvement to both the existing transit and automobile facilities.

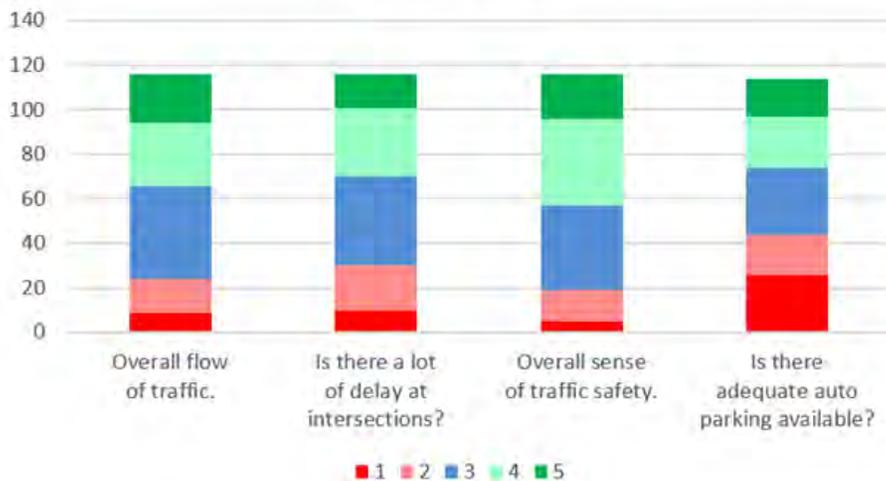
Transit



Pedestrians



Automobiles



Bicycles

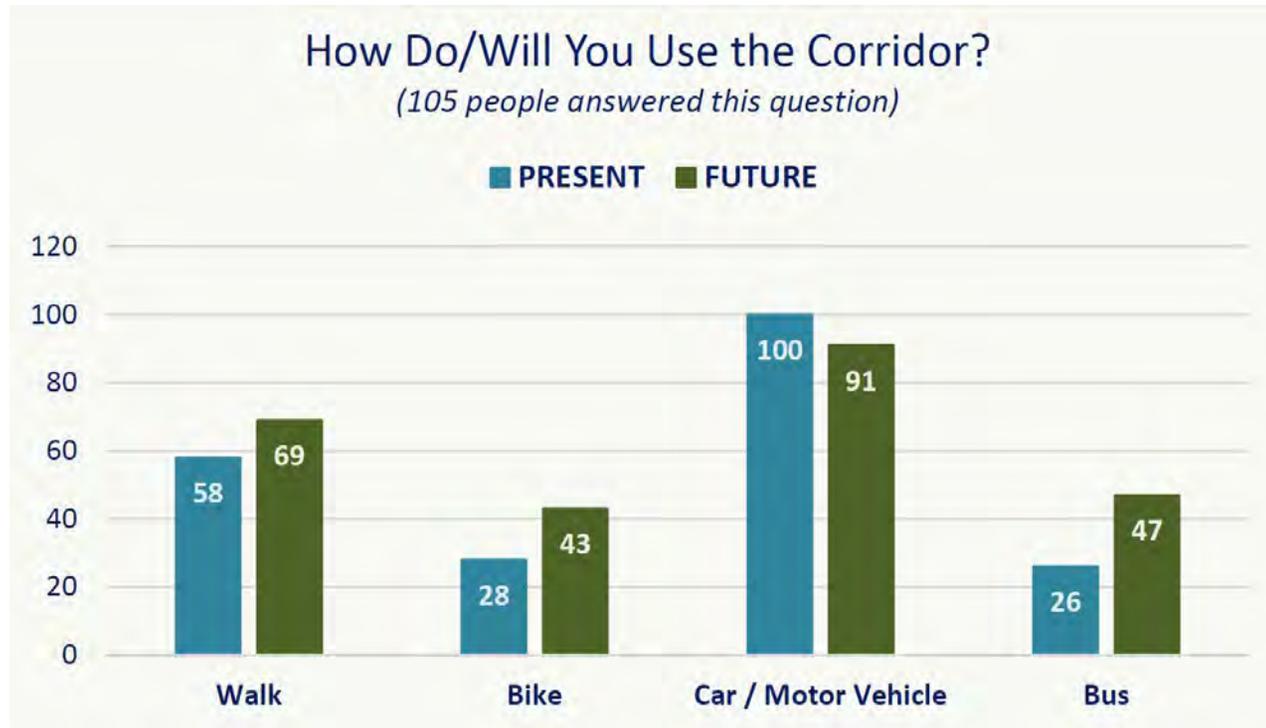


EXERCISE 3:

HOW DO/WILL YOU USE THE CORRIDOR?

In-person and online attendees were asked to consider how they use/will use the 185th Street Corridor, identifying each mode of travel they currently use on the 185th Street Corridor (blue) and the modes they hope to use on the Corridor in the future (green).

Generally, respondents indicated that in the future they would like to use the Corridor to walk, bicycle, and use transit more and drive slightly less. The results indicate that users may choose to leave their cars behind if there are safe and convenient alternative transportation options.



OUTREACH SERIES 2

The City conducted a second series of events and activities (Outreach Series 2) during spring 2019 for the 185th MCS. The purpose of Outreach Series 2 was to share progress on several different options for each of the 185th Street Corridor segments.

Stakeholders were given the opportunity to share their feedback at all of the Outreach Series 2 events. The study team used a variety of methods to notify and gather input from a wide range of stakeholder groups, including those who live, work, or travel in the area, and representatives from key organizations and partner agencies.

Outreach Series 2 objectives were to:

- Continue to provide community members and stakeholder agency partners with various opportunities to learn about the 185th MCS.
- Introduce how feedback from the community has been incorporated into the development of potential corridor design concepts.
- Invite the public and stakeholders to review and give input on preliminary roadway cross-section options, comparative analysis of roadway options, and draft concepts of Community Gathering Places.



Spring open house event

IN PERSON AND ONLINE ENGAGEMENT

Outreach Series 2 included a public open house, an online survey, stakeholder briefings, and other events. Outreach Series 2 events provided the community and stakeholders with an opportunity to share their feedback on draft materials and build a vision for the 185th Street Corridor, as well as speak directly with 185th MCS team members.

Overall, a total of 375 people participated in spring 2019 outreach meetings and the online survey. See the neighborhood map on the following page for a visual breakdown of where participants live in the community.

Outreach Series 2 events included:

SHORELINE CITY COUNCIL MEETING
Monday, March 25, 2019

PARKS, RECREATION, & COMMUNITY SERVICES BOARD
Thursday, March 28, 2019
• 11 attendees

OPEN HOUSE 2

Tuesday, April 2, 2019, 6 - 8 PM
Shoreline City Hall

- 80 attendees
- Included a City presentation and question and answer portion.

COUNCIL OF NEIGHBORHOODS MEETING

Wednesday, April 3, 2019

- 15 attendees

TRANSIT PROVIDERS MEETING

Tuesday, April 9, 2019

- 10 attendees

CITY STAFF MEETING

Wednesday, April 10, 2019

- 20 attendees

DEVELOPERS MEETING

Thursday, April 11, 2019

- 17 attendees

IN PERSON AND ONLINE ENGAGEMENT (CONTINUED)

UTILITY & PUBLIC SERVICES MEETING

Monday, April 15, 2019

- 15 attendees

LARGE PROPERTY OWNER MEETING

Monday, April 15, 2019

- 6 attendees

ECHO LAKE NEIGHBORHOOD ASSOCIATION, MERIDIAN PARK, AND NORTH CITY MEETING

Tuesday, April 16, 2019

- 42 attendees

YOUTH OUTREACH AND LEADERSHIP OPPORTUNITIES

Monday, April 29, 2019

- 9 attendees

ONLINE COMMUNITY SURVEY

Available April 5 - May 28, 2019

- 150 respondents
- Online survey offered similar prompts and exercises available at in-person meetings.

NOTIFICATION STRATEGIES

Notifications for Outreach Series 2 included:

Web page (ShorelineWA.gov/185corridor)

- Updated with materials from Outreach Series 1.
- Announced upcoming Outreach Series 2 events and served as a repository for materials presented at Open House 2.
- Provided link to online survey.

FAQs Update (in English and Spanish)

- Published FAQs update as hardcopy and on web page.
- Included translation in several languages for how to communicate with the City.
- Distributed FAQs at all outreach events.

Shoreline Currents

- Published March 1, 2019.
- Distributed via mail to each household in Shoreline.
- Advertised April 2 Open House at Shoreline City Hall.

Flyer/Poster (in English and Spanish)

- Distributed to local businesses and public locations beginning on March 19
- Included translation in several languages for how to communicate with the City.

Yard Signs for Open House 2

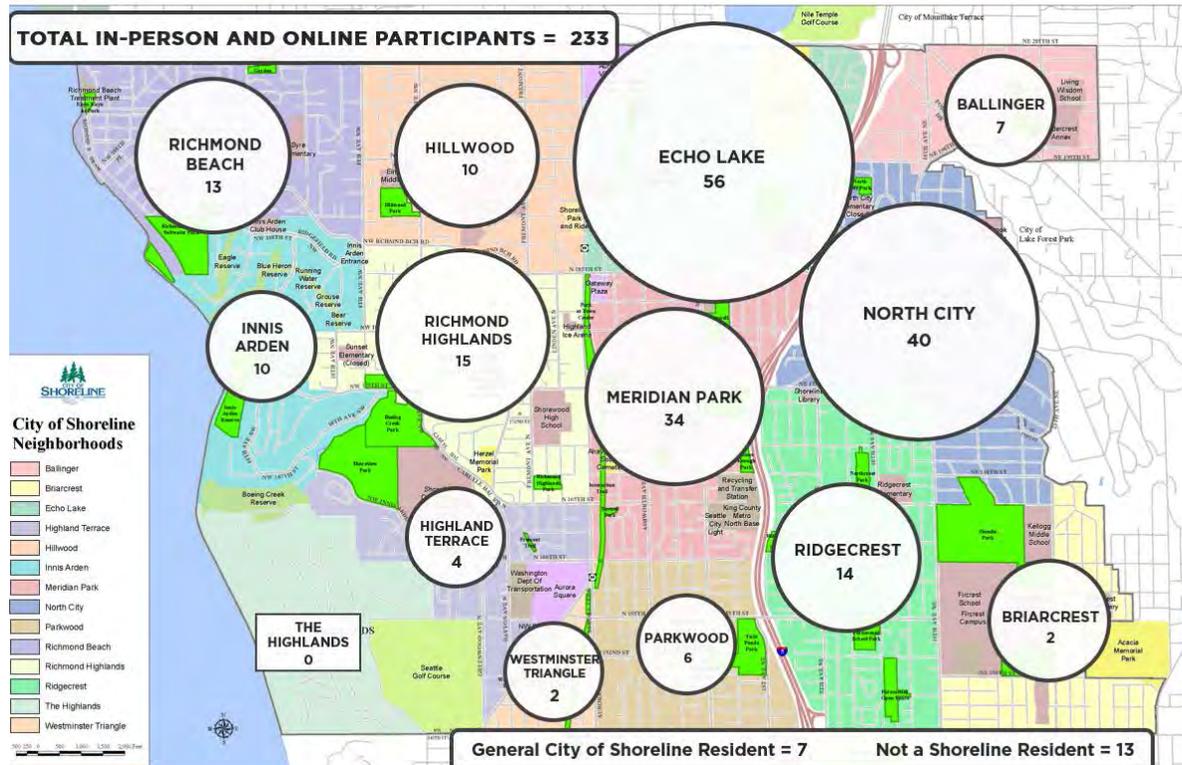
- Placed along the corridor on March 14 and removed on April 3.

ALERT Shoreline email (all those who signed up)

- Emailed alert on March 26 for upcoming Open House 2.
- Emailed alert on April 5 for virtual Open House 2 and online survey.

Social media posts

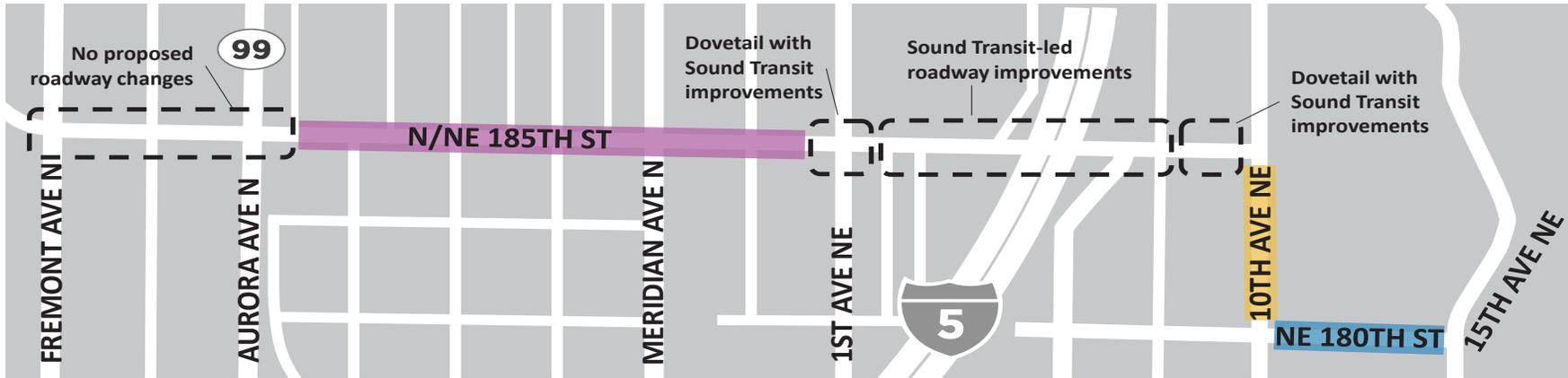
- Created and shared a Facebook event for Open House 2.
- Shared link to online survey on social media accounts on April 4, 2019.



233 participants identified the neighborhood they live in. *

EXERCISE -

STREET OPTIONS



Outreach Series 2 participants reviewed mid-block cross-section options for three distinct segments of the corridor (shown in the map above):

- **N/NE 185TH STREET**
- **10TH AVENUE NE**
- **NE 180TH STREET**

For each of the three corridor segments, community members were invited to review potential cross-section options. These options served as bookend opportunities and demonstrated different ways that multimodal components could be incorporated into different parts of the corridor.

Each of the corridor segment design options included a scorecard (see sample blank scorecard to the right) which rated its components with the set of evaluation criteria. These evaluation ratings helped visually show the types of benefits and challenges associated with each option.

Participants were then asked to respond to the following prompts for each segment:

- What is your favorite option for balancing future needs?
- Choose up to 3 components that make this option your favorite.
- Are there other reasons why you prefer this option?

OVERALL SURVEY TAKE-AWAYS

The relatively small percentage (between five to eight percent) of survey responders who selected keeping the corridor the way it is today reflects that most support improving the corridor. Survey responses indicate a strong interest in accommodating multiple modes of travel along the corridor with an emphasis on creating a pedestrian-friendly environment.

	PEDESTRIAN SAFETY
	PEDESTRIAN MOBILITY
	CYCLIST SAFETY
	CYCLIST MOBILITY
	DRIVER SAFETY
	TRAFFIC FLOW
	PARKING
	TRANSIT SPEED & RELIABILITY
	ENVIRONMENT
	PLACEMAKING OPPORTUNITY
	MODE SHIFT
	ROW IMPACT
	EASE OF IMPLEMENTATION
	CAPITAL COST



A scorecard was prepared for each segment of design option using the above evaluation criteria



N/NE 185TH STREET OPTIONS - SURVEY RESULTS



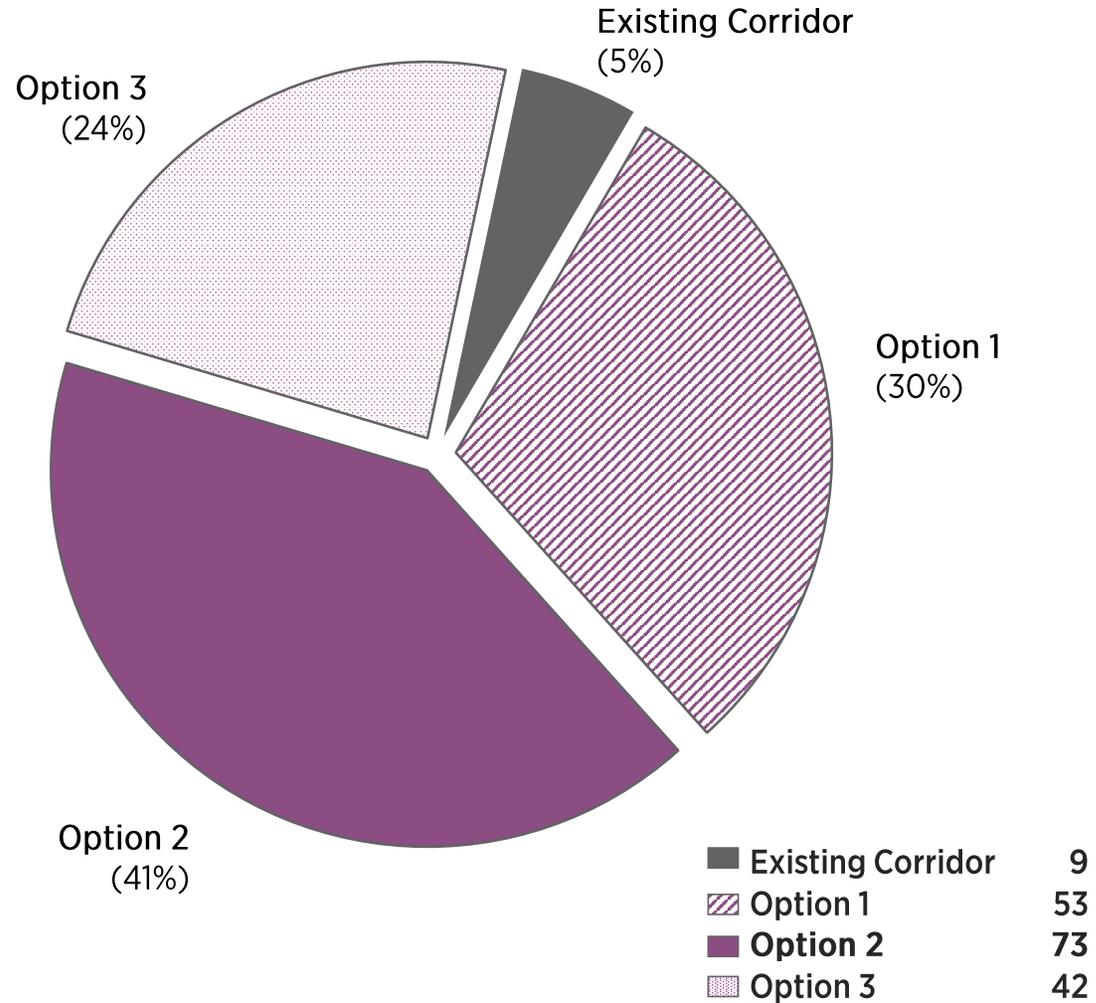
N/NE 185th Street locator map

DESCRIPTION OF OPTIONS

Option 1: THREE-LANE SECTION (two travel lanes and a center turn lane) with **BICYCLE LANES**

Option 2: FOUR-LANE SECTION (two travel lanes and two BAT lanes) with **PROTECTED BICYCLE LANES**

Option 3: FIVE-LANE SECTION (four travel lanes and a center turn lane) with a **SHARED-USE PATH**



Total participants 177

N/NE 185TH STREET OPTIONS - SURVEY RESULTS (CONTINUED)

Reasons for Favorite Option Selection on N/NE 185th Street
(Top 3 favorite components in each option are highlighted in green)*

* NOTE: Components for this question differed between the in-person and the online surveys.

Online survey (123 responses)

	Pedestrian	Bicycle	Traffic	Transit	Cost	Parking	Environmental	Placemaking
Option 1	24	16	15	4	16	1	13	9
Option 2	36	44	21	33	1	3	6	7
Option 3	16	9	25	13	1	6	8	4

In-person survey (54 responses)

	Pedestrian	Bicycle	Traffic	Transit	Cost	Livability
Option 1	14	7	4	3	10	10
Option 2	11	14	5	14	3	6
Option 3	5	2	10	6	3	1



N/NE 185th Street locator map

185TH STREET SURVEY TAKE-AWAYS

Overall, Option 2 (four lanes: two travel, two BAT - with protected bicycle lanes) ranked highest. Top reasons for this choice included considerations for pedestrians, bicyclists, and transit.

Outreach participants suggested improving Option 2 by moving the bicycle lanes off the street and trying to preserve mature trees on the north side of the street by retaining the location of the existing curb.

FEEDBACK THEMES FOR 185TH STREET OPTIONS

- **Tree Preservation** – Mature street trees and canopy coverage on 185th Street should be preserved to the greatest extent possible.
- **Pedestrian** – Provide sidewalks and crosswalks that promote a safe walking environment for pedestrians of all abilities, and safe and easy access to transit.
- **Bicycle** – Place bicycle lanes off of the street to promote bicycling, increase safety, and potentially help retain mature trees.
- **Transit** – Find smart ways to incorporate transit-only lanes while maintaining traffic flow and allowing vehicles to effectively turn.
- **Balance** – Select an option that does the best job of balancing cost and amenities.



Study team member walks open house attendees through one of the street options.

10TH AVENUE NE OPTIONS - SURVEY RESULTS



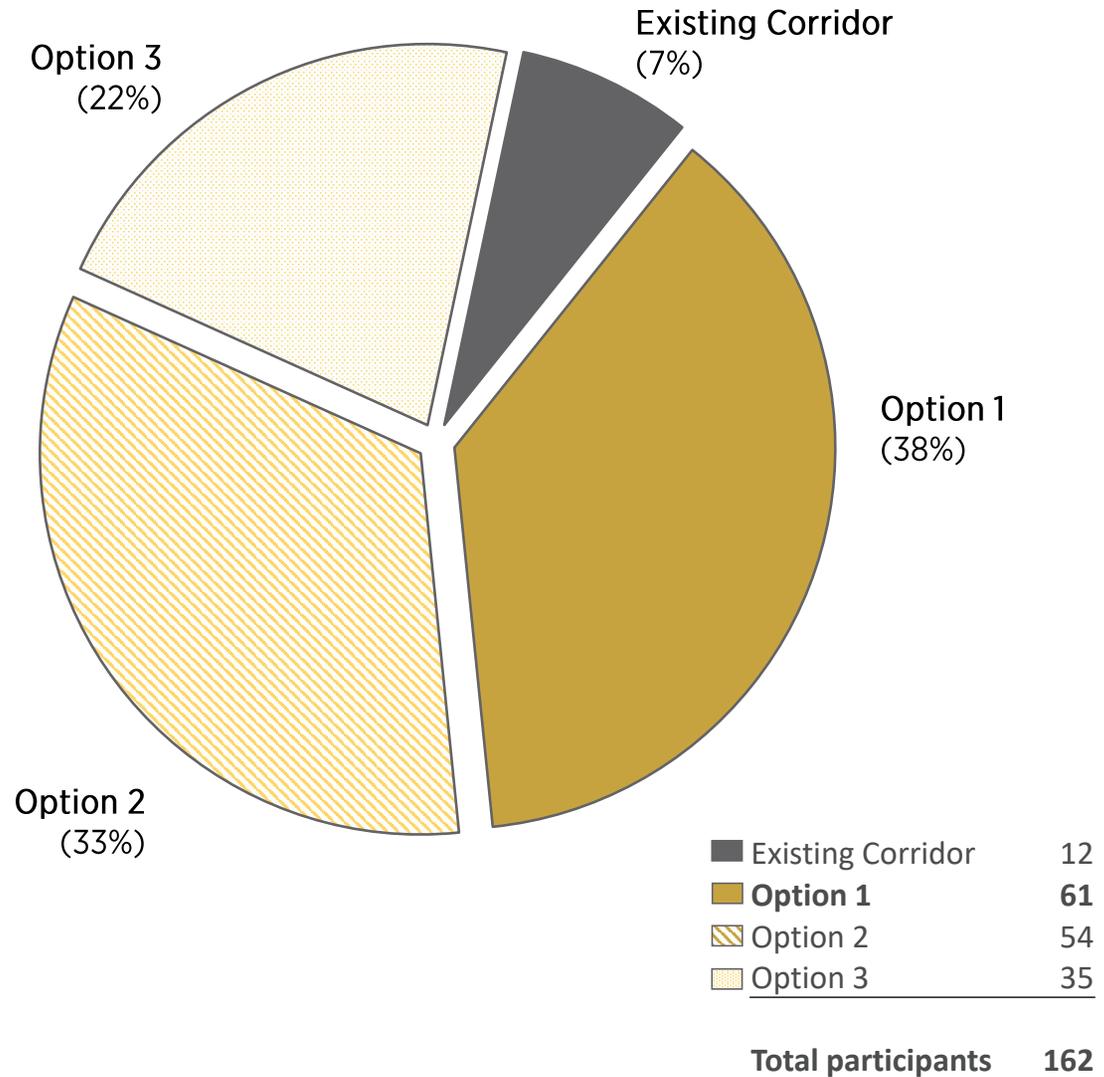
10th Avenue NE locator map

DESCRIPTION OF OPTIONS

Option 1: TWO-LANE SECTION (two travel lanes) with **BUFFERED BICYCLE LANES**

Option 2: TWO-LANE SECTION (two travel lanes) with **BICYCLE LANES** and **ON-STREET PARKING**

Option 3: THREE-LANE SECTION (two travel lanes and a center turn lane) with **BICYCLE LANES**



10TH AVENUE NE OPTIONS - SURVEY RESULTS (CONTINUED)



10th Avenue NE locator map

Reasons for Favorite Option Selection on 10th Avenue NE
(Top 3 favorite components in each option are highlighted in green)*

* NOTE: Components for this question differed between the in-person and the online surveys.

Online survey (117)

	Pedestrian	Bicycle	Traffic	Transit	Cost	Parking	Environmental	Placemaking
Option 1	31	32	12	7	10	2	10	6
Option 2	25	21	20	2	3	28	5	4
Option 3	12	15	21	11	1	5	2	0

In-person survey (45 responses)

	Pedestrian	Bicycle	Traffic	Transit	Cost	Livability
Option 1	17	13	6	6	11	8
Option 2	7	3	9	3	2	6
Option 3	4	3	7	4	0	2

10TH AVENUE NE SURVEY TAKE-AWAYS

Overall, Option 1 (two travel lanes with buffered bicycle lanes) ranked highest. Option 2 (two travel lanes, bicycle lanes, and on-street parking) was a close second (within five percent). Top reasons for this choice included considerations for pedestrians, bicyclists, and traffic.

Participants emphasized the need for parking in this growing neighborhood and asked the team to be mindful of how any future bus stops would affect traffic and cyclists.

FEEDBACK THEMES FOR 10TH AVENUE NE OPTIONS

- **Pedestrian** – Provide a safe, separate space for pedestrians and easy access to transit.
- **Bicycle** – Promote safety by separating cyclists from traffic and transit as much as possible.
- **Transit** – Accommodate transit and vehicles; be mindful of bus stops and how they will affect traffic and cyclists.
- **Traffic** – Provide dedicated turn lanes to help keep traffic moving smoothly.
- **Parking** – Demand will increase in this area due to the light rail station and nearby high-density housing.



Open House 2 participants reviewing information about roadway options and Community Gathering Places.

NE 180TH STREET OPTIONS - SURVEY RESULTS

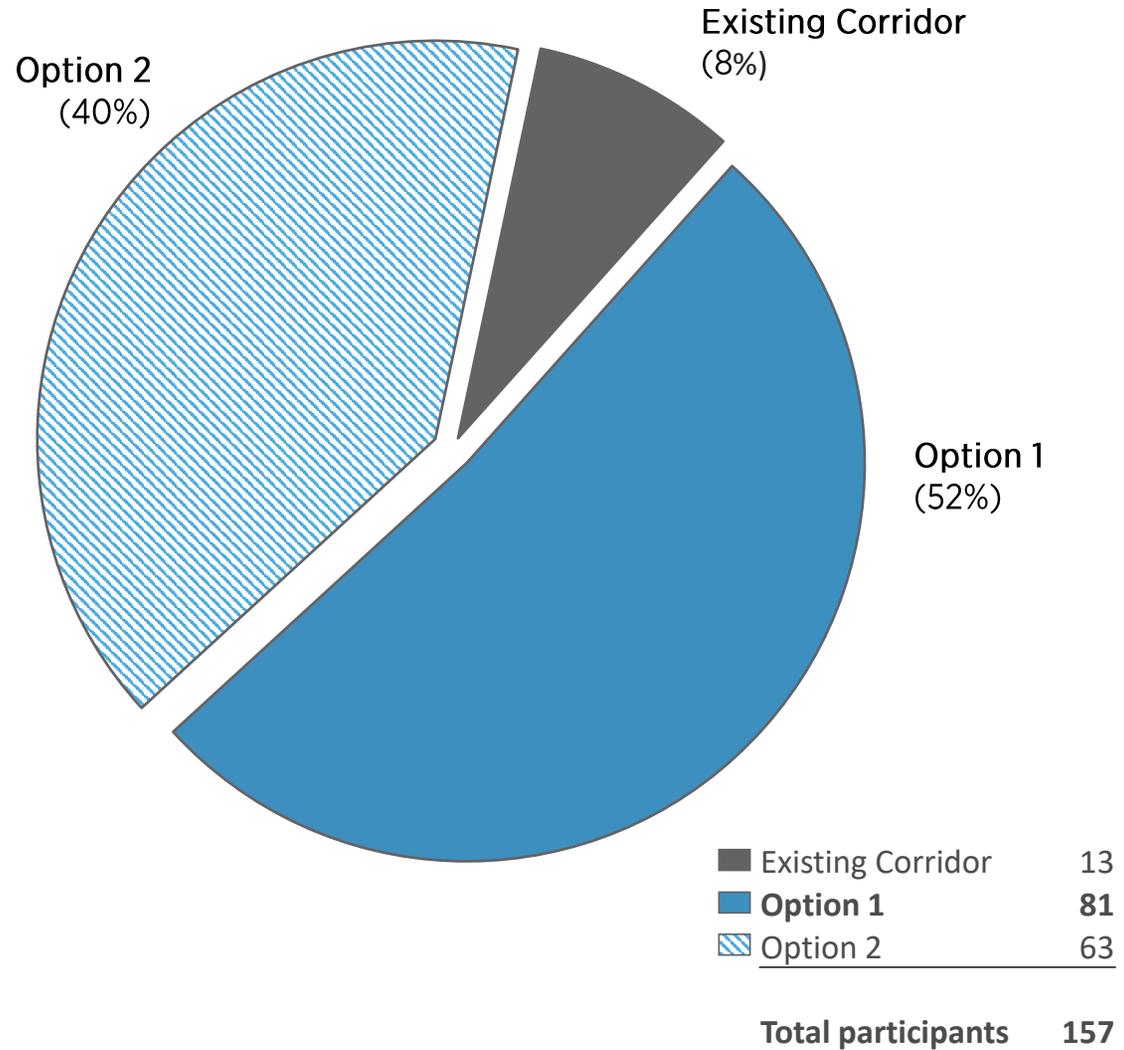


NE 180th Street locator map

DESCRIPTION OF OPTIONS

Option 1: TWO-LANE SECTION (two travel lanes) with **BICYCLE LANES**

Option 2: TWO-LANE SECTION (two travel lanes) with **BUFFERED BICYCLE LANES** and **ON-STREET PARKING**



NE 180TH STREET OPTIONS - SURVEY RESULTS (CONTINUED)



NE 180th Street locator map

Reasons for Favorite Option Selection on NE 180th Street
(Top 3 favorite components in each option are highlighted in green)*

* NOTE: Components for this question differed between the in-person and the online surveys.

Online survey (113 responses)

	Pedestrian	Bicycle	Traffic	Transit	Cost	Parking	Environmental	Placemaking
Option 1	47	33	27	7	18	5	17	3
Option 2	27	27	27	7	2	29	3	3

In-person survey (44 responses)

	Pedestrian	Bicycle	Traffic	Transit	Cost	Livability
Option 1	17	8	7	3	11	12
Option 2	7	8	8	3	2	6

180TH STREET SURVEY TAKE-AWAYS

Overall, Option 1 (two travel lanes with bicycle lanes) ranked highest. Top reasons for this choice included considerations for pedestrians, bicyclists, and traffic.

Participants voiced concerns about how multimodal improvements would fit into this relatively narrow street segment (within a 60 foot right-of-way) that is quickly redeveloping.

Transit Agency representatives expressed the need to design the street to be future compatible with frequent bus service including accommodating bus turning movements at intersections, allowing adequate room for future bus stops, providing a minimum of 11-foot wide travel lanes, and studying the roadway grade for potential modifications needed for buses to operate on the hill without bottoming out.

FEEDBACK THEMES FOR 180TH STREET OPTIONS

- **Multimodal** – Street is likely to become busier as more traffic tries to access the station area; design the roadway to move the most people the most effectively.
- **Bicycle** – Be mindful of the road grade when planning for bicycle infrastructure and keep bicycles as separate as possible from roadway traffic.
- **Parking** – Demand in this area due to nearby high-density housing and retail.
- **Balance** – Select an option that does the best job of balancing cost and amenities.

EXERCISE -

COMMUNITY GATHERING PLACES

The study team invited community members to share early thoughts on potential public space opportunities at four specific sites along the 185th Street Corridor (shown in the map to the right).

Community members reviewed concept diagrams and programming ideas and then responded to the following questions:

- For this site, please check your top three programming options that would be most beneficial for the community.
- Is there anything you would like to share about this location?



SITE 1: AURORA AVENUE N & N 185TH STREET

The City owns the northern portion of this currently vacant space. The recently installed Richmond Highlands gateway mural provides interest.

Survey Results - Site 1 (top 3 highlighted):

Colorful plantings	75
Pathways	69
Bike parking	54
Creative play	28
Fitness zone	20
Interpretive signage	19
Interactive musical elements	17

Feedback themes:

- **Maintenance** – The site would need to be cleaned and properly maintained to be a better gathering place.
- **Safe** – This site is very busy and its proximity to Aurora Avenue may present challenges for safe play.

SITE 2: ASHWORTH AVENUE N & N 185TH STREET

This parcel was identified as a potential nature-based open space during the 185th Street Station Subarea planning process.

Survey Results - Site 2 (top 3 highlighted):

Naturalized area	76
Boardwalk/Perimeter path	73
Nature play elements	59
Seating	33
Fitness zone	22
Educational elements	19
Placemaking elements	16
Interpretive signage	7

Feedback themes:

- **Green space** - This site could provide much needed neighborhood green space.
- **Maintenance** – The existing space is poorly maintained (trash, blackberry bushes, etc.) and it would require some work to transform it into a gathering place.
- **Engaging** - The site should be visually and physically interesting (e.g. multiple ingress/egress points, varying vegetation height, seating, etc.).



Recently installed gateway mural at Community Gathering Place 1

SITE 3: TRAILHEAD AT THE STATION

There is a small space for a trailhead at this location. Sound Transit will be constructing improvements and re-aligning 5th Avenue NE near the future Shoreline North/185th Station. The City's Trail Along the Rail project will access the station at this point.

Survey Results - Site 3 (top 3 highlighted)

Native plants	61
Trailhead signage	59
Seating	51
Public art/placemaking	42
Charge/Recharge space	36
Swale along the trail	34
Solar trees	27
Solar paving	22

Feedback themes:

- **Right-size** – Programming should be mindful of the small footprint of this site.

SITE 4: ROTARY PARK

The Shoreline Parks, Recreation, and Open Space (PROS) Plan identified this collection of parcels and utility right-of-way as an opportunity site for adding more public space within the light rail station area.

Survey Results - Site 4 (top 4 favorite options are highlighted. Community garden and splash park tied for third place):

Flexible lawn space	53
Play area	48
Community garden	44
Splash park	44
Picnic tables/Seating	42
Paths	40
Food trucks	34
Off-leash dog area	28
Stage	14

Feedback themes:

- **Open Space** – This site will be surrounded by many new housing developments, so there will be a need for open space that can accommodate many different types of users and uses.
- **Family amenities** – The site should prioritize amenities for families and neighborhood residents.

SURVEY TAKE-AWAYS AND NEXT STEPS

The intent of the survey was to gather ideas and feedback from community members and stakeholders about how these sites could benefit the community and the environment. Overall, outreach participants responded favorably to activating these sites while being mindful of maintenance and security needs.

Feedback on draft concepts for Site 1, 2, 3 and 4 received during this process was shared with the City's Parks, Recreation, and Cultural Services (PRCS) Director and the PRCS/Tree Board. Feedback on Site 3 received during this process was shared with the Public Works Director and the Trail Along the Rail project manager.

Draft concepts of Community Gathering Places are fodder for the start of a longer process of programming future public spaces with design features that will nurture a sense of place and enhance the quality of life refer to [Chapter 8 Community Gathering Places](#) to see draft concepts of Community Gathering Places.

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6 PREFERRED OPTION



PREFERRED OPTION

The 185th MCS Preferred Option was developed based on City Council input and community and stakeholder feedback received throughout the study process (see [Chapter 5 Outreach and Engagement](#) for more details). The team developed the Preferred Option to be forward-compatible with the 185th Street Station Subarea zoning, City plans, Metro, and CT future transit service plans, and utility providers and emergency responder service needs. The team used the results of preliminary evaluation analysis as well as public and stakeholder feedback to develop the best of the best hybrid option that evolved into the Preferred Option.

On July 22, 2019, City Council selected the Preferred Option of midblock cross-sections and directed the 185th MCS team to continue refinements and present the 185th MCS for adoption in the fall 2019.

During summer 2019, the team further analyzed the Preferred Option in respect to transit speed and reliability, traffic LOS, preliminary roadway design, intersection control, incremental redevelopment coordination, EDM Update, ROW needs, planning-level cost estimate, SEPA non-project review, project delivery approach, and funding strategy. On October 28, 2019, City Council adopted the Preferred Option of mid-block cross-sections for the 185th MCS.

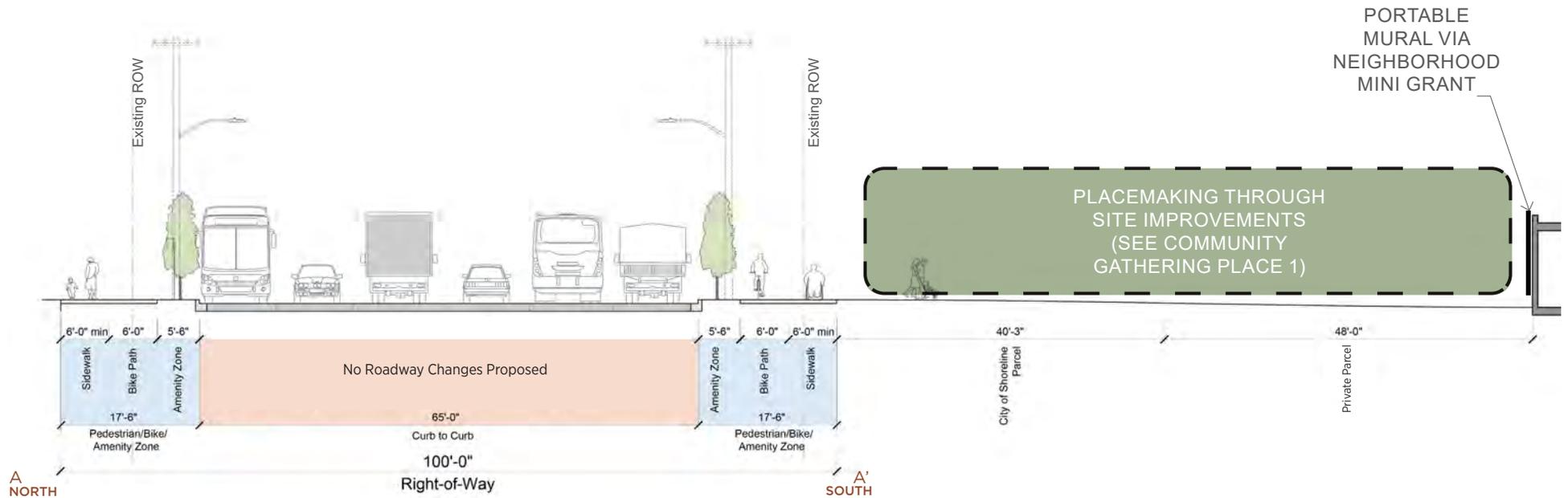
The Preferred Option for each segment displays a typical mid-block cross-section. This cross-section includes dimensions for its roadway components curb-to-curb, as well as its non-motorized components such as sidewalks, bicycle facilities, and amenity zones.

N 185TH STREET - A-A'

PREFERRED OPTION



Locator map



The Preferred Option for Segment A upgrades amenity zones and pedestrian and bicycle facilities on both sides of the street, but does not propose roadway changes because the current lane configuration is needed to accommodate present and future traffic volumes and turning movements. All travel lanes are general-purpose vehicle lanes. BAT lanes will begin at Segment B.

FEATURES

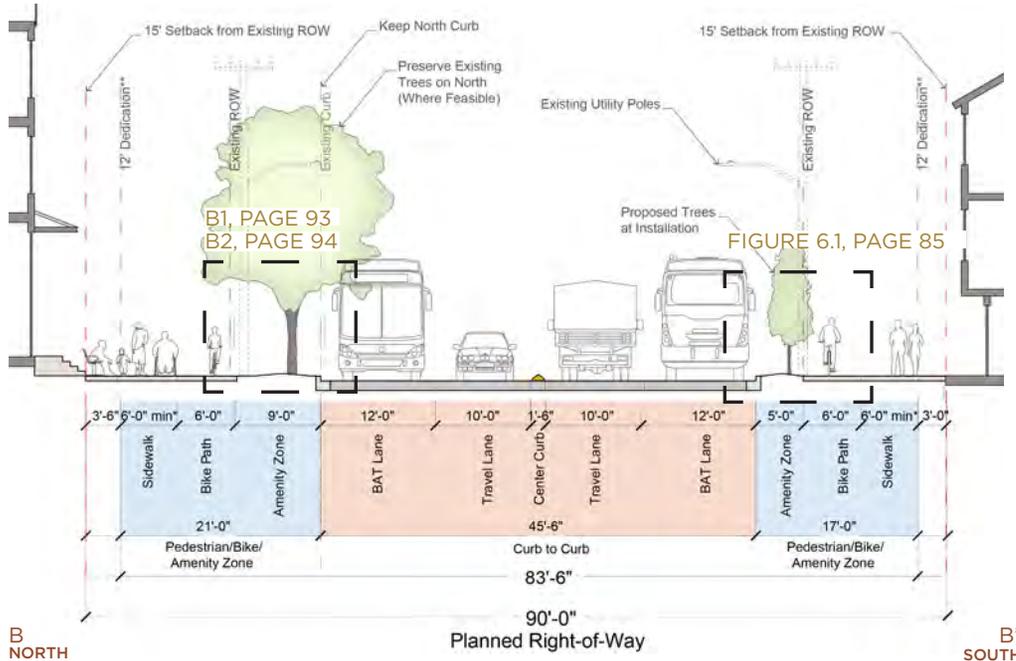
- Adds off-street bike paths to fill Segment A's gap in the 185th Street bicycle network
- Specifies amenity zones and minimum of six-foot wide sidewalks on both sides of the street.
- Identifies the City-owned parcel on the southwest corner of the intersection of 185th Street and Aurora Avenue as a potential Community Gathering Place.

N/NE 185TH STREET B-B'

PREFERRED OPTION



Locator map



The Preferred Option best prioritizes transit speed and reliability, providing a high-quality motorized public transportation option for the future urban environment, while also significantly improving pedestrian and bicycle movement along the corridor. Pedestrian and bicyclists, amenity zones/flex zones, buses, and general purpose traffic are each generally allocated roughly a quarter of the space along the corridor's ROW.

The Preferred Option holds the north curb and expands the existing amenity zone to preserve existing street trees where feasible and increase the ease of project implementation. Pedestrian and bicycle safety is increased with enhanced amenity zones, wider sidewalks, and off-street bike paths. Amenity zones and flex zones can be used for stormwater management, planters, and street furnishings. In order to maintain traffic flow, drivers will be prevented from making left turns mid-block with a center line curb. Intersections will be improved to accommodate turning movements and U-turns.

N/NE 185TH STREET PREFERRED SECTION EVALUATION TABLE

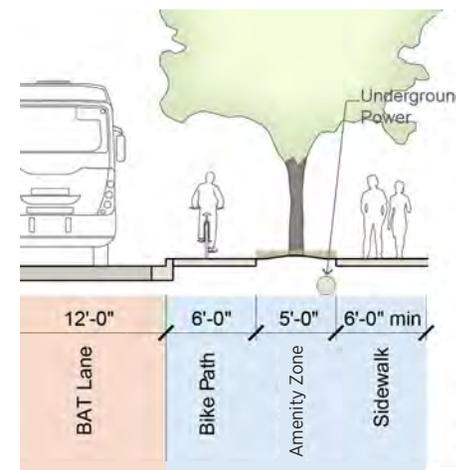
		BENEFIT MEASURE	EX	1	2	3	PREF	DESCRIPTION	DISTINCTIONS
PEDESTRIAN	PEDESTRIAN SAFETY							• 44-foot street crossing.	• 2nd narrowest street crossing. Amenity zone and bicycle lanes provides good separation from cars.
	PEDESTRIAN MOBILITY							• 8-foot sidewalks.	• 8-foot sidewalk meets City's standard.
BICYCLE	BICYCLIST SAFETY							• Off-street bicycle lanes.	• Greatest separation from vehicles and pedestrians. Intersections improvements would enhance bicycle safety.
	BICYCLIST MOBILITY							• Pair of uni-directional bicycle lanes.	• Easy to connect to Interurban Trail and surrounding streets.
		DRIVER SAFETY						• No turn lanes.	• Good mode separation.
TRAFFIC	TRAFFIC FLOW							• One general purpose lane in each direction.	• Traffic Level of Service will fail by 2035, but intersection improvements will help traffic flow
		PARKING						• No permanent parking.	• Option for parking in BAT lanes at non-peak times.
TRANSIT	SPEED AND RELIABILITY							• 12-foot Dedicated BAT lanes	• Supports frequent bus service.
		ENVIRONMENT						• Holds north side of street's curb to preserve existing trees where feasible.	• New large canopy trees on south side of street could be specified if power lines were undergrounded. Alternatively, smaller trees could be specified if power poles stay in amenity zone.
LIVABILITY	PLACEMAKING OPPORTUNITY							• Additional three foot flex zone for street furnishings, planters, etc.	• Most room for placemaking.
		MODE SHIFT						• Best spread of multimodal options, including frequent transit service.	• Encourages highest mode shift.
COST	ROW IMPACT							• Uses the full 90-foot planned ROW.	• Highest impacts.
	EASE OF IMPLEMENTATION							• Moderately easy to implement	• Can be transitioned to bridge's roadway configuration.
	CAPITAL COST							• -	• 2nd most expensive.

The Preferred Option for Segment B is a four-lane section (two travel lanes and two BAT lanes), amenity zones, off-street bicycle paths, sidewalks and transition zones at the back of the sidewalk on both sides of the street.

FEATURES

- Fits within the 90-foot planned right-of-way (ROW) established during the 185th Street Station Subarea planning process.
- Supports frequent and reliable transit service with 12-foot wide BAT lanes.
- Holds north curb to preserve existing street trees where feasible.
- Adds center line curb where needed for future access control.
- Moves bicycle lanes off the street for more protection.
- Provides separate facilities for pedestrians and cyclists.
- Brings amenity zones and sidewalks up to City standards.
- Provides an option to place the amenity zone between the bike path and sidewalk on the south side of street (FIGURE 6.1). This option would provide more separation of bicycle and pedestrian facilities.
- Power lines could be undergrounded to increase street aesthetics, accommodate growth of large canopy street trees on the south side of street, and remove the barrier that overhead wires present during firefighting and rescue operations. Alternatively, power poles could be relocated to the amenity zone and outfitted with street lights. A Council decision as to whether to underground power along 185th Street will require more information, analysis, and policy discussions as this is beyond the scope of this study.
- Leaves approximately three feet of unprogrammed space behind the sidewalk on both sides of the street to be coordinated with incremental redevelopment.
- Transitions from four-lanes to three-lanes at 5th Avenue NE (west of I-5) to match into Segment C ST improvements with possible transition options such as queue jumps for buses to keep transit service reliable.
- Identifies a parcel on the south side of 185th Street approaching Ashworth Avenue as a Community Gathering Place.

FIGURE 6.1 Option for amenity zone between bike path and sidewalk



PREFERRED OPTION

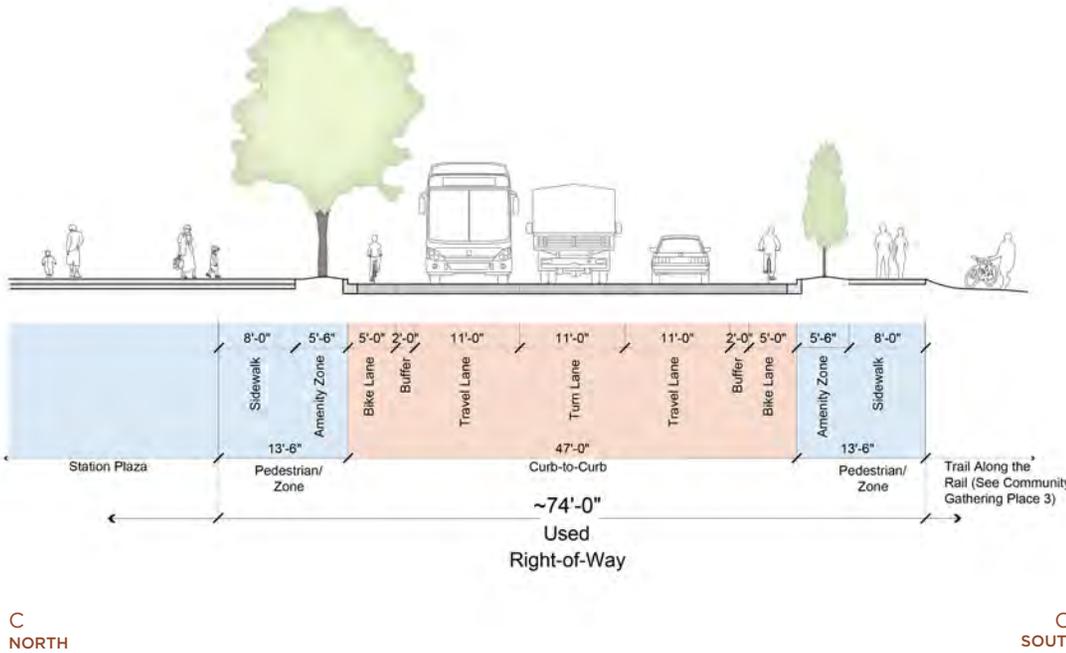


Locator map

During the refinement of the Preferred Option, the extents of Segment C were updated west to 5th Avenue (west of I-5) and east to 10th Avenue to dovetail refined extents of Segment B: Midvale Avenue to 5th Avenue (west of I-5). In the near term, Sound Transit will restripe 185th Street into a three-lane section with buffered bike lanes between 2nd Avenue and 8th Avenue. East of 8th Avenue to 10th Avenue, Sound Transit is not required to make any permanent roadway improvements to 185th Street. Ultimately, Segment B's roadway four-lane configuration will extend from Midvale Avenue to 5th Avenue (west of I-5) and then transition into Segment C's three-lane configuration before the bridge.

Sound Transit will install temporary traffic control measures at the intersection of 185th Street and 10th Avenue to accommodate detoured traffic during the reconstruction of 5th Avenue (east of I-5). Permanent traffic control measures at the intersection of 185th Street and 10th Avenue may be completed over time through a City CIP project.

The Preferred Option for Segment C is a three-lane section (two travel lanes and a center turn lane) with buffered bicycle lanes, five-foot wide amenity zones, and eight-foot wide sidewalks on both sides of the street. Gaps in pedestrian/bicycle/amenity zones may be completed overtime through incremental redevelopment and/or a City CIP project.

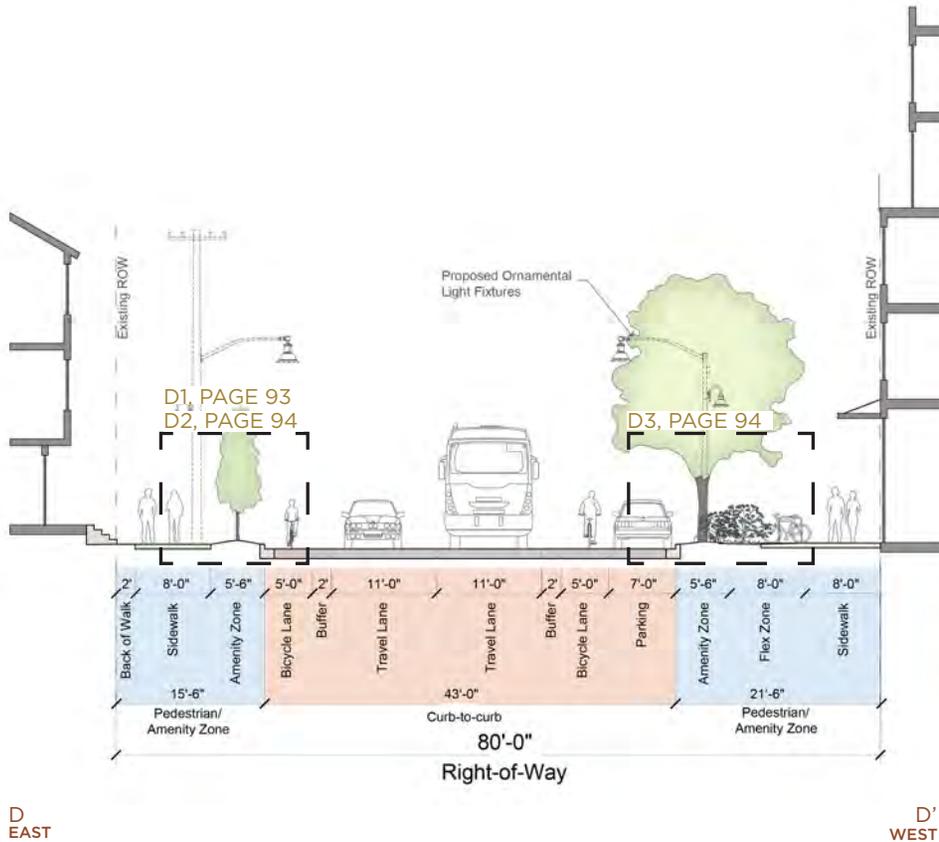


FEATURES

- Supports frequent and reliable transit service with 11-foot wide travel lanes.
- Brings amenity zones and sidewalks up to City standards.
- Provides two-foot buffer between bicycles and vehicles.
- Provides eight-foot sidewalks on both sides of the street.
- Identifies Community Gathering Place improvements to Rotary Park and the future Trail Along the Rail trailhead at 185th Street/5th Avenue NE (east of I-5).

10TH AVENUE NE D-D'

PREFERRED OPTION



Locator map

10TH AVENUE PREFERRED SECTION EVALUATION TABLE

BENEFIT MEASURE	EX	1	2	3	PREF	DESCRIPTION	DISTINCTIONS
PEDESTRIAN	PEDESTRIAN SAFETY	Red	Green	Green	Green	36-foot street crossing at curb bulbs. Curb bulbs at crossing make it the narrowest crossing	2nd narrowest crossing Amenity zones and flex zone on west side provides best separation from bicycles and cars
	PEDESTRIAN MOBILITY	Red	Green	Green	Green	5-foot sidewalk on east side 8-foot sidewalk on west side	Sidewalks meet City's standard for zoning
BICYCLE	BICYCLIST SAFETY	Red	Green	Green	Green	Buffered bicycle lanes	Best separation from vehicles and pedestrians
	BICYCLIST MOBILITY	Red	Green	Green	Green	Pair of buffered bicycle lanes for north/south travel	Easy to connect to surrounding streets
TRAFFIC	DRIVER SAFETY	Red	Green	Green	Green	No turn lanes	Parking slows down traffic
	TRAFFIC FLOW	Red	Green	Green	Green	One general purpose lane in each direction	Traffic Level of Service will fail by 2035, but intersection improvements will help traffic flow
	PARKING	Red	Green	Green	Green	Provides parking on west side of street	Supports parking adjacent to high-density development
TRANSIT	SPEED AND RELIABILITY	Red	Green	Green	Green	11-foot lanes shared by transit and autos	Bicycle buffer provides separation Parking creates friction for buses
LIVABILITY	ENVIRONMENT	Red	Green	Green	Green	Amenity zones, flex zone, and curb bulbs provide room for new trees and plantings	Moderate amount of new paving
	PLACEMAKING OPPORTUNITY	Red	Green	Green	Green	8-foot flex zone and parking bulb outs provide room for placemaking	Most room for placemaking
	MODE SHIFT	Red	Green	Green	Green	Good spread of multimodal options, including frequent transit service	Encourages mode shift
COST	ROW IMPACT	Red	Green	Green	Green	All options have equal right-of-way impacts	Moderate impacts
	EASE OF IMPLEMENTATION	Red	Green	Green	Green	Moderate ease of transition	Easy to transition north and south on 10th avenue NE
	CAPITAL COST	Red	Green	Green	Green	-	Most expensive

The Preferred Option for Segment D provides two travel lanes, buffered bike lanes, and on-street parking on the west side of the street. Wide amenity zones and flex zones can be used for stormwater management, planters, and street furnishings. Buffered on-street bicycle lanes in both directions provide more separation from traffic and fit within the vision of a strong, continuous bike network. On-street parking on the west side of street, adjacent to MUR-70', supports local trips to future retail businesses and visitor parking.

The Preferred Option for Segment D is a two-lane section (two travel lanes) with buffered bicycle lanes, on-street parking (west side only), amenity zones, sidewalks, and an additional flex zone on the west side of the street.

FEATURES

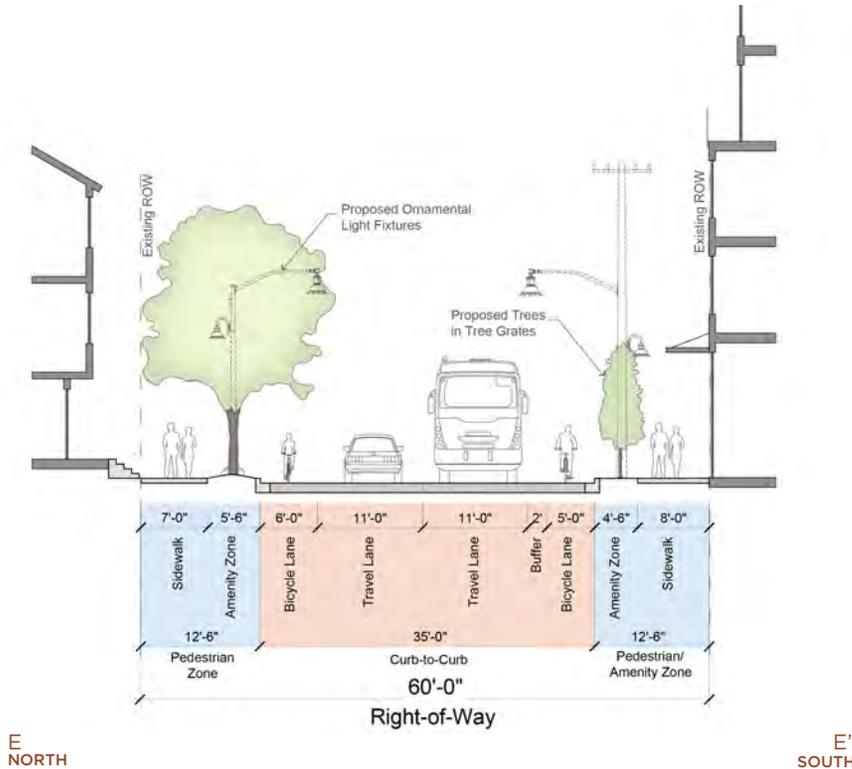
- Fits within the existing 80-foot ROW.
- Supports frequent transit service with 11-foot wide travel lanes.
- Provides two-foot buffer between bicycles and vehicles.
- Adds on-street parking on west side of street adjacent to future higher density mixed use development (MUR-70'). The Preferred Option seeks to balance needs by providing on-street parking on the west side of the street and addressing traffic turning movements at intersections rather than having a continuous center turn lane.
- Provides eight-foot sidewalks on both sides of the street.
- Provides up to a seven-and-a-half-foot amenity zone on the east side of the street to accommodate optional stormwater features.
- Adds an amenity zone plus an additional eight-foot flex zone to the west side pedestrian zone to accommodate more plantings and street furnishings adjacent to future higher density mixed use development (MUR-70').

NE 180TH STREET- E-E'

PREFERRED OPTION



Locator map



The Preferred Option for Segment E is a two-lane section (two travel lanes) with enhanced bicycle lanes, amenity zones, and sidewalks.

FEATURES

- Fits within the existing 60-foot ROW.
- Dovetails with recent redevelopment on this street segment.
- Supports frequent and reliable transit service with 11-foot wide travel lanes.
- Provides a buffer for bicyclists on the uphill side and a six-foot bicycle lane (wider than standard) on the downhill side.
- Provides sidewalks and amenity zones for trees on both sides of the street.

180TH STREET PREFERRED OPTION EVALUATION TABLE

BENEFIT MEASURE		EX	1	2	PREF	DESCRIPTION	DISTINCTIONS
PEDESTRIAN	PEDESTRIAN SAFETY	Red	Green	Yellow	Green	• 35' street crossing	• Narrowest crossing
	PEDESTRIAN MOBILITY	Red	Green	Yellow	Green	• 7' sidewalk on north side 7.5' sidewalk on south side	• Sidewalk widths are slightly less than City's standard
BICYCLE	BICYCLIST SAFETY	Red	Green	Green	Green	• Buffered bicycle lane on uphill 6' wide bicycle lane on downhill	• Best separation from vehicles and pedestrians
	BICYCLIST MOBILITY	Red	Green	Green	Green	• Pair of bicycle lanes for east/ west travel	• Easy to connect to surrounding streets
TRAFFIC	DRIVER SAFETY	Red	Green	Green	Green	• No turn lanes	• Added curbs provide traffic calming
	TRAFFIC FLOW	Red	Green	Green	Green	• One general purpose lane in each direction	• Acceptable Traffic Level of Service in 2035
TRANSIT	PARKING	Red	Green	Green	Red	• No new parking	• Narrow ROW is prioritized for multimodal travel rather than vehicle storage
	SPEED AND RELIABILITY	Red	Green	Yellow	Green	• 11' lanes shared by transit and autos	• Supports future transit service
LIVABILITY	ENVIRONMENT	Red	Green	Yellow	Green	• Room for trees in amenity zones	• Moderate amount of new paving
	PLACEMAKING OPPORTUNITY	Red	Green	Yellow	Green	• Potential placemaking opportunities in paving patterns, banners, and amenity zones	• Some room for placemaking
	MODE SHIFT	Red	Green	Yellow	Green	• Good spread of multimodal options, including transit service	• Encourages mode shift
COST	ROW IMPACT	Red	Green	Yellow	Green	• Minimal impacts	• Stays within the ROW
	EASE OF IMPLEMENTATION	Red	Green	Green	Green	• Easy to implement	• Some transition required to dovetail with existing development
	CAPITAL COST	Red	Green	Green	Green	• -	• Least expensive

PRELIMINARY ROADWAY DESIGN ANALYSIS

TRAFFIC LOS ANALYSIS

The March 25, 2019 and July 22, 2019 City Council Meeting staff reports discussed the City of Shoreline’s adopted traffic LOS for measuring traffic concurrency and provided general-purpose traffic V/C ratios for each of the 185th MCS Segments. For reference, a V/C of 1.0 indicates the roadway facility is operating at its capacity. A V/C of 0.9 is the City’s determined appropriate threshold and greater than 1.0 would indicate “over-capacity”. The carrying capacity varies by roadway and depends on its intended function, which explains why segments have the same V/C ratio but different future volumes. The general-purpose traffic V/C ratio outcomes for each of the Preferred Option segments is summarized below (TABLE 6.1). It should be noted that the V/C ratios indicate peak hour travel and reflect how well general-purpose traffic will flow through the individual street segments without factoring in the performance of the corridor’s intersections, which may affect results.

ROADWAY DESIGN ANALYSIS

During the Preferred Option refinement period, the study team further analyzed the LOS of the 185th Street Corridor. Additional traffic analysis showed a need to extend the Segment B four-lane cross-section from Midvale Avenue all the way to 5th Avenue (west of I-5) in order to allow the most benefit to transit. The transition from four to three lanes can happen seamlessly through the rechannelization of travel lanes and an intersection upgrade at 185th Street and 5th Avenue (west of the bridge).

185TH STREET - SEGMENT A

The Preferred Option will result in a 0.61 V/C ratio for general-purpose traffic that meets City’s current LOS standard for this segment.

185TH STREET - SEGMENT B AND C

The Preferred Option will result in a 1.92 V/C ratio for general-purpose traffic that far exceeds the City’s current LOS standard for this segment. However, it is

important to note that 185th Street Preferred Option Segment B provides dedicated BAT lanes that would allow transit to operate fast and reliable service well below the acceptable standard 0.90 V/C ratio. The roadway segment V/C ratio assumes standard trip generation methods associated with the type of redevelopment anticipated within the 185th Street Station Subarea. As such, there is an assumption of high vehicle use and dependency; however, this can and likely will shift over time, especially if walking, biking, or riding the bus becomes more economical and efficient than driving alone.

It should be noted that none of the options studied would meet the City’s LOS. Creating an option for 185th Street that would meet the City’s current V/C ratio would require a greater than 5-lane roadway configuration for general-purpose vehicles that would compromise the safety, access, and mobility of pedestrians, bicyclists, and reliable transit; and have a much larger roadway footprint than is economically feasible.

SEGMENT	LOCATION	EXISTING PEAK HOUR VOLUME (VEHICLES/HOUR)	FUTURE PEAK HOUR VOLUME (VEHICLES/HOUR)	EXISTING (2018)		PREFERRED OPTION (2035)	
				V/C	LOS	V/C	LOS
Segment A	N 185th Street (Fremont Ave N to Midvale Ave N)	700	1065	0.40	A	0.61	B
Segment B	N/NE 185th Street (Midvale Ave N to 5th Ave NE [west of I-5])	595	1840	0.62	B	1.92 ²	F
Segment C	NE 185th Street (5th Ave NE [west of I-5] to 10th Ave NE)	590	1685	0.61	B	1.76	F
Segment D	10th Avenue NE	325	785	0.54	A	1.12	F
Segment E	NE 180th Street	195	430	0.33	A	0.61	B

TABLE 6.1 General-purpose traffic - volume to capacity ratio screen
 1 Highest directional and peak hour volume reported for the associated segment.
 2 V/C reported applies only to general purpose traffic.

As a follow up action, because the LOS for Segment B and C will fail in the future, City Council will need to either lower the general-purpose vehicle LOS for 185th Street or shift to a MMLOS in the City's Comprehensive Plan.

10TH AVENUE NE - SEGMENT D

The Preferred Option will result in a 1.12 V/C ratio for general-purpose traffic that exceeds the City's current LOS standard for this segment.

As a follow up action, because the LOS for Segment D will fail in the future, City Council will need to either lower the general-purpose vehicle LOS for 10th Avenue or shift to a MMLOS in the City's Comprehensive Plan.

180TH STREET - SEGMENT E

The Preferred Option will result in a 0.61 V/C ratio for general-purpose traffic that meets City's current LOS standard for this segment.

INTERSECTION CONTROL ANALYSIS

While the 185th Street Segment B four-lane cross-section Preferred Option offers clear multimodal benefits, one of the tradeoffs is the elimination of the center turn lane which currently facilitates vehicular turns to and from driveways and side streets. As the corridor develops, access restrictions and driveway consolidations will likely be necessary. Given this, attention to intersections and specifically how intersections can accommodate U-turn movements will be an important consideration during the design engineering phase of 185th Street. Another tradeoff is that the additional crossing distance over four lanes versus three lanes increases pedestrian exposure to traffic. Strategic crossing improvements to improve pedestrian safety should also be explored during the design engineering phase.

As part of the preliminary roadway design analysis, the team analyzed two intersection control scenarios (TABLE 6.2). Scenario 1 utilizes signals for Segment B, whereas Scenario 2 utilizes a mix of roundabouts and signals for Segment B. Both utilize the same intersection control treatments from 5th Avenue NE

(west of I-5) onward. Both result in approximately seven-minute travel times for transit between Aurora Avenue and the future Shoreline North/185th Station, even considering typical traffic volume growth assumptions. Additional analysis during design engineering will be required to determine the best treatment for key intersections.

INTERSECTION	SCENARIO 1	SCENARIO 2
N 185th St & Midvale Ave N*	Signal (minor modifications)	Signal (minor modifications)
N 185th St & Ashworth Ave N*	Signal Added (no left turn pocket)	Signal Added (no left turn pocket)
N 185th St & Meridian Ave N	Signal (major modifications)	Multilane Roundabout
N 185th St & 1st Ave N	Signal (major modifications)	Multilane Roundabout
NE 185th & 5th Ave NE (west of I5)**	Multilane Roundabout	
NE 185th St & 5th Ave NE (east of I5)**	Signal (implemented with Sound Transit project)	
NE 185th St & 8th Ave NE**	Roundabout (implemented with Sound Transit project)	
NE 185th St & 10th Ave NE**	Single Lane Roundabout (implemented with Sound Transit project)	
10th Ave NE & NE 180th St**	Single Lane Roundabout	

TABLE 6.2 Intersection control scenarios

*Footprint the same across both options, but Scenario 2 does not designate BAT function for outer lanes.

**Intersection improvements the same across both scenarios.



Signalized intersections (shown as orange circles) along the 185th Street Corridor that were studied during the intersection control analysis.

INTERSECTION APPROACH

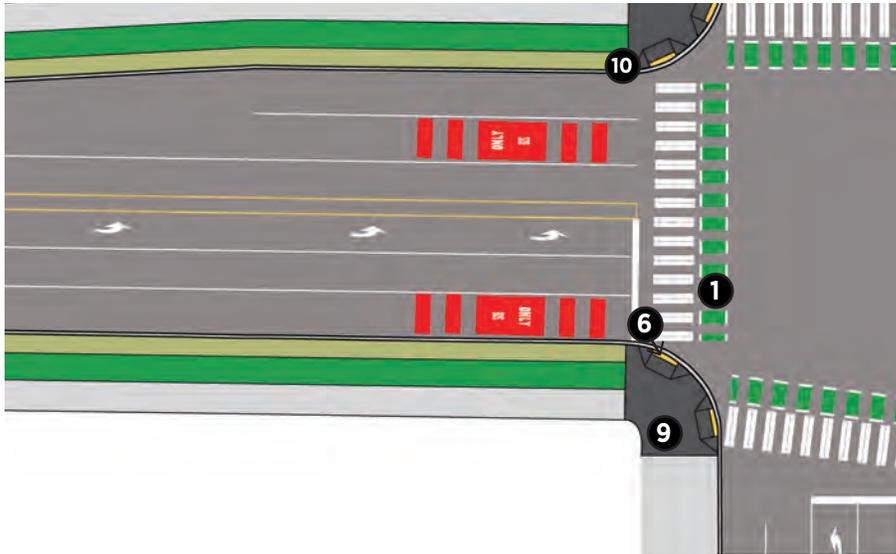


FIGURE 6.2 Signalized intersection design (refer to legend below and TABLE 6.3)

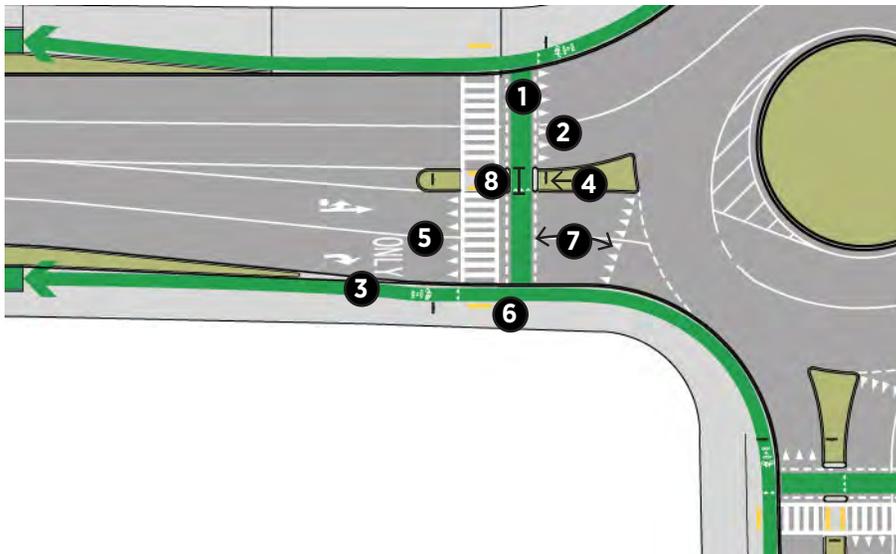


FIGURE 6.3 Roundabout intersection design (refer to legend below and TABLE 6.3)



The channelization and design of the intersections will be determined in a later stage of design. Features illustrated in FIGURE 6.2 and FIGURE 6.3 and described in TABLE 6.3 below should be considered as design is finalized.

TABLE 6.3 Intersection features

FEATURE DESCRIPTION

- | | |
|-----------|--|
| 1 | <ul style="list-style-type: none"> Bicycle Crossings should be adjacent to and parallel to the pedestrian crossing. Ramp design should be wide enough to accommodate bicycles with trailers. |
| 2 | <ul style="list-style-type: none"> Yield Lines should be considered to indicate the priority at the crossings. |
| 3 | <ul style="list-style-type: none"> Bicycle Yield-to-Pedestrian Lines may be considered based on sight distance. |
| 4 | <ul style="list-style-type: none"> Activated Rectangular Rapid Flashing Beacons (RRFB) with MUTCD W11-2 Sign should be placed approaching the crossings. |
| 5 | <ul style="list-style-type: none"> Supplemental Overhead or Mounted Rectangular Rapid Flashing Beacons (RRFB) with MUTCD W11-2 Sign or S1-1 can be added to potentially increase yield rate. |
| 6 | <ul style="list-style-type: none"> Standard Detectable Warning Surface to indicate a crossing. Provide eight ADA curb ramps per intersection to provide directional guidance for street crossings. |
| 7 | <ul style="list-style-type: none"> Distance between crossing and entry into roundabout should be 20' minimum. |
| 8 | <ul style="list-style-type: none"> Median Refuge Island - Provide a protected space for bicyclists to wait for an acceptable gap in traffic. Median should be a minimum of 6'. |
| 9 | <ul style="list-style-type: none"> Textured/Colored Paving should be considered at intersection "mixing zones" to signal to pedestrians that bicyclists will be using the ramps and crosswalks. |
| 10 | <ul style="list-style-type: none"> Additional Pavement for U-turn movements at signalized intersections. |

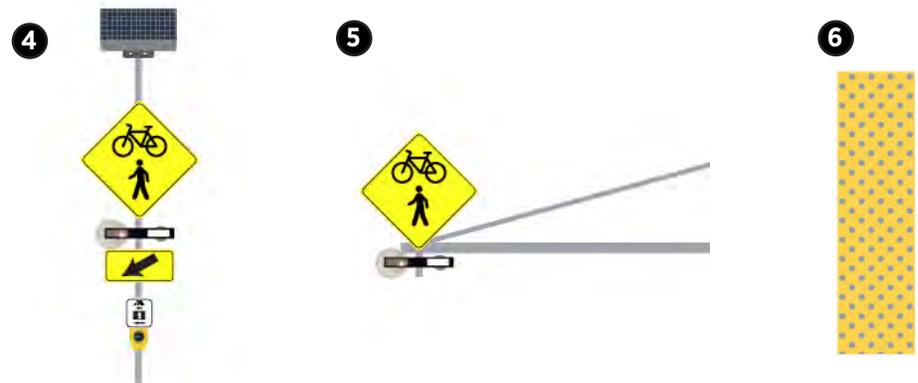


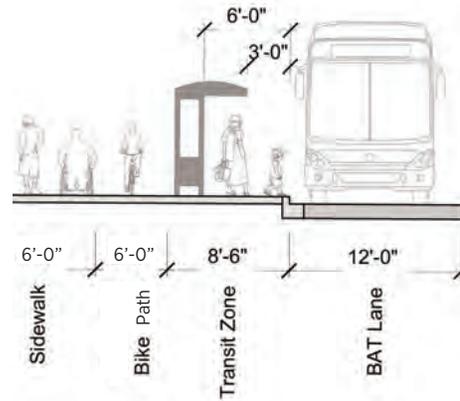
FIGURE 6.4 Intersection feature details

TRANSIT SPEED AND RELIABILITY

The expected opening of the future Shoreline North/185th Station in 2024 has been the impetus for planning efforts to optimize bus connections to and from the light rail station. Metro’s long-range plan envisions both local and frequent service connections to and from the Shoreline North/185th Station. In addition, Metro is considering a frequent service route (a bus every 15 minutes or less) from the Shoreline North/185th Station east to 10th Avenue NE to NE 180th Street to North City Business District and beyond to Lake Forest Park. CT is planning an extension of its Swift Blue Line bus rapid transit (BRT) line that would make frequent connections (a bus every eight minutes or less) to/from the Shoreline North/185th Station.

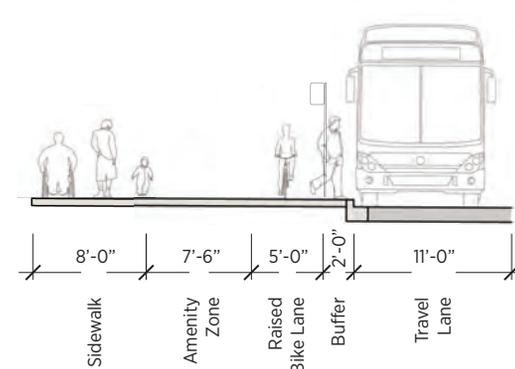
The Preferred Option supports future frequent and reliable transit service by proposing corridor improvements that would optimize the speed and reliability of transit service, as well as strengthen pedestrian and bicycle access to/from transit stops. In particular, the Preferred Option provides a minimum of 11-foot wide lanes for buses (Segment B provides 12-foot wide BAT lanes, Segment C, D, and E provides 11-foot wide lanes), accommodates bus turning movements at intersections, and allows adequate room for future bus stops along 185th Street and 10th Avenue.

B1: 185TH STREET, PAGES 84, 100



N/NE 185th St Transit Stop Option with Shelter on North Side

D1: 10TH AVENUE, PAGES 87, 101

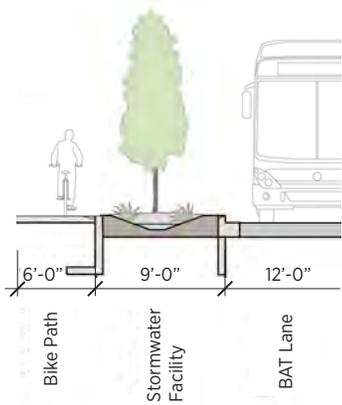


10th Ave Transit Stop Option on East Side

STORMWATER FACILITY OPTIONS

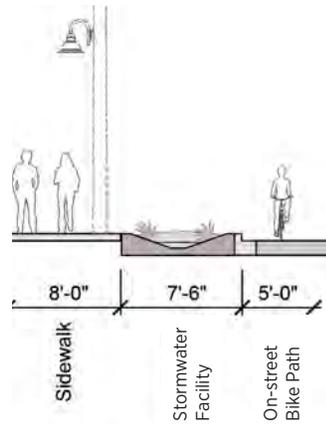
The 185th MCS is setting a precedent for maximizing stormwater treatment in the ROW. The wider amenity zones along the corridor are intended to be utilized as stormwater facilities. Stormwater facilities are also encouraged in smaller amenity zones and flex zone spaces to the maximum extent feasible. Facilities that provide water quality treatment, such as bioretention and modular suspended pavement systems, are preferred over facilities that only provide flow control. Refer to Figure D-3 in Appendix D for more information.

B2: 185TH STREET, PAGES 84, 100



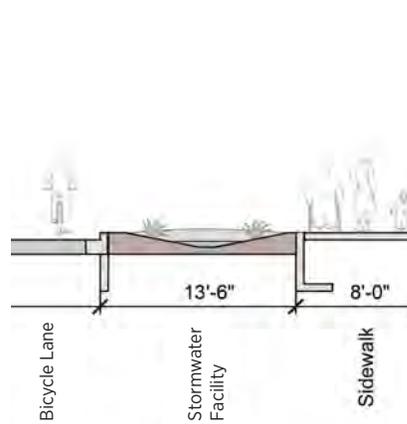
N/NE 185th St Stormwater Facility Option on North Side

D2: 10TH AVENUE, PAGES 87, 101



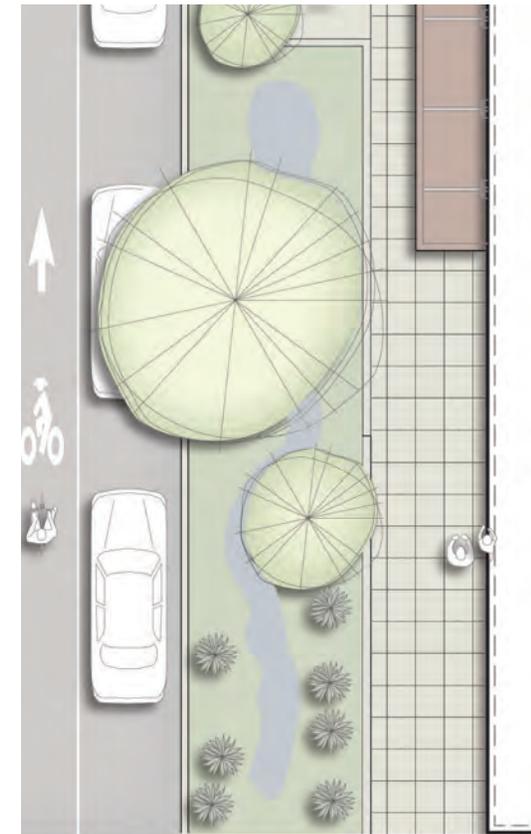
10th Ave Stormwater Facility Option on East Side

D3: 10TH AVENUE, PAGES 87, 101



10th Ave Stormwater Facility Option on West Side

D4: 10TH AVENUE, PAGE 101



10th Avenue Stormwater Facility Option on West Side

7 DESIGN GUIDELINES



DESIGN GUIDELINES

The design guidelines are meant to be a “tool” for shaping the development of the 185th Street Corridor and creating a cohesive corridor vision. They aim to create the character and function of the corridor.

PEDESTRIAN FACILITIES

- Widen sidewalks to encourage walking and create a safe and comfortable environment for pedestrians.
- Provide pedestrian amenities along sidewalks that enhance the quality of pedestrian environment.
- Introduce enhanced design treatments at intersections (protective medians, rectangular rapid flashing beacons (RRFBs), yield lines) and other highly visible locations.
- Enhance ADA design treatments at intersections and driveway crossings.

BICYCLE FACILITIES

- Provide bicyclists of all ages and abilities comfortable facilities where possible.
- Provide five-foot minimum bicycle lane, with buffers where appropriate.
- Dedicate sufficient space for bicycles to reduce potential conflicts with pedestrians and vehicles, while allowing for flow of traffic.
- Design driveways to provide a level through-way for bicycles and message to drivers that they must stop for the through movement of bicyclists and pedestrians.
- Delineate the mixing zones for pedestrians and bicycles clearly at bus stops and intersections.

TRANSIT FACILITIES

- Provide transit shelters, benches, lighting, trash receptacles and other amenities at transit stops when appropriate.
- Allow a minimum five-feet of unobstructed area for pedestrian through movement from the back of curb when amenities are provided.
- An awning on a development frontage can be used as a bus stop shelter.

AMENITY ZONE

- Enrich the character and identity of the area with street trees and other plantings.
- Install pedestrian-scaled lighting, and other amenities such as distinctive paving, water features, or seating to encourage pedestrian-oriented space on the street.
- Provide stormwater facilities where possible throughout the corridor.

FLEX ZONE

- Flex zone space should be treated as extended amenity zone and pedestrian space, and may include stormwater facilities, additional planting, bicycle facilities, and other street furnishings.

TRANSITION ZONE / BACK OF WALK

- Encourage active uses and pedestrian amenities in the transition area between back of sidewalk and development frontage such as outdoor cafes, seating, plantings, or shop wares.

ADJACENT LAND USE

- Configure buildings towards the right-of-way so that they enhance the character and safety of the streets. Orient major building pedestrian entryways toward intersections.
- Integrate new development with the surrounding neighborhood and street to provide efficient use of land and complement the corridor vision.

The design guidelines illustrate specific cross-section components and dimensions for meeting the character and function of the corridor. The Design Guidelines Table (TABLE 7.1) is broken down by segment and by both sides of the street (north and south, or west and east).

FIGURE 7.1 - FIGURE 7.3 are keyed with different components that make up the cross-section and that correspond with the Design Guidelines Table.

Following the design guidelines, the intersection approach and corridor-wide channelization approach are described in more detail.

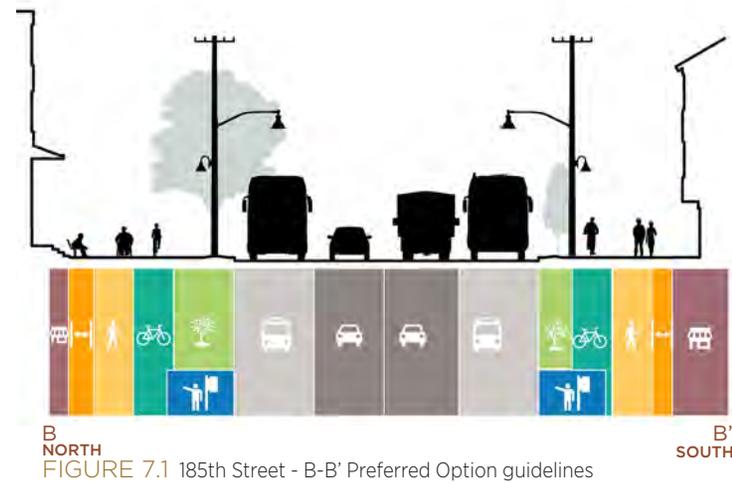


FIGURE 7.1 185th Street - B-B' Preferred Option guidelines

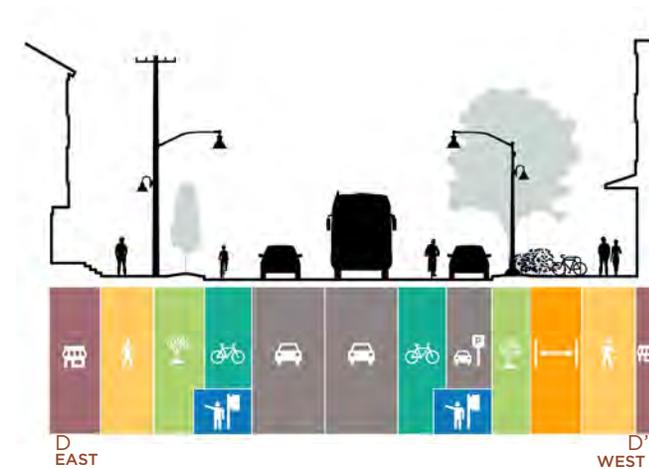


FIGURE 7.2 10th Avenue NE - D-D' Preferred Option guidelines

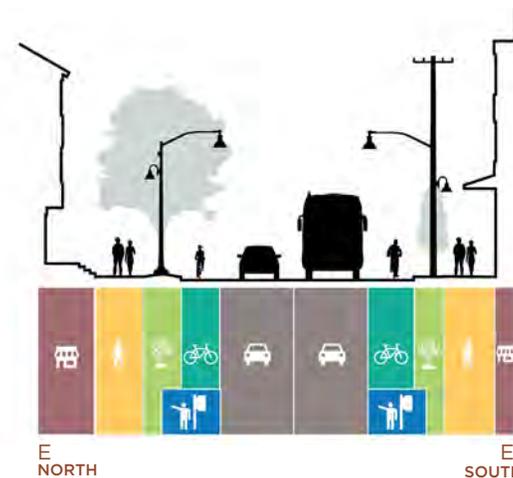


FIGURE 7.3 NE 180th Street - E-E' Preferred Option guidelines

DESIGN GUIDELINES

DOCUMENT REFERENCES	PAGE 100				PAGE 101		PAGE 102	
	185TH (SEGMENT B)				10TH (SEGMENT D)		180TH (SEGMENT E)	
	STREET SIDE	NORTH	SOUTH	WEST	EAST	NORTH	SOUTH	
PEDESTRIAN 	SIDEWALK WIDTH (FT-IN)	• 6'-0" min	• 6'-0" min	• 8'-0"	• 8'-0"	• 7'-0"	• 8'-0"	
	SIDEWALK MATERIAL/ FINISH	• Concrete per SD #309	• Concrete per SD #309	• Concrete per SD #309	• Concrete per SD #309	• Concrete per SD #309	• Concrete per SD #309	
BICYCLE 	BICYCLE FACILITY TYPE	• Off-Street Bike Path per SD #328	• Off-Street Bike Path per SD #328	• Buffered Bicycle Lane per SD #410	• Buffered Bicycle Lane per SD #410	• Bicycle Lane	• Buffered Bicycle Lane	
	BICYCLE FACILITY WIDTH (FT-IN)	• 6'-0"	• 6'-0"	• Lane: 5'-0" • Buffer: 2'-0"	• Lane: 5'-0" • Buffer: 2'-0"	• 6'-0"	• Lane: 5'-0" • Buffer: 2'-0"	
	BICYCLE FACILITY MATERIAL/FINISH	• HMA with 6" concrete edges	• HMA with 6" concrete edges	• HMA with painted buffer	• HMA with painted buffer	• HMA	• HMA with painted buffer	
TRANSIT 	TRANSIT FACILITY FEATURES	Refer to King County Metro Facilities Guidelines. All improvements are subject to coordination with transit agencies.						
AMENITY ZONE 	WIDTH (FT-IN)	• 9'-0"	• 5'-0"	• 5'-6"	• 7'-6"	• 5'-6"	• 4'-6"	
	USES	<ul style="list-style-type: none"> Planting strip with street trees, preserve existing trees where feasible LID features Transit facilities Utilities/Lighting 	<ul style="list-style-type: none"> Planting strip with street trees LID features Transit facilities Utilities/Lighting 	<ul style="list-style-type: none"> Planting strip with street trees LID features Transit facilities Utilities/Lighting 	<ul style="list-style-type: none"> Planting strip with street trees LID features Transit facilities Utilities/Lighting 	<ul style="list-style-type: none"> Planting strip with street trees Utilities/Lighting 	<ul style="list-style-type: none"> Street trees in tree grates Utilities/Lighting 	
	LIGHT POLE AND FIXTURE	Select SCL light poles and fixtures to create a uniform lighting design aesthetic for the corridor.						

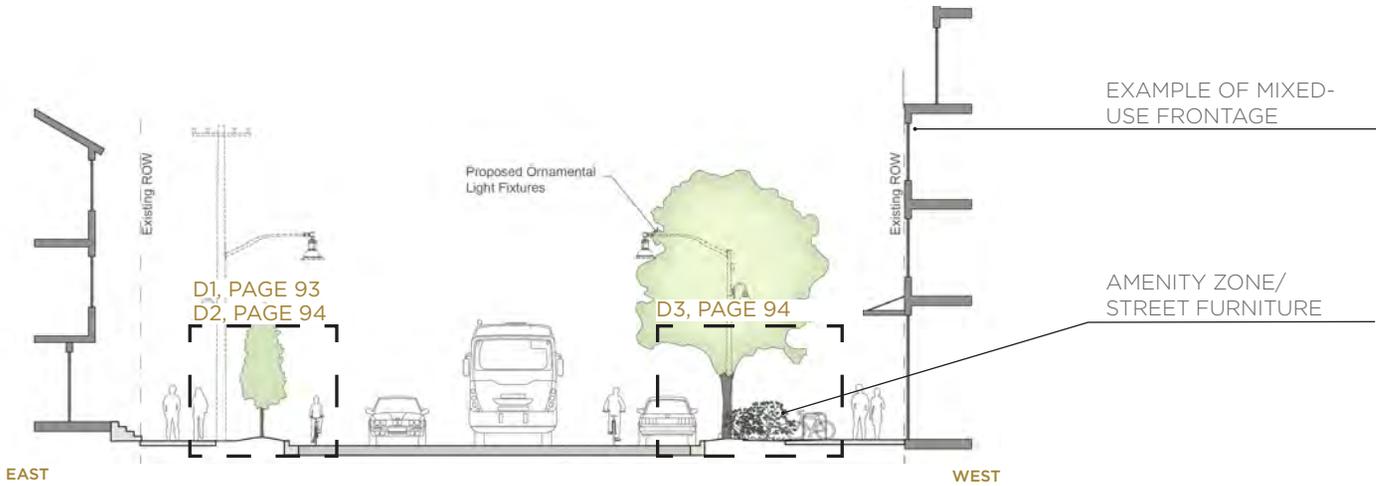
TABLE 7.1 Design guidelines (continued on next page)

DESIGN GUIDELINES

DOCUMENT REFERENCES STREET SEGMENT STREET SIDE	PAGE 100 185TH (SEGMENT B)		PAGE 101 10TH (SEGMENT D)		PAGE 102 180TH (SEGMENT E)	
	NORTH	SOUTH	WEST	EAST	NORTH	SOUTH
FLEX ZONE 	WIDTH (FT-IN)	• N/A	• N/A	• 8'-0"	• N/A	• N/A
	USES	• N/A	• N/A	<ul style="list-style-type: none"> • Decorative Planting • Cafe Seating • LID Features • Bicycle Parking • Transit Facilities 	• N/A	• N/A
TRANSITION ZONE 	WIDTH (FT)	• 3'-6"	• 3'-0"	• N/A	• N/A	• N/A
	USES	<ul style="list-style-type: none"> • Decorative Planting • Cafe Seating • Bicycle Parking • Transit Facilities 	<ul style="list-style-type: none"> • Decorative Planting • Cafe Seating • Bicycle Parking • Transit Facilities 	• N/A	• N/A	• N/A
ADJACENT LAND USE 	ZONING	<ul style="list-style-type: none"> • MUR 70' • MUR 45' 	<ul style="list-style-type: none"> • MUR 70' • MUR 45' • Town Center 	<ul style="list-style-type: none"> • MUR 70' • MUR 45' 	• MUR 35'	<ul style="list-style-type: none"> • MUR 35' • MUR 45' • Commercial

10TH AVENUE NE - D-D'

PREFERRED OPTION

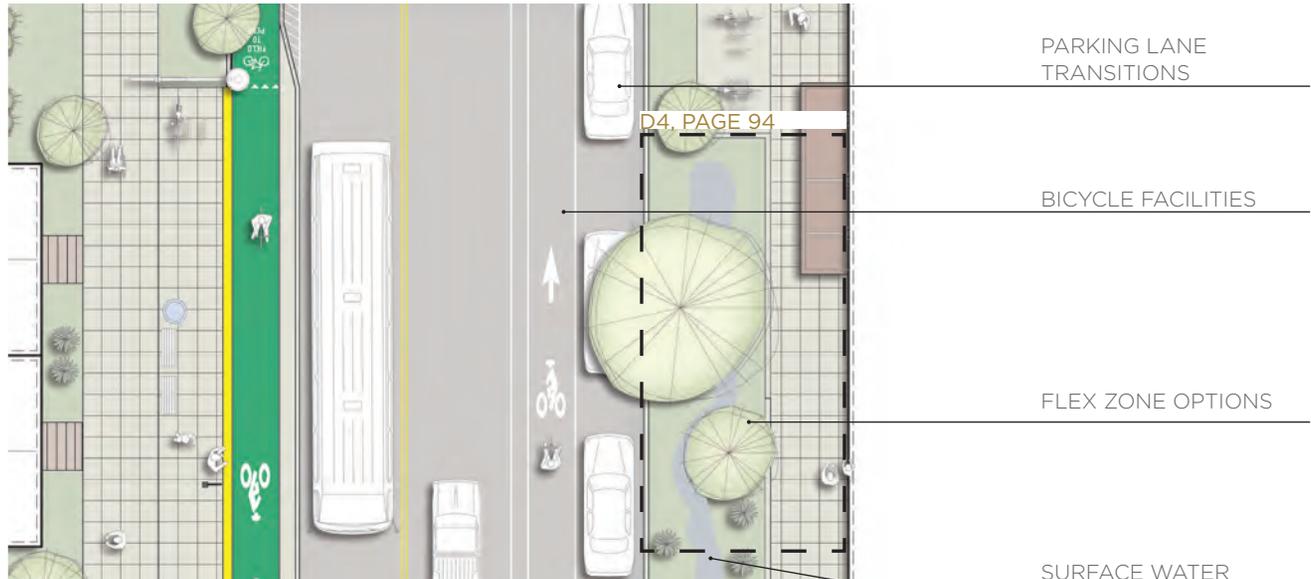


EXAMPLE OF MIXED-USE FRONTAGE

AMENITY ZONE/
STREET FURNITURE



EAST WEST

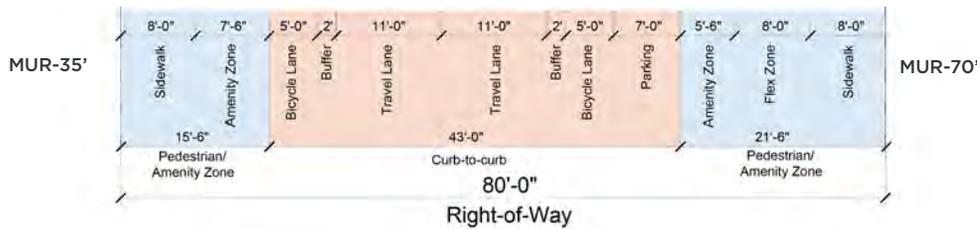


PARKING LANE TRANSITIONS

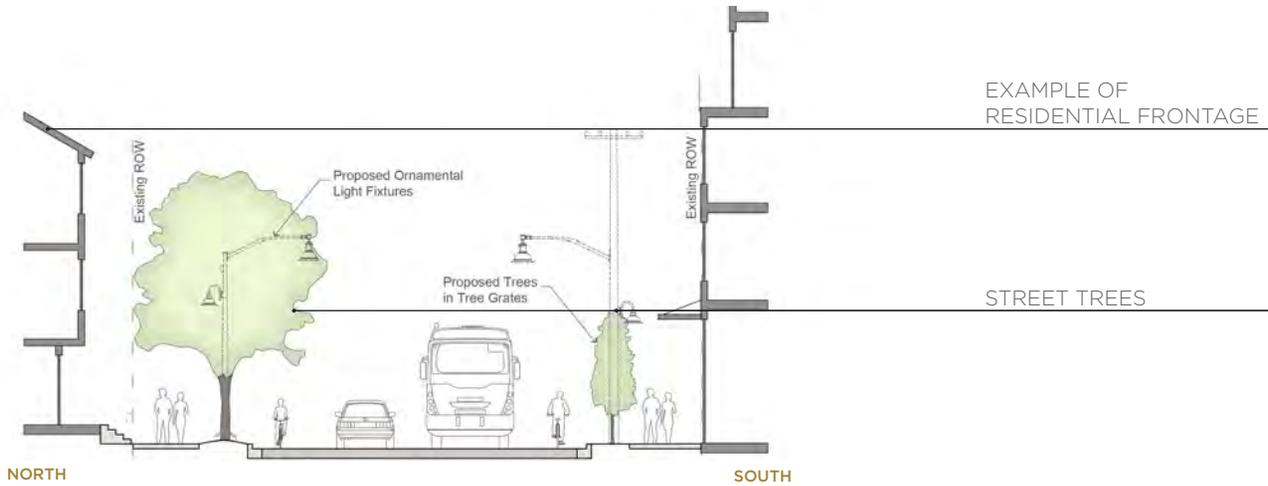
BICYCLE FACILITIES

FLEX ZONE OPTIONS

SURFACE WATER FACILITY



PREFERRED OPTION

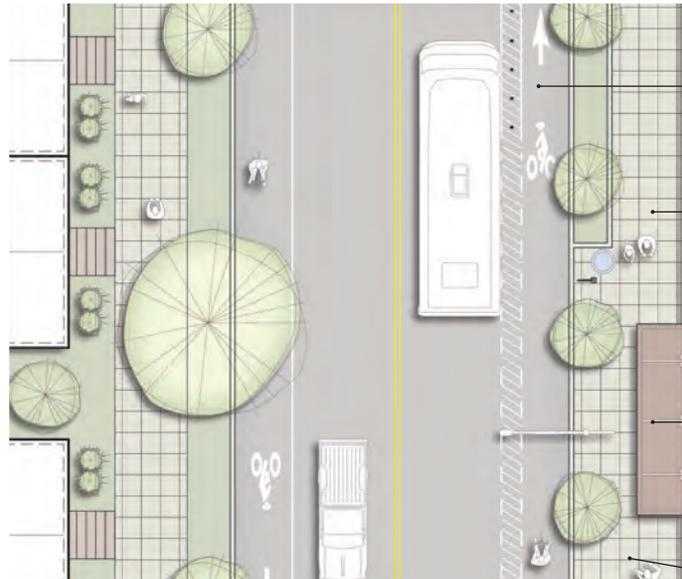


EXAMPLE OF RESIDENTIAL FRONTAGE

STREET TREES



NORTH SOUTH



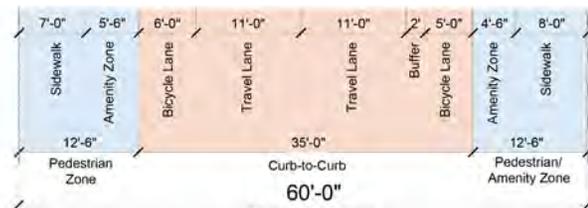
BUFFERED BICYCLE FACILITY

SIDEWALK PAVING

TRANSIT FACILITY

TYPICAL STREETSCAPE

MUR-35'



MUR-45'

(VARIES BY BLOCK: MUR-35', MUR-45', CB)

Right-of-Way 60'-0"

8 COMMUNITY GATHERING PLACES



COMMUNITY GATHERING PLACES

The following four sites have been identified as Community Gathering Places (FIGURE 8.1) along the 185th Street Corridor for better multimodal connections, placemaking, and enhanced open spaces within the Corridor's local vicinity.

- Site 1: Aurora Avenue N and N 185th Street (FIGURE 8.2)
 - City-owned parcel identified in the Shoreline Public Art Plan as part of a series of art-themed spaces along Aurora Avenue N.
 - A new mural was recently installed on the wall of Spiros facing N 185th Street.
 - Site is envisioned as a beautiful foreground for the mural with colorful plantings. The space could be used as a place for people to relax while waiting for the bus, or for bicycle parking to accommodate first/last mile connections.
- Site 2: Ashworth Avenue N and N 185th Street (FIGURE 8.3)
 - Parcel identified as a potential nature-based open space during the 185th Street Station Subarea planning process.
 - Potential loop trail or boardwalk around the exterior of site.
- Site 3: Trailhead at the Station (FIGURE 8.4)
 - City right-of-way that serves as a trailhead for the Trail Along the Rail at the intersection of NE 185th Street and 5th Avenue NE.
 - This parcel could be activated with wayfinding and placemaking elements and act as a place to recharge devices or bicycles, or as a place for seating.
- Site 4: Rotary Park (FIGURE 8.5)
 - Collection of parcels and utility right-of-way identified in the Shoreline Parks, Recreation, and

Open Space (PROS) Plan as an opportunity site for adding more public space with the light rail station areas.

- Rotary Park has the potential to be programmed in many ways to support the surrounding neighborhood with opportunities for community gardening, outdoor movie watching, or playing in a splash park.

As the City of Shoreline continues to grow, particularly along the 185th Street Corridor, there is an increased need for more community spaces and places to be outside. The identified sites offer opportunities for the community to come together. The programming of each site will be determined by surrounding context, size of the site, and potential pedestrian connections.

The study team gathered feedback from City Council, stakeholders, and the public about how these sites could benefit the community. Feedback on draft concepts for Sites 1, 2, 3, and 4 received during this process was shared with the City's Parks, Recreation, and Cultural Services (PRCS) Director and the PRCS/Tree Board. In addition, feedback on Site 3 received during this process was shared with the Public Works Director and the Trail Along the Rail project manager.

CURRENT OPPORTUNITIES

The following prospects currently exist that will help to advance some of the opportunities for the Community Gathering Places:

- The City received King County Conservation funding for acquisition of the 185th/Ashworth vacant lot (Site 2 of the Community Gathering Places).

- The City Parks Department will contribute funding for adjacent frontage improvements for any park redevelopment projects.
- The City owns a portion of the parcel at the corner of Aurora/185th, so ideas for space activation and beautification could be incorporated if funding is available.

The next few pages illustrates design concepts of the four sites and lists possible design elements and constraints. The City will continue to refine the idea of these gathering places and look for various funding sources as applicable.

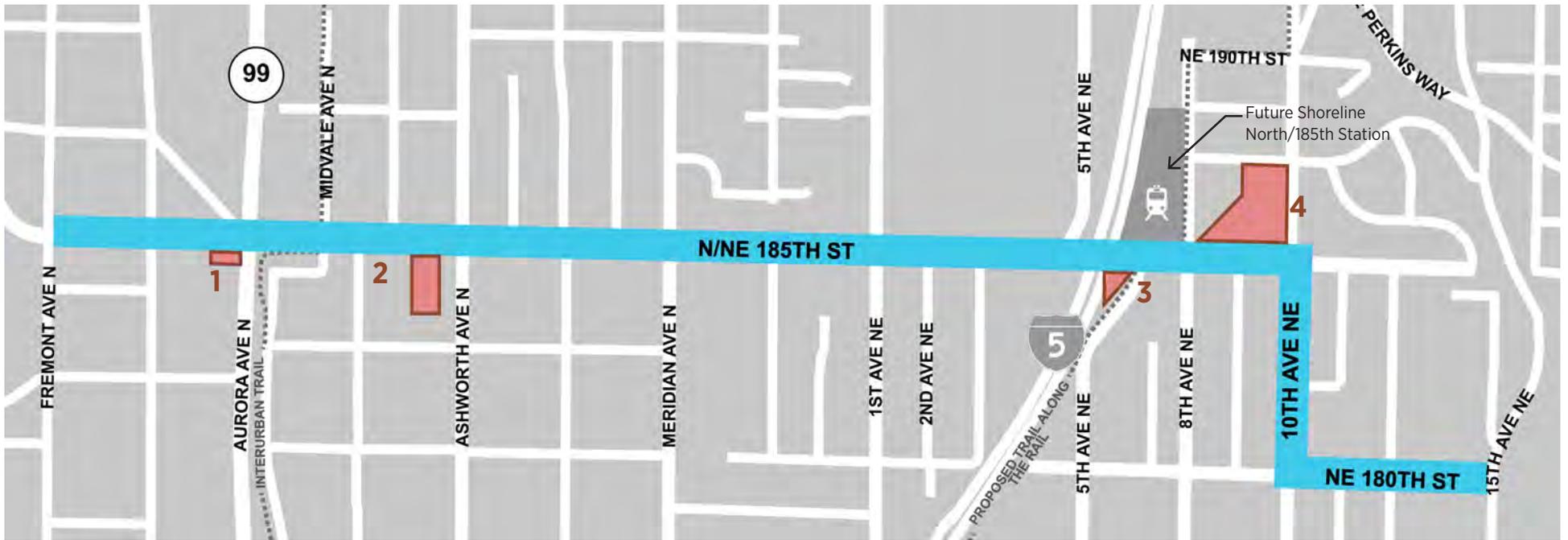


FIGURE 8.1 Community Gathering Place key map

- POTENTIAL COMMUNITY GATHERING PLACES 1, 2, 3, AND 4
- 185th Street CORRIDOR

SITE 1: OPEN SPACE AT AURORA AVE N & N 185TH ST

OPPORTUNITIES

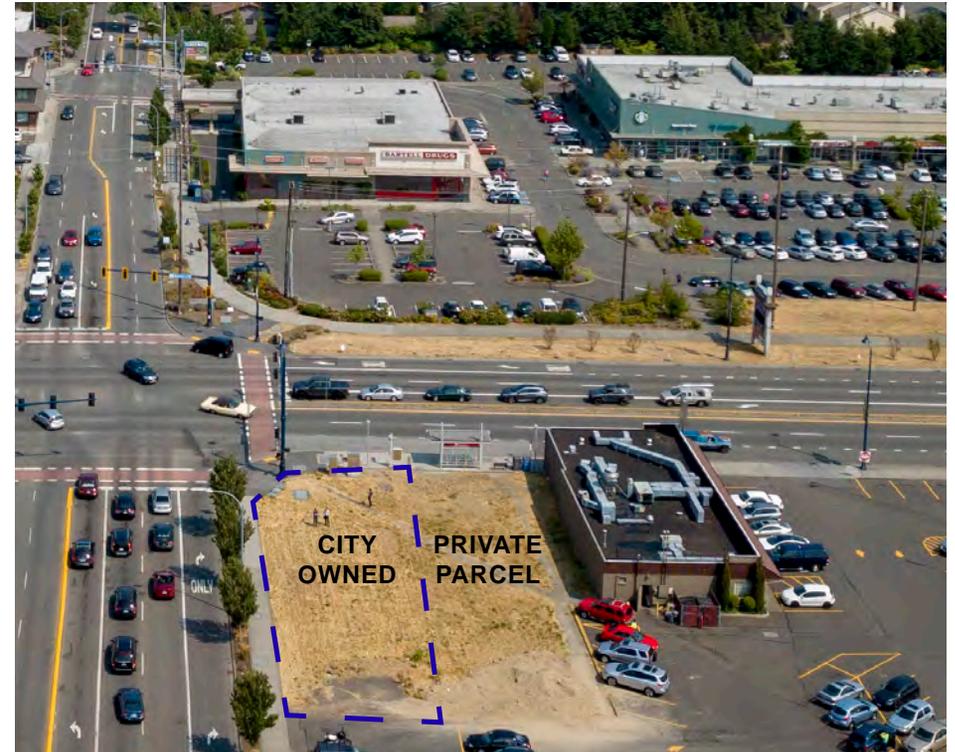
- Part of linear, art network of city-owned properties along Aurora Avenue N.
- Complement new mural on the side of Spiros.
- Historic connection to nearby Shoreline Historical Museum and historic music/jazz presence in Shoreline.
- Active play zone/musical art near bus stop.
- Bicycle parking.
- Formalize desire lines into pathways.
- Low-scale beautification on the rest of site.
 - Perennials/planting beds.
 - Crushed gravel paths.

CONSTRAINTS

- Half of lot privately owned.
- Very busy intersection with traffic noise.
- Above ground utilities at front of site limit access from Aurora.



Community Gathering Place locator map



Aerial view of Community Gathering Site 1



Richmond Highlands gateway mural project



**DESIGN IDEAS:
COLORFUL PLANTINGS**



PATHWAYS



FITNESS ZONE



CREATIVE PLAY AND MUSICAL ART



BICYCLE PARKING



FIGURE 8.2 Community Gathering Site 1 potential programming

SITE 2: ASHWORTH AVENUE N & N 185TH ST

OPPORTUNITIES

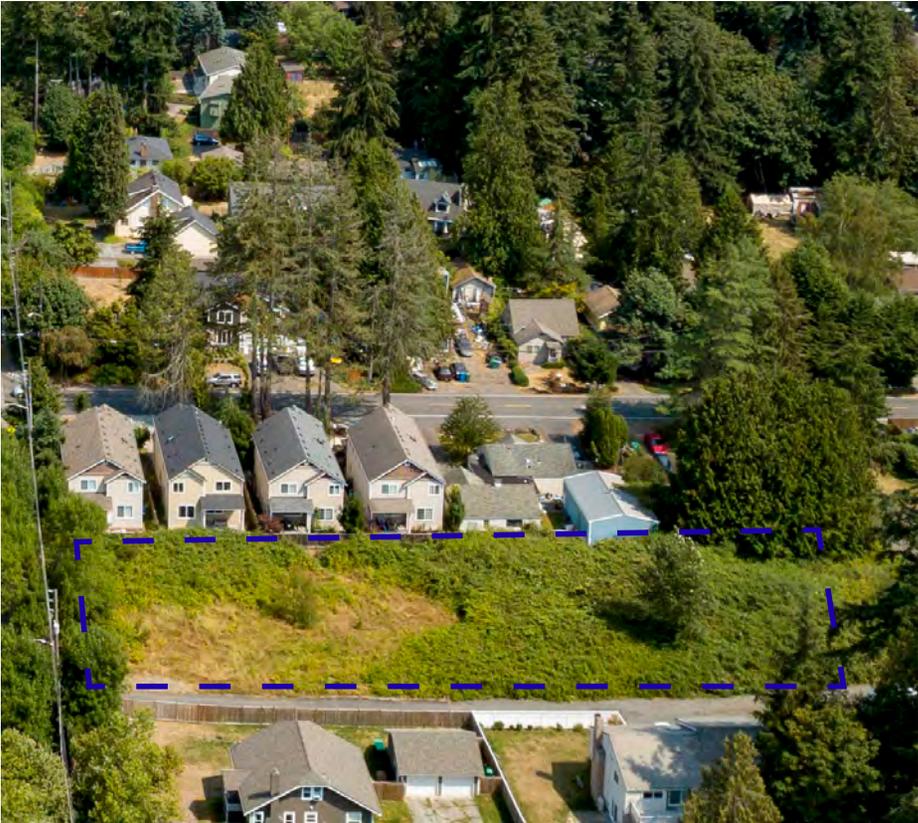
- Naturalize Area.
 - Perimeter trail.
 - Interpretive signage.
 - Exercise equipment along trail.
- Active use concentrated along N 185th Street with environmental education elements.
- Fitness Zone.
- Seating.
- Placemaking elements.
- Nature play features.

CONSTRAINTS

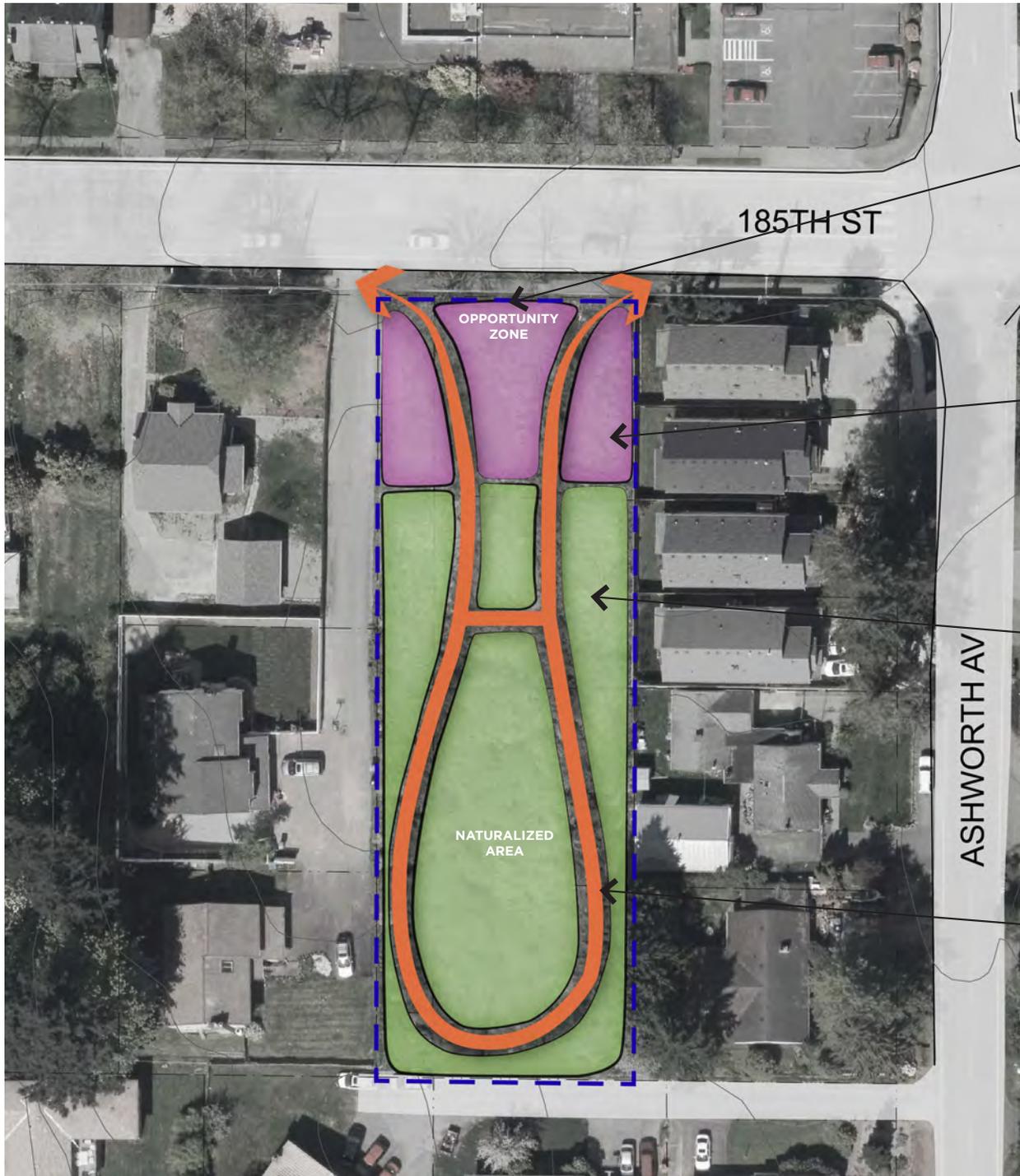
- Proximity to single-family residential limits possibilities for noise and crowd generating uses.
- King County Conservation Futures funding.
 - Limits use of 85% of the parcel to passive use.
 - 15% of parcel could be active use.



Community Gathering Place locator map



Aerial View of Community Gathering Site 2



DESIGN IDEAS:

EDUCATIONAL / PLACEMAKING ELEMENTS



NATURE PLAY / FITNESS ZONE



SEATING AND INTERPRETATION



BOARDWALK PERIMETER PATH



FIGURE 8.3 Community Gathering Site 2 potential programming



SITE 3: TRAILHEAD AT THE STATION

OPPORTUNITIES

- Trailhead amenities such as places to gather, shelter, bicycle repair tools, and a water fountain.
 - Placemaking with public art.
 - Charge/Re-charge stop.
- Solar collecting features can allow for device charging and net-zero site energy usage.
- Seating to pause and rest.

CONSTRAINTS

- Site is constrained by Sound Transit wall and Trail Along the Rail.
- Steep grades to the south may require site walls.



Community Gathering Place locator map



Aerial View of Community Gathering Site 3



**DESIGN IDEAS:
TRAILHEAD AMENITIES**



CHARGE/RECHARGE SPACES



SOLAR TREES AND PAVING



SWALE ALONG THE TRAIL / NATIVE PLANTS



PUBLIC ART / PLACEMAKING



FIGURE 8.4 Community Gathering Site 3 potential programming

SITE 4: ROTARY PARK

OPPORTUNITIES

- New large open space in one of the most densely zoned subareas in Shoreline.
- Formalized trail connection from 185th to 188th via Seattle City Light (SCL) easement.
- Intersecting loop trails connect to sidewalks on all sides for exercise opportunities.
- Potential innovative energy demonstrations (wind, solar) with SCL partnership.
- Family-friendly park amenities.
 - Amphitheater.
 - Grass lawns.
 - Splash park.
 - Play spaces.
- Flexible Programming in lower south-west and linear middle parcel.
 - Community garden.
 - Food Truck pull-in area.
 - Off-leash dog area.
- Use geometry and grade for seating/skate/interactive features .
 - Small spaces for activities.

CONSTRAINTS

- Multiple owners, including Seattle Public Utilities (SPU) and SCL, which could have limitations on access and type/longevity of programming in their easements.



Community Gathering Place locator map



Aerial View of Community Gathering Site 4



DESIGN IDEAS:

FLEXIBLE LAWN SPACE / STAGE AREA



PATH AND DOG PLAY



PLAY AREA / SPLASH PARK



PICNIC TABLES / SEATING



FOOD TRUCKS / COMMUNITY GARDEN

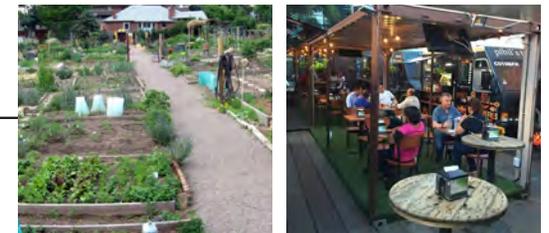


FIGURE 8.5 Community Gathering Site 4 potential programming



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9 PROJECT DELIVERY APPROACH AND FUNDING STRATEGY

An aerial photograph of a suburban neighborhood. In the lower-left, there is a school building with a blue roof and a playground with colorful equipment. A road with several cars runs horizontally across the middle. To the right of the road is a large, flat, sandy area under construction, with a yellow excavator and other equipment visible. The background shows more houses, trees, and a clear sky. The text '9 PROJECT DELIVERY APPROACH AND FUNDING STRATEGY' is overlaid in large white letters on the left side of the image.

PROJECT DELIVERY APPROACH AND FUNDING STRATEGY

Currently, there is no designated CIP funding for improvements to the corridor. The 185th Street Corridor improvements will be initially implemented through redevelopment and followed by a series of City capital projects that will reconstruct roadway segments and intersections and fill in gaps in the ped/bike/amenity zones. The City takes a comprehensive approach to planning the implementation of capital improvement projects through the TIP and Capital Improvement Plan (CIP). The TIP and CIP identify projects and funding for improvements over the next six years and are updated annually to reflect ongoing changes and additions. They also detail the work to be done for each project and an expected time frame for completion.

It is important for the City to maintain a balanced and paced approach to implementing capital projects in order to ensure that resources, both staffing and funding, are available to complete projects successfully. Currently, the City has many capital projects that are on the path toward implementation. Some notable planned corridor improvement projects include the 145th Street Corridor, the 145th Street / I-5 Interchange, and the 175th Street Corridor. These projects are targeted to be constructed in phases over the next 10+ years. The fundamental strategy to implementing the 185th MCS is to avoid competing with resources needed to deliver the City's obligated corridor improvement projects, mentioned above, by utilizing a schedule that will follow behind them.

INCREMENTAL REDEVELOPMENT COORDINATION

The 185th MCS takes a practical approach to the incremental redevelopment of the 185th Street Corridor by recognizing that private development will take a significant role in providing initial corridor improvements, and that a series of City CIP projects will make improvements to roadway segments and intersections as well as fill in pedestrian/bike gaps left by development at some time in the future. The 185th MCS will guide how future developments, both public and private, will relate to the 185th Street Corridor and ensure that it is developed in a cohesive way.

FORWARD COMPATIBLE PEDESTRIAN/BIKE DESIGN

A ROW dedication in the City is a perpetual easement that is dedicated for public uses (vehicular and pedestrian traffic, drainage, public or private utilities, lighting, signage, landscaping, and other public uses permitted within the public ROW). The City does not own the land; it still belongs to the adjacent property owner. Currently, when properties are redeveloped along 185th Street, the permit applicant is asked to dedicate eight feet beyond the existing ROW for frontage improvements.

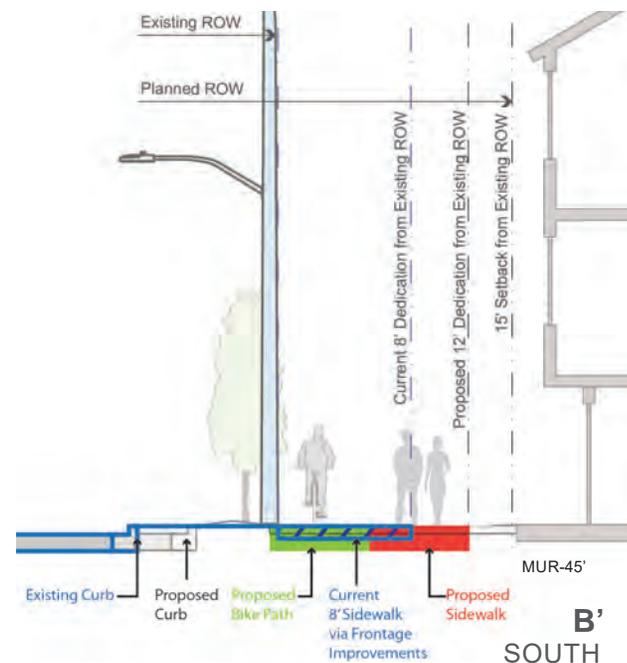


FIGURE 9.1 Incremental redevelopment with 8' dedication scenario and Preferred Option comparison.

In addition to the ROW dedication, a 15-foot setback from the existing ROW so that structures are not built within the planned 90-foot ROW.

FIGURE 9.1 shows how the current approach of building an eight-foot sidewalk (see blue hatched area in figure) from the back of an eight-foot dedication is incompatible with the build out of the 185th Street's (Segment B) ped/bike/amenity zones because the sidewalk would need to be eventually removed in

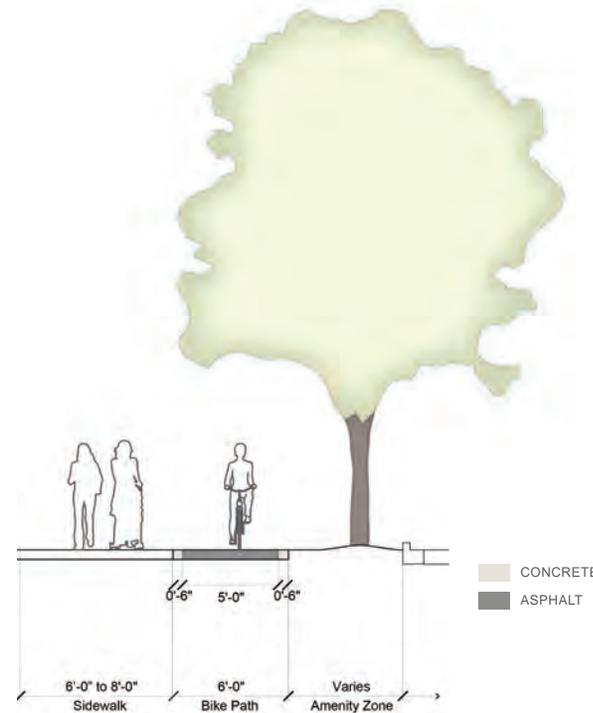
order to build Segment B's Preferred Option layout of a six-foot minimum bike path (green area) and a six-foot minimum sidewalk (red area). To solve this issue, the 185th MCS proposes a 12-foot dedication (green plus red area). from the ROW on both sides of the street. This solution allows Segment B's ped/ bike/amenity zones to be built incrementally with each redevelopment's frontage improvements and be forward compatible with build-out of Segment B.

ENGINEERING DEVELOPMENT MANUAL (EDM) UPDATE

The City's EDM contains Standard Plans for various street facilities which regulate development in the City's ROW. The City's EDM also contains an "Appendix F - Street Matrix" which identifies specific roadway cross-sections for all Arterial Streets and Local Primary Streets and provides a generic cross-section for Local Secondary Streets in the City. It is intended to guide the development of streets throughout the city. The planned cross-sections for these streets establish the location of future curbs so that streets can be constructed in the proper location. The Street Matrix also denotes required widths (on both sides of the road) for sidewalks, amenity zones, parking, travel lanes, bicycle lanes, and more.

NEW STANDARD PLAN

The 185th Street Preferred Option for off-street bike path adjacent to a sidewalk (FIGURE 9.2) is a new type of pedestrian and bike facility for the City that is now included in the 2020 EDM as a Standard Plan.



EXAMPLES FROM 7TH AVENUE BIKE LANES IN SEATTLE, WA

FIGURE 9.2 New ped/bike facility added to EDM Standard Plan

STREET MATRIX UPDATE

Now that Council has adopted the Preferred Option, the 2020 EDM's Street Matrix will be updated to reflect the Preferred Option's ROW allocations for the 185th Street Corridor. In addition, City staff will recommend updates to the Street Matrix on N 185th Street between Fremont Avenue N and Dayton Avenue N to fill the gap in the pedestrian/bike facilities and on NE 180th Street between 10th Avenue NE and 5th Avenue NE (west of

I-5) to strategically connect with the proposed Trail Along the Rail (see green lines in FIGURE 9.5).

As a result of Council adopting the Preferred Option, the 2020 EDM Street Matrix has been updated to reflect the 185th MCS Preferred Option cross sections as well as the following updates to 10th Avenue NE north and south of the 185th MCS study area.

10TH AVENUE NE - NE 185TH STREET TO NE 190TH STREET (FIGURE 9.3)

- Recommended Option for this segment is a two-lane section (two 10-foot travel lanes) with buffered bike lanes, on-street parking (west side only), amenity zones, and eight-foot sidewalks.
- Travel lanes were reduced from 11 feet to 10 feet wide to help with traffic calming and is appropriate for this road segment that doesn't accommodate transit.
- Flex zones were removed from this segment to create a narrower cross-section.
- The current ROW is 60 feet. An eight-foot dedication is proposed on the west side of the street which is zoned for MUR-70'.

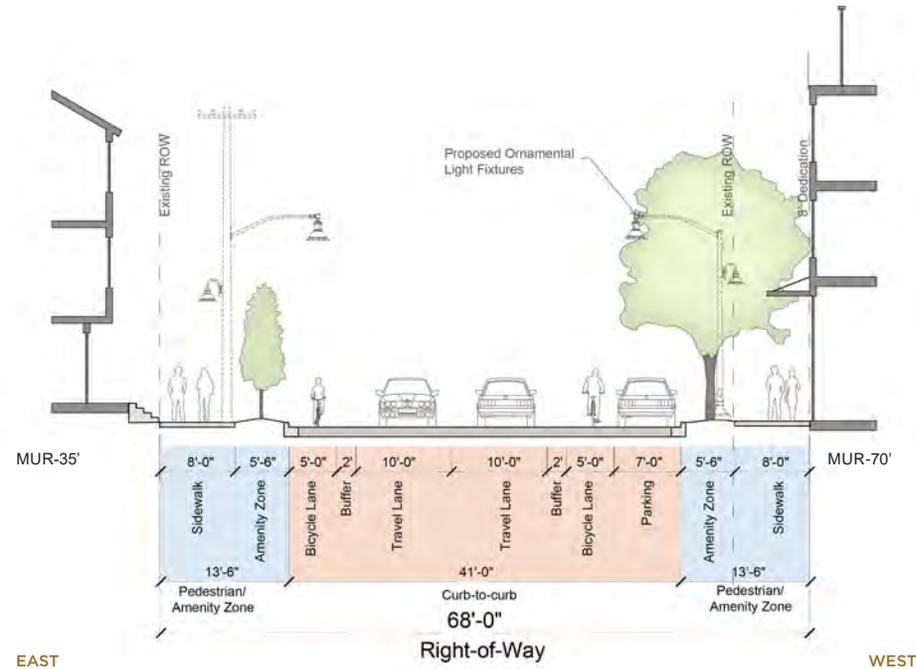


FIGURE 9.3 10th Avenue: Recommended section from 185th to 190th St

10TH AVENUE NE - NE 180TH STREET TO NE 175TH STREET (FIGURE 9.4)

- Recommended Option for this segment is a two-lane section (two 11-foot travel lanes) with buffered bike lanes, on-street parking (west side only), amenity zones, and eight-foot sidewalks.
- Flex zones were removed from this segment to fit within a 70-foot ROW.

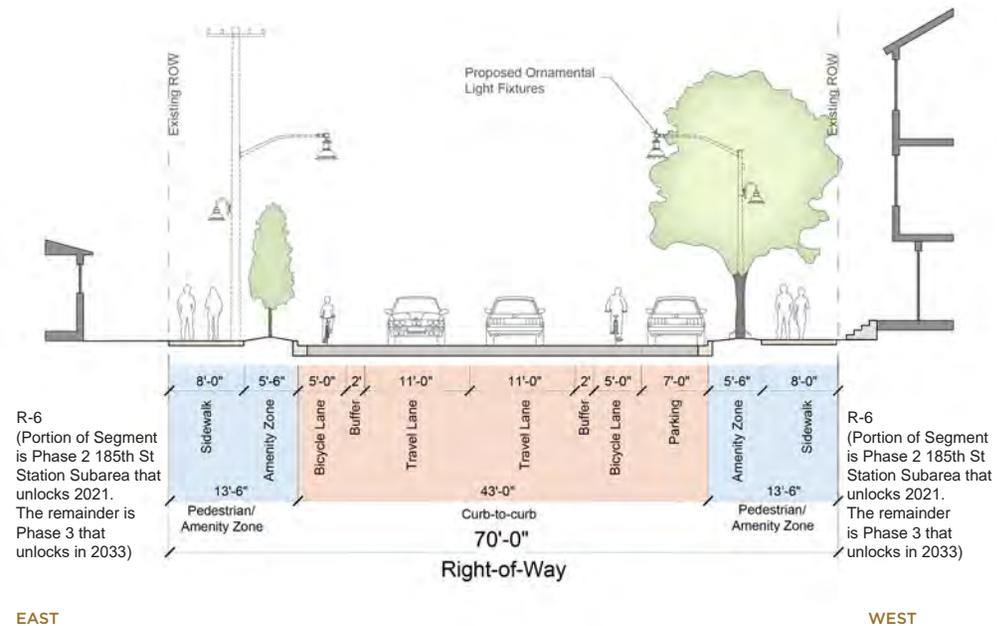


FIGURE 9.4 10th Avenue: Recommended section from 180th to 175th St

SEPA CHECKLIST

The State Environmental Policy Act (SEPA) process identifies and analyzes environmental impacts associated with governmental decisions. The City is required to perform the SEPA process at the earliest stage of a project and update it as the project's design progresses.

On September 18, 2019, the City of Shoreline issued a Notice of Application including an optional SEPA Determination of Nonsignificance (DNS) for the 185th MCS with a request for public comments by October 2, 2019. No comments were received. On October 8, 2019, the City issued a SEPA DNS

ROW NEEDS

SEGMENT A: N 185TH ST - FREMONT AVE N TO MIDVALE AVE N	
Number of Dedications	23
Total Dedication Area (sf)	8,500
Buildings Impacted	5
Property Impacts	10
SEGMENT B: N/NE 185TH ST - MIDVALE AVE N TO 5TH AVE NE (WEST OF I-5)	
Number of Dedications	97
Total Dedication Area (sf)	140,000
Buildings Impacted	15
Property Impacts	52
SEGMENT C: NE 185TH ST - 5TH AVE NE (WEST OF I-5) TO 10TH AVE NE	
Number of Dedications	9
Total Dedication Area (sf)	4,000
Buildings Impacted	0
Property Impacts	2
SEGMENT D: 10TH AVE NE - N 185TH ST TO NE 180TH ST	
Number of Dedications	3
Total Dedication Area (sf)	700
Buildings Impacted	0
Property Impacts	13
SEGMENT E: NE 180TH ST - 10TH AVE NE TO 15TH AVE NE	
Number of Dedications	0
Total Dedication Area (sf)	0
Buildings Impacted	0
Property Impacts	2

TABLE 9.1 185th Corridor ROW needs

Notes:

- Segment A: Assumes no roadway changes; only ped/bike/amenity zone improvements.
- Segment B: Maintains existing north curb and proposes four-lane configuration within 90-foot Planned ROW.
- Segment C: ROW Impacts only include transitional areas to Sound Transit-led improvements and a permanent roundabout at NE 185th St/10th Ave NE.
- Dedication areas provided are preliminary for planning purposes and subject to change as design progresses. Dedications and building impacts may increase depending on detailed vertical/grading design, constructability of improvements, and City of Shoreline requirements.
- Dedication area is measured from existing ROW and does not include any easements required for construction or traffic improvements needed at intersections.
- Property impacts include adverse impacts to parking, landscaping, driveways, access, site walls, and accessory buildings.

(refer to APPENDIX E SEPA MATERIAL) on the non-project action for the 185th MCS, which will serve as a guide for future development.

ROW NEEDS

The 185th MCS is a study, not a CIP project, and therefore it does not trigger ROW acquisition. However, ROW requirements were analyzed based on the anticipated impacts of the build-out of the Preferred Option on existing property lines and vehicular access (TABLE 9.1). This preliminary analysis is a rough estimate of the overall corridor's ROW needs at present. Redevelopment over the years will re-shape these findings; building and property impacts will initially be resolved through redevelopment projects and then with City projects to fill gaps left by redevelopment at some time in the future.

OPINION OF COST

A planning-level cost estimate of the Preferred Option by Segment (TABLE 9.2) includes design, environmental review, right-of-way acquisition, and construction costs for the full build-out of the 185th Street Corridor in 2019 dollars. Although in reality the 185th Street Corridor will be built incrementally by development and smaller CIP projects over time, this high-level cost estimate helps the City plan for future capital projects along the corridor. The estimated cost to underground power is provided as an optional line item. Please note, a Council decision as to whether to underground power along the 185th Street Corridor requires more information, analysis, and policy

PLANNING LEVEL OPINION OF COST

	SEGMENT A (W/O SR 99)	SEGMENT B	SEGMENT C	SEGMENT D	SEGMENT E	ALL SEGMENTS
Project Development	\$1.1 M	\$6.1 M	\$0.5 M	\$2.3 M	\$0.9 M	\$10.9 M
Right-of-way	\$1.1 M	\$17 M	\$0.4 M	\$0.0 M	\$0.00 M	\$18.5 M
Construction	\$2.7 M	\$15.5 M	\$1.2 M	\$5.8 M	\$2.3 M	\$27.5 M
Construction Management	\$0.4 M	\$2.4 M	\$0.2 M	\$0.9 M	\$0.4 M	\$4.3 M
Subtotal	\$5.3 M	\$41.0 M	\$2.3 M	\$9.0 M	\$3.6 M	\$61.2 M
Risk Allowance (30%)	\$1.6 M	\$12.3 M	\$0.7 M	\$2.7 M	\$1.1 M	\$18.4 M
Total Estimate (in 2019 million dollars)	\$6.9 M	\$53.3 M	\$3.0 M	\$11.7 M	\$4.7 M	\$79.6 M
Proj Dev for Utility Undergrounding	\$0.0	\$1.9 M	\$1.8 M	\$0.6 M	\$0.5 M	\$4.8 M
Construction	\$0.0	\$5.0 M	\$4.5 M	\$1.5 M	\$1.4 M	\$12.4 M
Construction Management	\$0.0	\$0.08 M	\$0.7 M	\$0.3 M	\$0.2 M	\$1.9 M
Subtotal	\$0.0	\$7.7 M	\$6.9 M	\$2.3 M	\$2.2 M	\$19.1 M
Risk Allowance (30%)	\$0.0	\$2.4 M	\$2.1 M	\$0.7 M	\$0.7 M	\$5.8 M
Utility Undergrounding (in 2019 million dollars)	\$0.0	\$10.1 M	\$9.0 M	\$3.0 M	\$2.9 M	\$25 M

TABLE 9.2 185th Corridor cost summary- planning level opinion of cost

Notes:

- Summary represents order of magnitude cost opinion (to determine initial project costs). Final project costs will depend on actual labor and material costs, actual site conditions, productivity, competitive market conditions, final project scope, final project schedule, and other variable factors.
- Estimates based on 185th MCS Preferred Option mid-block cross-sections.
- Costs are in 2019 dollars and do not include escalation, financial costs, or operations and maintenance costs.
- ROW costs are not based on appraisals and do not include adverse building or property impacts.
- Utility undergrounding costs assume undergrounding of existing utilities along the corridor and horizontal directional drilling under I-5.
- Project Development costs include allowances for environmental documentation, preliminary and final design engineering, agency administration, special studies, public art, and community engagement.
- Construction Management is assumed to be 15% of construction costs.
- Risk allowance is assumed to be 30% to capture design risks and unknown project costs.
- Design of intersections to be determined.

discussions. The Preferred Option accommodates flexible outcomes for locating power above or below ground.

TRANSPORTATION IMPACT FEES

The City uses Transportation Impact Fees (TIFs) to fund projects to maintain or improve levels of service on Shoreline’s streets. The intent is to share the financial responsibility of providing transportation facilities, such as roads and intersections, that support future growth with the development that grows our population and economy. All projects that add trips to City streets are required to pay the impact fee. The City has identified locations where new trips from development are projected to increase existing congestion on Shoreline streets or will result in newly congested areas. Funds generated by TIFs will be used to fix these areas and maintain adopted levels of service on Shoreline’s streets. Currently, there are two roadway projects (referred to as growth projects) along 185th Street to accommodate future transportation demand: the Meridian Avenue N and N 185th Street intersection improvement; and the rechannelization of NE 185th Street from 1st Avenue NE to 7th Avenue NE, which Sound Transit will essentially complete with their rechannelization of NE 185th Street from east of 2nd Avenue NE to 8th Avenue NE.

As part of the 185th MCS project delivery approach, the City could utilize TIFs to fund the design engineering and reconstruction of the Meridian Avenue N and N 185th Street intersection as a CIP project. During the upcoming TMP update process, the City may consider adding new growth projects that could generate TIFs to fund the design and construction of the 185th MCS Preferred Option roadway segments and/or intersections.

PROJECT DELIVERY APPROACH

The project delivery approach presents a corridor implementation vision in logical, incremental, and strategic steps in the near term (zero to five years), mid term (five to 10 years), and long term (10+ years) (FIGURE 9.5).

- **Near Term (zero to five years):** During the near term, the update to the EDM Street Matrix and Standard Plans will direct the construction of incremental redevelopment frontage improvements (i.e. amenity zones, bike paths, and sidewalks, etc.) to be forward compatible with the ultimate 185th MCS vision. The 2020 TIP will include an update to the 185th Street Corridor entry based on the Preferred Option. The City may consider adding 185th Street and Meridian Avenue intersection to the CIP because it is already a designated growth project to accommodate future transportation demand. During the TMP update process, the City may consider lowering the 185th Street Corridor's acceptable general-purpose vehicle LOS or shifting to a MMLoS as well as consider restructuring TIFs and associated growth projects to help fund the design and construction of additional roadway segments and intersections along the 185th Street Corridor in the mid term and long term. In addition, the City will engage with CT and Metro's frequent transit service planning and capital investments along the 185th Street Corridor.
- **Mid Term (five to 10 years):** During the mid term, the City may use restructured TIFs from newly assigned growth projects along the 185th Street Corridor, potential transit agency partnership funding, and/or grants to fund design and potentially construct portions of the 185th Street Corridor.

- **Long Term (10+ years):** During the long term, the City may use local funds such as TIFs and pursue grants and loans to help fund the implementation of the full 185th Street Corridor vision.

FUNDING STRATEGY

The City could potentially fund portions of the 185th MCS design engineering and implementation through local funds such as TIFs and pursue supplemental grant funding through Puget Sound Regional Council Transportation Alternatives Program (PSRC TAP), Washington State Department of Transportation (WSDOT) Pedestrian/Bicycle Program, Transportation Improvement Board (TIB) Urban Arterial, Sidewalk, and Complete Streets programs, Federal Highways Administration (FHWA) regional and county wide Surface Transportation Program/ Congestion Mitigation and Air Quality (STP/CMAQ), and Federal Transit Administration: Fixing America's Surface Transportation (FAST).

**NEAR TERM
0-5 YEARS**

**MID TERM
5-10 YEARS**

**LONG TERM
10+ YEARS**

2020 Engineering Development Manual Update

- Update Street Matrix to direct frontage improvements along 185th St, 10th Ave, and 180th St.
- Update Standard Plans for bike path/sidewalk.

2020 Transportation Improvement Plan Update

- Update 185th St Corridor entry based on the Preferred Option.

2021/2022 Bi-Annual Budget/Capital Improvement Plan

- Consider adding 185th St & Meridian Avenue intersection to CIP because it's a designated growth project to accommodate future transportation demand.

2023 Transportation Master Plan Update

- Consider lowering the 185th St Corridor's acceptable general-purpose vehicle LOS for concurrency or shifting to a Multimodal LOS (MMLoS).
- Reassess growth projects along the 185th St Corridor.

City to engage with Community Transit's Blue Line expansion and King County Metro's long-range transit planning

2024 - Shoreline North/ 185th Station Opens

CIP - Segment B - Design Engineering

- Design roadway and intersection improvements and gaps in ped/bike/amenity zones.

CIP - Segments C, D, & E - Design Engineering

- Design permanent improvements to 185th St & 10th Avenue intersection.
- Design 10th Avenue & 180th St intersection.
- Address gaps in segments C, D, & E.

CIP - Segment B - Construction

- Construct roadway and intersection improvements and fill in gaps in ped/bike/amenity zones.

CIP - Segments C, D, & E - Construction

- Implement permanent improvements to 185th St and 10th Avenue intersection.
- Construct 10th Avenue and 180th St intersection.
- Restripe roadways and fill gaps in ped/bike/amenity zones.

CIP - Segment A - Design & Construction

- Design gaps in ped/bike/amenity zones.
- Construct ped/bike/amenity zones improvements.



FIGURE 9.5 Project delivery diagram



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APPENDIX A. ENVIRONMENTAL CONDITIONS

ENVIRONMENTAL CONDITIONS

This section provides information on the existing environmental conditions within the study corridor. Existing conditions include information on the Natural Environment (Surface Water/Wetlands, Geologic Hazards, and Hazardous and Problem Waste) and the Built Environment (Neighborhood Character, Land Use/Zoning, Demographics, Community Resources, Parks and Recreation, and Cultural Resources) within the identified study corridor. The environmental study area for the existing conditions is the area within an approximate 0.25-mile radius on either side of the project corridor, generally N 190th Street to the north and N 180th Street to the south between Linden Avenue N to the west and 15th Avenue NE to the east.

NATURAL ENVIRONMENT

The study corridor is located within an urbanized area largely developed with residential and commercial uses. As a result, limited natural environment resources are located within the study area.

SURFACE WATER/WETLANDS

The only known wetlands are located in Cromwell Park. There are no known areas of surface water; floodplains; or fish, wildlife, and vegetation present within the study area.

GEOLOGIC HAZARDS

The study area does not have steep slopes aside from areas on the western and eastern extents. There are no other geologic hazards such as liquefaction prone area, peat settlement areas, or known slide events within the study area.

HAZARDOUS AND PROBLEM WASTE

There are nine potential hazardous material sites, with the majority, eight sites, centered around the Aurora Ave N/SR 99 corridor and one site located in the eastern limit of the study area, based on information from the Washington State Department of Ecology Facilities Database. The sites are associated with underground storage tanks, leaking underground storage tanks, or voluntary cleanup sites. Additional investigation is required to determine the status of the sites and whether cleanup has been completed or is ongoing.

BUILT ENVIRONMENT NEIGHBORHOOD CHARACTER

The study area consists of largely single-family residential neighborhoods. Much of the residential development is older, but pockets with older homes have been replaced with newer housing including both single-family and multifamily. Nonmotorized facilities including sidewalks and bike lanes are found on 185th Street, although not all are at current City standards. Larger connecting roadways have sidewalks, including Aurora, Meridian, and 15th Avenues. Bicycle and pedestrian facilities are sporadic in the surrounding neighborhood. Most of the roadways in the neighborhoods are two lanes with no sidewalks and lower speed limits to reflect the single-family residential development.

The study area overlaps with five City of Shoreline neighborhoods (Hillwood, Richmond Highlands, Echo Lake, Meridian Park, and North City). The majority of the study area is within the Echo Lake, Meridian Park, and North City neighborhoods. Within the study area, commercial development comprising large and small businesses is centered

on Aurora Avenue. Some small-scale commercial development is located in the eastern portion of the study area centered along 15th Avenue NE. The following provides a summary of the three neighborhoods that encompass the largest portion of the study area:

- **Echo Lake:** Located north of 185th Street and between Aurora Avenue N and I-5, the neighborhood is largely residential with the bulk of the residential development single-family. The neighborhood includes the Shoreline Conference Center, Shoreline Stadium, Senior Center, Spartan Recreation Center, and swimming pool and sports fields in the eastern portion of the neighborhood and west of I-5.
- **Meridian Park:** Located south of 185th Street between Aurora Avenue N and I-5, like Echo Lake, the neighborhood is largely residential with primarily single-family development. The neighborhood includes Cromwell Park and a King County District Court facility generally located in the middle of neighborhood.
- **North City:** Located east of I-5 and north and South of 185th Street, the neighborhood is largely single-family residential. There are multifamily developments including new apartment buildings located on NE 180th Street along the corridor and in proximity to 15th Avenue NE, which has a number of commercial uses adjacent including restaurants and small retail stores as well as a large grocery store. The neighborhood includes two parks, North City and Rotary Park. The neighborhood also includes North City Elementary in the northern portion of the neighborhood.

LAND USE/ZONING

Existing land use within the study area is predominately single-family residential with pockets of multifamily and commercial/retail located adjacent to Aurora Avenue N and adjacent to the area around 15th Avenue NE. The multifamily residential tends to be located in proximity to the two commercial areas. Commercial uses along Aurora Avenue N are a mixture of restaurants, automotive related, and businesses that would tend to serve populations living in the surrounding neighborhoods and attracting shoppers from a larger regional area, whereas commercial uses on 15th Avenue NE are more neighborhood related.

Zoning in the study area is similar to the existing land uses that allow for lower-density residential developments with commercial, mixed uses, and multifamily residential uses adjacent to the Aurora Avenue N corridor. In anticipation of the Sound Transit light rail station at NE 185th Street/I-5, the City of Shoreline has adopted new zoning for the station subarea. The 185th Street Station Subarea Plan was adopted in 2015. Three new zones were created in this area. These areas are described as follows:

- MUR-70 would allow mixed-use residential with maximum height of 70 feet.
- MUR-45 would allow mixed-use residential with maximum height of 45 feet.
- MUR-30 would allow mixed-use residential with maximum height of 30 feet.

The greatest heights would be allowed nearest the station and transition to the lower heights. The up-zoning is planned to occur in three phases between 2015 and 2033.

COMMUNITY RESOURCES

Community resources are defined as museums, fire departments, religious institutions, government facilities, and schools. Community resources are listed in the table on this page.

Within the City of Shoreline, students would attend schools in the Shoreline School District. The only school in the study area is the North City Elementary School located in the northeastern portion of the study area.

PARKS AND RECREATION

There are seven parks and recreation resources in the study area (see table on next page). The majority of the parks would provide opportunities for those in the surrounding neighborhoods. The Interurban Trail in Shoreline is a 3-mile multi-use trail that connects regionally to extensions of varying bicycle facilities north to Everett and south into Seattle. In addition to the parks and recreation facilities identified, the Highland Ice Arena is located in the study area. The arena is a private facility that provides public skating opportunities.

Community Facilities currently located along the corridor

TYPE	NAME	ADDRESS
Museum	Shoreline Historic Museum	18501 Linden Ave N
Religious Institutions	Shoreline Covenant Church	1330 N 185th St
Religious Institutions	St David Emmanuel Episcopal	18842 Meridian Ave N
Religious Institutions	Berean Bible Church	2345 N 185th St
Religious Institutions	Shoreline Community Church	125 NE 185th St
Religious Institutions	New Hope Church of the Deaf	203 NE 185th St
Religious Institutions	St Mark Catholic Church	18033 15th Pl NE
Community Center	Shoreline Lake Forest Park Senior Center	18560 1st Ave NE
Community Center	Spartan Recreation Center	202 NE 185th St
Community Center	Shoreline Conference Center	18560 1st Ave NE
School	Shoreline School District Offices	18560 1st Ave NE
Government Facility	King County District Court -Shoreline Division	18050 Meridian Ave N
Fire	Shoreline Fire Station 64	719 N 185th St
Fire	Shoreline Fire Station 63	1410 NE 180th
Public School	North City Elementary School	816 NE 190th St

Parks and Recreation

NAME	AMENITIES
Park at Town Center	Open space, trail
Interurban Trail	Paved multiuse trail
Cromwell Park	Baseball/softball, basketball, open space and natural area, picnic areas, playground, public art, restrooms, soccer, trails
Shoreline Park	Picnic areas, playground, public art, reservable field, restroom, soccer, tennis, trails
Shoreline Pool	Swimming pool, public showers, restroom
North City Park	Open space/natural areas and trails
Rotary Park	Open space

Demographic Characteristics

CHARACTERISTIC	STUDY AREA	SHORELINE
Total Population	12,101	55,021
Under 18	17.0%	18.5%
Over 65	18.3%	17.3%
Minority	34.1%	33.8%
Hispanic	9.7%	9.0%
Black	6.4%	5.4%
Asian	12.6%	13.0%
Other*	5.5%	6.4%
Low-Income Population	10.9%	9.9%
Median Household Income	\$72,043	\$70,398
Limited-English Proficiency	13.1%	10.5%
Households with No Vehicle	10.9%	7.6%
Owner Occupied/Renter Occupied Households	66%/34%	63%/37%

Source: U.S. Census Bureau, 2017

* Other includes American Indian or Alaska Native, Native Hawaiian and Other Pacific Islander, Some Other Race, and Two or More Races.

DEMOGRAPHICS

Demographic data was pulled using the most recent American Community Survey 5-year (2012-2016) estimate data (U.S. Census, 2017). Information was collected at the Census Block Group, the smallest geographical unit for which the bureau publishes sample data.

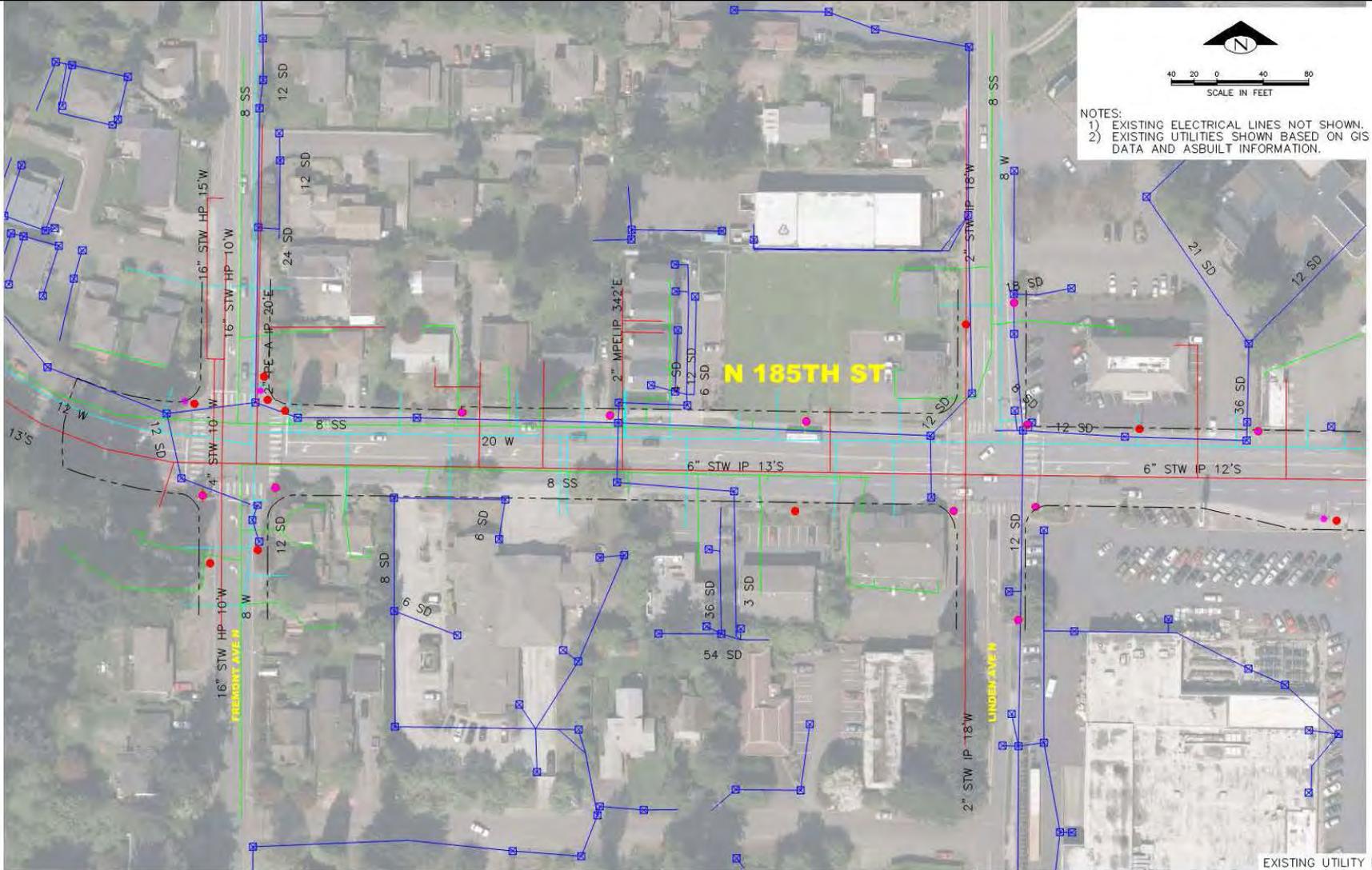
Data was collected for the area within 0.25 mile of the study corridor. Within 0.25 mile there are 11 Census Block Groups. The table to the left provides the demographics of the Census Blocks that are within or bisected by 0.25 mile of the study corridor (Shoreline data is provided as a reference). As shown in the table, populations within the study area are similar to Shoreline. The main differences between the study area and the City of Shoreline is the increased limited-English proficiency (LEP) population and households with no vehicle. LEP populations are those individuals who do not speak English as their primary language and who have a limited ability to read, speak, write, or understand English. Within the study area the majority of the LEP populations speak Asian languages and Spanish.

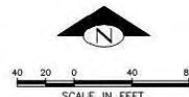
CULTURAL RESOURCES

Based on a search of the Washington Information System for Architectural and Archaeological Records Data (WISSAARD), there are no historic structures listed on the National Register of Historic Places (NRHP). Inventories have been conducted at a number of properties, but none of the properties were determined eligible for the NRHP. A number of single-family residences in the study area were constructed prior to 1970. The archaeological resources predictive model on WISSAARD indicates the study area is considered between low to moderate risk for archaeological resources. Much of the study area has been disturbed as a result of residential and commercial development.

APPENDIX B. EXISTING UTILITY LAYOUT

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 NOTES:
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 2) EXISTING UTILITIES SHOWN BASED ON GIS DATA AND ASBUILT INFORMATION.

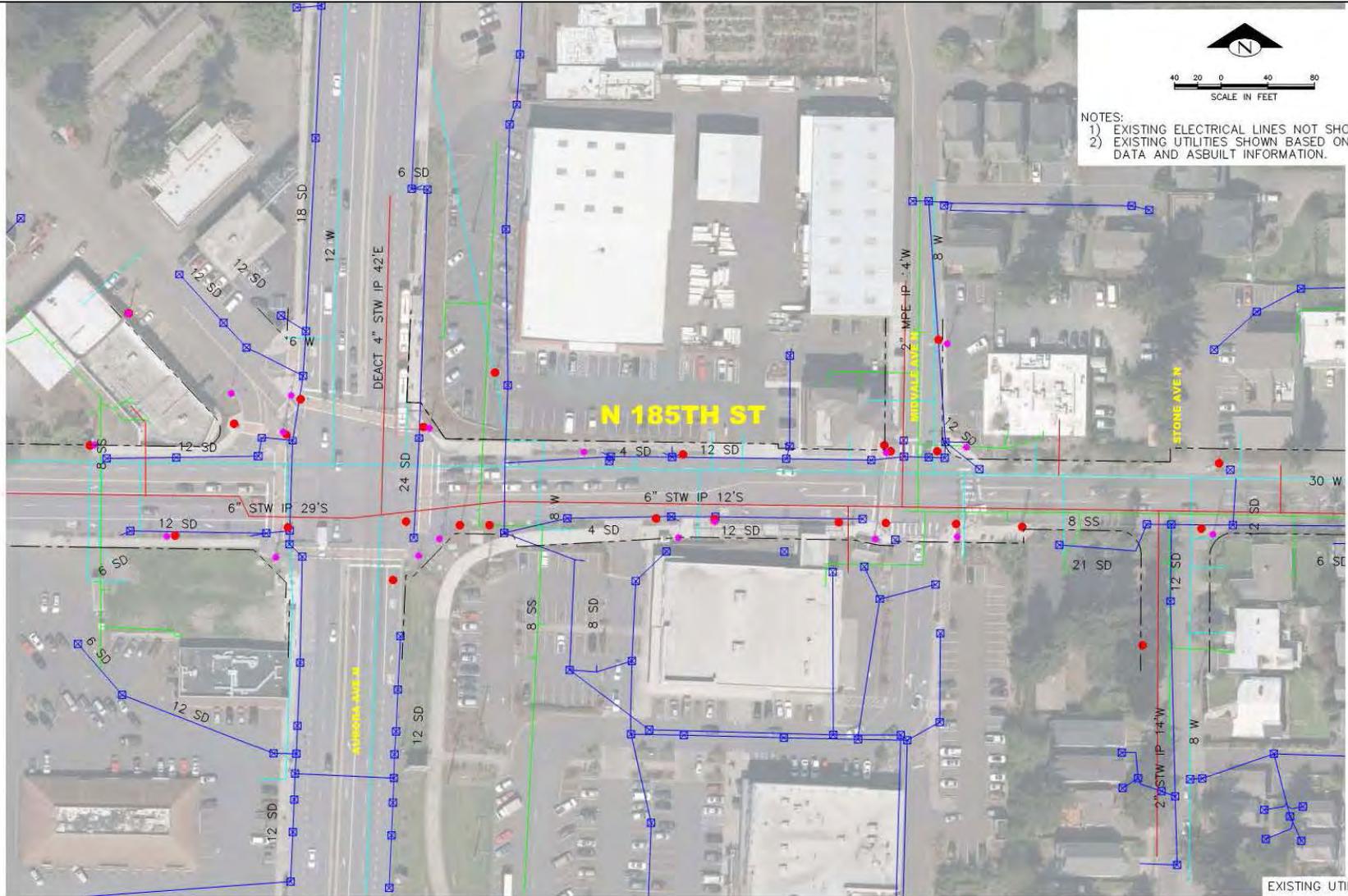
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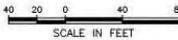
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	EXISTING UTILITY POLE
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EXISTING UTILITY PLAN

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	EXISTING STREET LIGHT

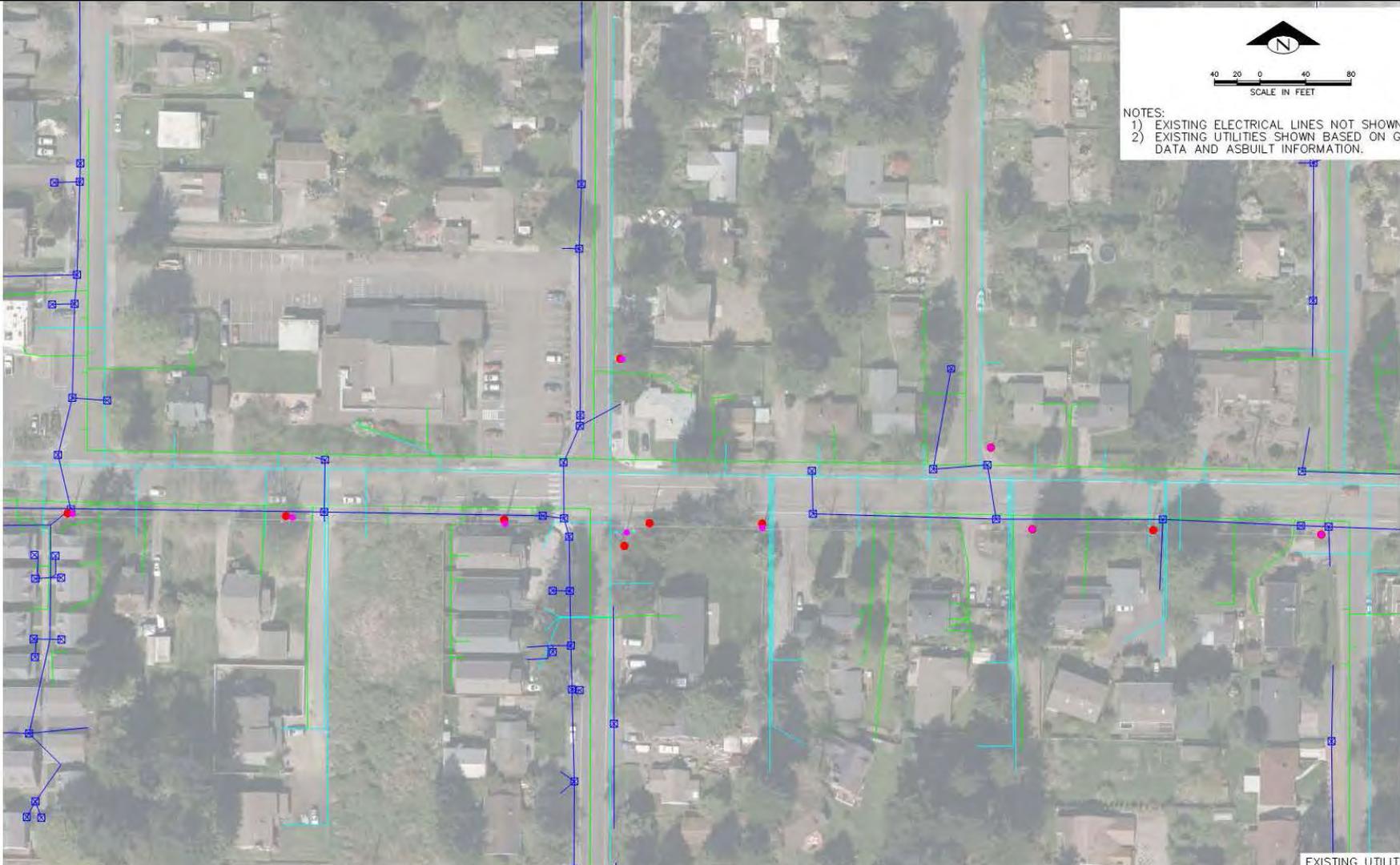
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185TH STREET
Multimodal Corridor Strategy

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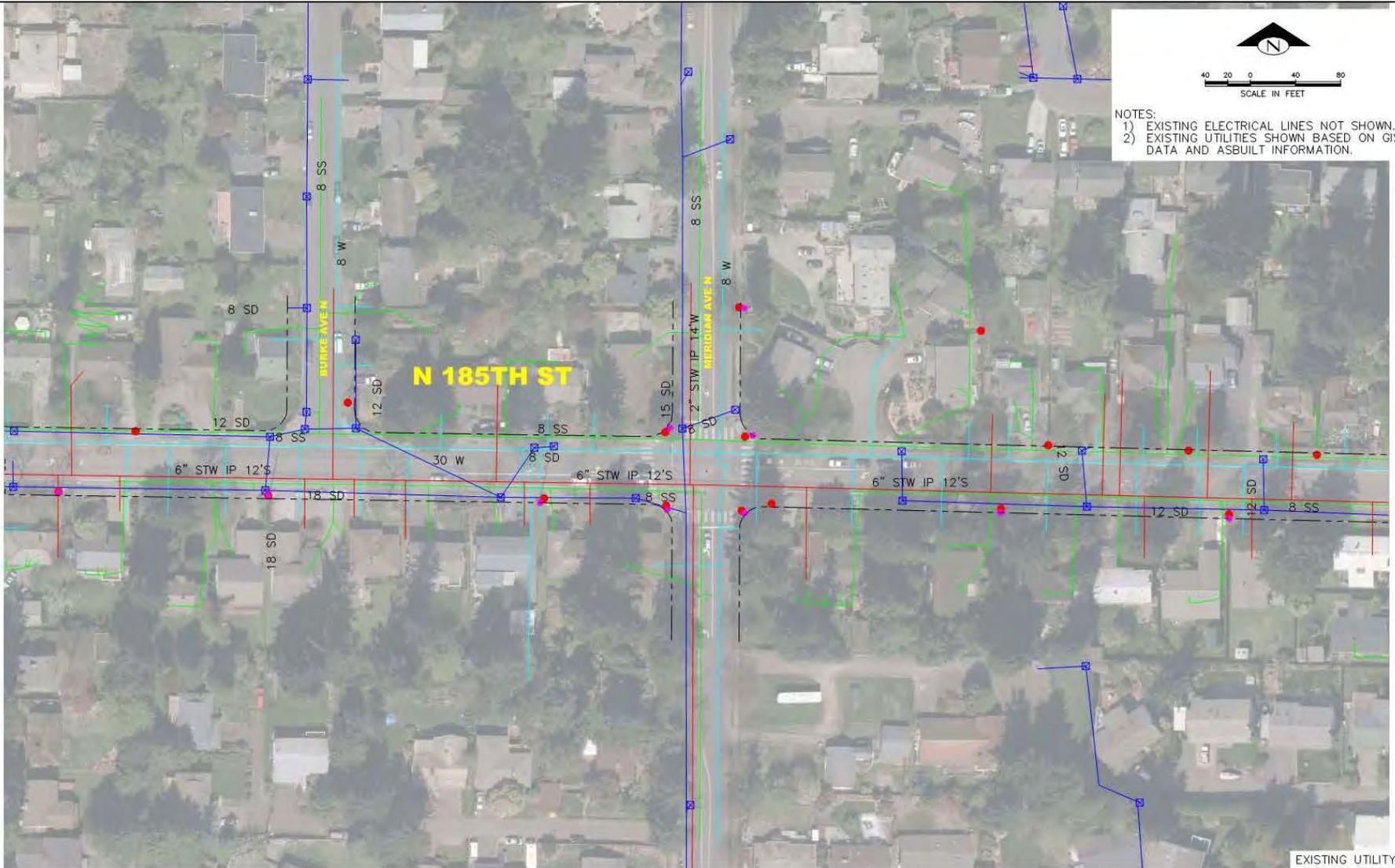
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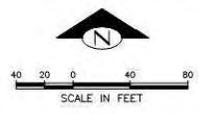
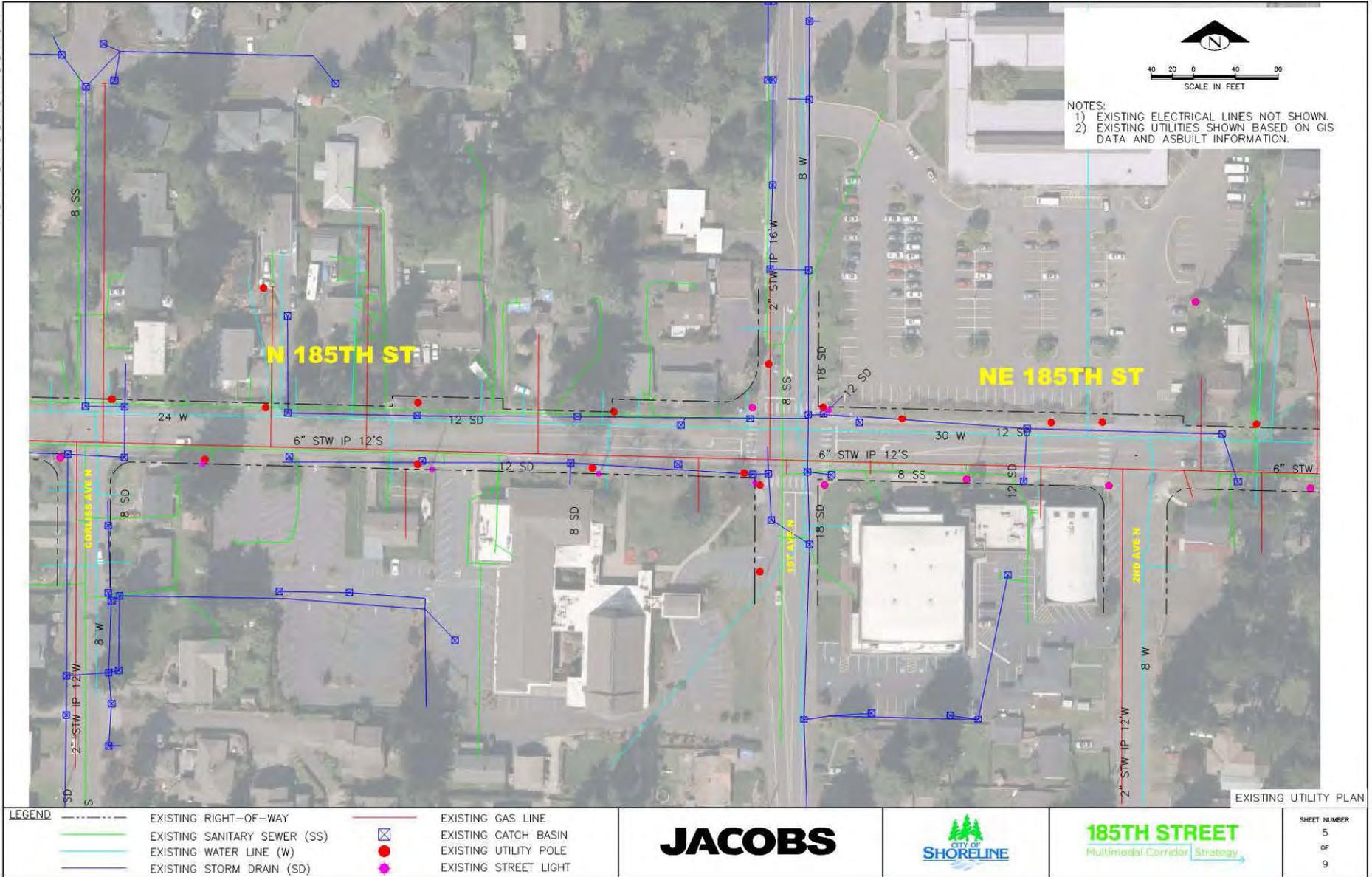
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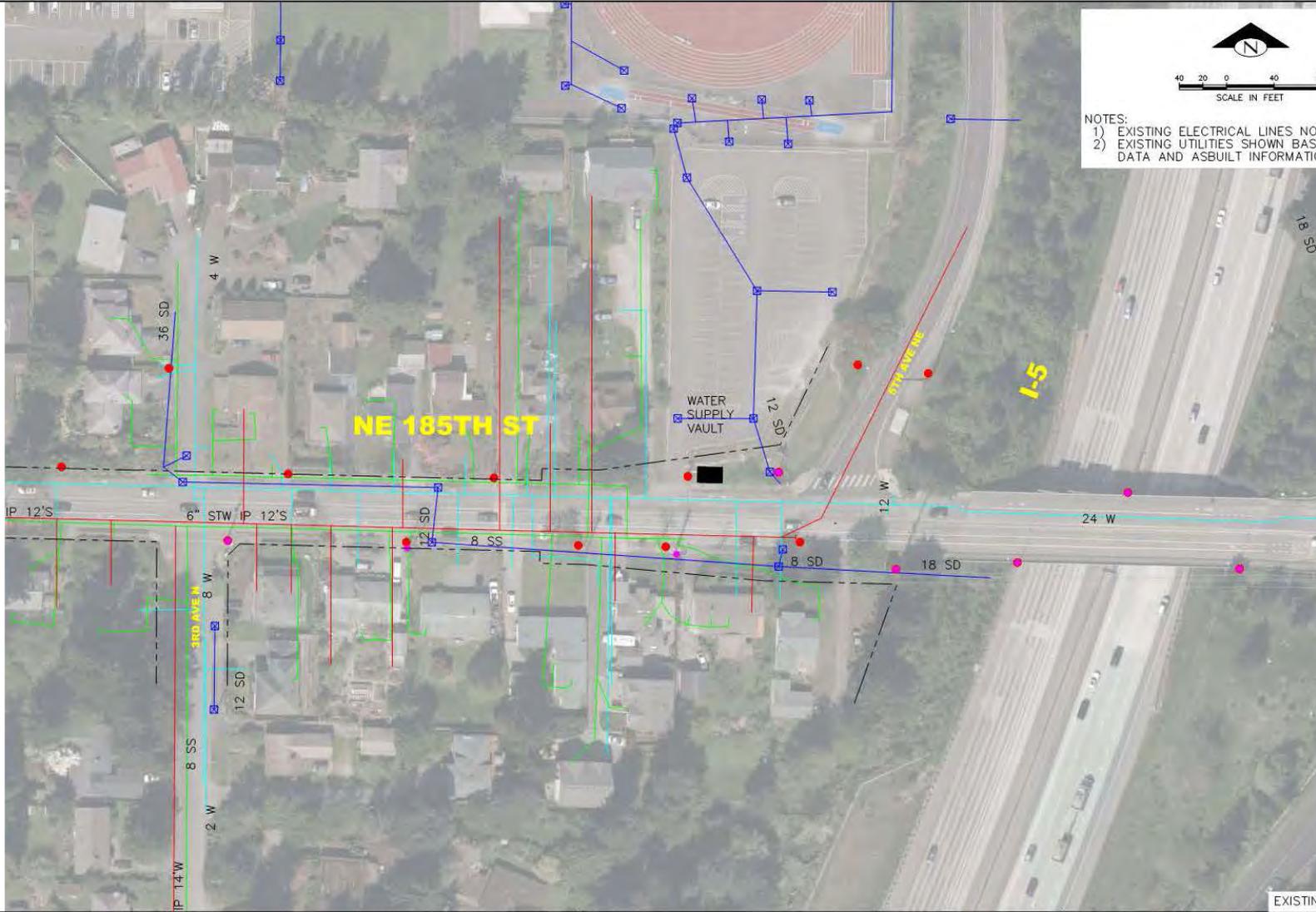
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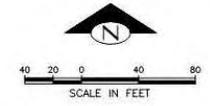


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--- (purple line)	EXISTING STORM DRAIN (SD)
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● (red dot)	EXISTING UTILITY POLE
● (purple dot)	EXISTING STREET LIGHT
--- (red line)	EXISTING GAS LINE

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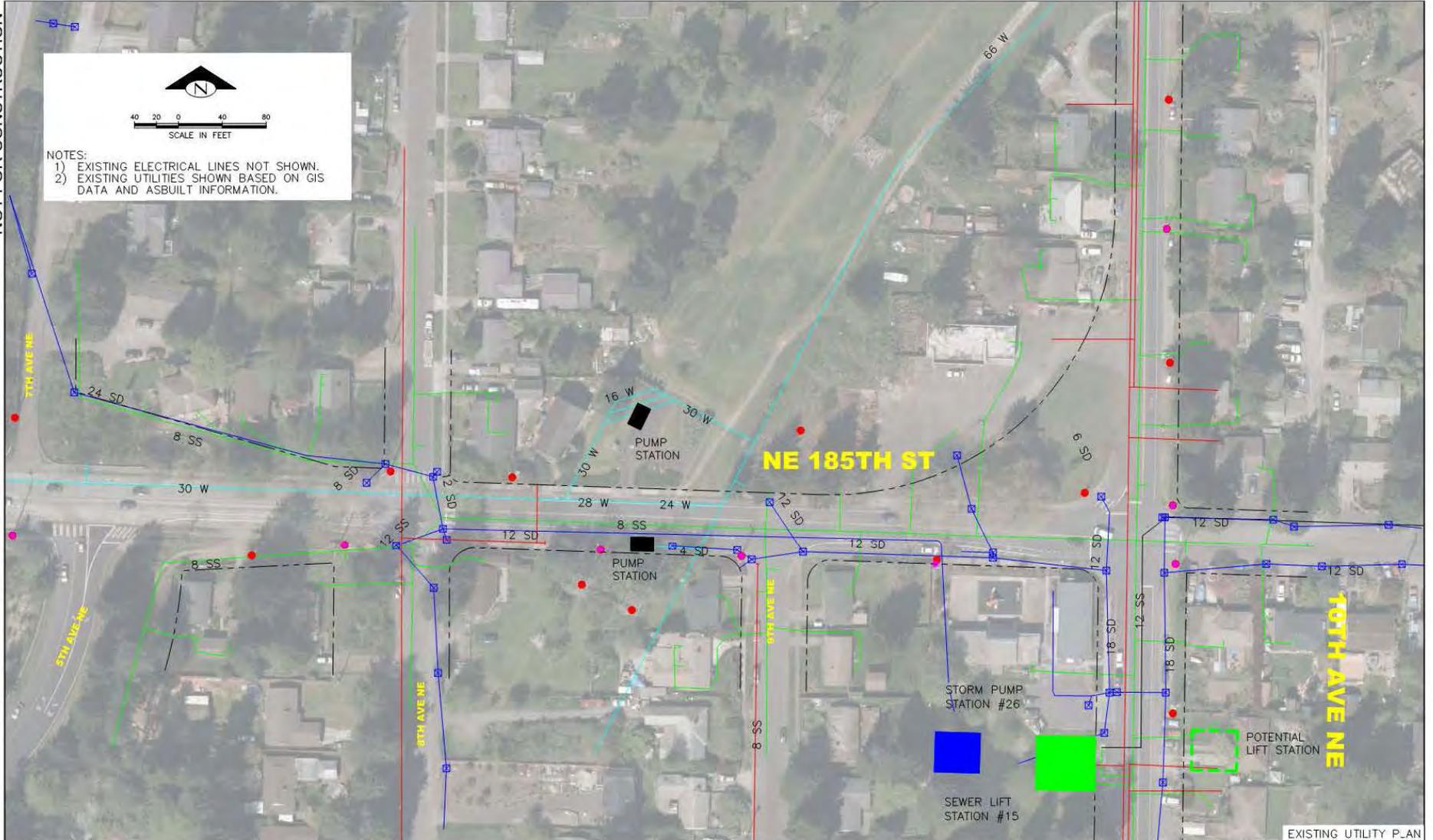


185TH STREET
 Multimodal Corridor Strategy

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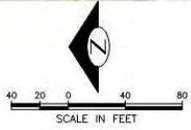


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	EXISTING WATER LINE (W)
	EXISTING STORM DRAIN (SD)
	EXISTING GAS LINE
	EXISTING CATCH BASIN
	EXISTING UTILITY POLE
	EXISTING STREET LIGHT



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EXISTING UTILITY PLAN

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	EXISTING SANITARY SEWER (SS)
	EXISTING WATER LINE (W)
	EXISTING STORM DRAIN (SD)
	EXISTING CATCH BASIN
	EXISTING UTILITY POLE
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185TH STREET
 Multimodal Corridor Strategy

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	EXISTING SANITARY SEWER (SS)
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	EXISTING UTILITY POLE
	EXISTING STREET LIGHT



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APPENDIX C. STORMWATER AND DRAINAGE

STORMWATER AND DRAINAGE DRAINAGE

The 185th Street Corridor study area spans Boeing, Thornton, and McAleer Creek basins, the three largest basins within the City of Shoreline. The 2018 City of Shoreline Surface Water Master Plan (SWMP) identifies the 185th Street Station Subarea, which overlaps the subject study corridor, as having some of the greatest potential for increased impervious surface in the City. The redevelopment of this corridor provides the City of Shoreline an opportunity to mitigate new and replaced hard surfaces associated with the Subarea Plan by implementing water quality treatment, flow control, and low-impact development (LID) best management practices (BMPs). The 2018 SWMP has identified improvement projects and provided prioritization of activities for the surface water utility projecting out 5 to 10 years. Additionally, the Subarea Plan contains goals for surface water management including LID that goes above and beyond Department of Ecology requirements.

BASIN INFORMATION

The 185th Street Corridor lies within three creek basins that drain to multiple waterbodies, including sensitive lakes, creeks, and wetlands, with unique surface water requirements. Subbasins within the corridor have been identified on **FIGURE D.1** based on downstream hydrologic conditions. The drainage system along NE 185th Street is separated from the sanitary sewer system and is primarily collected by catch basins along a curb and gutter and then piped downstream. The exception is 10th Avenue NE from NE 185th Street to 180th Street, where a ditch and culvert system collects stormwater. According to

Appendix E of the 2018 SWMP, the NE 185th Street corridor from Fremont Avenue to just east of I-5 consists of till soils, and no erosion or landslide-prone areas exist within the entire study area. U.S. Geological Survey maps (1985) confirm till soils west of I-5 and show that advance outwash comprises the corridor east of I-5. No infiltration investigation has been conducted at this time but will be necessary for the evaluation for LID BMP facilities. Of concern are infiltration rate, groundwater table elevation, and other geotechnical constraints pertinent to safety and feasibility of infiltration.

BOEING CREEK WATERSHED

The 185th Street Corridor is within the Boeing Creek Basin from Fremont Avenue to west of Aurora Ave. Runoff west of Linden Avenue is collected by a 12-inch diameter storm drain that flows west in North Richmond Beach Road and through the Pan Terra Detention Pond before continuing south. Runoff east of Linden Avenue and west of Aurora Avenue is collected by a 12-inch diameter storm drain flowing south in Linden Avenue, joining with the flows discharged from the Pan Terra Detention Pond before draining to the North Regional Retention/Detention Pond in Shoreview Park. The Boeing Creek Subbasin (Subbasin 1) is part of the North Tributary to Boeing Creek, and flows through one mapped wetland part of Hidden Lake before discharging to the Puget Sound.

MCALEER CREEK WATERSHED

The McAleer Creek Watershed encompasses the project in three distinct subbasins. Drainage east of Aurora Avenue and west of Stone Avenue N (Subbasin 2) discharges to Echo Lake, which contains a fringe wetland and is tributary to Lake Ballinger, a headwater of McAleer Creek. Drainage east of 3rd Avenue NE and west of I-5 (Subbasin 6) is conveyed via WSDOT ROW to McAleer Creek at a wetland identified as Wetland U, according to the 2004 City of Shoreline Stream and Wetland Inventory and Assessment. The area east of I-5 and west of 12th Avenue NE on NE 185th Street and 10th Avenue NE from 185th Street to north of 180th Street (Subbasin 7) is conveyed by a ditch and culvert system to existing pump station (PS-26) southeast of the NE 185th Street and 10th Avenue NE intersection. This pump station is noted in the 2018 SWMP to have known deficiency problems. This facility pumps stormwater to McAleer Creek via WSDOT I-5 ROW system. McAleer Creek ultimately drains to Lake Washington via Lakefront Park.

THORNTON CREEK WATERSHED

Stormwater runoff from Stone Avenue N to 3rd Avenue NE is conveyed south via a series of pipes within the Thornton Creek Basin. The pipes collecting runoff between Stone Avenue N and Meridian Avenue (subbasin 3) join with flows discharging from a wetland in Cromwell

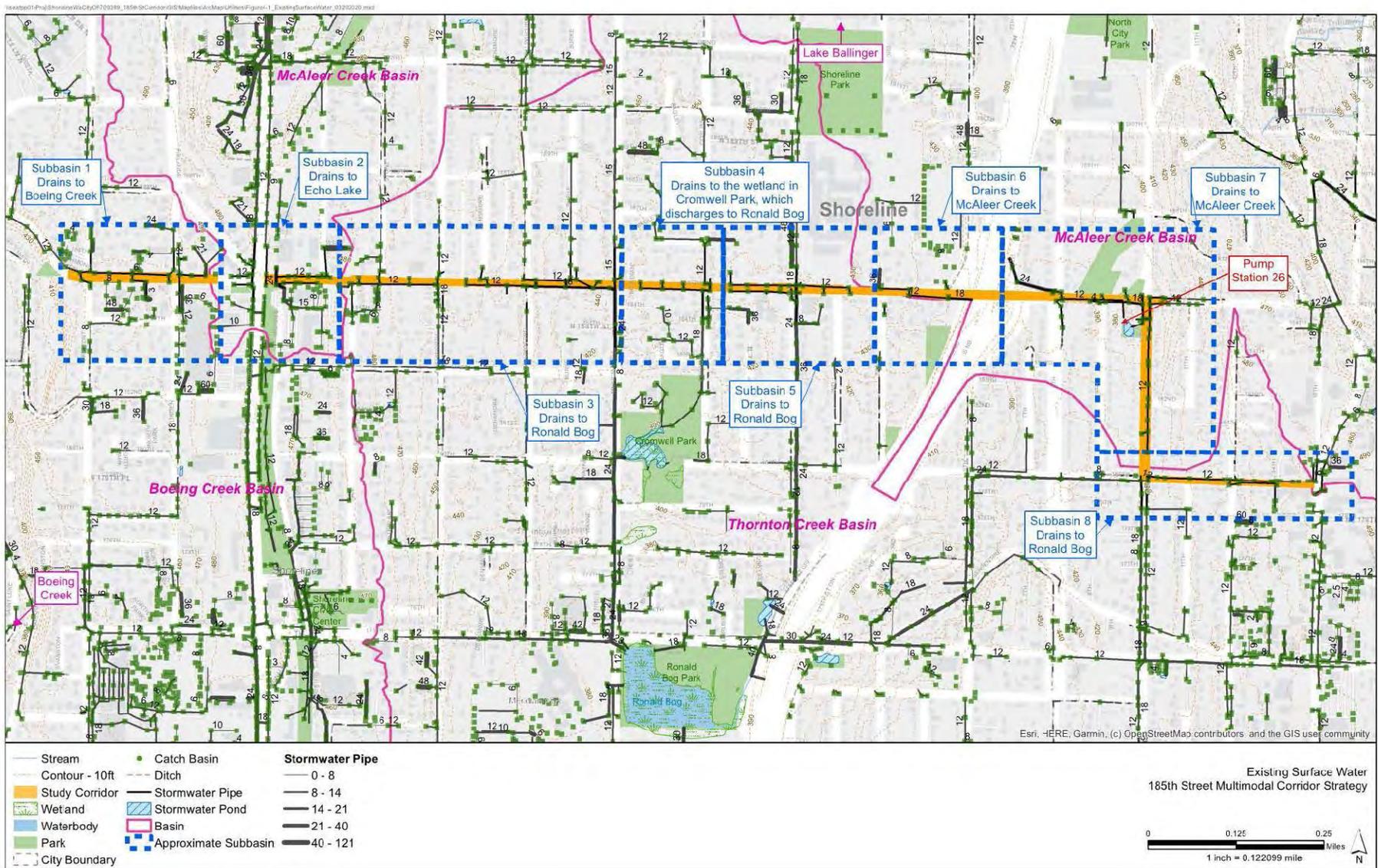


FIGURE D.1 Existing Surface Water Map

Park. The Cromwell Park wetland receives inflows from runoff conveyed from the area east of Meridian Avenue N to Corliss Avenue N (Subbasin 4) at a 24-inch diameter storm drain in Meridian Avenue before discharging to Ronald Bog. The area between Corliss Avenue N and 3rd Avenue NE (Subbasin 5) is conveyed down a 12-inch diameter Storm drain in 1st Avenue NE that enters Ronald Bog. Additionally, a segment of NE 180th Street within the project scope (Subbasin 8) also discharges to the Thornton Creek Basin through a ditch and culvert system via Serpentine PS, PS 25, and Ronald Bog. Flows from the three subbasins are piped through the City of Seattle's stormwater system into Thornton Creek, which discharges to Lake Washington.

DOWNSTREAM IMPACTS

The City of Shoreline is a National Pollutant Discharge Elimination System (NPDES) Phase II Municipal Stormwater Permit (Phase II Permit) holder and is required to meet compliance with total maximum daily loads (TMDLs) as established by the Department of Ecology. The City's municipal separate storm sewer system (MS4) is regulated by the Department of Ecology's Phase II Permit, which was applicable from 2013-2018 and extended for 1 year. Adoption of the New Phase II Stormwater Permit may result in additional requirements or guidance for wetland protection.

The Department of Ecology has established TMDLs to limit phosphorus discharge to Lake Ballinger, located in the cities of Edmonds and Mountlake Terrace. Lake Ballinger and the northern tributary to Lake Ballinger, Hall Creek, provide the headwaters for McAleer Creek. Additionally, McAleer Creek is the only waterbody within the City of Shoreline on the State 303(d) list, identified as a polluted waterbody for the following parameters: dissolved oxygen

(DO), water temperature, low B-IBI scores, and fecal coliform bacteria.

Reaches of Thornton Creek downstream of the project and within the City of Seattle are on the 303(d) list for bacteria, DO, and water temperature. TMDLs for downstream waterbodies located outside of the City of Shoreline limits may still trigger pollutant load reduction requirements for stormwater discharges within the City of Shoreline.

FIGURE D.2 shows the impacted creek basins within the 185th Street Corridor.

DOWNSTREAM IMPACTS	Boeing Creek Basin	Thornton Creek Basin	McAleer Creek Basin
WETLANDS	Yes – Hidden Lake wetland	Yes – Cromwell Park wetland and Ronald Bog	Yes – Wetland U and Wetland S
303(D) LISTED	No	Downstream within the City of Seattle (Thornton Creek, Lake Washington)	Yes – fecal coliform bacteria, DO, water temperature, and low B-IBI scores (McAleer Creek, Lake Washington)
TMDLS OR 'WATERS OF CONCERN'	No	No	Yes – Phosphorus (Lake Ballinger) and Bacteria, Level 2 (Echo Lake)
EXISTING FLOW CONTROL STRUCTURES	Yes – Pan Terra Detention Pond and North Regional Retention/Detention Pond	Yes – Cromwell Park wetland and Ronald Bog have incidental Flow Control	Yes – McAleer Creek at NE 196th St Pond at Pump Station 26 (currently provides incidental flow control; the City has a CIP for PS-26 and intends to design this site to provide formal flow control)

FIGURE D. 2 Creek Basins within NE 185th Street Corridor

STORMWATER REQUIREMENTS

Applicable codes, policies, and plans pertinent to managing drainage along the 185th Street Corridor include, but are not limited to, the Shoreline Municipal Code (SMC), Engineering Development Manual (EDM), and SWMP as well as WSDOT, King County, and Federal (Corps) requirements, depending on the extents of any future project(s). The City of Shoreline's 2021 EDM is expected to adopt the 2019 Department of Ecology Stormwater Management Manual for Western Washington (SWMMWW). Per the 2019 SWMMWW, the project shall comply with Minimum Requirements 1-4 and may be required to comply with Minimum Requirements 5-9, depending on the amount of new or replaced hard surface proposed. Minimum Requirement 5, Onsite Stormwater Management (OSM), includes LID and green stormwater infrastructure BMPs that infiltrate, attenuate, and/ or filter stormwater. This requirement is triggered if the project proposes 2,000 square

feet or more of new and replaced hard surface area. Because this is likely the case, and because LID has been identified as an important part of the 185th Street Station Subarea Plan, OSM BMPs are the preferred option to address Minimum Requirements #5-7. Additionally, projects along the corridor are encouraged to implement OSM BMPs to provide greater treatment than is required by the Minimum Requirements. This includes the utilization of amenity zone, sidewalk, and flex zone spaces to provide additional OSM BMPs and green stormwater infrastructure. Any

future projects on this corridor that can be defined as a roadway project, shall also comply with Minimum Requirements 6-9 if the project proposes 5,000 square feet or more of new hard surface. Per the SWMMWW, the project limits for roadway projects shall be defined by the length of the project and the width of the ROW.

Minimum Requirement 8, Wetland Protection, is applicable to subbasins which discharge to an existing wetland. No wetlands have been identified in the study corridor; however, most of the runoff from NE 185th Street discharges to a wetland at some point downstream of the study corridor. Therefore, the wetland hydrology requirement would be identified as a requirement across the 185th Street Corridor. According to the City of Shoreline Stream and Wetland Inventory and Assessment (2004), wetlands within the three basins are classified as palustrine, and are described in [FIGURE D.3](#).

SUBBASINS, PER FIGURE D-1	ROW CORRIDOR AREA	MINIMUM REQUIREMENTS	
	Area (acres)	#5 ON-SITE STORMWATER MANAGEMENT, #6 RUNOFF TREATMENT, #7 FLOW CONTROL	#8 WETLAND PROTECTION
Boeing (N 185th St from Fremont Ave N to the half-block west of Aurora Ave N)	1.8		1.5-acre forested scrub-shrub and emergent wetland in Hidden lake
McAleer, Echo (N 185th St from the half-block west of Aurora Ave N to Stone Ave N)	2.3		0.2 acre of palustrine wetland hydraulically connected to Echo Lake
Thornton (N 185th St from Stone Ave N to Meridian Ave N)	4.4		1-acre Ronald Bog (wetland)
Thornton (Cromwell) (N 185th St from Meridian Ave N to Corliss Ave N)	1.6	OSM BMPs are preferred to meet Minimum Requirements #5, #6, and #7. If OSM BMPs alone cannot meet Minimum Requirements #6 and #7, additional water quality and flow control BMPs may be required.	Forested, scrub- shrub wetland in Cromwell Park, which drains to Ronald Bog
Thornton (N 185th St from Corliss Ave N to 1st Ave NE; NE 185th St from 1st Ave NE to 3rd Ave)	3.2		1-acre Ronald Bog (wetland)
McAleer (NE 185th St from 3rd Ave NE to I-5)	2.6		1+ acre of forested scrub/shrub wetland: Wetland U, McAleer Creek Reach 1
McAleer (NE 185th St from I-5 to 10th Ave NE; 10th Ave NE from NE 185th St to NE 180th St)	4.3		Not Applicable
Thornton (NE 180th St from 10th Ave NE to 15th Ave N)	2.0		1-acre Ronald Bog (wetland)

FIGURE D. 3 Subbasin Minimum Requirements per the 2014 Ecology SWMMWW

APPENDIX D. EXISTING AND FUTURE PROJECTED TRAFFIC OPERATIONS

185th Street Multimodal Corridor Strategy

JACOBS

Existing and Future Projected Traffic Operations

Version 2

March 15, 2020

City of Shoreline, Washington



185th Street Multimodal Corridor Strategy

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Acronyms and Abbreviations

EIS	<i>Lynnwood Link Extension Final Environmental Impact Statement</i>
HCM	<i>Highway Capacity Manual</i>
I-5	Interstate 5
LOS	level of service
N	north
N/A	not applicable
NE	northeast
V/C	volume-to-capacity (ratio)
vph	vehicles per hour

This report documents the traffic operations analysis performed by Jacobs Engineering Group Inc. on behalf of the City of Shoreline, Washington, for the proposed 185th Street Multimodal Corridor Strategy. This report focuses on existing and future projected traffic operations along the 185th Street study corridor.

1. Existing Traffic Operations

The 185th Street study corridor provides access to numerous community-gathering places and neighborhood destinations. It is a regional route that provides access for vehicles and nonmotorized modes across Interstate 5 (I-5). This section describes the existing traffic operations along the study corridor, which serves as the study area.

1.1 Roadway Characteristics

Within the study area, North/Northeast (N/NE) 185th Street varies between a two-lane roadway and a five-lane roadway with a variety of pedestrian and bicycle amenities. 10th Avenue NE and NE 180th Street are two-lane roadways. An illustration of the existing channelization along N/NE 185th Street, 10th Avenue NE, and NE 180th Street at key intersections is shown on Figure 1-1. Roadway cross sections are shown on Figure 1-2.

N/NE 185th Street has a posted speed limit of 30 miles per hour through the study corridor. On 15th Avenue NE and on N 185th Street west of Fremont Avenue N, the posted speed limit is 35 miles per hour. On 10th Avenue NE, the posted speed limit is 30 miles per hour. NE 180th Street has a posted speed limit of 25 miles per hour.

1.2 Traffic Volumes and Level of Service

1.2.1 Average Daily Traffic Volumes

Average daily traffic volumes on N/NE 185th Street range from approximately 14,000 to 15,000 vehicles per day, in both directions of travel (combined), on either side of Aurora Avenue. Volumes along N/NE 185th Street are highest near Aurora Avenue because the highest concentration of businesses/retail are located here, and because Aurora Avenue provides a regional connection to and from residential areas along the corridor. Daily traffic volumes drop east of Aurora Avenue as the corridor transitions to primarily residential. Average daily traffic volumes along the corridor between Meridian Avenue N and 1st Avenue NE are approximately 11,000 vehicles per day, while traffic closer to 10th Avenue NE drops to approximately 8,000 vehicles per day.

Average daily traffic volumes on 10th Avenue NE and NE 180th Street are lower than 7,000 vehicles per day. Figure 1-3 depicts the existing average daily traffic volumes within the study area.

1.2.2 Intersection Turning Movement Counts

Within the N/NE 185th Street traffic study area, 7 signalized intersections and 11 stop-controlled intersections are analyzed. Intersection turning movement volumes were collected from a variety of sources including the City of Shoreline Citywide Synchro model, the *185th Street Station Subarea Plan* (City of Shoreline 2015), the 2012 Sound Transit Lynnwood Link Extension Project, and count data from nearby developments. Traffic data older than 2018 were grown to existing year 2018 analysis volumes by applying growth rates consistent with the City of Shoreline *2011 Transportation Master Plan* (City of Shoreline 2013).

Figures 1-4 and 1-5 show the intersection turning movement volumes for study intersections for the existing conditions analysis (2018).

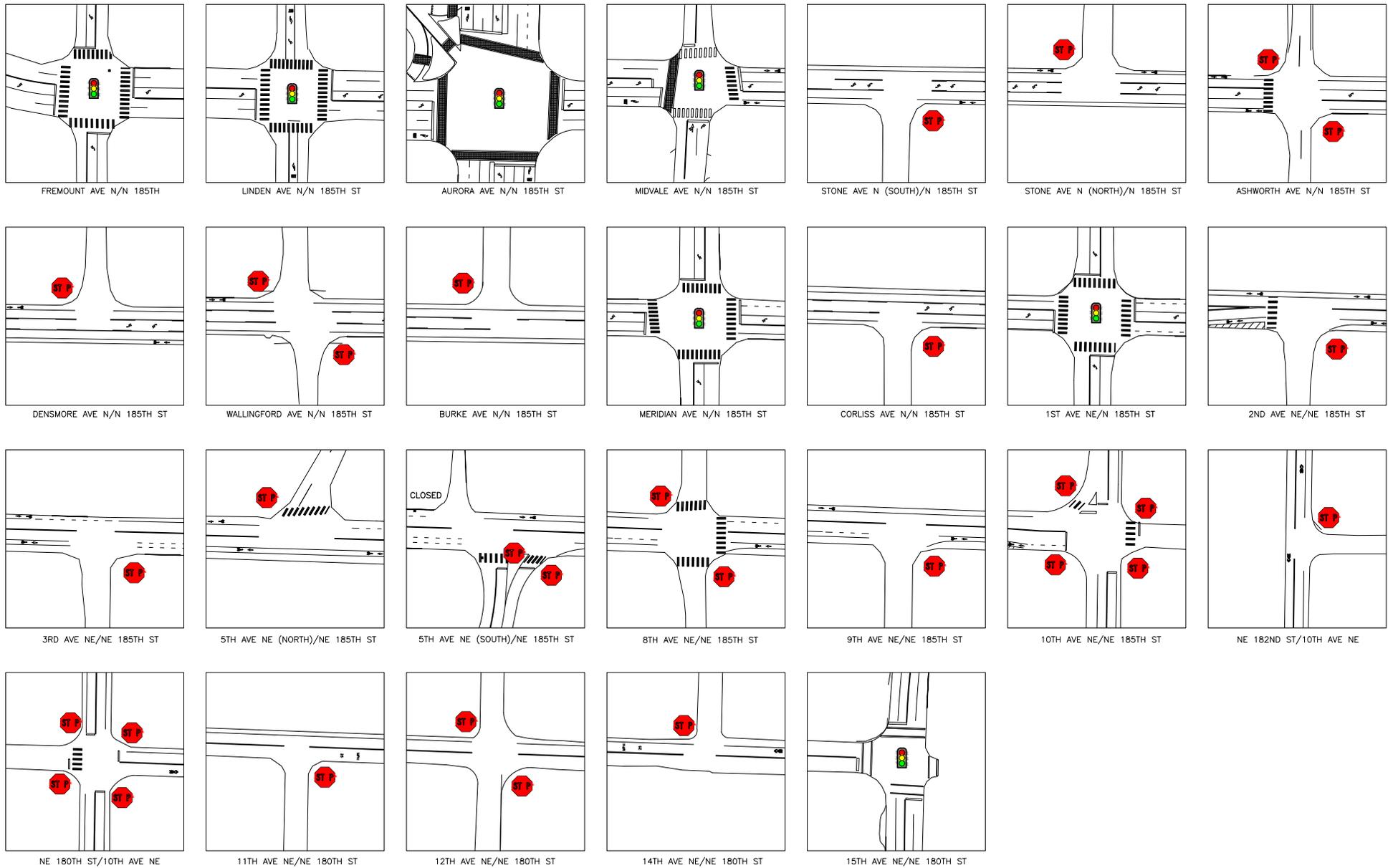
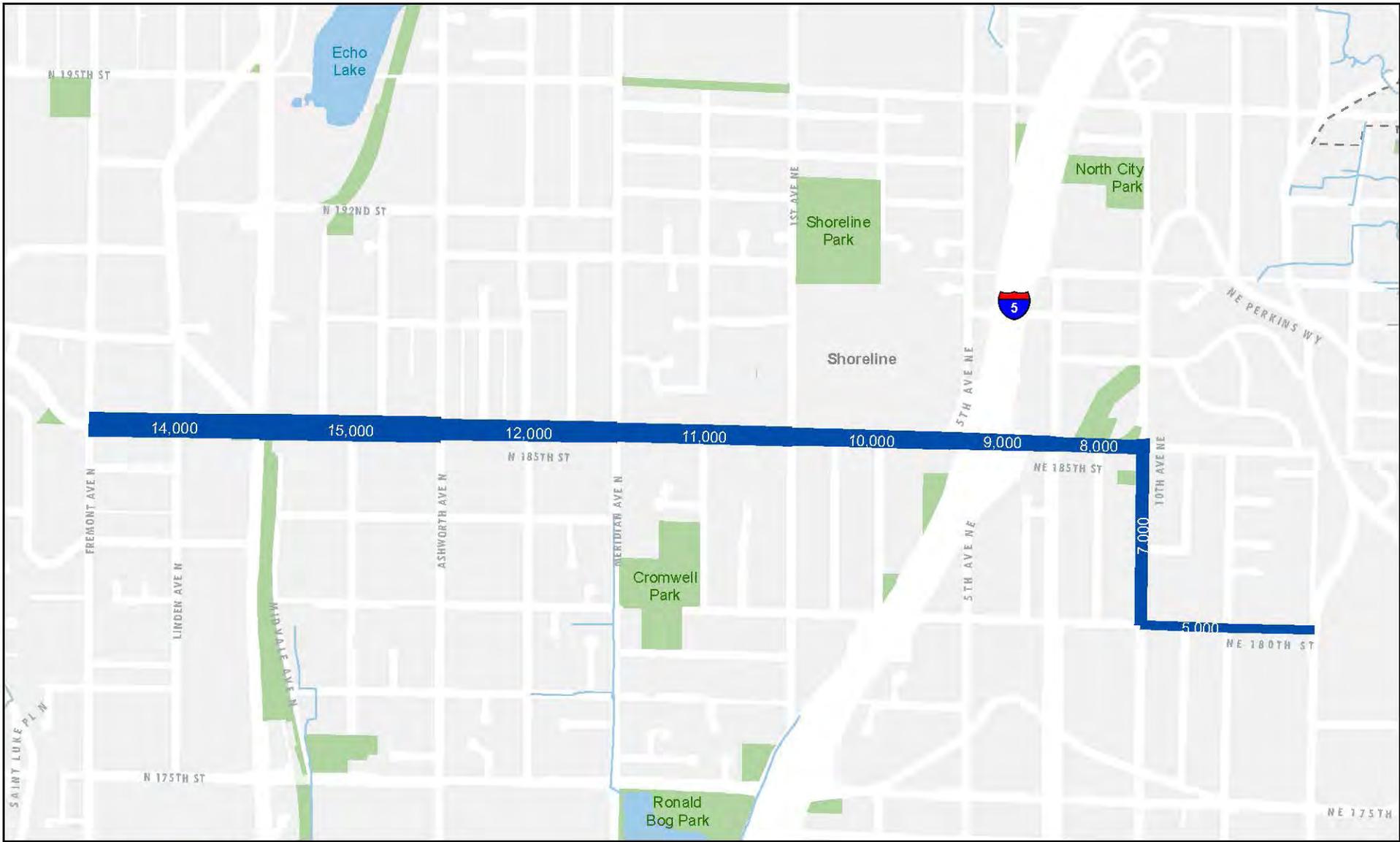


Figure 1-1
EXISTING CHANNELIZATION
185TH ST MCS



■ Waterbody ■ Park ■ 2018 Average Daily Traffic Volumes (Per Segment Location)

Figure 1-3
 2018 Average Traffic Volumes
 Traffic Report
 185th Street Multimodal Corridor Strategy

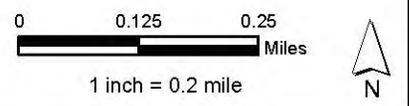


Figure 1-4. Existing (2018) Signalized Intersection PM Peak Hour Turning Movement Volumes

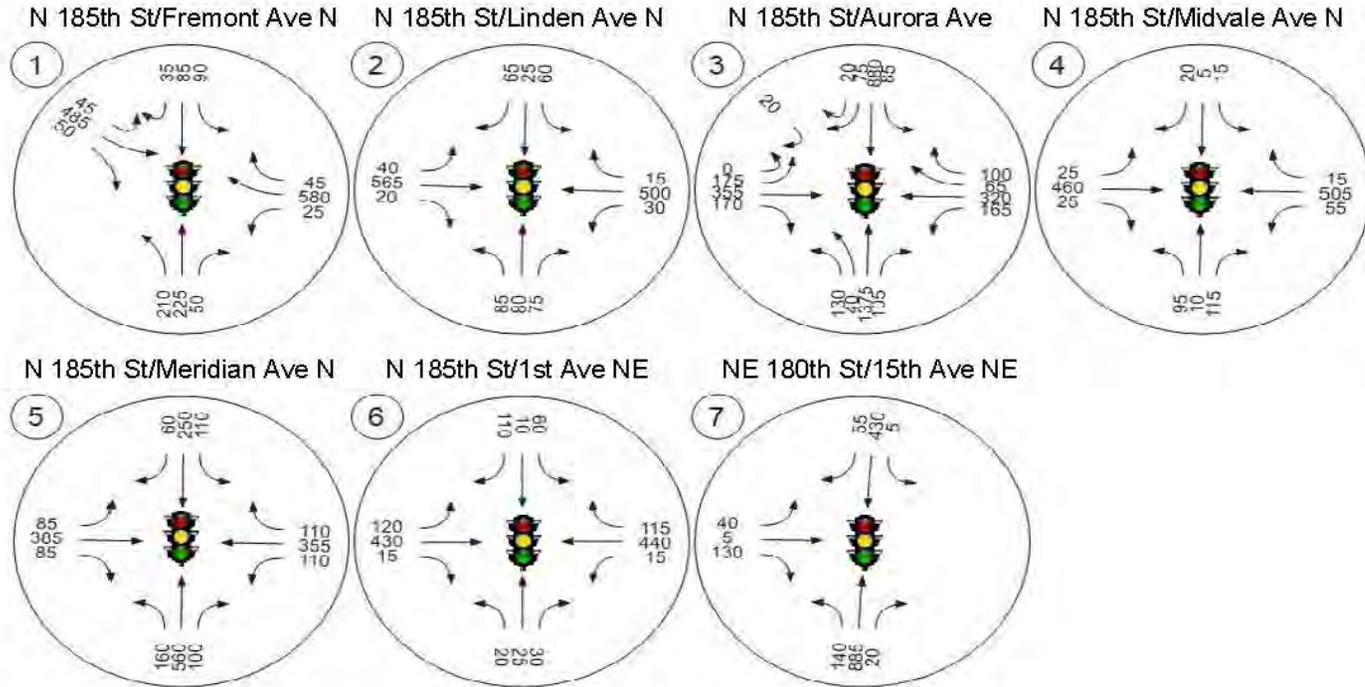
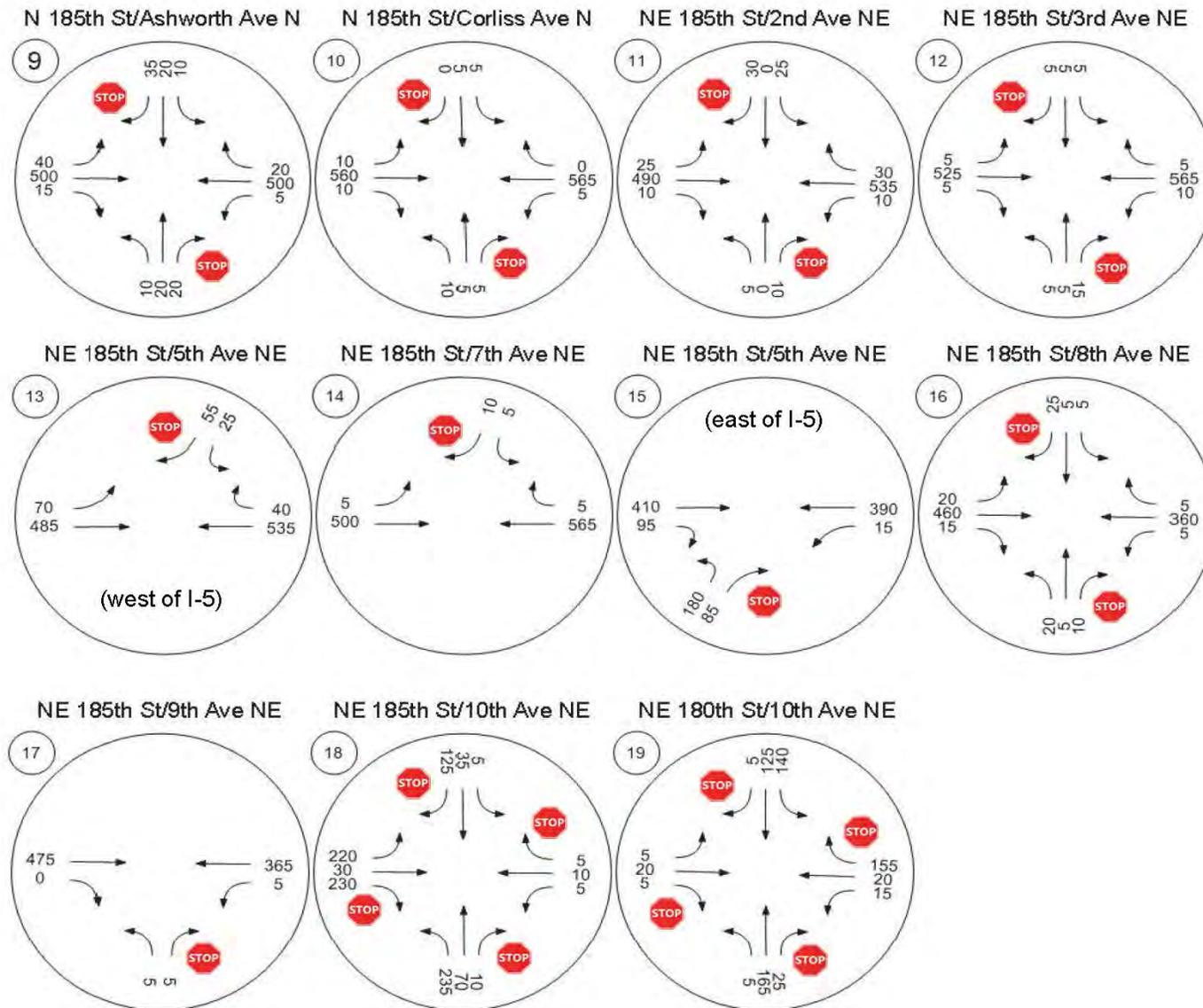


Figure 1-5. Existing (2018) Unsignalized Intersection PM Peak Hour Turning Movement Volumes



1.2.3 Intersection Operations Analysis

Level of service (LOS) is used as a measure of effectiveness for intersection analysis. LOS is reported from A to F where LOS A represents free-flow conditions with little or no delay and LOS F represents over-capacity conditions. The LOS at signalized intersections is defined by the average vehicle delay for the entire intersection. For unsignalized intersections, the LOS is defined based on the average vehicle delay for the stop-controlled movements and is reported for the worst stop-controlled approach to the intersection. Tables 1-1 and 1-2 describe LOS criteria for each type of intersection in more detail.

Table 1-1. Level of Service Criteria for Signalized Intersections

Level of Service	Average Control Delay (seconds/vehicle)	General Description
A	≤10	Free Flow
B	>10-20	Stable Flow (slight delays)
C	>20-35	Stable flow (acceptable delays)
D	>35-55	Approaching unstable flow (tolerable delay, occasionally wait through more than one signal cycle before proceeding)
E	>55-80	Unstable flow (intolerable delay)
F	>80	Forced flow (congested and queues fail to clear)

Source: Transportation Research Board 2010.

Table 1-2. Level of Service Criteria for Unsignalized Intersections

Level of Service	Average Control Delay (seconds/vehicle)
A	≤10
B	>10-15
C	>15-25
D	>25-35
E	>35-50
F	>50

Source: Transportation Research Board 2010.

For the study intersection operations analysis, Synchro (version 10) was used. The LOS for each intersection is calculated as a function of the average vehicle control delay (in seconds) and reported in accordance with the *Highway Capacity Manual (HCM) 2010* (Transportation Research Board 2010).

Chapter 20.60, Subchapter 4 of the Shoreline Municipal Code (SMC) describes standards to ensure adequate street and transportation system performance. Per section 20.60.140 of the SMC:

The level of service standard that the City has selected as the basis for measuring concurrency is as follows:

1. *LOS D at signalized intersections on arterial streets and at unsignalized intersecting arterials; and*
2. *A volume-to-capacity (V/C) ratio of 0.90 or lower for principal and minor arterials.*

The V/C ratio on one leg of an intersection may exceed 0.90 when the intersection operates at LOS D or better.

The City has selected these minimum standards to ensure that the transportation system is adequate to serve existing and future development. All study intersections are on principal, minor, or collector arterials. Aurora Avenue is a state route that serves as a principal arterial in Shoreline; therefore, the Washington State Department of Transportation LOS standard for the intersection of Aurora Avenue and N 185th Street is defined as LOS D.

Table 1-3 summarizes the PM peak hour LOS and delay for signalized intersections along the study corridor. Under existing conditions, none of the signalized intersections in the study area operate worse than LOS D. Table 1-4 summarizes the LOS and associated delay for unsignalized intersections. Except for NE 185th Street/5th Avenue NE (east of I-5), all unsignalized intersections in the study corridor currently operate within the City's adopted LOS standard of LOS D. The intersection of NE 185th Street/5th Avenue NE (east of I-5) is expected to be improved as part of the Sound Transit 185th Street Station implementation. Figure 1-6 illustrates the existing (2018) intersection PM peak hour LOS.

Table 1-3. Existing (2018) PM Peak Hour LOS and Delay (Signalized Intersections)

INT ID	Intersection	LOS	Delay (in Seconds)
1	N 185th St/Fremont Ave N	B	16.4
2	N 185th St/Linden Ave N	A	9.2
3	N 185th St/Aurora Ave (State Route 99) ^a	D	54.7
4	N 185th St/Midvale Ave N	A	7.8
5	N 185th St/Meridian Ave N	D	37.1
6	N 185th St/1st Ave NE	A	6.4
7	NE 180th St/15th Ave NE ^b	A	8.7

^a Reported from HCM 2000. HCM 2010 methodology does not support more than four approaches.

^b Reported from HCM 2000. HCM 2010 methodology does not support permissive and protected left-turn phasing from a shared lane.

Table 1-4. Existing (2018) PM Peak Hour LOS and Delay (Unsignalized Intersections)

INT ID	Intersection	LOS	Delay (in Seconds)
9	N 185th St/Ashworth Ave N	D	27.3
10	N 185th St/Corliss Ave N	D	30.7
11	NE 185th St/2nd Ave NE	D	25.0
12	NE 185th St/3rd Ave NE	C	24.3
13	NE 185th St/5th Ave NE (west of I-5)	C	21.7
14	NE 185th St/7th Ave NE	C	16.1
15	NE 185th St/5th Ave NE (east of I-5)	F	84.4
16	NE 185th St/8th Ave NE	C	20.8
17	NE 185th St/9th Ave NE	B	14.5
18	NE 185th St/10th Ave NE	C	18.7
19	NE 180th St/10th Ave NE	B	10.2

1.2.4 Roadway Segment Analysis

N/NE 185th Street within the study area is classified as a minor arterial by the City of Shoreline. Meridian Ave N and the portion of 5th Avenue NE south of NE 185th Street are also classified as minor arterials. Collector arterials include Fremont Ave N, Ashworth Ave N, 1st Ave NE and 5th Ave NE north of NE 185th Street, and 10th Ave NE.

For roadway segments, the City of Shoreline has adopted a volume-to-capacity (V/C) ratio method to measure performance. A V/C ratio describes the volume traveling on a segment of roadway compared to the capacity of that segment. Common factors that can influence the capacity of a roadway segment are the number and width of the travel lanes, the presence or lack of shoulders, number of traffic signals, and the density of access points. V/C ratios approaching 1.0 indicate the demand is getting closer to the capacity of the roadway, while a V/C ratio greater than 1.0 indicates heavy congestion.

Per section 20.60.140 of the SMC, the standard V/C ratio selected by the City is 0.90 or lower for principal and minor arterials. The average V/C ratio over each of the study area roadway segments will be compared to the 0.90 V/C standard. Table 1-5 shows the LOS criteria for the roadway congestion analysis.

Table 1-5 Level of Service Criteria for Roadway Congestion Analysis

Level of Service ID	Roadway Segment Volume-to-Capacity Ratio
A	< 0.60
B	0.60 - 0.70
C	0.70 - 0.80
D	0.80 - 0.90
E	0.90 - 1.0
F	> 1.0

Source: City of Shoreline 2013.

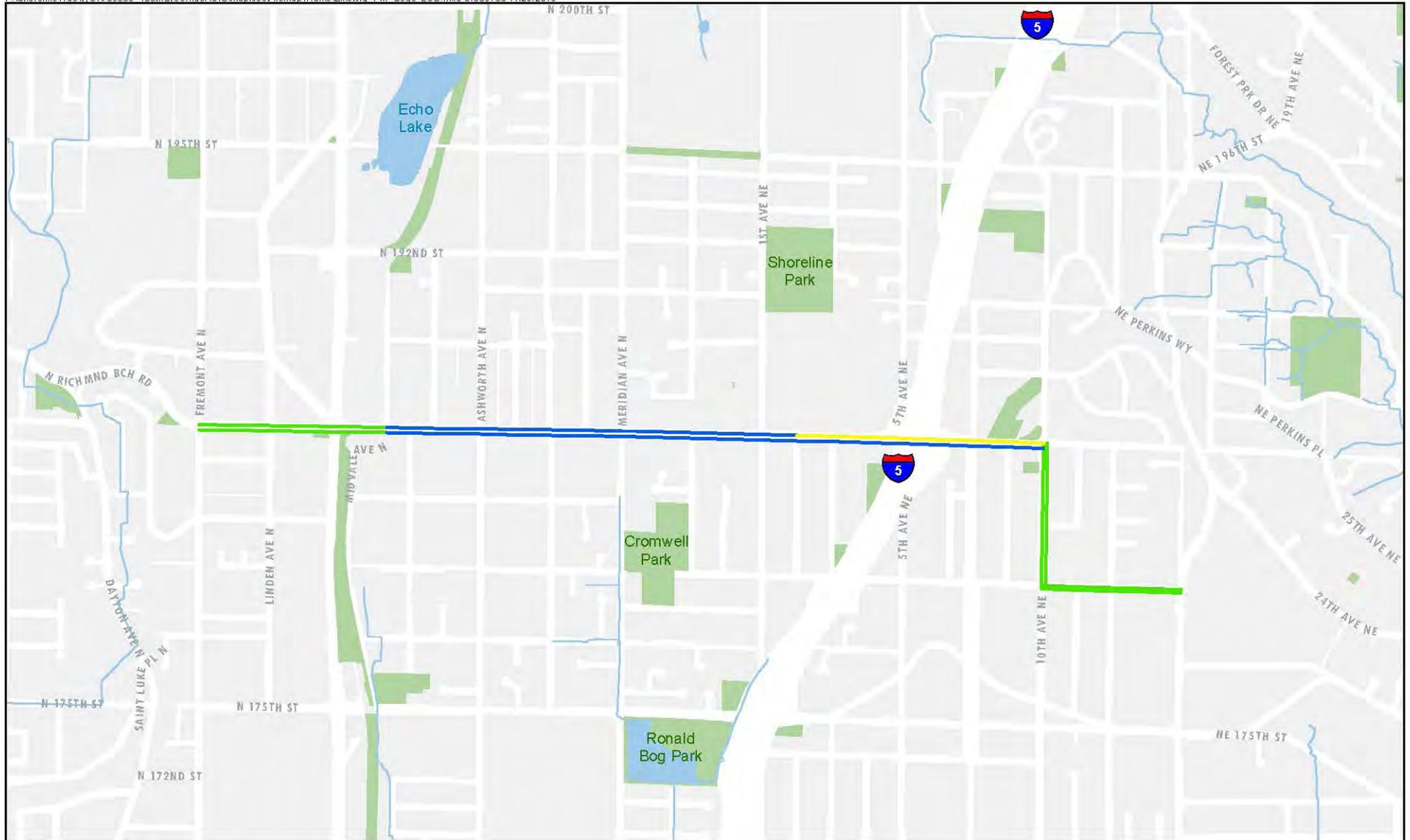
Throughout the N/NE 185th Street study corridor, three segments are defined based on the existing configuration along the corridor. Table 1-6 shows these segments and associated number of lanes and capacity in vehicles per hour (vph) along each direction. The capacity along the 185th Street corridor is 800 vph per lane; when a center two-way left-turn lane is present, the adjacent lane capacity is multiplied by 1.2. This capacity is obtained from the City of Shoreline and is consistent with the City’s forecast model capacity. The reported directional V/C ratio for each segment is the maximum V/C ratio among the subsegments. While the V/C ratios might vary slightly due to different volumes on individual blocks along the corridor, the reported V/C ratio represents the most conservative portion of the subsegments. The capacity along 10th Avenue NE and along NE 180th Street is 600 vph per lane. Table 1-6 and Figure 1-7 show the existing PM peak hour roadway segment analysis results.

Currently, traffic volumes along the corridor are lower than the provided capacity and the likelihood of congestion is low. The highest V/C ratio estimated for the corridor is 0.74 (westbound from 10th Avenue NE to 2nd Avenue NE), which is less than the standard V/C ratio (0.90) on principal and minor arterials within the City of Shoreline.

Table 1-6. Existing PM Peak Hour Roadway Congestion LOS

ID	Segment	Number of Lanes (per Direction)	Eastbound			Westbound		
			Capacity	V/C	LOS	Capacity	V/C	LOS
			(vph)			(vph)		
1	N 185th St - Fremont Ave N to Midvale Ave N	2.2 ^a	1760	0.40	A	1760	0.37	A
2	N 185th St - Midvale Ave N to 2nd Ave NE	1.2 ^a	960	0.62	B	960	0.60	B
3	NE 185th St – 2nd Ave NE to 10th Ave NE	1	800	0.69	B	800	0.74	C
4	10th Ave NE – NE 185th St to NE 180th St	1	600	0.45	A	600	0.54	A
5	NE 180th St – 10th Ave NE to 15th Ave NE	1	600	0.31	A	600	0.33	A

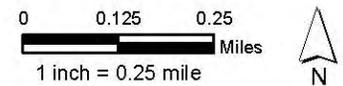
^a Center two-way left-turn lane increases adjacent lane capacity by 20 percent per direction.



LOS (Level of Service)

- LOS A
 - LOS B
 - LOS C
 - LOS D
 - LOS E
 - LOS F
- Waterbody
 - Park

Figure 1-7
 2018 Roadway Segments Level of Service
 (Congestion Level-V/C Ratio)
 185th Street Multimodal Corridor Strategy



1.2.5 Existing Pedestrian and Bicycle Volumes

Relatively few pedestrian and bicycle trips occur along the study corridor. They tend to be residents walking to business districts, for recreation or to access transit stops along the corridor.

The American Community Survey provides a snapshot of the percentage of men and women over the age of 16 who commute by transit, by bicycle or by foot per year in the City of Shoreline. The data from the last six years (Table 1-7) help to evaluate trends. For example, on average, more men are bicycling, and more women are walking. Taking a closer look at the trends in the number of people taking transit, walking, or bicycling can help to identify some of the reasons why people choose or do not choose to take transit, walk, or bicycle. Safe, convenient, and comfortable infrastructure is certainly part of the equation.

Table 1-7. Annual Percentage of Shoreline Residents Commuting by Transit, Foot, and Bicycle

Year	Transit			Walking			Bicycling		
	Total	Men	Women	Total	Men	Women	Total	Men	Women
2017	12.9%	10.2%	15.9%	1.7%	2.7%	0.7%	0.5%	0.7%	0.2%
2016	12.7%	13.7%	11.7%	2.0%	1.9%	2.1%	1.1%	1.1%	1.1%
2015	13.6%	10.7%	16.9%	2.1%	1.7%	2.4%	1.0%	1.6%	0.2%
2014	13.7%	14.0%	13.4%	1.8%	1.0%	2.6%	2.8%	3.3%	2.2%
2013	17.4%	17.9%	16.9%	3.1%	1.7%	4.5%	0.5%	0.9%	0.0%
2012	12.1%	11.2%	13.5%	2.1%	2.2%	1.9%	0.8%	1.1%	0.6%
Average	13.7%	13.0%	14.7%	2.1%	1.9%	2.4%	1.1%	1.5%	0.7%

Source: U.S. Census Bureau 2017.

1.3 Safety Analysis

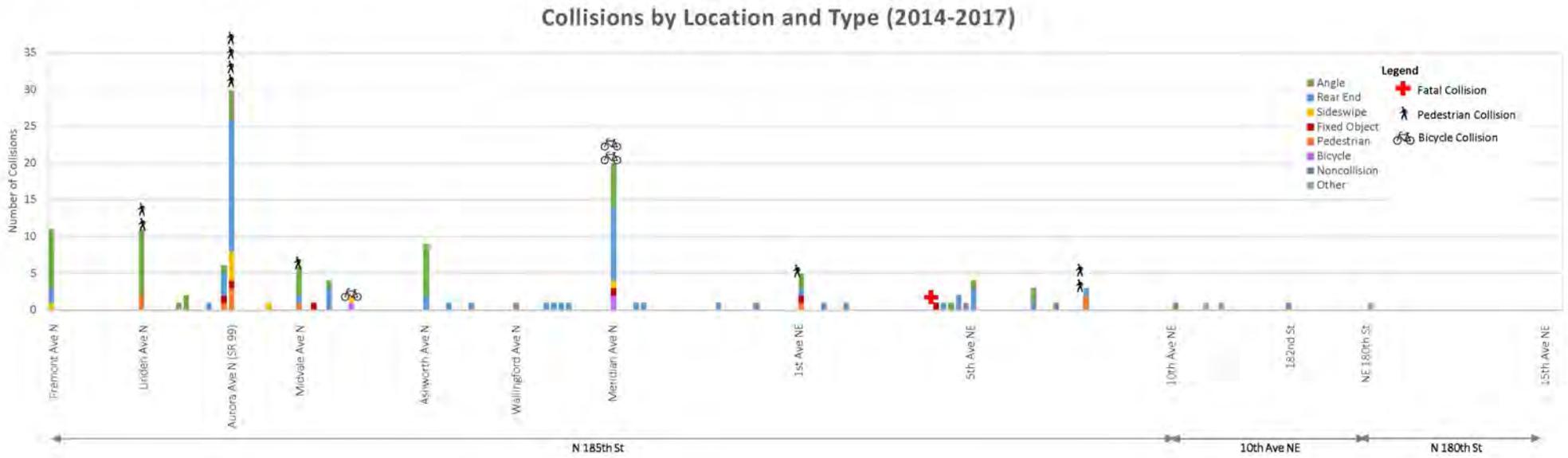
1.3.1 Summary

Collision data for the 185th Street study corridor were obtained from the Washington State Department of Transportation for years 2014 through 2017. During this period, a total of 158 collisions occurred along the study corridor including one fatal collision and one serious injury collision. The single fatal collision occurred in 2014 and involved a single truck colliding with a mailbox. A summary of collisions by severity is provided in Table 1-8. Figure 1-8 summarizes the collisions by type and location.

Table 1-8. Summary of Collisions by Severity 2014-2017

Crash Severity	Number of Crashes
Fatality	1
Serious Injury	1
Evident Injury	13
Possible Injury	41
Property Damage Only	100
Unknown	2
<i>Total</i>	<i>158</i>

Figure 1-8. Collisions by Location and Type (2014-2017)



1.3.2 Pedestrian and Bicycle Collision Data

1.3.2.1 Pedestrian Collisions

A total of 13 reported pedestrian collisions occurred along the study corridor between 2010 and 2017. Each of the 13 crashes resulted in some injury to the pedestrian with one collision resulting in suspected serious injury (see Table 1-9). Six of the collisions involved cars and seven involved larger vehicles. The majority of the collisions occurred at intersections during daylight hours under clear or cloudy skies. Most of the collisions occurred when motor vehicles made turning movements and failed to yield to pedestrians. Four crashes resulted from left-turning vehicles at Linden Avenue N and N 185th Street failing to yield to pedestrians in the crosswalk. Two collisions occurred at 8th Avenue NE and NE 185th Street.

Table 1-9. Pedestrian Collisions by Severity 2010-2017

Crash Severity	Number of Crashes
Died in Hospital (Fatal)	0
Serious Injury	1
Minor Injury	6
Possible Injury	6
Property Damage Only	0
Unknown	0
<i>Total</i>	<i>13</i>

1.3.2.2 Bicycle Collisions

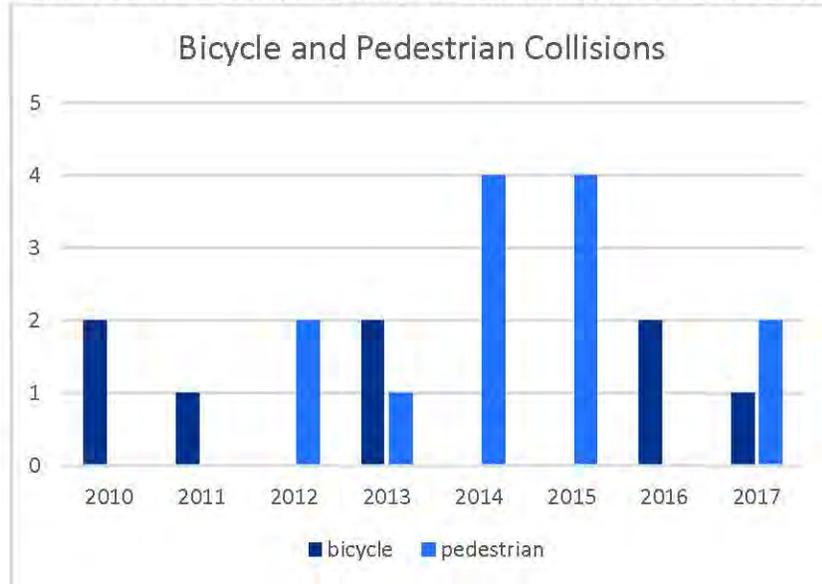
A total of eight reported bicycle collisions occurred on the study corridor between 2010 and 2017. All of the reported collisions resulted in some degree of injury to the bicyclist (see Table 1-10). One collision resulted in possible serious injury. Of the collisions that occurred at the same intersections, three occurred at the intersection of N 185th Street and Meridian Avenue N, and two occurred at the intersection of N 185th Street and Midvale Avenue N. All collisions except one occurred at intersections during daylight hours under clear or partially cloudy skies. There was no pattern to motor vehicle or bicycle maneuvers that resulted in collisions.

Table 1-10. Bicycle Collisions by Severity 2010-2017

Crash Severity	Number of Crashes
Died in Hospital (Fatal)	0
Serious Injury	1
Minor Injury	6
Possible Injury	1
Property Damage Only	0
Unknown	0
<i>Total</i>	<i>8</i>

Table 1-11 summarizes the number of pedestrian collisions and bicycle collisions by year.

Table 1-11. Pedestrian and Bicycle Collisions by Year 2010-2017



2. Future Traffic Operations

2.1 Future Projections

The *Lynnwood Link Extension Final Environmental Impact Statement* (EIS) (Sound Transit 2015) and the *185th Street Station Subarea Plan* (City of Shoreline 2015) both developed future traffic volume forecasts for the year 2035 for a portion of the study corridor (mainly east of Meridian Avenue N). Each document reported different areawide background traffic growth rates based on the planned light rail station. Both plans were reviewed with the City of Shoreline concurrence, and the future 2035 traffic volume forecasts from the *185th Street Station Subarea Plan* were selected for analysis. These volumes were chosen because they better reflect the anticipated growth along N/NE 185th Street within the study area.

East of Meridian Avenue N, the forecasted 2035 turning movement volumes are estimated by growing the existing year 2018 analysis volumes with regional growth rates consistent with the *City of Shoreline 2011 Transportation Master Plan* (City of Shoreline 2013). Lane geometry and traffic control types are assumed to be the same as existing conditions, except as stated below.

Adjustments to vehicle trips were made to account for the final location of the light rail station. Previously, parking for the station was on the west side of I-5, as assumed in the *185th Street Station Subarea Plan*, but parking has been moved to the east side of I-5 in Sound Transit plans. Vehicle trips were shifted from the intersection of NE 185th Street and 5th Avenue NE to the intersection of NE 185th Street and 8th Avenue NE to align with and reflect turning movements to and from the station and lots as they are now located.

Future corridor lane geometry and traffic control types between 1st Avenue NE and 10th Avenue NE are consistent with the Sound Transit Lynnwood Link Extension EIS assumptions. The skewed southbound and northbound approaches at 7th Avenue NE and 5th Avenue NE (west of I-5) are assumed to be combined into a single signalized intersection, and the stop-controlled intersection at NE 185th Street/8th Avenue NE is assumed to be a roundabout in the future. A center two-way left-turn lane is added along NE 185th Street between 2nd Ave NE and 8th Avenue NE (west of I-5).

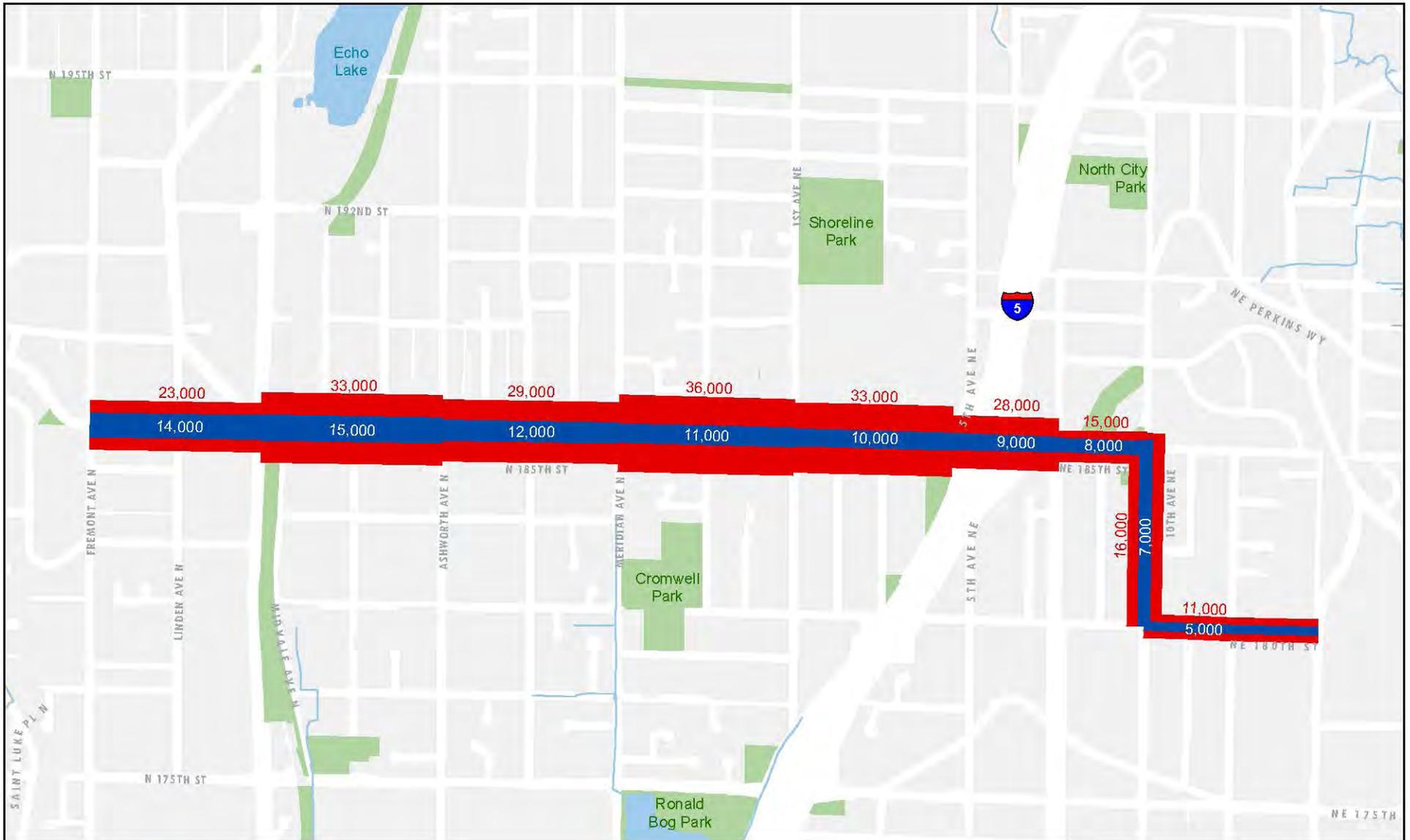
Proposed projects defined in the *City of Shoreline 2011 Transportation Master Plan* (City of Shoreline 2013) located in the study area are also included in the 2035 future analysis.

2.2 Average Daily Traffic Volumes

Average daily traffic volumes for 2035 are estimated based on PM peak hour volume growth rates applied to the 2018 average daily traffic volumes. The PM peak hour growth rates include both projected background historical growth and increased trip generation from anticipated changes in land use and density along the corridor. The resulting 2035 average daily traffic is shown in comparison to the existing average daily volumes in Figure 2-1.

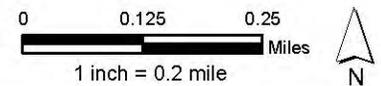
Average 2035 daily traffic volumes along N/NE 185th Street range from approximately 15,000 to 36,000 vehicles in both directions of travel (combined). Daily volumes presented in this report represent a high conservative level of traffic because they were estimated using growth rates consistent with the PM peak hour. The PM peak hour growth rates include increases in trips associated with higher land use density, but also includes increases in commuter trips to and from the station during the afternoon peak, which may not grow by as much in the off-peak or midday time periods.

Eastbound and westbound daily traffic volumes are expected to be highest near Aurora Avenue, between Meridian Avenue N and 1st Avenue NE, and station approach. The average daily traffic on N 185th Street between Meridian Avenue N and 1st Avenue NE is expected to be 36,000 vehicles in 2035, compared to 11,000 vehicles currently. Volumes remain relatively high until east of 8th Avenue NE. Compared to



- Waterbody
- Park
- 2018 Average Daily Traffic Volumes (Per Segment Location)
- 2035 Average Daily Traffic Volumes (Per Segment Location)

Figure 2-1
2018 and 2035 Average Traffic Volumes
Traffic Report
185th Street Multimodal Corridor Strategy



existing volumes, percentage of growth is highest between Meridian Avenue N and 8th Avenue NE, which is expected due to the future light rail station and denser residential development. Lower growth rates are seen east of 8th Avenue NE and west of Aurora Avenue.

2.3 Intersection Operations Analysis

Forecasted intersection turning movement volumes were used to evaluate traffic operations for the year 2035 PM peak hour with current roadway conditions. Between 1st Avenue NE and 10th Avenue NE, lane geometry, traffic control types, and signal timing plans for signalized intersections in 2035 reflect the Sound Transit Lynnwood Link Extension project (as these improvements are being constructed and will be operational by 2023/2024). Lane geometry along the remainder of the corridor is the same as existing and signal timing was optimized for the future condition.

Figure 2-2 and Figure 2-3 show the study intersection turning movement volumes for the future (2035) analysis in the PM peak hour.

The LOS and delay results from the existing and future analysis for signalized intersections are reported in Table 2-1. Many intersections located near the light rail station are expected to operate at LOS E or F in the future (which is worse than the City of Shoreline’s LOS threshold of LOS D). These results reflect considerable growth expected from anticipated changes in land use and density in the area and the associated changes in traffic patterns along the corridor. Although the signal timing plans for the signalized intersections are optimized, the results show that additional modifications to the traffic signal plans or lane geometry may be necessary to reduce vehicle traffic delays.

Table 2-1. Existing and Future PM Peak Hour LOS and Delay (Signalized Intersections)

INT ID	Intersection	Existing (2018)		Future (2035) ^c	
		LOS	Delay (seconds)	LOS	Delay (seconds)
1	N 185th St/Fremont Ave N	B	16.4	D	35.3
2	N 185th St/Linden Ave N	A	9.2	B	10.5
3	N 185th St/Aurora Ave (State Route 99) ^a	D	54.7	F	>80
4	N 185th St/Midvale Ave N	A	7.8	D	42.6
5	N 185th St/Meridian Ave N	D	37.1	F	>80
6	N 185th St/1st Ave NE	A	6.4	F	>80
15	NE 185th St/5th Ave NE/7th Ave NE	Unsignalized		F	>80
7	NE 180th St/15th Ave NE ^b	A	8.7	E	66.2

^a Reported from HCM 2000. HCM 2010 methodology does not support more than four approaches.

^b Reported from HCM 2000. HCM 2010 methodology does not support permissive and protected left-turn phasing from a shared lane.

^c Future condition assumes no-build scenario.

Note:

Shaded cells represent study intersections that are expected to operate at LOS E or F in the future.

Figure 2-2. Future (2035) Signalized Intersection PM Peak Hour Turning Movement Volumes

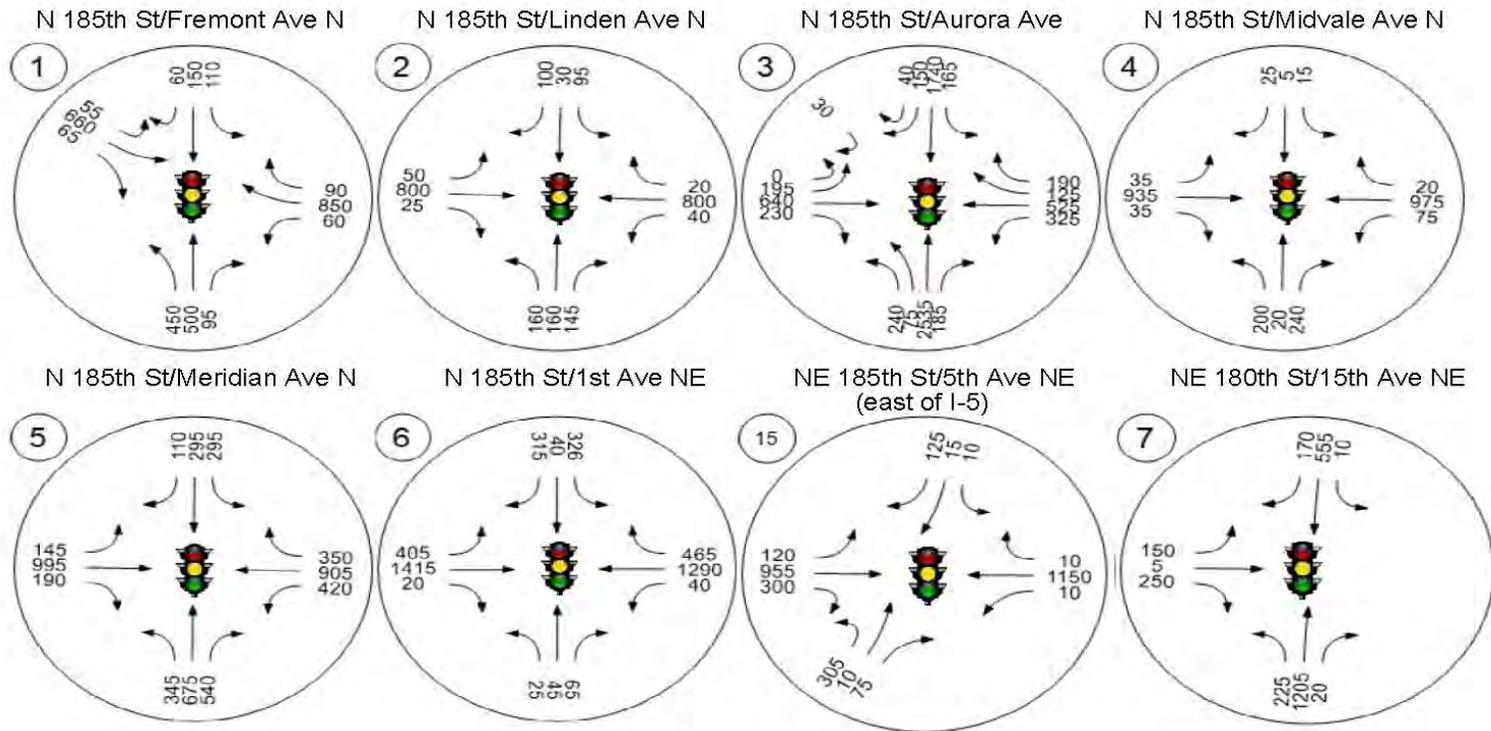
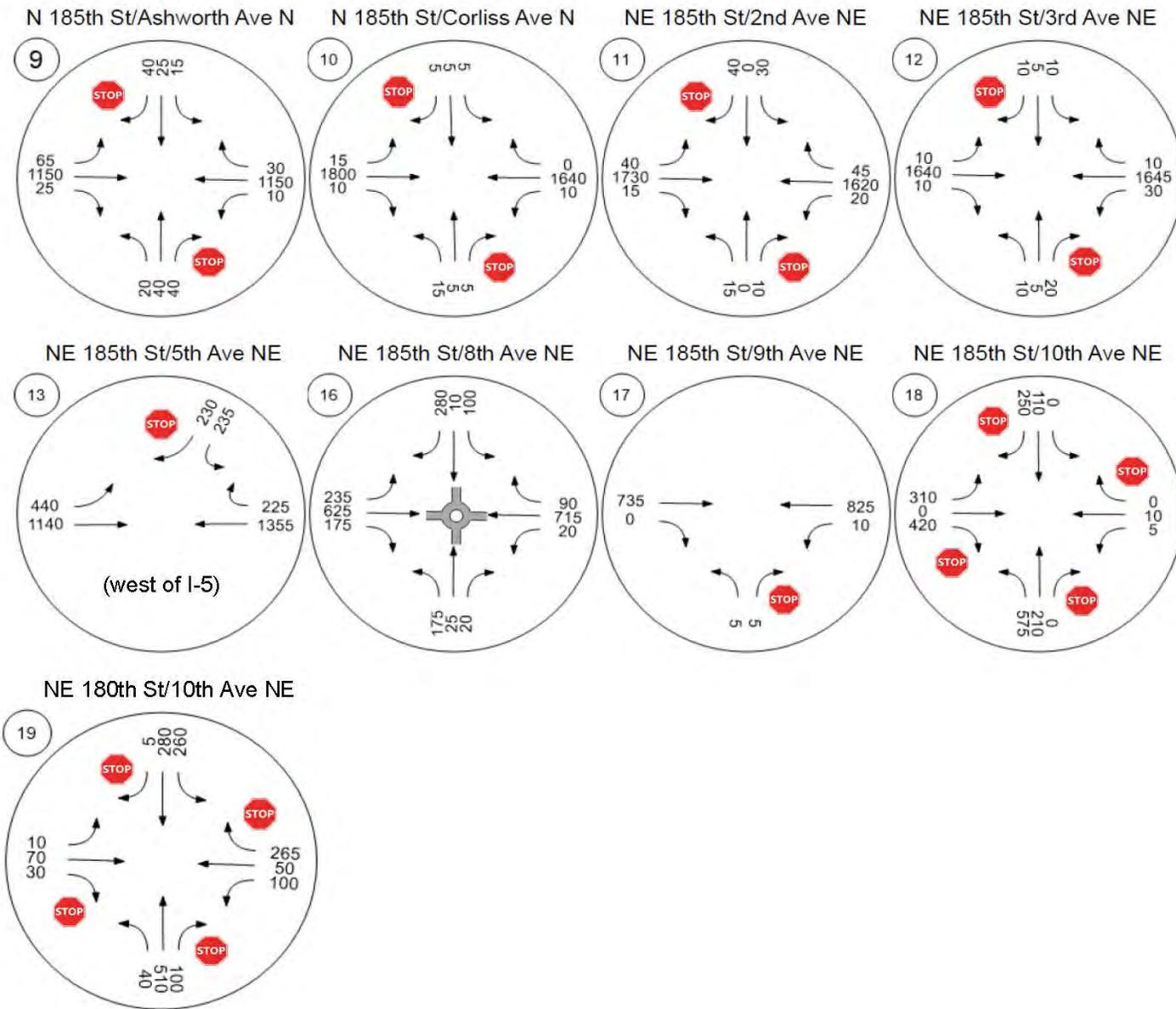


Figure 2-3. Future (2035) Unsignalized Intersection PM Peak Hour Turning Movement Volumes



For unsignalized intersections, the LOS and delay for 2035 are reported for the worst stop-controlled movement approaching the intersection. The results for unsignalized intersections are shown in Table 2-2. Figure 2-4 shows the future LOS at signalized and unsignalized intersections during the PM peak hour.

Except for the intersection at NE 185th Street/10th Avenue NE, all the stop-controlled intersections are expected to operate at LOS E or F. Poor operations are caused by growth in traffic volumes along the corridor that make it difficult for northbound/southbound traffic to find an acceptable gap to make turns. Access management or restriction (such as eliminating crossing or left-turn movements) could help to address poor operations and improve safety at certain intersections. In addition, signalization or roundabout installation may be appropriate mitigation strategies for some locations.

Table 2-2. Existing and Future PM Peak Hour LOS and Delay (Unsignalized Intersections)

INT ID	Intersection	Existing (2018)		Future (2035) ^c	
		LOS	Delay (seconds)	LOS	Delay (seconds)
9	N 185th St/Ashworth Ave N	D	27.3	F ^a	>50
10	N 185th St/Corliss Ave N	D	30.7	F ^a	>50
11	NE 185th St/2nd Ave NE	D	25.0	F	>50
12	NE 185th St/3rd Ave NE	C	24.3	F ^a	>50
13	NE 185th St/5th Ave NE (west of I-5)	C	21.7	F	>50
16	NE 185th St/8th Ave NE ^b	C	20.8	N/A	N/A
17	NE 185th St/9th Ave NE	B	14.5	F	>50
18	NE 185th St/10th Ave NE	C	18.7	D	26.3
19	NE 180th St/10th Ave NE	B	10.2	F	>50

^a Reported from HCM 2000. HCM 2010 methodology does not report LOS and delay for extremely congested approaches.

^b This intersection will be designed and analyzed by Sound Transit.

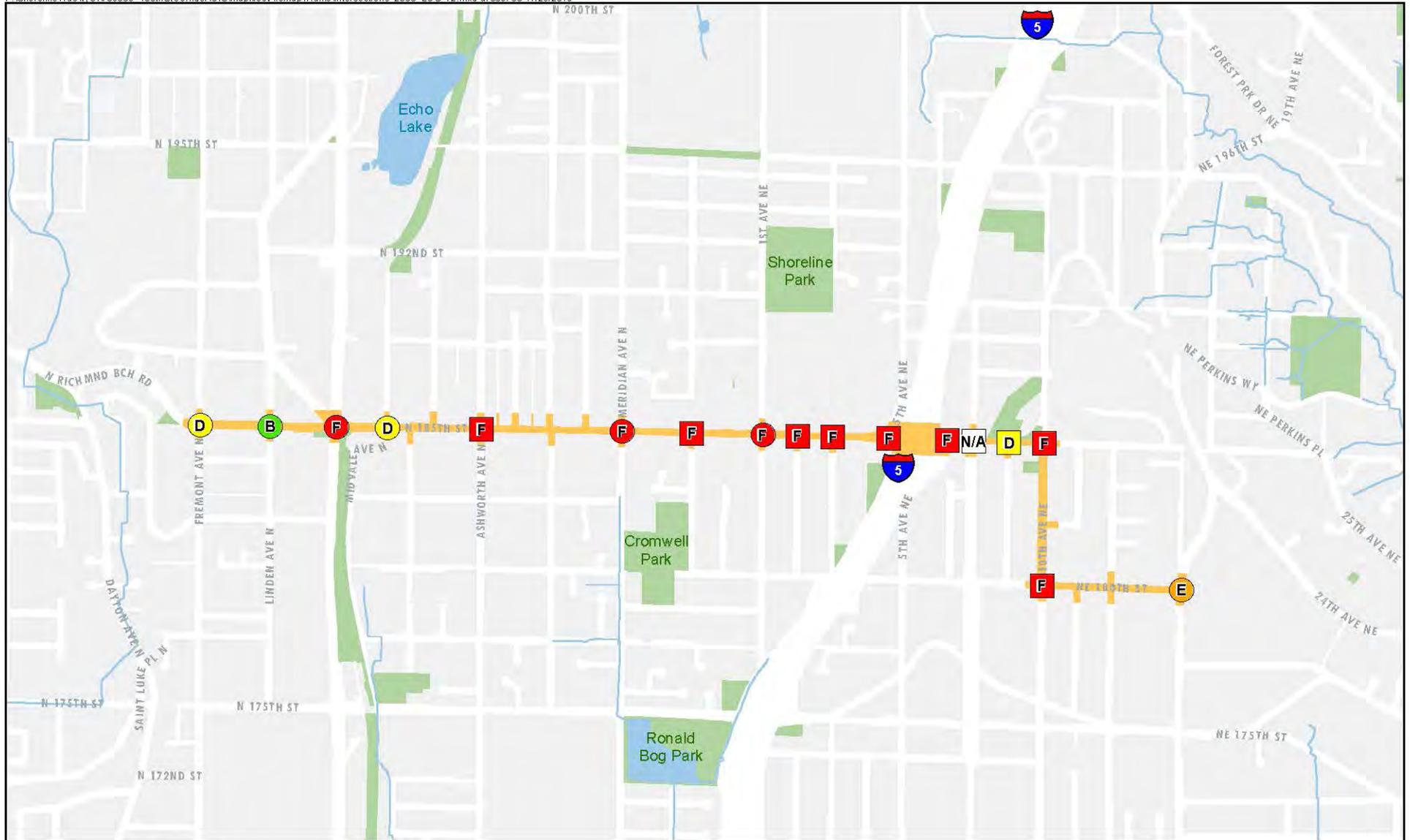
^c Future condition assumes no-build scenario.

Notes:

Shaded cells represent intersections that are expected to operate at LOS E or F in the future.

Intersections 14 and 15 will be realigned in the future to form a single signalized intersection.

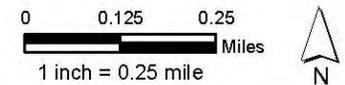
N/A = not applicable



LOS (Level of Service)

- | | | |
|--|---|--|
| ● LOS C or Better | ● LOS F | Study Area |
| ● LOS D | Signalized | Waterbody |
| ● LOS E | Unsignalized | Park |

Figure 2-4
2035 Level of Service Signalized/Unsignalized Intersections
185th Street Multimodal Corridor Strategy



2.4 Roadway Segment Analysis

Table 2-3 shows the roadway segments analysis and the associated number of lanes and capacity in each direction in terms of vph. Future roadway capacity is assumed the same as existing capacity; along N/NE 185th Street capacity is 800 vph per lane. The assumed capacity along 10th Avenue NE and along NE 180th Street is 600 vph per lane.

Future traffic volumes along the study corridor are expected to exceed the per-lane capacity on three of five study segments; V/C ratios greater than 1.0 indicate congestion along the corridor. The roadway segment V/C ratio assumes standard trip generation methods associated with the type of redevelopment anticipated within the 185th Street Station Subarea. As such, there is an assumption of high vehicle use and dependency; however, this can and likely will shift over time, especially if walking, biking, or riding the bus becomes more economical and efficient than driving alone.

Two segments operate within the City threshold of 0.90; N 185th Street between Fremont Avenue N and Midvale Avenue N, and NE 180th Street between 10th Avenue NE and 15th Avenue NE. In 2035 both these segments are expected to operate at 0.72 or lower, which corresponds to LOS C or better.

Figure 2-5 shows the roadway segment analysis for 2035. Strategies to improve operations include increasing travel demand management (such as promoting redevelopment to encourage walking, biking, or riding the bus as more economical and efficient than driving alone) and implementing access management along the corridor. Multimodal improvements such as expanding the pedestrian and bicycle network, and increasing transit speed and reliability by providing dedicated business access and transit (BAT) lanes could also help to manage projected future congestion. The City could also consider setting a specific LOS for N/NE 185th Street and 10th Ave NE in the City's Comprehensive Plan or shift to a Multimodal LOS.

Table 2-3. Existing and Future PM Peak Hour Roadway V/C Ratios

ID	Segment	Eastbound / Northbound						Westbound / Southbound					
		Existing (2018)			Future (2035) ^b			Existing (2018)			Future (2035) ^b		
		Demand (vph)	V/C	LOS	Demand (vph)	V/C	LOS	Demand (vph)	V/C	LOS	Demand (vph)	V/C	LOS
1	N 185th St between Fremont Ave N and Midvale Ave N	700	0.40	A	1,065	0.61	B	650	0.37	A	1,051	0.60	B
	Number of Lanes: 2.2 ^a Capacity: 1,760 vph												
2	N 185th St between Midvale Ave N and 2nd Ave NE	595	0.62	B	1,840	1.92	F	575	0.60	B	1,795	1.87	F
	Number of Lanes: 1.2 ^a Capacity: 960 vph												
3	NE 185th St between 2nd Ave NE and 10th Ave NE	555	0.69	B	1,660	1.73	F	590	0.74	C	1,685	1.76	F
	Number of Lanes: 1.0 Capacity: 800 vph												
4	10th Ave NE between NE 185th St and NE 180th St	270	0.45	A	545	0.91	E	325	0.54	A	785	1.31	F
	Number of Lanes: 1.0 Capacity: 600 vph												

Table 2-3. Existing and Future PM Peak Hour Roadway V/C Ratios

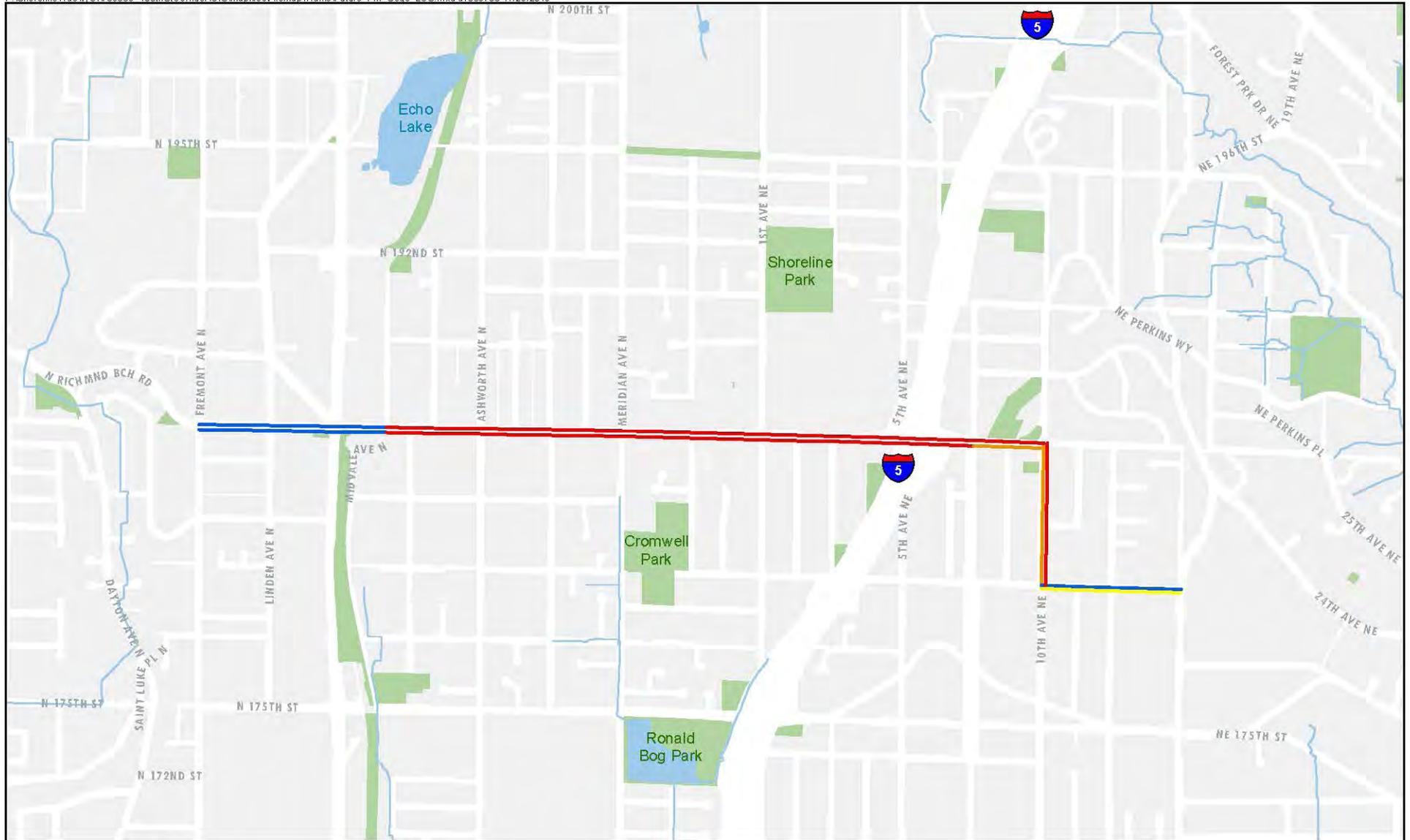
ID	Segment	Eastbound / Northbound						Westbound / Southbound					
		Existing (2018)			Future (2035) ^b			Existing (2018)			Future (2035) ^b		
		Demand (vph)	V/C	LOS	Demand (vph)	V/C	LOS	Demand (vph)	V/C	LOS	Demand (vph)	V/C	LOS
5	NE 180th St between 10th Ave NE and 15th Ave NE	185	0.31	A	430	0.72	C	195	0.33	A	415	0.69	B
	Number of Lanes: 1.0 Capacity: 600 vph												

^a Center two-way left-turn lane increases adjacent lane capacity by 20 percent per direction.

^b Future condition assumes no-build scenario.

Note:

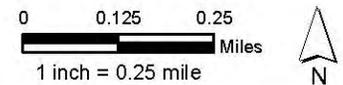
Shaded cells represent intersections that are expected to operate at LOS E or F in the future.



LOS (Level of Service)

- LOS A
- LOS B
- LOS C
- LOS D
- LOS E
- LOS F
- Waterbody
- Park

Figure 2-5
2035 Roadway Segments Level of Service
(Congestion Level-V/C Ratio)
185th Street Multimodal Corridor Strategy



2.5 Projected Pedestrian and Bike Volumes

Pedestrian volumes along the NE 185th corridor were studied by Sound Transit for the Lynnwood Link Extension EIS (Sound Transit 2015). The Shoreline North/185th Station will be a significant generator of pedestrian and bicycle trips on the study corridor. Table 2-4 shows existing and projected volumes of pedestrians and bicycles. The future projections consider the number of pedestrians and bicyclists accessing and exiting the Shoreline North/185th Station during one peak-hour period. The Shoreline North/185th Station will not be the only draw in the future. Most of the pedestrian and bicycle activity will be due to redevelopment within the 185th Street Station Subarea, not due to the light rail station itself. Other significant future pedestrian/bike trip generators may include mixed-use developments built within the Station Subarea, bus stops along the corridor, the Trail Along the Rail, and the North City Business District.

Table 2-4. Existing and Projected (2035) Volumes of Pedestrians and Bicyclists Using Study Corridor

Mode	Timeframe	Volume (per peak hour)	Count Location
Pedestrian	Existing	1-6	NE 185th Street: 5th Avenue NE to 8th Avenue NE
Pedestrian	Future (2035)	165	Shoreline North/185th Station vicinity
Bicycle	Existing	N/A	N/A
Bicycle	Future (2035)	30	Shoreline North/185th Station vicinity

Source: Sound Transit 2015.

3. References

City of Shoreline. 2013. *2011 Transportation Master Plan*. Adopted in 2011, last updated in December 2013. <http://www.shorelinewa.gov/home/showdocument?id=11146>.

City of Shoreline. 2015. *185th Street Station Subarea Plan*. March. <http://www.shorelinewa.gov/home/showdocument?id=20061>.

Sound Transit. 2015. *Lynnwood Link Extension Final Environmental Impact Statement*. April.

Transportation Research Board. 2000. *Highway Capacity Manual*. 4th edition.

Transportation Research Board. 2010. *Highway Capacity Manual 2010*.

U.S. Census Bureau. 2017. American Community Survey 5-year (2012-2016) estimate data.

APPENDIX E. SEPA MATERIALS



SEPA THRESHOLD DETERMINATION OF NONSIGNIFICANCE (DNS)

NONPROJECT INFORMATION

DATE OF ISSUANCE: **October 8, 2019**

PROPONENT: **Nora Daley-Peng, City of Shoreline Senior Transportation Planner**

APPLICATION NO.: **J.L.# ST269400**

LOCATION OF PROPOSAL: **The 185th Street Corridor is created by three roads: N/NE 185th Street, 10th Avenue NE, and NE 180th Street.**

DESCRIPTION OF PROPOSAL: **The 185th Multimodal Corridor Strategy Report includes a refined corridor plan, intersection design analysis, ROW needs, utility coordination, conceptual design guidelines, cost estimate, project delivery approach, and funding strategy.**

LEAD AGENCY: **City of Shoreline**

SEPA THRESHOLD DETERMINATION OF NONSIGNIFICANCE (DNS)

The City of Shoreline, as lead agency for this proposal, has determined that the proposal, a non-project action (WAC 197-11-774), will not have a probable significant adverse impact(s) on the environment. An environmental impact statement (EIS) is not required under RCW 43.21C.030(2)(c). This decision was made after review of the completed environmental checklist, the City of Shoreline Comprehensive Plan, the City of Shoreline Development Code, and other information on file with the Department. This information is available for public review upon request at no charge.

This Determination of Nonsignificance (DNS) is issued after using the optional DNS process in WAC 197-11-355. There is no further comment period on the DNS.

RESPONSIBLE OFFICIAL: **Rachael Markle, AICP**
Planning & Community Development, Director and SEPA Responsible Official

ADDRESS: **17500 Midvale Avenue North** PHONE: **206-801-2531**
Shoreline, WA 98133-4905

DATE: 10-4-19 SIGNATURE: *Rachael E. Markle*

PUBLIC COMMENT INFORMATION

There is no further comment period on the DNS.

APPEAL INFORMATION

Any aggrieved person may appeal this Threshold Determination by filing within 14 days of issuance as provided in SMC 20.30 Subchapter 4 and SMC 20.30.680 no later than fourteen (14) calendar days after the date of issuance. Appeals must be submitted in writing to the City Clerk with the appropriate filing fee and received not later than 5:00 pm on the last day of the appeal period. The written appeal must contain specific factual objections related to the environmental impacts of the project.

PROJECT INFORMATION

For more information, including application, documents, plans, and all SEPA related materials, please contact Nora Gierloff, Planning Manager at ngierloff@shorelinewa.gov or by calling (206)801-2551. Information is also available on the project web site:

<http://www.shorelinewa.gov/government/projects-initiatives/185th-street-multimodal-corridor-strategy>

SEPA ENVIRONMENTAL CHECKLIST

Purpose of checklist:

Governmental agencies use this checklist to help determine whether the environmental impacts of your proposal are significant. This information is also helpful to determine if available avoidance, minimization or compensatory mitigation measures will address the probable significant impacts or if an environmental impact statement will be prepared to further analyze the proposal.

Instructions for applicants:

This environmental checklist asks you to describe some basic information about your proposal. Please answer each question accurately and carefully, to the best of your knowledge. You may need to consult with an agency specialist or private consultant for some questions. You may use "not applicable" or "does not apply" only when you can explain why it does not apply and not when the answer is unknown. You may also attach or incorporate by reference additional studies reports. Complete and accurate answers to these questions often avoid delays with the SEPA process as well as later in the decision-making process.

The checklist questions apply to all parts of your proposal, even if you plan to do them over a period of time or on different parcels of land. Attach any additional information that will help describe your proposal or its environmental effects. The agency to which you submit this checklist may ask you to explain your answers or provide additional information reasonably related to determining if there may be significant adverse impact.

Instructions for Lead Agencies:

Please adjust the format of this template as needed. Additional information may be necessary to evaluate the existing environment, all interrelated aspects of the proposal and an analysis of adverse impacts. The checklist is considered the first but not necessarily the only source of information needed to make an adequate threshold determination. Once a threshold determination is made, the lead agency is responsible for the completeness and accuracy of the checklist and other supporting documents.

Use of checklist for nonproject proposals:

For nonproject proposals (such as ordinances, regulations, plans and programs), complete the applicable parts of sections A and B plus the [SUPPLEMENTAL SHEET FOR NONPROJECT ACTIONS \(part D\)](#). Please completely answer all questions that apply and note that the words "project," "applicant," and "property or site" should be read as "proposal," "proponent," and "affected geographic area," respectively. The lead agency may exclude (for non-projects) questions in Part B - Environmental Elements –that do not contribute meaningfully to the analysis of the proposal.

A. Background

1. Name of proposed project, if applicable:

185th Street Multi-Modal Strategy Corridor (185th MCS)

2. Name of applicant:

City of Shoreline

3. Address and phone number of applicant and contact person:

Nora Daley-Peng
(206) 708-3662
17500 Midvale Avenue N
Shoreline, WA 98133-4905

4. Date checklist prepared:

September 4, 2019

5. Agency requesting checklist:

City of Shoreline

6. Proposed timing or schedule (including phasing, if applicable):

City Council Adoption October 28, 2019

7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.

The 185th MCS will serve as the basis of design for a future design development phase when the City advances this study into a Capital Improvement Program (CIP) project.

8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.

During winter 2019, the team developed a set of draft criteria to evaluate how well each draft mid-block cross section option benefited pedestrians, bicyclists, transit operators and riders, and motorists; as well as overall environmental and community benefits; high-level ROW impacts and construction costs. During the spring outreach series, the team shared the preliminary evaluation analysis of draft mid-block cross section options with the community and stakeholders, so they could compare the benefits and tradeoffs of each draft options.

The study team used the results of preliminary evaluation analysis as well as public and stakeholder feedback to develop the best of the best hybrid option referred to as the Recommended Option. The City of Shoreline's adopted traffic LOS (level of service) for measuring traffic concurrency was evaluated against the general-purpose traffic V/C (volume to capacity) ratios (which compares roadway demand or general-purpose vehicle volumes to roadway supply or carrying capacity) for each of the 185th MCS segment options.

9. Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain.

Private development projects that may install frontage improvements consistent with the strategy along N/NE 185th Street, 10th Avenue NE, and NE 180th Street. will need land use and construction permits.

10. List any government approvals or permits that will be needed for your proposal, if known.

Future R-O-W and frontage improvements will be coordinated with the City of Shoreline and WSDOT (where applicable).

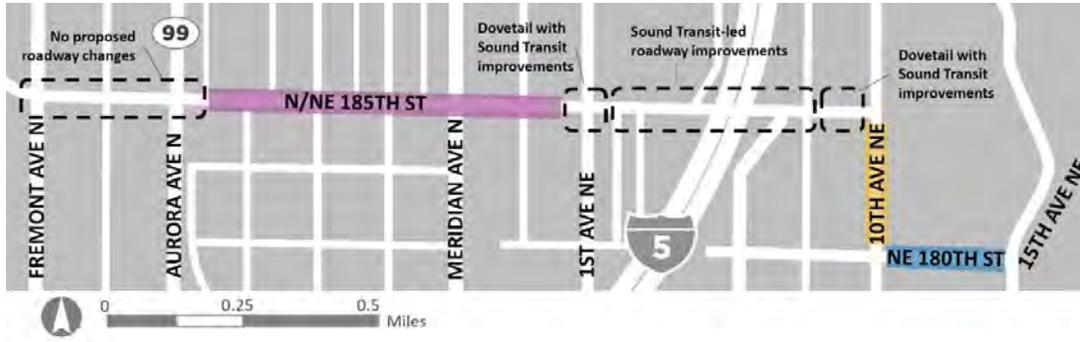
11. Give brief, complete description of your proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page. (Lead agencies may modify this form to include additional specific information on project description.)

The 185th Street Multimodal Corridor Strategy will provide a vision for the corridor that is safe for pedestrians and bicyclists, supports frequent bus and light rail service, addresses traffic flow, creates gathering spaces, and encourages neighborhood businesses.

The 185th MCS Report includes a refined corridor plan, intersection design analysis, ROW needs, utility coordination, conceptual design guidelines, cost estimate, project delivery approach, and funding strategy. The 185th MCS will serve as a guide to ensure that future public and private development projects contribute to a cohesive vision and will help the City competitively seek funding opportunities.

12. Location of the proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist.

The 185th Street Corridor is anchored by the future light rail station on the east side of Interstate 5 and created by three roads: N/NE 185th Street, 10th Avenue NE, and NE 180th Street. For this study, the term “185th Street Corridor” is used to succinctly describe the collection of these three streets.



B. ENVIRONMENTAL ELEMENTS

1. Earth

a. General description of the site:

(circle one): Flat, **rolling**, hilly, steep slopes, mountainous, other _____

b. What is the steepest slope on the site (approximate percent slope)?

Approximately 12% slope.

c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any agricultural land of long-term commercial significance and whether the proposal results in removing any of these soils.

Varies, recent geologic mapping of King County (Booth and Wisner, 2006) identifies the City as primarily glacially derived or glacially overridden soils and the roadway is underlain with compacted fill.

d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.

There are small areas designated as slope hazards.

e. Describe the purpose, type, total area, and approximate quantities and total affected area of any filling, excavation, and grading proposed. Indicate source of fill.

This is a non-project action. Engineering plans will be developed at the time the CIP project is funded and/or as frontage improvements are installed as part of private development.

f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe.

The City has erosion control regulations in place such as preparation of a SWPPP prior to issuance of a grading permit. If ground disturbance exceeds one acre then an NDPES permit is also required.

g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)?

The roadways will be impervious; the bike paths and sidewalks could be either pervious or impervious pavement; the landscaping within the amenity zone will be pervious.

h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any:

This is a non-project action and no additional measures are needed.

2. Air

a. What types of emissions to the air would result from the proposal during construction, operation, and maintenance when the project is completed? If any, generally describe and give approximate quantities if known.

While this is a non-project action, the 185th MCS will expand and/or reconfigure the roadways to better accommodate pedestrians, bicycles, and transit with the goal of shifting the mode split away from single occupancy vehicles and their emissions.

b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.

This is a non-project action and would not be affected by air quality.

c. Proposed measures to reduce or control emissions or other impacts to air, if any:

This is a non-project action and no additional measures are needed. The City has a plan and goals to reduce greenhouse gas emissions 80% by 2050.

3. Water

a. Surface Water:

- 1) **Is there any surface water body on or in the immediate vicinity of the site** (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into.

There is a wetland on the west side of I-5 along 185th Street, but Sound Transit will be responsible for constructing that portion of the improvements and will be performing separate environmental analysis for that work.

- 2) **Will the project require any work over, in, or adjacent to (within 200 feet) the described waters?** If yes, please describe and attach available plans.

Not within the scope of 185th MCS.

- 3) **Estimate the amount of fill and dredge material** that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material.

None, this is a non-project action.

- 4) **Will the proposal require surface water withdrawals or diversions?** Give general description, purpose, and approximate quantities if known.

None, this is a non-project action.

5) Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.

No. Floodplain regulations are addressed in SMC 13.12.

6) Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.

None, this is a non-project action and would not produce wastewater.

b. Ground Water:

1) Will groundwater be withdrawn from a well for drinking water or other purposes? If so, give a general description of the well, proposed uses and approximate quantities withdrawn from the well. Will water be discharged to groundwater? Give general description, purpose, and approximate quantities if known.

None, this is a non-project action.

2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: Domestic sewage; industrial, containing the following chemicals. . . ; agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.

None, this is a non-project action.

c. Water runoff (including stormwater):

1) Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.

None, this is a non-project action and future roadway runoff would continue to be treated prior to discharge.

2) Could waste materials enter ground or surface waters? If so, generally describe.

No, this is a non-project action and future water quality will be preserved during construction through the erosion control methods mentioned in B 1 f. and road runoff will continue to be collected and treated.

3) Does the proposal alter or otherwise affect drainage patterns in the vicinity of the site? If so, describe.

This is a non-project action. Engineering plans will be developed at the time the CIP project is funded and/or as frontage improvements are installed as part of private development.

d. Proposed measures to reduce or control surface, ground, and runoff water, and drainage pattern impacts, if any:

This is a non-project action and no additional measures are needed.

4. Plants

a. Check the types of vegetation found on the site:

X deciduous tree: alder, maple, aspen, other

- evergreen tree: fir, cedar, pine, other
- shrubs
- grass
- pasture
- crop or grain
- Orchards, vineyards or other permanent crops.
- wet soil plants: cattail, buttercup, bullrush, skunk cabbage, other
- water plants: water lily, eelgrass, milfoil, other
- other types of vegetation

b. What kind and amount of vegetation will be removed or altered?

None, this is a non-project action. Implementation of the 185th MCS will require removal of some existing street trees, but replanting will occur within the amenity zone.

c. List threatened and endangered species known to be on or near the site.

None directly on site, though the City of Shoreline is home to a number of priority species.

d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any:

This is a non-project action. Landscape plans including planting of street trees will be developed at the time the CIP project is funded and/or as frontage improvements are installed as part of private development.

e. List all noxious weeds and invasive species known to be on or near the site.

This is a non-project action however the area covered by the 185th MCS may contain weeds and blackberries in unmaintained frontage strips.

5. Animals

a. List any birds and other animals which have been observed on or near the site or are known to be on or near the site.

Examples include:

- birds: hawk, heron, eagle, songbirds, other:
- mammals: deer, bear, elk, beaver, other:
- fish: bass, salmon, trout, herring, shellfish, other _____

Birds may pass through the project area or nest in street trees.

b. List any threatened and endangered species known to be on or near the site.

None known.

c. Is the site part of a migration route? If so, explain.

The larger region is part of the Pacific Flyway for migratory birds.

d. Proposed measures to preserve or enhance wildlife, if any:

This is a non-project action and not intended to provide wildlife habitat.

e. List any invasive animal species known to be on or near the site.

None known.

6. Energy and Natural Resources

a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc.

This is a non-project action, however vehicles will be powered by gasoline and electricity and street and stop lights will use electricity.

b. Would your project affect the potential use of solar energy by adjacent properties?

If so, generally describe.

No, this is a non-project action.

c. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any:

This is a non-project action, however the 185th MCS will expand and/or reconfigure the roadways to better accommodate pedestrians, bicycles and transit with the goal of shifting the mode split to increase non-motorized trips.

7. Environmental Health

a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, that could occur as a result of this proposal? If so, describe.

No, this is a non-project action.

1) Describe any known or possible contamination at the site from present or past uses.

This is a non-project action. Any contamination discovered during future CIP project construction would be remediated at that time.

2) Describe existing hazardous chemicals/conditions that might affect project development and design. This includes underground hazardous liquid and gas transmission pipelines located within the project area and in the vicinity.

This is a non-project action. Future CIP project construction would be coordinated with affected utilities at that time.

3) Describe any toxic or hazardous chemicals that might be stored, used, or produced during the project's development or construction, or at any time during the operating life of the project.

None, this is a non-project action.

4) Describe special emergency services that might be required.

None, this is a non-project action.

5) Proposed measures to reduce or control environmental health hazards, if any:

None, this is a non-project action.

b. Noise

1) What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)?

This is a non-project action, however there is noise associated with use of the existing roadways that may increase along with future traffic volumes.

2) What types and levels of noise would be created by or associated with the project on a short-term or a long-term basis (for example: traffic, construction, operation, other)?
Indicate what hours noise would come from the site.

While this is a non-project action the affected roadways will continue to be open to traffic and generate noise around the clock. Future construction noise will be addressed through existing noise regulations.

3) Proposed measures to reduce or control noise impacts, if any:

This is a non-project action and no additional measures are needed.

8. Land and Shoreline Use

a. What is the current use of the site and adjacent properties? Will the proposal affect current land uses on nearby or adjacent properties? If so, describe.

The roadways included in the 185th MCS pass through a variety of residential and commercial land uses. The 185th Station Subarea is likely to continue to redevelop independently of the future roadway changes.

b. Has the project site been used as working farmlands or working forest lands? If so, describe. How much agricultural or forest land of long-term commercial significance will be converted to other uses as a result of the proposal, if any? If resource lands have not been designated, how many acres in farmland or forest land tax status will be converted to nonfarm or nonforest use?

No, the project area is within a developed urban area.

1) Will the proposal affect or be affected by surrounding working farm or forest land normal business operations, such as oversize equipment access, the application of pesticides, tilling, and harvesting? If so, how:

No, the project area is within a developed urban area.

c. Describe any structures on the site.

The area within the planned R-O-W covered by the 185th MCS contains various infrastructure including retaining walls, light poles, traffic signals, buildings, and a bridge over I-5.

d. Will any structures be demolished? If so, what?

The implementation of the 185th MCS will require some partial and full property acquisitions.

e. What is the current zoning classification of the site?

The R-O-W is unzoned, but the roadway passes through Town Center, Mixed Use Residential, R-6, and Community Business.

f. What is the current comprehensive plan designation of the site?

The R-O-W is unzoned, but the roadway passes through Town Center, Station Area 1, Station Area 2, Station Area 3, and Mixed Use 2.

g. If applicable, what is the current shoreline master program designation of the site?

The project area is not within the shoreline jurisdiction.

h. Has any part of the site been classified as a critical area by the city or county? If so, specify.

There is a wetland on the west side of I-5 along 185th Street and small areas designated as slope hazards.

i. Approximately how many people would reside or work in the completed project?

None.

j. Approximately how many people would the completed project displace?

The occupants of approximately 12 buildings would be displaced.

k. Proposed measures to avoid or reduce displacement impacts, if any:

This is a non-project action and no additional measures are needed.

l. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:

The process of developing the 185th MCS involved extensive outreach to residents, businesses and stakeholders and evaluation of various options to develop a solution that balances the competing interests and goals.

m. Proposed measures to reduce or control impacts to agricultural and forest lands of long-term commercial significance, if any:

None needed.

9. Housing

a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.

None, this is a non-project action for a transportation corridor.

b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.

Approximately 12 buildings would be acquired. The buildings are mainly single-family homes and a few commercial buildings.

c. Proposed measures to reduce or control housing impacts, if any:

This is a non-project action and no additional measures are needed.

10. Aesthetics

a. What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed?

This is a non-project action for a transportation corridor. When the strategy is implemented there will be light poles, bus shelters and signage along the roadway.

b. What views in the immediate vicinity would be altered or obstructed?

This is a non-project action for a transportation corridor. When the strategy is implemented there will be improvements to the corridor that include street trees and transportation infrastructure that could affect views.

c. Proposed measures to reduce or control aesthetic impacts, if any:

The 185th MCS has received extensive public review to develop a design that improves the character of the corridor and balances the multiple travel modes.

11. Light and Glare

a. What type of light or glare will the proposal produce? What time of day would it mainly occur?

When the strategy is implemented there will continue to be street lighting to improve roadway safety during the hours of darkness.

b. Could light or glare from the finished project be a safety hazard or interfere with views?

Street and bus stop lighting will improve visibility of pedestrians and bicycles and therefore improve safety for the users of the corridor.

c. What existing off-site sources of light or glare may affect your proposal?

Buildings and parking lots along the corridor will continue to have their own light fixtures.

d. Proposed measures to reduce or control light and glare impacts, if any:

This is a non-project action and after implementation light and glare will be similar to that existing on the corridor. No additional measures are needed.

12. Recreation

a. What designated and informal recreational opportunities are in the immediate vicinity?

The Spartan Recreation Center is adjacent to the corridor and the Interurban Trail connects to the western end of the corridor at 185th Street and Aurora Ave/Midvale Avenue.

b. Would the proposed project displace any existing recreational uses? If so, describe.
The Strategy does not envision displacement of these uses.

c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:

The 185th MCS includes upgrades to pedestrian and bicycle facilities along the corridor which could increase recreation opportunities.

13. Historic and cultural preservation

- a. Are there any buildings, structures, or sites, located on or near the site that are over 45 years old listed in or eligible for listing in national, state, or local preservation registers? If so, specifically describe.

None known.

- b. **Are there any landmarks, features, or other evidence of Indian or historic use or occupation?** This may include human burials or old cemeteries. Are there any material evidence, artifacts, or areas of cultural importance on or near the site? Please list any professional studies conducted at the site to identify such resources.

No, this is a non-project action for a developed transportation corridor where no such resources exist.

- c. **Describe the methods used to assess the potential impacts to cultural and historic resources on or near the project site.** Examples include consultation with tribes and the department of archeology and historic preservation, archaeological surveys, historic maps, GIS data, etc.

This is a non-project action for a previously developed transportation corridor.

- d. **Proposed measures to avoid, minimize, or compensate for loss, changes to, and disturbance to resources.** Please include plans for the above and any permits that may be required.

This is a non-project action and no measures are needed.

14. Transportation

- a. **Identify public streets and highways serving the site or affected geographic area and describe proposed access to the existing street system.** Show on site plans, if any.

The 185th Street Corridor is anchored by the future light rail station on the east side of Interstate 5 and created by three roads: N/NE 185th Street, 10th Avenue NE, and NE 180th Street.

- b. **Is the site or affected geographic area currently served by public transit?** If so, generally describe. If not, what is the approximate distance to the nearest transit stop?

While this is a non-project action the 185th MCS will expand and reconfigure the roadways to better accommodate transit.

- c. **How many additional parking spaces would the completed project or non-project proposal have?** How many would the project or proposal eliminate?

When 185th MCS is implemented, approximately 50 on-street parking spaces will be removed for a portion of 185th Street from approximately 2nd Avenue through 10th Avenue. Currently 10th Avenue and most of NE 180th Street has no formal on-street parking. When the 185th MCS is implemented, approximately 50 on-street parking spaces will be added to the westside of 10th Avenue NE.

- d. **Will the proposal require any new or improvements to existing roads, streets, pedestrian, bicycle or state transportation facilities, not including driveways?** If so, generally describe (indicate whether public or private).

The 185th MCS sets out a recommended set of future improvements to the corridor that emphasize improved transit, bicycle, and pedestrian facilities. Some of these may be constructed as frontage improvements to development sites while others will be constructed by the City or Sound Transit.

e. Will the project or proposal use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.

No.

f. How many vehicular trips per day would be generated by the completed project or proposal? If known, indicate when peak volumes would occur and what percentage of the volume would be trucks (such as commercial and nonpassenger vehicles). What data or transportation models were used to make these estimates?

Segment	Location	Existing Peak Hour Volume	Future Peak Hour Volume
		(vehicles/hour) ¹	(vehicles/hour) ¹
Segment A	N 185th Street (Fremont Ave N to Midvale Ave N)	700	1065
Segment B	N/NE 185th Street (west of 1st Ave NE)	595	1840
Segment C	NE 185th Street (east of 1st Ave NE)	590	1,685
Segment D	10th Avenue NE	325	785
Segment E	NE 180th Street	195	430

Synchro modeling was used to estimate the future traffic volumes. Peak volume estimates are based on general-purpose vehicles. Projections for the percentage of the volume that would be trucks (such as commercial and nonpassenger vehicles) has not be calculated at this time.

g. Will the proposal interfere with, affect or be affected by the movement of agricultural and forest products on roads or streets in the area? If so, generally describe.

No, the project area is within a developed urban area.

h. Proposed measures to reduce or control transportation impacts, if any:

While this is a non-project action the 185th MCS will expand and reconfigure the roadways to better accommodate pedestrians, bicycles, and transit. The only negative impacts would be during construction which would be mitigated as part of the future implementation.

15. Public Services

a. **Would the project result in an increased need for public services** (for example: fire protection, police protection, public transit, health care, schools, other)? If so, generally describe.

No, when implemented the project should improve safety for users of the corridor.

b. **Proposed measures to reduce or control direct impacts on public services, if any.**

This is a non-project action and no measures are needed.

16. Utilities

a. Circle utilities currently available at the site:

electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other _____

b. **Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed.**

While this is a non-project action undergrounding of overhead utilities may be part of future implementation. Upgrades to telecommunications may also be considered during project implementation.

C. Signature

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

Signature:  _____

Name of signee: Nora Daley-Peng

Position and Agency/Organization: Senior Transportation Planner, City of Shoreline

Date Submitted: 9/13/19

D. Supplemental sheet for nonproject actions

(IT IS NOT NECESSARY to use this sheet for project actions)

Because these questions are very general, it may be helpful to read them in conjunction with the list of the elements of the environment.

When answering these questions, be aware of the extent the proposal, or the types of activities likely to result from the proposal, would affect the item at a greater intensity or at a faster rate than if the proposal were not implemented. Respond briefly and in general terms.

1. How would the proposal be likely to increase discharge to water; emissions to air; production, storage, or release of toxic or hazardous substances; or production of noise?

If implemented the corridor improvements would create noise during construction but may reduce the growth in traffic-related air emissions by better accommodating pedestrians, bicycles and transit.

Proposed measures to avoid or reduce such increases are:

Noise and pollution created from constructing the improvements proposed would be addressed by existing noise and erosion regulations.

2. How would the proposal be likely to affect plants, animals, fish, or marine life?

Few direct impacts are expected as a result of implementing this set of improvements as this is an existing roadway. Street widening in some areas would modestly increase impervious surfaces though landscaping is included in the proposed cross sections.

Proposed measures to protect or conserve plants, animals, fish, or marine life are:

Existing street trees will be preserved where possible or replaced if necessary, to implement the pedestrian and bicycle improvements.

3. How would the proposal be likely to deplete energy or natural resources?

This is a non-project action, however the 185th MCS will expand and/or reconfigure the roadways to better accommodate pedestrians, bicycles and transit with the goal of shifting the mode split to increase non-motorized trips. Energy and natural resources will be used in the construction and maintenance of the improvements.

Proposed measures to protect or conserve energy and natural resources are:

If implemented the project would act to improve multi-modal transportation choices thus reducing auto emissions.

4. How would the proposal be likely to use or affect environmentally sensitive areas or areas designated (or eligible or under study) for governmental protection; such as parks, wilderness, wild and scenic rivers, threatened or endangered species habitat, historic or cultural sites, wetlands, floodplains, or prime farmlands?

The project area is within a developed urban area and future construction would have minimal impacts on one wetland buffer and small areas of slope.

Proposed measures to protect such resources or to avoid or reduce impacts are:

The existing critical areas ordinance will address any minor impacts during future construction.

5. How would the proposal be likely to affect land and shoreline use, including whether it would allow or encourage land or shoreline uses incompatible with existing plans?

The 185th MCS project area is not within the shoreline. Improved access to high capacity transit may encourage the higher density development that is planned for the 185th Street Station Subarea.

Proposed measures to avoid or reduce shoreline and land use impacts are:

None are needed as increased density adjacent to the corridor has already been analyzed and mitigated during the subarea planning process.

6. How would the proposal be likely to increase demands on transportation or public services and utilities?

The 185th MCS project would improve reliability of transit through BAT (Business Access and Transit) lanes and safety of bicycle trips through separated bicycle lanes thereby increasing the attractiveness of these travel modes.

Proposed measures to reduce or respond to such demand(s) are:

Increasing the share of transit and non-motorized trips is consistent with the City's sustainability strategy and Comprehensive Plan so no additional measures are needed.

7. Identify, if possible, whether the proposal may conflict with local, state, or federal laws or requirements for the protection of the environment.

The future implementation of the 185th MCS will not conflict with local, state, or federal laws or requirements for the protection of the environment because compliance with state and federal laws are required.