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SEPA Environmental Checklist (WAC 197-11-960)
145th Street Multimodal Corridor Project

A. Background

1. Name of proposed project, if applicable:
   145th Street Multimodal Corridor Project (Project)

2. Name of applicant:
   City of Shoreline, Washington

3. Address and phone number of applicant and contact person:
   Robert Victor, Project Manager
   City of Shoreline
   17500 Midvale Avenue N
   Shoreline, WA 98133
   (206) 801-2451

4. Date checklist prepared:
   June 2020

5. Agency requesting checklist:
   The City of Shoreline will serve as lead agency and the City of Seattle will be a reviewing agency.

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

   Construction of the 145th Street Multimodal Corridor is scheduled in phases. Phase 1 construction will begin in 2023 and facilities will be operational in 2024. Phase 2 construction will begin in 2024 and facilities will be operational in 2025. Phase 3 construction will begin in 2027 and facilities will be operational in 2028 pending funding availability.

   For context, this State Environmental Policy Act (SEPA) Checklist encompasses the entire 145th Street Multimodal Corridor from Interstate 5 (I-5) to Linden Avenue North (Ave N) at the Interurban Trail (just west of Aurora Ave N/State Route [SR] 99) and includes off-corridor bike network improvements. Figure 1 is a vicinity map that shows the 145th Street Project corridor and off-corridor bike network. Figure 2 provides a closer view of the construction phasing within the corridor. Table 1 provides a detailed look at the construction phasing and schedule.
Figure 1. Project Vicinity

Figure 2. Construction Phasing
Table 1. Project Construction Phases

<table>
<thead>
<tr>
<th></th>
<th>Phase 1</th>
<th>Phase 2</th>
<th>Phase 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>30% Design (complete)</td>
<td></td>
<td>February 2019</td>
<td></td>
</tr>
<tr>
<td>National Environmental</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Policy Act Approval</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Right-of-Way Acquisition</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2020-2021</td>
<td>2022-2023</td>
<td>2024-2025</td>
</tr>
<tr>
<td>100% Design</td>
<td>2021-2022</td>
<td>2023-2024</td>
<td>2026</td>
</tr>
<tr>
<td>Construction</td>
<td>2023-2024</td>
<td>2024-2025</td>
<td>2027-2028</td>
</tr>
<tr>
<td>Begin Operations</td>
<td>2024</td>
<td>2025</td>
<td>2028</td>
</tr>
</tbody>
</table>

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

The Project is designed for 30 years based on population projections. The City of Shoreline has proposed the Project as part of a series of improvements from Route 522 to 3rd Ave Northwest (NW), implemented by other agencies that will improve pedestrian and bicycle mobility, safety and operations, transit speed and reliability, and freight mobility issues for the region.

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

A series of technical memos have been prepared in support of the proposal and are cited within this document. They are available for review by request from the City of Shoreline during the comment period.

- 145th Street Multimodal Corridor Study (City of Shoreline, 2016)
- Environmental Existing Conditions Report (Jacobs, 2018)
- Geotechnical Design Report (Jacobs, 2019)
- Pavement Design Memo (Jacobs, 2019)
- Preliminary Stormwater Report (Jacobs, 2019)
- Preliminary Structure Design Memo (Jacobs, 2019)
- Relocation Plan (Jacobs, 2019)
- Traffic Noise Analysis (Jacobs, 2019)
- Cultural Resources Technical Report (Jacobs, 2020)
- Environmental Justice Report (Jacobs, 2020)
- Hazardous Materials Technical Memorandum (Jacobs, 2020)
- Land Use Review (Jacobs, 2020)
- Traffic Analysis Report (Jacobs, 2020)
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.

The Project site is under review by the City of Shoreline, City of Seattle, and Washington Department of Transportation (WSDOT). Rights-of-way will be established with the City of Shoreline, City of Seattle, and WSDOT. No other proposed projects are under review for this site.

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

Table 2 provides a list of government approvals and permits needed for the Project.

Table 2. Government Approvals and Permits for the Project

<table>
<thead>
<tr>
<th>Approval/Permit Type</th>
<th>Agency</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Federal and State Approvals and Permits</strong></td>
<td></td>
</tr>
<tr>
<td>NEPA, Class II Determination of Categorical Exclusion</td>
<td>Washington Department of Transportation on behalf of Federal Highway Administration</td>
</tr>
<tr>
<td>Right-of-Way Work Permit</td>
<td>Washington State Department of Transportation (WSDOT)</td>
</tr>
<tr>
<td>National Pollutant Discharge Elimination System (NPDES) Construction Stormwater General Permit and Coverage</td>
<td>Ecology/ US Environmental Protection Agency (EPA)</td>
</tr>
<tr>
<td>Cultural Resources Assessment for compliance with Section 106 of the National Historic Preservation Act</td>
<td>WSDOT and Washington State Department of Archaeology and Historic Preservation (DAHP)</td>
</tr>
<tr>
<td>Notice of Proposed Construction or Alteration (Form 7460.1)</td>
<td>Federal Aviation Administration</td>
</tr>
<tr>
<td><strong>Local Approvals and Permits</strong></td>
<td></td>
</tr>
<tr>
<td>State Environmental Policy Act (SEPA)</td>
<td>City of Shoreline</td>
</tr>
<tr>
<td>Street Use Permit (hybrid)</td>
<td>City of Seattle</td>
</tr>
<tr>
<td>Right-of-Way Use Permit</td>
<td>City of Seattle</td>
</tr>
<tr>
<td>Significant-Sized Trees and Street Tree Removal Permits</td>
<td>City of Shoreline</td>
</tr>
</tbody>
</table>

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.

The Project proposes improvements in two major categories: roadway improvements and bike network improvements. Upgrades to the roadway infrastructure including adding left-turn lanes, landscape buffers, and wider sidewalks, and improving pedestrian and bicycle mobility, safety and operations, transit speed and reliability, and freight mobility. The Project also proposes an off-corridor bike network to guide bicyclists of all ages and abilities along the network, support traffic calming, and provide safe crossings at arterials. The dimensions and purposes of the two key Project features of roadway and bike network are listed as follows and summarized in Table 3:

- Pavement resurfacing
- Full depth pavement replacement from Meridian Ave N to the I-5 Interchange
- New sidewalks on the north side of 145th Street from the Interurban Trail to the I-5 Interchange
- New landscape buffer on the north side of 145th Street between Aurora Ave N and I-5 that includes street trees
- New Americans with Disabilities Act (ADA) curb ramps to meet current design standards at all intersections within the corridor
- Lengthened left-turn pocket on the west leg of the intersection with Aurora Ave N
• New left-turn pockets at all legs of the intersections with Meridian Ave N and 1st Ave N:
  – Two new or modified traffic signals as a result of the new left turn pockets: Meridian Ave N and 1st Ave N
• Two new pedestrian crossing signals:
  – 145th Street and Ashworth Ave N, Corliss Ave N
• Installation of joint utility trench and undergrounding overhead power and telecom under the north sidewalk on 145th Street from Meridian Ave N to the I-5 Interchange
• New fill retaining walls at various locations along the north side of the roadway where widening will occur
• New raised medians at various locations between Wallingford Ave N and the I-5 Interchange
• Replaced stormwater management system including new flow control and runoff treatment
• New lighting poles and luminaires within the sidewalk/landscape amenity zone on the north side of the Project corridor from Linden Ave N to I-5 and on the south side of the Project corridor from Meridian Ave N to I-5
• New bus zone improvements including ADA-accessible pads, bus shelters, pedestrian lighting, and real-time information system pylons
• New off-corridor bike network to connect the Interurban Trail and west-end neighborhoods with the future Sound Transit 145th Street Link light rail station. The off-corridor network would travel on existing roadways with limited Project improvements including wayfinding signs, painted arrows, speed humps, and traffic islands. Curb ramps would also be improved at two intersections. All proposed improvements are located within existing right-of-way.

The Project improvements along the 145th Street corridor will require right-of-way property acquisition predominantly in the City of Shoreline, and partial (“sliver”) acquisition for ADA improvements in the City of Seattle. According to the Relocation Plan, the proposed Project will result in the partial or full acquisition of 51 parcels of which 19 property acquisitions are anticipated to require the displacement of 22 residential (11 owner occupants and 11 tenant occupants), 9 nonresidential (7 landlords and 2 nonresidential businesses) and 1 personal property only. The Project requires excavation below the existing paved surfaces: approximately 4.5 to 8 feet for lighting poles, 8 to 15 feet for traffic signals depending on soil conditions, 5 feet for storm conveyance system, and 5 feet for the utility trench.

Table 3. Key Project Features

<table>
<thead>
<tr>
<th>Project Feature</th>
<th>Approximate Dimensions</th>
<th>Purposes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roadway Improvements</td>
<td>Bus shelters</td>
<td>Provide better transit amenities</td>
</tr>
<tr>
<td>Turn pockets</td>
<td></td>
<td>Remove stopped cars from flow of traffic</td>
</tr>
<tr>
<td>Street and Pedestrian Lighting</td>
<td></td>
<td>Relocate for roadway improvements and update for current design standards. Provide better lighting for pedestrian facilities.</td>
</tr>
<tr>
<td>Underground Utilities</td>
<td></td>
<td>Provide better aesthetics by removing clutter from streetscape, in alignment with zoning and municipal code requirements</td>
</tr>
<tr>
<td>Storm Drainage Improvements</td>
<td></td>
<td>Ensure detention and treatment to address additional impervious surface added</td>
</tr>
<tr>
<td>Replace signals at 1st and Meridian intersections</td>
<td></td>
<td>Improve turn pockets and provide better traffic flow</td>
</tr>
<tr>
<td>Landscaping</td>
<td></td>
<td>Improve aesthetics and city gateway features</td>
</tr>
<tr>
<td>Structural Retaining Walls</td>
<td></td>
<td>Address grading and property interface</td>
</tr>
<tr>
<td>Curb ramps</td>
<td></td>
<td>Address ADA requirements</td>
</tr>
</tbody>
</table>
145th Street Multimodal Corridor Project

<table>
<thead>
<tr>
<th>Project Feature</th>
<th>Approximate Dimensions</th>
<th>Purposes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bike Network Improvements</td>
<td>Wayfinding signs, painted arrows</td>
<td>Guide bicyclists of all ages and abilities along the network</td>
</tr>
<tr>
<td>Speed humps, traffic islands</td>
<td></td>
<td>Provide traffic calming</td>
</tr>
<tr>
<td>Signalized crossings and curb ramps</td>
<td></td>
<td>Facilitate safe crossing for bikes at major arterials</td>
</tr>
</tbody>
</table>

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 Project is located along a segment of N/NE 145th Street from the east side of the Interurban Trail at Linden Ave N to the west side of the interchange with I-5 (shown in Figure 1 as well as in Figure 3). The south half of the existing roadway is in Seattle, King County, Washington (Section 19, Township 26 North, and Range 4 East, Willamette Meridian). The north half of the existing roadway is located in unincorporated King County, Washington (Section 18, Township 26 North, and Range 4 East, Willamette Meridian) within the Thornton Creek watershed.

![Figure 3. Project Extent](image)

B. Environmental Elements

1. Earth
   a. General description of the site:

   The Project study area covers approximately a 1-mile section along N 145th Street between Aurora Ave N/SR 99 and I-5. The Project area is a rolling terrain bound by residential properties to the north and south and includes its current pavements and sidewalks, existing retaining walls, and slopes.

   Stormwater generally flows along both curb lines into storm drains. Storm drains generally discharge to side streets on the north side of the roadway.

   b. What is the steepest slope on the site (approximate percent slope)?
Elevations range from 484 feet above mean sea level on the western edge of the Project (Aurora Ave N/SR 99) to approximately 341 feet on the eastern edge of the Project (I-5). The roadway slope of the site is no more than 8.0 percent. Steep slopes in two specific areas are discussed in question 8h.

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.

Existing borings and test pits found the Project area is underlain by Till and Outwash deposits. No groundwater was encountered during geotechnical explorations, but perched water may be present within the Till. (Three borings were drilled to depths of approximately 20 feet.) There will be soil removal for widening the roadway and for retaining walls on the north side of the road. There will also be excavation for signal foundations, stormwater conveyance, stormwater management facilities (detention vault and pond), and utility undergrounding.

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

Soils have moderate to high strength, low to moderate compressibility, and appear to be good embankment and subgrade material for pavement support with high susceptibility to changes in moisture content and high erosion potential.

Pavements and sidewalks are damaged considerably by tree roots producing depression or heave in the subgrade. Longitudinal and transverse asphalt cracks could be fatigue cracking as a result of a combination of repetitive traffic loading, nonuniformities or low stiffness in materials (e.g., base, subbase, and subgrade) beneath the pavement and sidewalks, moisture influences, or freeze/thaw effects.

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.

The Project will require approximately 4,950 cubic yards of excavation of pavement and pavement base for complete pavement resurfacing. Fill is estimated at 8,910 cubic yards for widening the road to the north. It does not include new pavement or pavement base. The total area of ground disturbance is 293,000 square feet, representing all of the area where subgrade will be disturbed for proposed improvements.

Site preparation activities will include the excavation of existing soil material and placement of structural fill material utilizing typical earthmoving equipment that may include hydraulic excavators, scrapers, dump trucks, and compactors. Structural engineering fill, gravel base course, and asphalt will be imported from permitted sources.

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

Slopes will be protected from erosion and construction traffic, and materials set back from the edge of the slopes by a minimum of 10 feet unless specifically accounted for in the design. The contractor will be responsible for continually observing the conditions of the slope, surcharge, and slope protection. The stormwater drainage system (including a bioretention facility) will manage the rain/surface water from the surface and impervious areas. Because site soil is susceptible to erosion, best management practices (BMPs) for temporary stormwater management will be implemented.

No cumulative impacts to soils or erosion are expected from the Project because construction will comply with applicable temporary erosion and sedimentation control provisions of the Shoreline City Code and an NPDES Construction Stormwater General Permit Stormwater Pollution Prevention Plan. The drainage design will accommodate the future phase’s runoff. For example, a detention facility will be installed during Phase 1 construction to accommodate some Phase 2 runoff.
g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)?

The amount of existing impervious surface area within study area limits is 353,132 square feet. The Project will add approximately 61,828 new square feet of impervious surface area. Table 4 provides additional detail regarding Project estimates for impervious surfaces from the Preliminary Stormwater Report (Jacobs, 2019).

Table 4. Impervious Surface Estimates and Stormwater Requirements by Threshold Discharge Area

<table>
<thead>
<tr>
<th>Name</th>
<th>Area</th>
<th>Existing Impervious Surface</th>
<th>Added Runway (EFF PGIS)</th>
<th>Added Impervious Surface (EFF IS)</th>
<th>Flow Control Required (EFF IS &gt; 10,000 SF?)</th>
<th>Runoff Treatment Required (EFF PGIS &gt; 5,000 SF?)</th>
<th>LID Feasibility Required?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interurban Trail</td>
<td>38,922</td>
<td>35,790</td>
<td>1,264</td>
<td>2,462</td>
<td>N</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Stone Ave N</td>
<td>87,484</td>
<td>80,562</td>
<td>81</td>
<td>6,428</td>
<td>N</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Ashworth Ave N</td>
<td>49,763</td>
<td>41,494</td>
<td>172</td>
<td>7,734</td>
<td>N</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Meridian Ave N</td>
<td>64,308</td>
<td>52,835</td>
<td>4,876</td>
<td>9,375</td>
<td>N</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>1st Ave NE</td>
<td>127,792</td>
<td>96,922</td>
<td>17,220</td>
<td>25,694</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>WSDOT</td>
<td>57,353</td>
<td>45,529</td>
<td>6,276</td>
<td>10,135</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Total</td>
<td>425,622</td>
<td>353,132</td>
<td>29,890</td>
<td>61,828</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes:
EFF = effective; IS = impervious surface; LID = low-impact design; PGIS = pollutant generating impervious surface; SF = square foot/feet; Y = Yes and N = No

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

There will be a Temporary Erosion and Sediment Control Plan and a Stormwater Pollution Prevention Plan (SWPPP) required due to more than 5,000 square feet of added impervious surface and more than 1 acre of disturbance. During construction, erosion control BMPs required by municipal code and the Stormwater Management Manual for Western Washington (Ecology, 2019) will be employed. The BMPs include enhanced level runoff treatment, oil control, flow control, and LID (if feasible).

Table 3-2 in the Preliminary Stormwater Report (Jacobs, 2019) summarizes the minimum stormwater requirements for the entities sharing jurisdiction over stormwater design. The 30% concept design meets the requirements of the Engineering Design Manual, Highway Runoff Manual, Surface Water Master Plan (City of Shoreline, 2018). Strategies include bioretention and enhanced runoff treatment levels. During final design, an operation and maintenance (O&M) plan will be adopted with an applicable agreement per the Revised Code of Washington.

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.

Construction

Temporary air quality impacts during construction will include construction machinery exhaust emissions, primarily from particulate matter less than 10 micrometers and 2.5 micrometers in aerodynamic diameter (PM_{10} and PM_{2.5}, respectively), and from small amounts of carbon monoxide and oxides of nitrogen. The
sources of particulate matter might be fugitive dust from clearing, excavation activities, uncovered fill stockpiles, diesel smoke, or any combination of these sources.

Some construction activities may cause odors. Paving operations use tar and asphalt. The construction contractor must comply with Ecology Northwest Clean Air Agency regulations requiring the control of odorous emissions to prevent interference with adjacent uses. These types of odors will be short-term and unlikely to impact adjacent uses.

**Operation of Multimodal Corridor**

Emissions during operation of the multimodal corridor will result from the combustion of fossil fuels from vehicles. Traffic is expected to increase over the life of the project, but the design features will mitigate some idling associated with congestion.

**Greenhouse Gas**

The multimodal corridor potential contribution to global climate change will be through emission of greenhouse gases (GHG), primarily CO₂. The net change in CO₂ emissions due to construction has not been quantified. It is estimated there will be some modal shifts due to the new bicycle network, new bus service, shelters and improved connections to the light rail station. Therefore, the will be no discernible new impacts to the climate from operation of the corridor.

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

No offsite sources of emissions or odor have been identified that may affect this proposal.

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

During construction, BMPs for Project impacts to air quality, odor, and GHG emissions could include, but would not be limited to the following:

- Spraying water, when necessary, during construction operations to reduce emissions of fugitive dust
- Covering dirt, gravel, and debris piles as needed to reduce fugitive dust and wind-blown debris
- Covering open-bodied trucks, wetting materials in trucks, or providing adequate freeboard (space from the top of the material to the top of the truck) to reduce fugitive dust emissions
- Turning off construction equipment when not in use to minimize idling and reduce GHG emissions
- Replanting vegetation temporarily disturbed by construction activities with native vegetation within 1 year or growing season after construction was complete

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.**

**Surface Water Bodies**

There are no surface water bodies in the immediate vicinity of the Project. The off-corridor bike network is adjacent to Twin Ponds Park, which is just over 0.25 mile from 145th Street. The southern pond is about 350 feet from the off-corridor bike network. The north branch of Thornton Creek is east of Aurora Avenue N and runs parallel to the off-corridor street bicycle network carrying stormwater east until it reaches the I-5 right-of-way at approximately N 150th Street. Thornton Creek runs under I-5 within a pipe.
Wetlands

There are no wetlands in the Project area.

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.

There will be no work within 200 feet of a pond or piped creek. (Thornton Creek is piped under I-5, approximately 300 feet from the east end of the Project.)

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.

The current design will not fill any surface waters or wetlands.

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

The current design does not propose surface water withdrawal or diversion.

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

The Project does not lie within a 100-year floodplain.

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.

Discharges of waste materials to surface waters will not occur.

b. Groundwater:

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.

Groundwater will not be withdrawn from a well for use in the Project.

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.

The current design does not utilize septic tanks.

c. Water runoff (including stormwater):

1) Describe the source of runoff (including stormwater) 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.

Stormwater runoff is the only source of water runoff expected at the site. Stormwater flows to the north branch of Thornton Creek, which then flows into Lake Washington. Thornton Creek is located within the I-5 right-of-way; however, the creek is located within a pipe.
2) Could waste materials enter ground or surface waters? If so, generally describe.

There is a possibility that small amounts of waste materials (i.e., petroleum products, sediments, or concrete materials) could occur from construction and operation activity. Spill prevention BMPs will be followed during construction to avoid such spills.

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

The site will utilize existing drainage patterns and increase the stormwater detention capacity in order to accommodate future phases of the Project. The existing gradient is 0.5 to 8.0 percent. Grading will mirror this gradient to maximize gravity flow of stormwater to the stormwater facilities.

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

The construction contractor will implement both a SWPPP and a temporary erosion and sediment control plan, in accordance with an NPDES General Construction Stormwater Permit. These approved plans will include a list of BMPs that will be in place before construction begins, along with erosion control measures (silt fences, check dams, silt/sediment basins and traps) and plans for erosion control through grading. Revegetation plans will be implemented at the end of construction.

Existing storm drains and structures will be replaced or adjusted to convey stormwater from the roadway improvements. Additional catch basins and associated storm drains will be placed to meet spacing requirements, based on preliminary calculations using the WSDOT Inlet Calculation Spreadsheet and the Highway Runoff Manual. In general, they are placed along the reconstructed portion of 145th Street on the north side. On the south side, City of Seattle structures were located near the improved intersections. The drainage conveyance elements should be refined as the design progresses, and when the interface with the I-5 interchange project is known.

Three parcels were identified as strategic stormwater management sites where BMPs for TDAs will be constructed to manage flow and water quality treatment (Table 5 and Figure 4). The parcels were selected based on TDA (location), collaborative opportunity, and availability. Stormwater facilities will be owned and maintained by the City of Shoreline. Maintenance features such as easy access is a City concern. The urban design and stormwater design teams have collaborated in identifying the parcels to maximize their potential benefits.

Table 5. Proposed Stormwater Facility Locations

<table>
<thead>
<tr>
<th>TDA</th>
<th>Stormwater Management Site</th>
<th>Proposed BMPs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Flow Control</td>
<td>Runoff Treatment</td>
</tr>
<tr>
<td>Meridian Ave</td>
<td>1</td>
<td>None</td>
</tr>
<tr>
<td>1st Ave</td>
<td>2</td>
<td>Detention vault</td>
</tr>
<tr>
<td>WSDOT</td>
<td>3</td>
<td>Stormwater detention pond</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Bioretention cell (noninfiltrating)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Modular wetland treatment unit</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Bioretention cell (noninfiltrating)</td>
</tr>
</tbody>
</table>
Figure 4. Proposed Stormwater Facility Locations

Onsite stormwater management techniques including bioretention, permeable surface, and amended soil depths in the planting areas may be suitable LID techniques. These will be specified with further geotechnical information and other design refinements are made.

A joint agency O&M plan for the multimodal corridor will be created and adopted. The O&M plan will be an agreement addressing the long-term maintenance of the stormwater facilities that will be constructed onsite to deal with the flow control and treatment requirements of Core Element 5 in the Stormwater Management Manual for Western Washington (Ecology, 2019).

4. Plants

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

- X Deciduous tree: alder, maple, aspen, other
- X Evergreen tree: fir, cedar, pine, other
- X Shrubs
- X Grass
- Pasture
- Crop or grain
- Ornaments, 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

The site is an urbanized area where the vegetation consists of exotic and native ornamental trees, grasses, and shrubs.

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

The Project will result in the removal and replacement of plants listed above. An estimated 1.66 acres of yard/landscaping will be impacted by the Project, mostly on private property that will be acquired by the
City of Shoreline. An estimated 0.67 acre of landscaping strip along the corridor between the roadway and sidewalk will be added, which will include shrubs/groundcover and street trees.

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

The Project will not impact any Endangered Species Act (ESA) listed species or critical habitat. The Project is located within a completely urbanized area and the properties to be acquired do not contain any critical habitat or threatened and endangered species.

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

Vegetation temporarily disturbed by construction activities will be replaced. The new landscaping strip will be designed in compliance with City of Shoreline code after construction is complete. New landscaping on the south side of the road at multiple intersections will be design in compliance with City of Seattle code.

More details including the revegetation/landscaping plan to meet City of Shoreline design criteria will be determined during the final design.

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

A field survey of vegetation was not conducted, but the Project site is contained within an urbanized area consisting of planned and maintained exotic and native ornamental trees, grasses and shrubs. As such, no noxious weeds or invasive species are known to be on or near the site.

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 ____________

No ESA-listed species are present in the Project’s study area nor is any designated critical habitat present in the study area. The Project is located within a completely urbanized area and the properties to be acquired do not contain any habitat or species. No animals were observed during a site visit in October 2018.

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

No threatened or endangered species are known to be on or near the Project site.

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

There was no analysis of migration routes because the Project lies in an urbanized area.
d. Proposed measures to preserve or enhance wildlife, if any:

Proposed measures to reduce impacts to wildlife include lighting design that is pointed down to avoid attraction from birds and movement-sensitive temporary construction buildings’ lighting to reduce lighting attractants.

Utilities will be buried to comply with development code and reduce clutter in the corridor, which can also reduce migratory bird injury and the creation of predator bird roosts or nests.

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

There was no analysis of invasive animal species because the Project lies in an urbanized area.

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.

Construction will require electricity and diesel fuel. A small diesel generator will be onsite to keep the construction shelter operational during power outages.

b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.

No, the potential use of solar energy by adjacent properties will not be affected.

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:

The streetlights and transit shelters will utilize LED lights.

There are no other built features requiring energy as part of the Project.

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.

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

Based on a review of Ecology’s Facilities Database that lists known or potential hazardous material sites or landfills, there are 25 hazardous material sites in the study area (Jacobs, 2020). Of these sites, two sites were identified as sites of potential concern for the Project (Table 6). The remaining 23 sites are eliminated from further consideration due to their distance from the Project alignment, lack of documented release, or cleanup has been completed (e.g., received a no further action determination).

Table 6. Hazardous Materials Potential Sites of Concern

<table>
<thead>
<tr>
<th>Site Name</th>
<th>Address</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aurora Texaco</td>
<td>14507 Aurora Ave N</td>
<td>Cleanup started. This site is considered as moderate risk because contaminated soil is known to remain on site just north of the area proposed for acquisition. Additional contaminated soil could also be located within the area proposed for acquisition.</td>
</tr>
</tbody>
</table>
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.

There is the potential to encounter contaminated soils in the northwest corner of the 145th Street and Aurora Ave N intersection. The Aurora Texaco property in the northwest corner had up to 6 leaking underground storage tanks that have been removed and the soils excavated. Contaminated soils were identified less than 40 feet north of an area proposed for acquisitions by Ecology in 2013. The Hazardous Materials Memorandum (Jacobs, 2020) estimates there is a moderate risk of encountering contaminated soil which could delay construction.

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.**

Hot mix asphalt, paint, and fuel will be stored and used at the Project site during construction. No hazardous chemicals will remain onsite after Project construction.

4) **Describe special emergency services that might be required.**

No special emergency services will be required.

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

Proposed measures to reduce or control environmental health hazards include the implementation of BMPs and preparation of a health and safety plan, a Spill Prevention, Containment, and Countermeasures Plan; and a SWPPP.

The Hazardous Materials Technical Memo will be included in the bid materials and a Moderate Risk Waste section will be included in the project specifications. It would require excavated soils to be sampled by the contractor or their subcontractor prior to disposal to determine contaminants. Contaminated soil would be hauled offsite to an approved disposal location. Construction activities would use BMPs for the safe handling and disposal of contaminated soil, if encountered.

b. **Noise**

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

The daytime and nighttime sound levels in the Project vicinity come from 145th Street. Other noise sources in the surrounding area include State Route 99 to the west and I-5 to the east.

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.**

**Construction**

Construction activities will result in temporary noise increases within and adjacent to the Project area. The short-term noise and vibration impacts will be generated primarily by mobile equipment (e.g., excavators,
backhoes), stationary equipment (e.g., generators, compressors) and vehicle traffic. Typical construction activities will occur during daytime hours between 7 a.m. and 10 p.m. when property-line noise limits do not apply. Allowable nighttime noise levels are reduced by 10 decibels on an A-weighted scale (dBA) from 10 p.m. to 7 a.m. on weekdays and 10 p.m. to 9 a.m. on weekends.

Operation

The Traffic Noise Analysis Memorandum (Jacobs, 2019) determined no noise barriers are recommended because increases in noise levels associated with the Project are below WSDOT’s definition of a substantial increase.

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

Construction

Because construction noise levels will be variable and short-term, contractors will implement the following measures to minimize noise from construction activities:

- Operate equipment during approved hours as required by local permits.
- Minimize idling time of heavy equipment and vehicles.
- Ensure adequacy of mufflers on all engines (vehicle and generators).

Operation

None planned.

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.

Within the Shoreline city limits, existing land uses in the Project area are primarily single-family residential. There are some areas of multifamily residential and areas of commercial focused along the Aurora Ave N/SR 99 corridor. The existing uses in the City of Seattle are similar to Shoreline with primarily single-family residential adjacent to 145th Street and area of commercial uses adjacent to the Aurora Ave N/SR 99 corridor.

A portion of the Project area (north of 145th) was up-zoned in 2016 to allow for greater densities and a mix of uses between Meridian Ave N and I-5 and to encourage transit-supportive development nearest the future light rail station at 148th Street and I-5. There are three mixed-use residential (MUR) zones: MUR-35', MUR-45', and MUR-70'. Each zone is shown in Figure 5a as adapted from the Project Land Use Review (Jacobs, 2020).

Seattle is considering up-zoning on the southside of 145th and near the LRT stations at 145th and 130th. They have had public meetings in the impacted neighborhoods. Currently the majority of the corridor is zoned for single-family residential with multi-family and commercial/mixed use designated at the intersection of 145th and Aurora Ave N/SR 99, all in the “low” Mandatory Housing Affordability Zone. Figure 5b provides current zoning on the Seattle side of the project from Seattle’s ArcGIS mapper.

1 http://www.seattle.gov/opcd/ongoing-initiatives/130th-and-145th-station-area-planning
Figure 5a. Project Area Zoning (Shoreline)

Figure 5b. Project Area Zoning (Seattle)

Figure 5c. Project Area Zoning, Bitter Lake Village Hub Detail (Seattle Comprehensive Plan)
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?

Not applicable.

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:

Not applicable.

c. Describe any structures on the site.

The Project is located within a completely urbanized area surrounding 145th Street, predominantly surrounded by residential structures.

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

The proposed Project would result in the partial or full acquisition of 51 parcels in the City of Shoreline, consisting of:

- 19 full-property acquisitions
- Displacement of 22 residential (11 owner occupants and 11 tenant occupants)
- 9 nonresidential (7 landlords and 2 nonresidential businesses)
- 1 personal property-only impact

It is unknown at this time how many structures may be demolished as some properties may be purchased by developers for demolition in advance of the project while other structures may be demolished as part of the project.

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

See the response to question 8a.

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

The Project is part of the Shoreline 145th Street Station Subarea Plan, which includes updates to the Comprehensive Plan and development code. Per the Seattle Comprehensive Plan 2035, the site is designated Single Family Residential in the Haller Lake neighborhood and the Bitter Lake Hub Urban Village (shown in Figure 5c).

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

Not applicable.

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

Shoreline Municipal Code critical areas (SMC 20.80) include geologic hazards, fish and wildlife habitat, wetlands, and flood hazards. Plans should be reviewed for the presence of slopes meeting the criteria for landslide hazard areas pursuant to SMC 20.80.220.B. If present, landslide hazard areas are subject to SMC 20.80.

Seattle Municipal Code 25.09 defines similar categories of environmentally critical resource areas. Steep slope erosion hazard areas (29.05.012.A.3.b.5) have slopes with an incline of 40 percent or more within a
vertical elevation change of at least 10 feet. “Steep slope environmental critical areas” from Seattle GeoData are shown in Figure 6.

Figure 6. Steep Slopes within Project Area

Construction on the Seattle side will remain within the existing roadway surface and not touch the steep slope critical areas shown in Figure 6. A reconnaissance survey indicates these steep slope critical areas appear to be related to humanmade cuts. In addition, there are no mapped landslide prone areas and no other critical area categories mapped within the project area.

i. **Approximately how many people would reside or work in the completed project?**
Not applicable.

j. **Approximately how many people would the completed project displace?**
See discussion in question 9a.

k. **Proposed measures to avoid or reduce displacement impacts, if any:**
See discussion in question 9a.

l. **Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:**
The Project implements the Shoreline 145th Street Station Subarea Plan and Seattle 145th Street Station Area Planning by improving the 145th Street corridor to support multiple modes of transportation and is more supportive of the land use plan for high density transit-supportive uses nearest the light rail station at 145th Street and I-5.

m. **Proposed measures to reduce or control impacts to agricultural and forest lands of long-term commercial significance, if any:**
Not applicable.

9. **Housing**

a. **Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.**

This Project does not involve the construction of new housing units, but the up-zoning of the parcels adjacent to 145th Street will result in a net increase of residential units. Three MUR areas were established in the Shoreline side of the Project area between Meridian Ave N and I-5: MUR-35’, MUR-45’, and MUR-70’ (the difference being the allowed height).

The number of high, middle and low-income housing units is not known at this time, but the City of Shoreline updated the development code (SMC 20.40.235) to include new opportunities for affordable housing in the 145th Street Station Subarea Plan. The 145th Street Multimodal Corridor Project Land Use Review (Jacobs, 2020) states, “within zones MUR-45’ and MUR-70’ it is mandatory that a portion of the housing provided be affordable and within MUR-35’ it is voluntary. To meet the affordable housing
requirements, there are incentives and requirements to build affordable housing units within developments or pay into a local housing trust fund to support development of affordable housing options."

On the Seattle side of the Project, there would be no new housing units constructed, but the proposed up-zoning in the Mandatory Housing Affordability Zone may result in a net increase of residential units.

The off-corridor bicycle network will not impact housing or land uses.

b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.

The proposed Project would result in the partial or full acquisition of 51 parcels in the City of Shoreline of which 19 property acquisitions are anticipated to require the displacement of 22 residential (11 owner occupants and 11 tenant occupants), 9 nonresidential (7 landlords and 2 nonresidential businesses) and 1 personal property only. (Relocation Plan, Jacobs, 2019). Per the analysis done for the Project’s Environmental Justice Report (Jacobs, 2020), the median household income in the study area is $62,113, which places most households (including the impacted residential units) under the classification of middle-income households.

Properties that would have been acquired and residents displaced by the Project are already being acquired or displaced by developer acquisitions. The number of property acquisitions needed for the Project continues to evolve as more properties are acquired by developers in the up-zoned areas.

c. Proposed measures to reduce or control housing impacts, if any:

A preliminary market analysis was conducted for the Project to determine if there is available housing in the area to address both owner and renters who could be displaced by the Project. Based on a search of the Northwest Multiple Listing Service (NWMLS) in March 2020, there are 40 active, single-family residential listings with two to five bedrooms and one to three bathrooms on standard residential lots that would be suitable for a displaced family’s needs. The listings are all within the City of Shoreline. A similar search of the NWMLS was conducted for single-family residential rentals and there are 16 active rentals in the area. As a result, it is anticipated that for those who wish to remain in the area, there are opportunities in comparable housing.

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?

The tallest feature of the Project will be streetlights on the north side of the road. The streetlights may be as tall as 40 feet.

There are no buildings proposed as part of the 145th Street Multimodal Corridor improvements or off-corridor bicycle network. The design includes the construction of new bus shelters by Metro measuring approximately 7.5 feet tall.

b. What views in the immediate vicinity would be altered or obstructed?

The Project would not result in adverse visual impacts because the features of the reconstructed roadway would be similar to the existing roadway. Views of street lights and traffic lights from residential units would be retained in similar volume and form, but brand new. Some street lights will serve as utility poles, consolidating the overall number of vertical features. New bus shelters will be added, changing the views of the roadway. Most of the trees that would be removed are on the Shoreline side and on private property. Street trees will be added to the public ROW. Some overhead lines would be buried on the north side of the roadway from Meridian Avenue N to I-5, improving the viewshed.
c. Proposed measures to reduce or control aesthetic impacts, if any:

Not applicable.

11. Light and Glare

a. What type of light or glare will the proposal produce? What time of day would it mainly occur?

During construction, there will be exterior safety lighting around crews. There will be no construction after 6:00 p.m. and before 7:00 a.m. There is no glare anticipated from the Project because there will be no reflective surfaces installed.

b. Could light or glare from the finished project be a safety hazard or interfere with views?

No, lights will adhere to WSDOT standards. Seattle City Light will own and maintain the streetlights and poles.

c. What existing off-site sources of light or glare may affect your proposal?

The only offsite light sources come from the highway.

d. Proposed measures to reduce or control light and glare impacts, if any:

Appropriate shielding systems, downward-facing lights, and motion-control lights for exterior lighting features will be used to reduce offsite light pollution. The City of Shoreline’s code, Chapter 15.580 for Outdoor Lighting Standards, will be followed.

12. Recreation

a. What designated and informal recreational opportunities are in the immediate vicinity?

One recreational resource, the Interurban Trail, is located in the Project impact area. This trail is part of the City of Shoreline’s off-road trail network (see Figure 1). The Project will not acquire any land from this resource nor adversely affect its features or use by the public.

b. Would the proposed project displace any existing recreational uses? If so, describe.

No

c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:

The installation of the off-corridor bicycle network will improve recreational 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.

There are two recommended eligible historic properties identified within the Project area: a residence at 2012 N 145th Street (Property 55/DAHP ID 296834) and Great Shepherds Adult Family Home at 1658 N 145th Street (Property 47/DAHP ID 376178), as shown on Figure 7. Neither property is expected to be adversely affected by the Project.
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.

An archaeological assessment of the Project area included a reconnaissance survey and monitoring of geotechnical boring. The boreholes drilled on January 16-17, 2019, encountered asphalt, road base, and fill overlying glacial till. No intact soil horizons or evidence of archaeological materials were observed.

The Cultural Resources Technical Report (Jacobs, 2020) contains a list of previous studies within 0.5 mile of the Project area.

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 archaeology and historic preservation, archaeological surveys, historic maps, GIS data, etc.

Background research was conducted in November 2018 using the Washington Information System for Architectural and Archaeological Records Data (WISAARD) database and through review of ethnographic reports, historic records, maps, and aerial photographs related to the Project area.

Historic-age resources 44 years old and older (constructed in or before 1975) were evaluated, documented, and recorded in the WISAARD database. The built environment survey and historic property inventory was completed in November 2018 and January 2019.

The Washington State Department of Transportation, on behalf of the Federal Highway Administration, initiated Section 106 with the Washington State Historic Preservation Officer and affected Tribes on March 5, 2019. The Washington State Historic Preservation Officer at DAHP concurred with the Area of Potential Effects on March 18, 2019, and no comments have been received from Tribes.

On February 25, 2020, DAHP concurred with a finding that both properties are eligible for listing in the National Register of Historic Places and the Project as proposed will have no adverse effect on historic properties.

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.

In the event that archaeological materials are discovered during construction, the contractor is required to halt excavations in the vicinity of the find, have a professional archaeologist assess the significance of the archaeological deposits discovered during construction, and contact City of Shoreline, City of Seattle, and WSDOT. If human skeletal remains are discovered, the King County Sheriff and DAHP must be notified immediately.
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 Project is located along N/NE 145th Street (SR 523) from the east side of the Interurban Trail at Aurora Ave N (SR 99) to the west side of the interchange with I-5 (Figure 1).

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?

The site is currently served by public transportation (bus) on 145th Street. The Project includes bus zone improvements. The site will be served in the future by the Sound Transit 145th Street Link light rail station approximately 0.1 mile away on the northeastern side of the I-5 intersection.

c. How many additional parking spaces would the completed project or non-project proposal have? How many would the project or proposal eliminate?

There is no on-street parking on 145th Street and no plans for on-street parking in the future.

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).

See the Project description provided in response to question 11.

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 non-passenger vehicles). What data or transportation models were used to make these estimates?

The Project itself will not generate new vehicular trips (passenger and commercial vehicles), but the volume of traffic is expected to grow with population growth in the region, up-zoning and the new light rail station. The Project mitigates the expected congestion by enabling better operation of the corridor. This is highlighted in particular when comparing the improvement to level of service (LOS) in the 2040 No Build and Build scenarios shown in Table 7.

The traffic volumes for 2040 analysis year were developed based on the forecasts prepared for the Sound Transit 3 2042 analysis year in the Shoreline 145th Corridor Study (City of Shoreline, 2016). Select results of the Traffic Report (Jacobs, 2020) are summarized in Table 7 using LOS thresholds provided in the Highway Capacity Manual 2000 and intersection analysis using Synchro, Version 10 software. Figure 8 shows the corresponding intersections discussed in the table.
<table>
<thead>
<tr>
<th>Intersection</th>
<th>Control Type</th>
<th>AM Peak Hour</th>
<th>2022 No Build</th>
<th>2040 No Build</th>
<th>2040 Build</th>
<th>PM Peak Hour</th>
<th>2022 No Build</th>
<th>2040 No Build</th>
<th>2040 Build</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>LOS</td>
<td>Delay (Sec/Vehicle)</td>
<td>V/C</td>
<td>LOS</td>
<td>Delay</td>
<td>V/C</td>
<td>LOS</td>
</tr>
<tr>
<td>1 Aurora Ave N/SR 99</td>
<td>Signalized</td>
<td>E</td>
<td>55</td>
<td>0.91</td>
<td>E</td>
<td>66</td>
<td>1.03</td>
<td>E</td>
<td>73</td>
</tr>
<tr>
<td>2 Ashworth Ave N</td>
<td>Two-way stop controlled</td>
<td>E</td>
<td>48</td>
<td>0.24</td>
<td>F</td>
<td>166</td>
<td>0.71</td>
<td>F</td>
<td>166</td>
</tr>
<tr>
<td>3 Meridian Ave N</td>
<td>Signalized</td>
<td>C</td>
<td>21</td>
<td>0.72</td>
<td>B</td>
<td>18</td>
<td>0.87</td>
<td>C</td>
<td>24</td>
</tr>
<tr>
<td>4 1st Ave</td>
<td>Signalized</td>
<td>C</td>
<td>23</td>
<td>0.97</td>
<td>F</td>
<td>116</td>
<td>1.36</td>
<td>C</td>
<td>24</td>
</tr>
</tbody>
</table>

Notes:
- There are no proposed congestion improvements at Intersection 2/Ashworth therefore the 2040 Build and 2040 No Build AM Peak and PM Peak numbers are the same.
- Red indicates intersection fails to meet agency LOS standards.
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.

h. Proposed measures to reduce or control transportation impacts, if any:

All intersections within the study area currently meet WSDOT’s LOS standards, except for the stop-controlled Intersection 2/Ashworth Ave N, which currently operates at LOS E in both AM and PM peak hours. If current conditions continue through 2040, 3 of 4 intersections fail to meet agency LOS standards.

The proposed improvement at Intersection 1/Aurora Ave N is an extension of the east bound left turn pocket. This mitigates expected congestion for left turning vehicles by providing additional storage space.

The protected pedestrian/bicycle crossing improvements proposed for Intersection 2/Ashworth Ave N provides increased safety but does not influence traffic/congestion.

Intersection 3/Meridian Ave N improvements include the addition of left turn pocket for each leg of the intersection. This is expected to mitigate congestion by increasing overall intersection capacity. It will also improve safety by providing a space for left turning vehicles and a left turn only signal phase. As shown in Table 7 No Build 2040 scenario, without the project improvements the AM peak fails to meet LOS standards due to heavy congestion that is caused by significant volumes traveling east to access I-5.

Intersection 4/1st Ave N improvements include the addition of left turn pockets for the eastbound, westbound, and southbound directions and a right turn pocket for northbound vehicles. This is expected to mitigate congestion by increasing overall capacity. It will also improve safety by providing space for left turning vehicles and a left turn only signal phase.

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.

b. Proposed measures to reduce or control direct impacts on public services, if any.

None.

16. Utilities

a. Circle utilities currently available at the site:

Electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other ________
All utilities currently at the site will remain.

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.

Existing overhead and below ground utilities will remain at the site. The roadway widening would cause the relocation of utilities on the north side of the project to be put underground from Meridian to I-5. Other utility poles elsewhere in the project may be relocated to meet standard horizontal clearance requirements or move within the new landscaping strip.

Street lights will be installed per light level analysis and updated to meet current standards. Three new stormwater management sites in Shoreline are described in question 3d and listed in Table 5 and Figure 4.

During site preparation and construction, utility actions will be coordinated among providers.

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: [Signature]

Name of signee: Robert Victor, P.E.

Position and Agency/Organization: Capital Projects Manager II, City of Shoreline

Date Submitted: 08/28/2020
The dimensions and purposes of the two key Project features of roadway and bike network are listed as follows and summarized in Table 1:

- Pavement resurfacing
- Full depth pavement replacement from Meridian Ave N to the I-5 Interchange
- New sidewalks on the north side of 145th Street from the Interurban Trail to the I-5 Interchange
- New landscape buffer on the north side of 145th Street between Aurora Ave N and I-5 that includes street trees
- New Americans with Disabilities Act (ADA) curb ramps to meet current design standards at all intersections within the corridor
- Lengthened left-turn pocket on the west leg of the intersection with Aurora Ave N
- New left-turn pockets at all legs of the intersections with Meridian Ave N and 1st Ave N:
  - Two new or modified traffic signals as a result of the new left turn pockets: Meridian Ave N and 1st Ave N
- Two new pedestrian crossing signals:
  - 145th Street and Ashworth Ave N, Corliss Ave N
- Installation of joint utility trench and undergrounding overhead power and telecom under the north sidewalk on 145th Street from Meridian Ave N to the I-5 Interchange
- New fill retaining walls at various locations along the north side of the roadway where widening will occur
- New raised medians at various locations between Wallingford Ave N and the I-5 Interchange
- Replaced stormwater management system including new flow control and runoff treatment
- New lighting poles and luminaires within the sidewalk/landscape amenity zone on the north side of the Project corridor from Linden Ave N to I-5 and on the south side of the Project corridor from Meridian Ave N to I-5
- New bus zone improvements including ADA-accessible pads, bus shelters, pedestrian lighting, and real-time information system pylons
- New off-corridor bike network to connect the Interurban Trail and west-end neighborhoods with the future Sound Transit 145th Street Link light rail station. The off-corridor network would travel on existing roadways with limited Project improvements including wayfinding signs, painted arrows, speed humps, and traffic islands. Curb ramps would also be improved at two intersections. All proposed improvements are located within existing right-of-way.

The Project improvements along the 145th Street corridor will require right-of-way property acquisition. According to the Relocation Plan, the proposed Project will result in the partial or full acquisition of 51 parcels of which 19 property acquisitions are anticipated to require the displacement of 22 residential (11 owner occupants and 11 tenant occupants), 9 nonresidential (7 landlords and 2 nonresidential businesses) and 1 personal property only. The Project requires excavation below the existing paved surfaces: approximately 4.5 to 8 feet for lighting poles, 8 to 15 feet for traffic signals depending on soil conditions, 5 feet for storm conveyance system, and 5 feet for the utility trench.
Table 1. Key Project Features

<table>
<thead>
<tr>
<th>Project Feature</th>
<th>Approximate Dimensions</th>
<th>Purposes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roadway Improvements</td>
<td>Bus shelters</td>
<td>Provide better transit amenities</td>
</tr>
<tr>
<td>Turn pockets</td>
<td></td>
<td>Remove stopped cars from flow of traffic</td>
</tr>
<tr>
<td>Street and Pedestrian Lighting</td>
<td></td>
<td>Relocate for roadway improvements and update for current design standards. Provide better lighting for pedestrian facilities.</td>
</tr>
<tr>
<td>Underground Utilities</td>
<td></td>
<td>Provide better aesthetics by removing clutter from streetscape, in alignment with zoning and municipal code requirements</td>
</tr>
<tr>
<td>Storm Drainage Improvements</td>
<td></td>
<td>Ensure detention and treatment to address additional impervious surface added</td>
</tr>
<tr>
<td>Replace signals at 1st and Meridian intersections</td>
<td></td>
<td>Improve turn pockets and provide better traffic flow</td>
</tr>
<tr>
<td>Landscaping</td>
<td></td>
<td>Improve aesthetics and city gateway features</td>
</tr>
<tr>
<td>Structural Retaining Walls</td>
<td></td>
<td>Address grading and property interface</td>
</tr>
<tr>
<td>Curb ramps</td>
<td></td>
<td>Address ADA requirements</td>
</tr>
<tr>
<td>Bike Network Improvements</td>
<td>Wayfinding signs, painted arrows</td>
<td>Guide bicyclists of all ages and abilities along the network</td>
</tr>
</tbody>
</table>

Steep Slope Discussion

There are steep slopes in the project area, but they consist of vegetated, human made cut slopes with retaining walls. The Shoreline ArcGIS mapper indicates the location of three “slope hazards” near the project area coded yellow (Figure 1a).

1) near Walgreens at N 145th St/Aurora Ave N
2) at the I-5 interchange
3) 14505 Sunnyside Ave N

The first two slopes are near the project footprint but will not be affected during construction. The third slope will be discussed in greater detail.

Figure 1a. Steep Slopes within Project Area (Shoreline ArcGIS)

Existing borings and test pits found the Project area is underlain by till and outwash deposits. No groundwater was encountered during geotechnical explorations, but project wide perched water may be present within the till. The roadway slope of the entire corridor is not more than 8.0 percent. Steep slopes (>40%) found on the Seattle/southern side of the roadway would not be impacted by pavement replacement activities.
14505 Sunnyside Ave N Current Condition

The third slope shown on Figure 1a (circled red) and Figure 1b (close-up) is between 2314 N 145th Street and 14505 Sunnyside Avenue N. The photo (Figure 2) demonstrates that the humanmade slope wraps around the southwest corner (backyard) of 14505 Sunnyside Ave N, supported in part by two retaining walls.

Figure 1b. Steep Slope at 14505 Sunnyside Ave N (shoreline ArcGIS)

Shoreline Municipal Code (SMC) 20.80.210 defines three types of Geologic Hazards (erosion, landslide and seismic). The Shoreline ArcGIS mapper provides erosion hazard soils and slope hazard (or slope steepness e.g. topography) data. Landslide hazards are defined by slope steepness as well as a by a combination of geologic and hydrologic factors (WAC 365-190-120).

The slopes in the backyard of 14505 Sunnyside Ave N are humanmade. From borings obtained by the project, the slopes do not appear to overlay a relatively impermeable sediment or bedrock. From visual data obtained from field visits, the site does not appear to experience groundwater seepage. Additionally, the slope is above groundwater (the regional groundwater table is anticipated to be located below the project excavation levels) and roadway stormwater is drained away from the slope with hardscaped features. Therefore, this steep slope does not meet the potential slide characteristics of a landslide hazard and does not warrant a critical area report as per SMC 20.80.240.
14505 Sunnyside Ave N Construction

Figure 3 is a detail of the 30% design at the 14505 Sunnyside Ave N site. It highlights the areas that will be graded to expand the roadway north, shifting the location of the landscaping strip and sidewalk north onto private properties that will be acquired and redeveloped separate from this project.

The existing 4-ft tall retaining walls on the west side of the property and adjoining property (oriented N-S) will remain in place, but up to 9 ft of the southern end of wall segment will be removed. The soil currently retained behind the walls will be removed or stabilized in advance of the sidewalk installation according to project specifications and standard construction techniques including BMPs to ensure temporary erosion and sedimentation control and stormwater requirements. Although this slope is not anticipated to be defined as a “landslide hazard area” per SMC 20.80.220(B), the project’s end design will neither increase surface water discharge or sedimentation on site or to adjacent properties, nor decrease slope stability on the site or adjacent properties, and as such would meet development standards for activities allowed in all geologic hazard areas and buffers (SMC 20.80.224).

The 2-3 foot retaining wall on the south edge of the property will be removed and replaced at a distance 3-4 feet north from the original site. The steep slope will be removed for the roadway and sidewalk to be constructed at grade. Reconstruction of the short wall will comply with the same BMPs to ensure erosion control and stormwater requirements are met. The replacement of the existing retaining wall (5-11 feet tall) will ensure long-term slope stability (retaining walls are preferred over graded slopes as per performance standards described in SMC 20.80.250(C)) and has the effect of reducing the overall contour of the slope.