3 Evaluation of Final SEIS Alternatives

This chapter evaluates the Final Supplemental Environmental Impact Statement (FSEIS) alternatives and describes the potential impacts and mitigation measures for the following topics:

- Section 3.1 Air Quality/Greenhouse Gas
- Section 3.2 Surface Water and Stormwater
- Section 3.3 Land Use Patterns and Policies
- Section 3.4 Plans and Policies
- Section 3.5 Aesthetics
- Section 3.6 Transportation
- Section 3.7 Public Services
- Section 3.8 Utilities

The analysis compares and contrasts the alternatives and provides mitigation measures for identified impacts. It also summarizes whether there are significant unavoidable adverse impacts. For the context of the affected environment, please see the Draft Supplemental Environmental Impact Statement (DSEIS).

3.1 Air Quality/Greenhouse Gas Emissions

Climate change and greenhouse gas emissions are addressed as air elements of the environment under the State Environmental Policy Act (SEPA) analyses. Transportation and land use changes can contribute to climate change due to increases in greenhouse gas (GHG) emissions. Land use changes can result in GHG emissions through the construction process; utilities used during operations, such as electricity, natural gas, and water; and waste production. Land use also generates vehicle trips. Travel completed using gasoline and diesel-fueled passenger, commercial, or transit vehicles can emit carbon dioxide, methane, and nitrous oxide. The accumulation of GHG in the atmosphere contributes to climate change.

See the DSEIS for additional background on Air Quality/Greenhouse Gas.

3.1.1 Thresholds of Significance

The alternatives would be considered to result in significant GHG emission impacts under the following conditions:

- Alternative 1 No Action if it increased per capita emissions compared to existing conditions.
- Alternatives 2 and 3 if they increased per capita emissions compared to Alternative 1 No Action.

The scale of climate change is so large that a project's GHG impacts should be considered on a cumulative scale and in relation to the service population (residents and employees) of the area.

For the purposes of this FSEIS, the indictors of GHG emissions include a comparison of growth estimates in population and jobs between Alternatives A and B and Alternatives 1, 2, and 3.

3.1.2 Evaluation of Final SEIS Alternatives

Under all studied alternatives embodied emissions associated with redevelopment and the energy emissions generated would increase compared to existing conditions due to the intensified land use. Vehicle emission rates are expected to be lower in 2035 as vehicles become more fuel efficient due to more stringent regulations; therefore, each VMT will contribute fewer GHG emissions to the environment. However, the transportation emissions are expected to increase under each studied alternative.

Under the analysis, Alternative 1 does not increase per capita emissions above

existing conditions; it would be reduced on a per capita basis. Alternatives 2 and 3 would reduce per capita emissions compared to Alternative 1 No Action. See Exhibit 3-1.

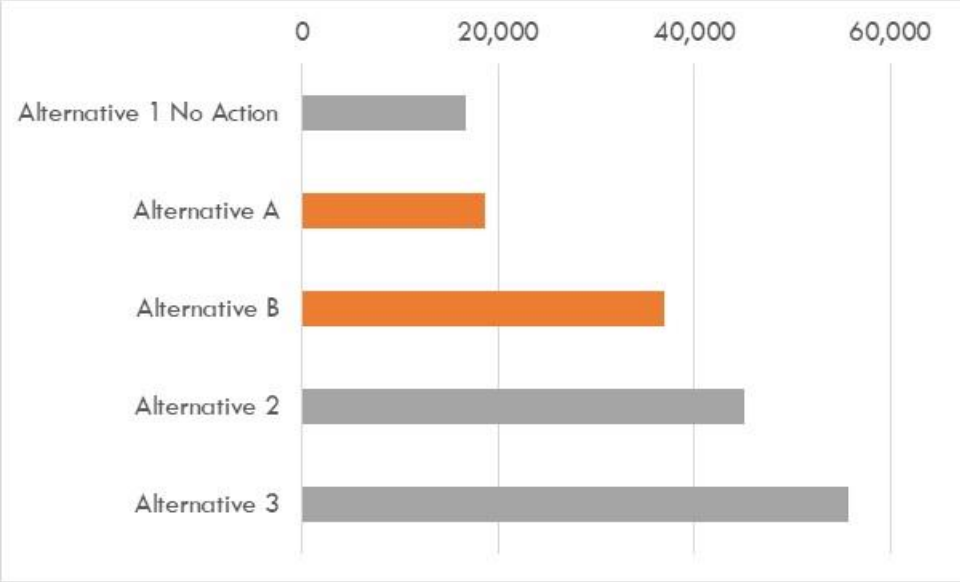
Exhibit 3-1. Lifetime GHG Emissions of the Study Area, Alternatives 1, 2, and 3

Emissions (MTCO2e)	Alternative 1 No Action	Alternative 2	Alternative 3
Embodied Emissions	371,800	778,300	922,900
Energy Emissions	7,967,300	13,687,000	15,111,400
Transportation Emissions	3,737,000	6,325,500	6,783,400
Total Emissions	12,076,100	20,790,800	22,817,700
Population + Jobs	16,640	45,010	55,710
Emissions per Capita	725.5	460	410

Sources: King County SEPA GHG Emissions Worksheet, 2019; Fehr & Peers, 2020.

The FSEIS Alternatives have population and jobs in the range of the DSEIS Alternatives and results are expected to be similar to Alternative 1 for Alternative A and Alternative 2 for Alternative B. See Exhibit 3-2.

Exhibit 3-2. Combined Population and Jobs 2044



Sources: Mithun 2021, BERK 2021.

Alternative A Current Trends

Alternative A combined population and employment growth is slightly higher than Alternative 1 by 12%. The slightly greater units and employment space/jobs

would produce slightly higher emissions and likely a similar emissions per capita as No Action Alternative 1.

Alternative B Transit Connected Growth – Preferred Direction

Alternative B has 22% less growth than Alternative 2. The lower units and employment space/jobs would produce slightly lower emissions and likely a similar per capita rate Alternative 2.

3.1.3 Mitigation Measures

Based on the evaluation in the preceding sections, no significant impacts are expected under the Study Area Alternatives. However, given the greater growth anticipated and to be consistent with City's Comprehensive Plan, Climate Protection Action Plan, Sustainability Master Plan, and SEIS scoping input, the following are offered as mitigation measures.

Incorporated Plan Features

- Dense landscaping along roadways can reduce air pollutants by up to 50% (Deshmukh, 2019). Green infrastructure is a source of potential air emission mitigation at a microscale (Tiwari, 2019). As part of the Station Area Plan and Code associated with the Action Alternatives, the City is proposing green streets with optimal implementation of landscaping to contribute towards meeting the citywide tree canopy goal.
- The Washington Environmental Health Disparities Map10 shows that populations in the Study Area are at high risk for environmental exposures (scoring 7 or 8 out of 10 on the risk factor scale, depending on the location.) Alternatives 2 and 3 and Alternative B propose growth near I-405 that is office-focused with residential and mixed uses buffered beyond office uses to reduce the potential for localized air quality effects on vulnerable populations and improve land use compatibility adjacent to the freeway.

Applicable Regulations and Commitments

- The City's Comprehensive Plan Environment Chapter cites promotion of cleaner fuels, a reduction in vehicle miles of travel, and more reliance on renewable energy as three key transportation related actions to meet the City's GHG reduction targets.

[10] See: https://www.doh.wa.gov/DataandStatisticalReports/WashingtonTrackingNetworkWTN/InformationbyLocation/WashingtonEnvironmentalHealthDisparitiesMap

- Kirkland's Climate Protection Action Plan (CPAP) 2013 and 2018 Gas Emission Report promote reduction in GHG.
- The Kirkland Sustainability Master Plan approved December 2020 includes key recommendations to reduce GHG, including but not limited to:
  - Incentivize construction of high-performing, low energy use zero-emission structures.
  - Retrofit existing buildings to reduce energy use.
  - Employ Smart Growth principles in all City planning practices and codes.
  - Reduce the average amount each person drives by 20% by 2030 and 50% by 2050.
  - Ensure that people of all ages and abilities can comfortably get around by walking or bicycling.
  - Grow the annual number of weekday transit riders by 10% each year.
  - Manage Kirkland's urban forest resource for optimal health, climate resiliency and social equity.
  - Develop a diversified, equitable and resilient local green economy.
- Efforts that the City makes can support State Climate Action goals. The State Agency Climate Leadership Act (RCW 70.235.050 and 060) requires some state agencies to reduce their greenhouse gas emissions. The Act was updated in 2020 to require state agencies to reduce their carbon pollution to these targets:
  - 2020 –15% below 2005 levels
  - 2030 – 45% below 2005
  - 2040 – 70% below 2005
  - 2050 – 95% below 2005 and achieve net-zero GHG emissions.

Mitigation Measures Related to Embodied and Energy Emissions

- In the Form-Based Code, the City could include site by site green building standards or implement districtwide green building standards / incentives, credentialing programs (e.g., Living Building Challenge, LEED, Passivhaus, Built Green, etc.), and district energy.

3.1.4 Significant Unavoidable Adverse Impacts

Based on the evaluation in the preceding sections, there are no significant unavoidable adverse impacts expected under the studied alternatives.

3.2 Surface Water and Stormwater

This section addresses impacts, and mitigation measures on constructed drainage facilities such as ditches, culverts, enclosed drainage system, detention ponds, and infiltration facilities; and on natural surface water bodies such as creeks, lakes, and wetlands. These elements were addressed in the November 2015 Comprehensive Plan Update Final Environmental Impact Statement (2015 Comprehensive Plan EIS). This section also includes consideration of tree canopy, which was not explicitly addressed in the prior EIS.

3.2.1 Thresholds of Significance

Stormwater impacts would be considered to rise to the level of significance when projects 1) create impervious surfaces without stormwater management that increase the rate and volume of stormwater entering the City's separated storm sewer system exceeding its conveyance capacity and causing local flooding or degrading habitat in downstream receiving waters due to streambank erosion or changes in wetlands hydroperiod, 2) release untreated stormwater from pollution generating hard surfaces that leads to a decrease in water quality in local receiving waters, or 3) release stormwater contaminated with silt or other pollutants during construction.

Impacts to surface waters, including streams and wetlands, would be considered to rise to the level of significance if streams would receive substantial changes in flow volumes and velocities that affect water quality and habitat and cannot be mitigated. Surface water impacts are also of significance if wetlands or wetland buffers are filled or substantially reduced in function and these losses cannot be mitigated.

For tree canopy, impacts would be considered to rise to the level of significance when the project would cause a net loss in the City's overall current 38% tree canopy coverage.

3.2.2 Evaluation of Final SEIS Alternatives

Stormwater: Under all alternatives, additional growth and development would likely increase the total amount of impervious surface in some areas of the Study Area, creating additional stormwater runoff that would require management and treatment. However, this new development would be required by existing development regulations to implement stormwater flow control and water quality treatment, mitigating its impacts.

Wetlands and Streams: Under all alternatives, the increase in impervious surfaces could reduce infiltration and therefore baseflow during drier periods. The required implementation of LID practices could mitigate for this impact to flow and minimize the impact to associated stream and wetland habitat.

FSEIS Alternatives Evaluation: As with the DSEIS Alternatives, the level of impervious surfaces increases with FSEIS Alternatives A and B, resulting in significant impacts to the stormwater system.

Three scenario models were developed and evaluated regarding the FSEIS Alternatives:

- Alternative A, with full buildout based on existing zoning
- Alternative B, the preferred alternative with fully developed land cover built under the new zoning code of the Station Area Plan, and
- A variation of Alternative B with the additional mitigation of blue/green streets.

The evaluation of both alternatives showed that development and any associated land use code changes within the Study Area will not negatively impact existing stormwater conveyance through the stormwater main line on 120th Ave NE between NE 85th St and NE 90th St. Limited improvements are needed (e.g., pipe replacement described in mitigation measures). Redevelopment in this area should reduce stormwater runoff with the implementation of required onsite stormwater control facilities. Additional results include:

- Development of the Study Area and any associated increases in impervious surface area will not have any negative downstream impacts. This is due to current stormwater mitigation requirements that will require these parcels to install large detention systems (such as tanks and vaults) to reduce the flow off their development and help existing flooding issues.
- Outside of the Study Area, the analysis showed an increase in runoff from the upstream residential areas causing potential flooding. Residential parcels are smaller in size and tend to be under the mitigation requirement and therefore are exempt from the requirement to construct large stormwater facilities.
- Much of the potential flooding is resolved with the stormwater mitigation from redevelopment. Other types of green streets or stormwater expression, which were not included in the study and may have lower maintenance costs, could continue to be considered as urban design features with water treatment benefits

Development under either FSEIS Alternative A or Alternative B is expected to improve flooding conditions. The modeling results for Alternatives A and B

indicate impervious limit increases will not negatively impact downstream flooding. Rather, redevelopment is expected to benefit existing flooding due to the flow control facilities that will be required for the redeveloping parcels.

Alternative A Current Trends

Though slightly greater anticipated growth than the No Action Alternative 1, under Alternative A land use and zoning would be retained, and changes to tree canopy in the Study Area would likely be minimal because they would be related to gradual infill and development activities consistent with current land-use and tree retention code.

Alternative B Transit Connected Growth – Preferred Direction

Building height and proximity to potential planting areas in public rights of way in this alternative could affect existing trees or restrict the choice of tree species for some future plantings to those with a smaller or more columnar structure, potentially limiting tree canopy coverage. The potential impact area for Alternative B includes parcels identified for development as well as adjacent public rights of way. The potential loss of tree canopy to new development would be slightly less for Alternative B (66.23 acres) than for Alternative 2 (67.36 acres) due to no proposed redevelopment in the interchange area.

3.2.3 Mitigation Measures

Incorporated Plan Features

Alternative B may implement measures from the Water & Sustainability Alternatives Matrix to provide additional mitigation. (See DSEIS Appendix B).

The NE85th Street Station Area SAP is intended to implement progressive stormwater management, support urban ecology, and create a vibrant urban center around the new transit facility. Among several ideas identified in the Water & Sustainability Alternatives Matrix one concept is a Blue Green corridor, which is an emerging concept meant to further these goals. Green/Blue Street stormwater infrastructure was modeled within the Study Area and found to be costly with little benefit for the capacity of the stormwater system. See FSEIS Appendix B.

There are few examples of blue green corridor implementation in the US or internationally, and their character can vary significantly. Blue green corridors can be designed to achieve a broad range of goals for placemaking, stormwater management, and urban ecology and therefore can range from an open vegetated stream channel to a series of at grade bioretention cells, to water and ecology themed art installations and specialty paving, to trees and other plantings all of which can be paired with below grade traditional grey infrastructure (i.e., vaults and pipes). Accordingly, the potential cost in the FSEIS Appendix B was conservative and may not represent the cost for the Blue Green facility; a more refined analysis could be accomplished as the concept is further defined if considered in the future.

Regulations and Commitments

Stormwater

Under all studied alternatives, the City would require projects to implement enhanced stormwater treatment for all hard surfaces requiring treatment within the Forbes Creek watershed in addition to the existing stormwater code requirements. Additionally, the final plan may incorporate elements from the Water Mitigation matrix in DSEIS Appendix B. Some elements of stormwater infrastructure were included in the citywide fiscal impacts analysis shown in FSEIS Appendix B.

Wetlands and Streams

Per KZC 90.60 and 90.70, modifications to wetlands, streams, and associated buffers are prohibited except under certain circumstances. Activities may be permitted in critical areas provided they meet the following standards (among others): general mitigation requirements, including mitigation sequencing; requirements for compensatory mitigation; are protective of fish or wildlife habitat conservation areas; have no adverse impact on water quality or conveyance or degradation of critical area functions and values; minimize the removal of significant trees; and restore temporarily disturbed areas to pre-project conditions or better.

Tree Canopy

Per KZC 95, a Tree Retention Plan would be developed under all alternatives, including inventory and survey of significant trees that may be impacted by the proposal. Tree canopy loss would be minimized through the retention of high value street trees and on-site trees to the maximum extent possible, and moderate value trees where feasible. Additionally, a forest management plan

may be required for significantly wooded sites greater than 35,000 square feet. New tree canopy would be added with new street tree plantings, installation of required landscaping, and general project landscaping.

Other Proposed Mitigation Measures

Stormwater

Per Appendix B-3, the only proposed stormwater project within the Study Area consists of replacing 520 feet of 36-inch piped stream along 120th Ave NE with a smoother pipe material. This will increase capacity through the stormwater main line, helping in all scenarios.

Tree Canopy

Tree loss should be minimized where possible through the development of a Tree Protection Plan in accordance with City requirements, with an emphasis to retain and protect high-value, significant trees. Large trees are the most difficult to replace and can be considered for relocation/transplanting. It is unlikely that all trees and tree canopy identified within the potential impact areas for Alternative B would be removed. However, because the maximum impact to tree canopy under these alternatives is approximately 67 acres, and there are only roughly 25 acres of potential planting area within the Study Area, it may be necessary to replace some outside of the Study Area in suitable locations. Recommended locations for tree plantings outside the Study Area include residential neighborhoods, public open space, parks, and stormwater retention facilities. In order to maximize replanting within the Study Area and allow trees a greater opportunity to mature and contribute to the City's canopy goals, potential planting opportunities within impervious surfaces using suspended pavement systems (Silva cell) could be implemented. Where replanting within the Study Area is not possible, an in-lieu-fee Alternative may provide flexibility to fund and support best management practices outlined in the City of Kirkland Urban Forestry Strategic Management Plan.

3.2.4 Significant Unavoidable Adverse Impacts

No significant unavoidable adverse impacts are expected to stormwater and surface water.

There may be indirect impacts to stream and wetland buffers due to increased development adjacent to buffers. No additional impacts to streams or wetlands are anticipated in any alternatives.

Based on Citywide data from historic canopy assessments, the Study Area would see near-term canopy loss under action alternatives as larger trees are removed to make way for redevelopment. The rate of near-term canopy loss likely accelerates based on the intensity of allowed development. The tree canopy would be restored over time as replacement trees reach maturity; however, both alternatives may result in significant unavoidable impact to city-wide tree canopy coverage temporarily over the next 10–20 years.

3.3 Land Use Patterns and Socioeconomics

This section evaluates land use patterns, housing, jobs, and growth today and in the future. This section describes potential impacts of the No Action and Action Alternatives on land use, growth, and displacement of vulnerable populations as development occurs. The data considered for this section include demographic data collected pre-COVID 19 from state and federal sources.

3.3.1 Thresholds of Significance

Land use and socioeconomic impacts would be considered to rise to a significant level if there are:

- Differences in activity levels at boundaries of uses of different intensities likely to result in incompatibilities.
- Intensities of expected growth likely to have an impact on direct displacement of a marginalized population (low-income people, people of color).
- Inadequate physical capacity to accommodate growth and displaced residents and businesses.
- Developments at intensities that would not support transit investments.

3.3.2 Evaluation of Final SEIS Alternatives

Land Use Patterns

Alternative A land use pattern is the same as Alternative 1 No Action. Alternative B proposes similar medium and high density residential, commercial, and industrial land use patterns as the No Action Alternative but emphasizes mixed use residential/commercial, and mixed use office development.

Compatibility

Land Use Transitions

All Alternatives would maintain a pattern of greater mixed use or employment intensity near NE 85th Street and I-405, though Alternatives B, 2 and 3 create a more distinct difference in intensity of uses in the northeast and southeast quadrants of the interchange where there are more abrupt changes in intensity from these uses to medium and lower density residential. This is addressed to a greater degree in the Aesthetics analysis. Alternative B includes preliminary Form-Based Code principles addressing transitions in height and landscaping. See Exhibit 1-26.

Air Quality

In contrast to No Action Alternative and Alternative A, and similar to Alternatives 2 and 3, FSEIS Alternative B provides a transition or buffer of greater employment uses along I-405 in the northeast and southeast quadrants of the interchange; residential uses would be located beyond these office-focused areas further from I-405.

Dense landscaping along roadways can reduce air pollutants by up to 50% (Deshmukh, 2019) Green infrastructure is another source of mitigation for potential air emissions (Tiwari, 2019). The Action Alternatives including Alternative B promote landscaping and green infrastructure such as with green streets. Like other Action Alternatives, Alternative B also includes a Form-Based Code that can address orientation and location of residential uses in mixed use developments to reduce potential exposure to adverse air quality and improve land use compatibility. Alternative B Form-Based code elements are more detailed than for other alternatives and described in Chapter 2.

Activity Levels

All alternatives would increase growth in the Study Area, with No Action the least and Alternative 3 the most. Alternative A is slightly higher and similar to the No Action Alternative 1 and Alternative B is slightly lower and similar to Alternative 2. See Exhibit 3-3.

Exhibit 3-3. Households and Jobs by Alternative

Alternative	Households	% Increase Above Existing	% Increase Above No Action	Jobs	% Increase Above Existing	% Increase Above No Action
Existing	1,909			4,988		
No Action	2,782	46%		10,859	118%	
Alternative A	2,929	53%	5%	12,317	147%	13%
Alternative B	8,152	327%	193%	22,751	356%	110%
Alternative 2	8,509	346%	206%	28,688	475%	164%
Alternative 3	10,909	471%	292%	34,988	601%	222%

Sources: Mithun, 2020; BERK, 2020.

Increases in growth activity levels could increase ambient noise such as at the interface of commercial or industrial and residential uses with delivery bays or other equipment. The City has adopted maximum permissible noise levels between land use classes of different types consistent with state rules (WAC 173-

60). Noise levels may increase temporally during construction, and City rules also address appropriate daytime hours for development activity.

The change in activity levels at the boundary of the Study Area is further addressed under each alternative.

Potential Displacement, Growth Capacity, Equity

All alternatives provide capacity for growth as seen in Exhibit 2-32 and Exhibit 2-34 in Chapter 2. Under all alternatives, there would be more intensive office mixed use or residential mixed use buildings replacing single-story big box retail and parking lots along NE 85th Street, though the degree and character differs among alternatives. New typologies would generally abut lower density and medium density residential areas but not replace them.

Most of the change would occur in Census Tract 53033022604, the Rose Hill area east of I-405. This Census Tract has a low opportunity index, and a quarter of the current residents are persons of color. There is a relatively low potential for displacement of small and ethnic businesses as indicated in the DSEIS and Puget Sound Regional Council opportunity index maps; to the extent there are limited displacements, there is capacity under all alternatives to contain space to accommodate them. Likewise, there may be lower income households in the Study Area that could be displaced in limited instances, but there is substantial capacity to add new housing including affordable housing (see below).

See discussions of each alternative for more detail on changes in typologies in some locations.

Affordable Housing

If the City continues the current affordable housing program of both its inclusionary housing program and its voluntary multifamily tax exemption (MFTE) program, the lowest number of affordable units would be added under Alternative 1 and the most under Alternative 3, with Alternatives A and B in the middle of the range. If the City improved these programs (e.g., make MFTE for affordable housing more likely to be used) or increased its inclusionary housing program in association with the increase in heights and densities allowed, more affordable housing could be achieved. Community benefits strategies such as commercial linkage fees could also potentially contribute to the production of more affordable housing within the Station Area and/or within the region. See Exhibit 3-4.

Exhibit 3-4. Affordable Housing Increases by Alternative

Alternative	Net Increase in Households Above Existing	10% Inclusionary Affordable Units	3.7% MFTE Affordable units	Total Potential Affordable Units
No Action Alternative 1	873	87	32	119
Alternative A	1,020	102	38	140
Alternative B	6,243	624	231	855
Alternative 2	6,600	660	244	904
Alternative 3	9,000	900	333	1,233

Sources: Mithun, 2021; BERK, 2021.

It should be noted that the balance of jobs and housing is not 1:1 in any alternative, and there is a greater share of jobs to future population under each alternative. Those working in the Study Area in the future may create demand for housing both in the Study Area and city or region. Though under the Action Alternatives, anticipated jobs would largely include technology and professional service office jobs, the vision includes a range including family wage jobs and a share would also be in retail or services as found today. Typically retail and service workers would earn lesser incomes and rely on availability of affordable housing.

The City will address its jobs-housing balance citywide in its Comprehensive Plan periodic review while also addressing its growth targets.

Transit Supportive Land Use

The PSRC requires that designated Regional Growth Centers allow 45 activity units (population and/or jobs) per acre to help ensure that land use supports transportation investments. The core of the Station Area is within a proposed Regional Growth Center.

All alternatives would increase activity units in the station area with Alternatives B, 2, and 3 exceeding the activity unit density required. The core of the Station Area is only a portion of a larger proposed Regional Growth Center, and density should be confirmed within the appropriate boundary. See Exhibit 3-5.

Exhibit 3-5. Activity Units – Station Area

	Alternative 1 No Action	Alternative A	Alternative B	Alternative 2	Alternative 3
Population + Jobs	16,640	18,660	36,868	45,010	55,710
Activity Units per Acre	23.1	25.9	51.2	62.6	77.4

Note: Existing and No Action assume the Study Area household size of 2.2 derived from PSRC household and population estimates. DSEIS Alternatives 2 and 3 assume a household size of 1.83, the multifamily household size estimated in the 2015 Comprehensive Plan EIS. However, new growth with Alternatives A and B assume a multifamily household size 1.59, recommended by the PSRC in the review of the Regional Growth Center application.

Alternative A Current Trends

Like the No Action Alternative 1, Alternative A retains the current Comprehensive Plan and zoning and anticipates a relatively low amount of growth in residential (53% above existing and 5% above No Action Alternative). Jobs would increase more to a greater extent (147% above existing and 13% above No Action Alternative) though less than Action Alternatives.

Alternative A would result in 2,929 total dwelling units in the Study Area, a 53% increase over existing units. The residential units are part of mixed use developments primarily along the NE 85th Street Corridor in the Commercial area. If 10% of the new units are affordable, about 102 affordable units would be created or funded. If another 3.7% are developed under MFTE as affordable that would mean 38 affordable units.

Higher activity levels and differences in types and scale of development exist where Industrial abuts Low Density Residential and Medium Density Residential west of the Cross Kirkland Corridor or along 122nd Avenue NE, or Commercial and Office near Low and Medium Density Residential along NE 85th Street.

There is capacity in the alternative to accommodate commercial or residential uses that may be displaced by new development.

When the entire station area is taken into consideration, there is not sufficient capacity for jobs and population in Alternative A to achieve the PSRC-desired activity units in proximity to the transit investments to meet the Regional Growth Center criterion of 45 activity units per acre (the City's nomination before PSRC includes the station area and the Moss Bay neighborhood).

Alternative B Transit Connected Growth – Preferred Direction

Under Alternative B, housing would increase by almost 200% above the No Action Alternative, and there would be nearly a 110% increase in jobs. The location of general development typologies and relative intensity of development are in similar places as the No Action Alternative – along the boundary of Industrial/Tech and Residential Mixed Use Intensity.

Areas of change in land use patterns from current zoning include:

- Northeast of I-405 near the transit station, there is more emphasis on Office Mid Intensity instead of Commercial. This could mean replacement of existing businesses for office or mixed use purposes.
- Southeast of the Interchange, there would be a higher intensity office mixed use development between Alternative 2 and Alternative 3.
- NE 122nd Avenue NE north of NE 85th Street: There is more area of Residential Mid Intensity instead of Commercial and Industrial Zoning. The planned uses are more similar to existing abutting uses but could replace existing businesses.
- The taller, more intense Residential High Intensity, including opportunities for mixed-use, would place more growth along NE 85th Street.

Form-based code design guidelines could establish upper story stepbacks, building setbacks, landscape buffers, transition areas and building modulation requirements to help ensure compatible growth.

Alternative B has the potential capacity to accommodate not only 2035 growth targets but more growth beyond to 2044. While displacement risk has been identified as low by PSRC, should there be potential displacement of homes or businesses Alternative B would provide space that could accommodate them as redevelopment occurs; or it is possible that those who may be displaced could relocate outside the Study Area. There is more opportunity for inclusionary housing and MFTE affordable units under Alternative B compared to the No Action Alternative and Alternative A. Together these could total over 855 affordable units under the City's existing inclusionary zoning regulations and potentially more if additional programs or incentives are implemented as described in Chapter 2 and under Mitigation Measures.

Alternative B exceeds the PSRC minimum of 45 activity units per acre in proximity to the transit investments and would support the Regional Growth Center criterion. In conjunction with the recently adopted Moss Bay Neighborhood subarea plan, the proposed Regional Growth Center would comprise about 551 acres and the activity units per acre would be planned to more than meet PSRC thresholds.

3.3.3 Mitigation Measures

Incorporated Plan Features

- Alternatives B, 2, and 3 would have a higher number of housing units and jobs to support transit, and an associated higher number of affordable units produced through inclusionary housing or MFTE programs.
- Alternatives B, 2, and 3 would include a Form-Based Code intended to implement design standards to ensure compatible development and transitions. This could include transitional development standards with building setbacks, landscape buffers, and building modulation requirements. See Chapter 2 for a more complete description of the Form Based Code proposals associated with Alternative B.
- Alternatives B, 2, and 3 promote office closer to I-405 and housing at a further distance, which could reduce exposure of residents in new mixed use developments to emissions and freeway noise impacts. Carefully-selected landscaping along rights of way and other locations can mitigate air quality affected by emissions. (See also these topics in Section 3.1, Air Quality/GHG).

Regulations and Commitments

- Kirkland Zoning Code regulates land use, landscaping, parking, and other aspects of development to ensure development meets the City's long-term vision. Design guidelines, adopted by Section 3.30.040 of the Kirkland Municipal Code establish urban design policies to be used in development design review. See also Section 3.5 Aesthetics.
- Kirkland Zoning Code Chapter 112 addresses affordable housing incentives.
- RCW 36.70A.540 authorizes affordable housing incentive programs applicable to residential, commercial, and mixed-use development.
- Kirkland Zoning Code Chapter 113 addresses opportunities for "Missing Middle Housing" types of development in low-density residential zones.
- The City regulates noise under Chapter 115.95 of the Kirkland Zoning Code. Noise related to construction activities is regulated under Chapter 115.25 of the Kirkland Zoning Code.

Other Proposed Mitigation Measures

Housing Strategy Plan Implementation

The Kirkland Housing Strategy Plan, April 2018, includes strategies the City could implement to improve its support for affordable housing. Strategies include, but

are not limited to:

- Infrastructure for walkability and open spaces/pocket parks.
- All-inclusive neighborhoods with nodes of commercial and gathering places.
- Infill housing including alterative housing types.
- Increase overall housing and choices in Transit-oriented development (TOD) and other centers.
- Mandate and incentivize the inclusion of residential uses in mixed-use developments. Examples of incentives include additional height, reduced setbacks, reduced parking, and tax breaks.
- Explore commercial development linkage fees.

Commercial Space Linkage Fees

Action Alternatives B, 2, and 3 increase the capacity for jobs by 356%-600% above existing levels, and 110% to 222% above the No Action Alternative. This capacity is realized by creating new form-based zoning and allowing heights of up to 150-250 feet (Alternative B) or 300 feet (Alternative 3) closest to the station and 25-85 feet elsewhere. Action Alternatives B, 2, and 3 also increase housing above existing levels by 327%-470% above existing units or 193% to 292% above the No Action Alternative, respectively.

Most of the jobs are expected to be office (e.g., 80-90%) given the development typologies planned next to the transit center with mixed use office towers. Retail jobs would also be created to support new households and employees. Industrial jobs would also occur as infill in existing zoned areas. The Study Area would allow for living and working in the same area, although provision of affordable housing choices would be key to ensuring that the employees of the area have a choice to live there. The housing in the Study Area could also help meet the City's affordable housing gaps in the City as a whole, as identified in the Kirkland Housing Strategy Plan. Such gaps included but were not limited to:

- A low proportion of workers in the City actually live in the City, while many who live in the City go elsewhere to work.
- Available housing for lower income (up to $45,000) and moderate income (up to $75,000) households, especially lower income seniors and individuals and more moderate-income families including single parents. (City of Kirkland, 2018)

A Kirkland strategy to help fill gaps is to "Increase overall housing and choices in Transit-oriented development (TOD) and other centers." (City of Kirkland, 2018)

A means to address the impacts of new job growth on the Kirkland area housing

market is to identify a commercial linkage fee applicable to new commercial square footage, described more specifically below:

> *Commercial linkage fees are a form of impact fee assessed on new commercial developments or major employers based on the need for workforce housing generated by new and expanding businesses. Revenues generated by the fee are then used to help fund the development of affordable housing within accessible commuting distance to the employment center. Commercial linkage fees help to better tie economic growth with housing growth. (Puget Sound Regional Council, 2020)*

Commercial linkage fees help cities address the problem of a "jobs-housing fit," where the range of housing affordability choices need to fit the range of worker incomes in the community. A commercial linkage fee is a per-square foot fee assessed to new, non-residential construction uses, such as hotel, office, retail, and restaurant, to address the affordable housing demand from new workers necessary to staff these uses. To establish the commercial linkage fee, the City must first develop a "nexus" study that demonstrates and quantifies the relationship between new development of commercial space and the demand for affordable housing units; in other words, a study to demonstrate that the increased demand for affordable housing in the City is a direct result of new non-residential development in the City. Such a study could be developed in coordination with A Regional Coalition for Housing ("ARCH").

An example of this type of nexus study was completed for the City of Seattle. After the nexus study, and in reliance on the nexus study, Seattle eventually adopted the Mandatory Housing Affordability (MHA) Program. (City of Seattle, 2014) Seattle modeled the share of units that could be funded with the program. (City of Seattle, 2016) The City also funded an economic analysis of the MHA program. (CAI Community Attributes, 2016) Other commercial linkage fee programs have been established in California, Virginia, Massachusetts and elsewhere. Regionally, other communities are considering commercial linkage fee programs, including the City of Bothell for the Canyon Park Regional Growth Center.

Regional Participation to Leverage Funding

The City could leverage regional partnerships such as with ARCH to add affordable housing opportunities in the Study Area. New regional efforts may also arise over time. For example, there is draft "Housing Benefit Districts" legislation (HB2898 and SB 6618) that would allow for an opt in incremental taxing district and ability for cities to acquire, assemble, landbank land to be developed into affordable / mixed income housing through partnering with the development community and supporting infrastructure. It has been tested in the Cities of

Renton, Everett, and Tacoma.

Other Development Code Concepts

The Form-Based Code could include companion amendments meant to address affordable housing and avoiding displacement such as:

- Creating density bonuses that prioritize affordable housing.
- Establishing minimum requirements for family-size units, so a range of households can live in the Study Area.
- Requirements that development provide a minimum number of activity units to achieve its desired transit-oriented development, as well as establish an expected amount of affordable housing.
- The region is experiencing displacement of general commercial uses and small, affordable spaces from more urban areas as redevelopment occurs. The Form-Based Code could create commercial space standards for both small and large businesses in new developments to retain area businesses in new urban formats. Building flexible tenant spaces that can accommodate small businesses can make the spaces more affordable.
- The City could provide incentives for development that retain space for existing businesses or households (e.g., right of first refusal). The City could also require relocation assistance for those displaced.

See the description of Form-Based Code concepts associated with Alternative B in Chapter 2.

3.3.4 Significant Unavoidable Adverse Impacts

Under all alternatives, additional growth would occur in the Study Area, leading to a generalized increase in building height and bulk and development intensity over time, as well as the gradual conversion of low-intensity uses to higher-intensity development patterns. This transition would be unavoidable, but it is not significant and adverse since this is an expected characteristic of a designated Urban Center in the Countywide Planning Policies.

In addition, future growth is likely to create localized land use compatibility issues as development occurs. The potential impacts related to these changes may differ in intensity and location in each of the alternatives. However, with the combination of existing and new development regulations, zoning requirements, and design guidelines, no significant unavoidable adverse impacts are anticipated.

As the area develops, there may be displacement of existing jobs as most of the areas of intensification are in commercial or mixed use areas; however, there is

sufficient employment space under any alternative to relocate the businesses and thus no significant unavoidable adverse impacts are anticipated.

All alternatives could see some risk of displacement of existing residents or businesses; this risk would be higher under Alternatives B, 2, and 3 but so would the capacity for relocation in new housing units and new tenant spaces. Alternatives B, 2, and 3 would increase substantially the capacity for housing that could better meet demand. Increasing affordable housing programs and incentives for providing units affordable to diverse income groups and to investment in affordable housing development could offset affordability pressures. Measures to encourage small businesses in the Form-Based Code would also help avoid displacement and create a more vibrant urban hub. The capacity of alternatives together with mitigation measures encouraging and requiring affordable housing and a variety of employment space should avoid significant adverse impacts.

3.4 Plans and Policies

This section of the FSEIS describes pertinent plans, policies, and regulations that guide or inform the proposal. Plans and policies evaluated in this section include the Growth Management Act (GMA), Puget Sound Regional Council's (PSRC) VISION 2050, and the King County Countywide Planning Policies (CPPs), each establishing a regulatory or policy framework with which comprehensive plans must be consistent. In addition, policy guidance established by the City' current Comprehensive Plan provides a basis for evaluating change and potential impacts associated with the proposal.

For the purpose of this analysis, the general direction of anticipated policy changes to the City's Comprehensive Plan are noted. The mitigation measures in this section reflect the City's planning process to conduct a policy consistency analysis and ensure compatibility with the overall Comprehensive Plan, after a draft of the Station Area Plan (SAP) is published. For this FSEIS analysis, the most significant components of the proposal and alternatives identified at this time include:

- Support for GMA urban growth, housing, economic development, and multimodal transportation goals,
- Relationship of the proposal to the PSRC VISION 2050 regional growth strategy and the adopted Urban Center designation in the Countywide Planning Policies and
- Relationship of the Study Area to the City's 2035 Comprehensive Plan and its current growth strategy.

3.4.1 Thresholds of Significance

This analysis reviews the alternatives for consistency with the state, regional, and local plans and policies listed above. For the purposes of this analysis, consistency means that the alternative can occur and be implemented together with the selected goal or policy without contradiction. In this section, a finding of inconsistency or contradiction with plans and policies would be considered to result in a significant adverse impact.

3.4.2 Evaluation of Final SEIS Alternatives

Washington Growth Management Act (GMA)

All alternatives are consistent with GMA goals that focus growth in urban areas, reduce sprawl, support housing and economic development, and support

multimodal transportation. However, Alternatives B, 2, and 3 would provide new momentum in focusing growth in the NE 85th Street Station Area in response to new high-capacity transit service. These alternatives would also enhance and streamline the permit process with a Planned Action. The alternatives would increase the demand for public services and recreation; mitigation measures to provide infrastructure and facilities are needed to support the anticipated growth.

GMA Goal Summary

- Encourage growth in urban areas
- Reduce sprawl
- Protect rural character
- Encourage an efficient multimodal transportation system
- Encourage a variety of housing types, including affordable housing
- Promote economic development
- Recognize property rights
- Ensure timely and fair permit procedures
- Protect agricultural, forest and mineral lands
- Retain and enhance open space and support recreation opportunities
- Protect the environment
- Ensure adequate public facilities and services
- Foster citizen participation
- Encourage historic preservation

VISION 2050

Adopted in October 2020, the PSRC VISION 2050 provides a framework for planning for future development within the four-county region.[11] Within this framework, the VISION 2050 regional growth strategy envisions a future where the region:

- Maintains a stable urban growth area.
- Focuses the great majority of new population and employment within the urban growth area.
- Maintains a variety of community types, densities, and sizes.
- Achieves a better balance of jobs and housing across the region.

[11] King, Pierce, Snohomish, and Kitsap counties.

- Within the urban growth area, focuses growth in cities.
- Within cities, creates and supports centers to serve as concentrations of jobs, housing, services, and other activities.
- Builds transit-oriented development around existing and planned infrastructure.
- Uses existing infrastructure and new investments efficiently.

Regional Growth Strategy. Consistent with the VISION 2050 Regional Growth Strategy goal, the proposed SAP Action Alternatives would accommodate growth in an urban area and near the new BRT station. By providing focused growth in a location near the new BRT station, all alternatives support the City's designation as a Core City. Compared to Alternative 1 (No Action) and Alternative A, Alternatives B, 2, and 3 provide greater growth capacity in the station area and are more likely to accommodate focused station area growth consistent with VISION 2050 guidance.

Regional Growth Center. As noted previously, the City has applied to PSRC for designation of the Greater Downtown Area, including the NE 85th Street station area, as a Regional Growth Center. This application is pending PSRC approval upon completion of the Moss Bay Neighborhood subarea plan and the Station Area subarea plan. Designation of the NE 85th Street station area as part of a Regional Growth Center would be consistent with VISION 2050 description of Core Cities as containing regional growth centers connected to the region's high-capacity transit system.

King County Countywide Planning Policies

The King County CPPs were developed by the King County Growth Management Council in collaboration with cities. The vision set forth in the CPPs calls for King County to be characterized by four types of land uses: 1) protected critical areas, such as wetlands and fish and wildlife conservation areas; 2) viable rural areas permanently protected with a clear boundary separating urban growth areas from rural areas; 3) bountiful resource lands including farms and forests; and 4) vibrant, compact, diverse urban communities. Consistent with the GMA and VISION 2050, the CPPs have been updated in 2021 with updated growth targets to support the next major update of GMA comprehensive plans in 2024.

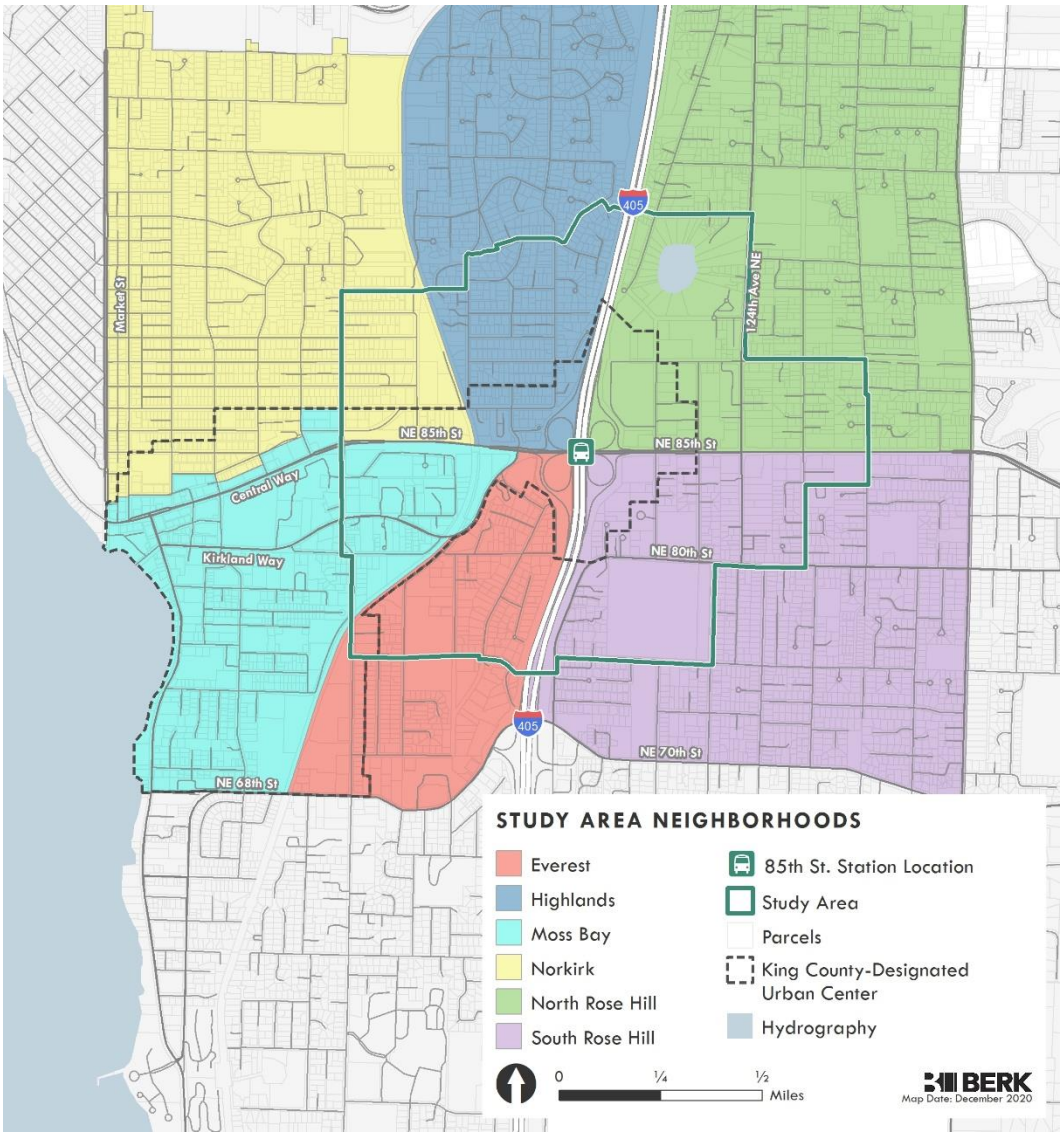
All alternatives are consistent with the King County Countywide Planning Policies described in the DSEIS. To the extent that the Countywide Planning Policies emphasize compact centers-focused growth pattern, Alternatives B, 2, and 3 provide the most capacity and amenities to support this type of growth compared to Alternative 1 (No Action) and Alternative A.

Kirkland Comprehensive Plan

The City of Kirkland's current Comprehensive Plan includes the following citywide elements: Vision/Guiding Principles; General; Community Character; Environment; Land Use; Housing; Economic Development; Transportation; Parks, Recreation and Open Space; Utilities, Public Services; Human Services, Capital Facilities; and Implementation Strategies.

The Comprehensive Plan also includes 13 neighborhood plans, a plan for the Market Street Corridor, and the City's shoreline area plan. The Study Area encompasses portions of six neighborhood areas, including the North Rose Hill, South Rose Hill, Highlands, Everest, Moss Bay, and Norkirk neighborhoods. See Exhibit 3-6.

Exhibit 3-6. Neighborhood and Study Area Boundaries



Sources: City of Kirkland, 2020; BERK, 2020.

Action Alternatives propose a Station Area Subarea Plan (SAP) consistent with the Rose Hill Neighborhood Plan Policy RH 25:

– **Policy RH 25:** Establish the parameters of future transit-oriented redevelopment in RH 1, 2 and 3 in a Transit Station Area Plan that coordinates land use, transportation, economics and urban design elements in partnership with Sound Transit, King County Metro, and WSDOT. The initial stages of the Transit Station Area Plan should establish the full boundaries of the station area to fully integrate the station with the surrounding land uses.

As noted in the DSEIS regarding the Action Alternatives, in a few cases, policies in the Rose Hill Neighborhood Plan speak to considerations that have not been fully

addressed in the Station Area Planning process. Future development of the SAP, development regulations, and design guidelines should include review of these selected policies, as noted in the mitigation measures, to determine applicability and potential need for comprehensive plan amendments.

- **Policy RH 24:** Utilize zoning incentives or other techniques to encourage commercial redevelopment in the District that will foster the 10-minute neighborhood concept.
  - **Alternatives 2 and 3:** The proposal does not currently include incentives or other measures to encourage commercial redevelopment within the Study Area. Such measures could be considered in the next phase of the planning process.
  - **Alternative B:** See Chapter 2 and the Community Benefits and Fiscal Impact Analysis in Appendix B where a density bonus program is identified for a range of community benefits.
- **Policy RH 27:** In RH 1A preserve the large regional retailer.
  - Under Alternative 1, the existing commercial designation would allow continuation of the large regional retailer.
  - Under the Action Alternatives, proposed land use designations provide for mid- to high-rise mixed-use development in RH 1A. The existing large format retail use could continue in this location and continue to expand its operations. Additionally, a large format retail use could be integrated into a the more intensive residential and office development that is planned for this location under the Action Alternatives.
- **Policy RH 29:** In RH 2A, B and C, require retail uses (including car dealer), and permit office and/or residential uses. Require retail use to be the predominant ground level use and discourage extensive surface parking lots. Encourage consolidation of properties into a coordinated site design; however, discourage large, singular retail or wholesale uses through establishment of a size limitation that, in recognition of convenient access to I-405, may be greater than in the rest of the District.

  Other site design considerations include the following:
  - Allow a range of building height four to five stories if offices above retail or a maximum of six stories if residential above retail. Additional height may be allowed to encourage a variety of roof forms and roof top amenities. Step back upper stories from NE 85th Street. Three stories on the south of NE 85th St is appropriate where buildings are adjacent to existing residences.
  - Limit the total floor area, separate the buildings and include ample building modulation to create open space within and around the development.
  - In order to prevent commercial access to and from 118th Avenue NE, limit vehicular access to NE 85th Street and 120th Avenue NE. Allow office and

residential uses and emergency vehicles to access from 118th Avenue NE.

- Encourage underground or structured parking (discourage large ground level parking lots).
- Limit the impacts of new signs to residents across 120th Avenue NE.

Evaluation

- Under Alternative 1 (No Action) and Alternative A future development could be consistent with the design considerations identified in this policy.
- Action Alternatives: This policy provides guidance for specific uses and design considerations that have not yet been fully addressed in the SAP process and will be addressed as part of the ongoing SAP and Form-Based Code planning process and potential comprehensive plan amendments identified as needed. Policies related to height would be changed under the Action Alternatives. Alternatives 2 and 3 would allow building heights of 150-300 feet respectively. Alternative B Preferred Direction would allow building heights of 125-250. Office uses anticipated in the Action Alternatives would benefit from access to 120th Avenue NE and 118th Avenue NE in order to create a more resilient and distributed transportation network that would be a benefit to fire and police response times, create shorter and more convenient trips for people biking and walking, establish more choices for drivers accessing the area, and minimize conflicts with WSDOT improvements on NE 85th Street.

– **Policy RH 30:** In RH 3 require consolidated mixed-use transit-oriented development with an emphasis on ground level retail and/or pedestrian amenities along street frontages to promote walkability in the neighborhood. Allow a range of building height from four to a maximum of six stories, with increased height on the northern portion of site where the ground elevation is lower. Additional height may be allowed to encourage a variety of roof forms and roof top amenities. Emphasize transit access to the Transit Station at the freeway interchange, and include connections between 120th and 122nd Avenues NE. Limit vehicular access points onto NE 85th Street.

Evaluation:

- The proposal is for focused mixed-use transit-oriented development in RH3 and surrounding areas. Pedestrian amenities would be provided under all alternatives, with Alternative 1 providing the least and Alternative 3 providing the greatest level of pedestrian improvements.
- In RH 3, Alternatives B and 2 would allow building heights of 65 – 85 feet and Alternative 3 would allow heights of 85 – 150 feet. Assuming 15-feet per floor, Alternatives B and 2 would allow roughly 4 – 6 stories, and

Alternative 3 would allow 6 – 10 stories. If these alternatives move forward, this policy should be amended to incorporate applicable height standards and design considerations.

Alternative A Current Trends

Alternative A continues the current Comprehensive Plan with slightly more growth to respect trends. It would not accomplish some of the Comprehensive Plan policies to develop a Subarea Plan and would not address some of the incentives for development in the current plan.

Alternative B Transit Connected Growth – Preferred Direction

Similar to the evaluation of the DSEIS Alternatives 2 and 3, Alternative B would produce a Subarea Plan, which would result in a need for some amendments to the Comprehensive Plan and Rose Hill Subarea Plan:

- The relationship of the Station Area Subarea Plan to neighborhood plans should be specifically articulated in the Comprehensive Plan.
- Rose Hill Neighborhood Plan policies RH-24, RH-27, RH-29, and RH-30 would be reviewed and amended to reflect the preferred policy objectives.

3.4.3 Mitigation Measures

Incorporated Plan Features

- All alternatives would accommodate the City's 2015-2035 growth targets for housing and employment identified in the Comprehensive Plan, as well as general guidance supporting transit-oriented development in the vicinity of the new BRT station at the I-405/NE 85th St interchange.

Regulations and Commitments

- As required by GMA, the City must submit proposed Comprehensive Plan amendments and updated regulations for review and comment by the State prior to final adoption.

Other Proposed Mitigation Measures

- The relationship of the SAP to neighborhood plans should be specifically articulated in the Comprehensive Plan. Consistency amendments with Comprehensive Plan elements would also be developed.

- Rose Hill Neighborhood Plan policies RH-24, RH-27, RH-29, and RH-30 should be reviewed and amended to reflect the preferred policy objectives.
- Consider the need for design standards and other measures to ensure that residential character is retained as infill development occurs.

3.4.4 Significant Unavoidable Adverse Impacts

With implementation of mitigation measures, no significant unavoidable adverse impacts are anticipated with respect to consistency with adopted plans and policies under any of the alternatives.

3.5 Aesthetics

This section evaluates the scale and visual quality of development that would potentially occur under each of the alternatives, including the effects of proposed building height increases on community character, views, and shading conditions. The section evaluates FSEIS Alternatives A and B in a manner similar to the DSEIS Alternatives.

3.5.1 Thresholds of Significance

The following conditions would be considered to result significant impacts:

- **Visual Character:** Would the alternative result in substantial visual changes to the Study Area, including building height, architectural style, streetscape and pedestrian environment, and overall intensity of development?
- **Views:** Would the alternative impede protected view corridors within the Study Area or alter views from the Study Area of nearby major landmarks or natural features?
- **Shading Conditions:** Would the alternative result in a substantial increase in ground-level shading of public spaces, including parks, open space, and the streetscape, or result in shading of adjacent lower-intensity development by higher-intensity development within the Study Area?
- **Light and Glare:** Would the alternative create a substantial increase in the ambient light level in the Study Area or create an acute source of light and glare that adversely affects surrounding development? Changes to nighttime lighting conditions are of particular concern.

3.5.2 Evaluation of Final SEIS Alternatives

Alternative A Current Trends

As described in Chapter 2, FSEIS Alternative A largely represents the land use policies and zoning regulations currently adopted for the Study Area. Alternative A Current Trends maintains existing zoning heights throughout the district like the No Action Alternative 1 and slightly adjusts the assumed 2044 growth projections to reflect current market trends, showing more jobs, and only slightly more housing than DSEIS Alternative 1.

No Station Area Plan would be adopted, and no changes would be made to development standards. Construction of the NE 85th Street BRT Station and associated transportation infrastructure would still occur, as would minor planned

streetscape improvements along designated pedestrian and bicycle routes.

Visual Character

Under the FSEIS Alternative A, the overall visual character of the Study Area would be similar to existing conditions, though anticipated growth would result in a moderate increase in the overall intensity of development, particularly in the Rose Hill Business District east of I-405, and to a lesser degree near Downtown on the west and moderately along NE 85th Street on the east.

As described in Chapter 2, the Study Area would experience moderate commercial growth and limited infill in residential areas on both sides of I-405.

Because most of the future growth anticipated under Alternative A would occur in the commercial areas along NE 85th Street east of I-405, the visual character of this area is likely to experience the most pronounced effects, while residential areas would remain relatively unchanged.

Under Alternative A, office and retail development in the commercial corridor east of I-405 would result in a moderate increase in the intensity of the built environment.

This would likely take the form of infill and redevelopment on underutilized sites, resulting in newer, larger buildings, greater building site coverage, or both. On many properties in the Rose Hill Business District, existing building heights are below the maximum height allowed, particularly in the RH-1A and RH-2A zones near I-405, which allow buildings up to 67 feet. RH 3 allows heights of 75 feet.

Redevelopment of properties in this commercial corridor with larger buildings would be allowed under Alternative A and could result in an incrementally more urban visual character in the Study Area; however, it would not fundamentally change the nature of development in the study area in most parts of the study area.

Views

Under Alternative A, allowed building heights would not increase, and most redevelopment and infill activity in the Study Area is anticipated to occur in the Rose Hill Business District, east of I-405, where views are limited. Of the four designated public view corridors within the Study Area, two are located on residential streets in North Rose Hill, one is located on a residential street in South Rose Hill, and one consists of the NE 85th Street corridor west of the I-405 interchange. As described in Chapter 2, infill residential development under the No Action Alternative would be limited, resulting in very little change to

development conditions in these areas. As a result, no significant impacts to protected views are anticipated under the No Action Alternative.

Shading Conditions

Under Alternative A, no increases to zoned building heights would occur, resulting in no major changes to shading conditions. Minimal localized increases in shading conditions could occur in portions of the Study Area where greater amounts of redevelopment or infill are anticipated, such as the NE 85th Street commercial corridor east of I-405 or the office and industrial areas in western portions of the Study Area. Because building heights would be limited by current zoning and development regulations, increases in shading conditions associated with redevelopment infill are anticipated to be less than significant.

Light and Glare

Development under Alternative A could generate additional light and glare in the Study Area through the addition of new exterior building and site illumination and increase vehicular traffic associate with commercial development. Development under Alternative A could generate additional light and glare in the Study Area through the addition of new exterior building and site illumination and increase vehicular traffic associate with commercial development. However, given that development under Alternative A would be relatively limited in scope and concentrated in areas already characterized by commercial development, light and glare impacts are anticipated to be minor.

Alternative B Transit Connected Growth – Preferred Direction

As described in Chapter 2, the Action Alternatives including Alternative B would establish a land use pattern focused on office and mixed-use development centered on the I-405 interchange and the associated future BRT station.

The eastern portion of the NE 85th Street corridor would be devoted to mixed-use development incorporating both commercial and higher-density residential uses. West of I-405, Alternative B would promote lower-intensity office and mixed-use development. The Norkirk portion of the Study Area would be primarily devoted to industrial/tech development.

Much of the rest of the Study Area would experience incremental infill development based on existing land uses and development typologies.

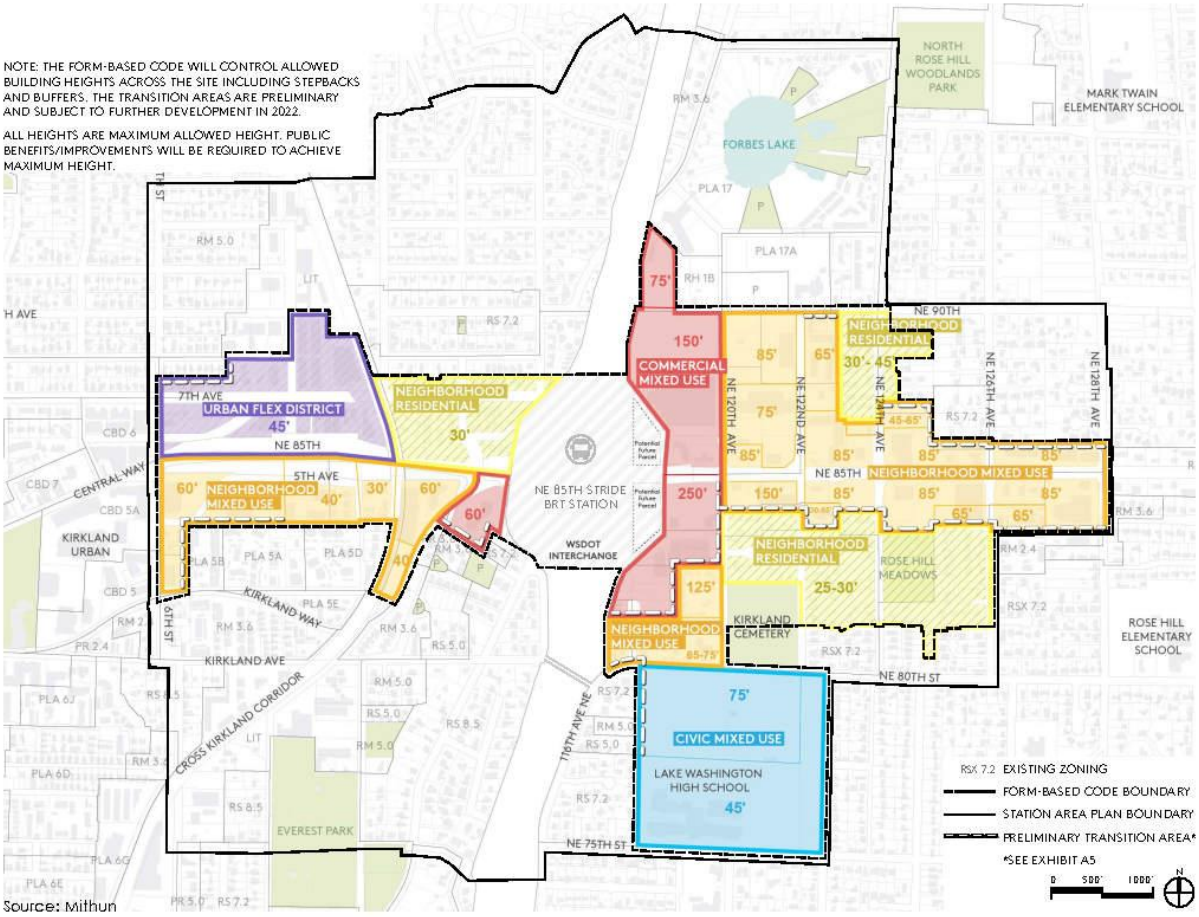
Alternative B represents a lower-intensity variant of the concept in Exhibit 2-7 with

typologies and heights identified in Exhibit 2-19 and below. The overall amount of new development would be less compared to Alternatives 2 and 3, generally leading to less extensive aesthetic and visual impacts than those alternatives.

Visual Character

Under Alternative B, the Study Area would experience substantial residential and employment growth, resulting in new development at greater densities and intensities than currently allowed. As shown in Exhibit 3-7, the greatest development intensity would be concentrated on the east side of the I-405 interchange along NE 85th Street and 120th Avenue NE. This area would allow increases in building heights from approximately 67 feet to 150 feet on the northeast quadrant of the interchange and from 55/67 feet to 250 feet on the southeast quadrant. The remainder of the NE 85th Street corridor eastward would increase allowed heights from 30-75 feet up to 85-150 feet. Allowed heights in Rose Hill residential areas north of NE 85th Street would increase from 35 feet to 65-85 feet on blocks adjacent to the commercial/office core near the freeway interchange, and from 30-35 feet up to 45-85 feet near the eastern end of the Study Area. Areas west of I-405 would experience less pronounced height increases. As shown in Exhibit 3-7, office and mixed-use blocks would increase heights from 30-35 feet to 60 feet, and industrial blocks in Norkirk would increase heights from 35 feet to 45 feet.

Exhibit 3-7. Land Use Change Areas and Height – Alternative B Preferred Direction



Source: Mithun

Sources: Mithun, 2021; BERK, 2021

These height increases have the potential to introduce new building typologies that are taller and more visually massive than existing buildings and what is currently allowed by existing development regulations. Introduction of these more intense typologies would gradually alter the architectural character and scale of development in the Study Area. Visual character impacts would be most pronounced in the areas with proposed land use changes highlighted in Exhibit 3-7. Other areas could experience infill development similar to the No Action Alternative and Alternative B.

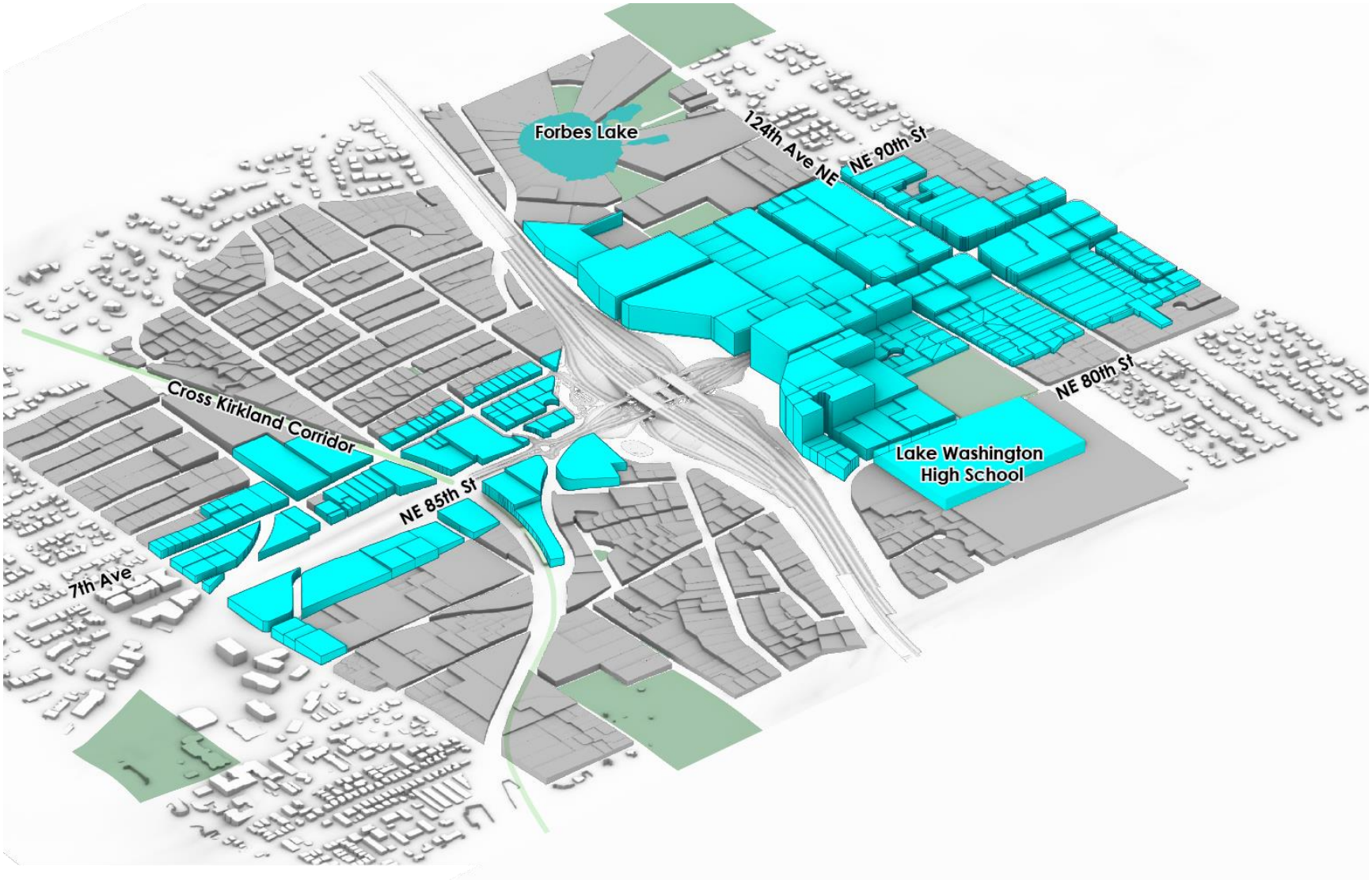
Examples of building typologies anticipated to develop under the Action Alternatives are shown in Exhibit 3-8.

Exhibit 3-8. Development Typology Examples – Alternative B

Source: Mithun, 2021.

Exhibit 3-9, Exhibit 3-10, and Exhibit 3-11 illustrate the maximum development envelopes for each block (not actual building or development proposals) allowed under Alternative B. Gray-shaded envelopes represent maximum heights for each block allowed under current development regulations (No Action/Alternative A), and blue shaded envelopes represent additional height for each block allowed under Alternative B. As described in Chapter 2, all Action Alternatives including Alternative B would include the adoption of a Station Area Plan and associated Form-Based Code that would include development regulations and design standards governing future development in the Study Area. The design standards in the Form-Based Code would incorporate mass-reduction features, such as upper-story setbacks and open space requirements. For a conservative analysis, modeling represented in the following figures assumes no stepbacks as it is under consideration with the Form-Based Code.

Exhibit 3-9. Maximum Development Envelope – Alternative B (Southwest View)

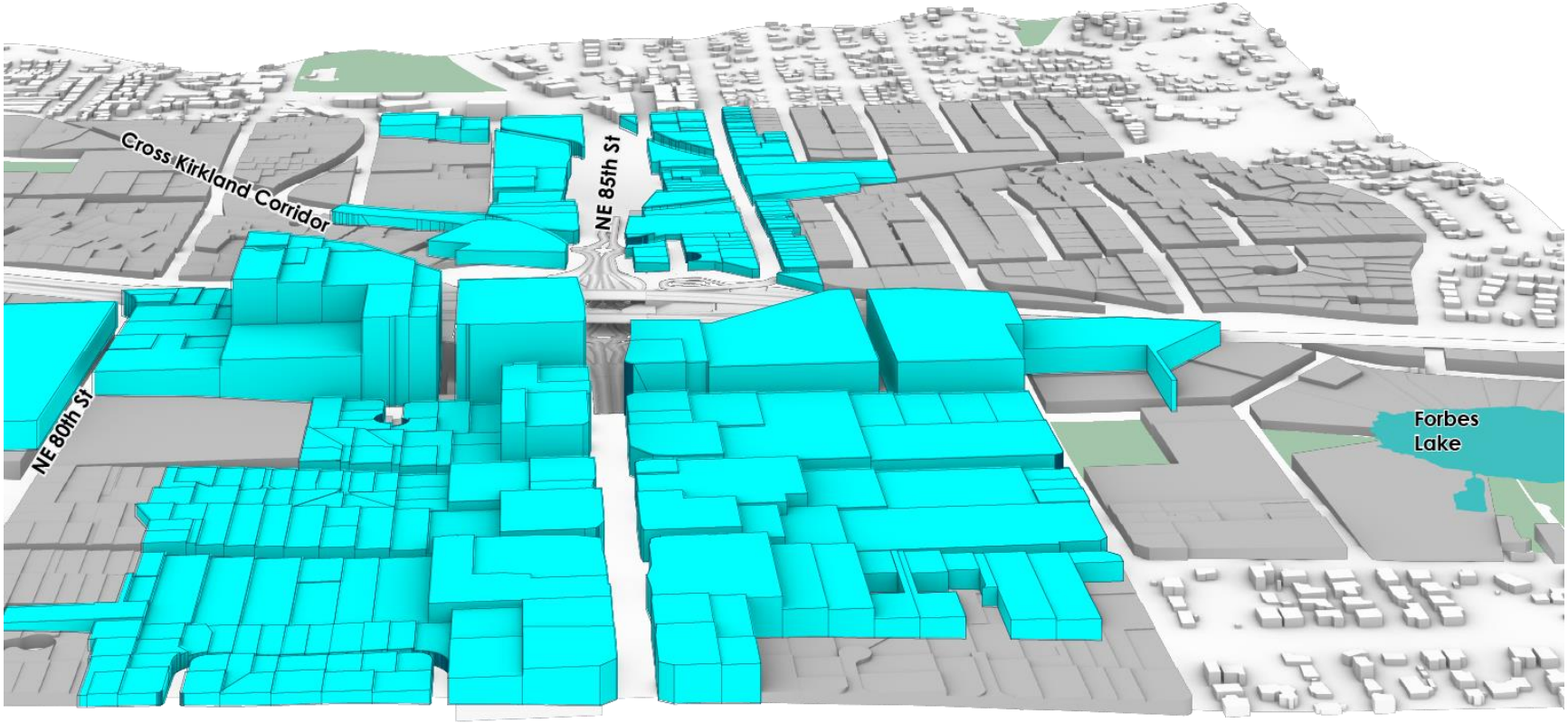


Sources: City of Kirkland, 2020; Mithun, 2020; BERK, 2021.

Exhibit 3-10. Maximum Development Envelope – Alternative B (Northwest View)

Sources: City of Kirkland, 2020; Mithun, 2020; BERK, 2020.

Exhibit 3-11. Maximum Development Envelope – Alternative 2 (NE 85th Street Corridor View)



Sources: Mithun, 2021.

As shown in the preceding figures, future development under Alternative B would substantially increase maximum allowable zoning envelope in the Study Area. Development in the primary focus areas along NE 85th Street, particularly in the Rose Hill Business District, would introduce new development typologies that would shift the overall character of the area from low-intensity, auto-oriented commercial to a higher-intensity, mixed-use district with less emphasis on auto-oriented uses, and more extensive use of transit and non-motorized transportation. In addition, increased building height and development intensity may be visible from nearby neighborhoods outside the Study Area. However, areas designated for neighborhood mixed use and neighborhood residential use could help form a buffer around areas of more intensive development, separating them from lower-density development outside the Study Area.

Adverse effects on the visual character of surrounding neighborhoods are anticipated to be minimal.

While development under Alternative B represents a significant change to the existing visual character of the Study Area, implementation of the planned Form-Based Code would provide measures to minimize the adverse effects of increased height and mass, as well as gradually providing a greater degree of architectural unity to the Study Area. Specific measures identified for inclusion in the Form-Based Code are described in Section 2.5.3 Final SEIS Alternatives, Alternative B Transit Connected Growth – Preferred Direction and Section 3.5.3 Mitigation Measures.

Development Scale and Pedestrian Environment

As described above, Alternative B would substantially increase maximum allowable building heights in the Study Area. In many locations, new development would be inconsistent with the scale of existing development, which could adversely affect the experience of pedestrians at ground level. Some areas of change compared to Alternatives 2 and 3 include areas of transition:

- Northwest Quadrant: LIT area between NE 85th and NE 7th Avenue where half blocks are increased in allowed height by 10 feet to 45 feet. The areas are not markedly visible from NE 85th due to topography changes. The extension of the character areas and regulating plan to the half block on the north side of NE 7th Avenue would create a more consistent streetscape. Transitional height and landscape standards should ensure compatibility.
- Southwest Quadrant: Under Alternative B, heights are similar to or lesser than Alternatives 2 and 3 and more graduated from east to west when approaching Kirkland Urban.
- Northeast Quadrant: Some areas of Neighborhood Mixed Use and

Neighborhood Residential are increased in allowed height by 10 feet compared to Alternatives 2 and 3 where blocks abut more intensive commercial blocks along NE 85th Street, in order to allow a more stair step transition from the corridor. Transitional height and landscaping requirements should address compatibility.

- Southeast Quadrant: The Civic Mixed Use area would allow greater height than current zoning like with Alternatives 2 and 3 to allow greater capacity for school / education space. In Alternative B the areas of height are more ranged to reflect abutting uses, with greater heights at 75 feet to the north to match the opposing block of Neighborhood Mixed Use, and lower heights of 45 feet near lower density residential areas. Some areas of Neighborhood Mixed Use and Neighborhood Residential are increased in allowed height by 10 feet compared to other alternatives to provide a smoother transition from the corridor. Transitional height and landscaping requirements should address compatibility.

Alternative B would include implementation of both a Form-Based Code and a program of streetscape improvements and bicycle/pedestrian connections through the Study Area. In particular, streetscape improvements and non-motorized connections in the Rose Hill portion of the Study Area would serve to break up development blocks, which would reduce the presence of large, monolithic building sites that would be out of scale with the pedestrian environment. Additionally, the Form-Based Code would include design standards regarding street-level building façades and required streetscape improvements to minimize impacts to the pedestrian environment. Specific measures identified for inclusion in the Form-Based Code are described in Section 2.5.3 Final SEIS Alternatives, and Section 3.5.3 Mitigation Measures.

Views

The primary view corridor within the Study Area is the portion of NE 85th Street west of the I-405 interchange. Local neighborhood plans define several other view corridors for protection on smaller, residential streets in the western half of the study, but views in the eastern Study Area are generally obstructed by existing vegetation or transportation infrastructure. The highest intensity development under Alternative B would be concentrated in the Rose Hill Business District, east of I-405, where risk of obstructing important and publicly accessible territorial views of Lake Washington are low. Development along NE 85th Street between the interchange and the western Study Area boundary would generally be screened from the roadway by topography and extensive vegetation. Height increases in this area would range from 30-50 feet above existing allowances. Provided that vegetation cover is maintained at a similar level to existing conditions along this corridor, the potential adverse effects of Alternative B on

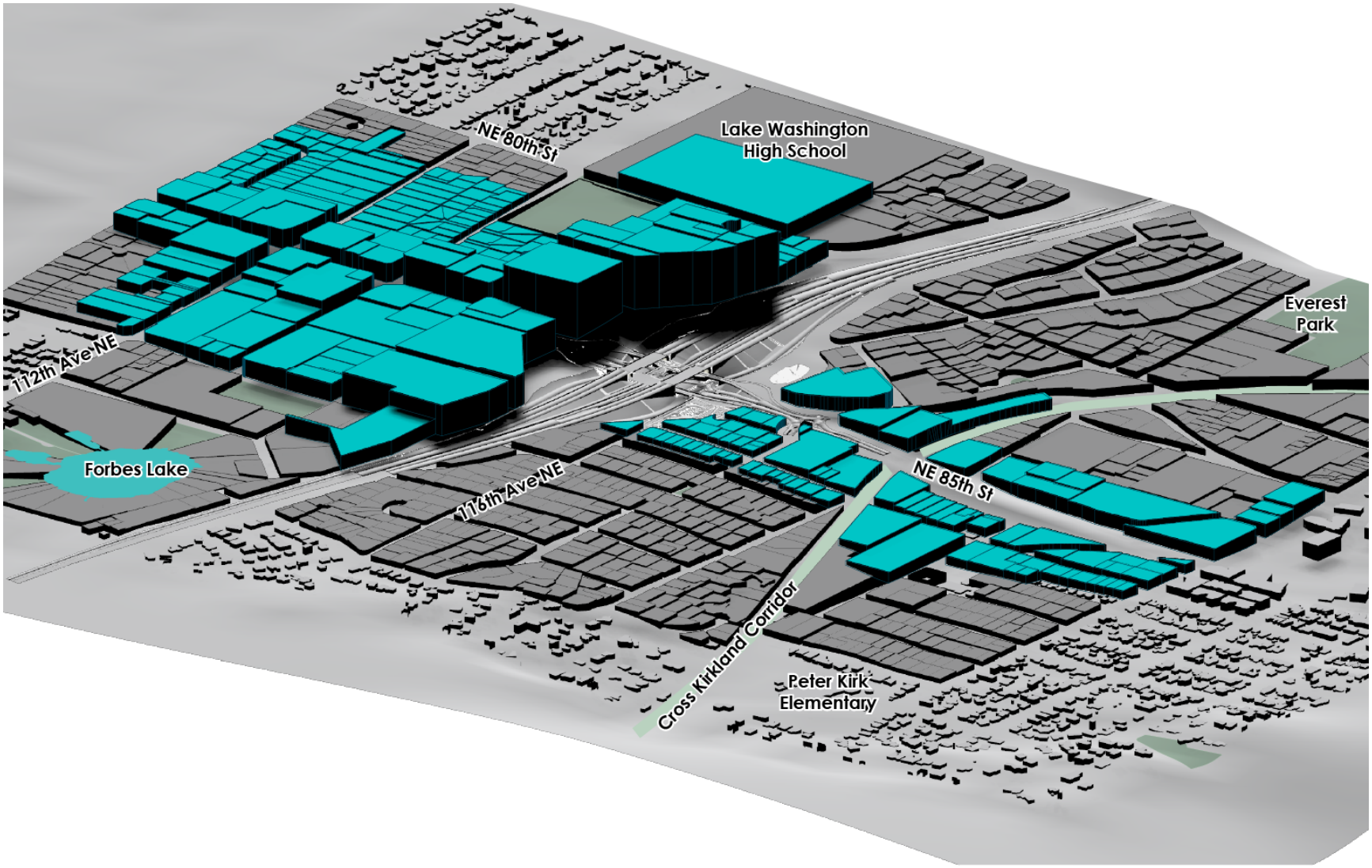
protected view corridors in the Study Area is anticipated to be less than significant. Conversely, the concentration of the most intense development on blocks immediately east of the interchange would alter views from NE 85th Street looking east across I-405. Alternative B would allow new buildings up to 150-250 feet in this location; this is substantially taller than existing buildings, which are generally shorter than the 67-75 feet allowed under current zoning. While such development would alter the existing viewscape in the Study Area, there are no designated view corridors in the area for east-facing views.

Shading Conditions

Under Alternative B, additional building height would have the potential to increase shading conditions in the Study Area, as well as on surrounding properties. Sun angles vary by latitude, growing more extreme farther from the equator. In Washington, the sun's path passes to the south, reaching a maximum altitude of approximately 66 degrees above the horizon in summer (June 21) and approximately 19 degrees above the horizon in winter (December 21). As a result, shadows are shortest around mid-day in summer and longest in early morning and late evening during the winter. This analysis models shading conditions on the fall equinox (September 21, 10:00 am), when day and night are of equal lengths. Sun angles change throughout the year, but fall equinox sun angles (equivalent to spring equinox sun angles) are less extreme than summer or winter conditions and provide a balanced view of shading conditions visible during most of the year.

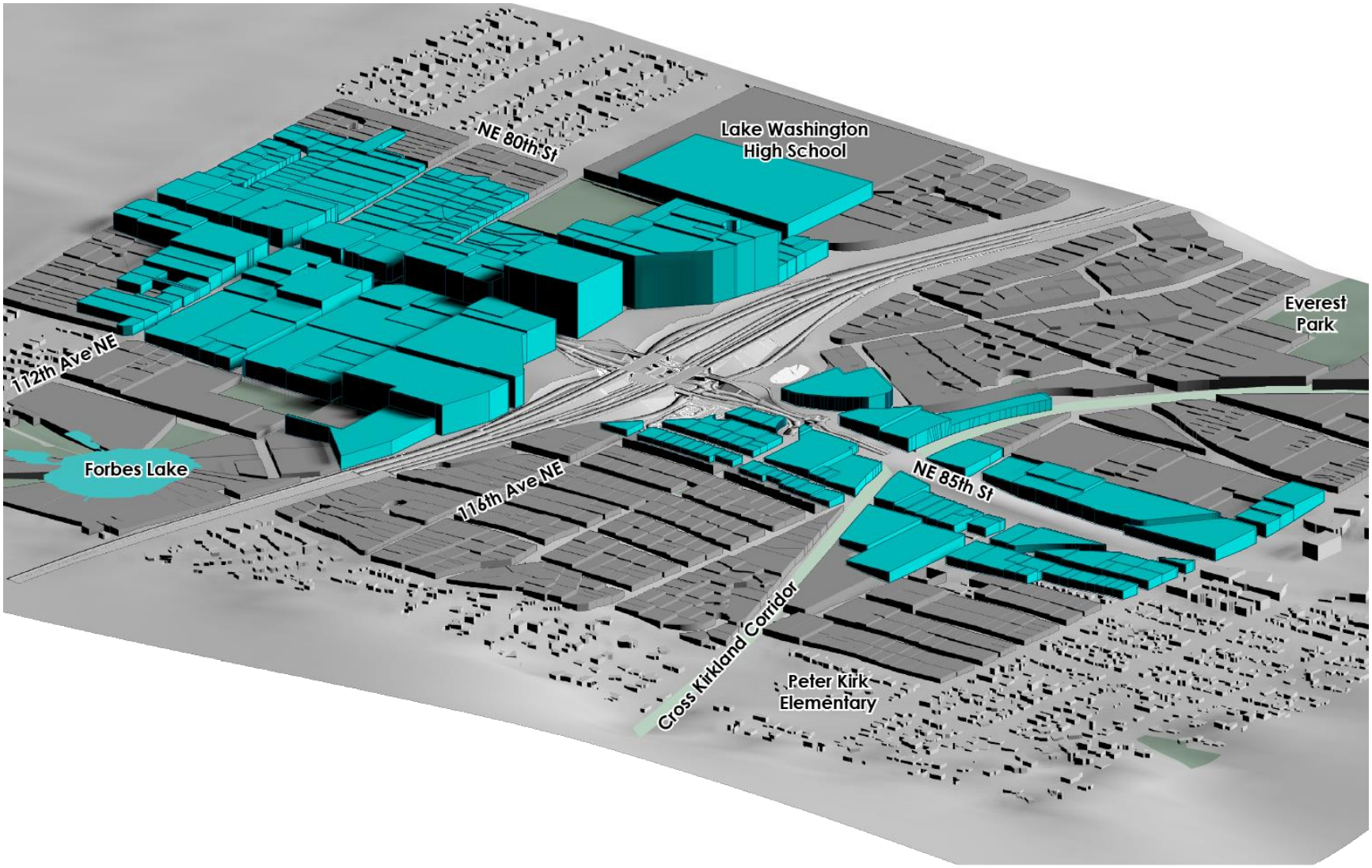
Shading impacts within the Study Area would primarily result from increased building heights and lot coverage, which would allow a greater density of tall buildings in close proximity. If buildings are not sufficiently spaced, they could block light at the ground level, creating adverse effects on public spaces and pedestrian paths. The development of buildings up to 150-250 feet in the Rose Hill Business District could cast mid-afternoon shadows on nearby development outside the Study Area (across NE 90th Street) and morning shadows on portions of the Cross Kirkland Corridor. NE 85th Street would also experience substantial shading during spring and fall morning and afternoon hours. Internal streets adjacent to areas of increased building height, particularly in the Rose Hill Business District, would also be subject to shading due to the close proximity of tall buildings, as would planned mid-block pedestrian/bicycle connections in this area. These shading effects would be transitory throughout the day and would be less intense during summer months. Exhibit 3-12 through Exhibit 3-14 illustrate projected shading conditions in the Study Area related to existing and future development under Alternative B.

Exhibit 3-12. Southeast-Facing Fall Morning (10:00 am) Shading Conditions – Alternative B



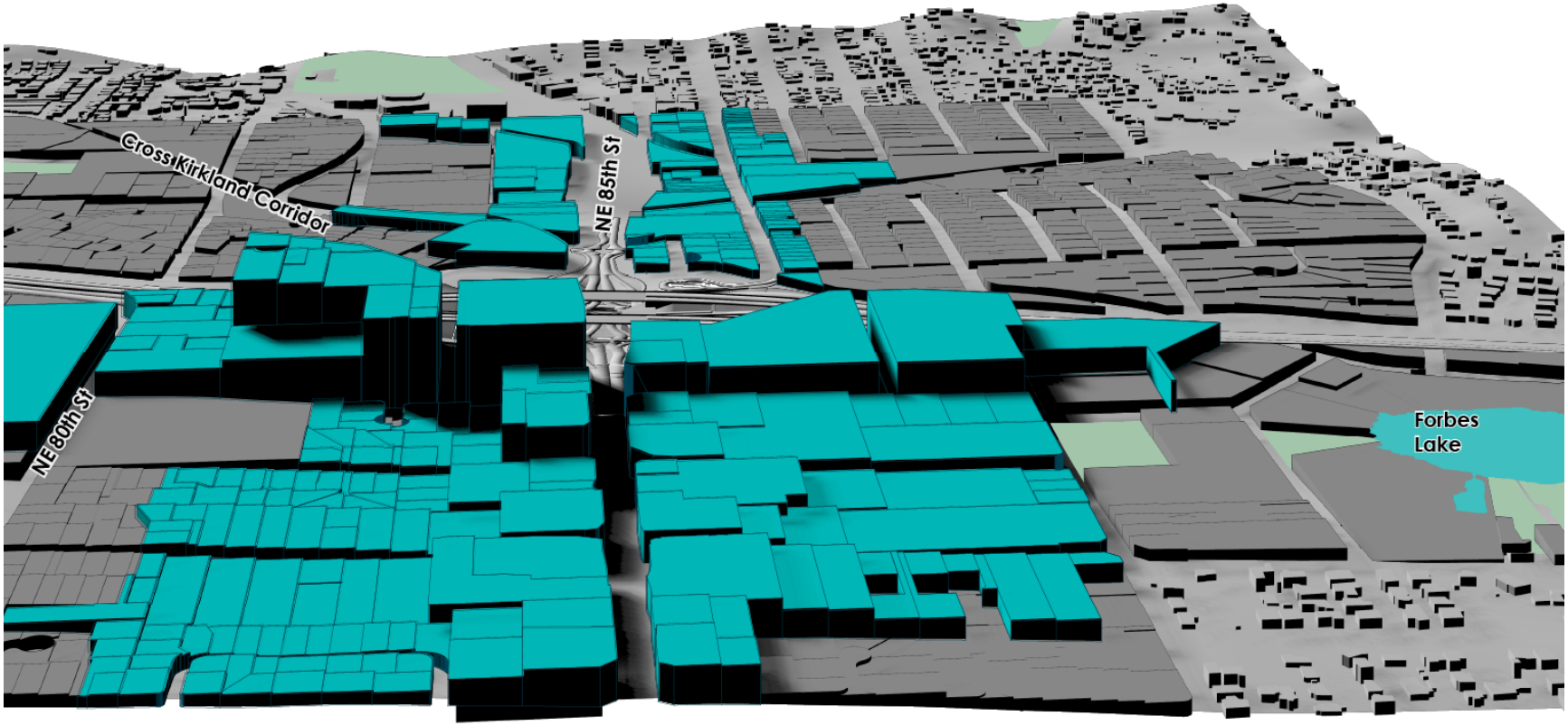
Sources: City of Kirkland, 2021; Mithun, 2021.

Exhibit 3-13. Southeast-Facing Fall Afternoon (3:00 pm) Shading Conditions – Alternative B



Sources: City of Kirkland, 2021; Mithun, 2021.

Exhibit 3-14. West-Facing Fall Afternoon (3:00 pm) Shading Conditions – Alternative B



Sources: City of Kirkland, 2021; Mithun, 2021.

To limit the effects of shading in spaces between buildings, the Form-Based Code would include building design standards that promote the preservation of solar access through upper-story setbacks and controls on building massing. Specific measures identified for inclusion in the Form-Based Code are described in Section 2.5.3 Final SEIS Alternatives, and Section 3.5.3 Mitigation Measures.

Light and Glare

Development under Alternative B would result in an increased level of ambient light and glare in the Study Area associated with additional exterior building illumination and vehicular traffic, though it is possible that light and glare associated with vehicular traffic may plateau or decrease over time as transit usage becomes more common in the future. These increases in ambient light would primarily occur in the Rose Hill commercial areas, which already contain extensive streetlights and building illumination. Infill areas would experience minimal increases in light and glare. As properties in the Rose Hill Business District gradually convert to mixed-use development, ambient light and glare will increase as more businesses stay open into the evening hours and building illumination and signage lighting become more extensive.

3.5.3 Mitigation Measures

Incorporated Plan Features

Implementation of Alternatives 2 3 and B would include adoption of a Station Area Plan and Form-Based Code to regulate development. The plan and Form-Based Code would establish measures to minimize and mitigate potential aesthetic impacts, including the following:

- The Station Area Plan would establish a land use pattern that places the most intense development and tallest buildings (up to 10 stories under Alternative 2 and 20 stories under Alternative 3) near the I-405 interchange, with lower intensity and building height areas arranged around this core area. Lower intensity areas bordering the station area are generally buffered from high-intensity development by areas designated for incremental infill.
- The proposed Form-Based Code would provide a consistent design framework for future development in the station area and provide a greater sense of architectural design cohesion over time.
- Alternatives 2 and 3 and B would implement a series of mobility improvements in the station area, including new pedestrian and bicycle infrastructure along streets in the Study Area and new pedestrian and bicycle paths that would serve as mid-block connections. These non-motorized connections would

break up large blocks to reduce visual mass and improve walkability.

- The Form-Based Code would include design standards to address potential impacts associated with increased building visual mass, such as upper-story stepbacks, setbacks, landscaping buffers, and maximum site coverage requirements.
  - Alternatives 2 and 3: While the final Form-Based Code may include different stepback sizes or thresholds, or incorporate additional techniques, such as stepback averaging, the visual modeling in this SEIS analysis assumed the following preliminary upper-story stepback requirements:
    - A stepback of 10 feet is required above a height of 65 feet; and
    - An additional stepback of 5 feet is required above a height of 85 feet.
  - Alternative B: Stepbacks are not incorporated into visualizations at this time. The parameters will be reviewed as part of the Form-Based Code development in 2022.

Regulations and Commitments

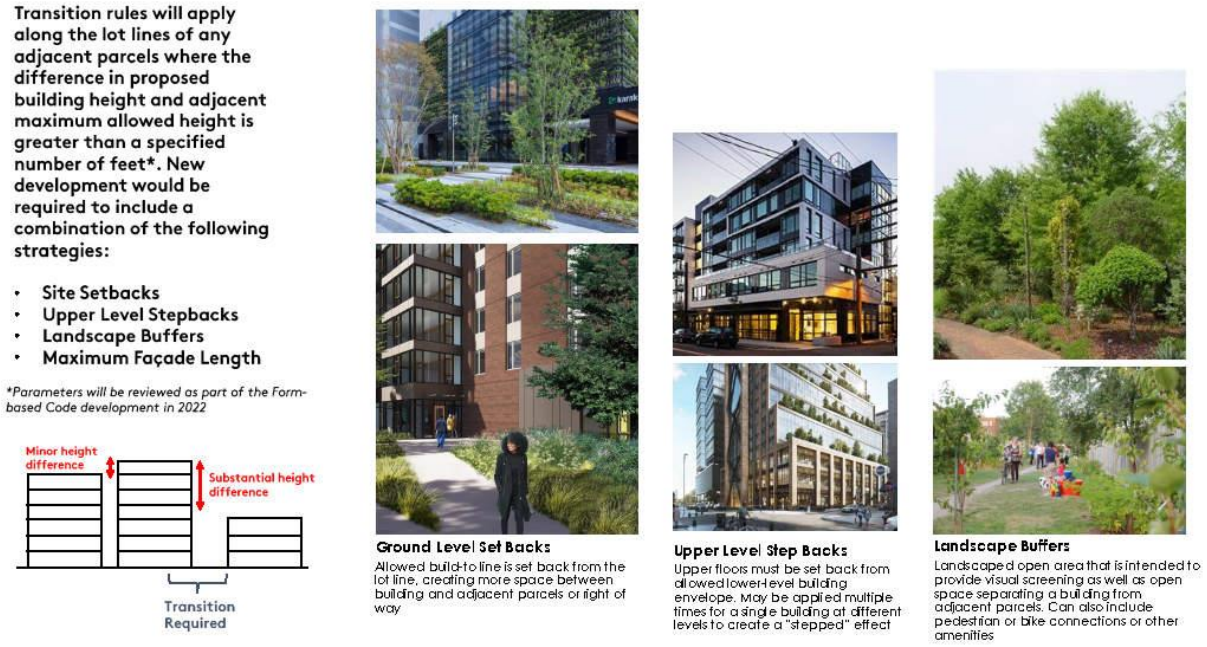
- All development in the station area would be required to follow the City's established permit application and review process to ensure compliance with design standards and development regulations.
- Kirkland Zoning Code (KZC) Chapter 142 establishes Design Review procedures for development projects meeting established criteria. KZC 142.15 requires Design Review Board approval for new buildings taller than one story or greater than 10,000 gross square feet, and all other development is required to undergo Administrative Design Review to ensure compliance with any applicable design standards:
  - Developments in the Rose Hill Business District are subject to the provisions of the *Design Guidelines for Rose Hill Business District*, adopted in 2006 (KMC 3.30.040(2)).
  - Future development in the portion of the station area zoned PLA 5C would be subject to the provisions of the *Design Guidelines for Pedestrian Oriented Business Districts*, adopted in 2004 and updated in 2018 (KMC 3.30.040(1)).
  - Both single-family and multifamily residential development in the NE 85th Street Subarea and the PLA 5C zone would be subject to the provisions of the *Design Guidelines for Residential Development*, adopted in 2015 (KMC 3.30.040(6)).
- Kirkland Zoning Code Chapter 95 regulates tree retention standards for development, as well as minimum planting requirements and supplemental tree planting densities.

Other Proposed Mitigation Measures

The City may wish to consider incorporating the following additional measures as part of the Form-Based Code to address potential aesthetic impacts associated with the Action Alternatives:

- Additional ground-level setback, upper-story stepback, or building height transition standards for sites abutting low-density residential properties. Under Alternative B, the Form-Based Code further illustrates transitional development guidelines as shown in Exhibit 3-15 below.
- Encouragement of building designs that break up building massing to avoid monolithic forms, particularly for tower-style developments.
- Limits on the footprint of tower-style development to regulate relationship of building massing to site open space.
- Transitional bulk, height, orientation, or landscaping standards at boundaries of higher and lower intensity typologies.
- Privacy standards to address window placement and additional setbacks for mixed-use and commercial buildings with windows that face side or rear lot lines, particularly where the property borders a lower-density residential use.
- Prioritization of streetscape improvements and amenities to create an attractive environment for pedestrians; and
- Design of exterior building illumination to reduce light pollution and spillover into adjacent, lower-density neighborhoods outside the station area, including the use of shielded lighting, ground-level fixtures, or other screening techniques.

Exhibit 3-15. Transitional Development Guidelines – Alternative B



3.5.4 Significant Unavoidable Adverse Impacts

Under all Alternatives, additional growth and infill development would occur in the station area, gradually increasing the level of development intensity and altering the existing architectural and visual character. These changes would occur under all alternatives, though the changes would be most pronounced under Alternative 3, with Alternative B generally similar to Alternatives 1 and 2 in areas west of I-405 and similar to Alternatives 2 and 3 east of I-405. With implementation of the mitigation measures described above, including adoption of the proposed Form-Based Code, the visual character of the station may experience positive effects, and no significant unavoidable adverse aesthetic impacts are anticipated.

3.6 Transportation

This section presents a multimodal transportation analysis evaluating the potential impacts from enacting proposed zoning and transportation network changes in the NE 85th Street Station Study Area. See Appendix B-1, Supplemental Transportation Study for more detail about the analysis.

3.6.1 Thresholds of Significance

The following conditions would be considered to result in significant impacts for the Action Alternatives:

Auto and Freight

- Vehicle LOS operates at LOS E or below at a study intersection that operated acceptably under Alternative 1 No Action or has a substantial increase in delay at a study intersection already expected to operate at or below LOS E under Alternative 1 No Action.[12]
- Queues from a downstream intersection expected to spill back to a study intersection that would not experience queues under Alternative 1 No Action or long queues not anticipated under Alternative 1 No Action that would require waiting at an intersection for several cycles before proceeding.

Transit

- Projected transit ridership would result in passenger loads exceeding King County Metro/Sound Transit guidelines on a route serving the Study Area that would operate acceptably under Alternative 1 No Action or increases the passenger load by at least 5% on a route that already exceeds the guidelines.
- Action Alternatives would preclude the transit upgrades identified in the Transit Implementation Plan.

Bike/Pedestrian

- Add bicycle or pedestrian demand to locations that lack facilities meeting City standards beyond the level anticipated under Alternative 1 No Action.

Parking

- Result in on-street parking demand exceeding supply beyond the level anticipated under Alternative 1 No Action.

[12] Per the City's TIA Guidelines, which are intended for individual developments, intersections operating at LOS E or F may be defined as impacts depending on the project's proportional share of traffic. Because the scale of the action alternatives is much larger than an individual development, as shown in Exhibit 3-21, the action alternatives would exceed the 5% and 15% proportional share thresholds found in the TIA Guidelines. Therefore, the applicable threshold for significance for this EIS is LOS E.

Safety

– Increases the collision rate at a study intersection compared to Alternative 1 No Action.

3.6.2 Evaluation of Final SEIS Alternatives

The Study Area is centered on the proposed site of a new BRT station at the busy interchange of I-405 and NE 85th St. Many intersections in the area experience congestion at peak hours. Projected growth under Alternative A Current Trends, which is slightly higher than the No Action Alternative 1, and under Alternative B Transit Connected Growth – Preferred Direction, which is slightly less than Alternative 2, will lead to a growing number of autos, bikes, and pedestrians on the road as well as increasing demand for transit and parking.

Mitigation measures ranging from intersection-specific enhancements like signals and turn lanes to city-wide capital improvements and Transportation Demand Management (TDM) programs will help to moderate impacts to traffic flow and safety, as well as provide greater multimodal travel Alternatives.

The alternatives considered in the transportation modeling analysis for this FSEIS include:

– 2035 No Action Alternative from the DSEIS
– 2044 Alternative 2 from the DSEIS
– 2044 Alternative A Current Trends
– 2044 Alternative B Connected Growth – Preferred Direction

The transportation analysis provides a conservatively high estimate of the growth in traffic volumes within the Study Area. Due to the forecasted increase in delay and queuing along NE 85th Street, it is likely that a portion of drivers who are not stopping within the Study Area would choose alternate routes to avoid congestion. This could include trips within the City of Kirkland or trips for travelers from other areas that are entering and exiting I-405 via the NE 85th Street interchange.

Exhibit 3-16 shows the net new vehicle trips for each alternative by quadrant of the station area, as well as the single occupancy vehicle (SOV), carpool, and transit mode share estimates in the Bellevue-Kirkland-Redmond (BKR) travel model for each scenario.

Exhibit 3-16. PM Peak Hour Vehicle Trip Generation using MXD+/BKR Model Mode Share Estimates

Quadrants	2035 No Action (DSEIS)	2044 Alternative A	2044 Alternative B	2044 Alternative 2 (DSEIS)
NW	930	930	1,280	1,000
NE	3,850	4,480	4,920	10,110
SW	1,910	1,850	2,360	2,190
SE	3,630	3,880	7,580	4,300
Total	**10,320**	**11,140**	**16,140**	**17,600**
Mode Share (SOV/Carpool/Transit)	**70% / 23% / 7%**	**70% / 22% / 8%**	**71% / 21% / 8%**	**72% / 21% / 7%**

Source: Fehr & Peers, 2021.

Intersection Level of Service Impacts

Intersection level of service (LOS) analysis was performed for ten intersections in the previous Draft Supplemental Environmental Impact Statement (DSEIS). For the analysis in the Final Supplemental Environmental Impact Statement (FSEIS), the model was refined and four of those intersections were analyzed along with four new intersections:

1. NE 90th Street & 124th Avenue NE (Intersection 8 in DSEIS)
2. NE 85th Street & 6th Avenue NE (Intersection 1 in DSEIS)
3. NE 85th Street & 120th Avenue NE (Intersection 6 in DSEIS)
4. NE 85th Street & 124th Avenue NE (Intersection 9 in DSEIS)
5. NE 83rd Street & 120th Avenue NE
6. NE 80th Street & 118th Avenue NE
7. NE 80th Street & 122nd Avenue NE
8. NE 70th Street & 116th Avenue NE

Intersection level of service (LOS) is a concept used to describe traffic operations from the driver's perspective. LOS is defined by intersection delay in seconds and ranges from LOS A with no congestion and little delay to LOS F with substantial congestion and delay. Traffic operations were analyzed using the Synchro 10 software package and Highway Capacity Manual (HCM) 6th Edition methodology. PM peak hour analysis was performed for all intersections listed above, and AM peak hour analysis was exclusive to two intersections (NE 85th Street & 120th Avenue NE and NE 85th Street & 124th Avenue NE).

The existing (2019) conditions and each of the future alternatives bulleted below were modeled:

- 2044 Alternative A
- 2044 Alternative B
- 2044 Alternative 2

The modeled Synchro networks reflect traffic volumes (passenger vehicles, heavy vehicles, and pedestrian and bicycle counts) and roadway network assumptions, including segment and intersection geometry and signal timings that align with each scenario. For signalized and all-way stop controlled intersections, LOS is based on the average delay of all movements. For side street stop-controlled intersections, LOS is based on the movement with the highest delay. Exhibit 3-17 summarizes the LOS and delay thresholds specified in the Highway Capacity Manual, which is a standard methodology for measuring intersection performance.

Exhibit 3-17. LOS and Delay Thresholds for Signalized and Unsignalized Intersections

LOS	Signalized Intersections (Delay in Seconds	Unsignalized Intersections (Delay in Seconds)
A	≤ 10	≤ 10
B	> 10 to 20	> 10 to 15
C	> 20 to 35	> 15 to 25
D	> 35 to 55	> 25 to 35
E	> 55 to 80	> 35 to 50
F	> 80	> 50

Source: Highway Capacity Manual (Transportation Research Board), 2016.

All study intersections are currently operating within the City's or WSDOT's standards. As population and employment grow in the station area, LOS is projected to decline under Alternative A and more so under Alternative B. See Exhibit 3-18. Some intersections will not meet the City standards for LOS without investing in physical mitigations at the intersection such as through lanes, turn lanes, signals, and restriping, as well as broader mitigation efforts to improve the multimodal transportation network by adding bike/ped facilities and enhancing access to transit. Mitigation strategies that reduce traffic and parking impacts include Transportation Demand Management (TDM) and Commute Trip Reduction programs, and parking management strategies.

Exhibit 3-18. LOS Results for Evaluated Alternatives (Without Mitigation)

ID	Intersection	LOS Standard	Peak Hour	2019 Existing	2044 Alternative A	2044 Alternative B-1: 2 Driveways	2044 Alternative B-2: 1 Driveway	2044 Alternative 2 (DSEIS Results)
1	NE 90th Street & 124th Avenue NE	D	PM	C / 21	**F / 83**	**F / 158**	**F / 158**	**F / 380**
2	NE 85th Street & 6th Street	E	PM	D / 41	**F/109^**	**F / 145^**	**F / 145^**	**F / 138^**
3	NE 85th Street & 120th Avenue NE	D	AM PM	C / 22 C / 21	C / 24 D / 39	**F/ 114** **F/ 113**	**F/ 114** **F/ 113**	**F / 572** **F / 616**
4	NE 85th Street & 124th Avenue NE	D	AM PM	C / 29 D / 35	C / 33 D / 41	D / 39 D / 45	D / 39 D / 45	D / 35 **E / 59**
5	NE 83rd Street & 120th Avenue NE	D	PM	B / 11	B / 13	B / 18*	B / 20**	A / 8*
6	NE 80th Street & 118th Avenue NE	D	PM	B / 15	C / 20	A / 8**	**F / 94**	A / 6**
7	NE 80th Street & 120th Avenue NE	E	PM	B / 11	B / 14	B / 13	**F / 222**	B / 20
8	NE 70th Street & 116th Avenue NE	E	PM	C / 28	D / 35	E / 75	E / 75	E / 67

Notes:
^ Intersection reconfiguration with transit queue jump and dedicated WBR turn pocket.
*Signalized without any geometric improvements.
**Signalized with EBL, SBR turn pockets.
Source: Fehr & Peers, 2021.

Impacts to Transit

The transit analysis in Appendix B-1, Supplemental Transportation Study, considered three primary elements to understand potential change to transit conditions under the different land use alternatives: passenger loads, speed and reliability, and access to transit. Exhibit 3-19 shows that under Alternative A, the only bus route that exceeds King County Metro's crowding threshold is the I-405 BRT North. Alternative B (as well as Alternative 2 from the DSEIS) would impact the route by adding riders to an already crowded line. Both growth scenarios impact the route by increasing PM Peak ridership by more than 15%.

Exhibit 3-19. Impacted Transit Ridership

Action Alternative	New PM Peak Hour Transit Trips in Station Area	Routes With Passenger Load Factors Above the Threshold	New PM Peak Hour Riders per Route	Passenger Load Factor^	Transit Ridership Growth
Alternative A	372	I-405 BRT North	11	1.16	15%
Alternative B	603	I-405 BRT North	18	1.25	24%
Alternative 2	669	Route 250 I-405 BRT North	38 20	1.06 1.28	285% 26%

^Passenger load factor is a ratio of anticipated ridership compared to KC Metro's crowding threshold.
Source: Fehr & Peers, 2021.

Transit speed and reliability would be impacted by worsening intersection LOS on the street network, though the new interchange creates a dedicated transit/HOV lane from 114th Ave NE/Kirkland Way to 120th Ave NE. The transit analysis identifies a potential location for a queue jump to mitigate impacts to transit speed. It also includes a recommended list of improvements to bike/ped facilities that will accommodate people walking and biking and make their experience safer and more comfortable.

Alternative A Current Trends

Under Alternative A, which represents current growth trends continuing through 2044, the following intersections would fail to meet adopted LOS standards:

- **NE 90th Street & 124th Avenue NE:** this intersection would operate at LOS F due to land use growth anticipated in the NE quadrant and the lack of streets connecting north of NE 90th Street
- **NE 85th Street & 6th Street:** this intersection will operate at LOS F under all future year alternatives due to planned modifications to better accommodate transit, walking, and biking modes.

Alternative B Transit Connected Growth – Preferred Direction

Alternative B considered two transportation scenarios for the southeast quadrant, with allowed development at 250 feet maximum height:

- The first assumes only one general access driveway[2] to the Lee Johnson site via NE 83rd Street to a signalized intersection with 120th Avenue NE.
- The second scenario considers the same access as above, plus an additional south access to the site along 118th Avenue NE, which connects to 80th Street NE with a newly signalized intersection.

The reconfiguration of land use growth in Alternative B would substantially improve intersection operations relative to Alternative 2. However, the land use growth envisioned by this alternative would increase vehicle trips on the roadway network (compared to existing conditions or No Action/Alternative A scenarios) such that the following intersections would not meet adopted LOS standards under Alternative B:

- **NE 85th Street & 6th Street:** this intersection will operate at LOS under all future year alternatives due to planned modifications to better accommodate transit, walking, and biking modes. Moreover, additional growth throughout the SAP would result in higher delays than are anticipated for Alternative A.
- **NE 85th Street & 120th Avenue NE:** this intersection could not meet City

standards without mitigation, as this is the main access point for growth in the SE quadrant and an important access point for growth in the NE quadrant.

- **NE 90th Street & 124th Avenue NE:** this intersection could not meet City standards without mitigation, as this is the main access point for growth in the NE quadrant.
- **NE 83rd Street & 120th Avenue NE:** under the scenario in which an intersection at, or in the vicinity of NE 83rd Street, serves as the only general access to the Lee Johnson site, it will require signalization (as assumed) as well as additional lanes.
- **NE 80th Street & 120th Avenue NE:** under the scenario in which only one general access is provided to the Lee Johnson site is along 120th Avenue NE, increased traffic through this intersection would result in LOS F delays without mitigation.
- **80th Street & 118th Avenue NE:** similarly, under a single access point scenario to the Lee Johnson site, this intersection would also be impacted by additional traffic along 80th Street, although it is unclear whether a signal or roundabout would be warranted to address the side street delay.

3.6.3 Mitigation Measures

This section identifies a range of potential mitigation strategies that could be implemented to help reduce the significance of the adverse impacts identified for Alternative B in the previous section. These include significant impacts for auto and freight, transit, parking, and safety.

Incorporated Plan Features

All alternatives support the BRT station. Action Alternatives including Alternative B assume the adoption of a Subarea Plan and Form-Based Code to guide the type of investment in multimodal transportation investments.

Regulations and Commitments

The City of Kirkland has requirements on TDM programs and strategies:

- Washington State Commute Trip Reduction (CTR) law focuses on employers with 100 or more employees whose shifts begin during the typical AM commute. This law requires employers to develop commute trip reduction plans and work toward meeting their mode share targets through internal programs and monitoring. As more businesses subject to CTR locate in the Study Area, it is expected that decreases in single-occupancy vehicle (SOV)

commute rates would result.

– Transportation Management Plans (TMPs) are required for property owners of newly constructed commercial buildings at the direction of the City. TMPs are designed to reduce automobile trips and their traffic impacts on city facilities. TMP programs are generally geared toward large developments; however, they could apply to smaller developments and residential buildings as well. For instance, TMPs are required at adjacent sites owned and developed separately where there may be several employers, none of which by themselves are affected by the CTR law or the City TMP requirements, but together constitute a sizeable population of employees. However, the TMP program is under-funded and needs a funding mechanism to be able to effectively manage future TMPs.

The TDM programs discussed here would be implemented regardless of which land use alternative is selected and can have a substantial effect on travel behavior—something which is not fully captured by the travel demand modeling process. With a robust TDM program in place, it is expected that actual trip generation in the Study Area would be lower than that analyzed in the impacts section of this SEIS.

Other Proposed Mitigation Measures

The City could consider mitigating the expected transportation impacts in a variety of ways including changes to city policies, physical improvements, and programmatic measures. These approaches could be pursued individually or in combination with one another. However, the NE 85th Street Corridor would likely require all three measures due to the extent of the impacts along that corridor.

Level of Service Policy

The City could approach mitigation through revision of its LOS policy—in particular, creating a separate LOS standard that would apply at designated intersections in the Study Area (and potentially other areas of the City outside the Study Area) to be consistent with the transportation characteristics of urban areas. Multiple cities in the Puget Sound designate varying LOS standards based on neighborhood or corridor context.

Intelligent Transportation Systems

Another measure the City could consider implementing is additional intelligent transportation systems (ITS) elements into the corridor beyond the currently interconnected signal system that functions based on a traffic responsive timing pattern. Additional treatments could include implementing performance

monitoring software and a more advanced adaptive traffic signal timing system.

Intersection-Specific Improvements

Development under both Alternative A and Alternative B would result in traffic impacts requiring modifications to the roadway network:

- **NE 90th Street & 124th Avenue NE:** With the addition of through lanes and restriping, the intersection would meet the City's LOS standard under both alternatives.
- **NE 85th Street & 120th Avenue NE:** Given high delays measured at this intersection under Alternative B during both the AM and PM peak hours, several potential mitigation scenarios were analyzed. Potential geometric mitigation Alternatives include adding a turn lane, removing the western crosswalk of NE 85th Street, restriping, and revising the signal phasing.
- **NE 83rd Street & 120th Avenue NE:** With the allowed development in the southeast quadrant at a maximum height of 250 feet anticipated under Alternative B, this intersection would need to be signalized. If this intersection serves as the only primary entrance (and a southern entrance via 118th Avenue NE is not provided), this intersection requires additional geometric modification. Various configurations would include widening and restriping for left turns and extending the northbound left turn lane.
- **NE 80th Street & 118th Avenue NE:** Based on delay analysis, this intersection would require mitigation under Alternative B regardless of whether 118th Avenue NE serves as a primary access point. Mitigation would include a signal, or potentially a roundabout, and may require additional treatments to ensure safe sight distance.
- **NE 80th Street & 120th Avenue NE:** If the Lee Johnson site has only one primary entrance (via 83rd Street & 120th Avenue NE), this intersection would require geometric mitigation (a southbound left turn pocket) to maintain the City's LOS standard.

See more detail about these modifications in Appendix B-1 and Exhibit 3-20. No additional geometric modifications have been identified to address impacts at NE 85th Street & 6th Street.

Exhibit 3-20. LOS Results for Evaluated Alternatives with Geometric Mitigations

ID	Intersection	LOS Standard	Peak Hour	2019 Existing	2044 Alternative A	2044 Alternative B: 2 Driveways	2044 Alternative B: 1 Driveway	2044 Alternative B: 1 Driveway (Mitigated)
1	NE 90th Street & 124th Avenue NE	D	PM	C / 21	**F / 83**	**F / 158**	**F / 158**	D / 52
2	NE 85th Street & 6th Street	E	PM	D / 41	**F/109^**	**F / 145^**	**F / 145^**	**same**
3	NE 85th Street & 120th Avenue NE	D	AM PM	C / 22 C / 21	C / 24 D / 39	**F / 114** **F / 113**	**F / 114** **F / 113**	**F / 104** **F / 88** **(Mit. Option 1)#** **F / 126** **F / 96** **(Mit. Option 2)@**
4	NE 85th Street & 124th Avenue NE	D	AM PM	C / 29 D / 35	C / 33 D / 41	D / 39 D / 45	D / 39 D / 45	Same
5	NE 83rd Street & 120th Avenue NE	D	PM	B / 11	B / 13	B / 18*	B / 20**	D / 37
6	NE 80th Street & 118th Avenue NE	D	PM	B / 15	C / 20	A / 8***	**F / 94**	A / 5*
7	NE 80th Street & 120th Avenue NE	F	PM	B / 11	B / 14	B / 13	**F / 222**	D / 52
8	NE 70th Street & 116th Avenue NE	E	PM	C / 28	D / 35	E / 75	E / 75	same

Source: Fehr & Peers, 2021.
Notes:
* Signalized without any geometric improvements
** Signalized with EBL, NBL, SBR turn pockets
*** Signalized with EBL, SBR turn pockets
^ Intersection reconfiguration with transit queue jump and dedicated WBR turn pocket
#Mitigation Option 1:
Adding an eastbound right turn lane from the I-405 off ramp to 120th Avenue NE to facilitate trips for future intensive development
Removal of the western crosswalk of NE 85th Street (since pedestrians would have to cross at least eight vehicle travel lanes with planned widening related to both the interchange and eastbound right turn lane proposed above)
Restriping the northbound approach to include a left turn lane and a shared left/through/right turn lane
Restriping the southbound approach to include dedicated left, through, and right lanes, with the right turn lane protected by a "pork chop" to create a free movement3
Revising the signal to provide northbound/southbound split phasing to allow for left turn movements out of either lane from the south approach
@Mitigation Option 2:
Restriping the northbound approach to include a left turn lane and a shared left/through/right turn lane
Restriping the southbound approach to include dedicated left, through, and right lanes, with the right turn lane protected by a "pork chop." Unlike Option 1, the right turn would not be a free movement since the western crosswalk would remain.
Revising the signal to provide northbound/southbound split phasing to allow for left turn movements out of either lane from the south approach

These improvements will help to reduce delay under Alternatives B. However, these intersections would still have substantially more delay than Alternative A, so other programmatic or policy measures would be required to fully mitigate the impacts. The improvements were tested from a traffic operations perspective, but additional analysis would be necessary to refine the details of these

improvements, including design feasibility and necessary right-of-way.

The lack of east-west travel routes across I-405 also causes vehicle trips to be concentrated along NE 85th Street. This means that local trips within the City of Kirkland mix with a significant amount of regional traffic that is accessing I-405. Creating additional east-west vehicle connections across the freeway (not proposed or recommended) and increasing the network density would spread out the trips and reduce the congestion along NE 85th Street.

Additional Transportation Demand Management (TDM) and Parking Strategies

Research by the California Air Pollution Control Officers Association (CAPCOA), which is composed of air quality management districts in that state, has shown that implementation of TDM programs can substantially reduce vehicle trip generation, which in turn reduces congestion for transit, freight, and autos.

A comprehensive set of TDM strategies were considered by City staff. Tier 1 strategies are most likely to be implemented both because they are within the City's control and consistent with the City's vision for the Study Area. These include the following:

- Unbundle parking to separate parking costs from total property cost.
- Revise parking code to reduce the parking minimums or implement parking maximums.
- On-street parking management strategies.
- Require new development to charge for off-street parking.
- Require robust monitoring and management of parking and TDM measures to reduce spillover parking.
- Encourage or require transit pass subsidies from developers/property owners.
- Expand upon Kirkland's Green Trip program and encourage alternative commuting modes.
- Provide an Emergency Ride Home program for employees.
- Require bike facilities such as storage and showers in new developments.
- Encourage carpooling with a Ridematch Program.

Tier 2 strategies could also be pursued but would either be led by developers or would require additional partnerships beyond sole City control. These strategies include:

- Provide shared off-street parking with new developments.
- Provide private shuttle service or gondola as a first mile/last mile solution to make the 85th Street Station more accessible from Downtown Kirkland, the 6th Street Google campus, Kirkland Urban, and other destinations.

- Encourage or require transit pass provision programs for residents of multifamily properties.
- Partner with Transportation Network Companies (TNCs) such as Uber or Lyft to provide pooled ridesharing Alternatives.
- Launch a bikeshare or other micromobility system in Kirkland.

The traffic analysis estimated the efficacy of Tier 1 strategies and the resulting trip reductions were incorporated into the traffic operations analysis to understand how the strategies would affect operations at the intersection level. Exhibit 3-21 summarizes the range of estimated efficacy for each of the Tier 1 strategies. Combined, these strategies have an estimated overall efficacy of 9-38%, with 13% recommended for typical planning applications.

Exhibit 3-22 shows the combined efficacy of geometric and TDM strategies in mitigating transportation impacts. TDM serves to reduce delays, although the intersections of NE 85th Street with 6th Street and 120th Avenue NE would have delays exceeding City standards.

Exhibit 3-21. Trip Reduction (VMT %) from Tier 1 Transportation Demand Management Strategies by Land Use

TDM Strategy	Office	Residential	Retail	Other
Parking				
Increased Off-Street Fees	6% to 11%	6% to 11%	6% to 11%	
Increased On-Street Fees	1% to 5%	1% to 5%	1% to 5%	
Unbundled Parking	—	—	—	
Pay-as-you-Go Parking Rates				
Parking Supply	up to 4%	4% to 4%	up to 4%	
Transit				
Subsidies	up to 2%	—	—	
Transit Frequency				
Transit Coverage				
Private Point-to-Point Shuttles				
Last Mile Shuttle				
Commute Programs				
Commuter Incentives				
Commute Marketing Programs	2% to 16%	3% to 21%	up to 3%	
Emergency Ride Home	up to 1%	—	—	
TNC Partnerships				
Bike and Walk				
Secure Parking	—	up to 1%	—	
Shower & Lockers	—	—	—	
End of Trip Repair Stations	—	up to 1%	—	
Pedestrian-Oriented Design				
Bikeshare System & Subsidies				
Ride				
Carpool/Vanpool Incentives				
Ridematch Program	up to 6%	up to 6%	up to 6%	up to 6%
Carshare				
Carshare Subside				
Total of all Measures	**9% to 38%**	**13% to 40%**	**7% to 22%**	**—**

Source: Fehr & Peers, 2021.

Exhibit 3-22. Transportation Demand Management Strategies Efficacy in Mitigating Intersection Impacts

ID	Intersection	LOS Standard	Peak Hour	2019 Existing	2044 Alternative A	2044 Alternative B: 2 Driveways	2044 Alternative B: 1 Driveway	2044 Alternative B: 1 Driveway (TDM + Geometric Mitigations)
1	NE 90th Street & 124th Avenue NE	D	PM	C / 21	**F / 83**	**F / 158**	**F / 158**	D / 46
2	NE 85th Street & 6th Street	E	PM	D / 41	**F/109^**	**F / 145^**	**F / 145^**	**F / 139^**
3	NE 85th Street & 120th Avenue NE	D	AM PM	C / 22 C / 21	C / 24 D / 39	**F/ 114** **F/ 113**	**F/ 114^^** **F/ 113**	**F / 85^^** **E/ 80**
7	NE 80th Street & 120th Avenue NE	F	PM	B / 11	B / 14	B / 13	F / 222	B / 13

Source: Fehr & Peers, 2021.
Notes:
^ Intersection reconfiguration with transit queue jump and dedicated WBR turn pocket
^^ Assumes Alternative 1 geometric mitigations

Transit Improvements

Significant impacts to transit were identified in the Study Area for Route 250 and the I-405 Stride BRT North under Alternative B. These impacts are due to forecasted ridership exceeding load factors established by King County Metro and Sound Transit. To address this impact, the City of Kirkland could coordinate with King County Metro and Sound Transit to adjust their service levels through their regular service revisions as transit demand increases in the Study Area.

The City of Kirkland could also require that all new transit stops are designed to minimize delay and maximize comfort by providing convenient loading and access at all bus doors and necessary sidewalk width to accommodate future stop amenities such as benches, transit shelters, and trash receptacles.

Other strategies for mitigating impacts to transit service include:

- Support King County Metro's Metro K-Line Rapid Ride.
- Implement transit access strategies, such as first-last mile rideshare connections, bikeshare support, and bike/ped facilities.
- Implement a pilot shuttle service to improve access to the BRT station.
- Install amenities at stops along NE 85th Street such as real-time arrival signage, expanded shelters, and bike parking.

An alternative form of transit could include a gondola given topography changes across the Study Area:

- The City of Kirkland has commissioned a study of a gondola connection

between the upcoming I-405/NE 85th St BRT station and the intersection of 6th Street and Central Way. A 2018 study assumed 1,000 passengers per hour per direction (pphpd). The gondola could itself have a maximum capacity of 3,600 pphpd. Such a gondola could help connect riders to the BRT station; depending on its design and alignment it could affect current road channelization and use but may also offer some relief in travel time and reduce single-occupancy vehicles in parts of the study area. Should the City decide to construct a gondola, that project would undergo its own environmental review related to transportation, views, and potentially other topics.

Safety Improvements

Significant impacts to safety were identified in the Study Area due to higher vehicle volumes and the resulting queueing throughout the Study Area and on the I-405 off ramps. The Intersection-Specific Improvements and TDM strategies described above will help reduce delays, which would help improve safety.

- Provide continuous pedestrian scale streetlighting along corridors within transit-oriented development areas.
- Design streets to promote slower vehicle travel speeds and awareness for the most vulnerable users of the street system, pedestrians, and cyclists, during all times of the day by implementing treatments, such as those identified in the *NACTO Urban Street Design Guide*.
- Ensure all new uncontrolled crosswalks are constructed with treatments that bring awareness to drivers regarding yielding to cross pedestrians, including applying the *USDOT FHWA Guide for Improving Pedestrian Safety at Uncontrolled Crossing Locations*.

The City should also monitor safety through its crash reporting system and Vision Zero program and consider additional improvements at the study intersections as needed.

3.6.4 Significant Unavoidable Adverse Impacts

This section identifies significant adverse impacts for auto and freight, transit, parking, and safety under the Action Alternatives.

The auto, freight, and safety impacts are anticipated to be reduced by implementing a range of possible mitigation strategies such as those discussed in Mitigation Measures. In addition to geometric transportation capacity improvements, the City could manage demand using policies, programs, and investments aimed at shifting travel to non-SOV modes. However, even with some

combination of these potential mitigation measures, queueing would likely still be an issue throughout the Study Area and on the I-405 off ramps, which would also influence safety. Therefore, significant unavoidable adverse impacts are expected for auto, freight, and safety.

With some combination of the potential mitigation measures outlined in the previous chapter, the magnitude of the transit impacts could be mitigated to a less-than-significant level. Therefore, no significant and unavoidable adverse impacts to transit are expected.

The parking impacts are anticipated to be brought to a less-than-significant level by implementing a range of possible mitigation strategies such as those discussed in 3.6.3 Mitigation Measures. While there may be short-term impacts as travelers initially rely predominantly on auto travel (causing on-street parking demand to exceed supply), it is expected that over the long term with these mitigation strategies and continued expansion of non-auto travel alternatives, travel behavior would change such that the on-street parking situation would reach a new equilibrium. Therefore, no significant unavoidable adverse impacts to parking are expected.

3.7 Public Services

This section addresses police services, fire and emergency medical services, schools, and parks and recreation. Following a description of current services in the Study Area and level of service (LOS) standards, an impact analysis is presented for each alternative. Mitigation measures are proposed to address impacts to services.

3.7.1 Thresholds of Significance

Impacts on public services would be considered to result in significant impacts under one or more of the following conditions:

- Negatively affect the response times for police and/or fire and emergency medical services.
- Increase demand for special emergency services beyond current operational capabilities of service providers.
- Reduce access to park and open space facilities.
- Result in increases in students and lack of facilities.

3.7.2 Evaluation of Final SEIS Alternatives

Alternative A Current Trends

Police

A fiscal analysis performed for Alternatives A and B considered the drivers of police services including calls for service, and full-time equivalents due to combined jobs and residential population. The method results in less staff for Alternative A than for the No Action Alternative even though Alternative A is slightly larger in capacity for population and jobs. See Exhibit 3-23. See also FSEIS Appendix B.

Exhibit 3-23. Police Staffing (FTE) Demand by Alternative

Department	DSEIS No Action	FSEIS Alt A	DSEIS Alt 2	FSEIS Alt B	Basis
Police	5.6	3.9	27.1	15.7	Annual Calls for Service & Equivalent Population rather than FTE/1,000 Pop.

Source: BERK 2021.

About 1,882 additional calls for service are expected under Alternative A. Approximately 3.9 FTE police staff would be needed to support growth in the Study Area under this alternative, including staff in the patrol division, the traffic division, the professional standards division, and administrative staff. No additional corrections staff would be needed under either alternative.

Police staff indicated that current police facilities would be sufficient to service expected growth in the Study Area and there would be no anticipated need for new or expanded Police facilities under either alternative.

Fire and Emergency Services

Fire staff estimate the Department's current and projected future staffing capacity would be sufficient to handle additional incidents in the Study Area.

No new or expanded facilities would be needed as a result of growth under Alternative A. See Exhibit 3-24.

Exhibit 3-24. Fire Staffing (FTE) Demand by Alternative

Department	DSEIS No Action	FSEIS Alt A	DSEIS Alt 2	FSEIS Alt B	Basis
Fire	3.7	-	18.2	6.0	Existing Capacity and Annual Calls for Service rather than FTE/1,000 Pop.

Source: BERK 2021.

Schools

Both alternatives would generate new students in housing units. The Lake Washington School District's multifamily student generation rates were used to determine how many students would be generated through the planning period. See Exhibit 3-25.

Exhibit 3-25. Student Generation by Alternative Student Generation Rate

Student Generation Rate	Alternative A	Alternative B
New Housing Units	**1,020**	**6,243**
Elementary School = 0.082	84	512
Middle School = 0.035	36	219
High School = 0.033	34	206
Total Students	**153**	**936**

Sources: Lake Washington School District Six-Year Capital Facilities Plan, 2021-2026; BERK, 2021.

School capacity would need to increase by 153 students under Alternative A. The Lake Washington School District will need solve for additional school population under Alternative A. Additional growth in this area would increase the number of students at the following schools: Twain Elementary, Rose Hill Elementary, Lakeview Elementary, Kirk Elementary, Kirkland Middle School, Rose Hill Middle School, and Lake Washington High School.

Parks

Alternative A is expected to result in 2,151 new residents in the Study Area. Exhibit 3-26 below summarizes the City's target levels of service (LOS) for parks and recreation facilities, estimates the cost per facility or acre of new parkland, and estimates the additional demand generated by growth under both alternatives.

Exhibit 3-26. Park LOS Guidelines, Net Need, and Estimated Net Facility/Acre Costs, 2021$

Facility/Acre Type	LOS Guidelines	Estimated Cost per Facility/Acre	Alt A Net New Facilities/Acres Needed	Alt B Net New Facilities/Acres Needed
Tennis Courts	1/3,000 pop.	$0.1 M	0.72	3.31
Baseball Fields	1/5,000 pop.	$1.9 M	0.43	1.99
Softball Fields	1/10,000 pop.	$1.4 M	0.22	0.99
Soccer/Football/Lacrosse Fields	1/7,500 pop.	$2.7 M	0.29	1.32
Skate Parks	1/40,000 pop.	$1.4 M	0.05	0.25
Indoor Pools	1/40,000 pop.	$72.0 M	0.05	0.25
Community Park Acres	2.25/1,000 pop.	$2.3 M	4.84	22.33
Neighborhood Park Acres	1.5/1,000 pop.	$2.3 M	3.23	14.89

Sources: City of Kirkland NE 85th SAP Supplemental Study, Fiscal Impacts and Community Benefits Analysis Final Technical Memo, November 2021 (HBB, 2021; City of Kirkland, 2021; BERK, 2021).

Accounting for inflation, there would be an estimated cumulative park capital need of approximately $30.8 million under Alternative A. An additional 1.3 parks and community services FTEs would be needed to service park facilities and amenities under Alternative A.

Alternative B Transit Connected Growth – Preferred Direction

Police

About 7,558 additional calls for service are expected under Alternative B. Approximately 15.7 additional FTE police staff would be needed to support

growth in the Study Area under this alternative, including staff in the patrol division, the traffic division, the professional standards division, and administrative staff. See Exhibit 3-23. This is approximately 11.8 FTE higher than Alternative A. No additional corrections staff would be needed under either alternative. Overall projected operating revenues are anticipated to cover operating needs by 2044 under both alternatives.

Vehicle and equipment needs would be higher under Alternative B than Alternative A to support the additional growth and associated Police FTE. Police staff indicated that current police facilities would be sufficient to service expected growth in the Study Area and there would be no anticipated need for new or expanded Police facilities under either alternative.

Fire and Emergency Services

Fire staff projected a need for five additional firefighters and one fire inspector under Alternative B based on the volume of annual projected incidents and major developments (multifamily, mixed use, or other non-residential buildings) in the Study Area. See Exhibit 3-24.

Firefighters would need to be added to Station 26 when the volume of annual incidents in the Study Area increased above 500 per year, and an additional fire inspector would be needed when five new major development buildings complete construction. However, overall projected operating revenues are anticipated to cover operating needs by 2044 under both alternatives.

Station 26 would need an additional aid car and to convert an existing engine truck into a ladder truck concurrent with increased staffing needs. Costs are projected to be covered both by fire impact fees generated in the Station Area on new development and by using 0.5% of the general government operating surplus) to cover annual deficits in 2038 when the new equipment is needed.

Schools

School capacity would need to increase by 936 students under Alternative B (783 more than Alternative A; see Exhibit 3-25 above). The City would need to help the Lake Washington School District solve for additional school population under this alternative.

About $24.6 million in school impact fee revenue would be available for school capital needs under Alternative B. Extending the Lake Washington School District Capital Levy (currently scheduled to expire in 2022) through the study period could generate as much as $53.9 million in the Station Area.

Parks

Alternative B is expected to result in 9,926 new residents in the Study Area. Exhibit 3-26 above summarizes the City's target LOS for parks and recreation facilities, estimates the cost per facility or acre of new parkland, and estimates the additional demand generated by growth under both alternatives. Accounting for inflation, there would be an estimated cumulative park capital need of approximately $160.0 million under Alternative B. About 76% of that cost is comprised of acquisition and development of 15 new acres of neighborhood parks and 22 new acres of community parks, which are likely infeasible in the Station Area.

An additional 5.9 park and community service FTEs would be needed to service park facilities and amenities under Alternative B (4.6 more than Alternative A).

3.7.3 Mitigation Measures

Incorporated Plan Features

- Onsite open spaces and community gathering spaces are proposed with each Action Alternative in the Form-Based Code to alleviate demand for and use of local public parks.
- The Action Alternatives include investment in pedestrian and bicycle improvements to connect with trails, parks, and schools within and abutting the Study Area.
- The adoption of Form-Based Code can accommodate a variety of uses proposed by future development, including civic and school facilities.

Regulations and Commitments

Police

- New development will be required to comply with the provisions of Title 21 of the Kirkland Municipal Code – Buildings and Construction (KMC 21). Provisions include that all new buildings with either more than five stories above grade plane, a total building area of 50,000 square feet or more, or a total basement area of 10,000 square feet or more have approved radio coverage for emergency responders (KMC 21.20.065).
- Primary funding sources for public safety services include property taxes, sales taxes, and utility taxes. New development will increase the tax base for each of these funding sources, which will help partially offset additional service costs associated with housing and employment growth. The Department will

need to review growth in existing homes as well as new growth to determine its revenue sources and ability to respond with capital improvements and operational changes in its six-year capital facility plans.

Fire and Emergency Services

- New development will be required to comply with the provisions of Title 21 of the Kirkland Municipal Code – Buildings and Construction (KMC 21). Provisions include fire extinguishing systems be required for all new buildings with a gross floor area greater than 5,000 square feet (KMC 21.33.040).
- Primary funding sources for public safety services include property taxes, sales taxes, and utility taxes. New development will increase the tax base for each of these funding sources, which will help partially offset additional service costs associated with housing and employment growth.
- New development is subject to collection of fire impact fees under Chapter 27.10 of the Kirkland Municipal Code. Fire impact fees are used to fund additional staffing, equipment, and facility needs.

Schools

- New development is subject to collection of school impact fees under Chapter 27.08 of the Kirkland Municipal Code. School impacts fees would be collected by the City on behalf of Lake Washington School District to partially offset the system improvement costs of educating additional students generated by new development. The Lake Washington School District (LWSD) Capital Facilities Plan assumes additional funding for capacity comes from state funds and tax revenue.

Parks

- New development is subject to collection of park impact fees under Chapter 27.06 of the Kirkland Municipal Code. Park impact fees are used to build or acquire new facilities.

Other Proposed Mitigation Measures

All Services

- For all services, the Station Area Plan could promote public/private partnerships to provide facilities in the station area and address potential service needs created by new development.

Police

- The City could adopt a formal, population-based Level of Service Standard

for police services to help identify project-specific demand.

- The City could consider the hiring of additional police officers and police department staff to maintain levels of service consistent with growth. This would be considered with the Comprehensive Plan, Capital Facility Plan, and regular budgets and increased revenue and costs from development.
- The City could consider requiring development to provide on-site security services, which may include video surveillance systems, to the Study Area, to reduce the increased need for police response to that area. This reduction is largely dependent on the nature of the incident.

Fire and Emergency Services

- In addition to the existing Level of Service Standards for response time, the City should consider adopting a population-based Level of Service Standard for fire and EMS to help identify project-specific demand. Any plan to address impacts of growth should be initiated before construction build out.
- As development occurs, the Fire Department could reassess future operations plans to ensure that staff and equipment are located close enough to areas of concentrated development to maintain adequate response times according to Department's Standards of Coverage and Deployment Plan. This may entail redistribution of staff or equipment between fire stations or construction of new facilities.
- The City could consider requiring a mitigation agreement at the time a development application is submitted to address additional staffing needs and needed capital investments at stations serving the Study Area (e.g., stations and ladder trucks or other).
- The City could condition Planned Action proposals during development review to develop protocols for fire aid and emergency medical services in conjunction with the Kirkland Fire Department.

Schools

- Alternatives 2 and 3 and FSEIS Alternative B would raise heights at Lake Washington High School to allow additional school capacity in the future. As well, the Form-Based Code could offer incentives for private developments to incorporate space for schools in new developments. Example schools integrated into employment or commercial districts include the Innovation Lab High School in the Canyon Park Regional Growth Center, and the Center School in Seattle Center. School districts with limited land are also building multistory schools at all grade levels. For example, Seattle School District has built the three-story Genesee Hill Elementary in 2016. A three-story Kimball Elementary School is planned in the Central District.
  - Consider requirements or development bonuses for developments to

provide space on-site in land-constrained locations like the Study Area. This could include educational and childcare space integrated into the development (most common for early learning, pre-K, and specialized programs like STEM) or by setting aside land for future school development.

  - Consider policy changes to define active frontages or required retail space to include educational, childcare, and community-serving spaces in order to implement a Development Bonus strategy.

- Explore partnership opportunities to align programs, such as Joint/Shared Use Agreements that broaden access to community-serving facilities.
- Consider increasing allowed development capacity on existing underutilized public parcels to support future development of new school space.
- Obtain more direction from Lake Washington School District on what school capacity the District will need to accommodate more students and require that development addresses these needs.
- Incorporate density bonus incentives for education space per community benefits and fiscal impacts study. See Appendix B.

Parks

- The City's 2015 Parks, Recreation, & Open Space (PROS) plan identifies a gap in access in the western portion of the South Rose Hill neighborhood, which aligns with the edge of the southeast quadrant of the Study Area and recommends the acquisition of neighborhood parkland in this area. The Capital Facilities Plan associated with the plan budgeted $600,000 beyond 2021 towards the acquisition of this parkland.
- The Station Area Plan could advance parks and open space at a neighborhood scale and at a site scale per Exhibit 3-27 below.

Exhibit 3-27. Park and Open Space Elements for Station Area

Neighborhood Scale	Site Scale/Code
Acquisition if opportunities arise. This could include a park consistent with the PROS Plan (2015 or as updated), or pocket parks or pea patches identified in the Kirkland Housing Strategy and Kirkland Sustainability Master Plan.	Developments provide onsite green space to provide for gathering space and stormwater treatment: ▪ Seattle Green Factor (Example implementation) ▪ Bellevue Green and Sustainability Factor (Code) ▪ Denver Green Building Ordinance (green roofs/green spaces requirements)
Linear parks along roads and trails Linear parks with green space and recreation elements could be part of green / blue streets associated with Alternatives 2 and 3 and Alternative B. Enhancements could be made along trails such as the Cross Kirkland Corridor. Examples: ▪ Seattle examples ▪ Renton example	As part of site-level requirements for **plazas and common space**, allow recreation space **at ground level or at upper levels**. Examples include: ▪ Pike Place Urban Garden. ▪ San Francisco, requirement to provide publicly accessible open space with new office space.

- Consider using a portion of general government operating surplus to offset costs.
- Consider a policy change to how park LOS is defined that moves toward equitable park access within walking distance and away from a per-acre approach. This approach would be well suited for the Station Area and could change the amount of park land needed.
- Leverage public assets and partnerships, including:
  - Explore needed and planned infrastructure projects to determine multi-benefit project candidates that include open space or trails.
  - Leverage existing spaces, including enhancing existing neighborhood parks, open space around Forbes Lake, and the Cross Kirkland Corridor with needed amenities to increase capacity (expand playgrounds, use vegetation to create intentional spaces for use and division of space).
  - Inventory existing publicly owned parcels for potential to support open space objectives. Identify parcels for neighborhood needs to support amenities like playgrounds, picnic areas, walking paths (multiple smaller parcels, parcels that allow for one or two amenities versus several in the same location).
  - Explore clover leaf space more for stormwater/natural areas/sustainable landscape areas.
  - Consider Shared Use agreements to leverage existing park and recreation spaces for public use. Maintain existing Shared Use agreements and explore expanding these to maximize the use of existing or future community assets.

- Identify Community Park Alternatives. Consider using tax increment financing, re-design of existing facilities (such as Peter Kirk Park or other community parks), and/or acquisition of Taylor Fields to meet additional need for a larger Community Park.
- See the community benefits and fiscal impacts analysis in Appendix B for evaluation of parks.
- Other Open Space and Parks Opportunities: Parks and open space elements that could be explored in the SAP and Form-Based Code include:
  - **Expand access and open space near Forbes Lake** to provide open space, boardwalk connections, wetland enhancement, and water quality benefits
  - **Cross Kirkland Corridor (CKC) enhancements and linear parks** could coordinate with NE 85th St widening to add covered recreational opportunities
  - **Green Connections to Parks and Schools** with paths and streets to Rose Hill Meadows Park and other open spaces (this is already part of the Preferred Plan Direction – "Green Connections")
  - **Tree canopy** could increase ecosystem services and green infrastructure in the station area, such as at WSDOT excess ROW
  - **Multi-benefit Streetscape improvements** could include raingardens at intersections to improve water quality for salmon health

3.7.4 Significant Unavoidable Adverse Impacts

Future population and employment growth will increase the demand for public services including police, fire, schools, and parks. This growth would occur incrementally over the 20-year planning period through 2044 and would be addressed in regular capital planning. Each service provider in conjunction with the City could evaluate levels of service and funding sources to balance with expected growth; if funding falls short, there may need to be an adjustment to levels of service or growth as part of regular planning under the Growth Management Act. With implementation of mitigation measures and regular periodic review of plans, no significant unavoidable adverse impacts to public services are anticipated.

3.8 Utilities

This section estimates whether water and sewer systems have the capacity to meet the needs of current and future customers.

3.8.1 Thresholds of Significance

Water and Sewer impacts would be considered to raise to the level of significance when the project's water or sewer demand exceed the capacity of the utility, and the LOS is decreased.

3.8.2 Evaluation of Final SEIS Alternatives

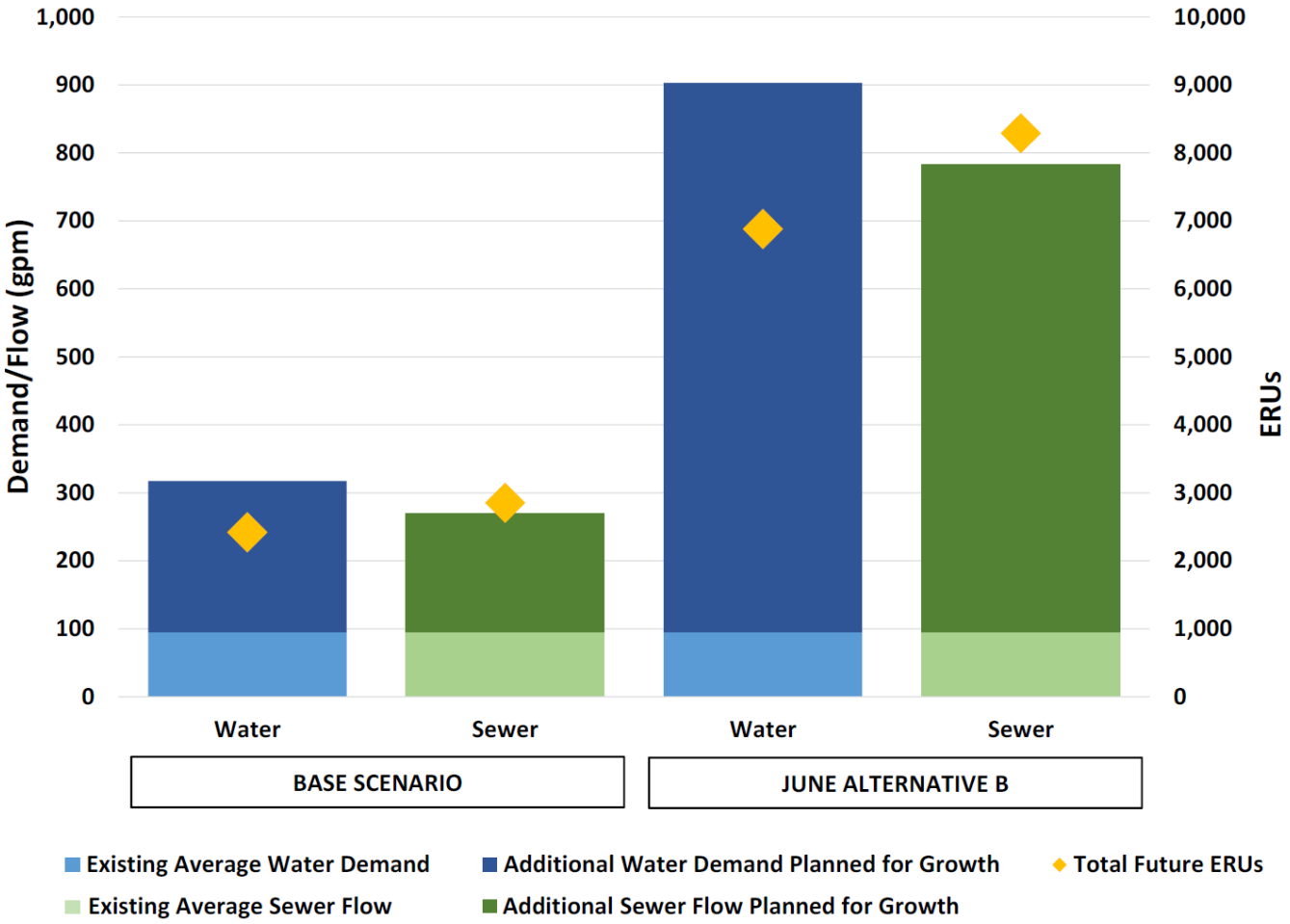
Two alternative scenarios were evaluated for the Water and Sewer analysis:

- The base scenario with growth projections based on the 2035 Comp Plan including the Rose Hill Mixed Use Site. This growth scenario closely aligns with Alternative A.
- Alternative B, with growth in water demands and sanitary sewer flows projected to be approximately triple the amount as that projected in the base scenario.

Refer to the Supplemental Water and Sewer Memo, Appendix B-2 for more detail about the analysis.

Exhibit 3-28 shows a comparison of existing and projected water demand and sewer flow under the base scenario equivalent to Alternative A and under Alternative B, in terms of gallon per minute (gpm) and Equivalent Residential Units (ERUs).

Exhibit 3-28. Station Area Projected Water Demand/Sewer Flows and ERUs



Source: RH2, 2021.

Base Scenario Current Trends

The Base Scenario uses the future growth analyses and capital improvement planning (CIP) performed for the Water System Plan (WSP), the 2021 Water CIP Update, and the General Sewer Plan (GSP), which reflect the City's current Comprehensive Plan growth targets for year 2035. This scenario projects approximately triple the existing water demands and sanitary sewer flows in the Station Area by the end of the planning horizon.

Alternative B Transit Connected Growth – Preferred Direction

Additional improvements will be needed under Alternative B, above and beyond

those needed in Alternative A[13], to meet projected growth given proposed zoning changes in the Station Area. Additional water and sewer system improvements are identified in Appendix B as a representative list of projects that could serve the level of buildout described in Alternative B:

- The water system would not be able to meet the fire flow requirements without additional improvements.
- The sewer system would not be able to meet the additional flows from the Station Area without additional improvements.

Notable water and sewer improvements needed include a water main under I-405 as required by WSDOT due to construction of the BRT station (needed in either Alternative A or Alternative B) as well as a sewer capacity project that crosses under I-405 to connect to the King County transmission line under Cross Kirkland Corridor (needed in FSEIS Alternative B).

Fire Flow Demands

In addition to domestic water demands, the water system infrastructure must also have sufficient capacity to convey fire flow demands. Planning-level fire flow requirements are designated in the hydraulic model based on the different land use categories to provide a target level of service for planning and sizing future water facilities. A comparison between the WSP fire flow requirements utilized for the Base Scenario analyses and requirements under Alternative B is shown in Exhibit 3-29.

Exhibit 3-29. Planning-Level Fire Flow Requirements

	2015 Water System Plan		FSEIS Alternative B	
Land Use Type	Fire Flow Requirement (gpm)	Duration (hrs)	Fire Flow Requirement (gpm)	Duration (hrs)
Medium Density Residential	1,500 - 2,000	2	1,500 - 2,000	2 - 3
High Density Residential	2,000 - 2,500	2	2,500 - 3,500	3 - 4
Office/Multi-Family Residential	2,500 - 3,500	2 - 3	2,500 - 3,500	3 - 4
Office	2,500 - 3,500	2 - 3	2,500 - 3,500	3 - 4

Source: R2H, 2021.

[13] See Appendix B. Base Scenario is projected to approximately triple the existing water demands and sanitary sewer flows in the Station Area by the end of the planning horizon. The Base Scenario is slightly modified from the June Alterative A scenario.

3.8.3 Mitigation Measures

Incorporated Plan Features

No additional plan features are proposed for water or sewer.

Regulations and Commitments

RCW 19.27.097 provides that an applicant for a building permit must provide evidence of an adequate supply of potable water. The authority to make this determination is the local agency that issues building permits (i.e., The City of Kirkland).

Requirements for adequate connections include:

- Sewer Service Installation KMC Chapter 15.12
- Water service installation and fees KMC 15.14

The means by which utilities can be extended to address area-specific needs and potentially distribute the costs include:

- Local Improvement Districts KMC 18.08
- Sewer Extension Charges KMC 15.38.030 to collect sewer extension charges from owners of properties which individually benefit from publicly built sewer extension facilities.
- Latecomers' agreements per RCW 35.91. The City has allowed for such agreements where the City agrees to collect funding from benefited properties where a developer agrees to install public infrastructure that is of a greater capacity or a longer distance than is needed for that developer's project alone.

Other Proposed Mitigation Measures

Under either Alternative A or B, additional water and sewer system improvements will be needed to meet expected growth in the Station Area beyond implementation of the City's existing CIPs as shown in the 2015 Water System Plan (WSP) and 2018 General Sewer Plan (GSP). All improvements required for the City's water and sewer systems to accommodate growth under the Base Scenario or Alternative B are shown in Appendix B. These improvements consist of upgrades and replacement of existing pipes, which would be installed on a predetermined maintenance schedule or when capacity reaches certain thresholds.

The City should begin planning for where future storage could be located because there are very few alternatives for siting additional storage in the City. Considerations may include building new, larger tanks on existing reservoir sites. Any proposed improvements on existing reservoir sites should consider potential conflicts and opportunities to accommodate these future storage needs.

3.8.4 Significant Unavoidable Adverse Impacts

Under all the alternatives the population served by the utilities will increase. This will result in increased consumption of water from the regional supply and increased sewage production requiring treatment and discharge into local waters. With the mitigation identified, no significant unavoidable adverse impacts are expected for water or sewer.

4 Clarifications & Corrections

This chapter provides clarifications and corrections to the Draft Supplemental Environmental Impact Statement (DSEIS) due to responses to comments or review by City staff or consultants. Changes are noted in the order of the DSEIS chapter and subsections. Insertions are noted as underlined text and deletions are noted with stricken text.

4.1 Study Area

In the Fact Sheet (Location), Chapter 1 (Section 1.2), and Chapter 2 (Section 2.2) the Study Area description should be slightly modified as follows:

> The Study Area includes the area within approximately a half mile area centered on the future NE 85th Street/I-405 BRT "Stride" station location. At the maximum extents, the Study Area is bounded approximately by 12th Avenue and NE ~~100th~~ 97th Street to the north, 128th Avenue NE to the east, NE 75th and 5th Avenue S to the south, and 6th Street to the west. The Study Area includes portions of the North Rose Hill, South Rose Hill, Everest, Moss Bay, Norkirk, and Highlands neighborhoods.

4.2 Station Opening

In Chapter 1 (Section 1.1) and Chapter 2 (Section 1.2), correct the opening date of the Stride Bus Rapid Transit (BRT) station as follows:

> Sound Transit's ST3 Regional Transit System Plan is bringing a once-in-a-generation transit investment to Kirkland with a new Stride Bus Rapid Transit (BRT) station at 85th and I-405, currently scheduled to open by ~~2025~~2026.

4.3 Surface Water and Stormwater

In Section 1.6.2 and Section 3.2.2, amend the description of impacts common to all alternatives regarding wetlands and streams as follows:

Section 1.6.2, What impacts did we identify? Wetlands and Streams

Development allowed under each alternative could result in impacts to Forbes Creek and the unnamed stream located in Moss Bay Basin, as well as wetlands along the eastern portion of the Study Area. Under all alternatives, the increase in impervious surfaces ~~and decrease in tree canopy cover associated with development would increase the flow volume and velocity during storm events and~~ could reduce infiltration and therefore baseflow during drier periods. The required implementation of LID practices would mitigate for this impact to flow and minimize the impact to associated stream and wetland habitat. Redevelopment would improve stream and wetland habitat by implementing current stormwater controls including LID practices, requiring appropriate buffer widths, and retaining existing native vegetation.

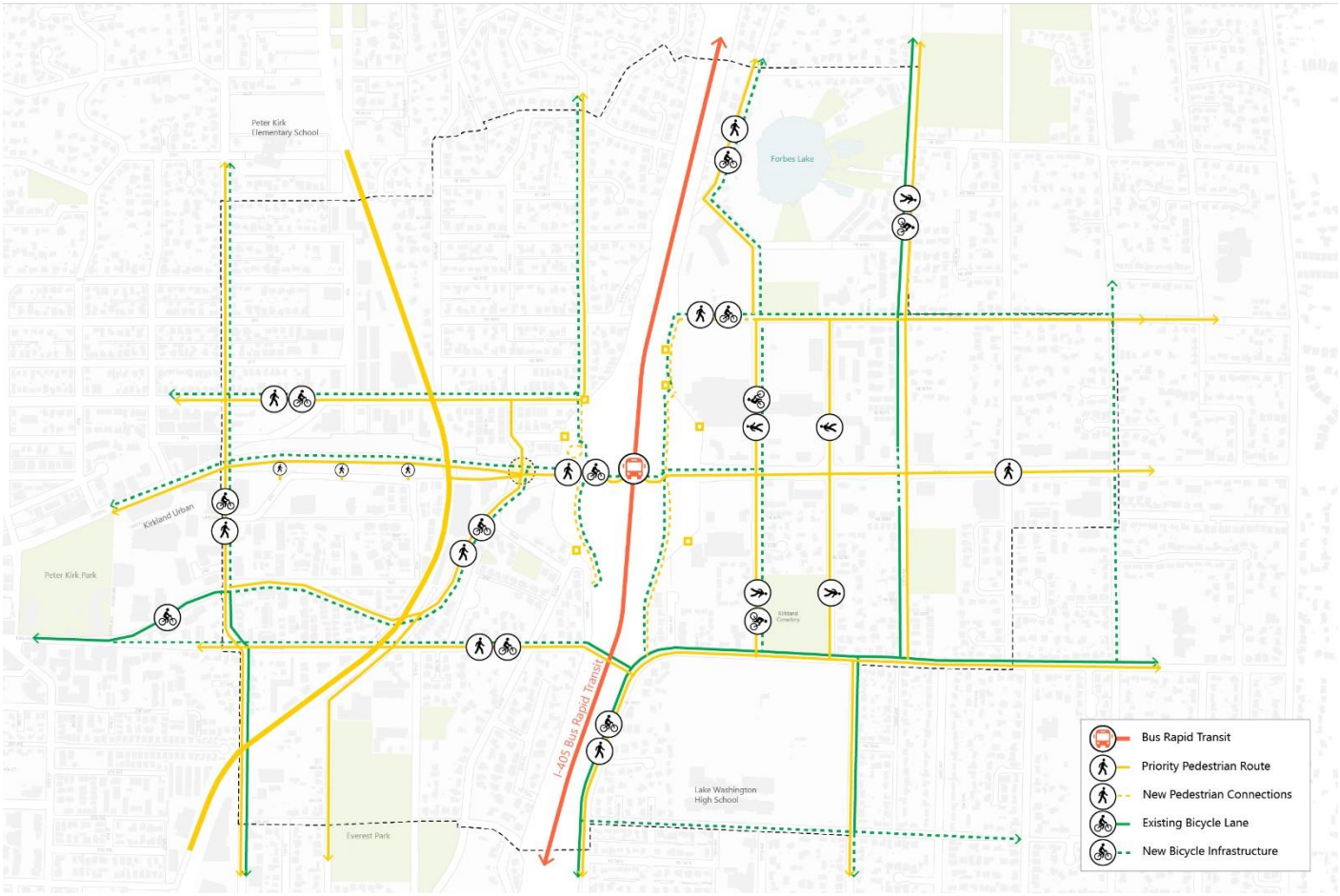
Section 3.2.2, Impacts Common to All Alternatives, Wetlands and Streams, First Paragraph

Development allowed under each alternative could result in impacts to Forbes Creek and the unnamed stream located in Moss Bay Basin, as well as wetlands along the eastern portion of the Study Area. Under all alternatives, the increase in impervious surfaces ~~and decrease in tree canopy cover associated with development would increase the flow volume and velocity during storm events and~~ could reduce infiltration and therefore baseflow during drier periods. The required implementation of LID practices would mitigate for this impact to flow and minimize the impact to associated stream and wetland habitat.

4.4 Transportation

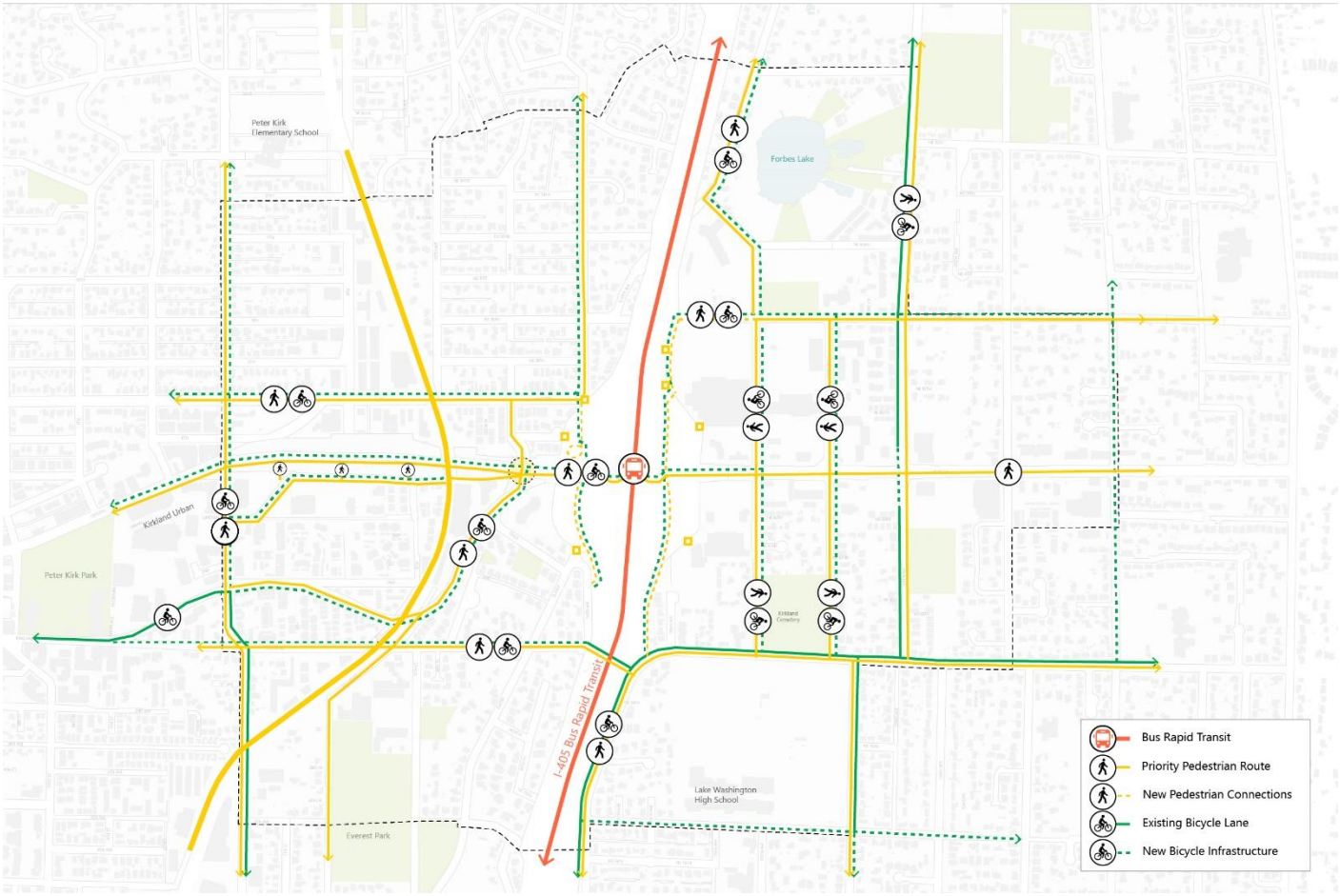
Legend symbols in the following three maps were reversed in the DSEIS for pedestrian and bicycle facilities. Alternative 2 and 3 DSEIS maps also incorrectly showed a new pedestrian connection and new bicycle infrastructure crossing I-5 at NE 90th St on (Exhibit 3-66 and Exhibit 3-67, respectively).

Revised Exhibit 3-65 (page 3-139). Multimodal Transportation Network Assumptions, Alternative 1 No Action



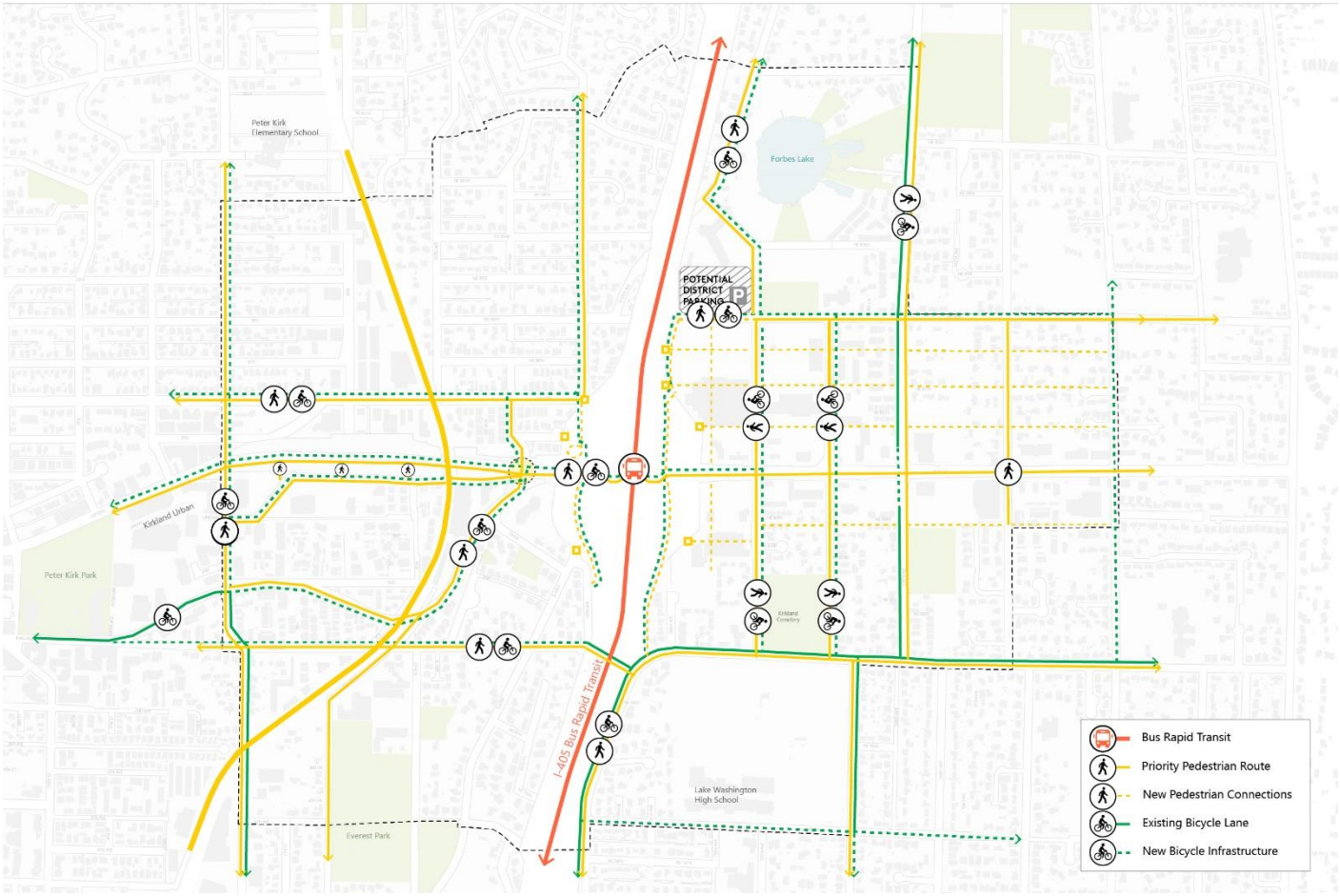
Sources: Mithun, 2020; Fehr & Peers, 2021.

Revised Exhibit 3-66 (page 3-140). Transportation Network Assumptions, Alternative 2



Sources: Mithun, 2020; Fehr & Peers, 2021.

Revised Exhibit 3-67 (page 3-141). Transportation Network Assumptions, Alternative 3



Sources: Mithun, 2020; Fehr & Peers, 2021.

Amend page 3-154 regarding Alternative 2 and Pedestrian and Bicycle facilities to fix an Exhibit cross reference and correct the description of improvements:

Pedestrian and Bicycle

Alternative 2 would include the pedestrian and bicycle projects identified for Alternative 1 No Action, as well as additional improvements along 122nd Avenue NE and 4th Avenue/5th Avenue as shown in Exhibit 3-~~76~~66. ~~This alternative would also include a bicycle and pedestrian bridge over I-405 at NE 90th Street.~~ Therefore, rather than preclude any pedestrian or bicycle improvements, Alternative 2 is expected to provide additional benefits. Because future development is expected to facilitate additional demand and meet the City design standards related to bicycle and pedestrian facility accommodations, no significant adverse impacts to pedestrian or bicycle travel are identified under Alternative 2.

4.5 Public Services

The following tables and text in Section 3.7 of the DSEIS were originally based on the Lake Washington School District's (LWSD) 2019-2024 Six-Year Capital Facilities Plan (CFP) and the Office of Superintendent of Public Instruction's (OSPI) School Year 2018-2019 (SY 18-19) Report Card data.[14] The District's 2020-2025 CFP was subsequently received during analysis and the following information from the more recent CFP was incorporated into the analysis:

- **Appendix A-2.** For SY 19-20 permanent student capacity and individual school enrollment.
- **Appendix D.** For 2020 student generation rates.
- **Table 2.** For SY 19-20 district-wide student enrollment.

OSPI's SY 19-20 Report Card data was also incorporated to match the time period of the District's 2020-2025 CFP.

Teacher counts for individual schools were sourced from OSPI's SY 19-20 Washington State Report Card data.

4.5.1 Table Corrections

Exhibit 3-85 (page 3-174). School District Summary Data, SY 2019-20

Characteristic	Number
Lake Washington School District Population	202,123
Lake Washington School District Enrolled Students	~~32,050~~31,106
Number of Teachers	~~1,852~~1,913
Student to Teacher Ratio	~~16.8~~16.3*

* Not an adopted Lake Washington School District policy. Derived based on the enrolled student and teacher numbers listed above – District enrollment is from LWSD's 2020-2025 CFP and the number of teachers is from OSPI's SY 19-20 Washington State Report Card.
Sources: WA State Office of Superintendent of Public Instruction, 2020 (School Year 2019-2020); WA Office of Financial Management, 2019; Lake Washington School District Capital Facilities Plan, 2020-2025; BERK, ~~2020~~2021.

[14] OSPI SY 18-19 data was used to match the time period of the Lake Washington School District (LWSD) 2019-2024 CFP.

Exhibit 3-87 (page 3-176). Lake Washington Public Schools Serving the Study Area Summary Data, SY 2019-20

School	Permanent Student Capacity	Net Available Student Capacity	Student Enrollment 2019-20	Surplus/Deficit to Permanent Capacity	Surplus/Deficit Net Available Capacity
Twain Elementary	598	437	~~658~~659	-65~~60~~	-222
Rose Hill Elementary	552	414	~~485~~487	65~~67~~	-73
Lakeview Elementary	506	414	~~550~~558	-52~~44~~	-144
Kirk Elementary	782	690	~~614~~639	143~~168~~	51
Kirkland Middle School	697	623	~~616~~619	78~~81~~	4
Rose Hill Middle School	1,021	921	~~1,024~~1,028	-~~73~~	-107
Lake Washington High School	1,567	1,487	~~1,768~~1,599	-32~~01~~	-112

Note: Net available capacity is equal to permanent student capacity minus classrooms used for special programs like resource rooms, ELL rooms, pre-school rooms, music rooms, or arts/science rooms.
Sources: ~~WA State Office of Superintendent of Public Instruction, 2020;~~ Lake Washington School District Capital Facilities Plan, 2020-2025; BERK, ~~2020~~2021.

Exhibit 3-90 (page 3-178). Lake Washington Public Schools Serving the Study Area, Student to Teacher Ratio, SY 2019-20

School	Student to Teacher Ratio
Twain Elementary	~~13.5~~14.3
Rose Hill Elementary	~~14.4~~13.5
Lakeview Elementary	~~14.0~~15.5
Kirk Elementary	~~15.4~~16.0
Kirkland Middle School	~~16.9~~16.7
Rose Hill Middle School	~~18.9~~17.1
Lake Washington High School	~~17.5~~16.0

Note: Student--to--teacher ratios are derived from enrollment numbers in LWSD's 2020-2025 CFP and OSPI's SY 19-20 count of classroom teachers.
Sources: WA State Office of Superintendent of Public Instruction, 2020 (School Year 2019-2020); Lake Washington School District Capital Facilities Plan, ~~2019~~2020-2025; BERK, ~~2020~~2021.

Exhibit 3-97 (page 3-184). Student Generation by Alternative

Student Generation Rate	No Action	Alternative 2	Alternative 3
Housing Units	873	6,600	9,000
Elementary School = 0.082	72	542	738
Middle School = 0.03~~52~~	~~28~~31	~~212~~231	~~288~~315
High School = 0.03~~325~~	~~22~~29	~~165~~218	~~225~~297
Total Students	**~~122~~132**	**~~919~~991**	**~~1,251~~1,350**

Sources: City of Kirkland, 2019; Lake Washington School District Capital Facilities Plan, 2021-2026; BERK, ~~2020~~2021.

4.5.2 Text Corrections

No Action Alternative 1 Schools Impact (page 3-185)

The No Action Alternative would produce the fewest additional housing units and lowest student generation among the three alternatives. The No Action Alternative is estimated to generate an additional ~~122~~ 132 students through the planning period.

Alternative 2 Schools Impact (page 3-186)

Alternative 2 would produce the second highest additional housing units and student generation among the three alternatives. Alternative 2 is estimated to generate an additional ~~919~~ 991 students through the planning period.

Alternative 3 Schools Impact (page 3-188)

Alternative 3 would produce the highest additional housing units and student generation among the three alternatives. Alternative 3 is estimated to generate an additional ~~1,251~~1,350 students through the planning period.