NE 85th Street Station Area Plan

June 20, 2022

CITY OF KIRKLAND
WASHINGTON

Acknowledgments

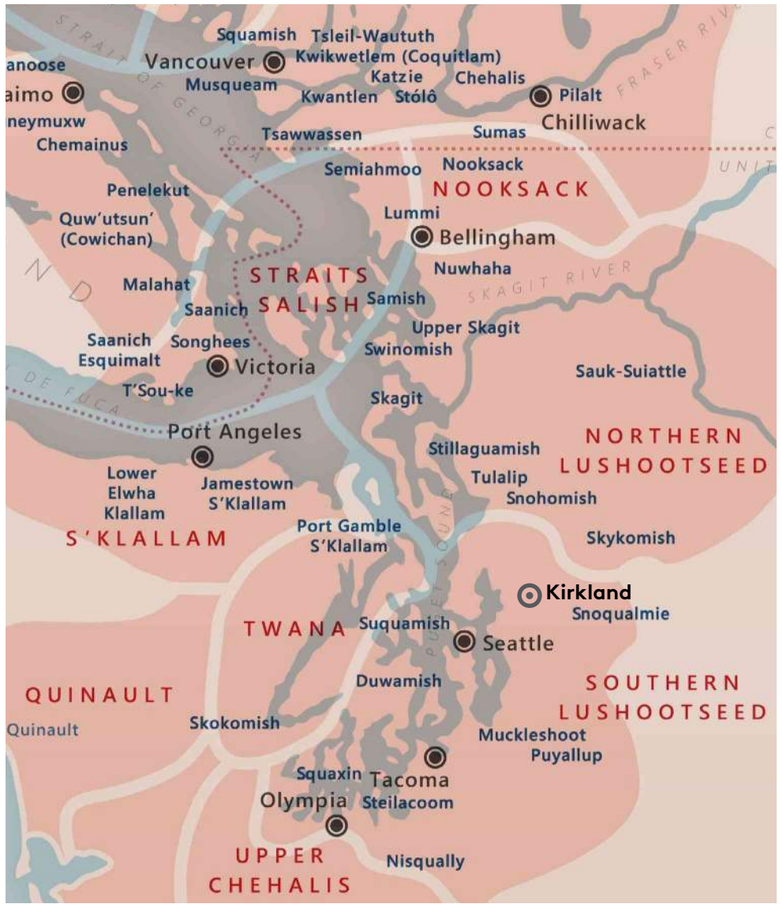

Image Source: LandLines Map, Burke Museum, USGS Topographic Map; Seattle quadrangle, 1906

Land Acknowledgment

We acknowledge that the Southern Salish Sea region lies on the unceded and ancestral land of the Coast Salish peoples, the Duwamish, Muckleshoot, Puyallup, Skykomish, Snoqualmie, Snohomish, Suquamish and Tulalip tribes and other tribes of the Puget Sound Salish people, and that present-day City of Kirkland is in the traditional heartland of the Lake People and the River People. We honor with gratitude the land itself, the First People – who have reserved treaty rights and continue to live here since time immemorial – and their ancestral heritage.

Source: City of Kirkland adopted land acknowledgment language.

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How To Use This Plan

The NE 85th Station Area Plan (SAP) is an effort led by the City of Kirkland to take a comprehensive look at how the area may evolve within an approximately 1/2-mile radius of the future Stride Bus Rapid Transit (BRT) station planned by Sound Transit and new WSDOT I-405 interchange at NE 85th Street. The SAP outlines the overall vision as a vibrant, mixed use environment and a model of innovation with plentiful affordable housing and a mix of both high tech and family wage jobs linked by transit.

Community members, elected officials, and City staff should look to this long-range Station Area Plan as a guide to the area overall vision and goals, recommended public projects and services as well as future opportunities, and for additional detail surrounding the Preferred Plan direction which establishes growth targets and was included in the Final Supplemental Environmental Impact Statement (FSEIS) published in December 2021. The city will use the SAP and its appendices to inform, guide, and coordinate implementing policies and plans including:

- A Station Area Chapter of the Comprehensive Plan to establish goals and policies for future growth. This chapter will be an overlay that addresses the Station Area relationships to existing Neighborhood Plans for Everest, Highlands, Moss Bay, Norkirk, North Rose Hill, and South Rose Hill
- A new Form-Based Code chapter in the Zoning Code
- Parcel Rezones
- Design Guidelines
- Help inform and coordinate with other ongoing, citywide planning efforts such as the Capital Facilities Plan
- Identify opportunity areas for further exploration

The overall structure of this SAP begins with an executive summary, an overview of the vision, a history of the planning processes, and then provides detail into each of the key plan elements including Land Use, Open Space and Environment, Transportation and Mobility, Utilities and Public Services. Each plan element describes recommendations and goals, including supporting technical guidance in the form of zoning or other regulatory changes, design guidelines, and implementation strategies. This plan will guide where new jobs and homes will go and their relative density and form. The plan also describes where transportation network connections can be added or enhanced.

The SAP is closely related to other key strategic planning initiatives within the City of Kirkland. These include:

- A periodic update to the Comprehensive Plan (to be adopted 2024)
- Ongoing Park, Recreation and Open Space (PROS) Plan update (anticipated 2022)
- Sustainability Master Plan (adopted 2020)
- Active Transportation Plan (ATP) update (adopted 2022)
- High performance Building Standards (adopted 2022)
- Designation of portions of the Moss Bay Neighborhood and Station Area as a King County Regional Growth Center (and pending review of PSRC Urban Growth Center review after adoption of Station Area Plan)

Relevant projects and strategies from these initiatives are referenced throughout this document and were used to inform the structure and content of the Station Area Plan.

Within the document, several desired community benefits are identified based on community feedback, City Council and Planning Commission direction, and initial findings from the Draft Supplemental Environmental Impact Statement (DSEIS) and Opportunities and Challenges Report completed in 2020. These community benefits are outlined with a specific icon relating to affordable housing, mobility, parks and open space, sustainability, and schools. Initiatives that provide community benefits will be noted with the following icons:

4.0 Community Benefits are denoted throughout the document with these icons:

Affordable Housing

Schools and Education

Sustainability, Climate Action, and Resilience

Open Space and Parks

Mobility: Walking and Rolling

1.0

Executive Summary—

Overview and Context

Voter-approved transit funding package Sound Transit 3 (ST3) is bringing a once-in-a-generation transit investment to Kirkland with a new reconfigured interchange and Bus Rapid Transit (BRT) Stride station at NE 85th St and I-405 by 2026. The BRT Station and planned Stride BRT line (Burien to Lynnwood), developed by Sound Transit and the Washington State Department of Transportation (WSDOT), is designed to connect Kirkland to Link Light Rail service at stations in Downtown Bellevue and the Lynnwood Transit Center with frequent bus service every 10-15 minutes. The City of Kirkland's Station Area Plan (SAP) considers changes to policies, regulations and zoning to proactively plan for potential growth over the next 20+ years and encourage transit-oriented development near the BRT station to leverage this regional investment and create the most value and quality of life for Kirkland.

The Plan goals build on the 2035 Comprehensive Plan; the Highlands, Everest, Norkirk, Moss Bay, and Rose Hill Neighborhood Plans; and the Sustainability Master Plan. It includes an approach to Form-Based Zoning and a Planned Action supported by HB 1923. The planning process includes the issuance of a Supplemental Environmental Impact Statement (SEIS) to the 2035 Comprehensive Plan EIS.

A proactive plan to leverage a once-in-a-generation regional transit investment

** Source: www.soundtransit3.org*

Station Area Objectives and Vision

The Vision
The Station Area is a thriving, new walkable district with high tech and family wage jobs, plentiful affordable housing, sustainable buildings, park amenities, and commercial and retail services linked by transit.

The vibrant, mixed use environment is a model of innovation. With an outstanding quality of life and unmatched mobility choices, the Station Area is eco-friendly, a place to connect, and deeply rooted in the history of the land, the people, and the culture of this special crossroads in Kirkland. The highly visible integration of ecological systems within an urban setting set the Station Area apart while tying the unique sub-area districts together with existing open space and active living opportunities.

A place to connect and deeply rooted in the history of the land, the people, and the culture of this special area

The City's Objective
Leverage the BRT station regional transit investment. Maximize transit-oriented development and create the most:

- Opportunity and Inclusion,
- Value for the City,
- Community Benefits, including:
    - Plentiful affordable housing
    - Sustainability measures
    - Park amenities
    - Active transportation improvements
    - Solutions for school capacity
- And Quality of life.

NE 85th St. Future Vision Looking West

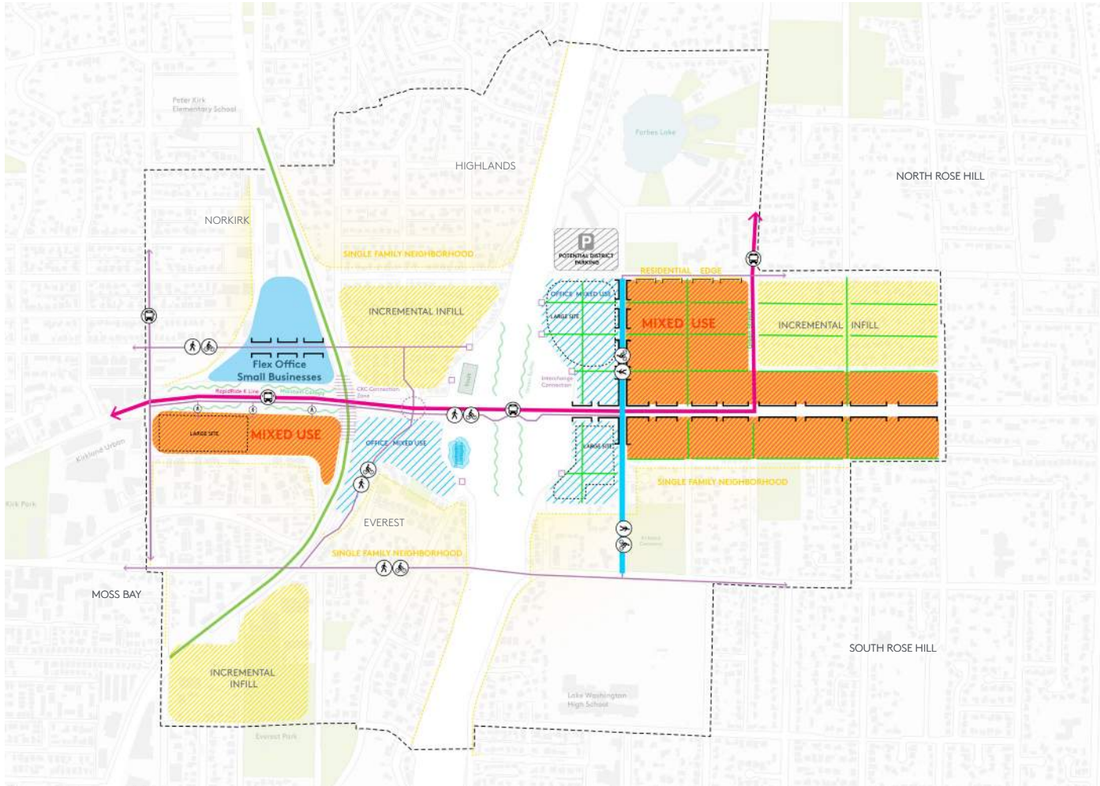
Planning for Growth

With a strong fundamental real estate market and significant regional transit investment, proactively planning for growth will help the community shape their own future by creating a vision and plan for development in the Station Area. The intent of the overall Station Area Plan growth framework is to:

- Support sustainable levels of service provision, by coordinating transportation infrastructure and land use capacity with changes near the BRT node to help achieve the City's fiscal responsibility and sustainability goals.
- Attract new jobs to foster economic activity and meet citywide targets.
- Balance the type and mix of allowed development and distribution of commercial-focused development across the area.
- Promote inclusion and support a range of attainable housing choices for existing residents, students, and workers.

The Growth Framework developed in 2020 as a basis for the Draft Supplemental EIS alternatives reflects public comments on a range of scenarios and focuses increased allowable building heights in areas that provide clear benefits to the community and take advantage of regional transit connections, rather than areas that are unlikely to redevelop due to market forces, are limited by development feasibility, or are constrained by other factors. The areas planned for greater capacity for change are focused around the BRT node and the Cross-Kirkland Corridor, including two areas in Rose Hill nearest to the planned BRT Stride station: the mid-rise office designation in the northeast quadrant and the high-intensity office designation in the southeast quadrant; and the flex industrial – residential capacity in the Norkirk's Light Industrial Technology (LIT) area in the northwest quadrant. These are supported by an urban design framework that holistically brings together infrastructure and services within a future vision for welcoming this growth.

Study Area (June 2020): initial growth concept that served as the basis for the draft SEIS alternatives



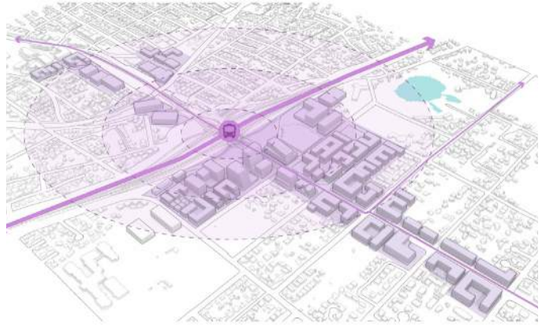
Source: Mithun, 2020

Urban Design Framework

Alongside the vision for the Station Area Plan is an urban design framework that establishes a set of overarching strategies to shape development in the future. These strategies were developed based on community input and Council direction and are reflected throughout subsequent chapters of the Station Area Plan as well as implementation tools like Form-Based Code and Design Guidelines.

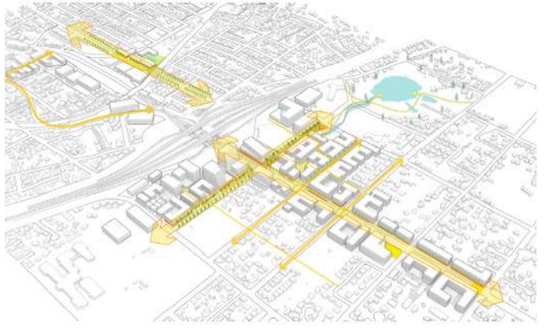
How should we grow?

Focus Near Transit



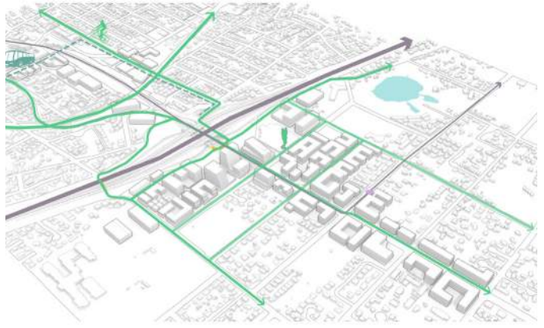
1. Focus growth in inclusive housing and jobs near transit.
There is a mutually supportive relationship between transit ridership and the amount of housing, jobs, and services near transit. The Station Area Plan designates the areas closest to the future BRT Stride station as priority locations for increased development. Not only are these areas prime opportunities to broaden the mix of jobs and housing choices within the station area, this strategy focuses growth in a more sustainable, compact form. In addition, the areas closest to the future station on the east side of I-405 are reserved for taller office development. This serves a dual role of providing the potential for improved commutes and focusing growth in the City where residents and employees have the best access to high-capacity transit and using larger office buildings as a buffer to protect residences from the noise and air pollution that come from high volume roadways like I-405.

A Strong Public Realm Network



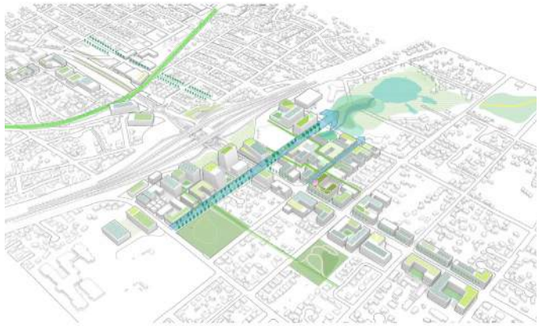
2. Establish a strong public realm network and transit-oriented community that puts people first.
The vision for the station area includes a robust, vibrant public realm with places for people to connect, welcoming public art and cultural opportunities, a mix of active ground floors, generous sidewalks, and improved tree canopy. The urban design framework identifies key streets where a combination of public and private investments will create focal points and destinations for the district, the city, and the region. These include enhancing NE 85th Street to a more urban street that becomes a place for people to engage, retail-focused streets like 120th Ave NE near Forbes Lake, and neighborhood hubs like the 7th Ave corridor in Norkirk. Each of these focal points brings together recommendations around mobility, public realm, land use, sustainability, and massing.

A Network of Mobility Options



3. Connect neighborhoods together with a comprehensive, multi-modal transportation network.
As a station area plan, it's particularly important to create a network of mobility options that connect transit users between the station and key services and destinations. Green mid-block connections help break down large auto-oriented blocks into walkable distances. New and enhanced sidewalks and bikeways provide safe and comfortable walking and biking connections throughout the district. Finally, increased transit service, including the Stride BRT future King County Metro's K Line BRT, flexible parking policies, and specific roadway capacity improvements provide a multi-faceted approach to mitigate congestion and accommodate travel needs on roadways and parking demand. This holistic approach to mobility is integrated into all aspects of the urban design framework.

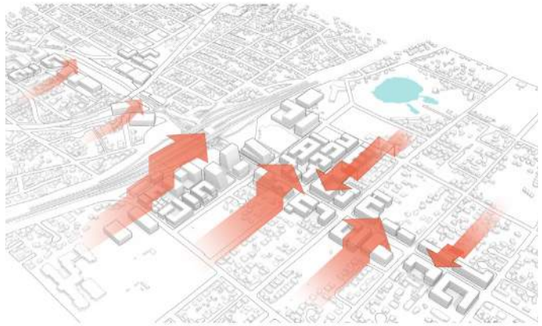
Leverage Existing Natural Systems and Resources



4. Leverage existing natural systems and resources, enhance ecosystem performance, and increase resilience.

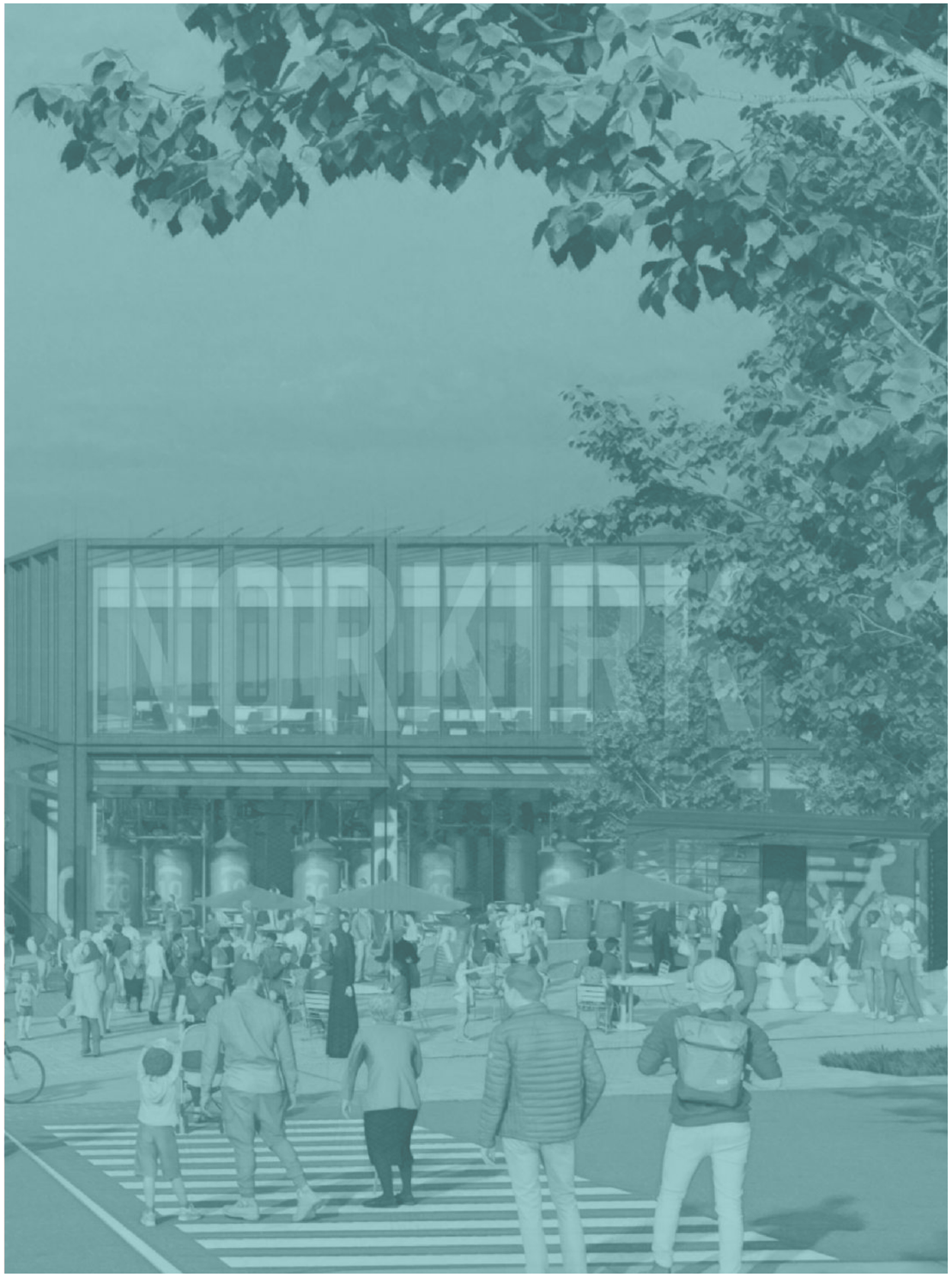
Like all of Kirkland, the station area is a rich natural environment with important ecological assets and opportunities to improve the sustainability and resilience of the district. Updated policies encourage stormwater management through on-site green infrastructure like bioswales in streetscapes and within larger developments. Street types in the Form-Based Code will lead to increased tree canopy in the public realm, and ecological assets like Forbes Lake become the focus of a new boardwalk network and "trailhead" that's integrated into the streetscape at 120th Ave NE and NE 90th St.

Transitions in Scale to Adjacent Neighborhoods



5. Ensure appropriate development scale with transitions to adjacent neighborhoods and design regulations.

While planning for growth in the station area, supporting transitions in scale to adjacent neighborhoods is a key focus of the urban design framework. The Form-Based Code regulates elements of massing and form to step down from larger commercial office blocks to mid-rise neighborhood mixed use development, and eventually to smaller "missing middle" infill. Special rules for transitions, landscaping requirements, and other policies further specify how new development should respond to the existing context. Additional design guidelines and the City's Design Review process will ensure that building massing and details reflect a pedestrian-oriented district.



West Character Sub Areas

The Urban Design framework is a cohesive set of design strategies used throughout the Station Area. Within the larger urban design framework, character subareas specify the unique opportunities and desired elements for each portion of the study area that build on existing assets and characteristics of the community values. These subareas can inform public investments, design guidelines for future development, and placemaking.

West of 114th Ave NE, NE 85th Street is built on an elevated structure, and the topography of the area creates two distinct districts: the Maker District in the Norkirk and Highlands neighborhoods north of 85th and the Downtown Gateway District in the Everest and Moss Bay neighborhoods south of 85th. Here, the focus is supporting pedestrian-oriented districts and enhancing Cross Kirkland Corridor as the major north south connection.

Maker District

Pedestrian-oriented district building on Norkirk's character and excellent Cross Kirkland Corridor trail connections. 7th is a lively connection between the BRT drop off and downtown. The traditional mixed industrial/commercial character of the area is recognized while encouraging more urban uses supporting "maker" activities, locally-owned small businesses, active lifestyle and recreation-related private and public uses.

Downtown Gateway District

Gateway district to Downtown Kirkland via 6th St that emphasizes mid-rise residential and office uses along 6th St and important bicycle and pedestrian connections between the future Stride station and Rose Hill commercial area and Downtown Kirkland. These connections include a new bicycle and pedestrian route along NE 85th Street as well as improved bicycle and pedestrian facilities along existing Kirkland Way.

East Character Sub Areas

East of I-405, NE 85th Street is an important connector and gateway to Kirkland from Redmond. The Plan envisions NE 85th Street as a place to be, rather than travel through, that encourages people to gather and spend time in a lively public realm. It is supported by a robust mobility network that bridges existing barriers and provides safe crossings. The Forbes Lake District and Green Innovation District envision a strong public realm connection along 120th Ave NE, between North and South Rose Hill neighborhoods; and the Rose Hill Gateway District similarly envisions a cohesive public realm and safe crossings along NE 85th Street.

Forbes Lake District

A walkable mixed use district with opportunities for mid-rise residential uses and higher intensity office uses, organized around a green main street corridor with retail and active uses combined with small open spaces on 120th that connects to Forbes Lake. Biophilic design and visible water, energy, and biodiversity strategies tell the story of this place.

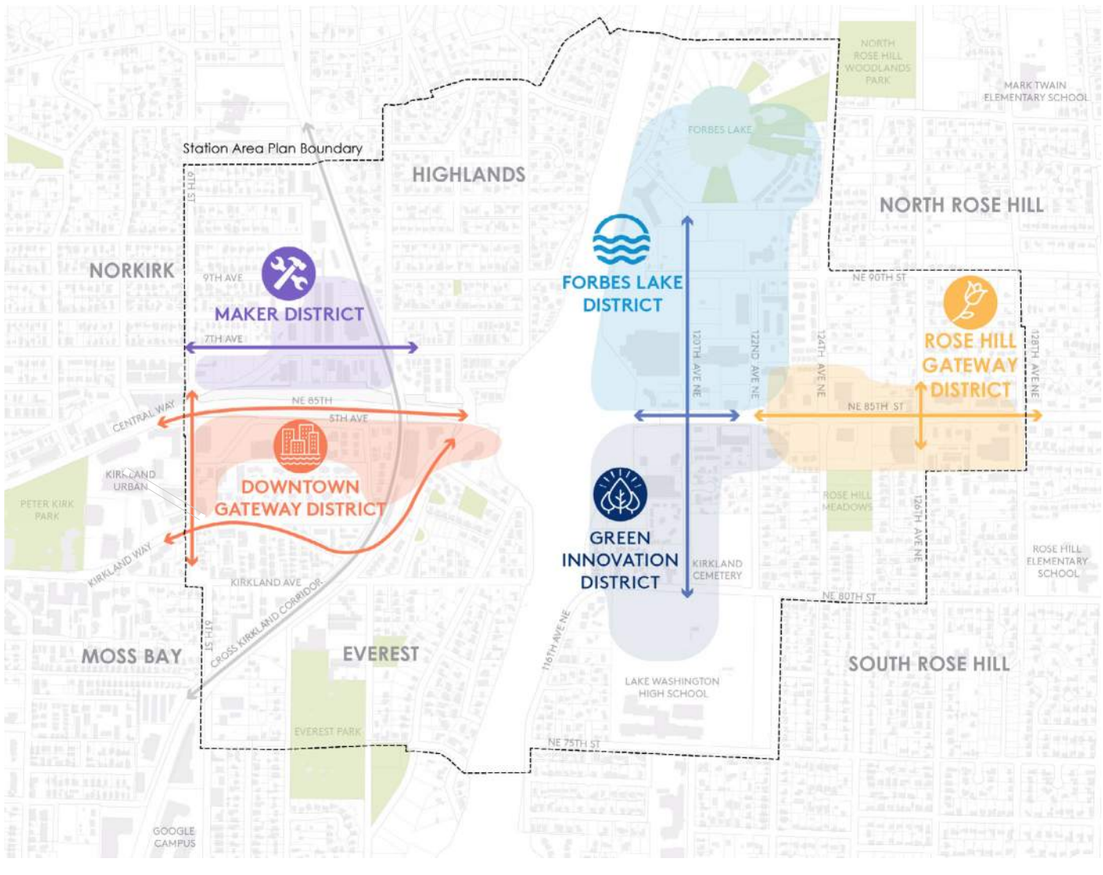
Green Innovation District

This vibrant, mixed use district is a model of innovation and place for community, students, and the workforce to connect. It transitions from high intensity office uses near the BRT Station, to mid-rise shops and office uses, to townhouses, small apartment buildings, and civic uses. Active transportation choices, connections to green space, and walkable 120th Ave NE offer a healthy lifestyle. Existing cemetery is an opportunity for green space that provides opportunities for walking and more passive recreation.

Rose Hill Gateway District

Corridor-based gateway with a mix of active ground floors and mid-rise residential along NE 85th that focuses on creating a strong sense of arrival from Redmond with streetscape design, public art, and urban design features.

Character Sub Areas

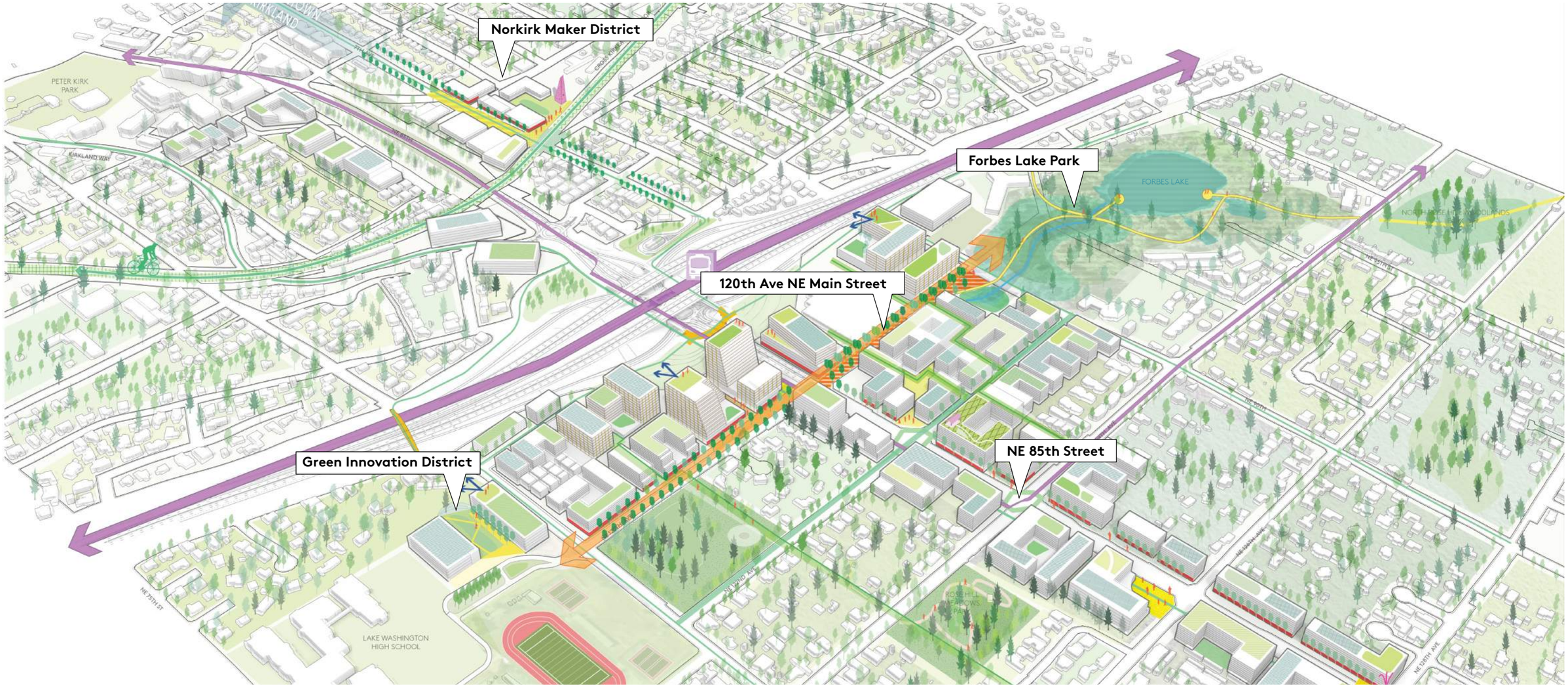


Key Urban Design Elements

Based on the vision and urban design framework, a number of key initiatives are included in the Station Area Plan. These reflect both public investments, private development opportunities and partnerships that can bring together private, public, and institutional investments to realize the greatest value for the community.

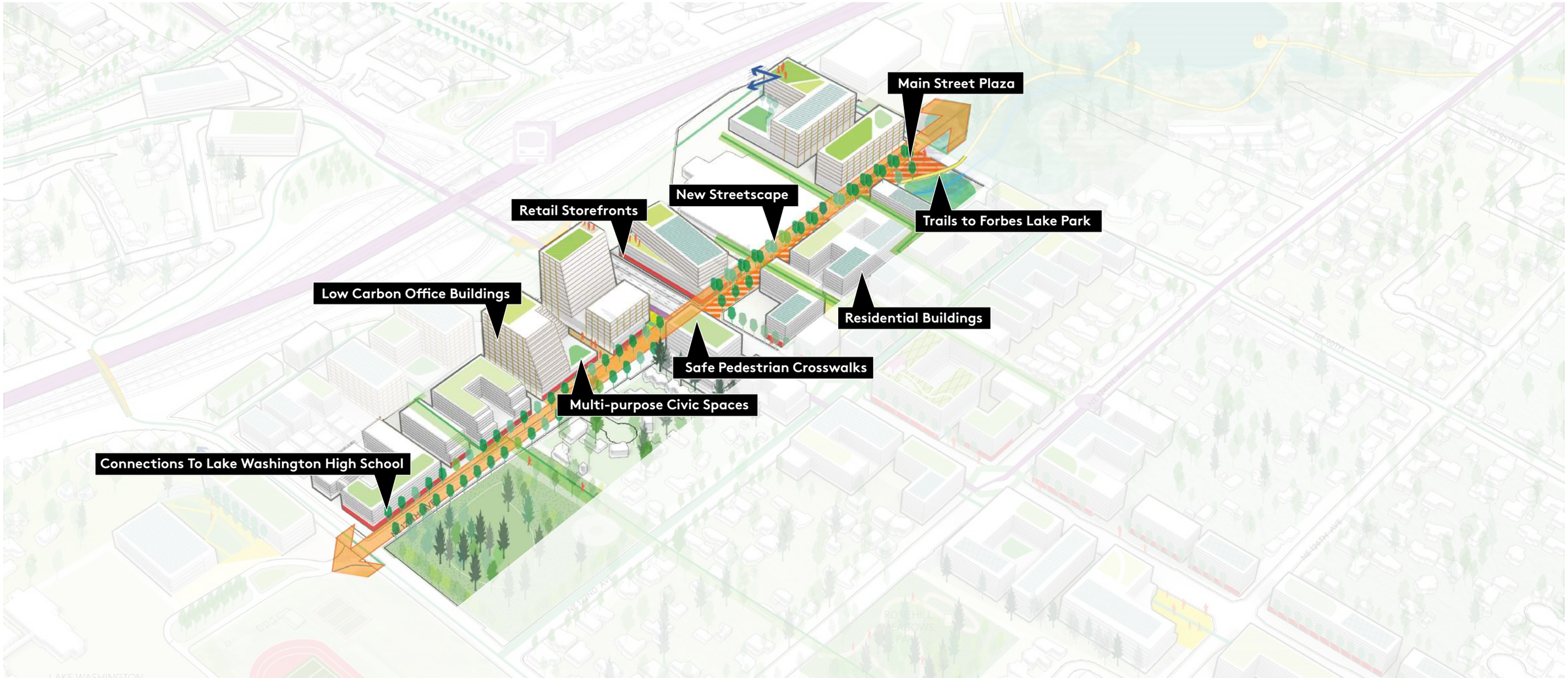
The 120th Ave NE main street establishes a new civic heart for the district, adjacent to trails and open space amenities at the newly activated Forbes Lake Park. The Norkirk Maker District creates new opportunities for local businesses and mixed use educational facilities help meet the continued need for expanded school capacity. New multi-benefit mobility connections provide space for enhanced landscaping in the urban context and improve accessibility to existing parks.

Businesses are integrated with activation of the Cross Kirkland Corridor (CKC). A selection of those initiatives is described in the following pages.



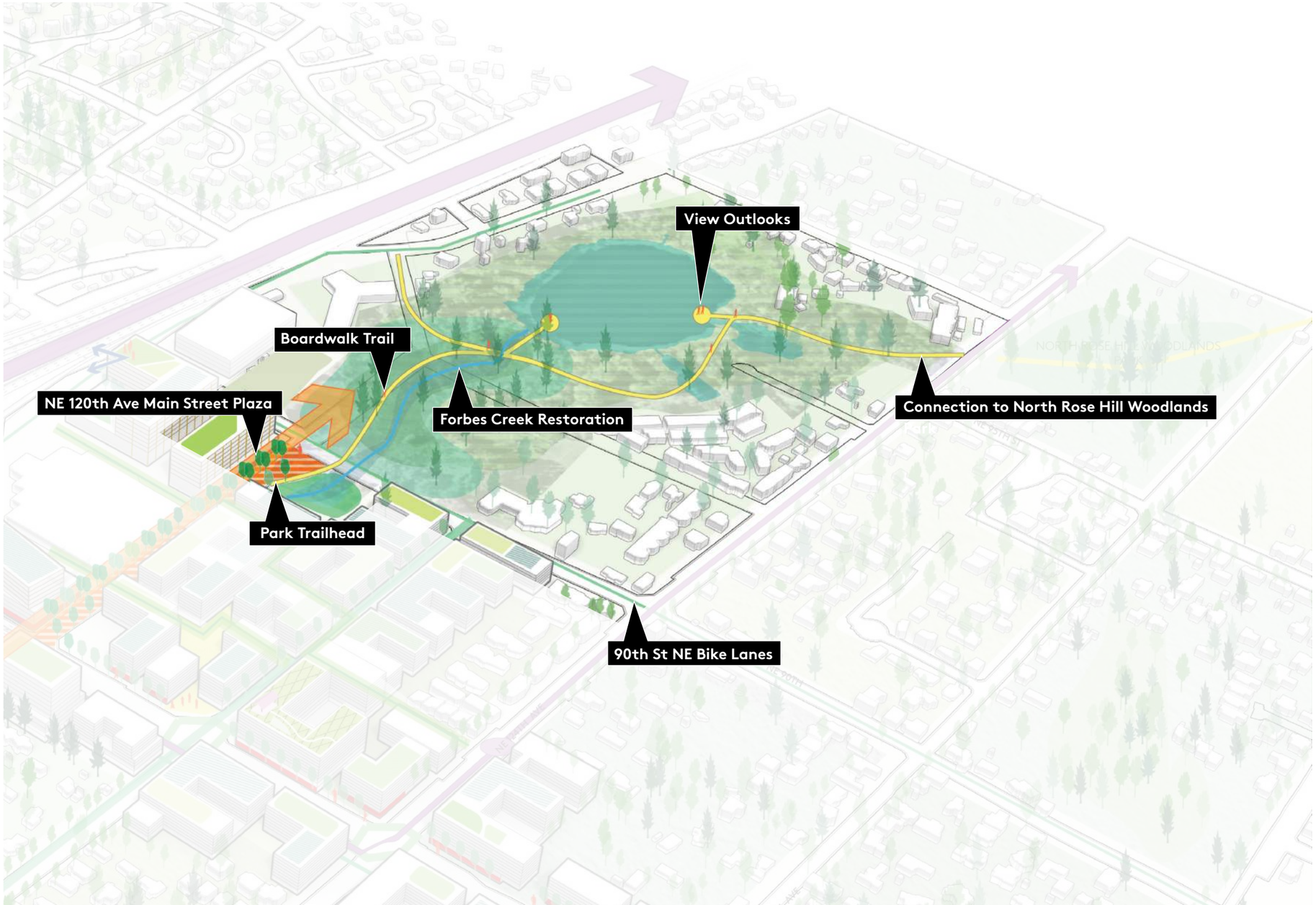
120th Ave NE Main Street

Many of Kirkland's most beloved public spaces are organized around streets that combine shopping and services, gathering spaces, and dense residential and office uses that help activate these spaces. 120th Ave NE, particularly between NE 85th St and NE 90th St, is envisioned as a future main street for the district with wider sidewalks, improved tree canopy, and human-scaled, active ground floors. As part of the Forbes Lake subdistrict, a focus on connections to the lake through landscaping, gateway features, and wayfinding, and connections to the proposed Forbes Lake Park (see next initiative) will create a unique complement to existing destinations in the city.



Forbes Lake Park

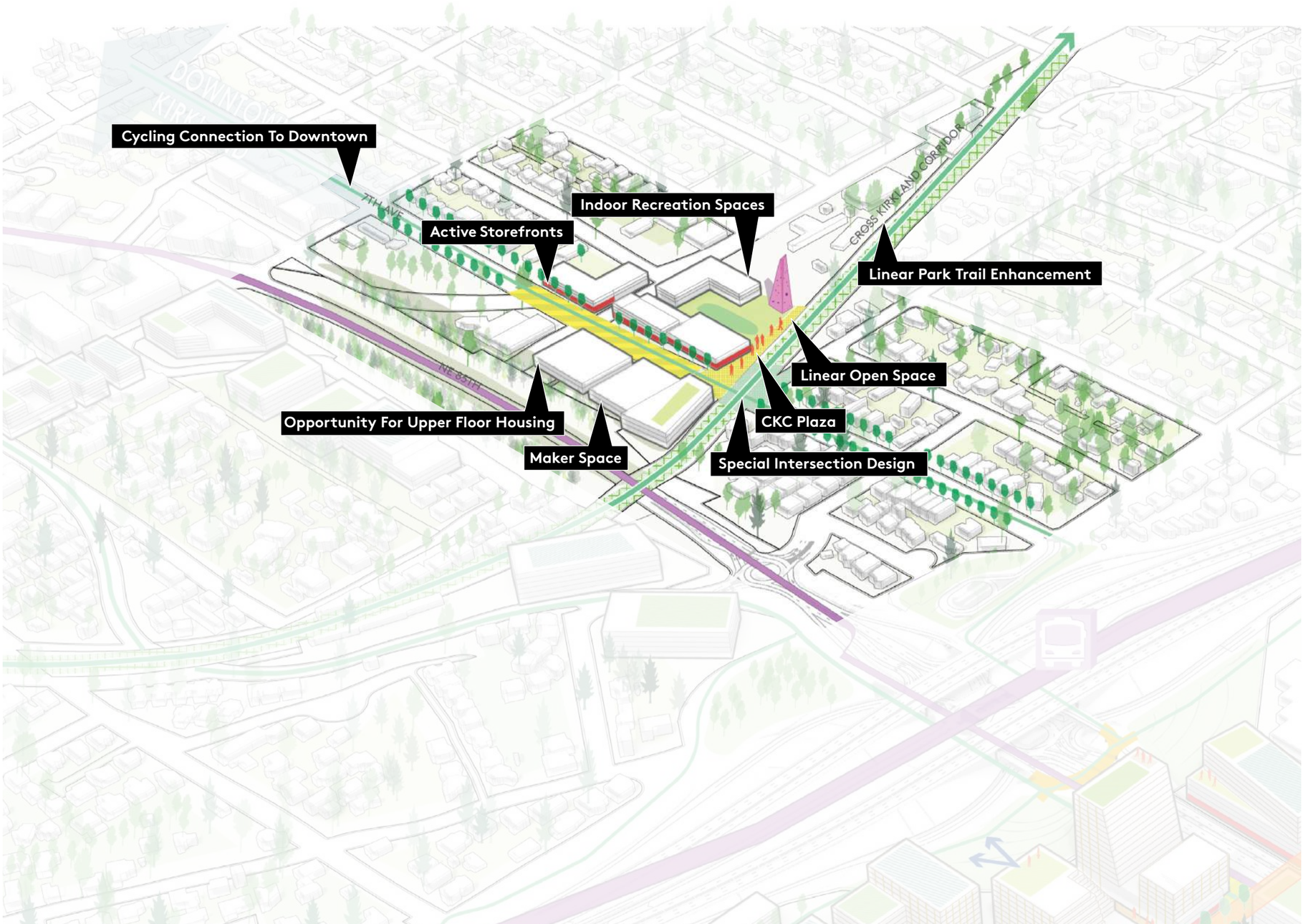
Forbes Lake is a jewel in the station area. It serves a critical ecological habitat role in the larger watershed and provides opportunities for future visitors to connect with nature and Kirkland's history. The station area plan builds on previous concepts to establish a more robust park around Forbes Lake that can make it more accessible to future visitors and improve ecological function. The key components include a trail head plaza at 120th Ave NE and NE 90th St and a network of wide boardwalks connecting NE 90th St to the North Rose Hill Woodlands Park. The boardwalk system will serve the dual purpose of connecting park visitors with nature while providing an improved bicycle and pedestrian network connecting the Station area and surrounding community.



120th Ave NE Corridor and Forbes Lake Vision

Norkirk Maker District

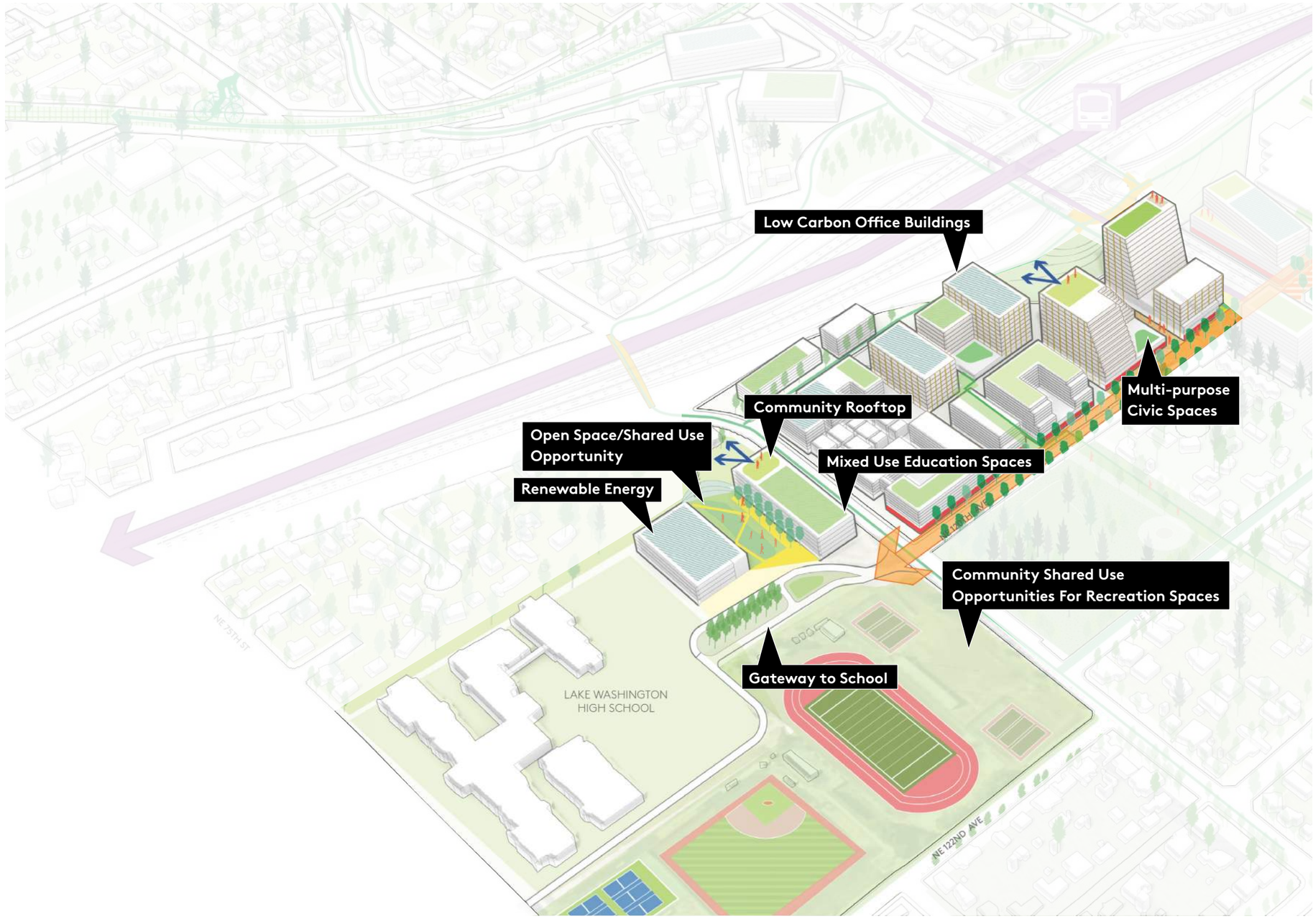
Norkirk's Light Industrial Technology (LIT) area is an important future bike and pedestrian corridor connecting Downtown Kirkland, the CKC and the BRT Stride station. The existing character of industrial buildings and small businesses can evolve over time to maintain this industrial character while encouraging more pedestrian oriented, innovation-focused development. Maker spaces, small scale manufacturing, and local businesses will all serve to activate the corridor and create a neighborhood hub to serve Norkirk and Highlands residents, workers, and visitors. Limited residential infill will also provide opportunities for meeting Kirkland's need for diverse housing choices. Alongside these development opportunities, facilities such as climbing walls, gyms, and other indoor recreation uses can meet community needs and provide an additional draw to the area. Finally, activating the intersection of the Cross Kirkland Corridor and 7th Ave can emphasize this multimodal intersection and create a neighborhood gathering place with multimodal and recreational amenities.



Norkirk Maker District Future Vision Looking West

Green Innovation District

As the City continues to grow, this subarea can show how innovative urban design strategies can meet community needs. Higher intensity office located close to transit can also provide for green mid-block connections and plazas. A pedestrian oriented corridor along 120th Ave NE will link Lake Washington High School with the rest of the neighborhood and the BRT station. The current cemetery can be improved to also provide passive open space. Innovative models for schools can add significant capacity on existing Lake Washington School District properties and integrate educational space with other uses in multi-story, mixed use buildings or within campus-like developments. There are opportunities to align educational and workforce development initiatives, supporting both large and small businesses, a green economy, and offering a range of job choices.



Moving Towards Implementation

The Study Area encompasses three main components to planning for the growth and future of this area. The first is the Plan and Planned Action Ordinance (PAO) boundary as shown in the dark black line in the diagram, which spans over 700 acres. Second, the Form-Based Code boundary which dictates design and character of the sub-area for over 250 acres within the Station Area. Lastly, the Phase 1 boundary planned for a mixed use commercial district in the center of the plan adjacent to the future transit station.

This Station Area Plan establishes a long range vision for the study area with an urban design framework, community benefits goals, and specific strategies for elements like mobility, open space, and public services. A number of tools have been developed to support the implementation of this plan. These include:

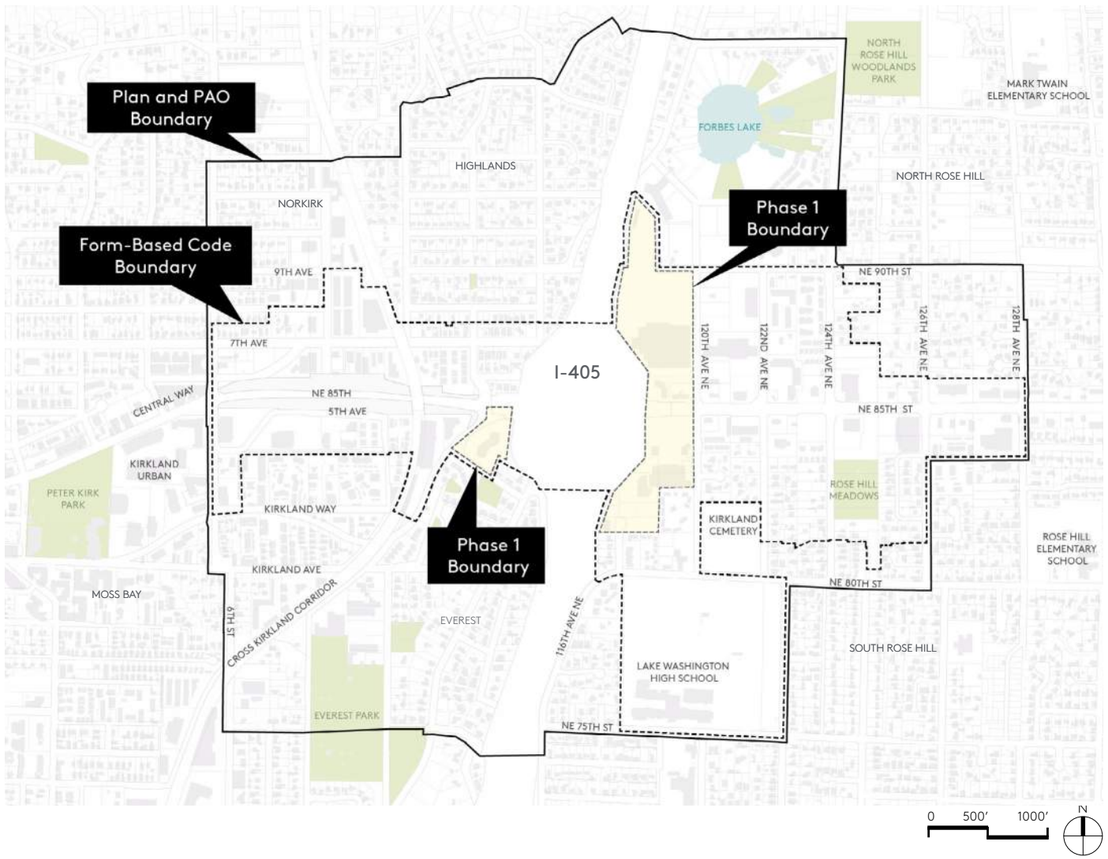
Form-Based Code (Zoning)
A Form-Based Code will regulate future development for a subarea of the study area. This Form-Based Code is intended to ensure that development is facilitated by clear and predictable standards that achieve transit-supportive development intensities in a high quality, pedestrian-oriented built environment.

Planned Action Ordinance
Future development proposals within the NE 85th Street Station Area Plan study area will be reviewed for alignment with the vision, goals, and growth limits established through the Final Supplemental Environmental Impact Statement (FSEIS). Development that is consistent can be designated by the City as a Planned Action, pursuant to SEPA (RCW 43.21c.440 and WAC 197-11-164 to 172). Designating a planned action streamlines environmental review for development proposals consistent with FSEIS mitigation measures that are adopted in a planned action ordinance. Development proposals exceeding the growth studied in the Station Area FSEIS would require additional environmental analysis and review.

Sustainability Framework
Sustainability is woven throughout the Station Area Planning effort and the vision and opportunities framework can be found in the last chapter of this plan. Specific implementation tools include a Green Factor program that codifies how to provide green infrastructure and other ecological benefits as part of new development. Additional sustainability strategies are included within the Form-Based Code, incentive zoning, and specific City-led public improvements.

Incentive Zoning
Incentive zoning creates a mechanism for realizing community benefits in exchange for allowing additional development capacity or other incentives. Benefits can range from affordable housing and educational space to small parks, additional tree canopy, and low carbon buildings. The Form-Based Code will establish base heights allowed by right and, in certain regulating districts, a menu of incentive amenity options that would be required to build to the maximum height established for the district by the Preferred Plan Direction.

Plan Components and Study Area



2.0

Project Context

Project Objectives and Planning Context

The area covered by this Station Area Plan is part of several ongoing and recent initiatives. The creation of the BRT Station prompted the design and construction of a new interchange, led by WSDOT. Sound Transit is leading the design of the BRT Station itself. The Station Area Plan, by contrast, is an effort led by the City of Kirkland to take a comprehensive look at how the surrounding one-half mile area may evolve with this new interchange and BRT Station in mind.

The City of Kirkland has also recently completed or is in the process of updating several key documents, including the Comprehensive Plan (2015), Parks, Recreation and Open Space Plan (anticipated 2022), Sustainability Master Plan (2020), High Performance Building Standards (2022), and submitted an application for Regional Center designation with Puget Sound Regional Council pending review after adoption of the Station Area Plan. Relevant projects and strategies from these documents are cross-referenced throughout the document. The Station Area Plan is an influential project for the Kirkland community and is viewed as a part of the City's strategy to achieve the objective and vision laid out in the Comprehensive Plan. The SAP refers to the following nine (9) documents found in the following next pages:

Station Area Objectives

The City's Objective

Leverage the BRT station regional transit investment. Maximize transit-oriented development and create the most:

- Opportunity and Inclusion,
- Value for the City,
- Community Benefits, including:
  - Plentiful affordable housing
  - Sustainability measures
  - Park amenities
  - Active transportation improvements
  - Solutions for school capacity
- And Quality of life.

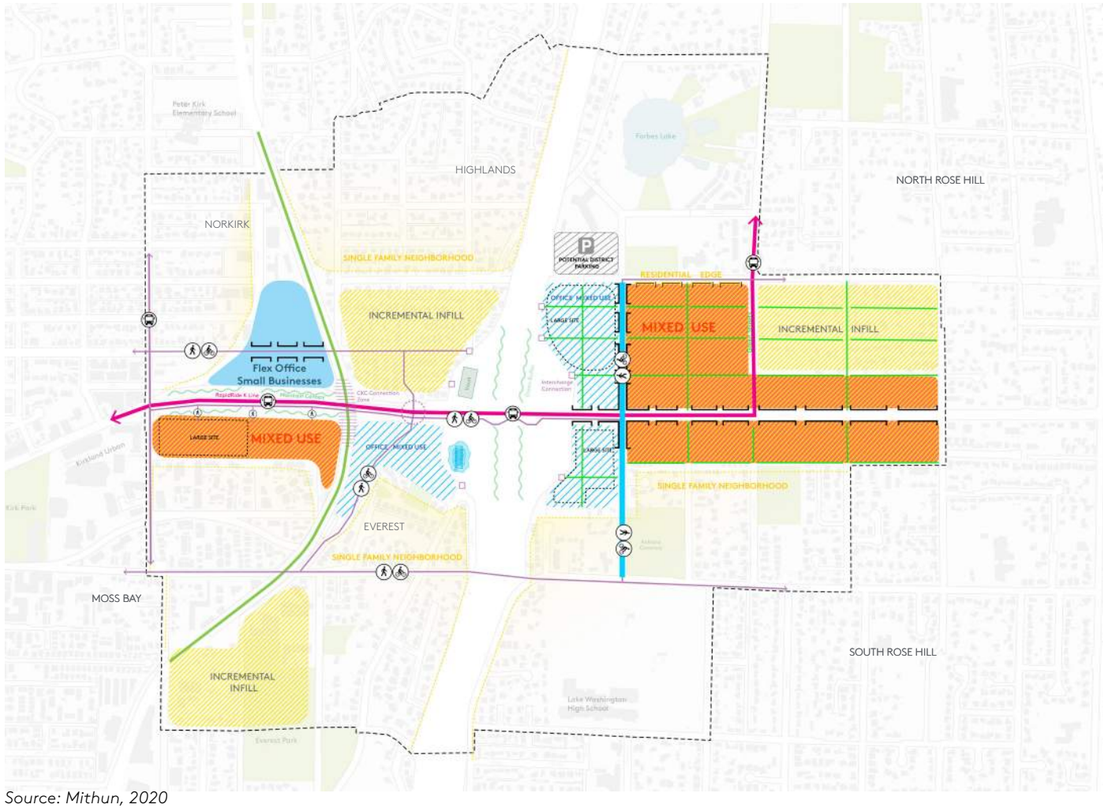
Planning for Growth

With a strong fundamental real estate market, and planned regional transit investment, proactively planning for growth can help the community shape their own future by creating a vision and plans for the Station Area. The intent of the overall Station Area Plan growth framework is to:

- Support value for the city with sustainable levels of infrastructure and service provision, and, coordinating transportation and land use with capacity for change near the BRT node, to help achieve the City's fiscal responsibility and sustainability goals.
- Attract new jobs to foster economic activity and meet citywide targets.
- Balance the type and mix of allowed development and distribution of commercial-focused development across the area.
- Promote inclusion by supporting existing residents, students, and workers, and optimize for additional workforce and affordable housing choices.

The Growth Framework reflects public comments on a range of scenarios and focuses increased allowable heights in areas that provide clear benefits to the community and take advantage of regional transit connections, rather than areas that are unlikely to redevelop due to market forces, are limited by development feasibility, or are constrained by other factors. The areas planned for greater capacity for change are focused around the BRT node and the Cross-Kirkland Corridor, including two areas in Rose Hill nearest to the planned BRT Stride station: the mid-rise office designation in the northeast quadrant and the high-intensity office designation in the southeast quadrant; and the flex industrial – residential capacity in the Norkirk LIT area in the northwest quadrant. These are supported by an urban design framework that holistically brings together infrastructure and services within a future vision for welcoming this growth.

Study Area (June 2020): initial growth concept that served as the basis for the draft SEIS alternatives



Source: Mithun, 2020

Referencing Key Relationships to the SAP

1. WSDOT I-405/SR 167 Corridor Program

Project includes an innovative triple decker interchange that will replace the I-405 / NE 85th Cloverleaf. Improvements will maintain an at-grade under crossing of I-405 at NE 85th and create a new second level for HOV lanes, bike and pedestrian traffic, and bus traffic. The second level will accommodate Sound Transit's new BRT Stride line. The new interchange leaves a significant amount of excess WSDOT ROW, which has been considered when developing land use, active transportation, vegetation, and stormwater recommendations for the SAP.

2. Sound Transit I-405 Bus Rapid Transit Program

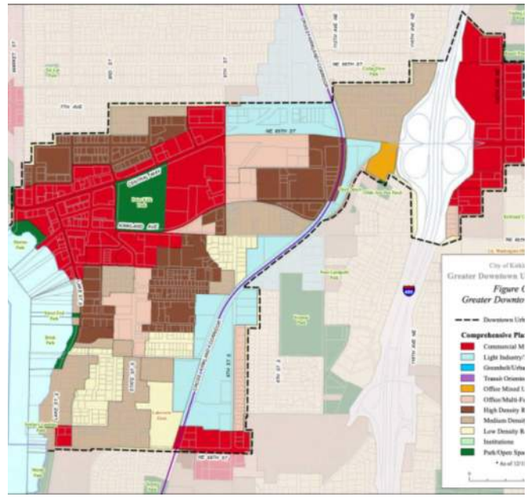
Includes design and construction of the BRT Stride station with the new I-405/ NE 85th St Interchange. The Stride line will provide a regional connection from Burien to Lynnwood with frequent bus service running at 10 to 15-minute intervals. This new service, which will support frequent transit service connecting Kirkland to the Link Light Rail at Bellevue and the Lynnwood Transit Center, as well as connections to existing and planned transit connections on NE 85th St including the new King County Metro K Line.

3. Kirkland 2015 Comprehensive Plan Update And Totem Lake Planned Action

The purpose of the SAP is to advance the Comprehensive Plan by supporting a welcoming, equitable, and sustainable Transit-Oriented Community as outlined in the Comprehensive Plan objectives. Together these documents will shape the continued growth expected in Downtown Kirkland and the Station Area. The NE 85th St Station Area Planned Action SEIS supplements the Kirkland 2015 Comprehensive Plan Update EIS.

4. Puget Sound Regional Council (PSRC) Greater Downtown Kirkland Regional Growth Center Designation

In November 2019, King County Council recognized Downtown Kirkland as an Urban Center, inclusive of the core areas surrounding the BRT Station. Kirkland has also applied for formal recognition of the Greater Downtown area as a Regional Growth Center from the Puget Sound Regional Council. PSRC review is pending completion of the Station Area Plan.



5. Parks, Recreation and Open Space (PROS) Master Plan
The Open Space recommendations in the Station Area Plan are coordinated with the draft recommendations in the PROS Plan, anticipated to be adopted in June 2022. In addition, some of the open space mitigations outlined proposed in the FSEIS will be addressed through the PROS plan.

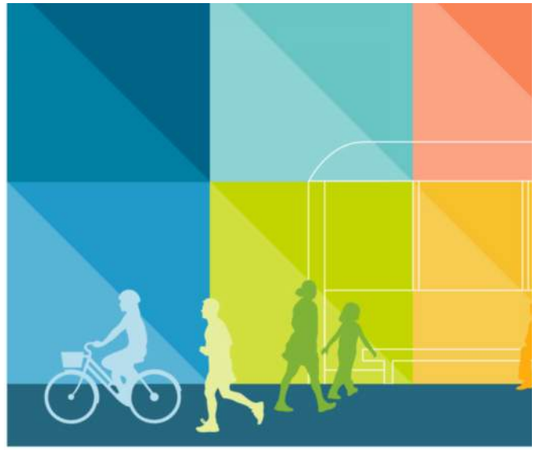
6. Cross Kirkland Corridor Master Plan
The Cross Kirkland Corridor is a unifying recreational and transportation amenity and part of the low stress bike and pedestrian network. It serves as an important north-south connection for the community and a key element of the identities of the Norkirk, Everest, and Moss Bay neighborhoods.

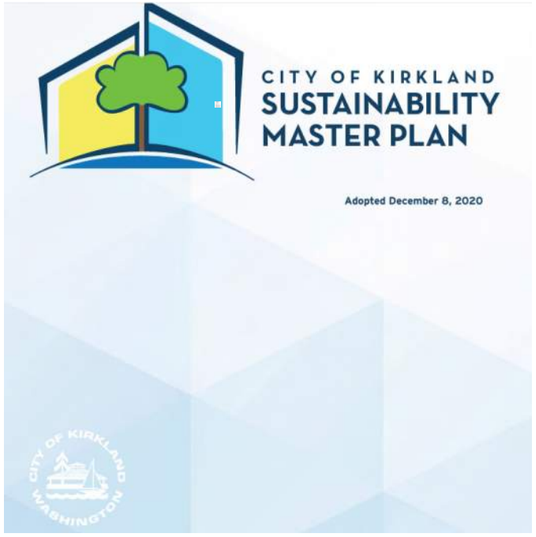
The access points and intersection improvements proposed in the CKC Master Plan are referenced in the active transportation section, and amenities and potential additional ROW development along the CKC in Norkirk are referenced in the **Parks and Open Space Section, Chapter 7.0.**

7. Active Transportation Plan (ATP)
Active Transportation recommendations for the Station Area have been coordinated with the ATP update. Concept design for several key bike / pedestrian corridors have been advanced through Station Area Planning efforts and are integrated into proposed street sections and intersection improvements in the **Transportation Section, Chapter 8.0.**

8. Sustainability Master Plan (SMP)
The City's initiative to revitalize an auto-centric part of the City with urban, transit-oriented development reflects and ongoing commitment to long term sustainable growth patterns. The Green Innovation Code, summarized in the Sustainability Section, will be instrumental in demonstrating that Kirkland can support growth while building a greener and more environmentally-sound community. To facilitate this, the team completed a "crosswalk" between Station Area Plan elements and Sustainability Master Plan topics. This work demonstrated that many elements embedded in the Station Area Plan help to support SMP Goals.

9. High Performance Building Standards
The City's High Performing Building Code has been integrated into the Green Innovation Code, which is summarized in the **Sustainability Framework Section, Chapter 10.0.**





NE 85th Study Area Existing Conditions

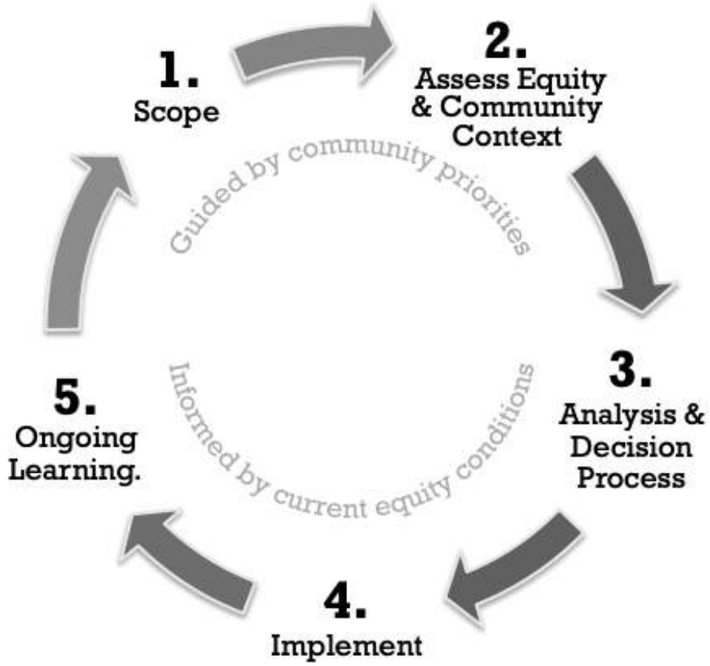
Developing The Plan

Background
On February 19, 2019 the City Council adopted the City's Work Program (R-5356), which included a goal of completing land use, zoning, and economic development plans for areas adjacent to Sound Transit's NE 85th Street/ I-405 Bus Rapid Transit interchange project. To pursue this goal, the City issued a Request for Qualifications (RFQ) for planning consulting services to support the creation of a Station Area Plan in August 2019. This process is supported by a grant awarded to the City by the State Department of Commerce under HB 1923 to support the creation of a Form-Based Code and Planned Action Ordinance within the Station Area Plan.

Opportunities and Challenges Winter 2020
In February 2020, the team's first task was to complete an Opportunities and Challenges Report to assist in identifying the vision, values, and goals for the Station Area Plan. The Opportunities and Challenges report was released on April 15, 2020. As part of this work, the team assessed market conditions. The Market Study report, published on June 16, 2020, confirmed that the Station Area is suitable for transit-oriented development. The opportunities and challenges report also included an Equity Impact Review, conducted according to King County's recommended methodology. To support equitable project processes and outcomes, demographic analysis was performed to identify all communities that would be affected by the project and consider how to incorporate them into the decision-making process.

These populations (in the study area) were prioritized for enhanced outreach and engagement since they will be most affected by the project and are not always well represented in conventional public meetings: residents of color (18%), limited English speakers (7%) and linguistically isolated populations* (EJ Mapper estimates 1.4%), seniors (32%), youth, (26%), renters (36%), and households experiencing poverty (6%), including clients of Kirkland's new adult women and family shelter. The engagement process focused on this equity impact to the Station Area and expanded engagement was carried out throughout the feedback process.

Equity Impact Review Process



May-June 2020
Scoping Comment Period + Community Workshop

April 2020
Opportunities and Challenges

Jan - Feb 2021
DSEIS Comment Period+ Community Workshop

Jan-Feb 2021
Alternatives Development and Draft Supplemental Environmental Impact Statement (DSEIS)

May 2021
Council Listening Session

June 2021
Narrowed Bookends

Nov 2021
Community Question and Answer Session

Oct 2021
Fiscal Impacts and Community Benefits Study

Dec 2021
Preferred Plan Direction

Dec 2021
Final SEIS Released

May 2022
Public Open House

May 2022
Draft Station Area Plan

June 2022
Public Hearing

** Linguistically isolated household is one in which no member 14 years old and over speaks only English or English "very well." In other words, all members 14 years old and over have at least some difficulties with English.*

Initial Concepts and Plan Alternatives- Spring through Fall 2020

On May 26th, the City released their SEPA Scoping notice. This kicked off a 3-week comment period which provided opportunities for comment in several different formats. Engagement opportunities were advertised widely including through City social media channels and e-newsletters, posters, and postcards mailed to businesses, property owners, residents in the station area. The City and its consultants held the first public Community Workshop to discuss opportunities and challenges for the Station Area, and to gather feedback on initial concepts for the plan on June 4, 2020. The workshop included a large presentation to share out information and small group activities to collect input. About 90 people, including 13 team members, participated in the workshop. Comments were also collected through a web survey and Story Map, which allowed stakeholders and the public to learn about the SAP and provide feedback on their own time. This Story Map webpage received over 800 visits, and 26 people completed the survey. In addition, stakeholders and members of the public were invited to submit written comment. Over the 3-week period, the City received 32 written comments.

The Opportunities and Challenges analysis along with Initial Station Area Concepts were shared in a June 2020 public workshop. These concepts were used as the framework for the three alternatives evaluated in the Draft SEIS work, developed in parallel with station area planning efforts.

Draft Supplemental Environmental Impact Statement (SEIS) – Fall 2020 through Winter 2021

After reviewing input from the Community and City Council, the team developed Draft SEIS Alternatives 1, 2 and 3, which were distinguished by the level of growth which would be allowed. This phase culminated in the release of the Draft SEIS on January 5, 2021, which opened a 30-day public comment period. In response to requests from the community, and in recognition that an extended comment period would allow for further outreach to community members traditionally underrepresented in past planning processes, the City extended the Draft SEIS comment period to 45 days.

To inform this round of outreach and engagement, the City and project team reviewed representation of minority groups in the SEPA Scoping comments, and identified voices that were underrepresented in that conversation. The Project Team developed the following targeted engagement methods to increase representation from those groups: To receive additional input from youth, the project team coordinated with the Lake Washington High School. Students from two Lake Washington High School economics classes engaged in a month long project to learn about the SAP and to provide input during the comment period. To receive input from those experiencing homelessness, the project team designed "Meeting in a Box" including project background information and presentation materials. The Sophia Way hosted two in-person group sessions and a few one-on-one discussions to gather input on the Draft SEIS from 26 of their clients, all of whom are women experiencing homelessness. The city also hosted a service provider round table with representatives of shelters and day centers who have clients in the Station Area on February 2, 2021. After a brief presentation, attendees provided input about how the plan can support client needs.

The project team pursued several broad outreach methodologies intended to expand participation in the DSEIS Comment Period across the community. The city produced a video to provide the public with information on the plan and how to provide comment. The team built on engagement methods that were found to be successful during the Initial Concepts engagement. 140 people attended an online open house held on January 7, 2021, 408 People responded to the online survey and 114 written comments that were received. These comments were all documented and responded to in the Final SEIS. For more information, see Appendix 11.8.

Key issues and concerns identified through SEPA Scoping and DSEIS engagement:

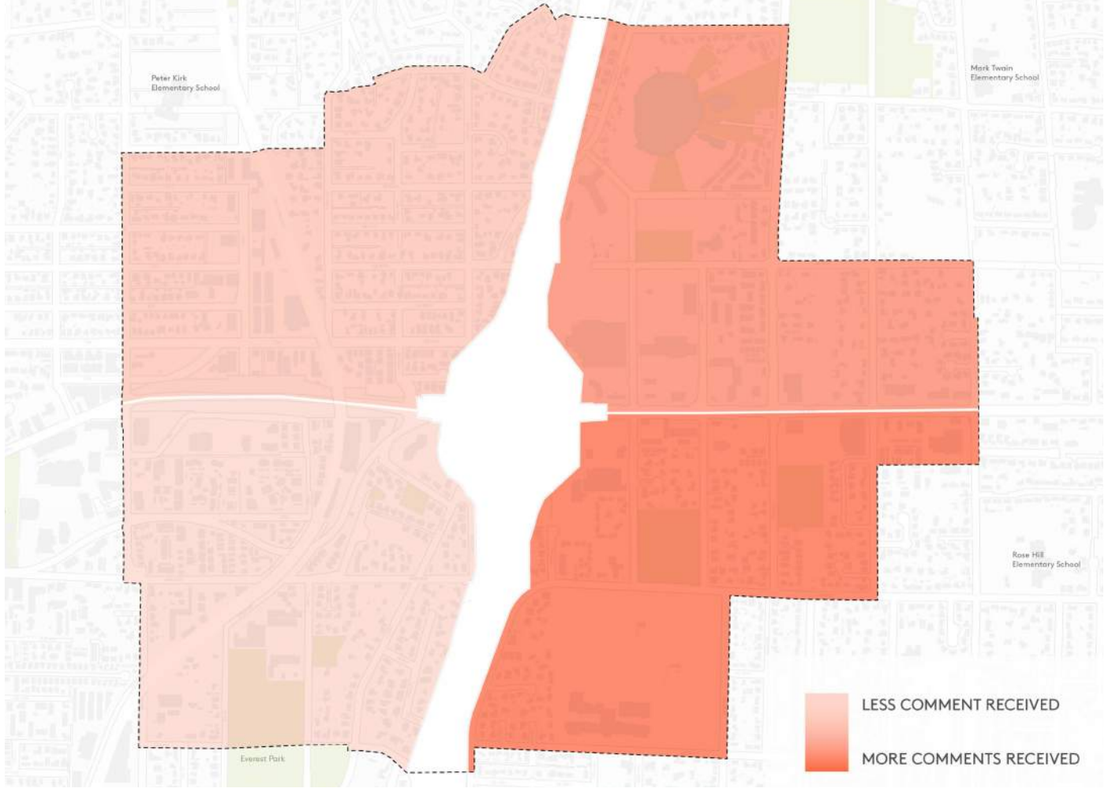
- Impacts of growth
- Traffic congestion
- Increased Building Height
- Impacts on Schools
- Transit Capacity
- Match of Housing and jobs for People

"Make sure there are enough schools that these children living in this proposed development can go to, and that there will be public bus routes provided before and after school."

"Is the burden to build this infrastructure going to be placed on the current tax payers of Kirkland?"

"...further identify and quantify additional mitigation projects and/or Transportation Demand Management strategies that could be implemented to address these adverse impacts under Alternatives 2 and 3."

Where Comments Were Received



Fiscal Impacts and Community Benefits Spring 2021-Fall 2021

The comments on the Draft SEIS and planning process included concerns from the community about the impacts of growth and increased density, and a desire for the plan to help achieve community benefits such as affordable housing, plentiful parks and recreation opportunities, improvements to the active transportation network, sustainability strategies, and school capacity for students in the Station Area. In response to these concerns and following a review of the DSEIS, Council directed the project team to expand the project scope to complete a Fiscal Impacts and Community Benefits Analysis in order to: analyze the fiscal impacts of infrastructure and public service provision to accommodate future growth in the Station Area; explore strategies to achieve Community Benefits from growth; and further analyze the transportation network. To facilitate this analysis, the project team developed new alternatives to respond to the vision for Kirkland's future shared by community members. In advance of Council decisions about which growth alternatives to analyze in the Fiscal Impacts and Community Benefits Analysis, the Council held a special meeting on May 26, 2021 that served as a Listening Session for community members to provide input on the Station Area Plan directly to Council members. At their June 15, 2021 meeting, Council endorsed Alternative A (Current Trends) and Alternative B (Transit-Connected Growth) for study in the Analysis. This narrowed the bookends of potential growth under consideration for the final Plan, and eliminated Draft SEIS Alternative 3, the highest growth alternative.

On October 26, 2021, the City published the Fiscal Impacts and Community Benefits Analysis Technical Memo, which found that if the City were to select June Alternative B to implement its vision of the Station Area, the City could afford the investments necessary to address the increased demand on public services, and avoid a reduction in service for existing community members and businesses. The memo recommended a series of policy changes and benefit capture strategies necessary to support this outcome. Upon review of the Fiscal Impacts and Community Benefits Memo, Council directed staff to draft a Preferred Plan Direction based on Alternative B (Transit Connected Growth) for inclusion in the Final EIS, and to prepare an additional scope of work to support further development of the community benefits strategies. On November 1, 2021, The City hosted a Community Question and Answer Session to provide an opportunity for the community to engage directly with the project team and ask questions regarding the Fiscal Impacts and Community Benefits Analysis and related topics.

Final Supplemental Environmental Impact Statement (SEIS) – Winter 2021

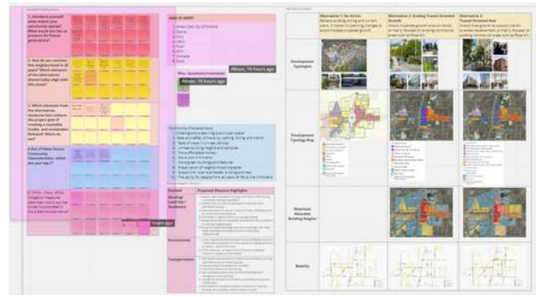
The project team integrated Council's vision of the Station Area into the Preferred Plan Direction. This describes a thriving, new walkable urban center with high tech jobs, plentiful affordable housing, sustainable buildings, and shops, and restaurants linked by transit. The Preferred Plan Direction was presented to Council on December 14th, 2020. Council passed Resolution R-5503, which adopted the Preferred Plan Direction and instructed the project team to proceed with drafting a final Station Area Plan, Form-Based Code and zoning amendments, Comprehensive Plan amendments and a Planned Action Ordinance based on the Preferred Plan Direction. R-5503 also directed the City Manager to procure consulting services to further develop community benefits strategies.

The Preferred Plan Direction was integrated into the Final EIS along with responses to Draft SEIS Comments and related edits. The Final SEIS was released on December 30th, 2021.

Community Benefits Study – Winter to Spring 2022
As directed in R-5503, the project team began to advance the Community Benefits Policy Framework including key topics of parks, affordable housing, mobility, sustainability, and schools/childcare/education to help support Station Area Plan implementation. This entailed additional engagement and meetings, transportation analysis, the development of an incentive zoning program, and drafting a Green Innovation Code. The Project Team received guidance on this approach in 4 public meetings: A March 10, 2022 presentation to Planning Commission to provide an Introduction to the Form-Based Code, a March 23 Project Update for Transportation Commission, an April 5 Process update and Key Issues Status Briefing for City Council, an April 26th Joint City Council and Planning Commission Policy Direction Study Session, an April 27 presentation to Transportation Commission on supplemental analysis, and a May 12 Joint City Council and Planning Commission Draft Document Review Study Session. The Community Benefits strategies will be integrated into the Comprehensive Plan policies for the Station Area and a series of Zoning Code amendments. The zoning amendments related to the Commercial Mixed Use Districts are intended to be adopted in June 2022, with amendments relating to the remainder of the Station Area regulating districts adopted later in 2022.

Final Plan and Form-Based Code – Winter to Summer 2022
Implementation of the vision established in the Preferred Plan Direction and forthcoming NE 85th Street Station Subarea Plan requires a comprehensive set of regulations and supporting design guidelines. This Form-Based Code is intended to facilitate development in the Station Area with clear and predictable standards that support transit-supportive development intensities in a high quality, pedestrian-oriented built environment. City staff and the consultant team are developing the code in a phased approach, beginning with the Commercial Mixed Use district and associated elements, and continuing to the additional districts later in 2022.

This Final Station Area Plan report is a summary of the entire process described above, and the recommendations developed through over two years of community engagement and technical analysis. It illustrates the vision for the future of the station area plan and documents recommendations to support ongoing planning efforts by the City and realize transit-oriented development that creates the most value for the City and maximizes community benefits.



Online Engagement Event: Utilizing a tool called Miro to explain concepts to the public.

Online Engagement Event Via Zoom Platform

Engagement Summary Feedback

The NE 85th Station Area Plan has gone through substantial community engagement as outlined in the previous section Developing the Plan. Throughout the process a number of different voices, and methods of collecting feedback have been implemented. Ongoing public discussions have also occurred with 6 public Transportation Commission meetings, 8 public Planning Commission meetings, as well as 11 public City Council Meetings since the inception of the plan in 2019.

4
Listening Sessions / Workshops*

114
Written Draft SEIS Comments

408
Survey Responses

11
Public City Council Meetings

1
Community Open House

150+
Written Comments

8
Public Planning Commission Meetings

6
Public Transportation Commission Meetings

** Includes 2 community workshops, 1 City Council listening session, and 1 community Q&A session*

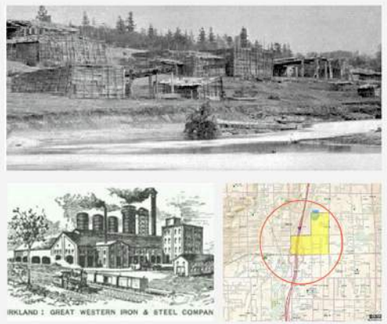
3.0

Existing Conditions

Growth Trends

This station area's history echoes many of the same forces that have shaped Kirkland's evolution as a whole. Kirkland's founder, Peter Kirk, sited a mill near the present-day interchange to take advance of the topography and access to Forbes Lake. Although the mill is no longer there, the large land area it required is reflected in block pattern and parcels of that portion of the study area today. Other themes, such as the long relationship between transportation infrastructure and growth, continue to shape the city today.

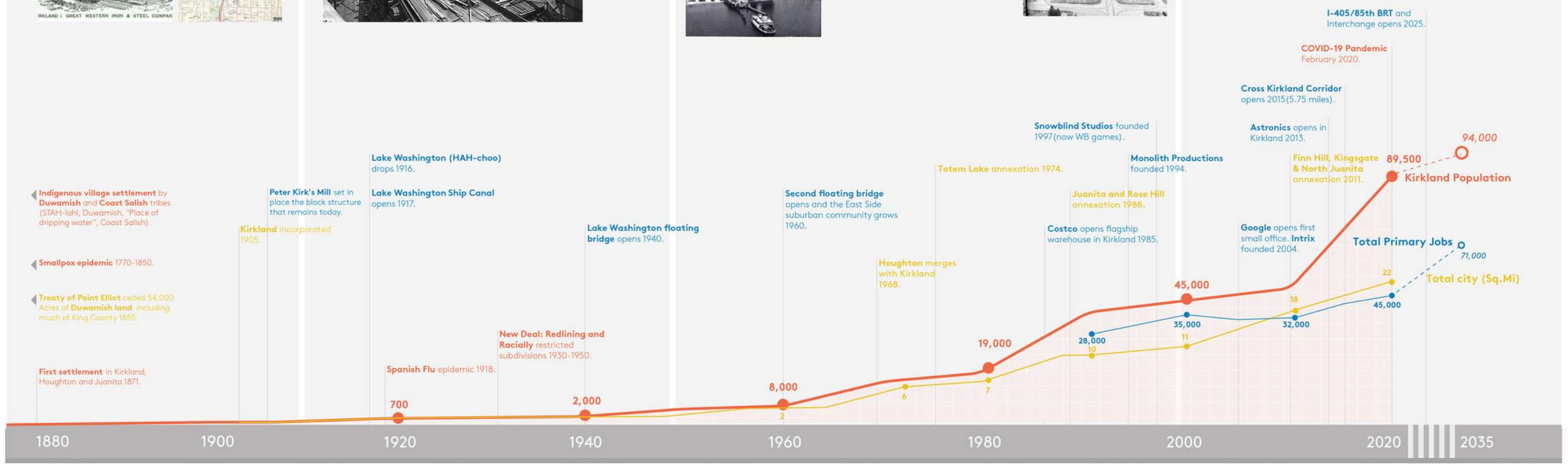
Indigenous Community and Early Settlement



Industrial Era and Regional Development

Suburban Growth and Annexation

Innovation Economy and Mobility Investment



Our Community

The station area includes about 3,100[1] residents as well as over 3,200[2] jobs. People of all stages of life live, work, learn, and visit this special place in Kirkland. The plan recognizes the many intersecting dimensions of social and economic identities and aims to advance an inclusive district where people of all ages and abilities are supported and welcome.

Seniors
About a third of people who live in the area are over 65 years old[3]. Many have owned homes here for years, and there are also people who have moved here more recently. The hilly area and lack of safe places for walking may create challenges for older adults to access services and connect with neighbors.

Youth
A quarter of the people who live in the area are 18 or younger[4], and Lake Washington High School has about 1800 students . There is a substantial demand for childcare space and indoor recreation opportunities within the station area, and growth in the area will require more school capacity in the future. The Cross Kirkland Corridor and other parks are great assets, yet youth may also have challenges to easily walk and bike throughout the area.

Race, Ethnicity, and Language
The area has a higher proportion of white people than the average in King County. About 18%[5] of residents are people of color. Nearly a quarter of people who live in the area are immigrants[6], and about 7%[7] of people in the area have limited English language skills. People who are racialized often face institutional barriers within our communities and may have less access to social networks and services.

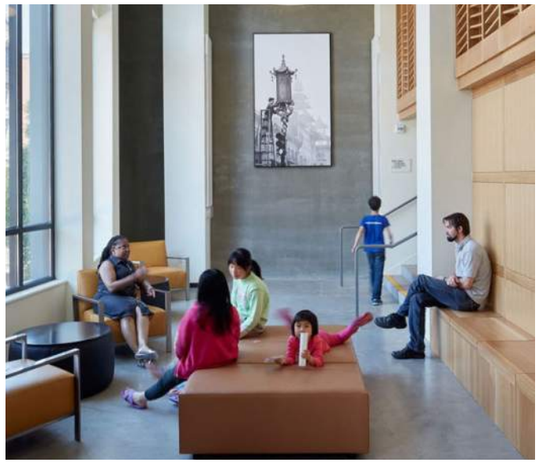
Renters
Compared to other parts of Kirkland, there is a higher proportion of people who rent within the area, rather than owning their homes. Renters include people of all ages and life stages, from students to seniors. Renters have less control over changes to their housing costs and are not always well represented in public meetings and comments due to conventional notification practices and associations which often center homeowners.

People experiencing poverty
About 6%[8] of households in the area are below the poverty line, including clients of Kirkland's new adult women and family shelter. Many people are burdened by high costs and may spend a significant share of their income on housing, or not have secure housing. The share of employees in this area who earn low wages is about 48%[9], compared to about 30%[9] of residents citywide, and they may be working multiple jobs to make ends meet.

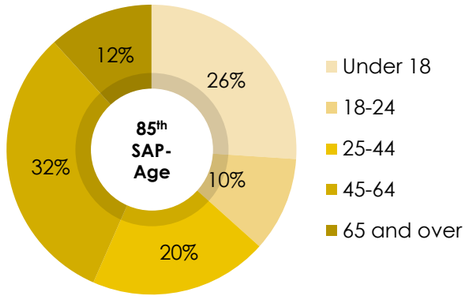
People with disabilities
Between 6-8%[8] of people in the area overall have disabilities, including difficulties with mobility, vision, hearing, and others. People with disabilities may have low life outcomes and be more likely to be under employed or experience housing instability. In the station area, a quarter of people who are living in poverty also have a disability.

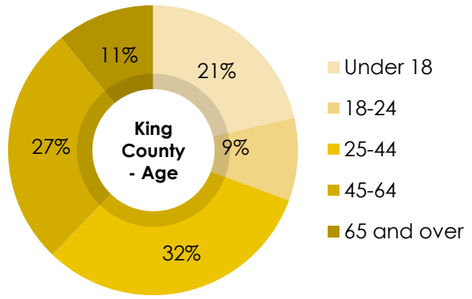
Advance an inclusive district where people of all ages and abilities are supported and welcomed.

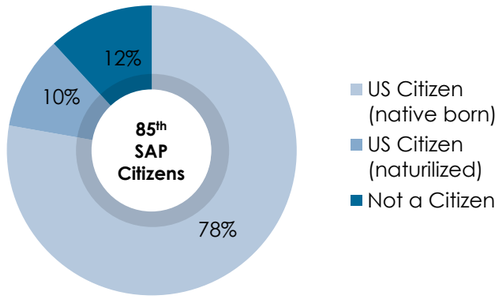
1 American Community Survey 2018 estimates
2 Longitudinal Employer-Household Dynamics, US Census Bureau, 2017
3 American Community Survey 2017 estimates
4 American Community Survey 2017 estimates
5 American Community Survey 2017 estimates
6 American Community Survey 2017 estimates
7 American Community Survey 2017 estimates
8 American Community Survey 2017 estimates
9 Longitudinal Employer-Household Dynamics, US Census Bureau, 2017

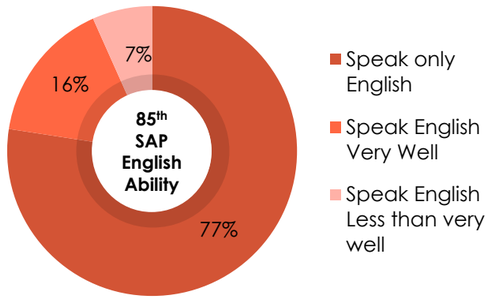


Resident Demographics

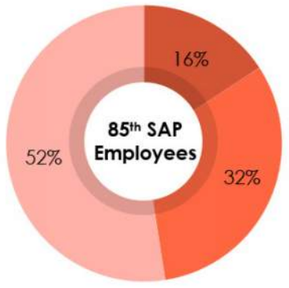


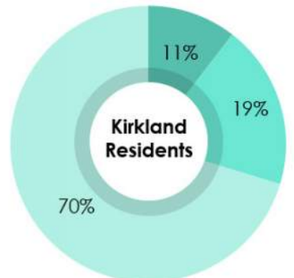


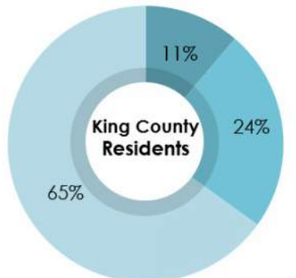




Employment Demographics

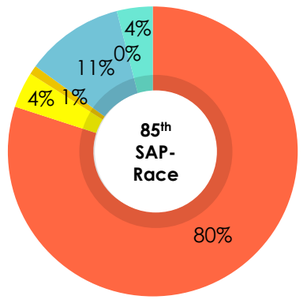


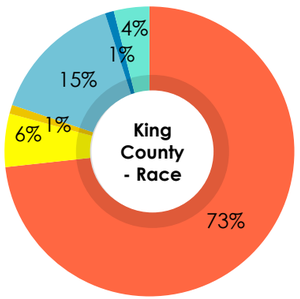




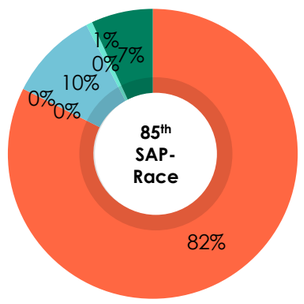
Source: Longitudinal Employer-Household Dynamics, 2017 https://lehd.ces.census.gov/

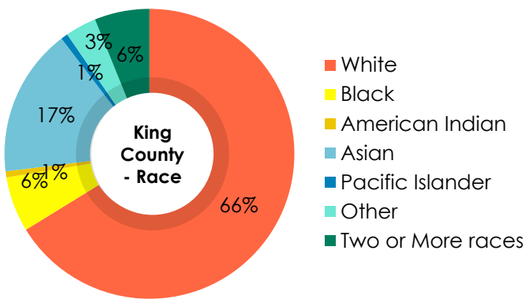
Employee Demographics





Resident Demographics





The Station Area Today

Today, development in the study area reflects the different eras of growth for Kirkland. Low density neighborhoods anchor the district, ranging from large lot homes to smaller bungalows. The northwestern portion of the study area also includes a mix of townhouses and other infill adjacent to single family neighborhoods, and small apartment complexes. This mix is important for housing diversity. The western part of the study area is also home to a pocketed, somewhat isolated set of developments.

Auto-oriented office buildings, light industrial, and multi-family complexes add diversity to the study area but lack pedestrian access and visual connections to the public realm. The eastern portion of the study area is dominated by large parcels of strip retail. This type of development is marked by large surface parking, auto-oriented sites with frequent driveways and curb cuts, and a weak relationship to street frontages. Because 13% of the land within one half mile from the BRT station is comprised of the WSDOT right-of-way, this road infrastructure plays an influential role in the character in the study area. These parts of the study area are prone to significant noise, unused open space, and uneven maintenance and vegetation.

710 acres
> 3,000 jobs[1]
> 3,000 residents[2]
1 industrial district
1 regional trail
1 cloverleaf interchange

1 high school
1 cemetery
1 lake
2 watersheds
1 community park

45% surface parking
25% - 44%[3] tree canopy cover
6 neighborhoods

1 Source: LEHD, 2017
2 Source: American Community Survey 2018 estimates
3 Source: City of Kirkland 2018 Urban Tree Canopy Assessment

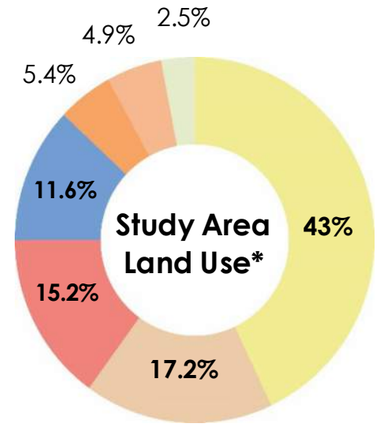
Overview of Station Area Today

Land Use

The study area is marked by a strong congruence between zoned and existing uses. Very few examples of non-conforming uses are found in the study area. At the same time, much of this conformance is due to zoning designations that respond to the specific circumstances of numerous subareas. Examples include the Rose Hill business district and areas in Everest adjacent to 85th St.

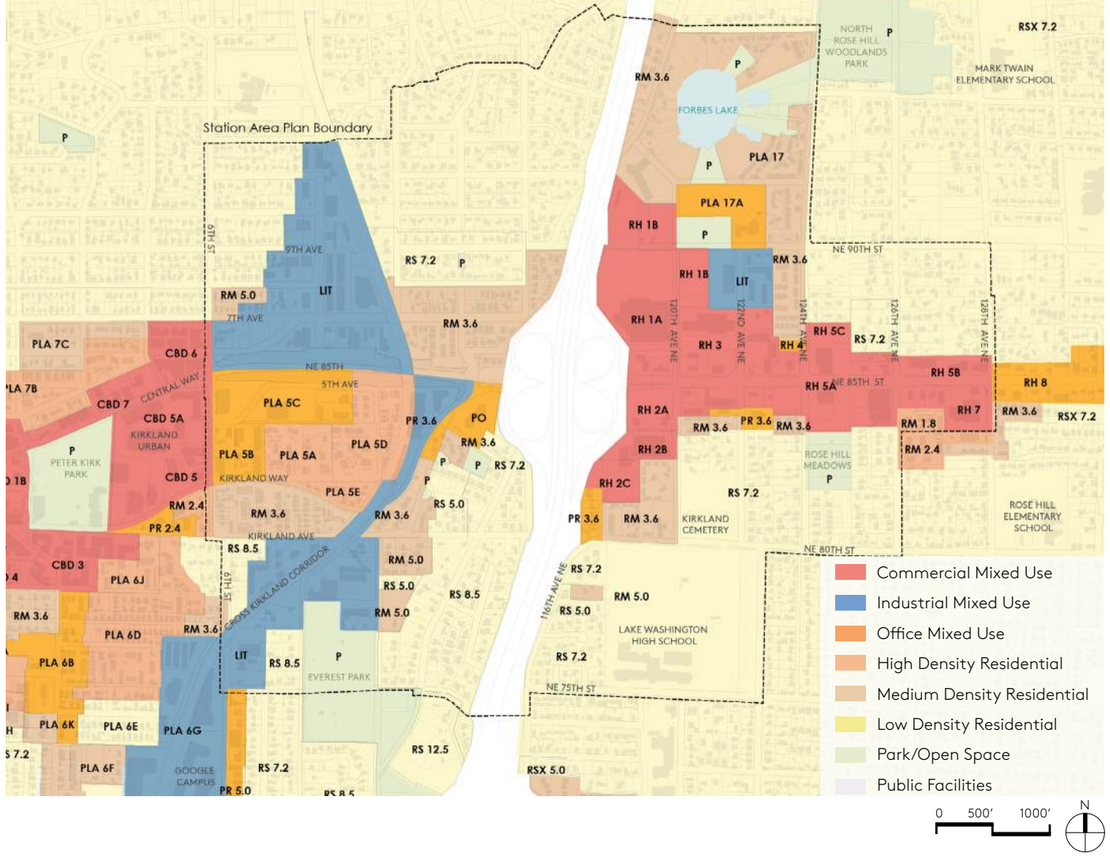
Overall land use for the study area reflects two main trends. First, I-405 serves as a dividing line between a relatively single-use area in Rose Hill and a much more pocketed, patchwork of uses west of I-405. The second is the role of lower density residential parcels, which comprise a significant proportion of the study area but a relatively small proportion of the parcels directly bordering the WSDOT ROW.

Both this distribution of land uses and the edge condition of the ROW are important considerations for creating effective transitions in the Station Area Plan.

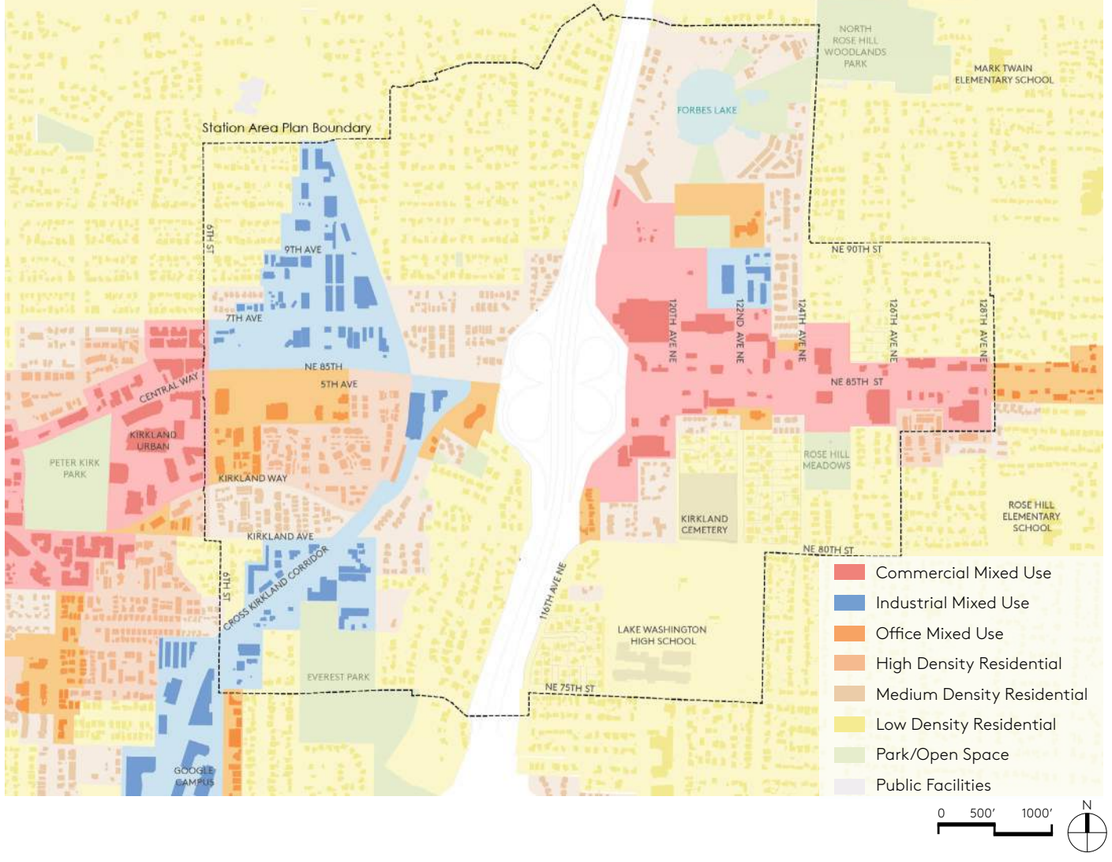


*Net land use as percent of total parcel area, excluding WSDOT ROW.

Existing Zoning



Existing Land Use



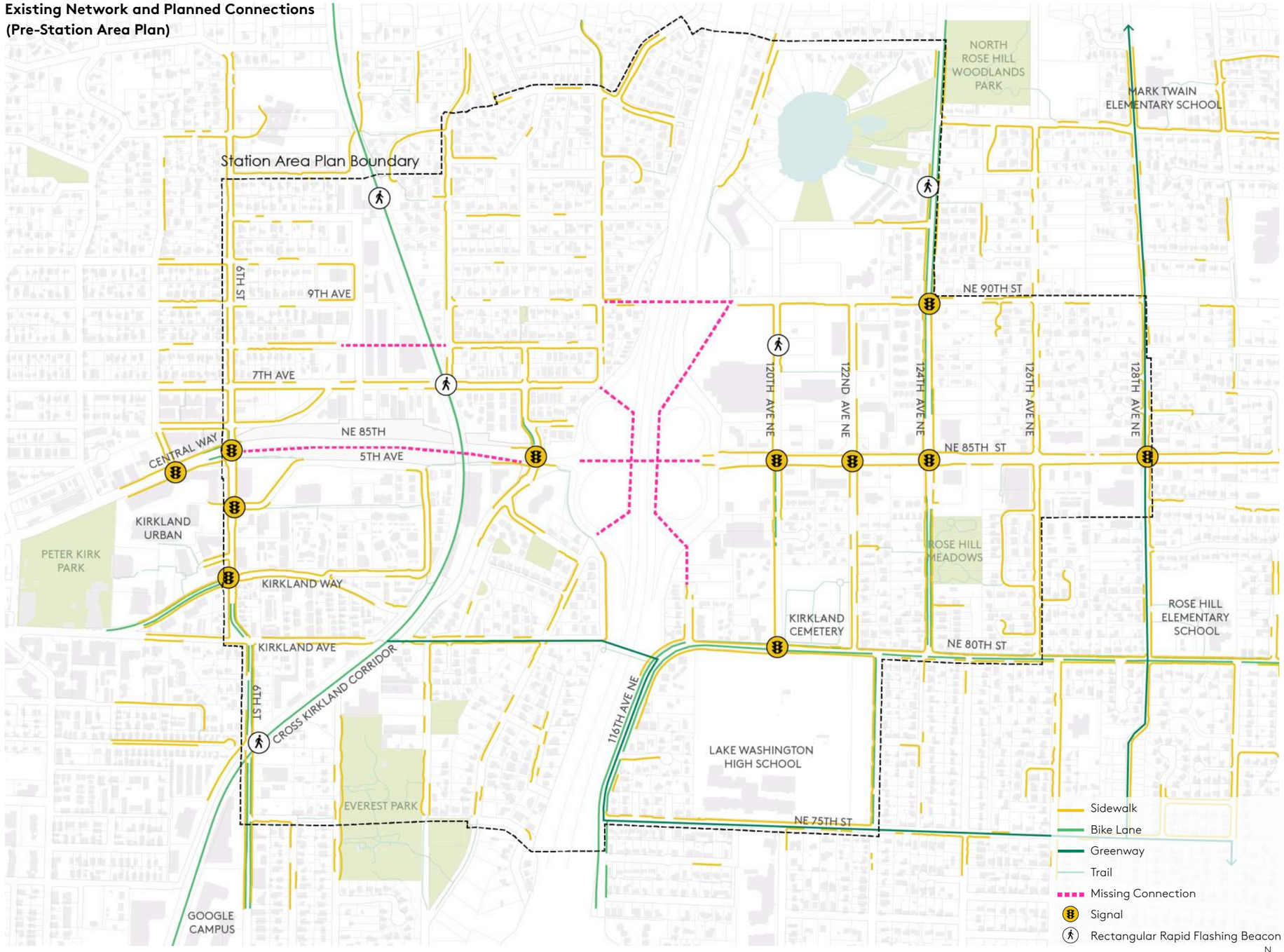
Pedestrian and Bike Connections

Kirkland was developed over several decades, which is reflected in both the block structure as well as the mix of streets with and without sidewalks. Many major streets have sidewalk coverage, with the prevailing sidewalk width varying between 5-8 feet. NE 85th Street and Kirkland Way lack sidewalk coverage from the interchange itself west to 6th St, a key route which connects the study area to downtown. As part of the funding agreement with Sound Transit for the future BRT station and interchange project, there will be a new shared use path south of NE 85th St to connect the station to 6th Street. Local streets have some sidewalks, however many of the adjacent commercial and industrial areas lack coverage or there are gaps along a block. 120th Ave NE, 122nd Ave NE, 126th Ave NE, NE 90th St and 116th Ave NE all lack consistent sidewalks.

There is also a lack of continuity in the bicycle facilities provided in the study area. On the western side of the study area, the Cross Kirkland Corridor provides the most significant north/south connectivity, while partially buffered bike lanes on 80th St, bike lanes on 124th Ave NE, and the newly completed greenway on NE 75th St and 128th Ave NE act as the primary connections on the eastern side of the station area.

For both people walking and biking, east/west connectivity across I-405 is a significant challenge. There is an existing pedestrian bridge at Kirkland Ave/116th Ave NE, and planned improvements to address this gap include the future Stores to Shores greenway which will improve access to the existing NE 100th St bridge and the WSDOT-designed shared use paths through the interchange at I-405 and 85th.

Existing Network and Planned Connections (Pre-Station Area Plan)



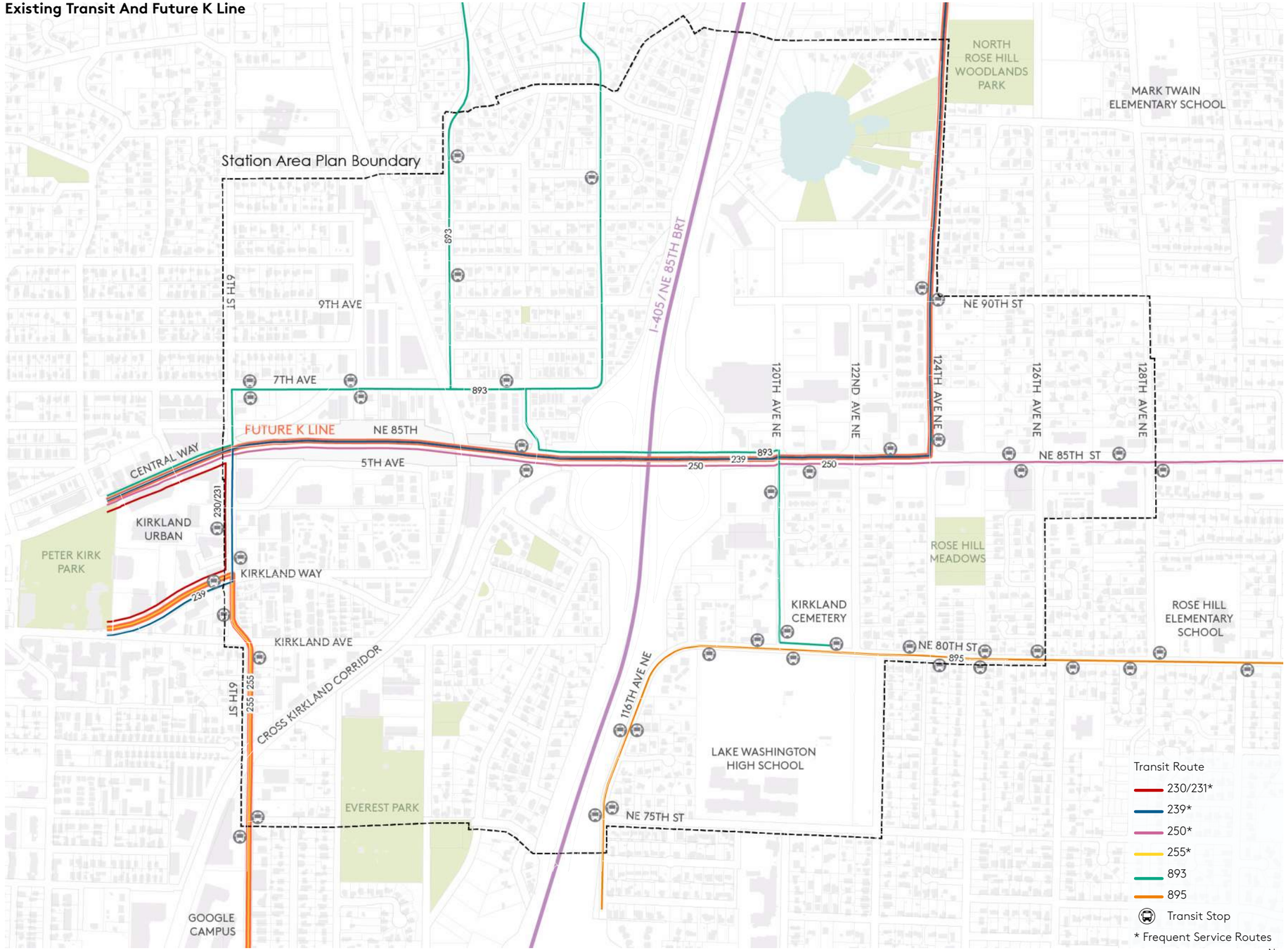
Transit

The new BRT station at I-405 and 85th St will greatly improve transit connectivity for Kirkland. Within the station area, NE 85th St and 124th Ave NE are the primary transit corridors which have transit service from the Kirkland Transit Center in Downtown Kirkland to Totem Lake, Redmond, and Downtown Bellevue.

Route 250, which connects to Redmond along NE 85th St is the only route currently designated as a "frequent all day route" with service every 15 minutes*.

King County Metro is planning for the K Line, a bus rapid transit service that will serve the fast-growing communities between Totem Lake in Kirkland and Bellevue. The K Line buses will come more often and reliably on-time, with service added at night and on weekends.

Existing Transit And Future K Line

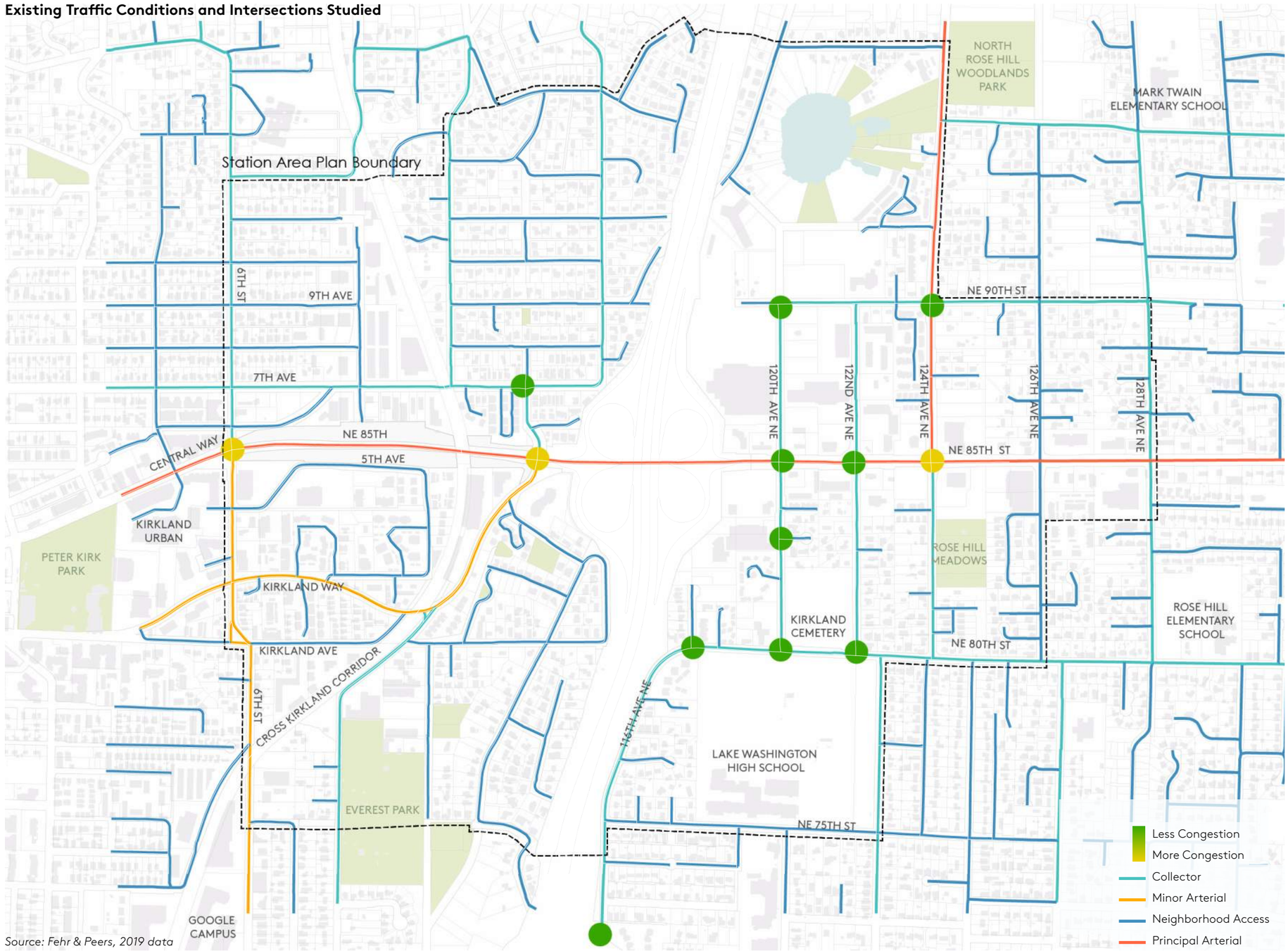


Vehicle traffic

Road infrastructure in the study area is primarily oriented around NE 85th St serving east/west traffic and 124th Ave NE and I-405 serving north/south traffic.

Generally, intersections are most challenged where arterials meet, such as at Kirkland Way and 85th. There is anticipated vehicle delay at intersections due to increased regional growth and congestion. ST/WSDOT is incorporating additional vehicle capacity improvements in the study area as part of the I-405 interchange project, including as roundabout at NE 85th St and Kirkland Way and a third eastbound lane from the interchange to 122nd Ave NE. See Appendix 11.7 and 11.10: Transportation Analysis for more detail on existing vehicular network performance.

Existing Traffic Conditions and Intersections Studied



Source: Fehr & Peers, 2019 data

Open Space

Kirkland as a city is well served by parks and open space. The Lake Washington waterfront, Peter Kirk Park, Everest Park, and the Forbes Lake Park all serve adjacent neighborhoods with a mix of passive natural open space and active recreation facilities.

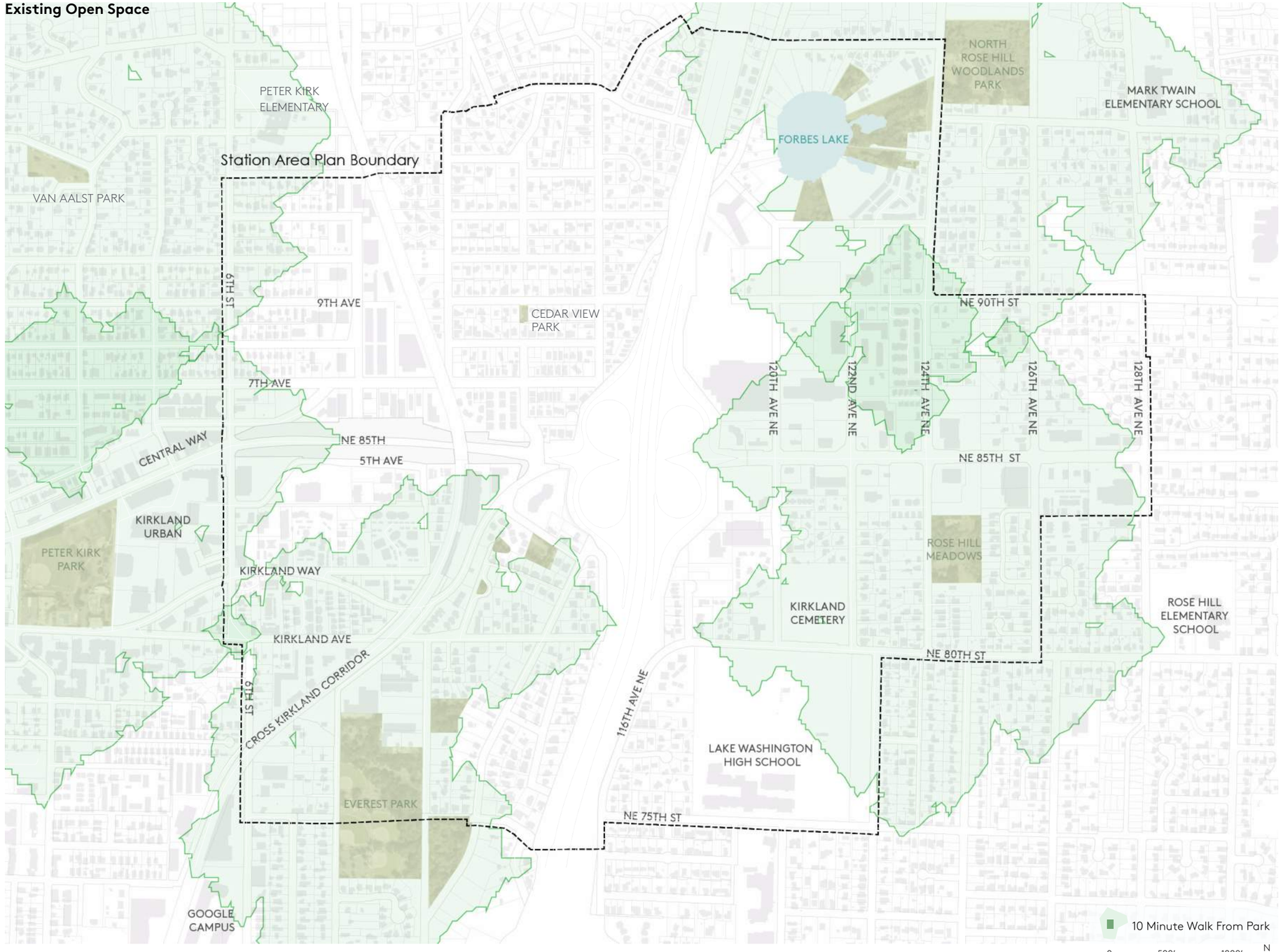
However, the study area itself is generally lacking in parks and open space across several measures.

Access to Parks
One measure of parks and open space provision is access to nearby parks. Much of the study area today, particularly the Highlands neighborhood and the interchange area itself, are not within a 15 minute walk of a single large park. Moreover, only a small portion of Rose Hill has access to more than one park within a 15 minute walk.

Park Amenities
Most parks that serve the study area include a mix of natural areas as well as active recreation. Everest Park and Rose Hill Meadows both include playground equipment, while Forbes Lake Park provides access to nature trails. Two smaller parks within the study area provide pocket park amenities like small play areas and community gardening. However, only these smaller parks fall within the study area itself.

In addition to these neighborhood parks which are accessible to portions of the study area, there remains significant opportunity to provide parks and open space that directly serves new development near the station itself, serving a critical mental and physical health need and providing the opportunity for gathering and social cohesion.

Existing Open Space



Environment

Kirkland's identity is strongly tied to its natural environment. Within the study area, a number of important elements come into focus.

Watersheds: The study area straddles two primary watersheds roughly divided along I-405: Moss Bay and Forbes Creek. Moss Bay consists of short stretches of open channel separated from Lake Washington by long piped sections. The Forbes Creek watershed includes Forbes Lake and associated wetlands and creeks. The Forbes Creek Watershed provides important aquatic species habitat, and is vulnerable to stream bank erosion and increased sediment loads.

Topography: Like other parts of the Puget Sound Lowlands, Kirkland's topography was shaped during the ice age with elements such as kettle ponds and moraines. Within the study area, the slope generally rises West to East away from Lake Washington. This consistent slope creates excellent views at the I-405 interchange. The bermed and elevated portion of 85th St between 6th St and 114th Ave is a significant man-made topographic feature, which influences several aspects of the study area, from land use and stormwater to transportation access.

Vegetation: Similar to other parts of Kirkland, the study area includes dense areas of vegetation interspersed through existing neighborhoods. Three of these are of particular significance for the study area: A woodland corridor at 85th St between 6th St and 114th Ave, a riparian corridor that includes Everest Park, and the wetlands and associated lands surrounding Forbes Lake.

Existing Watersheds

Public Services and Amenities

Stormwater
The Storm and Surface Water Division of Kirkland Public Works is responsible for managing the City of Kirkland's stormwater system. Within the NE 85th SAP study area, a large portion of the stormwater conveyance is the responsibility of WSDOT along I-405. WSDOT has its own stormwater manual, the Highway Runoff Manual (HRM).

Known System Deficiencies in the Forbes Creek basin are related to water quality and fish habitat. Concerns in the basin include sedimentation, flooding, and fish passage barriers and a regional detention facility has been proposed for the basin. Peter Kirk Park is used as a detention storage area for stormwater during peak events and is mapped as a floodplain.

Water
Potable water is purchased by the City of Kirkland from Seattle Public Utilities (SPU) through the Cascade Water Alliance (Cascade). Cascade is an association of five cities and two water and sewer districts in Puget Sound that have partnered to supply water to over 380,000 residences. The Kirkland Water Division operates and maintains the City's water infrastructure. In 2013, average water usage for the entire Kirkland system was 5.3 million gallons per day.

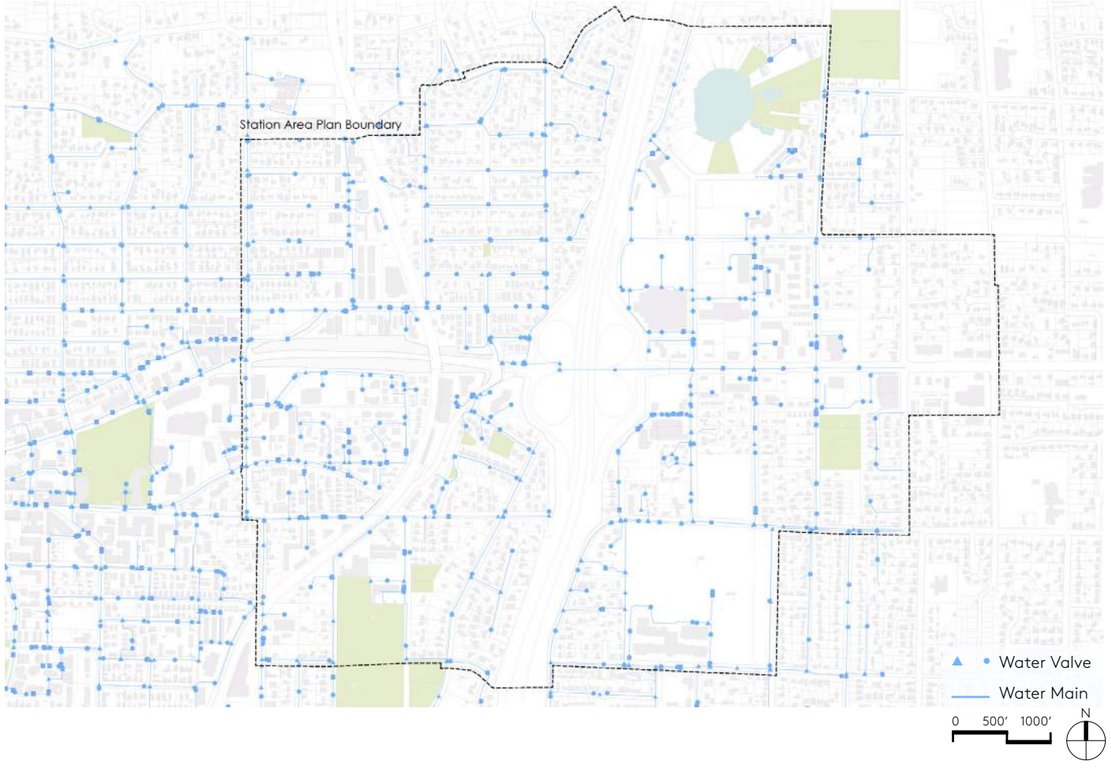
Some areas of the City's system are over 40 years old, and water mains are expected to have a life expectancy of only 50 years. Portions of the system, particularly in the older parts of the city, may need to be replaced within the next ten years.

The WSDOT Interchange Design Plans identify an existing water main that runs along NE 85th St across I-405. This main may be influenced by the project, but WSDOT Interchange Design Plans do not yet include the replacement main.

Wastewater
The Wastewater Division of the City of Kirkland Department of Public Works maintains the City's sewer system, which serves the southern portion of the city. The portion of the city North of NE 116th St of the city is served by Northshore Utility District (Northshore) (RH2 2018). The City's sewer system is made up of 13 major drainage basins, six pump stations, approximately 122 linear miles of gravity sewer piping, and approximately 6,230 LF of force main. The wastewater system conveys water to King County's Eastside Interceptor and to the South Wastewater Treatment Plant (South WWTP) located in Renton, WA.

The majority of the proposed sanitary pipeline replacement projects listed in the City's 2018 General Sewer Plan (RH2 2018) are located within the Kirkland basin (the basin to the west of the I-405 Interchange). The project list is based on the City's assessment of existing deficiencies, safety concerns, maintenance requirements, and capacity requirements.

Existing Water Infrastructure



Existing Waste Water Infrastructure

A Shift Toward People-Centered Places

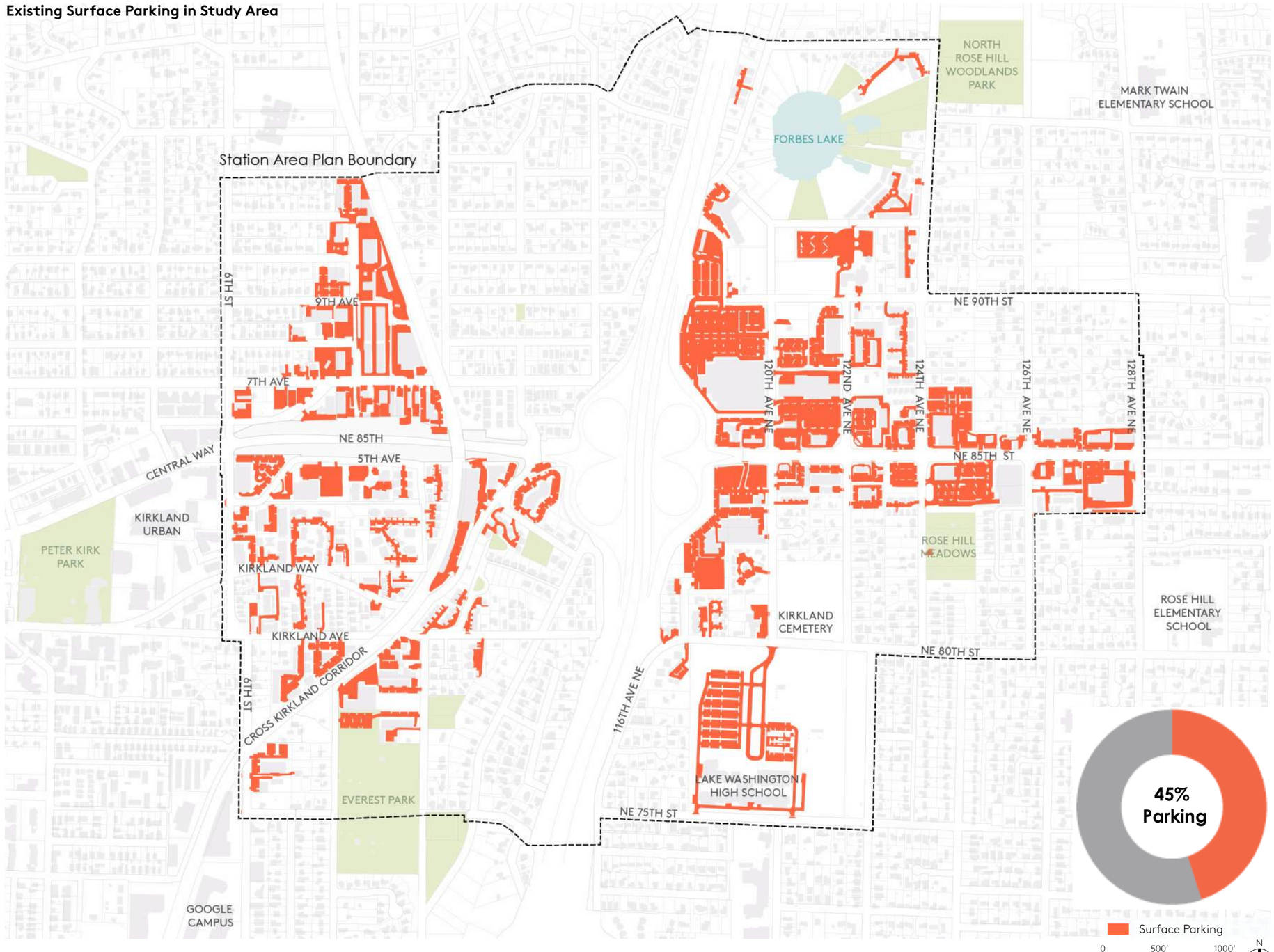
A core principle of Transit Oriented Development is to maximize development types that put people, jobs, and destinations within walking distance of transit.

Surface parking discourages this by both crowding out more active uses and creating more space between development that does exist. These typical outcomes tend to make surface parking a suboptimal use for land close to transit.

Within the study area, a remarkable portion of the total parcel area is dedicated to surface parking lots. Although the big box retail in Rose Hill is one source of this surface parking, many smaller developments also display an auto-oriented site organization that features a "ring" of surface parking.

These areas of surface parking are good candidates for future development. Future parking needs are anticipated to be lower due to the accessibility of frequent transit and improved multimodal networks for greater transportation choices. Future vehicle parking demand can be met through a number of strategies, including structured parking, shared parking, district parking and management strategies such as time limits . District approaches to parking can reduce site design inefficiencies by pooling resources, coordinating infrastructure planning, and identifying the most effective overall strategies for delivery.

Existing Surface Parking in Study Area



Station Area 2020 Market Study

A market study was conducted using February/March 2020 market and economic data that had not captured the ongoing impacts of the Covid-19 Coronavirus pandemic facing local and regional economies across the country. Although the market study was conducted largely pre-Covid general key takeaways are still applicable. The Study Area represents the half-mile buffer surrounding the NE 85th Street Station. Overall, this study emphasized that within the Study Area, there is potential for increased investment and integration with the walkable center in downtown Kirkland.

Kirkland mainly comprises land uses organized around motor vehicle traffic and access. Residential uses in the northwestern portion of the Study Area include a mix of townhouses, and other medium density residential and small apartment developments. In addition to a review of the existing low and mid-density residential development types that are already being built in the Station Area today, three distinct types of real estate products were also studied for potential market feasibility and their ability to accommodate future residential and employment growth:

- Office commercial.
- Retail commercial.
- Multifamily residential.

An additional real estate category that could be considered in the Study Area is institutional use. This includes schools, colleges and universities, hospital campuses, and civic or public buildings. These uses support a stable workforce, a mix of demographics, and amenities. Within the Study Area, retail space forms the bulk of the commercial property, with only 39% of space in office use. This report covered a few key takeaways including:

OFFICE

- There is a regional demand that is growing for office space on the Eastside.
- Within downtown Kirkland the office market is strong with high rents per square foot and low vacancy rates below 5%.
- The office market of the Study Area offers a lower-cost investment opportunity to build on existing momentum for a growing tech center in Greater Downtown Kirkland.
- The addition of supportive amenities could attract additional office investment such as higher walk score that provide convenient access to errands and meals.

RETAIL

- A variety of services are auto oriented within the Study Area.
- There may be opportunities for more retail as part of new development because of low vacancy rates as well as increased demand for office space.

MULTIFAMILY RESIDENTIAL

- Multifamily buildings in the Study Area are low-rise and 30 units or less (show image below exhibit 25).
- Home values within the study Area have more than doubled between 2010 – 2019.
- Currently, 60% of the Study Area is zoned for low and medium density residential development.
- Increasing residential density with more multi-family development will enhance the City of Kirkland's station area's capacity to leverage mobility investments.
- Regional case studies and national research shows evidence that Bus Rapid Transit investments lead to increased development activity, particularly when paired with complementary policy initiatives.

Commercial Property in the Study Area by Type, 2020

Total Rentable SF	
Office Properties	261,875 (39%)
Retail Properties	414,813 (61%)

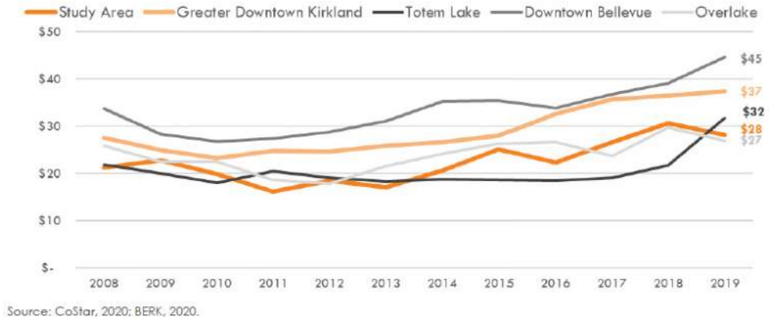
Sources: Costar, 2020; BERK, 2020

Residential Property in the Study Area by Type, 2020

Total SF	
Multifamily Units	164, 696 (3%)
Single Family Lots	5,834,339 (97%)

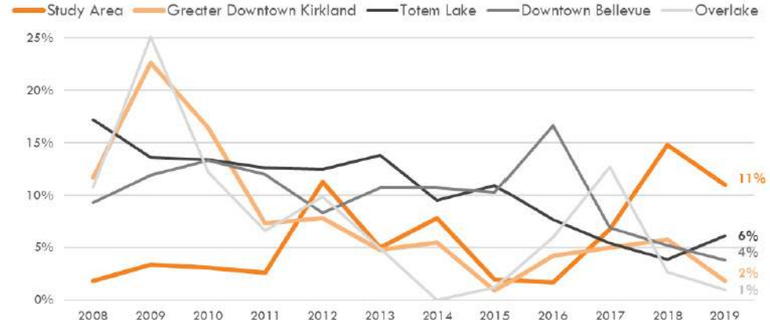
Sources: Costar, 2020; BERK, 2020

Base Rent per Square Foot, Office Commercial, Study Area and Peer Geographies, 2008-2019



Sources: Costar, 2020; BERK, 2020

Vacancy, Office Commercial, Study Area and Peer Geographies 2008-2019



Sources: Costar, 2020; BERK, 2020

Development trends

Kirkland is in the midst of a period of significant growth. This growth has taken shape in the form of both large scale developments as well as smaller infill projects in existing neighborhoods.

Three major recent projects are relevant for this study. Kirkland Urban, located just outside the current study area on Central Way, is a large mixed use development with a proposed build out of 925k sq ft of office, 50k sf of general retail and a 55k sf grocery store. Together with smaller development across the street, it contributes to a more walkable, urban orientation for Central Way. Google's recent and planned expansion in Everest are another major recent project, which demonstrates the significant opportunity for increased commercial and office development as well as the flexibility of light industrial uses in the study area to adapt to more urban uses.

Another major project is the Rose Hill mixed use development, 1.3M sq ft proposal with 870 housing units and 80,000 sq ft of retail. This project reflects many of the trends seen elsewhere in the region towards redevelopment of large strip-commercial parcels into more walkable, urban development.

Also within the study area are a number of smaller infill developments, particularly on the Northwest side of the interchange. These kinds of smaller scale projects can be an important way of transitioning from larger new development to existing neighborhoods.

Project	Description*
1 Google Campus	Office space :375,000 sf at the campus
2 Kirkland Urban	Total proposed buildout: 1.3 million sf Office : 925,000 sf Commercial space : 218,000 sf Residential space : 172,000 sf, 185 housing units**
3 Rose Hill	Total project size: 1.3 million sf. Residential space: 870 housing units Ground-floor retail :84,200 sf

Sources:

**City of Kirkland: https://www.kirklandwa.gov/*

***City of Kirkland*

Urban Design Analysis

The urban design context for the study area today reflects a mix of conditions, from big box strip commercial and auto-oriented corridors to new infill residential and established neighborhoods.

NE 85th St Corridor

NE 85th St Corridor – NE 85th St is an important east/west connection. Its auto-oriented character often lacks sidewalks on the western side, instead featuring a dense tree canopy, and lots that turn their back on this important corridor.

Industry

Industrial areas adjacent to 85th feature large parcels, close proximity to the future station, and potential opportunities for development or new investment. Many are currently important locations for small businesses.

New Infill

Townhouses, small apartments, and other medium-density developments are creating transitions from single family neighborhoods to larger developments typically associated with TOD.

Highway Barrier

I-405 acts a major barrier, limiting east/west connections, discouraging adjacent development opportunities, and contributing to noise and air pollution.

Empty Interchange

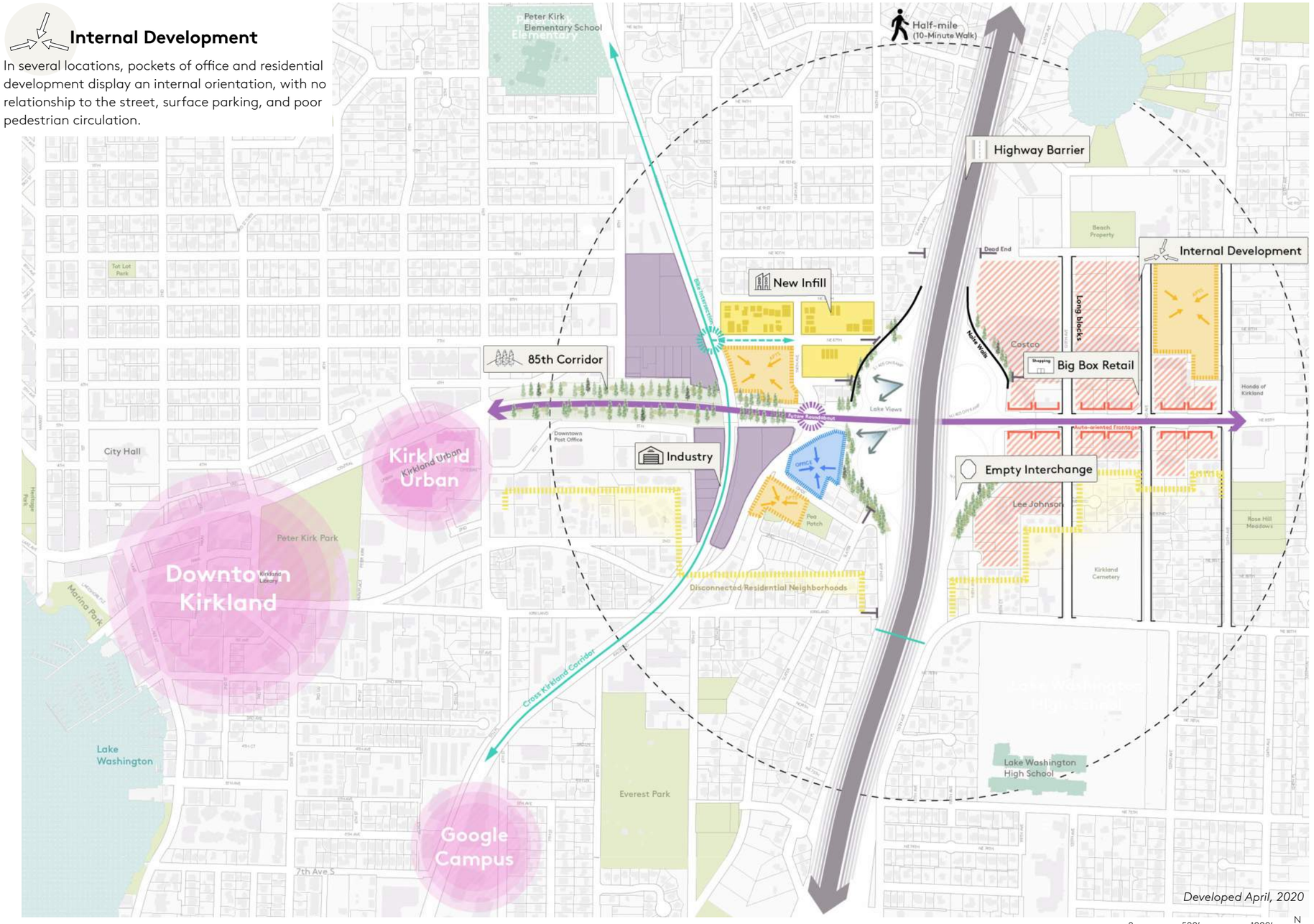
The interchange geometry results in large underutilized open spaces designed to be experienced by vehicle.

Big Box Retail

The Rose Hill business district is an important economic engine and activity center for the city. Characteristics include extensive surface lots, superblocks, and auto-oriented streets and public realm.

Internal Development

In several locations, pockets of office and residential development display an internal orientation, with no relationship to the street, surface parking, and poor pedestrian circulation.



Station Area Plan Elements —

NE 85th Study Area Existing Conditions 2022

NE 85th Study Area Future Vision, Looking West

4.0

Community Benefit Strategies —

Planning for Community Benefits

To achieve the project objectives of promoting opportunity and inclusion with future growth, as well as sustaining quality of life for existing and new neighbors, a Community Benefits policy framework and strategy have been developed. Priority community benefits were chosen for this project based on community feedback, City Council and Planning Commission direction, and initial findings from the DSEIS and 2020 Opportunities and Challenges Report. They include affordable housing, schools, parks and open space, sustainability, and mobility.

How can the public receive benefits of growth?

Along with planned growth comes the opportunity for public, private, and other investments and improvements in the Station Area. Rezoning and updated policies in the Station Area will change the amount and type of development that is allowed, and what baseline requirements will be expected. This new development capacity will be supported by public investments and partnerships for infrastructure and services to sustain amenities for the community. As upzoning may increase the potential value of private land, a portion of this potential value can also be leveraged for public benefit. Overall, the Station Area itself comes with a tremendous opportunity of intrinsic public benefits which include, but are not limited to, enhanced transportation choices, improved and more community gathering places and environmentally sound growth patterns that support the overall vision to the Station Area.

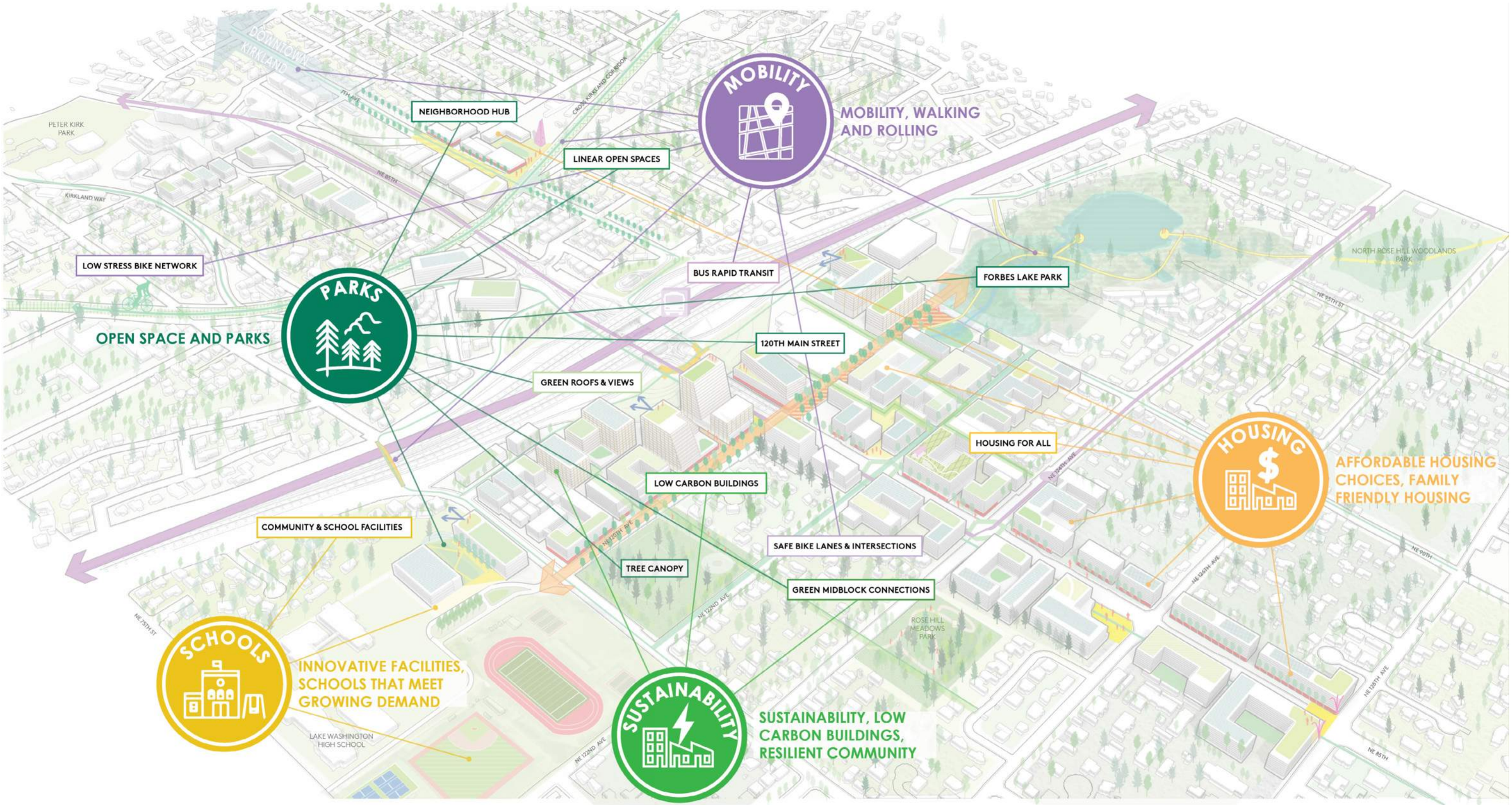
Public Projects will support infrastructure and services including transportation and mobility, parks and open space to sustain quality of life for the public. This plan identifies a range of public project opportunities, which are coordinated through the City's capital planning process and other city-wide planning efforts such as the Parks, Recreation, and Open Space Master Plan and the Transportation Master Plan. These projects may include improvements or enhancements to existing public assets and services, or the creation of new public infrastructure.

Private Developments
Through baseline requirements and the Form-Based Code, community benefits can be realized through private development. Beyond these baseline benefits, there is also potential for additional public benefits or amenities that can be incentivized. This can occur through tools like incentive zoning programs that allow additional development in exchange for the developer providing community benefits. Under a typical incentive zoning program, new zoning establishes a base development allowance in each zone. In exchange for additional development capacity, the developer provides public benefits through fee-in-lieu or direct provision of the amenity. In the Station Area, the incentive program would not allow development heights above the maximum heights adopted in the Preferred Plan Direction.

Partnership Opportunities can advance priority community benefits through program alignment or potential co-benefits. P3's, or Public-Private Partnerships, are examples of collaboration across sectors or organizations to achieve aligned goals. There is potential to advance some of the plan initiatives, community benefits, and long-term vision through such partnerships, especially around the topics of schools, education, and childcare; affordable housing and workforce development; as well as sustainability, climate action, and health and well-being initiatives.

Community Benefits Icons
Throughout the document the following five community benefit icons are called out. Each denotes the topic in which the SAP provides benefits to the broader population:

Community Benefits



Affordable Housing

The Preferred Plan Direction adopted by Council identified a vision for plentiful affordable housing in the Station Area, and maximizing affordable housing options in the Station Area was a priority in all phases of the planning process. Future redevelopment in the Station Area will be subject to the City's existing inclusionary zoning requirement that at least 10% of new multifamily units are affordable which could result in over 600 estimated new affordable units (of the studied capacity for up to 6,243 additional housing units). Additional strategies to promote and incentive affordable housing production in the area were identified in the FSEIS, and included:

- Leverage regional partnerships (e.g., A Regional Coalition for Housing (ARCH) to add affordable housing opportunities in the Station Area,
- Create density bonuses that prioritize affordable housing
- Establish minimum requirements for family-size units
- Require development to provide a minimum number of activity units (i.e. housing units or jobs) and
- Commercial linkage fees

City staff has coordinated with ARCH to discuss the mitigation options that the City could consider to maximize affordable housing opportunities in the Station Area. ARCH will be a key partner in assisting the City with investing resources to produce affordable housing. To the extent that the City receives cash payments toward affordable housing rather than units being built directly by developers, it will be important that those funds be directed to affordable housing projects located in or near the Station Area. New affordable housing projects in the Station Area will be accessible and connected to the region via transit, and should also be targeted to support housing choices attainable for people that work at a range of existing and new jobs in the district.

In the economic analysis for the incentive zoning program, the project team has evaluated options for base and incentive housing requirements, including: providing more than 10% (current inclusionary zoning requirement) of units as affordable, and providing units at deeper levels of affordability. The project team believes that commercial linkage fees could be a valuable tool and should be evaluated in the future. To support evaluation of commercial linkage fees as a tool for the future, the City should continue to work with ARCH to identify legislative changes that might better address such fees being mandatory and applying on a jurisdiction-wide basis.

More than 30% of people who work within the NE 85th Station Area make a salary below the living wage. Additionally, 16% of employees within this area make below the federal poverty guidelines this imbalance of equity regarding the types of jobs available in the area should be addressed. Opportunities to support linkage fee programs and workforce development in order to encourage more jobs for residents in Kirkland will be important, especially jobs that offer higher income. Workforce training programs may be possible along the 120th corridor connecting high tech jobs and the schools. The plan also seeks to maximize affordable housing by providing additional development capacity at a site owned by the King County Housing Authority, which could be redeveloped in the future to provide additional affordable units.

Schools and Education

As part of the Final SEIS for the Station Area Plan, School mitigation options were identified to address the anticipated student growth associated with the increased density in the district. The Station Area Project team has coordinated with Lake Washington School District (LWSD) throughout the planning process to discuss student generation projected with growth in the Station Area, and to collaborate around ways the City can help the district address school capacity. The final plan anticipates that the City will continue coordination with LWSD to explore creative solutions. The project team has identified the below ways to address school capacity in the plan, with the opportunity for future solutions to be identified.

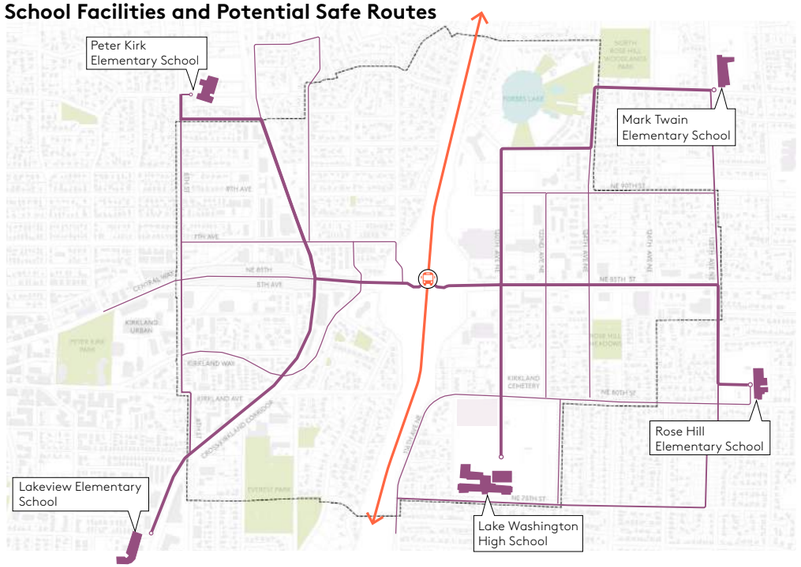
1. Increase development capacity on existing school sites:
The major existing school site in the Station Area is Lake Washington High School. The Preferred Plan Direction contemplates increased density on the site by incorporating it into a future Civic Mixed Use regulating district in the SE quadrant of the Station Area. The Preferred Plan Direction established an increased maximum height allowance up to 75' on portions of the site. Under the allowed height of 75', up to 5 stories could be accommodated on that land area, including structured parking above, or below, ground, which could multiply the building square footage and generate sufficient space to accommodate long-term needs. LWSD would need to further study the concept of co-locating different grade levels on this site and issues related to parking and traffic management related to urban school concepts.

In addition, on March 1, 2022, the City Council approved the following item for the Planning Commission work program:

Growing School Capacity: The City is consistently receiving feedback from the community and the Lake Washington School District (LWSD) about the capacity issues at current District facilities. This Planning Work Program project, building on a collaboration between City staff, LWSD, and University of Washington urban design students in 2018 (that addressed this issue on a separate site), would partner with the District to explore potential development constraints on existing District-owned properties that create barriers to adding student capacity, and then undertaking code amendments to reduce or eliminate these barriers. Examples might include height, setbacks, parking, and permitting processes.

2. Explore development bonus incentives for provision of school space in new development:
Staff evaluated the feasibility of providing bonus density incentives in two broad categories: commercial development and residential development.

School Facilities and Potential Safe Routes



Commercial Dedication of School Space
Based on recent office building sales in the Spring District and downtown Bellevue – areas with similar zoning and building quality to what is expected in the NE 85th St SAP – the value of built space that could be dedicated to school use could be between $750-$1000 per SF.

Residential Dedication of School Space
Another option that staff explored is providing development bonus incentives for provision of school space (likely for Pre-K programs) in new residential development of sufficient size to support such facilities. These would likely be located within ground floor commercial spaces which may be economically beneficial to project applicants. Depending on factors such as location and size of these commercial units, these spaces sometimes do not provide significant rental income. Combining this with the possibility of requiring less parking for a Pre-K use as compared to general retail or restaurant, there could be a net economic benefit to the project.

3. Define active frontages or required retail space to include educational uses:
The Form-Based Code will regulate future development in the Station Area. In order to allow flexibility for more types of educational space to be provided in the future, the Preferred Plan Direction included draft regulating districts that would allow educational ("civic") uses in all zones. Additionally, the Form-Based Code will establish allowed frontage types, and land uses, along each street. Where those frontage types may require an active use, educational uses will be included in any definition of an "active" use and/or frontage type.

4. Promote partnerships to encourage shared facilities in the Station Area and/or optimize utilization of shared use agreements:
As development interest in the Station Area arises, staff has coordinated with the private sector and the school district to encourage conversations to explore opportunities and barriers. These connections should help the City and the District understand the most effective partnership strategies based on shared interests. These partnerships could take the form of shared space agreements or lease arrangements as discussed earlier. City staff will continue to connect the District with potential partners as opportunities arise.

Sustainability, Climate Action, and Resilience

The Station Area is envisioned as a demonstration district that maximizes opportunity for innovation and community benefit around climate action, resilience, and quality of life. The scale and unique opportunities of a mixed use, transit-oriented district provide a tangible way to move the needle on the City's broad sustainability and resilience goals and specific objectives in the Sustainability Master Plan (SMP). Because vehicular trips are one of the major drivers of greenhouse gas emissions, shifting towards more transit and active transportation options will play an important role in reducing emissions. Beyond these fundamental strategies that have Sustainability co-benefits, a Green Innovation Strategy for the Station Area supports innovation in priority performance areas of Building Performance, Ecosystem / Green Infrastructure, and Energy / Decarbonization to maximize community benefit for Kirkland's existing residents and employees and new members of the community. This Green Innovation Strategy is realized in the plan through multiple means: First, the Sustainability Framework (Chapter 10.0) adopts the SMP goals and actions, lays out complementary Station Area Sustainability Goals, and identifies a set of strategies and opportunities related to priority performance areas.

Sustainability Framework Summary
The purpose of this Sustainability Framework is to advance the City's objectives and Sustainability Master Plan with the Station Area as a demonstration district that maximizes opportunity for innovation and community benefit around climate action, resilience, and quality of life. This Framework is aimed to complement the Station Area Plan and envisions a "future-ready" district that is responsive to quickly changing climate conditions, that takes advantage of the scale and unique opportunities of a mixed use, transit-oriented district, and that recognizes the pace of market transformation and does not preclude future innovations.

Next, the Form-Based Code includes baseline requirements as well as incentives to help realize the Sustainability Framework, including the High Performance Building Standard and a new Green Factor for integrated green infrastructure. Finally, there are opportunities to explore partnerships and other initiatives that contribute to district-wide initiatives, shared systems, and other multi-benefit efforts. Currently aligned initiatives, potential partners and opportunities have been identified in the Sustainability Framework and should be pursued to continue advancing objectives.

For more information refer to Chapter 10.0.

Parks and Open Space

Open space and parks are inherently important to health and wellbeing of the community, and provide vibrancy in urban settings, and needed amenities with increasing density as is expected to occur within the Station Area in Kirkland. They function as an essential service, supporting social resilience and the setting for people to gather and connect, to share culture and art. There are opportunities to enhance the amount and types of open spaces provided within the study area, as well improve connections to open space within, and outside, of the Station Area. The City should think creatively on the use of publicly owned land and potential for shared use agreements, as well as how to include open space elements that would support the population within smaller urban footprints to strategically consider smaller, park-like areas within new developments. To supplement this approach, gaps identified in larger scale neighborhood or community parks could be accommodated through enhancements and improved access to existing parks nearby the Station Area, as well as through exploring community access to recreation facilities and spaces within the Station Area.

Coordination with the PROS Plan

On a parallel timeline with the Station Area Plan, the Parks and Community Services Department has been updating the PROS plan, both of 2022. This updated PROS will set the strategy for the City's investments and includes elements related to serving the Station Area. As discussed later in the document, the process of funding and executing these projects will be done as part of the existing Capital Improvement Program (CIP) and Capital Facilities Plan (CFP).

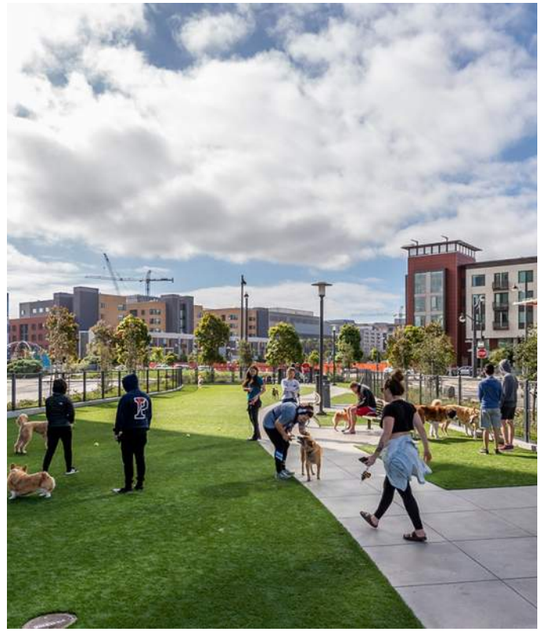
Pocket-parks and amenity considerations that are small in scale have the potential to support community gathering spaces and recreational opportunities to homes. Examples of programming that can increase the utility of open spaces for people to connect include the following:

- Linear Parks
- Dog Runs
- Plazas/Civic Spaces
- Playgrounds
- Exercise Stations

The Station Area Plan provides a unique opportunity to coordinate within the PROS Plan, as well as consider policy changes to the LOS opportunities to provide new open spaces. These approaches can be taken into action in the near term. Options explored through the Station Area planning process include:

- Explore the ability to integrate parks and open space through planned infrastructure investments in the public right-of-way, including street and utility improvements.
- Leverage existing spaced by enhancing existing neighborhood parks, open space around Forbes Lake, and the Cross Kirkland Corridor, these enhancements are identified within Chapter 7.0 Parks, Open Space and Environment .
- Consider the role of school facilities and non-City parks, as well as existing publicly owned parcels in helping to provide recreation opportunities and infrastructure advancements (including excess WSDOT right-of-way for open space benefits such as stormwater treatment, natural areas, and canopy restoration.
- Consider Community Park options that may include supporting the re design of Peter Kirk Park and renovation of other community parks to increase capacity.

For more information refer to Chapter 7.0.



Mobility: Walking and Rolling

This Station Area Plan creates a rich network of mobility options that not only connect transit users to and from the future bus rapid transit station but allow movement throughout the station area to connect downtown Kirkland, Redmond, and beyond. Improved sidewalks and dedicated bikeways ensure that walking and biking in the station area is safe and pleasant. Capacity is added to key intersections on major arterials through strategic widening and signal operation changes to avoid gridlock. These improvements are linked to overall urban design and mobility goals for each corridor. For instance, on NE 85th St a wide landscaped furnishing zone, protected bikeway at the sidewalk level, and wide generous sidewalks are appropriate infrastructure investments to create a sense of safety and a pleasant environment for walking and biking along a major thoroughfare that connects vehicle and transit traffic to the interstate. On smaller collector streets such as the 7th Ave/NE 87th St corridor, sidewalks with sufficient clear pedestrian zones, buffered bikeways, and narrower vehicle lanes proportionally relates the street to a more intimate, residential character.

Green mid-block connections help break down large blocks into more walkable distances and a pedestrian scale environment. Finally, increased transit service with dedicated lanes through the interchange and flexible parking policies balance the transportation needs of the station area.

Active Transportation Plan Coordination

The Station Area Plan's transportation analysis and study has been running alongside the City of Kirkland's ongoing work to update the Active Transportation Plan (ATP) which has been adopted in June 2022. The update to the ATP reaffirms Kirkland's commitment to a multi-modal system of transportation choices by providing network and infrastructure improvement recommendations to enable people of all ages and abilities to safely walk, bike, and roll. Specifically, the Active Transportation Plan outlines three main goals:

1. Create a safe, connected pedestrian network where walking is a comfortable and intuitive option as the first choice for many trips.

2. Create a connected bicycle network that accommodates people of all ages and abilities to get to destinations such as activity centers, parks, and transit.

3. Encourage and incentivize more people to walk and bike and encourage safe behavior for all users of the transportation system.

Network recommendations made as part of the ATP update have been incorporated into the active transportation network vision for the Station Area Plan.

For more information refer to Chapter 8.0.

5.0

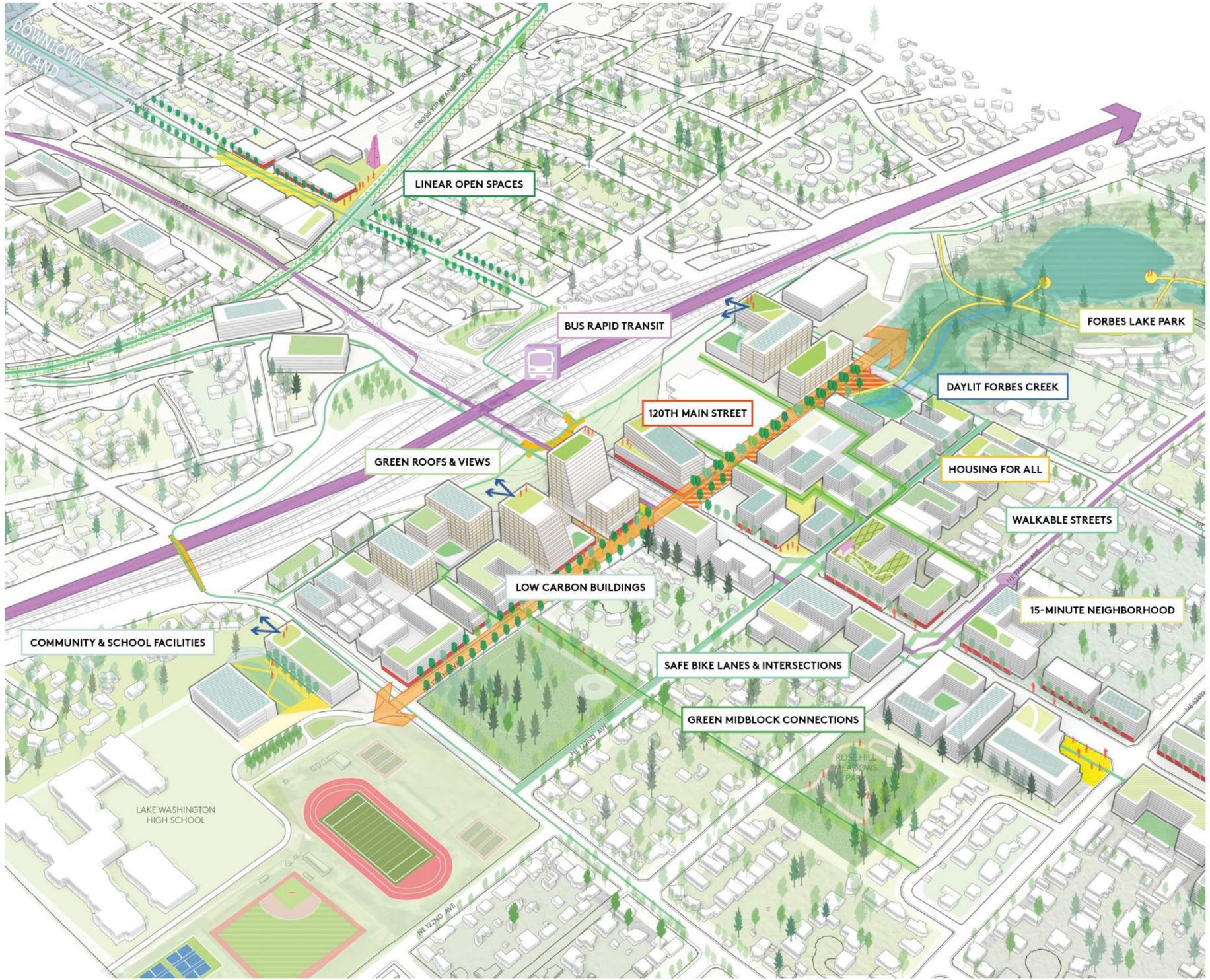
Vision and Urban Design Framework—

The Community Vision

This Station Area Plan envisions a vibrant, mixed use district that is a model of innovation, equity, and quality of life. Development focused around the future station ensures high ridership and supports last mile connections via walking, biking, and transit. Buildings transition in scale as they approach existing neighborhoods to respect the established context while encouraging new jobs and homes. A mix of housing types reflects the needs of a diverse community for all ages and stages of life, at a variety of income levels.

A robust public realm is punctuated with key focal points for retail and services along NE 85th St, 120th Ave NE, and 7th Ave. These focal points provide increased opportunities for pocket parks, green infrastructure, and other amenities that enliven the street. Signature public spaces like Forbes Lake Park and future plazas in large developments create spaces for people to connect with nature and each other. Within development a combination of courtyards, green roofs and other outdoor areas supplement the public realm. Flexible standards for educational and civic spaces encourage creative solutions to provide capacity for students to learn and the community to gather or recreate with future growth in the district.

Finally, this district's innovation is shown in the ambitious sustainability features woven into the district. Community solar power generation, district-scale energy networks, and low-carbon building technologies all reduce the climate impacts of this district. Similarly, green infrastructure, new tree canopy, and ambitious low water use buildings improve the ecological health of the district and its residents.



Urban Design Framework

Alongside the vision for the Station Area Plan is an urban design framework that establishes a set of overarching strategies to shape development and investments in the district in the future. These strategies are reflected throughout subsequent chapters of the Station Area Plan as well as implementation tools like Form-Based Code and Design Guidelines.

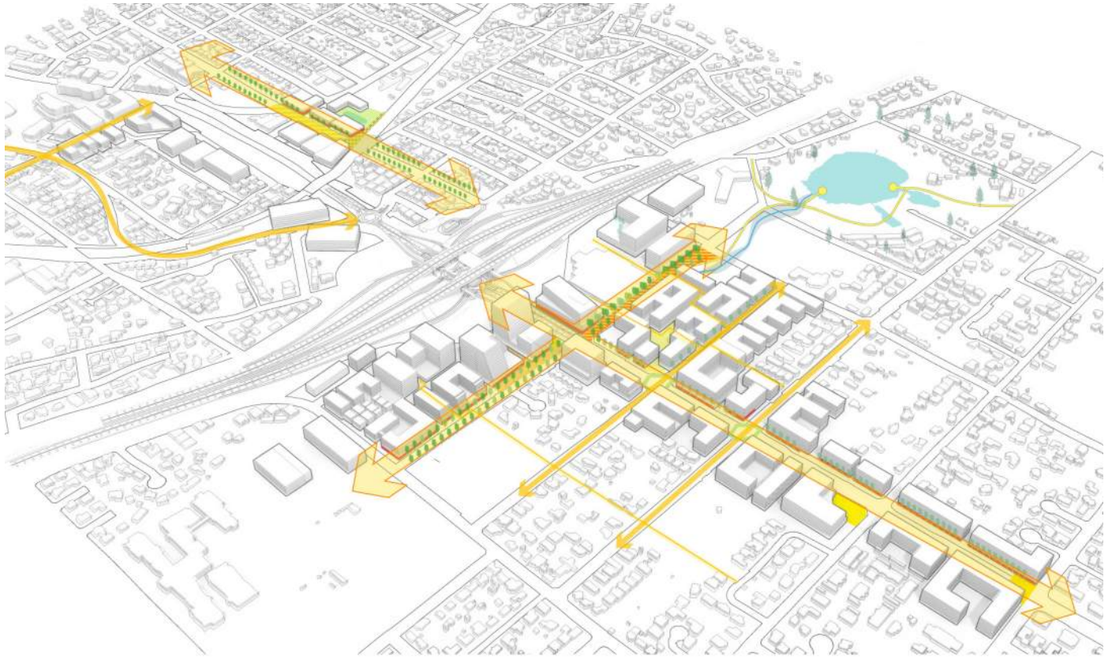
How should we grow?

Focus Near Transit

1. Focus growth in inclusive housing and jobs near transit

There is a mutually supportive relationship between transit ridership and the amount of housing, jobs, and services near transit. The Station Area Plan designates the areas closest to the future BRT Stride station as priority locations for increased development. Not only are these areas prime opportunities to broaden the mix of jobs and housing choices within the station area, this strategy focuses growth in a more sustainable, compact form. In addition, the areas closest to the future station on the east side of I-405 are reserved for taller office development. This serves a dual role of providing the potential for improved commutes and focusing growth in the City where residents and employees have the best access to high-capacity transit and using larger office buildings as a buffer to protect residences from the noise and air pollution that come from high volume roadways like I-405.

A Strong Public Realm Spine



A Network of Mobility Options

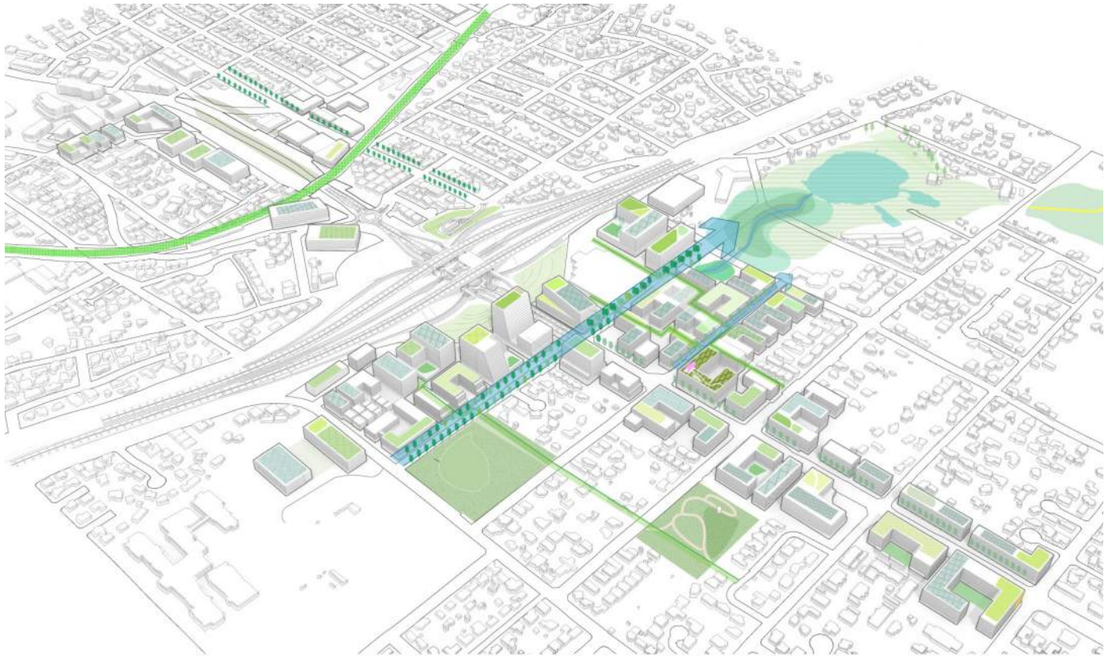
2. Establish a strong public realm network and transit-oriented community that puts people first

The vision for the station area includes a robust, vibrant public realm with a mix of active ground floor uses, generous sidewalks, and improved tree canopy. The urban design framework identifies key streets where a combination of public and private investments will create focal points and destinations for the district, the city, and the region. These include enhancing NE 85th Street to a more urban street that becomes a place for people to engage, supporting retail-focused streets like 120th Ave NE near Forbes Lake, and neighborhood hubs like the 7th Ave corridor in Norkirk. Each of these focal points brings together recommendations around mobility, public realm, land use, sustainability, and building massing.

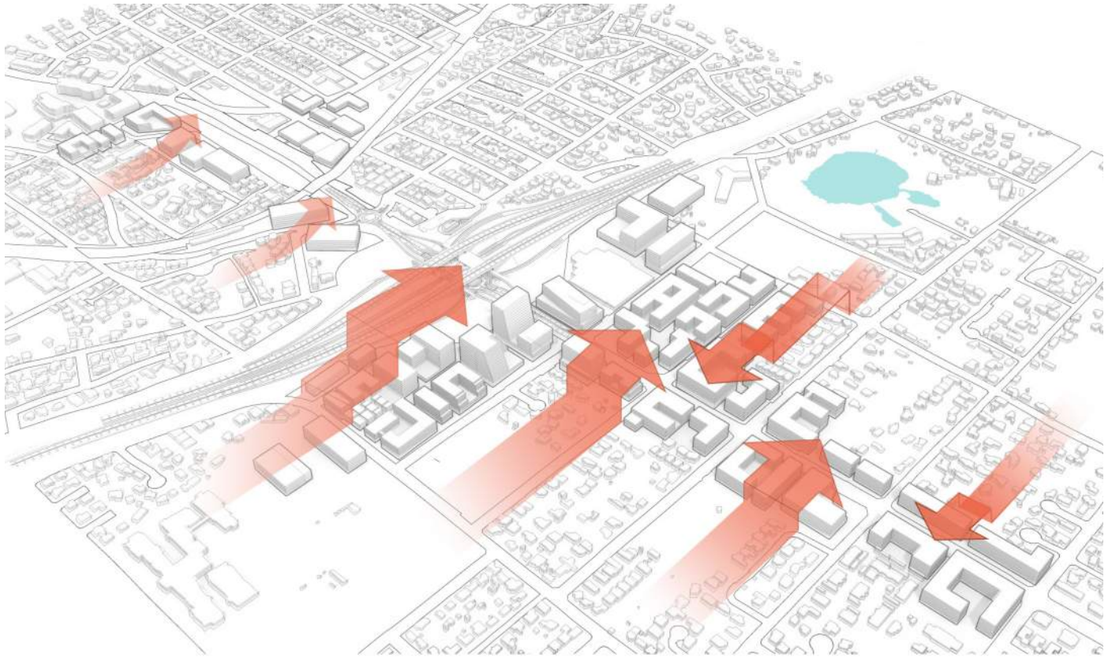
3. Connect neighborhoods together with a comprehensive, multi-modal transportation network

As a station area plan, it's particularly important to create a network of mobility options that connect transit users between the station and key services and destinations. Green mid-block connections help break down large auto-oriented blocks into walkable distances. New and enhanced sidewalks and bikeways provide safe and comfortable walking and biking connections throughout the district. Finally, increased transit service, including the Stride BRT future King County Metro's K Line BRT, flexible parking policies, and specific roadway capacity improvements provide a multi-faceted approach to mitigate congestion and accommodate travel needs on roadways and parking demand. This holistic approach to mobility is integrated into all aspects of the urban design framework.

Leverage Existing Natural Systems and Resources



Transitions in Scale to Adjacent Neighborhoods



4. Leverage existing natural systems and resources, enhance ecosystem performance, and increase resilience.
Like all of Kirkland, the station area is a rich natural environment with important ecological assets and opportunities to improve the sustainability and resilience of the district. Updated policies encourage stormwater management through on-site green infrastructure like bioswales in streetscapes and within larger developments. Street types in the Form-Based Code will lead to increased tree canopy in the public realm, and ecological assets like Forbes Lake become the focus of a new boardwalk network and "trailhead" that's integrated into the streetscape at 120th Ave NE and NE 90th St.

5. Ensure appropriate development scale with transitions to adjacent neighborhoods and design regulations.
While planning for growth in the station area, supporting transitions in scale to adjacent neighborhoods is a key focus of the urban design framework. The Form-Based Code regulates elements of massing and form to step down from larger commercial office blocks to mid-rise neighborhood mixed use development, and eventually to smaller "missing middle" infill. Special rules for transitions, landscaping requirements, and other policies further specify how new development should respond to the existing context. Additional design guidelines and the City's Design Review process will ensure that building massing and details reflect a pedestrian-oriented district.

The Norkirk Maker District vision builds on the area's industrial character with a focus on local "maker" businesses organized along 7th Avenue and a new plaza that meets the Cross Kirkland Corridor trail.

NE 87th Street and 7th Avenue Intersection Future Vision, Looking West

SUSTAINABLE ENERGY

MAKER SPACES

TREE CANOPY

SAFE DOWNTOWN CONNECTIONS

ACTIVE PLAZA EDGES

BIKE TRAIL AMENITIES

NEIGHBORHOOD GATHERING PLACES

INTEGRATED CROSS KIRKLAND CORRIDOR

West Character Sub Areas

The Urban Design framework is a cohesive set of design strategies used throughout the Station Area. Within the larger urban design framework, character subareas specify the unique opportunities and desired elements for each portion of the study area that build on existing assets and characteristics of the community values. These subareas can inform public investments, design guidelines for future development, and placemaking.

West of 114th Ave NE, NE 85th Street is built on an elevated structure, and the topography of the area creates two distinct districts: the Maker District in the Norkirk and Highlands neighborhoods north of 85th and the Downtown Gateway District in the Everest and Moss Bay neighborhoods south of 85th . Here, the focus is supporting pedestrian-oriented districts and enhancing Cross Kirkland Corridor as the major north south connection.

Maker District

Pedestrian-oriented district building on Norkirk's character and excellent Cross Kirkland Corridor trail connections. 7th is a lively connection between the BRT drop off and downtown. The traditional mixed industrial/commercial character of the area is recognized while encouraging more urban uses supporting "maker" activities, locally-owned small businesses, active lifestyle and recreation-related private and public uses.

Downtown Gateway District

Gateway district to Downtown Kirkland via 6th Street that emphasizes mid-rise residential, and office uses along 6th and important bicycle and pedestrian connections between the future Stride station and Rose Hill commercial area and Downtown Kirkland. These connections include a new bicycle and pedestrian route along NE 85th Street as well as improved bicycle and pedestrian facilities along existing Kirkland Way.

East Character Sub Areas

East of I-405, NE 85th Street is an important connector and gateway to Kirkland from Redmond. The Plan envisions NE 85th Street as a place to be, rather than travel through, that encourages people to gather and spend time in a lively public realm. It is supported by a robust mobility network that bridges existing barriers and provides safe crossings. The Forbes Lake District and Green Innovation District envision a strong public realm connection along 120th Ave NE, between North and South Rose Hill neighborhoods; and the Rose Hill Gateway District similarly envisions a cohesive public realm and safe crossings along NE 85th Street.

Forbes Lake District

A walkable mixed use district with opportunities for mid-rise residential uses and higher intensity office uses, organized around a green main street corridor with retail and active uses combined with small open spaces on 120th that connects to Forbes Lake. Biophilic design and visible water, energy, and biodiversity strategies tell the story of this place.

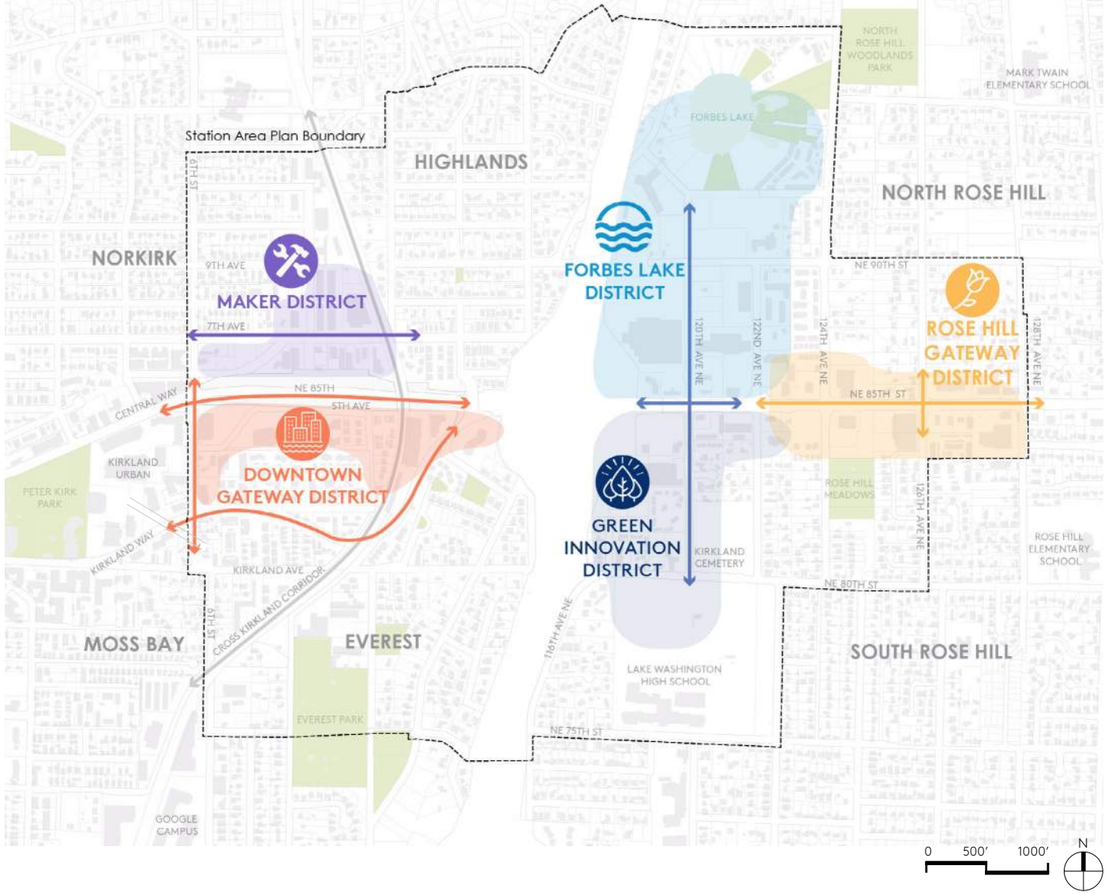
Green Innovation District

This vibrant, mixed use district is a model of innovation and place for community, students, and the workforce to connect. It transitions from high intensity office uses near the BRT Station, to mid-rise shops and office uses, to townhouses, small apartment buildings, and civic uses. Active transportation choices, connections to green space, and walkable 120th Ave NE offer a healthy lifestyle. Existing cemetery is an opportunity for green space that provides opportunities for walking and more passive recreation.

Rose Hill Gateway District

Corridor-based gateway with a mix of active ground floors and mid-rise residential along NE 85th that focuses on creating a strong sense of arrival from Redmond with streetscape design, public art, and urban design features.

Character Sub Areas



Character Subarea Precedent Imagery

Maker District

Downtown Gateway District

Forbes Lake District

Green Innovation District

Rose Hill Gateway District

6.0

Land Use and Zoning —

Land Use, Zoning Concepts and Goals

The future land use concept for the station area focuses on two main ideas: establishing mixed use areas of various intensities in currently commercial or industrial zones and introducing lower scale missing middle housing types in those existing residential areas which are closest to the station. This land use concept is the basis for the Form-Based Code regulating districts. The Station Area will facilitate existing City allowances for Missing Middle Housing typologies.

All inclusive neighborhoods with nodes of commercial gathering places and essential services in walking distance should be facilitated to create 15 minute neighborhoods. While existing businesses and households should be retained and the City could provide incentives for development that help to retain these key spaces.

The Form-Based Code

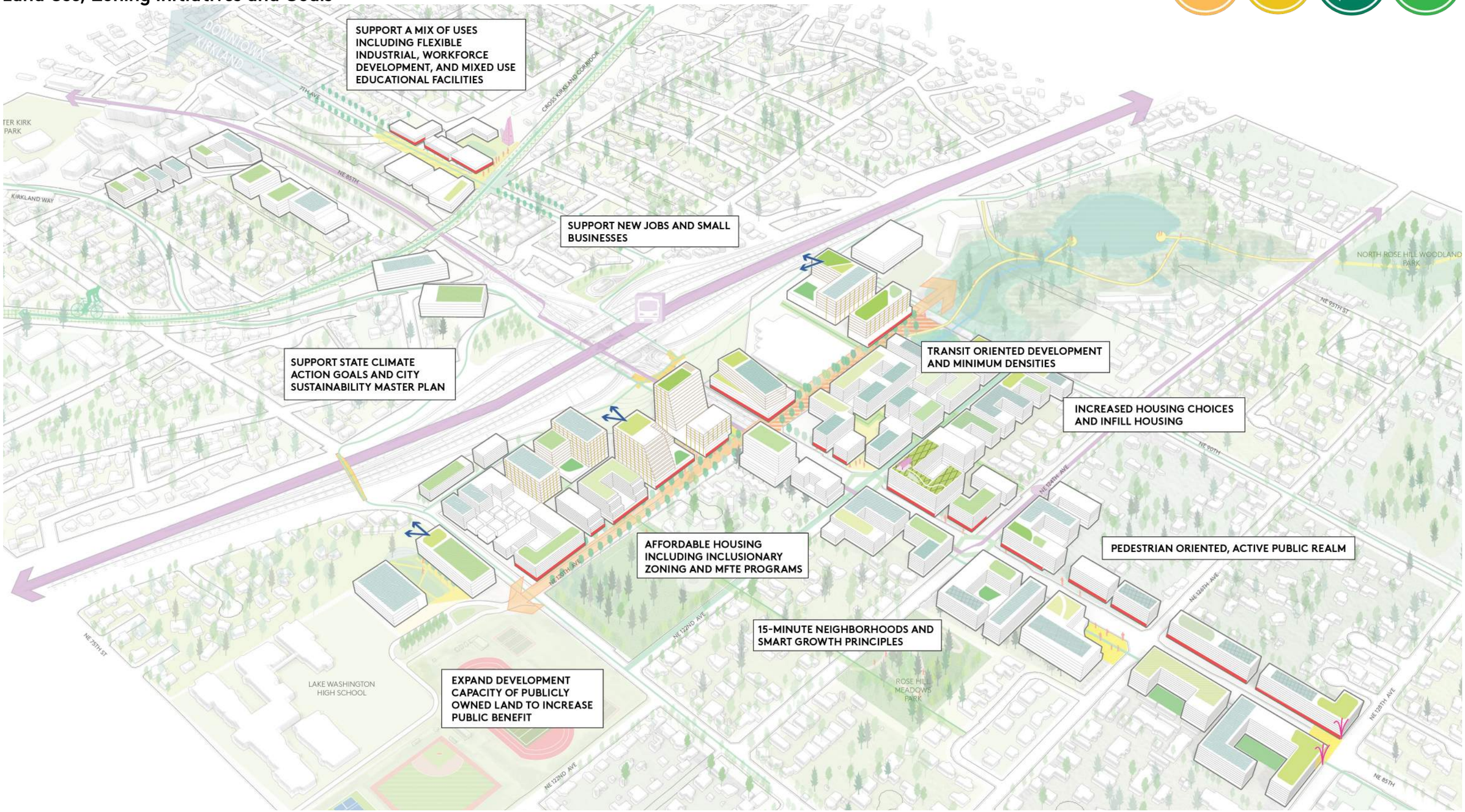
This land use concept is the basis for the Form-Based Code regulating districts. Design standards implemented through the Form-Based Code will ensure compatible development and transitions. The Form-Based Code will also help to encourage building designs that break up the massing to avoid monolithic forms, particularly for tower style developments. Limits on the footprint of tower-style development will regulate relationship of building massing to site open space. Design of exterior building illumination will reduce light pollution and spillover into adjacent, lower density neighborhoods outside the station area, including the use of shielding lighting, ground level fixtures, or other screening techniques.

All inclusive neighborhoods with nodes of commercial gathering places and essential services in walking distance should be facilitated to create 15 minute neighborhoods. Existing businesses and households should be retained and the City could provide incentives for development that help to retain these key spaces.

Green Innovation and Building Standards

Within the Form-Based Code districtwide green building standards, incentives and credentialing programs will be implemented. Retrofits to existing buildings to reduce energy use will also be encouraged. These goals will help to reduce energy consumption by retrofitting existing buildings with any renovations or upgrades.

Land Use, Zoning Initiatives and Goals



Growth Framework

Proposed Growth

The overall Station Area Plan growth framework developed in 2020 as a basis for the Draft Supplemental EIS alternatives is aimed at supporting an inclusive, transit-oriented district that supports existing residents and businesses while offering more choices for living, working, learning, and visiting the area. As a transit-oriented community, the station area will accommodate a significant share of the City's growth, in support of city and regional plans, and add more jobs to improve the balance of land uses in the area and the City as a whole. The intent of this strategy is to:

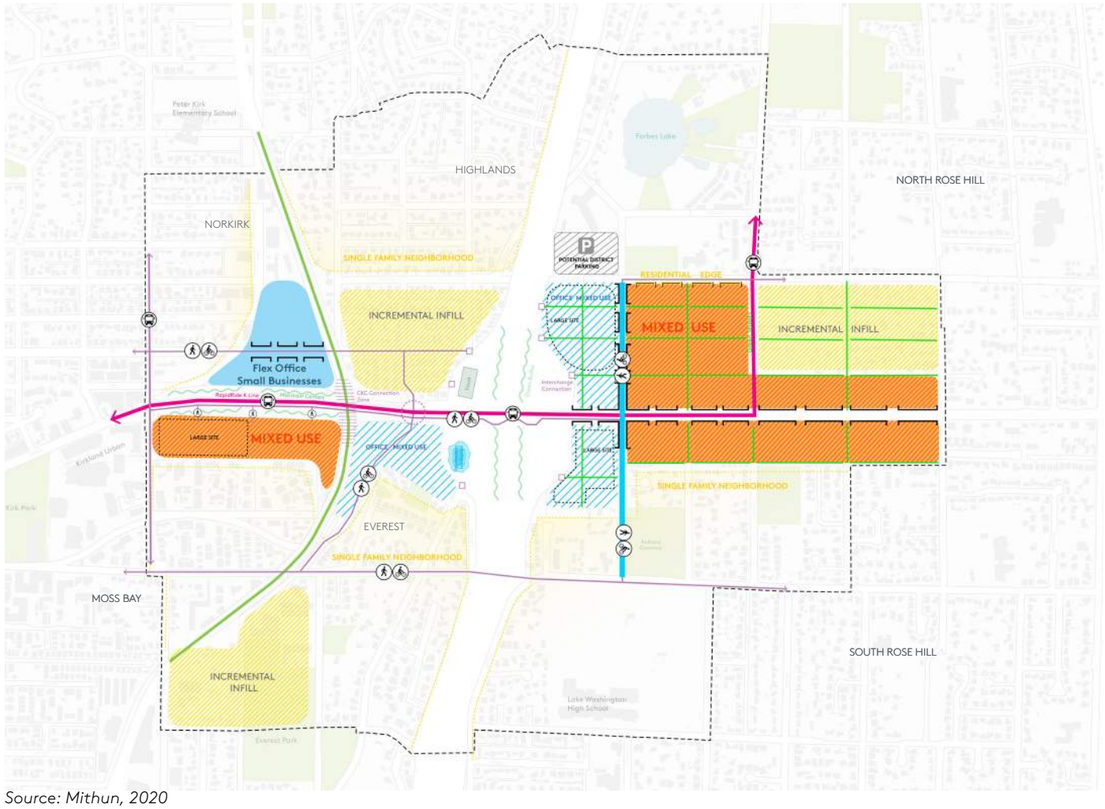
- Optimize for workforce and affordable housing.
- Attract new jobs to foster economic activity and meet citywide targets.
- Include commercial-focused development across different areas of the Study Area.
- Foster an environmentally sound land use pattern that helps achieve the City's sustainability goals.

The Growth framework responds to the public comment heard during the DSEIS comment period and the May 26, 2021 Council Listening Session.

The final Growth Framework only proposes increased allowable heights in areas that provide clear benefits to the community and take advantage of regional transit connections. To that end, several areas where height increases had been proposed as part of DSEIS Alternative 2 and 3 have been removed from consideration in the final growth framework. These include areas that are unlikely to redevelop due to market forces, are limited by development feasibility, or are constrained by other factors. The final growth framework is closest to DSEIS Alternative 2, with lower employment to create a better match between jobs and housing in the future.

In alignment with the Station Area Initial Concepts Growth Framework, a few areas of greater capacity for change as compared to existing conditions are included. These are focused around the BRT node and the Cross-Kirkland Corridor, including two areas in Rose Hill nearest to the future BRT station: the mid-rise office designation in the northeast quadrant and the high intensity office designation in the southeast quadrant; and the flex industrial – residential capacity in the Norkirk's Light Industrial Technology (LIT) area in the northwest quadrant. Because of this greater capacity for change, these areas received greater study in some studies regarding fiscal impacts and potential for community benefits. It is important to note that development will likely occur incrementally, and in all cases, the projected growth capacity reflects a hypothetical assumption of the total allowed development in the Preferred Plan Direction and is not meant to presuppose decision making by private landowners or the actions of the market.

Study Area (June 2020): initial growth concept that served as the basis for the draft SEIS alternatives



Source: Mithun, 2020

Preferred Plan Direction (2044)	
Households	8,152
Employment	22,751

Totals refer to 2044

Growth Expectations (2044) GSF	
GSF Residential	4,990,000
GSF Office	5,260,000
GSF Retail / Restaurant	900,000
GSF Flex / Industrial	150,000

Totals refer to 2044

NE 85th Study Area Future Vision

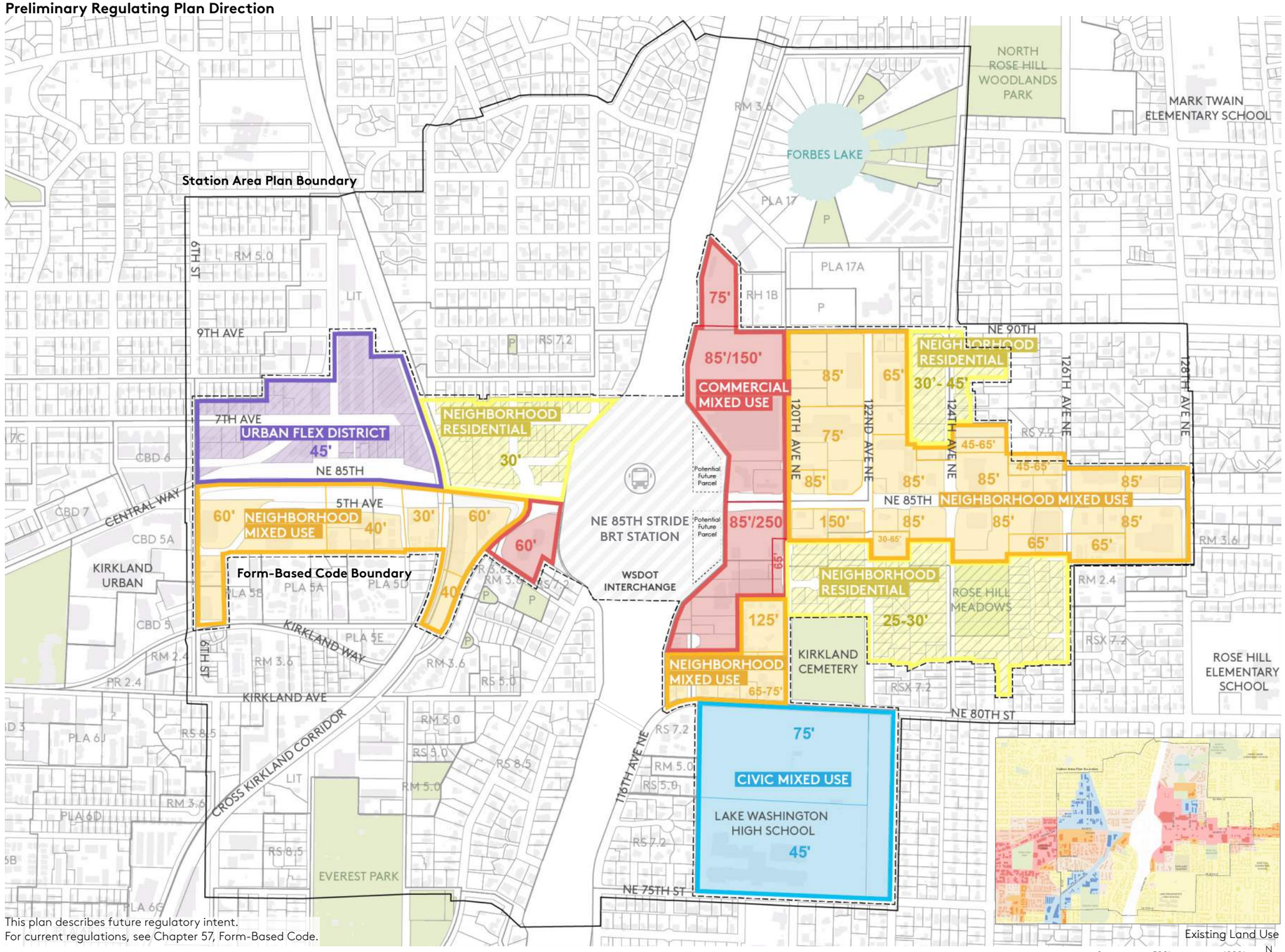
Future Land Use Map

Regulating Districts are intended to translate the vision and goals documented in the NE 85th Station Area Plan into standards that define allowed uses, lot parameters, building massing, and height controls. Regulating districts consist of two elements: Regulating District Standards that specify development standards for each district, and a Regulating Plan that maps these districts to specific parcels.

The Regulating Plan maps the applicable areas of the Form-Based Code area with the appropriate regulating district designation. Each designation includes two parts: a district designation followed by the height subdistrict for that zone. Heights are stated in terms of maximum base and bonus heights. For instance, NMU 85/150 would reflect a base maximum height allowance of 85' and a bonus maximum height of 150'. The Incentive Zoning section of the Form-Based Code will include details on utilizing the bonus allowances.

Mixed use areas are represented in the Form-Based Code regulating plan as Commercial Mixed Use, Neighborhood Mixed Use, Civic Mixed Use, Neighborhood Residential, and Urban Flex districts. The Commercial Mixed Use district does not allow residential and focuses on institutional and commercial land uses, with active ground floor uses on key streets. Neighborhood Mixed Use and Civic Mixed Use districts allow for a combination of residential, institutional, and commercial uses, with different height subdistricts established. The Urban Flex district allows for light industrial, some residential, and commercial uses consistent with a neighborhood scale, pedestrian oriented environment. Residential areas intended for lower intensity infill are represented by the Neighborhood Residential regulating district

Preliminary Regulating Plan Direction



- Commercial Mixed Use
- Urban Flex
- Civic Mixed Use
- Neighborhood Mixed Use
- Low Density Residential
- Park/Open Space

RSX 7.2 Existing Zoning

Form-Based Code Boundary

Station Area Plan Boundary

This plan describes future regulatory intent.
For current regulations, see Chapter 57, Form-Based Code.

The Form-Based Code

In December 2021, City Council voted to confirm the Preferred Plan Direction. Implementation of the vision established in the Preferred Plan Direction and forthcoming NE 85th Street Station Subarea Comprehensive Plan Chapter requires a comprehensive set of regulations and supporting design guidelines. This Form-Based Code is intended to facilitate development in the Station Area with clear and predictable standards that support transit-supportive development intensities in a high quality, pedestrian-oriented built environment.

Form-Based Codes Overview

Form-Based Codes are an approach to land use regulation that focuses on physical form as a primary element of zoning. Conventional zoning evolved with a focus on the separation of land uses, and over time has adapted to take on more complex topics like building height, massing, and other elements of physical form. This can create zoning codes that have unpredictable outcomes, do not achieve the character desired by the community, and which become complex to administer.

By contrast, form-based codes are organized around the desired physical character of future development with graphic, clear illustrations. This focus on physical form can result in future development that better matches the desired character of an area. One key aspect of Form-Based Codes is that they can better link private development to the character of adjacent development and public spaces, creating a more seamless, inviting public realm.

Form-Based Code Elements

Form-Based Code Applied

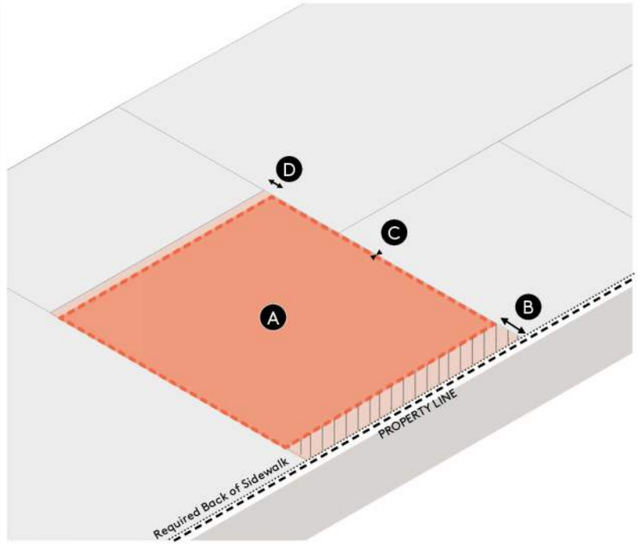
NE 85th Street Form-Based Code

The Form-Based Code for NE 85th St Station Area Plan applies to a subset of the larger study area (see regulating plan). The NE 85th St Form-Based Code is key to realizing several aspects of the vision and goals of the overall plan. For instance, frontage standards include ground level parking setbacks that require structured parking to be located behind ground level uses that activate the public realm. Regulating districts like the urban flex district include standards to encourage smaller scale commercial spaces that can support existing local businesses and "maker" uses. This code is organized into four sections:

Regulating Districts
Regulating districts define primary features of overall building form, including lot parameters, massing, height, and permitted uses. A regulating plan defines the regulating district designation and allowed height for each parcel. These regulating districts are established on the Kirkland Zoning Map and in the code. An example of the Commercial Mixed Use district is shown to the right.

This excerpt is for illustration purposes only. For current regulations, see Kirkland Zoning Code Chapter 57.

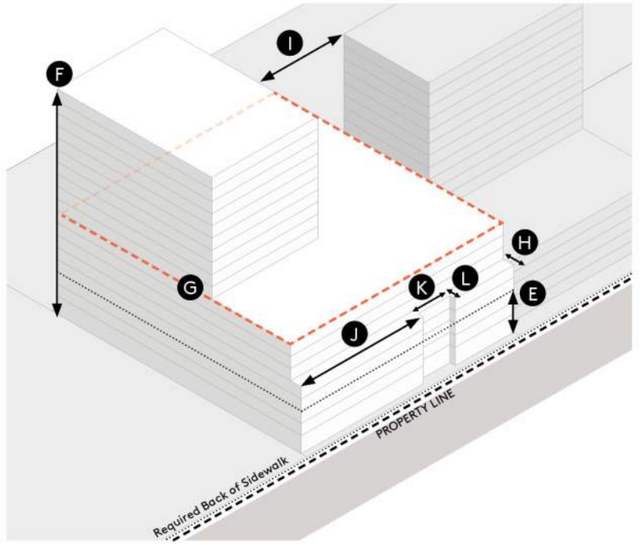
Regulating District Example: Commercial Mixed Use



LOT COVERAGE AND SETBACKS

	Permitted Uses	
	General Permitted Uses	Commercial, Institutional
	Lot Coverage	
A	Max Lot Coverage *	90%
	Required Yards	
B	Front	Refer to Frontage Types
C	Side	0′ Min
D	Rear	5' Min

* Lot coverage as shown does not represent intended building placement or setbacks.



MASSING AND DEVELOPMENT DENSITY

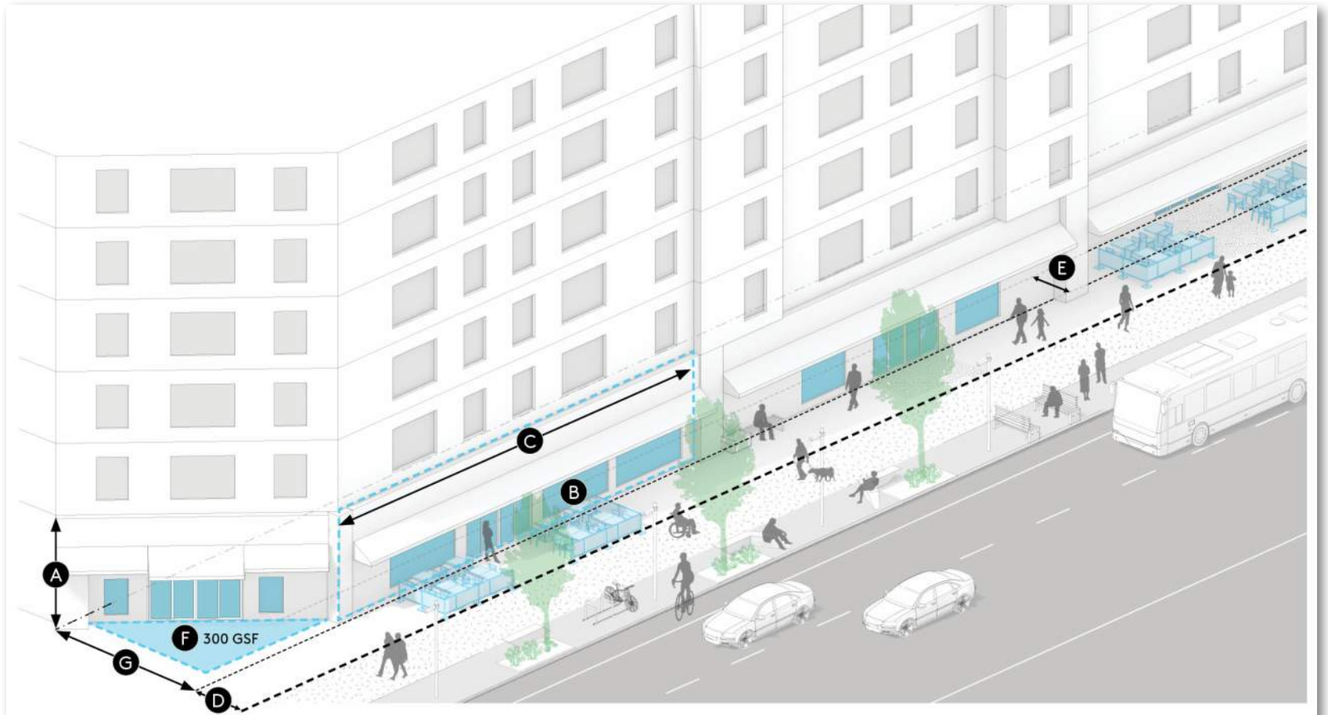
	Height and Floor Area	
E	Base Maximum Allowed Height	Refer to Regulating Plan
F	Bonus Maximum Allowed Height	Refer to Regulating Plan
G	Maximum Floor Plate (per building)	Between 45′-75′: 35,000 GSF Between 75′-125′: 25,000 GSF Above 125′: 20,000 GSF
	Setbacks and Tower Separation	
H	Upper Story Street Setbacks	At 75′: 15′ setback At 125′: 30′ setback
I	Tower Separation	60′
J	Maximum Facade Width	160′
K	Minimum Facade Break Width	15′
L	Minimum Facade Break Depth	5′

Frontage Types

Establish design regulations for private property frontages, including the required front setback and building base. Eligible frontage types are determined based on the adjacent street type for a subject property.

This excerpt is for illustration purposes only. For current regulations, see Kirkland Zoning Code Chapter 57.

Frontage Type Example: Retail and Active Uses



GROUND FLOOR DESIGN AND ENTRY

Ground Floor Design

A	Minimum Street Level Story Height	15'
B	Facade Transparency	75%
C	Max Street Level Facade Width	65'

Entrances

Location	Required on primary street-facing frontage
Entry Transparency	80%

PUBLIC REALM

Public Realm

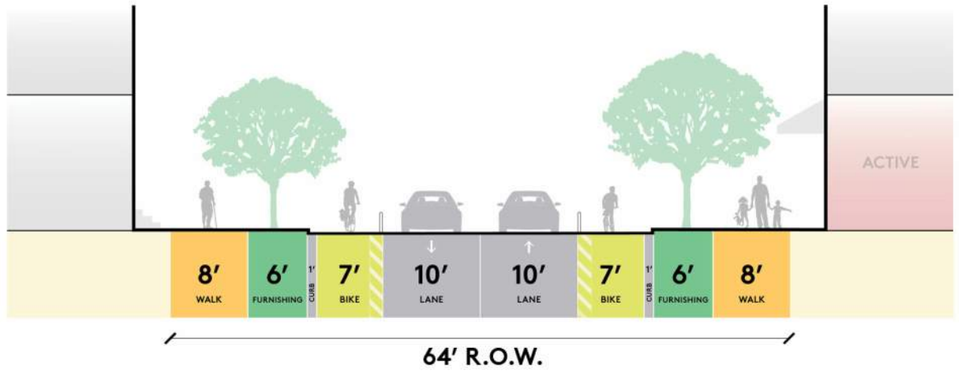
D	Front Setbacks (Min, Max)	0',15'
E	Sidewalk Cafes/ Amenity Zone	Min depth 7', up to 10' additional setback allowed
F	Corner Design	300 GSF required within property line at corners where two intersecting streets are a combination of major thoroughfare, main street, or neighborhood mixed use
G	Ground Floor Parking Setback	25′

Street Types

Set the design intent for specific segments of public ROW, including functional classification, prioritized transportation modes, sidewalk and bikeway facility dimensions, and expected streetscape amenities like trees, planting, hardscape, and street furnishings.

This excerpt is for illustration purposes only. For current regulations, see Kirkland Zoning Code Chapter 57.

Street Types Example: Neighborhood Mixed Use Street



DESCRIPTION

Neighborhood mixed use streets have low to mid-intensity commercial and residential, occasional active ground floors. With generally lower vehicular volume than major thoroughfares, these streets require careful balancing among modes and should include wider sidewalks, buffered bike facilities, transit routes, and narrower travel lanes. On-street parking considered on a contextual basis and is subject to approval by Public Works Official.

PERMITTED FRONTAGE TYPES

URBAN STREET EDGE	RETAIL & ACTIVE USES	RESIDENTIAL STOOP/PORCH	PLAZA/ PUBLIC SPACE	PRIVATE YARD
Permitted	Permitted	Permitted	Permitted	Permitted

FUNCTIONAL CLASSES	Minor Arterial, Collector, Neighborhood Access
ADJACENT LAND USES	Low to mid-intensity commercial, residential, and occasional active ground-level uses, civic and urban flex uses

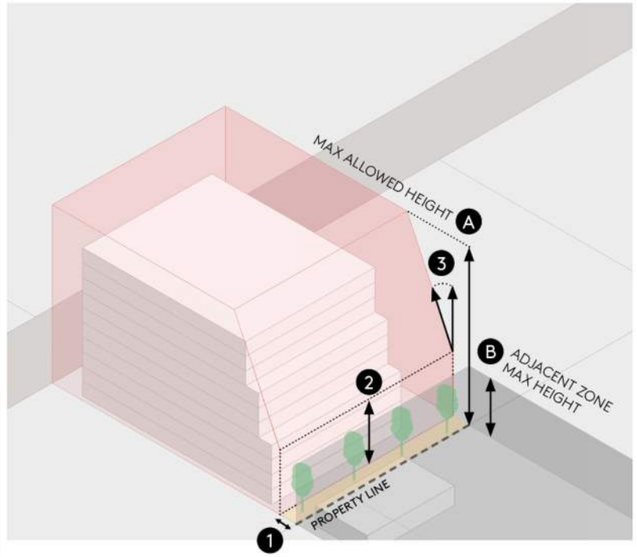
Districtwide Standards

Shown in the transition example, districtwide standards apply across the subarea, and include overall transitions, parking, plazas and public spaces, landscaping and open space, and sustainability and green innovation.

To use the code, an applicant first identifies the applicable regulating district for their property. Based on the street type designation for the parcel frontage, the applicant can choose from a set of eligible frontage types for that street type, as well as an understanding of the requirements for any improvements to the public right of way.

This excerpt is for illustration purposes only. For current regulations, see Kirkland Zoning Code Chapter 57.

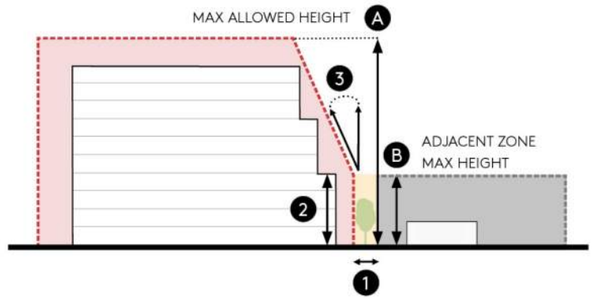
Transitions Example



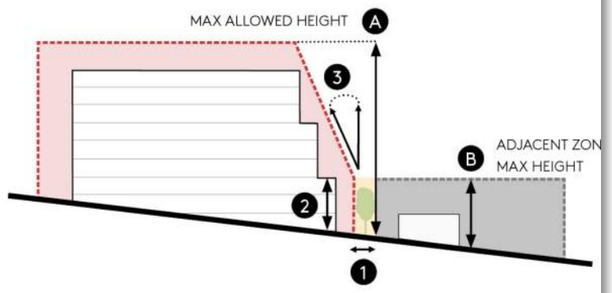
TRANSITIONS

Applicability	A	Transitions are required if the allowed maximum height for the subject parcel is greater than 30' above the maximum allowed height for any adjacent parcel.
	B	
Requirement	1	Create a vertical plane 15' away from and parallel to the common lot line.
	2	Establish a maximum height of the vertical plane that is equal to the midpoint grade elevation plus the maximum allowed height for the zone of the adjoining property.
	3	From the top of this vertical plane, extend a sky exposure plane at an angle of 25 degrees to the maximum allowed height of the subject property zone.

EXAMPLE ONE



EXAMPLE TWO



Green Innovation

Within the Form-Based Code Districtwide Standards, a Green Innovation component has been included to ensure that new development is consistent with the vision of the NE 85th Street Station Area Plan Sustainability Framework as well as aligned with the Sustainability Master Plan. The document outlines several requirements in detail with the overarching subjects of:

- High Performance Buildings
- Energy and Decarbonization
- Ecosystems and Green Infrastructure

Green Factor

The Green Factor is one of the primary tools that will be used to achieve the Ecosystems and Green Infrastructure goals at the project scale through building -and site- integrated green infrastructure. The Green Factor sets criteria for landscape and site-based sustainability measures. The landscape elements and benefits that are included in the Green Factor code will contribute to larger district sustainability goals focused on the natural environment, ecosystems, and stormwater.

Green Factor Criteria

1 LANDSCAPE ELEMENTS

- A Bioretention facilities and/or soil cells
- B Structural soil systems
- C Landscape areas with soil depth less than 24"
- D Landscape areas with soil depth of 24" or more
- E Preservation of existing trees
- F Preservation of Landmark trees bonus
- G Preservation of exiting evergreen trees bonus
- H Groundcovers or other low plants
- I Medium shrubs or perennials
- J Large shrubs or perennials
- K Small trees with 500 ft^3 soil volume
- L Medium trees with 1000 ft^3 soil volume
- M Large Trees with 1500 ft^3 soil volume

2 GREEN ROOFS

- A Area planted with at least 2" but less than 4" of soil
- B Area planted with at least 4" but less than 8" of soil
- C Area planted with at least 8" but less than 30" of soil
- D Area planted with trees and least 30" of soil

4 LANDSCAPE BENEFITS

- A Landscaped areas in food cultivation
- B Landscape areas with native or drought tolerant plants
- C Landscape areas at sidewalk grade where the majority of the area is covered with vegetation that is native or drought tolerant, and/or provides habitat for urban wildife and pollinators
- D Rainwater harvesting
- E Planting that provides food, forage and refuge for a diversity of species and/or inclusion of habitat elements such as woody debris, gravel/cobble, nesting materials, etc.

5 PERMEABLE PAVING

- A Permeable paving over 6"-24" soil or gravel
- B Permeable paving over at least 24" of soil or gravel

3 GREEN WALLS

- A Facade or wall surface onbstructed with vines
- B Facade or wall surface planted with a green wall system

Green Factor Criteria

7.0

Parks, Open Space and Environment —

Parks, Open Space and Environment Concepts and Goals

Open space within the Station Area will provide multiple benefits for employees, visitors, and residents living in and around the Station Area and these spaces will be critical in supporting growth while providing places for people to gather and support mental, physical, and community well-being. Open spaces that are welcoming to people of a wide range of ages and stages of life, that support social connections, art and culture, and everyday interactions should be prioritized.

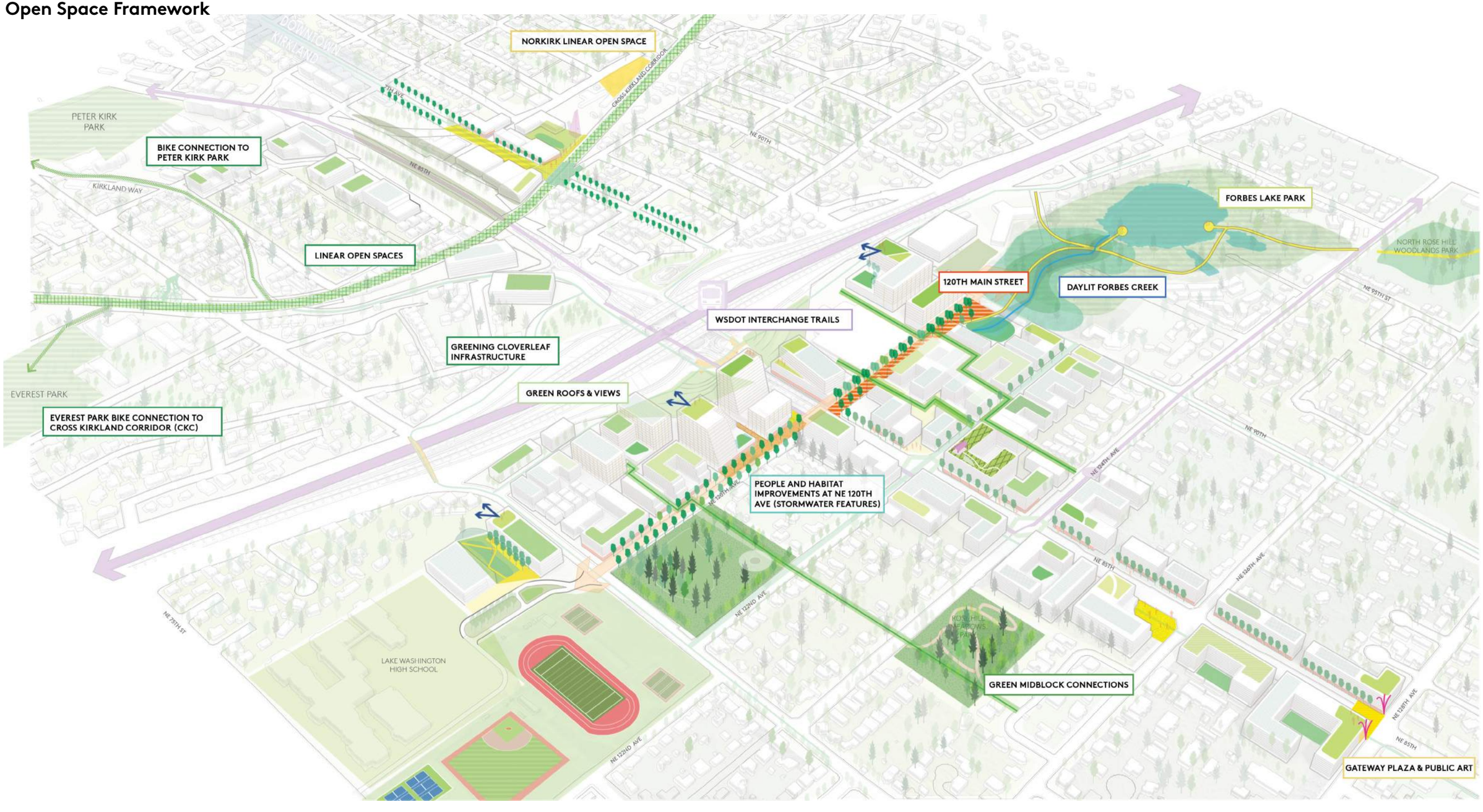
Open Space strategies within the larger Station Area align with the goals of the Parks, Recreation and Open Space Plan and the Sustainability Master Plan, and should respond to the character and scale defined for each of the Character Subareas and respond specifically to the environmental conditions of their watersheds (Moss Bay and Forbes Creek). While there are existing assets within the station area including Forbes Lake and areas of tree canopy and habitat, there are also gaps that exist due to urban development patterns and barriers. Goals include improving and connecting tree canopy and habitat areas, improving stream health by daylighting or making other improvements, and generally minimizing impervious surfaces. Green infrastructure techniques that incorporate trees, planting, and natural materials as part of the drainage system, instead of conventional "gray" stormwater facilities, provide additional environmental and open space benefits and support resilience through air and water quality, shade and cooling, and habitat. When considering new open space design and existing open space enhancement opportunities, multi-benefit strategies that serve functions of active / passive recreation, flexible use open space, and environmental functions like stormwater management, carbon sequestration, air quality, and urban heat island mitigation, should be prioritized to maximize value.

Within the Station Area, open space opportunities include: the creation of urban linear parks, pocket parks, and plazas, rooftops and mid-block connections, passive and active recreational parks, arts, cultural, and gathering spaces, and enhancements to existing parks and open space. Within these spaces, sustainability goals are promoted by prioritizing the use of large canopy trees, a diverse plant pallet of species that are native, drought tolerant and provide habitat such as food, forage, and refuge, and the integration of stormwater management. Management of Kirkland's urban forest resource for optimal health, climate resiliency and social equity will be important in creating new open spaces.

New development within the Station area should be encouraged to provide publicly accessible parks and sustainability components at ground level or at upper-level portions of the site, while considering opportunities to replace tree canopy to support ecological goals by adding new trees and habitat with plantings wherever gaps exist. Enhancing publicly owned land to support open space objectives with improvements to provide open space and recreational amenities and explore potential partnerships for shared use agreements to support recreational uses. These actions will help to contribute to the overarching goal to provide all areas within the Station Area a park or open space within a 15-minute walk. Coordination with the PROS Plan on how park LOS is defined in more urban areas of the City that moves toward equitable park access within walking distance and away from a per acre approach should be considered to more broadly leverage green infrastructure to create more open space, educational and environmental opportunities.

Integrate parks and open spaces throughout the area and ensure all residents have access to open space within a 15-minute walk.

Open Space Framework



Open Space Typologies: Characteristics

Open space opportunities will arise through public projects and with private development throughout the Station Area. Several varying typologies have been identified in the table below which can supplement and enhance private development while improving the open space network already in existence. As more development occurs and jobs and housing increase, so will the amount of open space. City of Kirkland staff will work with the development community as projects arise to fulfill the appropriate scale and type of open space to enhance the overall park and public realm system.

The following table describes twelve (12) open space typologies with siting criteria, approximate sizing requirements, programming potential and some example project opportunities.

Support park opportunities and amenities for community.

Open Space Typology	Siting Criteria	Sizing Range	Example Typical Program / Features	Example Opportunities within Study Area
1. Linear Open Space Along Trails	To be located in dense areas linking major urban nodes.	Minimum size of 15,000 SF	• Landscaping • Seating • Public Art • Performance spaces	Developer improvements along Cross Kirkland Corridor (CKC) or Trail connections to transit stops along NE 85th Street and the BRT station
2. Pocket Parks	Within tightly spaced urban fabric where accommodating larger open space is difficult, or where open space is needed in areas with limited access to park spaces.	Minimum size 10,000 SF	• Trees • Seating • Public Art • Performance spaces	Pocket park within dense commercial district
3. Active Recreation Spaces	Consider in areas where programming is lacking.	Playground minimum of 5,000 SF / Pickleball minimum of 7,500 SF	• Playground • Exercise Equipment • Pickleball / Tennis / Courts • Dog Parks and Dog Runs	Pickleball Courts; playground or exercise equipment in pocket parks and/or linear open space
4. Community Gardens (small and rooftop ex.)	Consider rooftops and temporary surface parking lots.	Varies on context	• Planter beds • Pollinator and bee habitat • Gathering tables, supportive infrastructure like sinks and tool sheds	Surface parking lot potential; pocket parks; public plazas; private rooftops; publicly accessible rooftops
5. Rooftops with Public Viewpoints	Programming such as dog runs or playgrounds should be chosen in areas where a large proportion of families with young children live.	Playground minimum of 5,000 SF	• Playground • Cultural and performance spaces • Dog Parks and Dog Runs	Potential for Playground or dog runs on top of residential rooftop within new commercial district zone.
6. Green Mid-block Connections	Sited within a travel corridor to maintain continuity for pedestrians and/ or cyclists. Or may exist adjacent to active frontages.	Varies on context	• Seating • Elements of landscaping • Water components	Opportunities for east/west connections off 120th Main Street
7. Neighborhood Park	Should be sited near residential land use and provide adequate opportunity for a variety of program.	Minimum size of 2 acres	• Seating and Public Art • Elements of landscaping • Community gardens • Cultural and Performance spaces	Enhance existing publicly owned parks and improve access to support open space objectives. Seek opportunities for community access to recreation assets, spaces, and facilities.
8. Community Park	Sited next to residential areas with access to pedestrian and bike paths. Large areas of managed landscape and opportunities for shade, program, refuge and impermeable surface.	Minimum size of 15 acres	• Community center • Elements of landscaping • Connections and walking/cycling paths	Enhance existing publicly owned parks and improve access to support open space objectives. Seek opportunities for community access to recreation assets, spaces, and facilities.
9. Plazas	Plaza will supply physical and visual access from the adjacent right-of-way. Support sense of security to users through well-lit and visible spaces.	Minimum size of 3,000 SF	• Seating • Elements of landscaping • Public Art • Water components	Norkirk Plaza at 7th Avenue and 112th St Ave NE; other examples could be larger-scale redevelopment in Station Area; coordination with corner treatments required in FBC
10. Tree Canopy and Habitat	Locate in areas where abundant natural light and limited infrastructure below grade is present to accommodate large soil volumes and trees. Seek opportunities to expand canopy and habitat, and bridge existing gaps.	-	• Landscaping • Green infrastructure and stormwater features • Nature trails • Wayfinding • Educational opportunities	Opportunities for additional tree canopy and habitat improvements within underutilized spaces, public land, and easements could be included as part of streetscape and multi-benefit projects. There is also an opportunity for a city Tree Nursery that would require a site at about 20,000 SF.
11. Unprogrammed Green Space	Opportunity to provide refuge and passive place to contemplate or simply enjoy nature, which may be sited within medium to lower scale density.	0.25 acres	• Heavy vegetation • Landscaping • Seating	Forbes Lake Park Kirkland Cemetery
12. Green Infrastructure and Stormwater with Open Spcae for People	Areas that can accommodate water storage, conveyance, and quality improvements through natural systems that provide co-benefits	See standards	• Landscaping • Green infrastructure • Green roofs	Forbes Lake Park

Open Space Typology Examples

Linear Open Space Along Trails

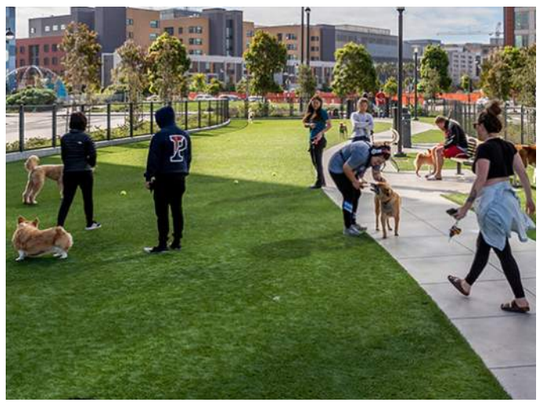
Linear Open Spaces along trails will be a minimum of 15,000 square feet and incorporate a variety of programs. Opportunities within the study area include developer improvements along the Cross Kirkland Corridor (CKC) and trail connections to transit stops along the 85th Street and BRT Station.

Community Gardens

Community gardens are opportunities to provide planter beds for food cultivation and/or habitat for pollinator species and bees. They can be in surface parking lots as temporary programming, or in more permanent conditions such as on private rooftops, within pocket parks, public plazas and on publicly accessible rooftops.

Pocket Parks

Pocket parks are opportunities to incorporate open space in dense, tight urban fabric with a minimum of 10,000 square feet. The commercial mixed use district could see potential for pocket parks given its density.



Active Recreation

The types of active recreation programming is limitless and varied. Some example opportunities for the Station Area include pickleball courts, playgrounds, exercise equipment, and bocce ball courts.

Rooftops with Public Viewpoint Areas

Rooftops have a wide potential to create public amenity space whether it be on private rooftops, or publicly accessible ones. Potential for playgrounds within the new commercial district zone is possible, along with other programming including community gardens or dog parks.

Green Mid-Block Connections

Opportunities for east/west connections off of 120th Main Street are possible for green mid-block connections which can vary in size depending on its context.

Neighborhood Park

New neighborhood parks should be a minimum of 2 acres in size. Existing neighborhood parks in and near the station area include Rose Hills Meadows Park and North Rose Hill Woodlands Park. Better connections to existing community parks will support open space objectives, and an inventory of existing publicly owned parcels within the station area should be completed to seek other opportunities.

Community Park

New community parks should be a minimum of 15 acres. Existing community parks near the station area include Peter Kirk Park and Everest Park. The City currently has an agreement with Lake Washington High School for shared use of their fields and recreation facilities. Enhancements and better connections to existing community parks will support open space objectives, and an inventory of existing publicly owned parcels within the station area should be completed to seek other opportunities.

Plazas

Plazas are a minimum of 3,000 square feet and offer the opportunity for flexible gathering spaces for events, performances, art, or other uses, as well as an important opportunity for wayfinding and identity elements. The future of the area could include a plaza at 7th Avenue and 112th St Avenue NE, or a gateway plaza in the Rose Hill area along NE 85th Street as part of a larger scale redevelopment in Station Area; Coordination with corner treatments required in FBC

Tree Canopy and Habitat

Tree nursery opportunity within the area would provide greater tree canopy and habitat as well as serve a function for the Parks and Community Services Department.

Unprogrammed Green Space

Passive, unprogrammed green space is important to a neighborhood to provide moments of refuge, contemplation, and true connection to nature. Areas of this nature could include public or interpretative art, should be a minimum of 0.25 acres and examples include Forbes Lake Park and the Kirkland Cemetery.

Green Infrastructure and Stormwater With Open Space for People

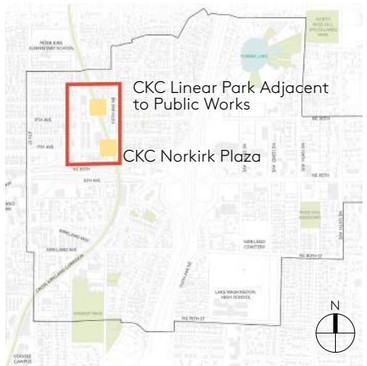
Areas to store and contain extra water can be accomplished throughout the Station Area within a variety of scales. Forbes Lake Park will have the opportunity to accommodate green infrastructure and storm water while providing green space for people to enjoy.

Open Space Project List

Cross Kirkland Corridor Related Improvements at Norkirk Plaza and adjacent to Public Works Maintenance Center

The Cross Kirkland Corridor (CKC) Norkirk Plaza is located at the important intersection of 7th Avenue and 112th Ave NE where bike focused infrastructure is envisioned to connect from the BRT pick up / drop off location to downtown. This concept builds on the CKC Master Plan vision and will support the creation of public open space accessible by transit within the urban neighborhood. It is characterized by high quality landscape materials, pedestrian-oriented amenities like seating, and buildings that engage the open space.

Feriton Spur Park



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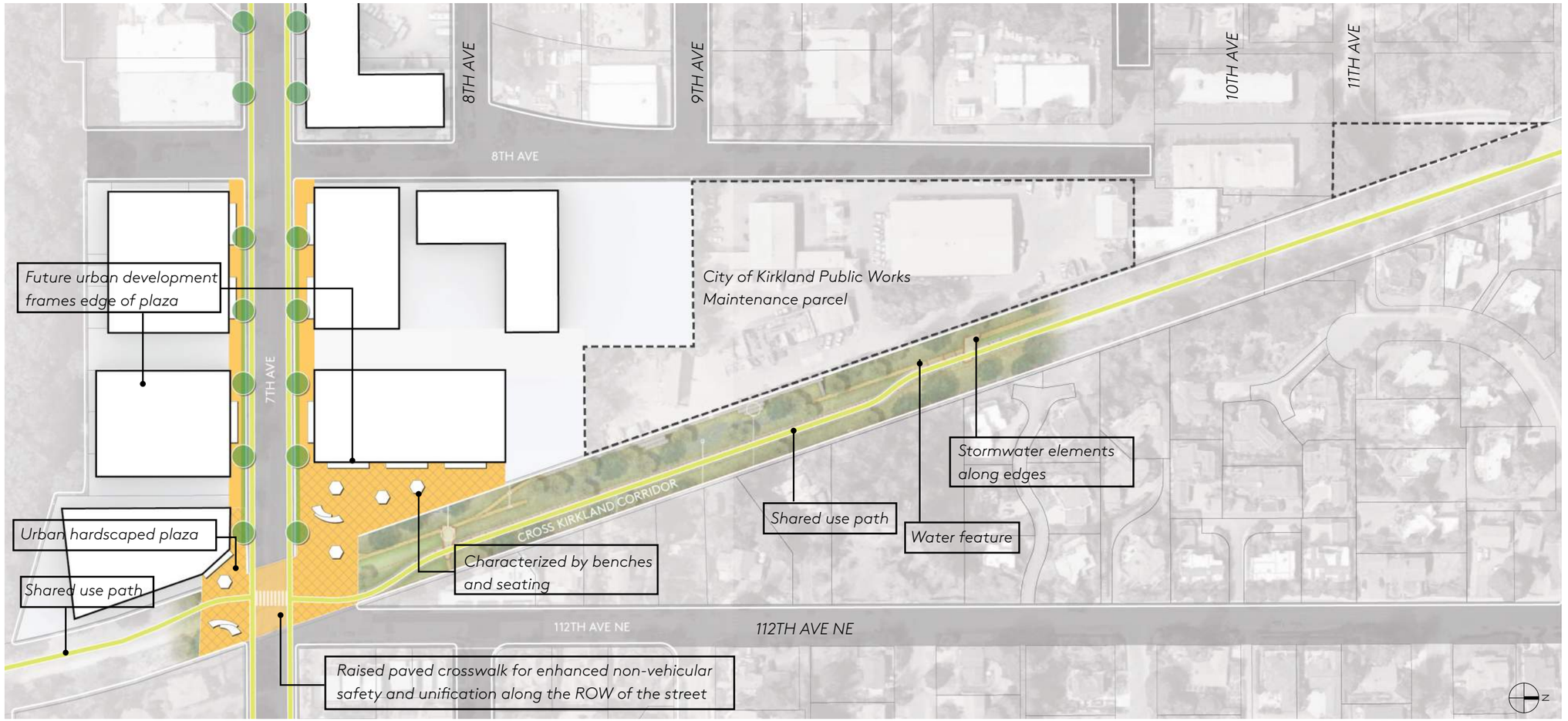


Forbes Lake Park

Preliminary planning to expand public open space and neighborhood connectivity near the City of Kirkland's Forbes Lake Park as part of the Station Area Plan has been explored. Existing protected critical areas, including Forbes Lake and associated wetlands and tributary drainages to Forbes Creek, including some piped conveyances, appear to restrict options for developing recreational facilities, however the attraction of these natural features provide opportunities for passive and active recreational public use and environmental education and interpretive exhibits.

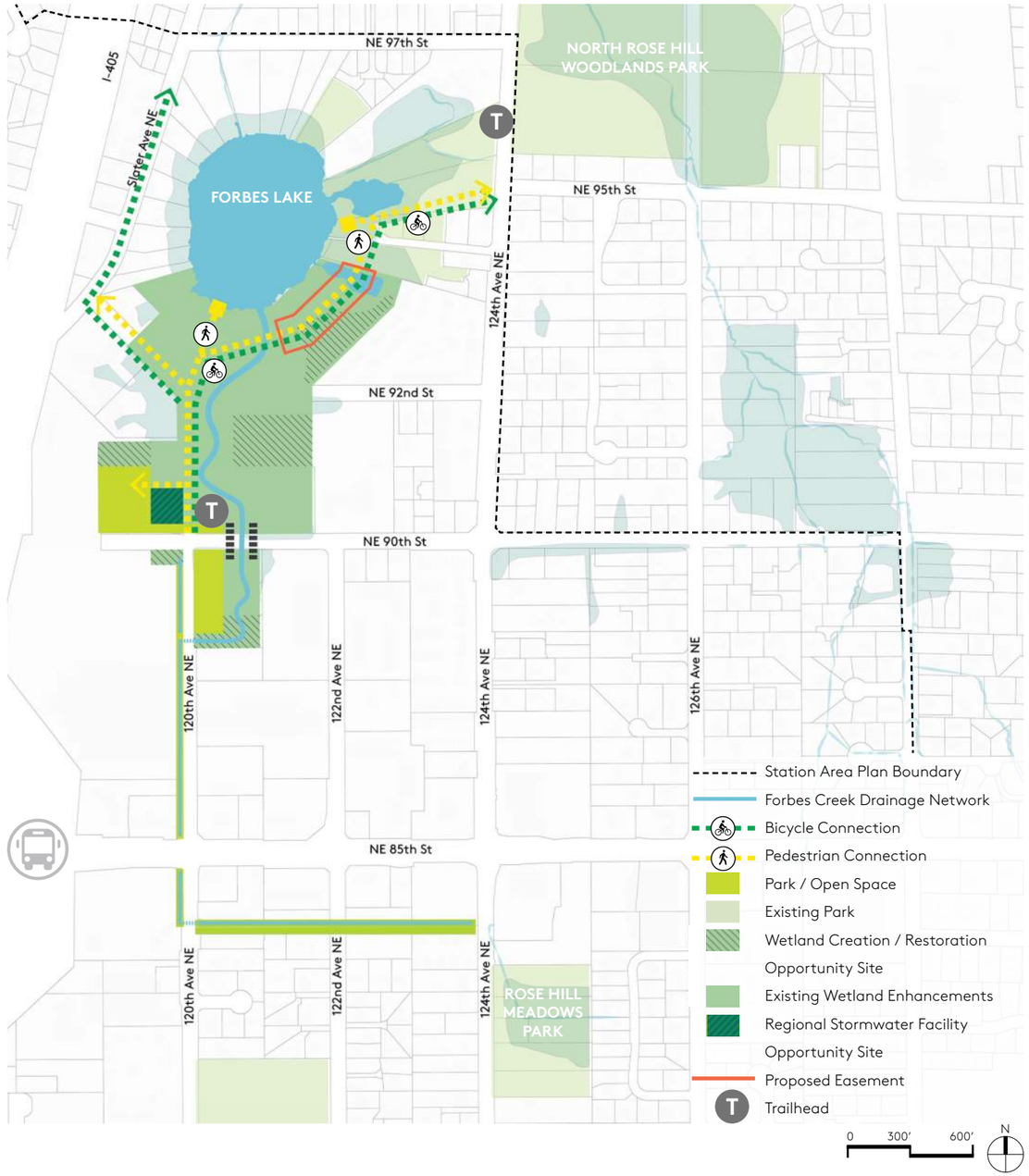
Forbes Lake Park is proposed to have a boardwalk with easy connections to North Rose Hill Woodlands Park as well as active transportation facilities nearby, that is a minimum of 10 feet wide to support two-way directional travel with open grate decking to avoid exceeding single threshold stormwater discharge. Opportunities for active and passive recreation are imagined. At the southwest corner of 120th Avenue and 90th Street where the parking lot exists, a stormwater treatment may act as open space as a floodable park. New trailheads, potential linear parks or pocket parks may be envisioned.

High Performance Bioretention Soil Mixture would likely be incorporated into Forbes Lake Parks to enhance overall water quality. The City encourages daylighting a stream that is located in a culvert to restore it to a more natural open space with tree preservation and native buffer vegetation plantings. The purpose is to improve the values and functions of the stream, including maintaining water quality, reducing storm and flooding water flow, and providing wildlife habitat.

The proposed open space options have been selected to avoid and or minimize potential environmental impacts, as required for regulatory compliance and permitting by federal, state, and local agencies, as applicable.

Illustrative Concept Plan

Concept Diagram and Connections



120th Ave NE Corridor and Forbes Lake Vision

A refined corridor at 120th Ave NE serves as an important connection to Forbes Lake Park as well as Lake Washington High School. It will accommodate a place for both pedestrians with wide sidewalks, as well as cyclists with dedicated bicycle facilities avoiding shared bike/ped routes where possible. Slow vehicle speeds with narrow travel lanes, smaller turning radii and other traffic calming measures are envisioned along the corridor. A strong public realm that focuses on the transitions for buildings and their relationship at the ground floor will be emphasized, and developments will be encouraged to include publicly accessible plazas and pocket parks along the 120th Ave NE frontage. The northern terminus of 120th Ave NE in the Station Area will meet a gateway to the Forbes Lake Park boardwalk.

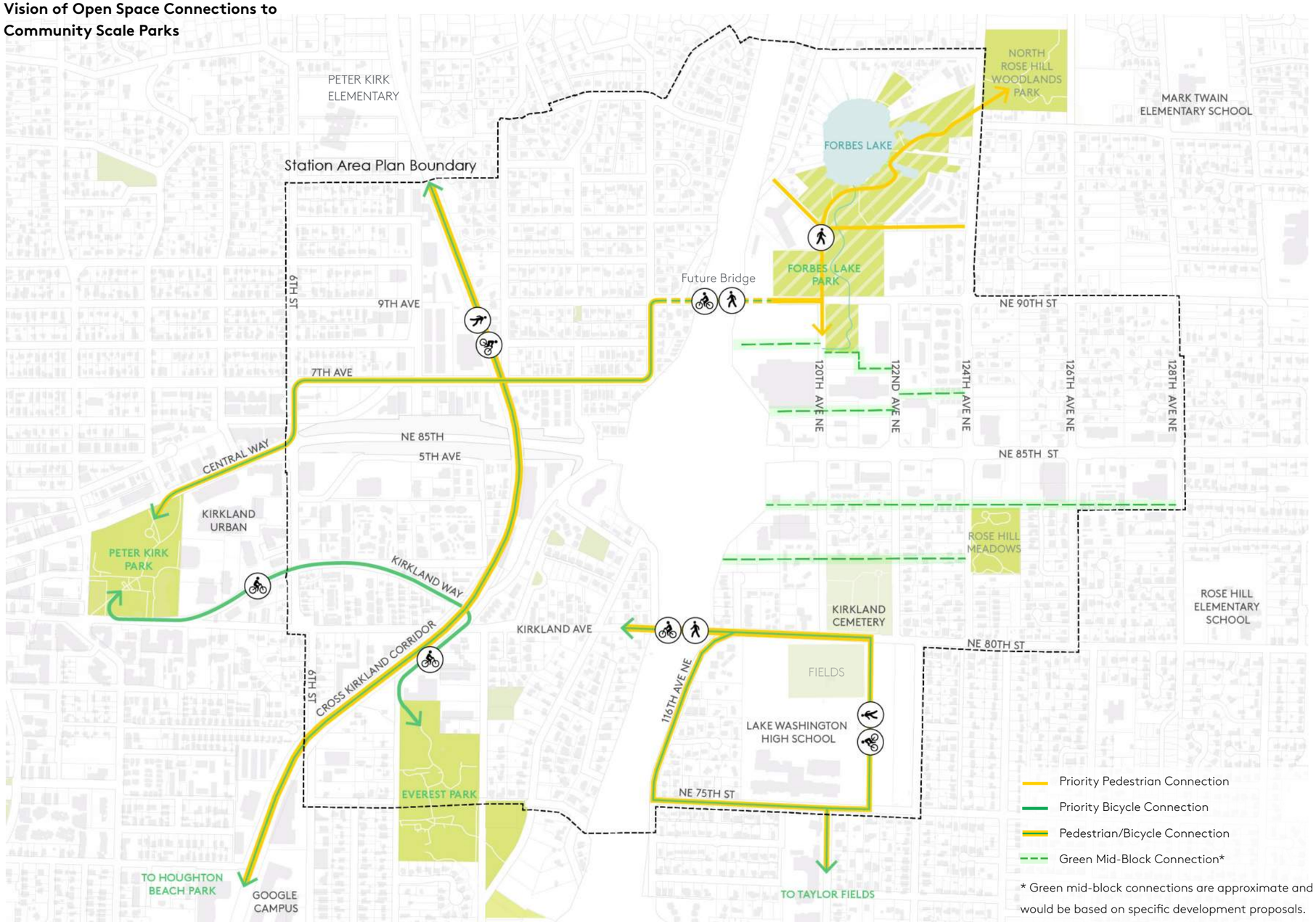
Support habitat, stream, lake and wetlands health.

Enhanced Connections and Improvements to Existing Parks

The planning process identified opportunities for enhanced connections to existing parks. These enhanced connections will improve access to parks, and creating connections from the Cross Kirkland Corridor to existing parks will help link together existing recreational spaces in, and close to, the district. Existing Community Park assets of Peter Kirk Park, Taylor Fields, and Everest Park located just outside the Station Area and partially within the area respectively could be improved, and walking and cycling routes to these community assets can be enhanced, including connections directly from the CKC. There is an opportunity for the City to improve existing public assets with enhanced or new park and recreation elements, and all publicly owned land should be studied for potential to contribute to open space objectives. These enhancements and connections can help address gaps in the system in the south western area of the Station Area.

Enhance community and neighborhood parks and improve ease of access by walking, rolling and transit.

Vision of Open Space Connections to Community Scale Parks



8.0

Transportation and Mobility —

Transportation and Mobility Concepts and Goals

The Station Area has served as a crossroads for many years. Central Way/ NE 85th Street has been the primary connecting route from Lake Washington to Redmond since 1907 and was also known as the Kirkland-Redmond Road. This corridor was also State Route 908, which ran from SR 520 north south along Lake Washington Boulevard and east west along Central/85th to I-405 until that segment was removed from the state route system and transferred to City ownership in 1992, and the segment from I-405 to Redmond was later decommissioned as a state route in 2010. Today, NE 85th Street continues to be an important east-west connector from Kirkland to Redmond and other east side communities, and the interchange at I-405 provides regional north-south access since the interstate was constructed in the 1950s.

The Cross Kirkland Corridor (CKC), which is a part of the King County regional trails system and a key north-south multimodal corridor, was formerly the Lake Washington Belt Line freight train corridor from Renton to Woodinville which once had a station platform at 7th Avenue/ NE 87th Street, and later a depot station for both passenger and freight service at what is now Kirkland Avenue. The CKC continues to be a critical regional active transportation link for the east side, and the access point at 7th Ave is a key connection point for the Highlands and Norkirk neighborhoods. 7th Ave will also become the corridor link from the CKC to the passenger pick up and drop of zone for the future BRT station.

As a principal arterial, NE 85th St has been designed to support throughput, moving people between places. NE 85th Street has a right-of-way width of nearly 100' wide and a typical curb to curb width of 60'. With significant roadway volumes on NE 85th St, and the north-south barrier of I-405 limiting east/west connectivity, these roadways have had a profound effect on the surrounding neighborhoods, creating physical and social barriers between the four quadrants. Existing development is auto oriented with large parking areas and very little space devoted to walking and biking.

The planned Stride BRT station and multimodal access improvements present an impetus to improve many of these conditions. Moreover, in support of citywide and regional plans, the station area will accommodate a significant share of the City's planned growth. The station area is a significant opportunity to develop a transit-oriented district and add more jobs, households, and improve the balance of land uses in the area and the city as a whole. The multimodal infrastructure and services in the station area will support a proactive shift toward a successful place to live and work that builds value for the City and community by promoting sustainable growth.

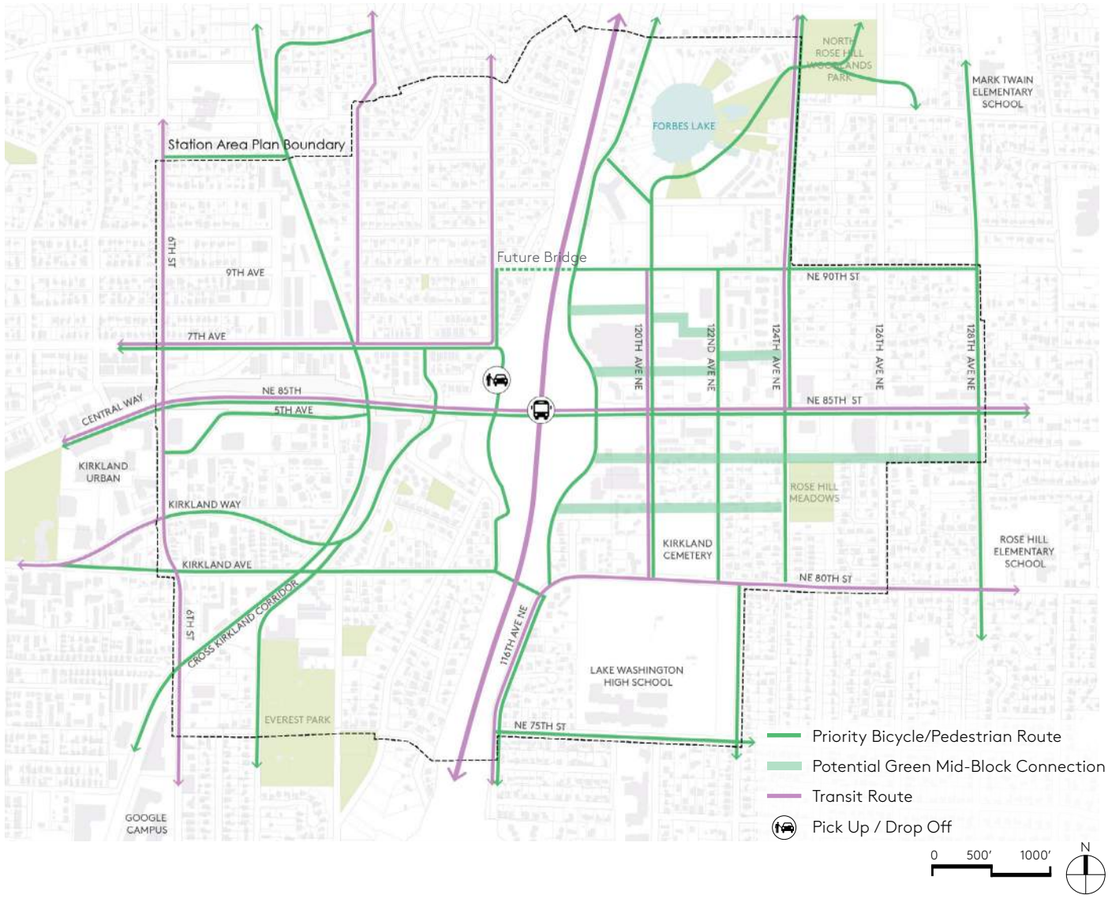
Construction of NE 85th Street

As a place to be, rather than to pass through, the Station Area will support and improve access to businesses, homes, schools, and open spaces. It will put people walking, bicycling and taking transit first, while maintaining a manageable level of vehicular traffic. The planned transportation improvements have been designed to support multimodal mobility by increasing network connectivity, and providing safe intersections and crossings, and promoting comfortable streets for walking and bicycling.

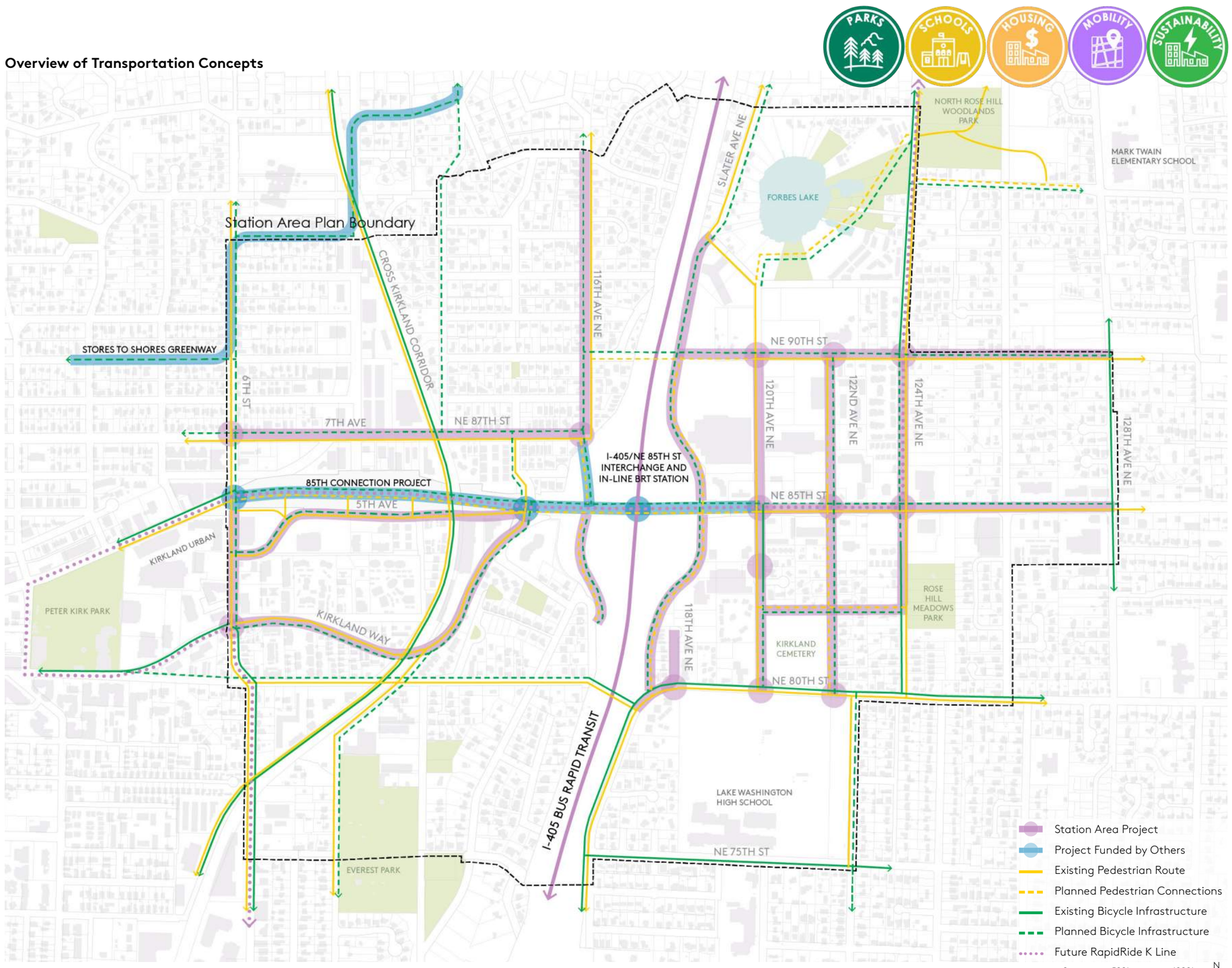
Mobility and Active Transportation

Ensuring a safe and pleasant network for walking, biking, and other active transportation options for people of all ages and abilities is critical to the success of the Station Area Plan and a priority for the City. To create a safe and connected active transportation network, this Plan includes a number of proposed transportation projects and improvements. For this long-range plan, the City is targeting modal split goals for the station area of approximately 24% walk and bike trips, 29% transit/high-occupancy vehicle (HOV) trips, and 47% single-occupancy vehicle (SOV) trips. More information can be found in the pages that follow.

Mobility and Active Transportation (Bicycle/Pedestrian and Transit)



Overview of Transportation Concepts



Supporting Transit

Envisioned as a transit-oriented community, the plan primarily considers access improvements to the future Stride BRT station and existing local routes. While no specific transit speed or reliability projects other than the interchange associated ramps and Stride stations are included in this plan, it and does not preclude future improvements from the King County Metro K Line BRT design efforts currently underway. This plan does include complete street concepts for improvements to streets and greenways throughout the station area and coordinates shared use trails and other connections between transit stations and key services and destinations. Three primary elements to understand potential change to transit conditions under the different land use alternatives are: passenger loads, speed and reliability, and access to transit. Two routes were evaluated to estimate how travel times for transit vehicles might change from existing conditions to 2044 conditions under the 2044 Preferred Alternative for the Station Area Plan. The two routes are:

• Along NE 85th St between 128th Ave NE and 6th St (Route 250)

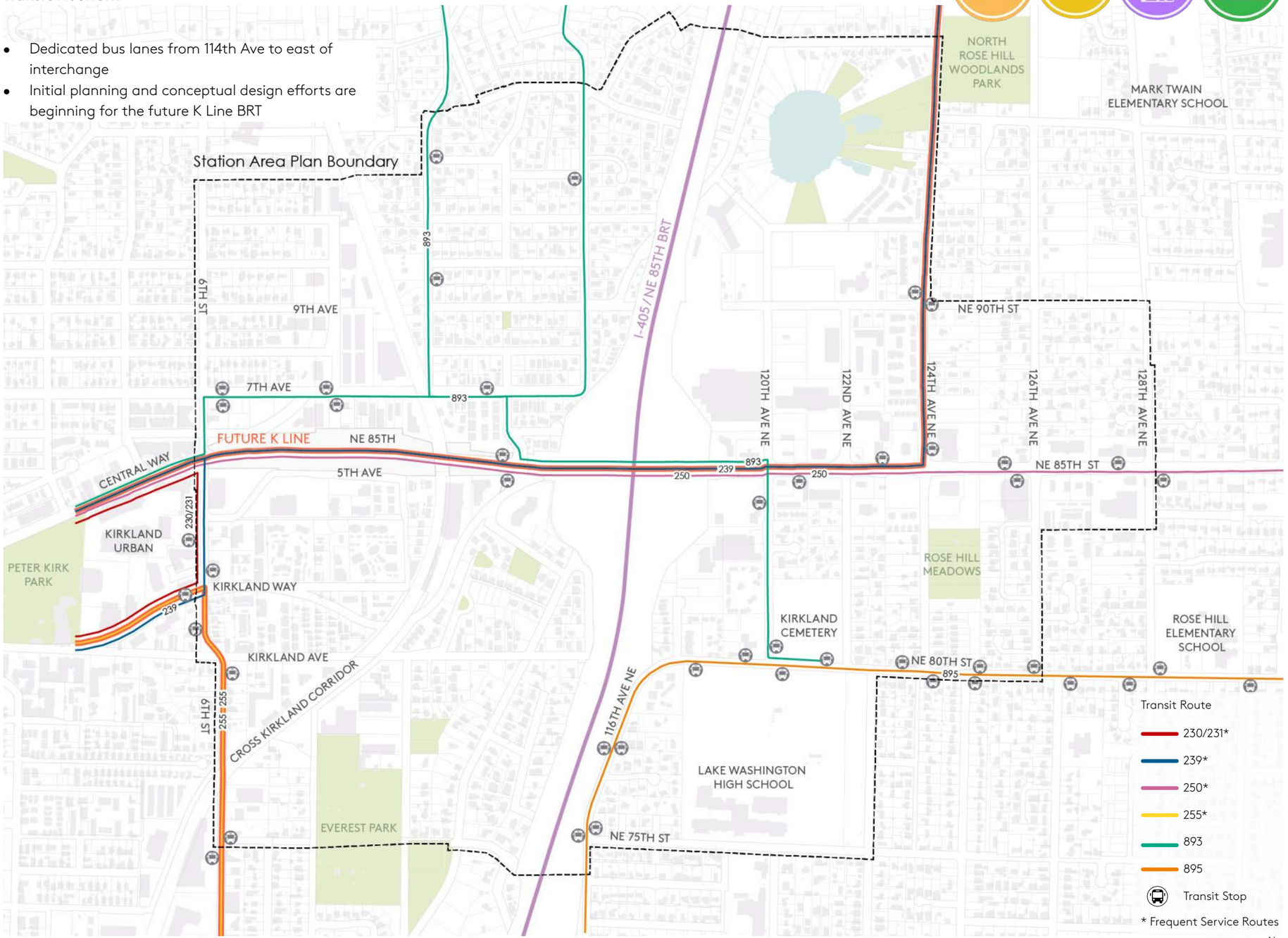
• Along NE 85th St and 124th Ave NE between NE 90th St and 6th St (Route 239 and K Line)

Analysis shows that projected overcrowding of buses will impact many transit routes within the Study Area. Delay at many intersections along NE 85th Street may slow down transit by 1-2 minutes according to a study done by transportation consultant Fehr & Peers (see Appendix 11.7) on point-to-point analysis, not the full route. This delay may reduce reliability of service. Currently, a queue jump is being planned at NE 85th Street and 6th Street to improve transit operations. Improvements to enhance access to transit include:

- Construction of shared use trail connections to transit stops along NE 85th Street and the BRT station.
- Sidewalks will be widened along NE 85th Street throughout the SAP.
- Complete street and greenway improvements on key routes accessing transit stops along NE 85th St and the BRT station, including 5th Ave, 7th Ave/NE 87th St, 116th Ave NE, and NE 90th St.

Transit Network

- Dedicated bus lanes from 114th Ave to east of interchange
- Initial planning and conceptual design efforts are beginning for the future K Line BRT



Low Stress Bike Network
Throughout the district, a network of bikeways is planned to provide a low stress riding experience for people of all ages and abilities. On streets with higher speeds and vehicle volumes, bikeways will be separated from vehicles through grade separation, furnishing zones, parked cars, or striped buffers. On lower speed and lower volume streets, bikeway connections will be provided through neighborhood greenways, which include signing, striping, and speed and volume controls to prioritize a street for walking and bicycling. This low stress bike network will be supplemented by additional infrastructure including bicycle parking at destinations and intersection improvements such as bicycle signals, green conflict pavement markings, and refuge islands.

Pedestrian Scaled Network
A complete network of pedestrian accessible routes is planned to support the vision of the station area as a walkable, urban district. This includes a mix of expanded or improved sidewalks, shared-use trails, green mid-block connections that provide access through otherwise large blocks, and public spaces like plazas and parks which can function as pedestrian pass-through routes. A complete, connected network of sidewalks, trails, and pedestrian connections will provide more universal accessibility for the station area.

Future Auto Network
NE 85th Street and 124th Avenue NE are the key principal arterials within the station area that serve both local and regional trips. Due to limited crossings of I-405, and anticipated increase in regional and planned local growth, both corridors are heavily utilized today, and will have congestion in the future. The Preferred Plan includes a mix and distribution of growth and land uses to minimize substantial congestion impacts, which were studied through the EIS process and supplemental studies. The planned development intensity and mix of uses east of I-405 present a greater opportunity to reduce overall vehicular trips through transit-oriented development. Within the Station Area, transportation improvements have been planned to maintain or improve the existing traffic flow, while reducing conflicts between vehicles and people walking or biking.

Parking
With plans to support more walking, biking, and transit use, the goal is to facilitate adequate parking needs and management for people who live, work, and visit the Station Area, while reducing the negative impacts of large surface lots and building parking requirements through the Form-Based Code. In addition to general parking requirements, the Form-Based Code also addresses bike parking and electric vehicle / micro mobility parking. The following section on Transportation Demand Management (TDM) explores a few options to implement within the district to reduce the need for vehicle parking.

As a place to be, rather than to pass through, the Station Area will support and improve access to businesses, homes, schools, and open spaces.

Low Stress Bike Network

NE 85th Street Future Vision, Looking West

Active Transportation Plan Coordination

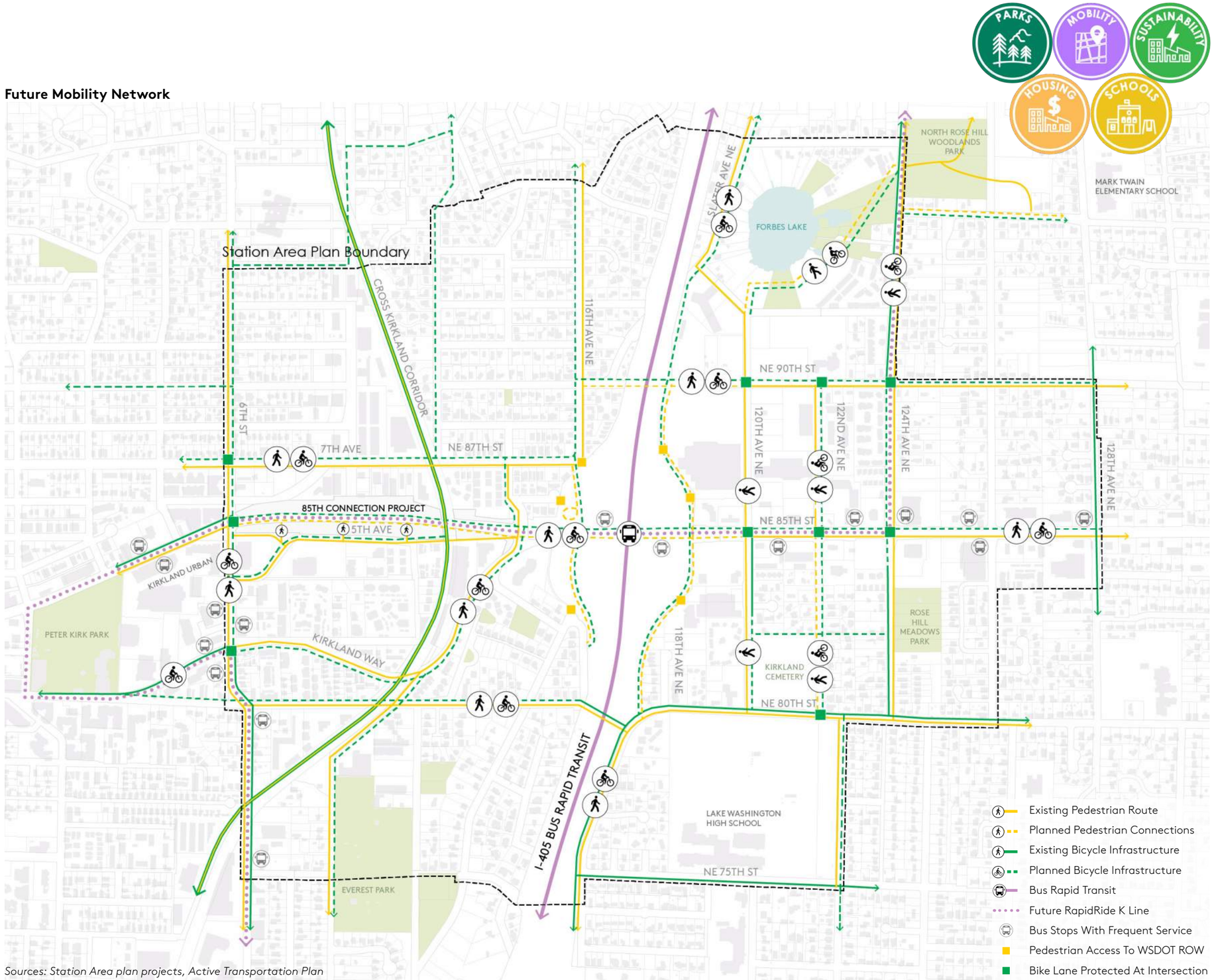
The Station Area Plan's transportation analysis and study has been running alongside the City of Kirkland's ongoing work with the Update to the Active Transportation Plan (ATP) which will be finalized in 2022. The update to the ATP reaffirms Kirkland's commitment to a multimodal system of transportation choices by providing network and infrastructure improvement recommendations to enable people of all ages and abilities to safely walk, bike, and roll.

Specifically, the Active Transportation Plan outlines three main goals:

1. Create a safe, connected pedestrian network where walking is a comfortable and intuitive option as the first choice for many trips.
2. Create a connected bicycle network that accommodates people of all ages and abilities to get to destinations such as activity centers, parks, and transit.
3. Encourage and incentivize more people to walk and bike and encourage safe behavior for all users of the transportation system.

Network recommendations made as part of the ATP update have been incorporated into the active transportation network vision for the Station Area Plan.

Future Mobility Network



Sources: Station Area plan projects, Active Transportation Plan

Mobility and Modal Split Goals

Travel Demand Management (TDM)
TDM strategies suitable for the station area were analyzed with the Preferred Plan growth as part of the 2021 Fiscal Impacts and Community Benefits Study. With the recommended strategies in place, the analysis estimated a possible 13% reduction in single-occupancy vehicle (SOV) and high-occupancy vehicle (HOV) trips, and increase in the number of transit, walk and bike trips.

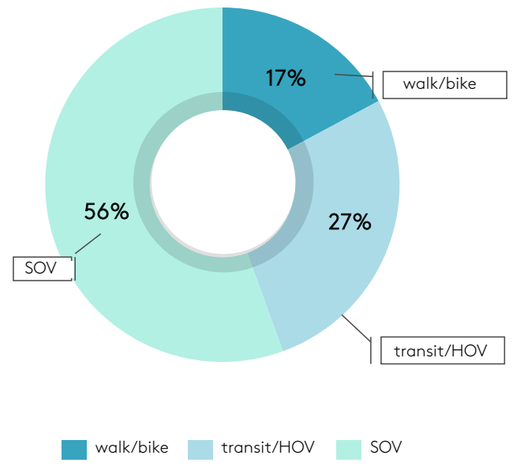
Based on analysis and a comparison of existing modal splits and targets in other areas, the City is targeting modal split goals for the station area of approximately 47% SOV, 29% HOV/Transit, and 24% walk and bike trips. TDM programs are successful when they are enforced within developments. Implementation and monitoring will be critical to the success of this target mode share in Kirkland.

Modeled no action modal split and proposed modal split goals within the study area are shown in the image on the right.

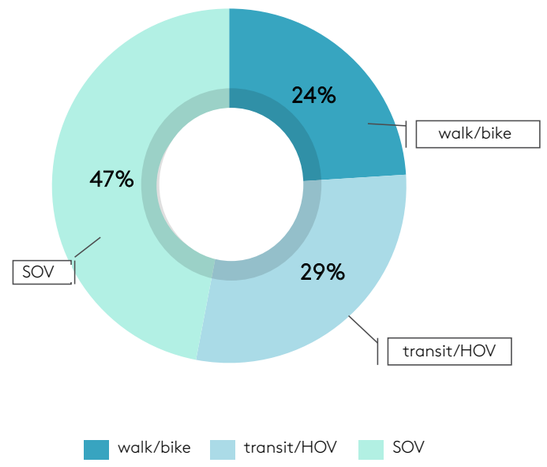
Identified TDM strategies to implement in the station area include:

- Unbundle parking to separate parking costs from total property cost, allowing buyers or tenants to forgo buying or leasing parking spaces if they do not park a car.
- Revise parking code to reduce the amount of parking new developments must provide.
- Implement managed on-street parking strategies (e.g., designate special use zone for activities such as loading/unloading or emergencies
- Require new development to charge for parking off-street.
- Encourage or require transit pass subsidies from developers/property owners.
- Utilize a Ridematch Program to assist potential carpoolers in finding other individuals with similar travel routes.

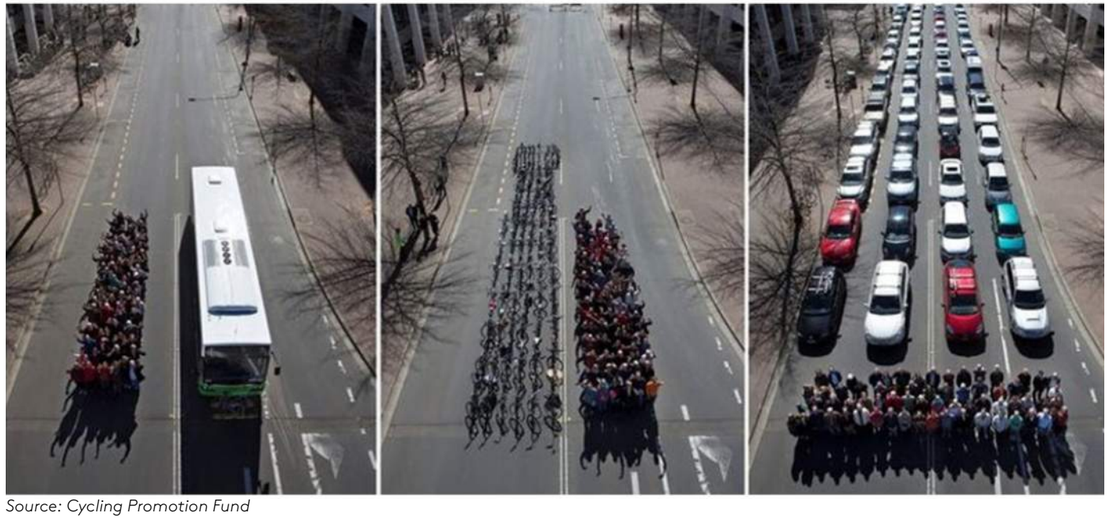
Modal Split: No Action



Modal Split: Proposed Goal (2044)



Mobility In Terms of Space: Space needs on the street for the same number of people that can fit in one bus, riding bicycles, or traveling by car.



Source: Cycling Promotion Fund

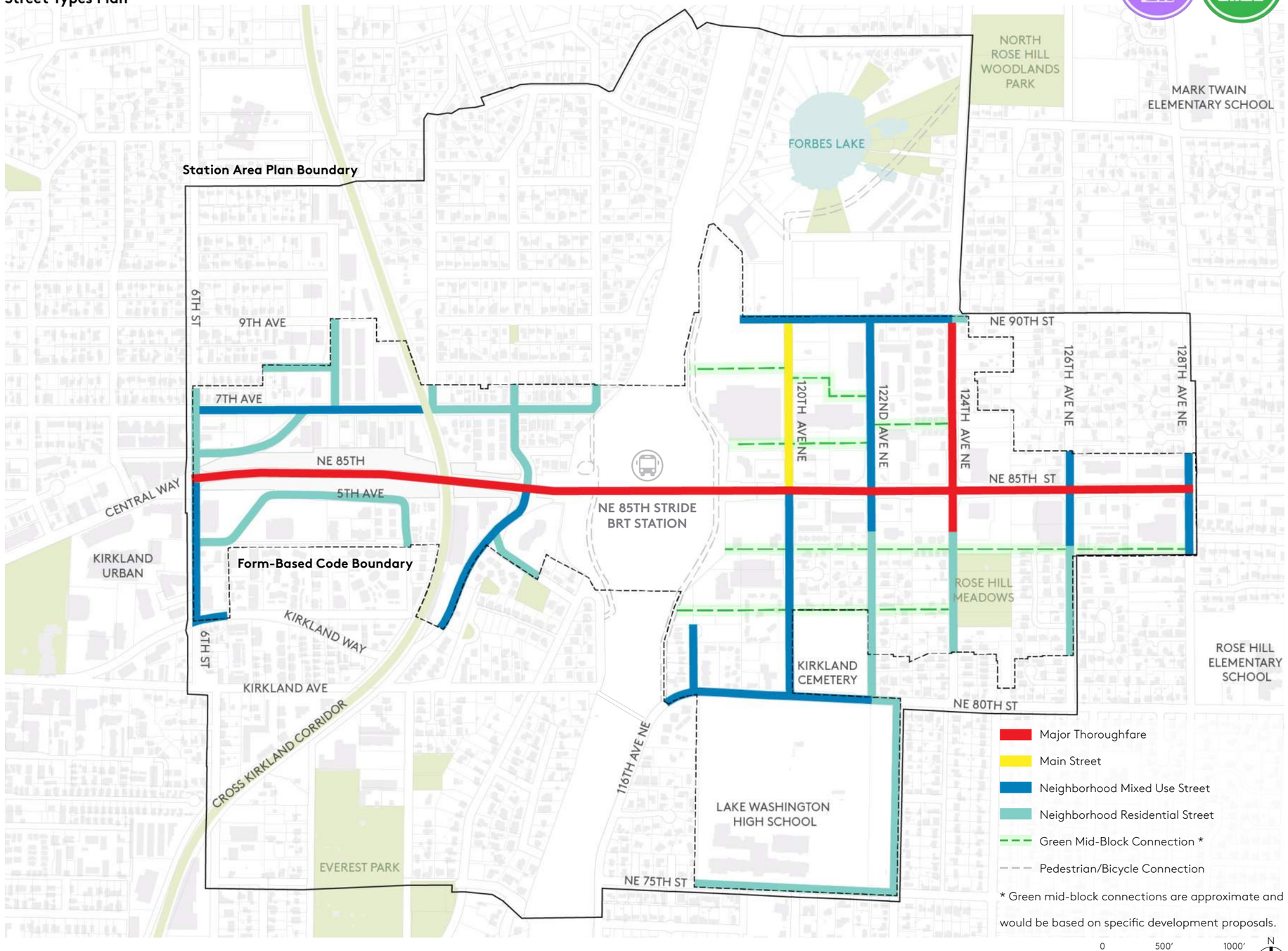
Street Types

Street improvements are designed to accommodate all modes of travel, support a pleasant and safe public realm, and support the homes, businesses, and community places within the Station Area. Improved sidewalks and dedicated bikeways ensure that walking and biking in the station area is safe and pleasant. Capacity is added to key intersections on major arterials through strategic widening and signal operation changes to avoid gridlock. These improvements are linked to overall urban design and mobility goals for each corridor.

Street Types set the design intent for specific segments of public ROW, including functional classification, prioritized transportation modes, sidewalk and bikeway facility dimensions, and expected streetscape amenities like trees, planting, hardscape, and street furnishings. They are addressed in the Form-Based Code and illustrated in the following sections.

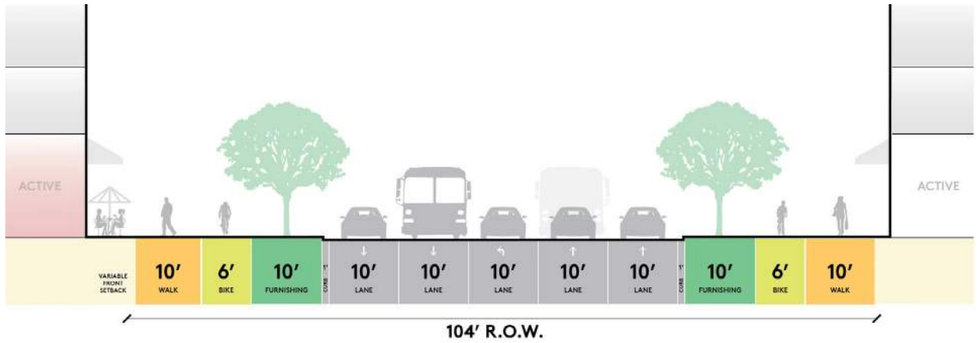
Note: only areas within the Form-Based Code boundary have a street type assigned. This does not preclude additional pedestrian/bicycle improvements within the Station Area.
This excerpt is for illustration purposes only. For current regulations, see Kirkland Zoning Code Chapter 57.

Street Types Plan



Street Type Sections

Major Thoroughfare



DESCRIPTION

Major Thoroughfares are streets that connect regional centers or pass through central commercial corridors. Many of these streets have significant traffic volumes at peak hours, and are key places for high-capacity transit routes, separated bike facilities, and wider sidewalks.

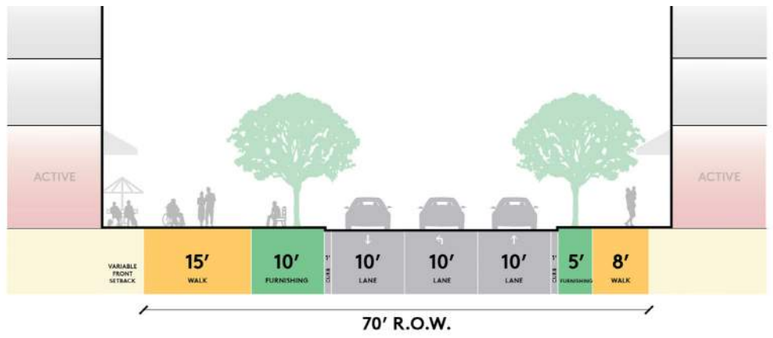
PERMITTED FRONTAGE TYPES

URBAN STREET EDGE	RETAIL & ACTIVE USES	RESIDENTIAL STOOP/PORCH	PLAZA/PUBLIC SPACE	PRIVATE YARD
Permitted	Permitted	Not Permitted	Permitted	Not Permitted

FUNCTIONAL CLASSES Principal Arterial

ADJACENT LAND USES High intensity commercial, residential, and active ground-level uses

Main Street



DESCRIPTION

Main Streets are primary pedestrian corridors with active uses and generous sidewalks. They feature high quality streetscapes with linear open space, decorative paving, and tree canopy. These are often important corridors for transit or supported with transit nearby. Wide furnishing zone may include pockets for on-street parking.

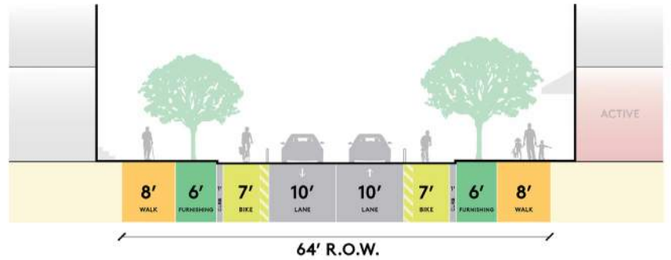
PERMITTED FRONTAGE TYPES

URBAN STREET EDGE	RETAIL & ACTIVE USES	RESIDENTIAL STOOP/PORCH	PLAZA/PUBLIC SPACE	PRIVATE YARD
Permitted	Permitted	Not Permitted	Permitted	Not Permitted

FUNCTIONAL CLASSES Minor Arterial, Collector

ADJACENT LAND USES Mid to high intensity commercial, residential, and ground-level retail uses.

Neighborhood Mixed Use Street



DESCRIPTION

Neighborhood mixed use streets have low to mid-intensity commercial and residential, occasional active ground floors. With generally lower vehicular volume than major thoroughfares, these streets require careful balancing among modes and should include wider sidewalks, buffered bike facilities, transit routes, and narrower travel lanes. On-street parking considered on a contextual basis and is subject to approval by Public Works Official.

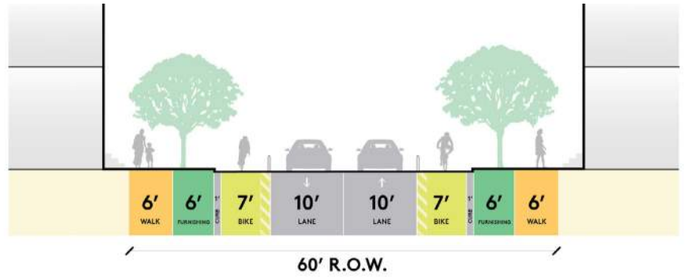
PERMITTED FRONTAGE TYPES

URBAN STREET EDGE	RETAIL & ACTIVE USES	RESIDENTIAL STOOP/PORCH	PLAZA/ PUBLIC SPACE	PRIVATE YARD
Permitted	Permitted	Permitted	Permitted	Permitted

FUNCTIONAL CLASSES Minor Arterial, Collector, Neighborhood Access

ADJACENT LAND USES Low to mid-intensity commercial, residential, and occasional active ground-level uses, civic and urban flex uses

Neighborhood Residential Street Type 1



DESCRIPTION

Neighborhood residential streets are low vehicular traffic volume streets that have primarily residential frontages and dedicated bicycle facilities.

PERMITTED FRONTAGE TYPES

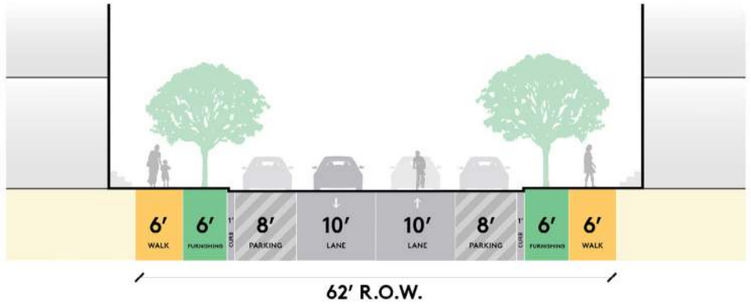
URBAN STREET EDGE	RETAIL & ACTIVE USES	RESIDENTIAL STOOP/PORCH	PLAZA/ PUBLIC SPACE	PRIVATE YARD
Not Permitted	Not Permitted	Permitted	Permitted	Permitted

FUNCTIONAL CLASSES Collector, Neighborhood Access

ADJACENT LAND USES Predominantly low to medium intensity residential uses

Street Type Sections

Neighborhood Residential Street Type 2



DESCRIPTION

Residential-focused streets with low vehicular traffic volumes, which can accommodate shared bike facilities.

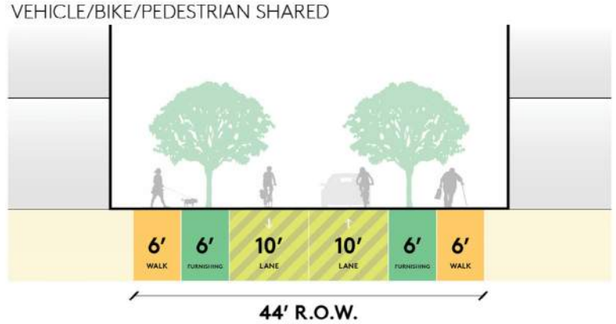
PERMITTED FRONTAGE TYPES

URBAN STREET EDGE	RETAIL & ACTIVE USES	RESIDENTIAL STOOP/PORCH	PLAZA/ PUBLIC SPACE	PRIVATE YARD
Not Permitted	Not Permitted	Permitted	Permitted	Permitted

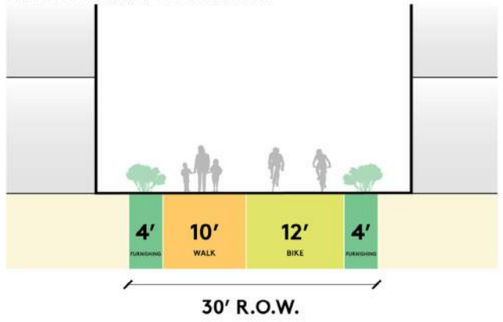
FUNCTIONAL CLASSES	Neighborhood Access
ADJACENT LAND USES	Predominantly low to medium intensity residential uses

Green Mid-Block Connection

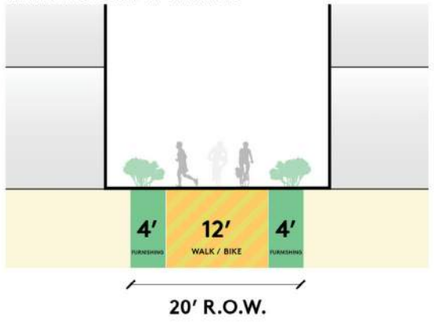
VEHICLE/BIKE/PEDESTRIAN SHARED



BIKE/PEDESTRIAN DEDICATED



BIKE/PEDESTRIAN SHARED



DESCRIPTION

These streets are generously landscaped mid-block connections typically as part of larger developments. May include required green infrastructure. Does not include public R.O.W. improvements to "green" an existing street. Mid-block connections may be used for emergency access, and may also be used for access to loading zones, parking entrances, or other "back of house" functions.

PERMITTED FRONTAGE TYPES

URBAN STREET EDGE	RETAIL & ACTIVE USES	RESIDENTIAL STOOP/PORCH	PLAZA/ PUBLIC SPACE	PRIVATE YARD
Permitted	Permitted	Permitted	Permitted	Permitted

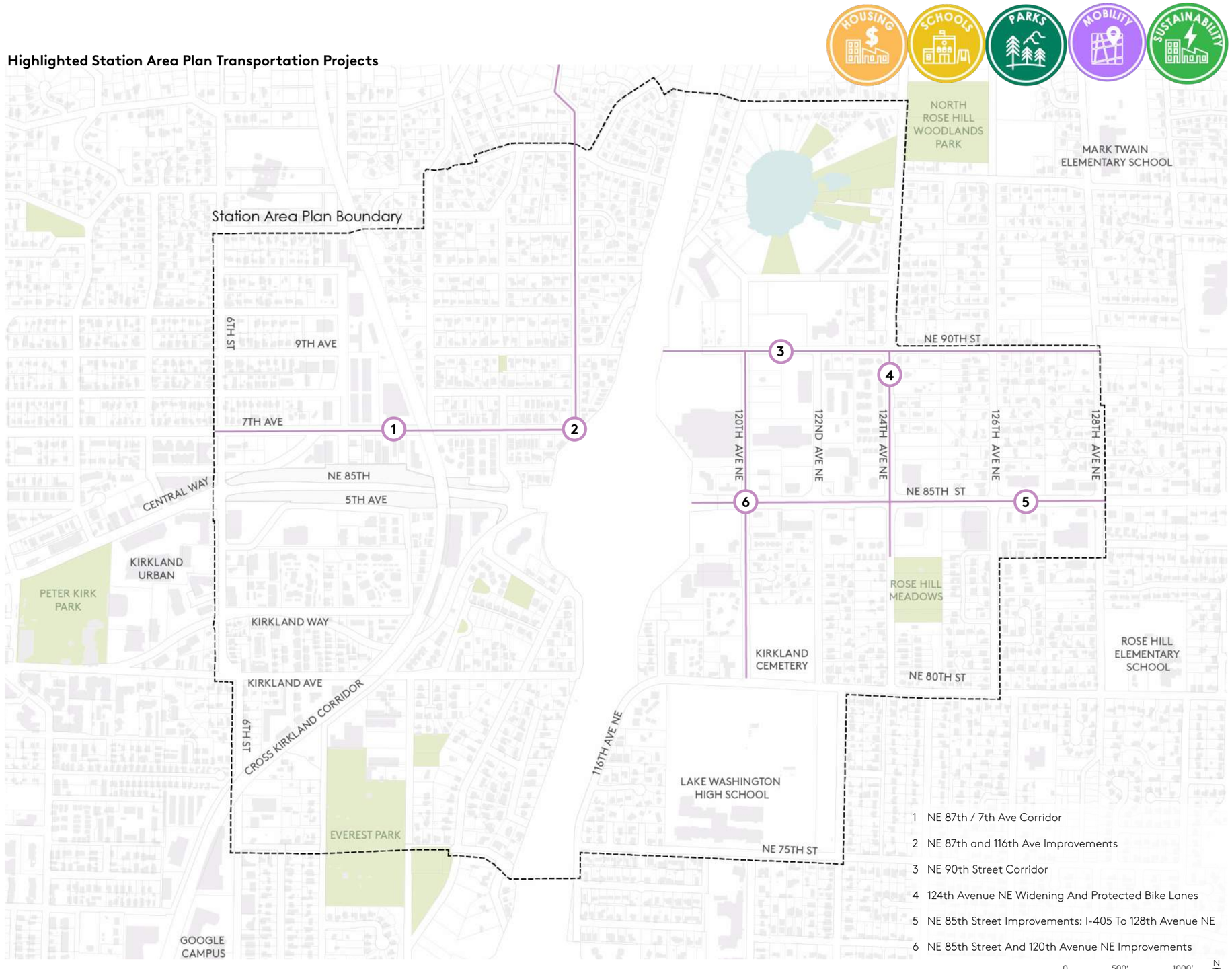
FUNCTIONAL CLASSES	Neighborhood Access, Trail
ADJACENT LAND USES	Low to high intensity commercial or residential uses, typically within larger developments. May have active ground-level uses, depending on site design

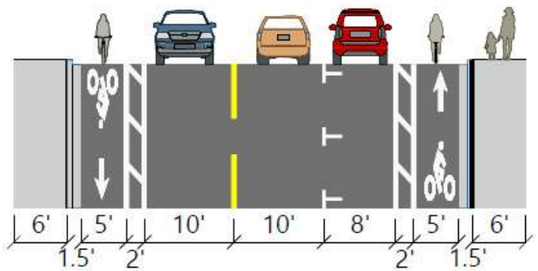
Transportation Projects

A number of different transportation projects are being recommended as part of this Plan, including intersection improvements to accommodate safe crossings that reduce conflicts between modes of transportation, focused roadway capacity improvements to manage vehicular congestion, and complete streets projects to provide a complete network for all transportation modes. Proposed station area plan projects have been developed to a representative planning level. When these improvements move into project design, configurations or details may change but fundamentally these projects should support mobility with a priority for people walking, rolling, and taking transit, as well as enhance the public realm through public art, landscape, green infrastructure, and trees.

The following are a few highlighted station area plan transportation projects that are part of the full set of proposed improvements, available in the Appendix 11.3.

Highlighted Station Area Plan Transportation Projects

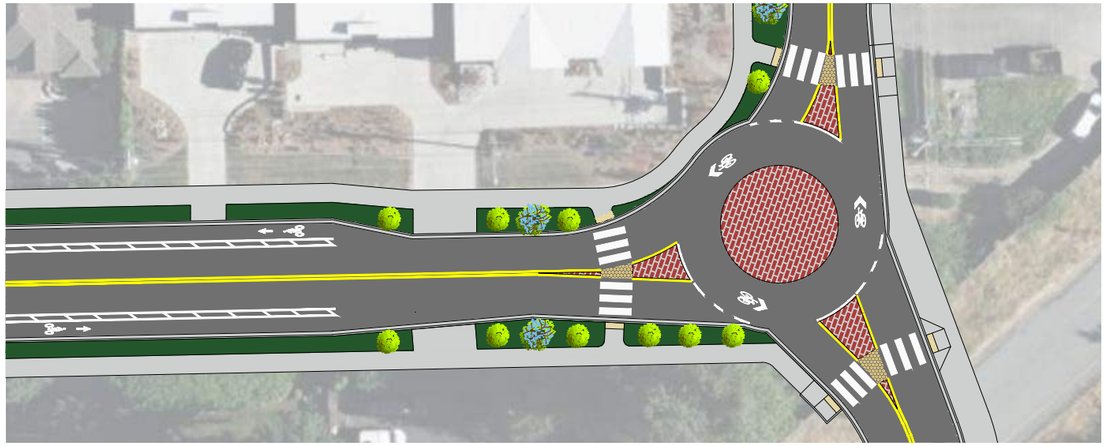




Source: Fehr & Peers

Representative:
NE 87th and 7th Ave Corridor Improvements

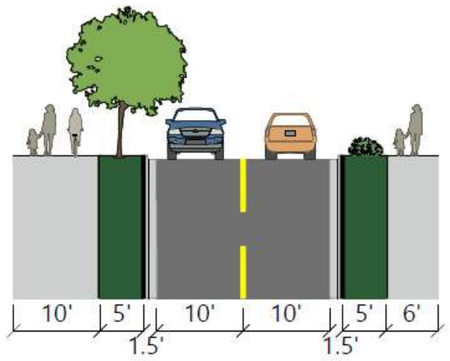
Add new buffered bike lanes and consistent sidewalks between 6th Avenue and 116th Avenue NE. West of the Cross Kirkland Corridor, provide a parking-protected bike lane on the south side of the street and buffered bike lane on the north side of the street. East of the Cross Kirkland Corridor, provide buffered bike lanes, and a consistent sidewalk with 5-foot landscape strip to enhance the street's character.



Source: Fehr &Peers

Representative:
NE 87th and 116th Ave Intersection Improvements

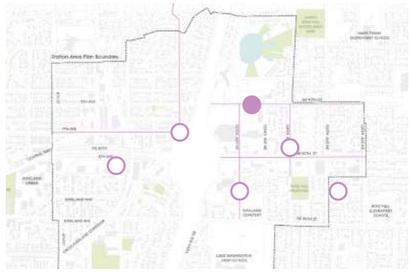
Provide improvements to better accommodate people walking, biking, and access to the STRIDE BRT NE 85th Street Station pick-up and drop-off. Consider a compact roundabout, signal, or other means to reduce conflicts between modes and support safe crossing.



Source: Fehr & Peers

Representative:
NE 90th Street Corridor Improvements

Between I-405 and 122nd Avenue NE adjacent to Forbes Lake, build a shared-use path or boardwalk on the north side of the street. Between 122nd and 124th Avenue NE, provide buffered bike lanes and sidewalks with landscape strips on both sides of the street. From 124th Ave NE to 128th Ave NE in the more residential context provide a neighborhood greenway with signing, striping, and traffic calming measures to prioritize the street for walking and biking.



Source: Fehr & Peers

Representative:
124th Avenue NE Widening and Protected Bike Lanes Improvements

Widen 124th Avenue NE to five lanes and provide raised (grade separated from the street) and protected bike lanes and improved sidewalks from NE 85th Street through the NE 90th Street intersection. This project also includes continuation of protected bike lanes south through the NE 85th St intersection to NE 84th Lane to connect to exiting on-street bike lanes.

Source: NACTO, Urban Street Design Guide

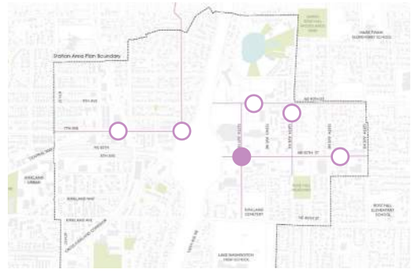
Representative:
NE 85th Improvements: I-405 to 128th Avenue NE

To offer a high-quality experience for people walking, biking, rolling, and making last-mile connections from transit, enhance NE 85th Street between I-405 and 128th Avenue NE by providing active transportation facilities on both sides of the street. The interchange project will construct shared use paths from I-405 to 120th Ave NE, and the remained of the corridor will provide one-way raised protected bike lanes, widened sidewalks, and wide landscape zones.

Source: Fehr & Peers

Representative:
NE 85th Street and 120th Avenue NE Improvements

As part of the overall enhancement to the NE 85th Street corridor to better accommodate all travel modes, multiple concepts were studied for this intersection. This preferred plan concept direction improves the NE 120th Avenue intersection to include an added eastbound lane as storage capacity from the interchange, and an added northbound left turn lane to accommodate expected traffic volume increases. To clarify operations for two westbound incoming lanes and reduce the north/south crossing distance, add a bump out of the northwest corner, high-visibility crosswalks, shared use paths to the west connecting to the Stride BRT stations, and raised protected bike lane and wide sidewalks to the east.



9.0

Utilities and Public Services —

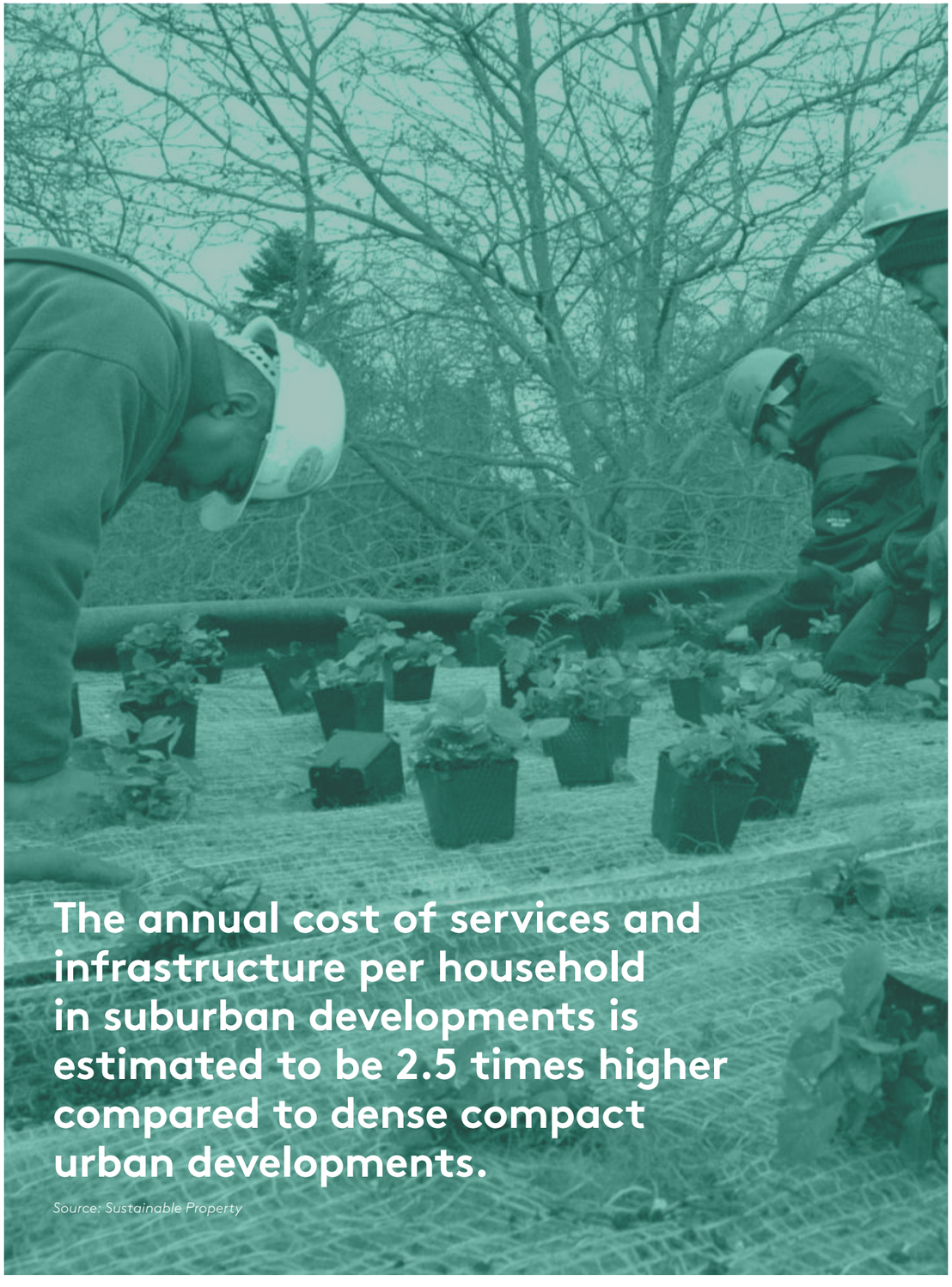
Utilities and Public Service Concept and Goals

Overall, the approach to infrastructure and public services improvements should take a holistic view of all the potential improvements and seek efficiencies through multi-benefit strategies, or timing projects to be bundled together and reduce construction needs.

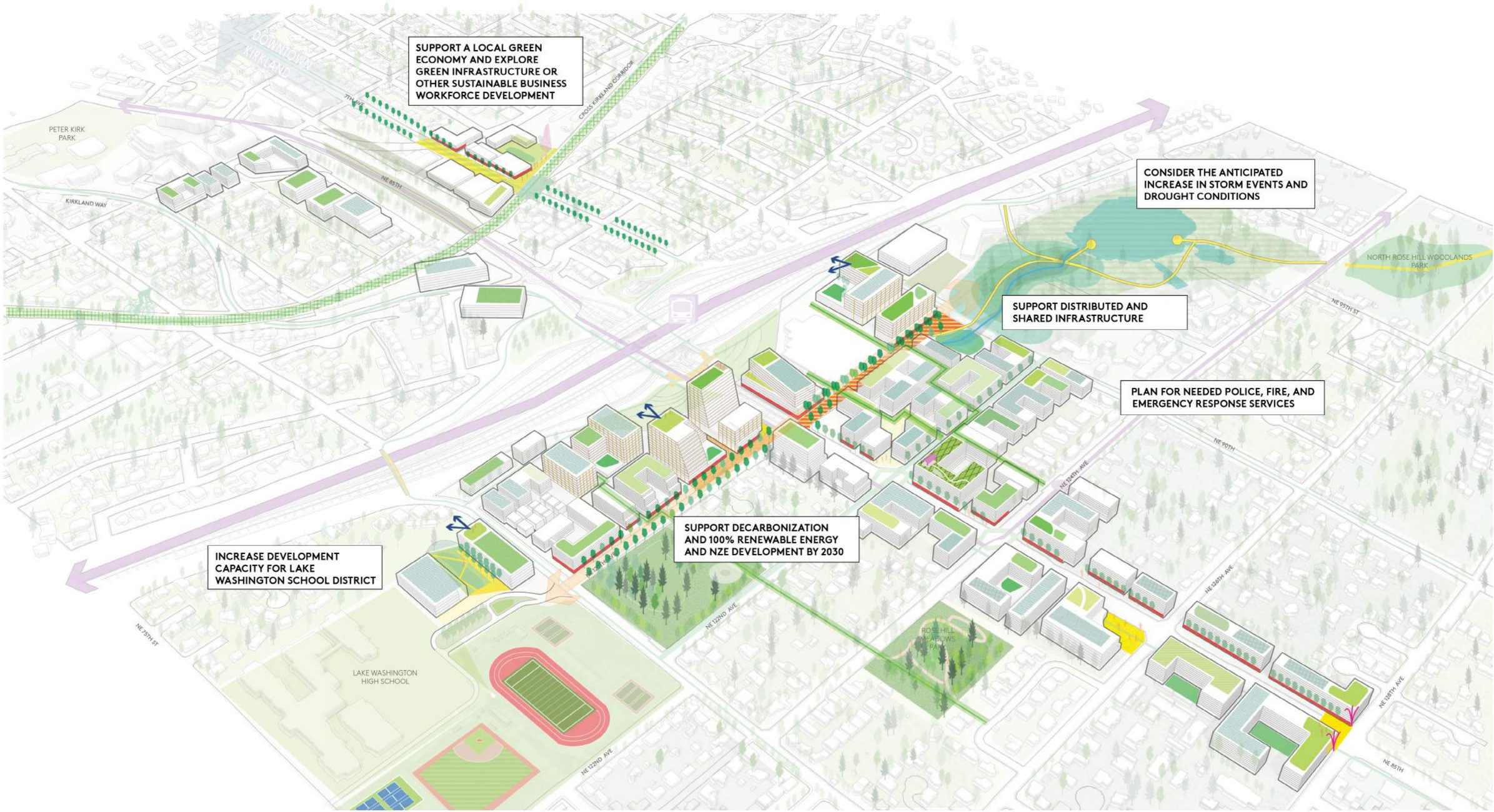
Prioritize Multi-Benefit Strategies: To maximize investment and community benefit, multi-benefit strategies that achieve multiple goals through one intervention should be prioritized. For example, green infrastructure and planting can provide tree canopy/ air quality benefit, bioswales to provide stormwater benefit, increases habitat or biodiversity, improves human mental and physical health, and provides resiliency to climate change. It should be noted that water plays into Ecosystem / Green Infrastructure, Energy due to energy needed to deliver water, and Building Performance.

Promote innovative stormwater strategies that respond to specific watershed conditions and enhance urban ecological function.

Regional Stormwater facilities provide opportunities to reduce impact on redevelopment parcels and can be coupled with other projects to contribute to other watershed goals like wetland and stream buffer restoration.



Overview of Utilities and Services Initiatives and Goals

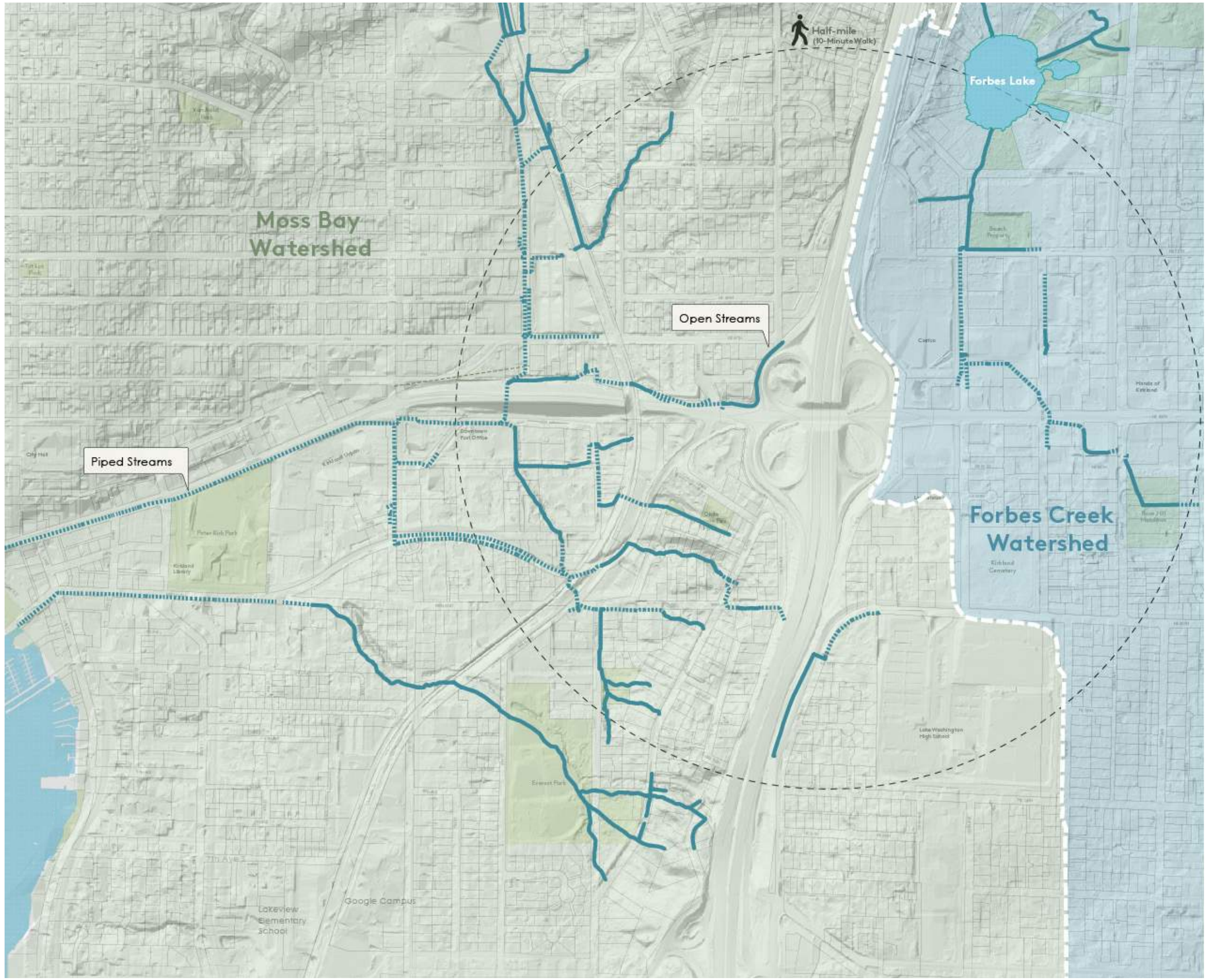


Stormwater Infrastructure

The City of Kirkland has a track record of innovative stormwater management and aquatic resource protection. The opportunities to further promote innovative stormwater strategies for future development look at possibilities to reduce the stormwater management burden (e.g. facility cost, space required) for redevelopment projects within the subarea, while protecting the natural environment and the City's stormwater infrastructure. The opportunities are strongly influenced by the environmental conditions and regulatory requirements within the two primary stream basins of the subarea, the Moss Bay Basin and the Forbes Creek Basin.

Moss Bay Stormwater Opportunities:
Development and redevelopment projects within these stream-discharge areas are required to comply with stringent flow control requirements, which necessitate large detention facilities to protect the stream channels from the damaging effects of high flow; however, there is no viable fish habitat mapped in this area. Downstream of these open stream channels, the City may allow smaller detention facilities if it can be demonstrated that the downstream stormwater conveyance infrastructure is adequate to handle the existing flows.

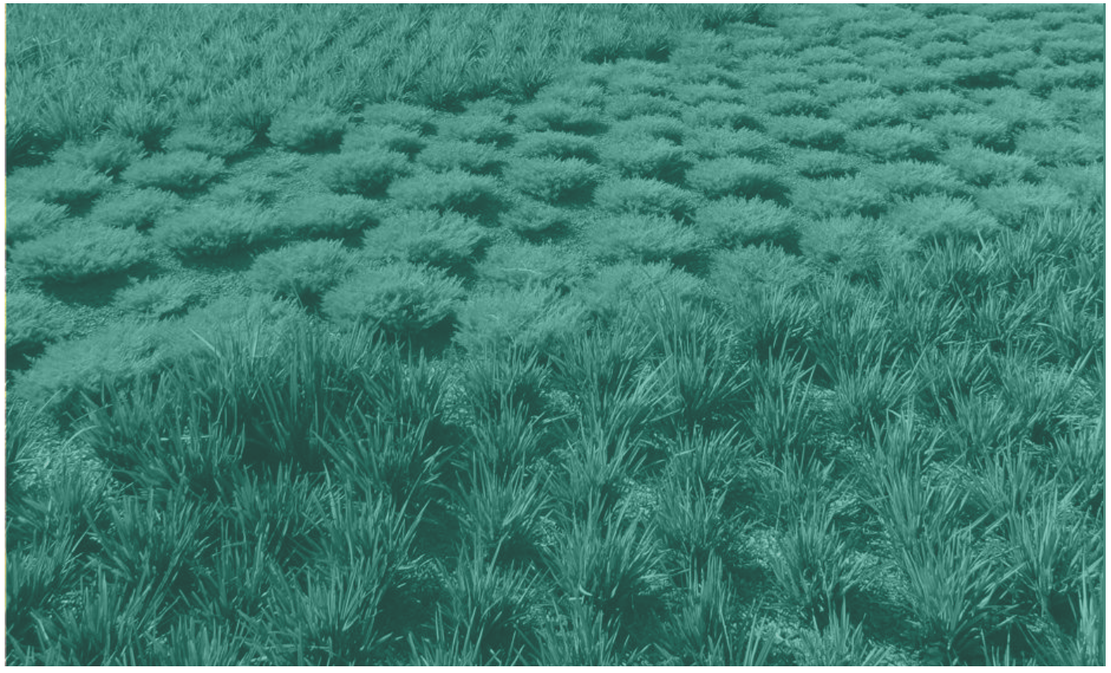
Forbes Creek Stormwater Opportunities:
Forbes Creek is a salmon-bearing stream and is identified as priority habitat. This basin also includes a large area that discharges to Forbes Lake, which requires that projects in the basin to utilize water quality practices that provide phosphorus treatment. The primary opportunity in the Forbes Creek basin to reduce the stormwater management burden for redevelopment projects is to meet those stormwater requirements at a different site, such as through regional stormwater facilities constructed by the City prior to redevelopment. Development of the Forbes Lake Park concept could also contribute to wetland and stream buffer restoration to enhance function.



Distributed / Shared Infrastructure

To increase resilience and flexibility, prioritize a more distributed, multi-source approach to infrastructure that is less vulnerable to risk from disruptions and allows for changes over time. Support the shift from centralized large-scale infrastructure, such as centralized energy or stormwater treatment plants, to networks of smaller scale facilities that can be interconnected and shared; also recognizing that this is likely to be a mid to long-term process.

There is also an opportunity to explore the concept of a Blue Green Corridor, which can be designed to achieve a broad range of goals for placemaking, stormwater management and quality, 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).



Water and Sewer

Increased growth in the Station Area will mean an increased consumption of water from the regional supply and increased sewage production requiring treatment. The City is planning for needed water and sewer improvements beyond the current capital improvement planning within the Water System Plan, Water Capital Improvements Plan (CIP) Update, and General Sewer Plan. These will include upgrades and replacement of existing pipes, that will help support improvements to fire flow requirements in the water system, and improvements to address increased flow in the sewer system. The overall plan goals and policies also support a more efficient, high performance approach to water use than represented in conventional demand models. See the Green Innovation Strategies for more information. Goals and Principles include:
Goals and Principles include:

Reduce Demands
Developments can incorporate efficiency measures through their systems and fixture selection, as well as operations. The Green Innovation Strategies incorporate the standard of reducing water use in buildings by 10% by 2025 and 20% by 2030 as compared to a 2019 baseline. Reduced water demands will also reduce energy needs to convey the water.

Increased water and sewer demands will require replacement and improvements to existing infrastructure.

Green Innovation strategies promote a more efficient approach to water use within buildings which will reduce potable water demands.

Use Potable Water for Potable Needs
Today, it is common practice to use potable water for all water needs, including uses such as irrigation that do not necessitate a potable water treatment standard. By using recycled water sources, such as cleaned stormwater for irrigation, the demand for potable water is reduced and we will use less water from our streams and groundwater basins. This principle will support a healthy ecosystem and habitat, and in particular, stream health within the Moss Bay watershed. While there are some regulatory barriers that exist today, recycling water on-site or in larger, district facilities is anticipated to become more common during this plan horizon, and should not be precluded. Future proofing strategies include developments with dual plumbing to allow for purple pipe connections in the future. These strategies are encouraged by third-party protocols like the Living Building Challenge.

A next step should be to study climate change impacts to sewer and stormwater / storm events and follow up planning.

Water use reduction is supported through the prioritization of using recycled water sources for non-potable water use needs

Public Services

To support planned growth, public services including schools, parks and open spaces, transportation, and utilities will also be needed. The City has planned for meeting these needs in alignment with Level of Service (LOS) standards. With a more compact, mixed use form of development than other parts of Kirkland, there may be opportunities to consider an approach to service provision that takes advantage of more varied mobility choices, like walking, biking, and transit. The City will plan for additional Police and Fire and Emergency Services staff and equipment to align with population growth, including at Fire Station 26. For more information refer to the Fiscal Impacts and Community Benefits Analysis (2021).

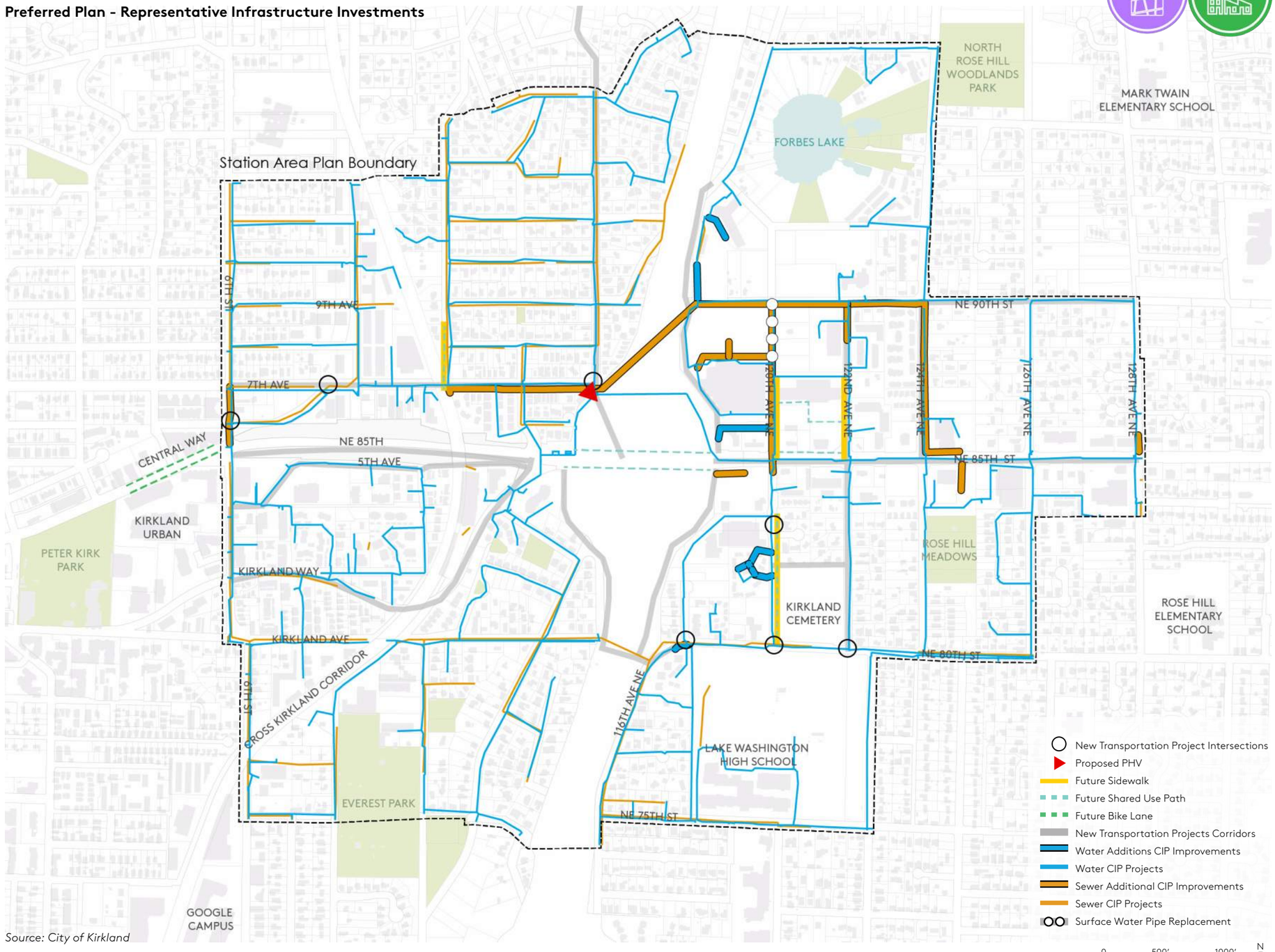
City services like Fire, Police, and Emergency Services will be increased to align with population growth.

Representative Projects

Planning level studies completed for the Fiscal Impacts and Community Benefits Analysis (2021) determined a set of representative infrastructure investments needed to maintain service levels in water, sewer, and stormwater given the planned household and employment growth for the station area. A full list is available in the Appendix 11.3, Project List.

- Notable water and sewer improvements needed include a water main under I-405 as required by WSDOT due to construction of the BRT station, as well as a sewer capacity project that crosses under I-405 to connect the King County transmission line under Cross Kirkland Corridor.
- Within the representative infrastructure improvements, the only recommended stormwater project within the Study Area consists of replacing 520 feet of pipe along 120th Ave NE with a smoother pipe material to increase conveyance capacity.

Preferred Plan - Representative Infrastructure Investments



Source: City of Kirkland

10.0

Sustainability Framework—

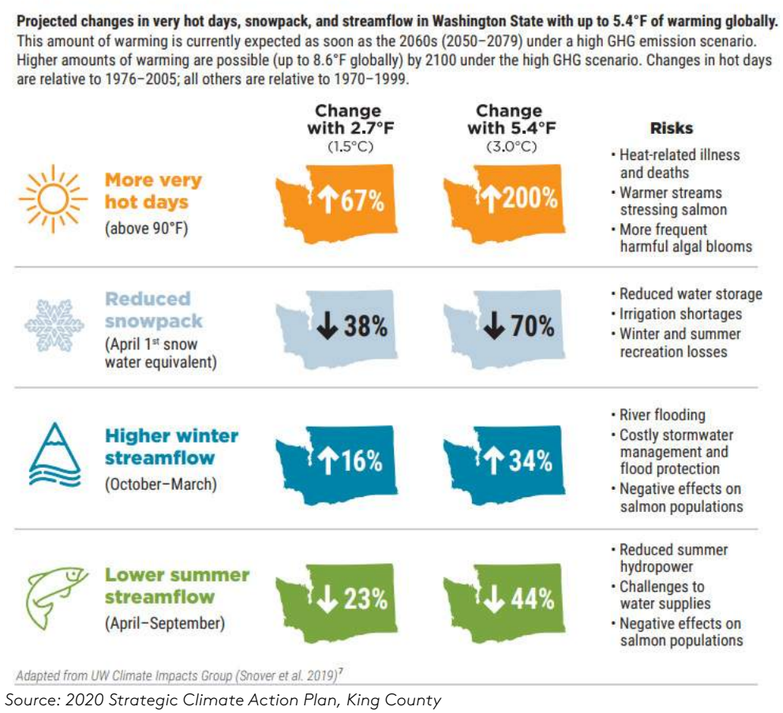
Background and Context

The purpose of this Sustainability Framework is to advance the City's objectives and Sustainability Master Plan with the Station Area as a demonstration district that maximizes opportunity for innovation and community benefit around climate action, resilience, and quality of life.

This Framework is aimed to complement the Station Area Plan and envisions a "future-ready" district that is responsive to quickly changing climate conditions, that takes advantage of the scale and unique opportunities of a mixed use, transit-oriented district, and that recognizes the pace of market transformation and does not preclude future innovations.

Climate conditions are changing quickly and are anticipated to have wide-ranging effects on our region by this plan's horizon of 2044. The future climate implications for Kirkland and the station area include:

- Heavier and more frequent storms and rain events, resulting in flooding
- Drought and regional decline in snow and ice in Cascades and Olympic mountains, resulting in irrigation and water shortages
- Sea level rise and ocean chemistry change in ways that are harmful to local marine species like shellfish and salmon
- Temperature ranges, increased extreme heat days, high smoke events due to an increase in regional wildfires
- Increased potential for cardiovascular illness due to heat or for vector-borne diseases
- Increased potential for food availability and affordability impacts from heat, drought, and pests



Source: 2020 Strategic Climate Action Plan, King County

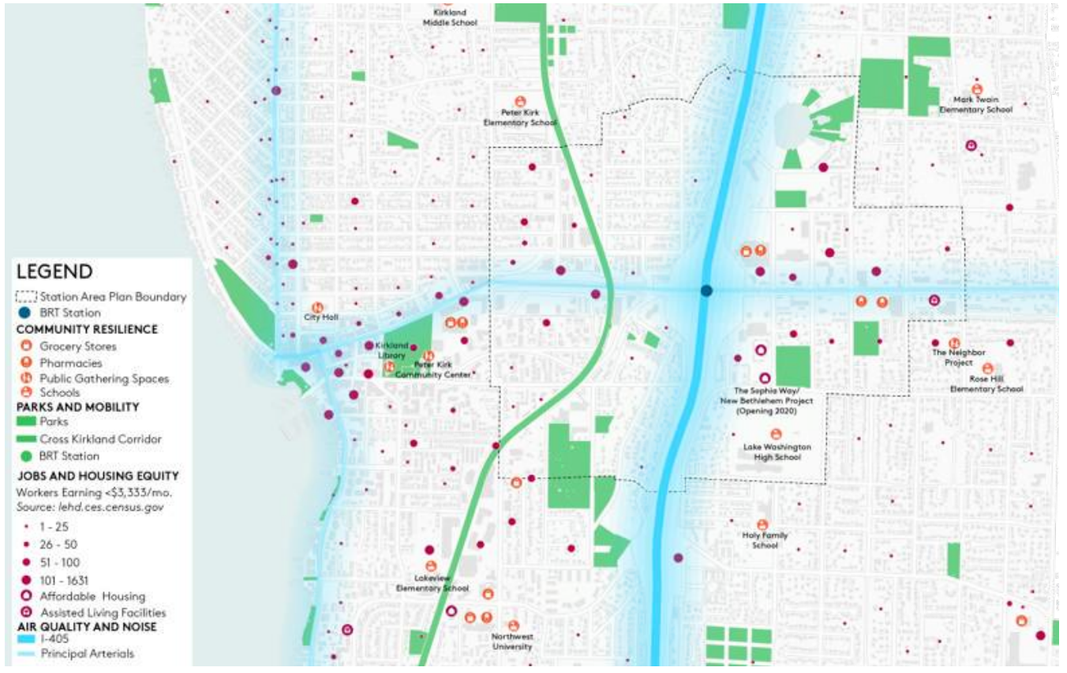
Being along a major highway corridor places the Station Area at higher environmental exposure for GHG emissions, resulting in poorer air quality and noise impacts experienced today. While the Plan includes land use strategies to buffer and mitigate these current impacts, the highways and high level of paving and impervious surface in the Station Area do reduce the community's capacity for resilience looking forward, by increasing flood and heat island risks, by forming barriers for people to get to essential services, and by creating gaps in habitat and stream corridors and reducing ecosystem performance.

How can we increase community resilience?

The adopted Preferred Plan supports growth with an increasing mix in land uses and transit-oriented development, along with improved biking and walking connections and an enhanced open space network. With the planned growth, there will also be an increased demand for resources including energy, water, and open space among others.

However, a more compact, urban development pattern affords the potential to improve upon community resilience as a part of this planned growth, with strategies including shared resources, a more distributed, flexible approach to infrastructure, and enhancing ecosystem performance.

Essential Services and Resources, Environmental Exposure and Access Gaps



Many sustainability co-benefits will accrue through the fundamentals of these smart growth concepts represented in the Station Area Plan – particularly in the areas of syncing land use, transportation, and open space together. A crosswalk indicating alignment between projects and Sustainability Master Plan goals is in the Appendix.

Some examples of strategies already embedded in the plan that will support Sustainability benefits include:

Jobs and Housing Opportunities –
Currently, Kirkland has significantly more housing than jobs, and many people who work in Kirkland cannot afford to live here. This jobs / housing imbalance creates both sustainability and resiliency challenges. The large number of commuters increases VMT, and the lack of affordable housing makes it difficult for essential workers to reach their jobs. The proposed zoning amendments in the Station Area Plan will help address the citywide jobs/ housing imbalance and can reduce the need for commuting.

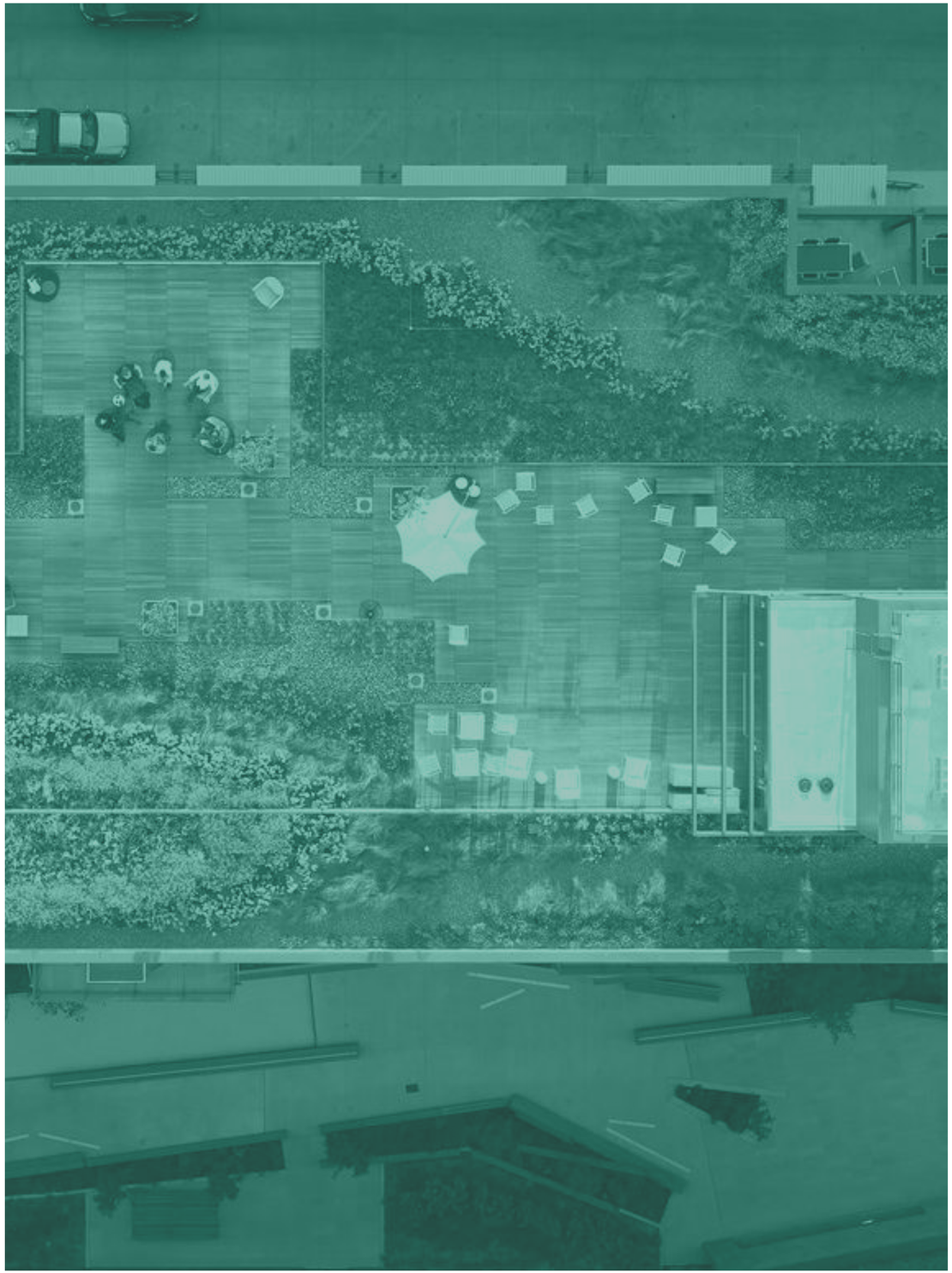
Mobility and Active Transportation –
The planned mobility and active transportation projects and programs will be essential to achieving VMT reduction and climate goals. These include a suite of actions including access to the BRT station, multimodal streets, transportation demand management strategies, and intersection improvements.

NE 120th Main Street –
120th is an important, pedestrian friendly main street for the Station Area with active ground floors and is also envisioned as a green street with plantings which could serve as a habitat corridor and stormwater management feature. These improvements help to strengthen bike and pedestrian connections between Lake Washington High School and Forbes Lake, a valuable open space asset to leverage for ecological and community benefit.

Green Mid-Block Connections –
These mid-block easements are envisioned to help break down large blocks and parcels to a more pedestrian friendly scale. They provide valuable opportunities for stormwater conveyance and treatment and could also provide opportunities for public private partnerships that would allow the city to treat stormwater from the public ROW on private land.

Forbes Lake Park –
Forbes Lake is an important existing open space and habitat asset. Investments including an enhanced wetland buffers could help address phosphorous levels in this salmon bearing water body. A proposed boardwalk and potential acquisitions could expand open space access in this area.

Sustainability co-benefits will accrue through smart growth concepts– particularly in the areas of syncing land use, transportation, and open space together.



Sustainability Framework Goals and Principles

To address anticipated climate changes and increased demands for the Station Area, this Sustainability Framework includes all the Sustainability Master Plan (SMP) goals informed by the community (see inset) and establishes a set of goals and principles to maximize community benefit, including sustainability measures, for Kirkland's existing residents and employees and new members of the community. Like the SMP, the High Performance Building Standards described in KZC 115.62 outline key implementation strategies and actions for development projects to readily tackle these goals.

Sustainability Master Plan (SMP) goals

Sustainability Master Plan Key Recommendations

The plan is divided into eight focus areas. The following list of recommendations highlights the ideas that garnered the most support and excitement in the community:

Energy Supply and Emissions

It is imperative that the energy the community uses is renewable and consistently gets cleaner until it is free from all pollutants. This can be achieved by sourcing electricity that is not produced by combustion of fossil fuels. On a global scale, this conversion should be done to the maximum extent possible by 2030 to avoid the worst impact from Climate Change as the world works towards achieving zero community greenhouse gas (GHG) emissions.

- Secure carbon-free electricity for the community
- Reduce vehicle miles traveled
- Reduce the use of natural gas in buildings and convert existing systems to clean electric

Buildings and Infrastructure

Buildings and related infrastructure not only use a great deal of natural and human made materials, but their construction and operation are responsible for over one third of the community's GHG emissions. Since water is a precious and essential resource, we should ensure we don't use more than required as it is also being impacted by climate change.

- Incentivize construction of high-performing, low energy use zero-emission structures
- Retrofit existing buildings to reduce energy use
- Increase water efficiency in all buildings and infrastructure

Land Use and Transportation

Transportation alone accounts for about half of Kirkland's community greenhouse gas emissions. Efficient land use and transportation patterns can be optimized to use the land we have more efficiently, and to help the community improve air quality, reduce congestion by driving less, and utilize many cleaner transportation options such as biking, walking, transit use and carpooling.

- 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

Natural Environment and Ecosystems

Air, water, land, plants and animals and the entire ecosystem that supports them are vital to human health and contribute immensely to the community's quality of life.

- Protect and enhance the water quality of Kirkland's streams, lakes and wetlands
- With the community's help, restore at least 500 acres of City-owned natural areas and open space park lands by 2035
- Eliminate the discretionary use of synthetic pesticides in parks by 2025
- Make sure that all residents can walk to a park or open space
- Meet the overall goal of citywide 40% tree canopy cover goal by 2026
- Manage Kirkland's urban forest resource for optimal health, climate resiliency and social equity

Sustainable Material Management

Reducing consumption and waste by reusing materials and fixing items instead of replacing or discarding them helps us transition to a system where everything is reused or recycled.

- Achieve zero waste by 2030
- Compost all food and yard waste
- Reuse material and recycle the rest
- Support product stewardship

Sustainable Governance

Responsible governance helps foster decisions that are good for the environment, social equity, and the economy.

- Integrate sustainability into every major decision the City makes
- Coordinate sustainability programs and policies across all City departments
- Ensure processes for public participation are fair, accessible, and inclusive
- Build community resiliency
- Maintain the City's responsible fiscal practices

Sustainable Business

Local businesses, both small and large, contribute extensively to the livelihood of the community and enhance Kirkland's sense of place. The city can assist businesses to become more sustainable and help rebuild the local economy through local and regional partnerships.

- Provide personalized environmental technical support to businesses
- Develop a diversified, equitable and resilient local green economy

Healthy Community

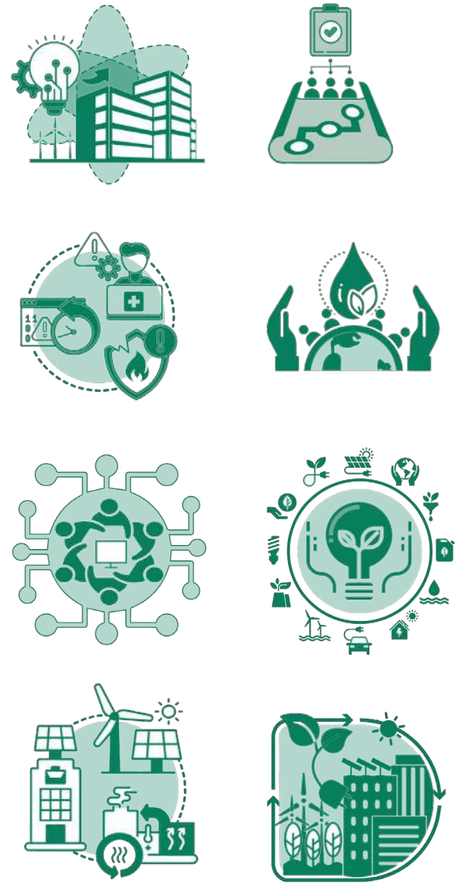
Communities that have access to the necessities of life such as food, water, housing, jobs and opportunities are happier and healthier. It is important for all members of the community to feel they belong and that their city is equitable and socially just.

- Double the number of P-Patches or other community gardens by 2025, and again by 2030
- Reduce how much potable water each person in Kirkland uses by 10% by 2025 and 20% by 2030
- Help refugees and immigrants, people of color and economically struggling residents access the resources they need to thrive
- Build a community that helps young people become engaged, competent and responsible members of the community
- Make Kirkland a safe, inclusive, and welcoming place for all people
- Expand housing options for all income levels
- Provide more recreation facilities

Goals

In support of the project objectives of an inclusive district that supports community benefits and quality of life, and the Council -and community- identified priority innovation areas of Ecosystems / Green Infrastructure and Energy / Decarbonization, the following goals have been developed. Opportunities around these goals are explored further in the following frameworks.

- Plan for a "future-ready" district that supports innovation and emerging technologies
- Lead the way on sustainability goals with public projects
- Support community health and emergency preparedness
- Prioritize actions that support social resilience and environmental justice
- Support partnerships and shared systems to achieve district objectives
- Require high performance buildings to achieve emissions, energy, materials, and water targets
- Prioritize green infrastructure, address gaps, and reduce impervious surfaces to improve resilience, air and water quality, shade and cooling and ecological function
- Support clean energy production and decarbonization



NE 85th Station Area Ecological Framework

Subarea Context and Priorities

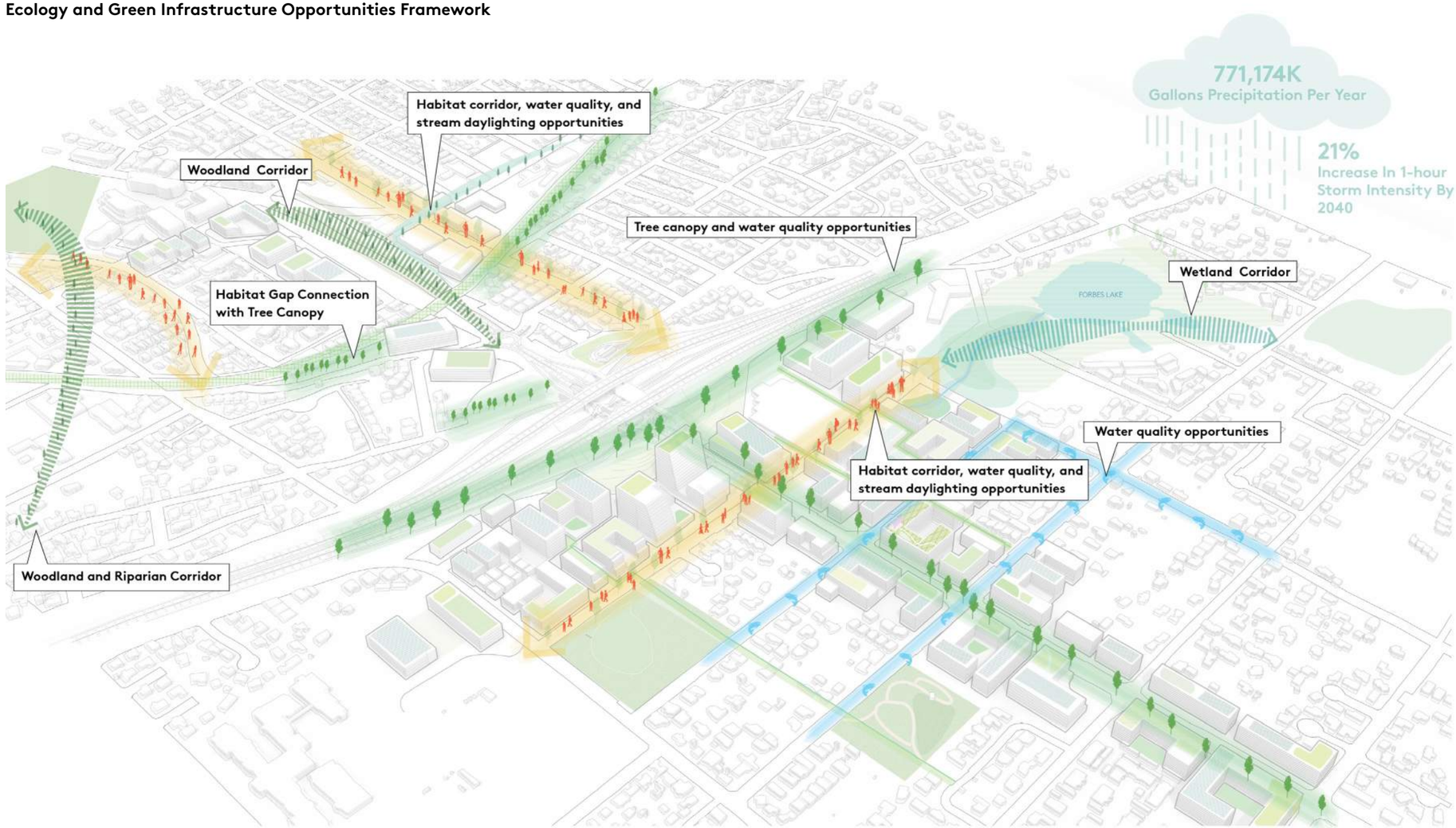
There is an urgency to address anticipated climate changes including more frequent storms and flooding; drought and water shortages; negative impacts to salmon; and increased extreme heat days and food availability. Progress can be made through project and site-level interventions, but by definition, cooperation is needed for system-wide improvements to ecosystem health and functioning.

The subarea has glacial geology with kettles and moraines and includes substantial rolling hills and topography. It is comprised of two watersheds: the Forbes Creek watershed and the Moss Bay watershed. The Forbes Creek watershed is a salmon bearing habitat. It also includes dense areas of existing vegetation interspersed through neighborhoods.

This vegetation primarily exists in an urban matrix consisting of both patches and disconnected habitat corridors. These patches and corridors are made up of layered vegetation including tree canopy and understory planting which supports structural habitat that provides for food, forage, and shelter for mammals, birds, and insects. Three of these are of particular significance: a woodland corridor at NE 85th St between 6th St and NE 114th Ave, a riparian corridor that includes Everest Park, and the wetlands and associated lands surrounding Forbes Lake.

To support the goals of enhancing urban ecology, biological diversity, and tree canopy within the station area, existing patches and corridors should be protected, while filling in the gaps between them.

Ecology and Green Infrastructure Opportunities Framework



Source: Mithun, Herrera

Prioritizing Ecosystem and Green Infrastructure Strategies

Multiple Benefits

A guiding principle for the ecosystem and green infrastructure strategies prioritized here is that they create multiple benefits across ecosystem functions such as: improving mental and physical health; cleaning water and air; increasing biodiversity; and providing resiliency to the impacts of urbanization and climate change impacts, including increased frequency and intensity of rainfall and warmer temperatures.

Resilient, Distributed Green Infrastructure

The recommended green infrastructure strategies are informed by a distributed systems approach to infrastructure and utilities that moves from large, centralized stormwater facilities to smaller scale facilities that are distributed throughout the area and, when they are interconnected, has been shown to increase resiliency. Resiliency is the ability to respond to chronic or sudden stressors, such as significant rain, flooding, or heat events. Successful green stormwater infrastructure projects use a mixture of regional facilities and distributed stormwater features to provide multiple benefits including stormwater conveyance, treatment and adding significant value to the urban habitat, as well as to the pedestrian realm, through green streets.

Connected and Living Systems

To support citywide goals around tree canopy and habitat, this framework builds on Kirkland's existing urban forestry plan and utilizes a Green Factor criterion to incentivize integrated green infrastructure project contributions at the site scale, leveraging new buildings, sites, frontages, open spaces, and streets.

Opportunities to support broader ecosystem and habitat function beyond the site scale are very important for living, resilient systems. Existing stormwater regulations and standards offer a strong foundation to support ecosystems; however, there are gaps that can reduce participation of developments.

There is an opportunity to support more stringent water quality standards and biodiversity by considering amending infeasibility criteria and providing other incentives, that would also anticipate future regulations addressing water quality pollutants (such as metals, 6PPD quinone, and phosphorus) and permit drivers to retrofit existing development.

"Beyond the Site" opportunities include a range of strategies and innovations that should not be precluded, and are illustrated in the Ecosystem Opportunities Framework:

- Contribute to in-watershed habitat connectivity, tree canopy, and stream health goals beyond the site boundary
- To address flooding, reduce impervious surfaces, treat stormwater from the public right-of-way on the project site, or contribute to a district green infrastructure project
- To support ecosystem health, provide enhanced stormwater treatment for water quality pollutants including metals, 6PPD Quinone, and phosphorus, with a priority on the Forbes Creek watershed; and support stream health including daylighting of piped portions with a priority on the Moss Bay watershed
- To support urban habitat, consider design and management practices that provide dark sky environments and bird-safe construction, and adaptive management of landscapes
- To reduce potable water needs and address droughts, contribute to water use efficiencies, and include rainwater capture, harvesting, reuse, and on-site treatment

Stretch strategies for additional consideration include shared and distributed systems, like blue streets or purple pipes, and should be studied further. Some areas should be further explored by City departments and in collaboration with partner organizations or local utilities. For example, widespread adoption of water recycling could be facilitated by installation of district purple pipe as the city performs ongoing maintenance on public streets. There would need to be conversations with the City, King County, and water retailers regarding implications of this shift.

Bird Safe glass, Louisiana Children's Museum (Mithun)

Example applications of Bird Safe Design Standards

Stormwater management integrated into plaza, Liberty Bank Building (Mithun)

Woodland Park Zoomazium Green Roof (Mithun)

NE 85th Station Area Energy Framework

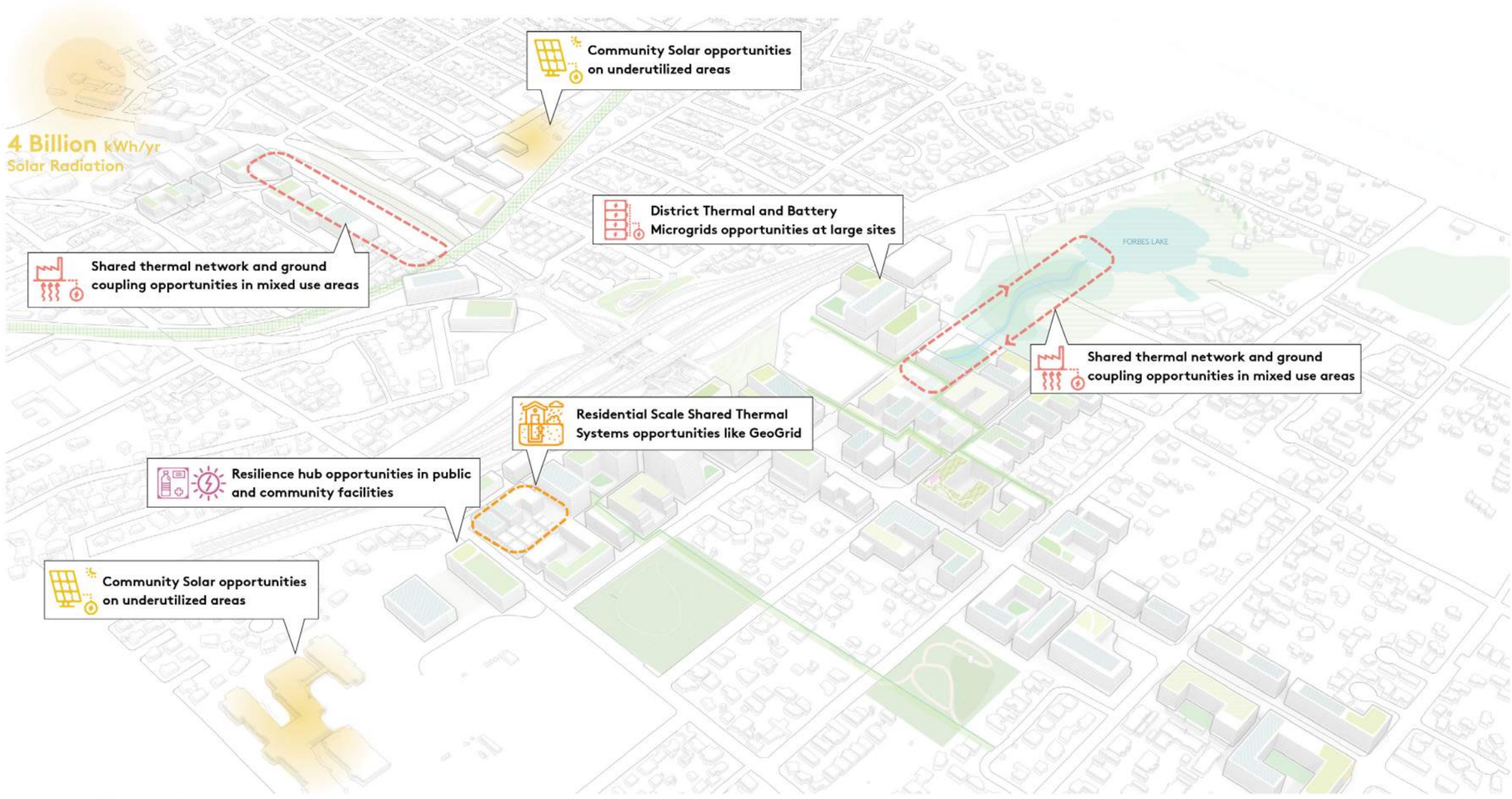
Subarea Context and Priorities

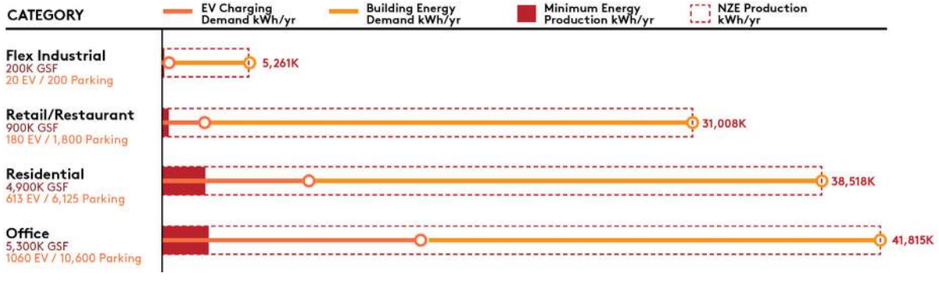
Energy use in the built environment is a major driver of climate change-related emissions. The concept of Embodied Carbon refers to emissions that occur during the manufacture, transport, construction, and operations of a building or facility. There is significant movement within the building industry towards decarbonization including construction and building materials, as well as building operation.

Regionally, the K4C King County Cities Climate Collaboration and Shift Zero advocacy alliance are examples of groups sharing technical, policy, and other expertise to scale up action. The building industry is well positioned for construction and building materials reductions, and tools like the Embodied Carbon in Construction Calculator (EC3), are widely known and used today. Similarly, our region is well positioned for operational reductions. The Washington State Energy Code (WSEC) is one of or the most aggressive in the country with respect to efficiencies, renewable energy production, and low-carbon systems.

Strategies should align with the recently approved 2021 WSEC, effective July 1, 2023, and the SMP target of 80% emissions reduction from baseline by 2050. These strategies should be revisited once the metrics of the WSEC are finalized, with an understanding that the WESC will require renewable energy production, efficiencies, and low-carbon technologies; and development will be moving towards all-electric energy and more electric vehicle charging.

Energy and Decarbonization Opportunities Framework





Source: Mithun, BUSS

Prioritizing Energy and Decarbonization Strategies

Addressing energy decarbonization in the built environment involves two linked approaches: lowering the demand for energy overall and investing in cleaner sources of energy. In both cases, actions should be taken at the individual building, multi-building, and district scales. As a mixed use, transit-oriented community, there are ample opportunities to reduce energy demand.

Multiple Benefits

As with other strategies in this sustainability framework, multi-benefit solutions have been identified wherever possible. One example in this section is the opportunity for co-location of future energy production with resiliency hubs.

Sharing Resources

With a planned mix of development types, compact form, and anticipated street and public works improvements, the Station Area presents opportunities for shared energy and balancing loads. Different land and building uses tend to have differing energy use profiles, both in the typical amount of energy needed for operations and in the time of energy demand (called load).

Because of the Station Area's planned mixed of uses and relatively compact development pattern, there are unique opportunities to gain efficiencies and balance loads during different times of the day. There are opportunities to facilitate shared resources through partnerships and other models. District energy systems are being used today in Puget Sound by a variety of entities, including institutions like Seattle University or large organizations like SeaTac; and examples of public-private models exist in other places in the U.S. and Canada.

Multi-Source Approach

One of the major trends in energy today is a shift from high temperature, centralized generation plants to a more distributed, multi-source approach to generation, transmission, and storage of energy. The opportunity strategies reflect this shift in approach, while recognizing that this is likely to be a mid to long-term process.

Building-scale decarbonization will be supported through High Performance Building Standards and third-party sustainability protocols that encourage developments to not only design, construct, and certify high performing buildings. Recognizing the imperative for decarbonization, baseline requirements will support energy efficiency, on-site renewable energy production (such as rooftop solar), and embodied carbon assessments. Baseline requirements will also include strategies that require low private investment but provide high public value and may function better with widespread adoption, such as planning for construction materials diversion.

Single-occupancy vehicle trips are a significant driver of emissions for the city. As a transit-oriented community, the Station Area will intrinsically have high potential for vehicle trip reduction and carbon reductions. This can be achieved through a combination of land use and urban design policies, together with active transportation improvements and demand management (TDM) strategies and programs. These actions and strategies are primarily addressed in other areas of the Station Area Plan and Implementing Codes; however, their sustainability co-benefits should be recognized.

"Beyond the Building" opportunities include a range of strategies and innovations that should not be precluded and could be facilitated as the market continues to move rapidly toward decarbonization. Some of these are illustrated in the Energy Opportunities Framework on the prior page:

- district thermal and battery mirogrids
- residential-scaled thermal networks
- community solar, energy storage and battery
- distributed, shared systems that move towards "5th Generation" systems that move away from centralized, high temperature plants to distributed, multi-source, more efficient energy systems
- Resilience Hubs, community-serving facilities augmented to support residents, coordinate communication, distribute resources, and reduce emissions

Stretch strategies for additional consideration include District and Shared Thermal and Low-Carbon systems. Additional technical guidance on how to contribute to district energy opportunities could help increase developer participation. This could take the form of a task force assembled by the city to provide technical support to developers considering district energy contributions, or the issuance of RFPs for partnerships on discrete strategies. When utility or street improvements are planned, it is an opportune time to evaluate the potential for installation of shared thermal system infrastructure components such as thermal storage, ambient loop systems, group coupling, and waste heat recovery including sewer heat recovery. The City and local utilities should also consider a study of the implications of requiring all electric buildings on the grid and a cohesive approach to facilitating their goals.

On-site renewable production at UC Irvine Mesa Court towers (Mithun)

Summary of Ecosystem and Green Infrastructure Strategies

Strategy	Description	Implementation Recommendations
Tree Canopy, Habitat Contributions, and Stream Health	Require developments to provide documentation that they have reviewed the NE 85th SAP Ecosystem and Green Infrastructure Opportunities Framework and encourage them to contribute to tree canopy, habitat "patches" with similar habitat functions as adjacent properties or habitat "corridors", and/or support stream health through daylighting piped portions with a priority on the Moss Bay watershed, to reconnect ecological corridors.	Requirement
Native, Drought Tolerant Species	Encourage planting primarily native of drought tolerant trees throughout the SAP, in addition to the existing tree retention-based code in KZC 95.	Requirement / Incentive
Bird Safe and Dark Sky Environment Standards	Require netting or screening to reflect glare on windows and prevent bird kills. Require the installation of fixtures that limit light leaving a building or a site or shining into the sky. Eliminating artificial light and sounds while few humans are present create a nighttime habitat and bird friendly environment.	Requirement
Food Production	Incentivize the provision of Pea Patches or Community Gardens on roofs or on underutilized lots.	Requirment through the Green Factor
Stormwater Management, Pesticide Reduction, Sediment Control	Require developments to adopt a long-term stormwater management plan, construction site management practices that control sediment, with the goal of achieving zero sediment runoff across the entire operation, and to submit a landscape plan that demonstrates a commitment to minimal pesticide and fertilizer inputs, if any, informed by Salmon Safe Standards.	Incentive through the Green Factor, consider for future Requirements
Water Use Management	Require water efficiencies and incentivize responsible water use including reduction, reuse, treatment and recycling, and treatment and reclamation. Do not preclude installation of or connection to purple pipe.	Requirement
Enhanced stormwater treatments for pollutants	To support ecosystem health, provide enhanced stormwater treatment for water quality pollutants including metals, 6PPD Quinone, and phosphorus (exceeding DOE's 50% reduction requirement) with a priority on the Forbes Creek watershed.	Incentive
Adaptive Management of Landscapes	Adaptive Management Plans developed with input from local ecologists and environmental specialists outline on-going landscape maintenance, organic management methods, and monitoring activity to support biodiversity, habitat, and ecosystem function, understanding the nature of their changing relationships.	Incentive
Adaptation Strategies	Encourage developments to assess regional climate change impacts on site design based on 50-year projections, and how these impacts can be reduced or eliminated through Site Climate Resiliency Planning, informed by Salmon Safe Standards.	Incentive

Summary of Energy and Decarbonization Strategies

Strategy	Description	Implementation Recommendations
Demand Reductions	Consider 3rd Party Protocols including Built Green 4-Star and LEED Platinum as baseline requirements to achieve demand reductions.	Requirement
Building Scale Renewable Energy Production	Require development scale renewable energy production, in alignment with 2021 WESC provisions or greater.	Requirement
All Electric Buildings	Require all electric buildings except for gas commercial cooking appliances if electric "ready" infrastructure is provided. Incentivize fully natural-gas free buildings. Reference the Kirkland High performance Building Standard for additional information.	Requirement / Incentive
Waste Diversion	Require developers to provide documentation of a deconstruction and material diversion plan. Reference the Kirkland High performance Building Standard for additional information.	Requirement
Electric Vehicle Infrastructure	At least 20% of all required vehicular parking spaces shall be EV ready, at least 10% of all required vehicular parking spaces shall be EV ready complete with functioning charger, and all bicycle/micro-mobility storage areas shall include electrical outlets. Reference the Kirkland High performance Building Standard for additional information.	Requirement
District Thermal and Battery Microgrids	Incentivize the installation of battery micro-grids on large sites and in projects that serve vulnerable populations, such as seniors, youth, and people experiencing poverty, housing insecurity, or health issues. Incentivize developments to provide documentation that they have considered contributing to the microgrid opportunities outlined in the NE 85th Energy and Decarbonization Opportunities Framework.	Incentive
Residential scale shared thermal systems (ex. GeoGrid)	Incentivize residential scale shared thermal system demonstration projects.	Incentive
Resilience Hubs	Require developments to provide documentation that they have reviewed opportunities in 85th SAP Energy and Decarbonization Opportunities Framework and considered publicly accessible resilience hubs as demonstration projects, integrated into community facilities, institutions, private developments, or partnerships.	Incentive
Community Solar, Energy Storage, and Battery	Require on-site renewable energy production, or contribution to community solar within the grid area.	Requirement Scaling Option or Incentive
Low Carbon, 5th Generation District Thermal, including waste heat recovery, ambient loop systems, and ground coupling	Incentivize developments to provide documentation that they have reviewed opportunities in 85th SAP Energy and Decarbonization Opportunities Framework and considered District Thermal, including thermal storage, ambient loop systems, ground coupling, and waste heat recovery.	Incentive
Net Zero Energy (NZE) Buildings	Provide incentives for developers who achieve the International Living Futures Institute (IFLI) NZE certification. Potential partnership with PSE. Community solar will likely be needed for taller buildings to meet NZE.	Incentive
Embodied Carbon Assessment	Require developers to provide an Embodied Carbon Assessment (ECA) and set embodied carbon limits and reductions. Reference the Kirkland High performance Building Standard for additional information.	Requirement
Lifecycle Decarbonization	Incentivize developers to provide a Lifecycle Carbon Assessment (LCA) and achieve an established maximum carbon level. Review Design Guidelines, FBC, and Development Standards for their ability to promote or not preclude emerging technologies, such as Mass Timber, that achieve carbon reductions.	Consider for future Incentive
Metered Energy Efficiency Transaction Structure	The City can explore MEETS (Metered Energy Efficiency Transaction Structure) and potentially do much of the early exploration legwork needed with the local utility.	Do not preclude
High Performance Building Envelopes	Allow a provision for departures from Design Guidelines, FBC, and Development Standards for their ability to promote or not preclude energy efficient design.	Do not preclude (process based)
Adaptation Strategies	Incentivize developers to provide documentation that they have assessed regional climate change impacts on site design based on 50-year projections, and conducted a hazard assessment. Actions are dependent on project, location, and hazard. May include: • Relocation of critical systems • Structural reinforcement • Off-Grid renewables	Do not preclude (process based)

For more information please visit:
www.kirklandwa.gov/stationareaplan

11.0

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11.0 Appendix Table of Contents:

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11.1

Appendix — Implementation Matrix

Implementation Matrix

	ACTION	LEAD AGENCY/PARTNERS	IMPLEMENTATION TIMELINE Adopt with Plan Initiate Upon Adoption Short-term (0-5 years) Medium-term (5-10 years) Long-term (10+ years) Ongoing	STATUS 1 = Funded or resourced (staffed) 2 = City considering allocating funding in future (e.g., C/P and/or budget process/ staffing) 3 = Long-range Vision
LAND USE				
1	Adopt a Form-Based Code and urban design guidelines to accommodate the growth targets based on the capacity analyzed in the Station Area Plan FSEIS.	City of Kirkland	Adopt with Plan (FBC/Design Guidelines)	1
2	Maintain collaborative relationships with service providers in the Station Area (e.g., KCHA, Helen's Place) and identify opportunities to complement and enhance their services.	City of Kirkland / King County Housing Authority / Helen's Place / Salthouse Church	Ongoing	1
3	Pursue opportunities to utilize WSDOT right-of-way for transit-supportive uses that could include future development, recreational amenities, and/or managed open spaces through the City's legislative agenda.	City of Kirkland / WSDOT	Ongoing	3
HOUSING				
4	Adopt an incentive zoning program in the Station Area Form-based Code that creates development bonuses for affordable housing, with an emphasis on creating units in excess of the City's current 10% inclusionary zoning and, or providing units at deeper levels of affordability.	City of Kirkland / ARCH	Adopt with Plan (FBC)	1
5	Direct affordable housing in-lieu payments or commercial incentive contributions to support affordable housing within the Station Area boundary.	City of Kirkland / ARCH	Short-term	1

Implementation Matrix

	ACTION	LEAD AGENCY/PARTNERS	IMPLEMENTATION TIMELINE Adopt with Plan Initiate Upon Adoption Short-term (0-5 years) Medium-term (5-10 years) Long-term (10+ years) Ongoing	STATUS 1 = Funded or resourced (staffed) 2 = City considering allocating funding in future (e.g., C/P and/or budget process/ staffing) 3 = Long-range Vision
HOUSING				
6	Establish an affordable housing target within the Station Area boundaries (as a subset of Citywide targets); create and maintain a monitoring program to track progress of implementation measures towards housing targets.	City of Kirkland	Short-term	1
7	Conduct a nexus study for commercial linkage fees as a method to support affordable housing targets by collecting fees new commercial development. To the extent new State-wide enabling legislation is needed, add to the City's legislative agenda.	City of Kirkland	Medium-term	2
8	Adopt a Tax Increment Financing district and project list that identifies infrastructure projects in the Station Area that are necessary to encourage and support future redevelopment and housing production.	City of Kirkland	Short-term	2
ECONOMIC DEVELOPMENT				
9	Adopt development standards that accommodate a range of commercial spaces, particularly smaller scale commercial spaces that are accessible to small, local businesses.	City of Kirkland	Adopt with Plan (FBC)	1
10	Identify opportunities for multi-benefit partnerships and programs between private, public, and non-profit organizations in the Station Area to create community benefits.	City of Kirkland	Initiate Upon Adoption	1

Implementation Matrix

	ACTION	LEAD AGENCY/PARTNERS	IMPLEMENTATION TIMELINE Adopt with Plan Initiate Upon Adoption Short-term (0-5 years) Medium-term (5-10 years) Long-term (10+ years) Ongoing	STATUS 1 = Funded or resourced (staffed) 2 = City considering allocating funding in future (e.g., C/P and/or budget process/ staffing) 3 = Long-range Vision
NATURAL ENVIRONMENT AND SUSTAINABILITY				
11	Implement the City's Sustainability Master Plan goals in the Station Area and develop a monitoring program to track.	City of Kirkland	Initiate Upon Adoption	1
12	Integrate strategies into sustainability regulations for the district that "future-proof" the plan to ensure development is not precluding future innovation in the field.	City of Kirkland	Adopt with Plan (FBC)	1
13	Identify programs that support achievement of state and regional greenhouse gas emissions reductions goals.	City of Kirkland	Initiate Upon Adoption	1
14	Identify programs that reduce air pollution and greenhouse gas emissions by increasing alternatives to driving alone.	City of Kirkland	Initiate Upon Adoption	1
15	Expand electric transportation infrastructure in the Station Area.	City of Kirkland / Transit Agencies / Private development	Short-term	2
16	Identify programs that encourage retrofitting of existing buildings to reduce building energy use.	City of Kirkland	Short-term	2
17	Identify programs that promote wise use of services and resources (including conserving water and energy, reducing waste, treating stormwater).	City of Kirkland	Initiate Upon Adoption	1
18	Explore partnership opportunities to treat stormwater from the public right-of-way on project sites with shared facilities.	City of Kirkland / Private property-owners	Initiate upon adoption	2

Implementation Matrix

	ACTION	LEAD AGENCY/PARTNERS	IMPLEMENTATION TIMELINE Adopt with Plan Initiate Upon Adoption Short-term (0-5 years) Medium-term (5-10 years) Long-term (10+ years) Ongoing	STATUS 1 = Funded or resourced (staffed) 2 = City considering allocating funding in future (e.g., C/P and/or budget process/ staffing) 3 = Long-range Vision
NATURAL ENVIRONMENT AND SUSTAINABILITY				
19	Establish a Green Factor Code that encourages visible, functional, green spaces and high-quality habitat.	City of Kirkland	Adopt with Plan (FBC)	1
PARKS AND OPEN SPACE				
20	Identify and minimize gaps in equitable access to parks and open spaces in order to make more efficient use of existing parks and open spaces in the area.	City of Kirkland	Adopt with Plan (SAP and PROS Plan)	1
21	Leverage public assets and partnerships, including excess WSDOT right-of-way, for potential active recreational areas, managed natural areas, stormwater treatment, or sustainable landscape areas.	City of Kirkland / WSDOT	Short-term	1
22	Expand access to and through Forbes Lake Park to provide multiple benefits of environmental enhancement and education, improved nonmotorized transportation connec-tions, and access to open space and recreation.	City of Kirkland	Short-term	2
23	Identify locations to enhance the Cross Kirkland Corridor to create recreational and open space amenities and improve active transportation connections to the Corridor.	City of Kirkland	Short-term	2
24	Identify locations for required mid-block green connections that provide opportunities for landscaping, active, and passive recreation.	City of Kirkland	Adopt with Plan (FBC)	1

Implementation Matrix

	ACTION	LEAD AGENCY/PARTNERS	IMPLEMENTATION TIMELINE Adopt with Plan Initiate Upon Adoption Short-term (0-5 years) Medium-term (5-10 years) Long-term (10+ years) Ongoing	STATUS 1 = Funded or resourced (staffed) 2 = City considering allocating funding in future (e.g., C/P and/or budget process/ staffing) 3 = Long-range Vision
PARKS AND OPEN SPACE				
25	Adopt an incentive zoning program in the Station Area Form-Based Code that creates development bonuses for new development to provide on-site public open space (e.g., plazas, pocket parks, etc.), enhanced on-site common spaces, recreation amenities, and linear parks.	City of Kirkland	Adopt with Plan (FBC)	1
26	Incorporate identified Station Area Parks projects into the City's Capital Improvement Program.	City of Kirkland	Initiate Upon Adoption	1
27	As part of a Tax Increment Financing district, identify candidate Parks and Open Space infrastructure projects needed to serve the Station Area.	City of Kirkland	Short-term	2
TRANSPORTATION AND MOBILITY				
28	Incorporate identified Station Area Transportation projects into the City's Capital Improvement Program, Capital Facilities Plan, and Transportation Master Plan.	City of Kirkland	Initiate Upon Adoption	1
29	Incorporate identified Station Area Transportation projects into a Planned Action Ordinance as required mitigation for future private development to construct.	City of Kirkland	Adopt with Plan (PAO)	1
30	Evaluate how Station Area Plan projects should be reflected in Transportation Impact Fee calculations, including the option of establishing an overlay for the Station Area.	City of Kirkland	Short-term	2

Implementation Matrix

	ACTION	LEAD AGENCY/PARTNERS	IMPLEMENTATION TIMELINE Adopt with Plan Initiate Upon Adoption Short-term (0-5 years) Medium-term (5-10 years) Long-term (10+ years) Ongoing	STATUS 1 = Funded or resourced (staffed) 2 = City considering allocating funding in future (e.g., C/P and/or budget process/ staffing) 3 = Long-range Vision
TRANSPORTATION AND MOBILITY				
31	Develop street standards that serve all users, including pedestrians, bicyclists, other forms of micromobility (e.g., scooters), transit users, vehicles, and – where appropriate – freight ("Complete Streets" vision 2040).	City of Kirkland	Adopt with Plan (FBC)	1
32	Establish parking ratios that reflect the vision for a vibrant transit-oriented district, recommended transportation investments to achieve a balanced multi-modal network, and robust Transportation Demand Management (TDM) strategies for future development.	City of Kirkland	Adopt with Plan (FBC)	1
33	Establish a TDM monitoring program for the Station Area.	City of Kirkland	Initiate Upon Adoption	1
34	Develop bicycle parking guidelines as a Public Works pre-approved policy.	City of Kirkland	Short-term	1
35	Develop passenger load/unload areas as Public Works pre-approved roadway policy.	City of Kirkland	Short-term	1
36	Utilize parking management strategies like residential parking zones, time limitations and enforcement around large commercial projects and pick up and drop off facilities and monitor parking congestion in the Station Area.	City of Kirkland	Short-term	2
37	As part of a Tax Increment Financing district, identify candidate Transportation infrastructure projects in the Station Area.	City of Kirkland	Short-term	2
38	Conduct a study to evaluate transportation solutions to connect the BRT to downtown.	City of Kirkland	Medium-term	2

Implementation Matrix

	ACTION	LEAD AGENCY/PARTNERS	IMPLEMENTATION TIMELINE Adopt with Plan Initiate Upon Adoption Short-term (0-5 years) Medium-term (5-10 years) Long-term (10+ years) Ongoing	STATUS 1 = Funded or resourced (staffed) 2 = City considering allocating funding in future (e.g., C/P and/or budget process/ staffing) 3 = Long-range Vision
PUBLIC SERVICES AND PUBLIC FACILITIES				
39	Incorporate identified Station Area Water, Sewer, and Stormwater projects into the City's Capital Improvement Program.	City of Kirkland	Initiate Upon Adoption	1
40	Incorporate identified Station Area Water, Sewer, and Stormwater projects into a Planned Action Ordinance as required mitigation for future private development to construct.	City of Kirkland	Initiate Upon Adoption	1
41	Adopt an incentive zoning program in the Station Area Form-Based Code that creates development bonuses for new development to provide school space.	City of Kirkland	Adopt with Plan (FBC)	1
42	Adopt development standards that can provide Lake Washington School District with more development capacity to build additional school space on current district-owned sites.	City of Kirkland	Adopt with Plan (FBC)	1
43	Remove potential development barriers in current regulations that might preclude siting of school facilities on private properties as part of mixed use developments.	City of Kirkland	Adopt with Plan (FBC)	1
44	Conduct a Citywide assessment of zoning regulations to remove potential barriers to LWSD capacity projects on current district-owned sites and possible public/private partnership sites.	City of Kirkland / LWSD	Short-term	1
45	As part of a Tax Increment Financing district, identify possible candidate Sewer infrastructure projects in the Station Area.	City of Kirkland	Short-term	2

Implementation Matrix

	ACTION	LEAD AGENCY/PARTNERS	IMPLEMENTATION TIMELINE Adopt with Plan Initiate Upon Adoption Short-term (0-5 years) Medium-term (5-10 years) Long-term (10+ years) Ongoing	STATUS 1 = Funded or resourced (staffed) 2 = City considering allocating funding in future (e.g., C/P and/or budget process/ staffing) 3 = Long-range Vision
ADMINISTRATIVE				
46	Develop City application materials, a fee structure, and legal agreements to implement the incentive zoning program, including forms that ensure provision of bonus incentives in perpetuity.	City of Kirkland	Short-term	1
47	Develop a Station Area implementation tracking program and establish a cadence of Council and Planning Commission updates on implementation progress.	City of Kirkland	Short-term	1
48	Adopt a Planned Action Ordinance for the Station Area, and a supplemental checklist form for projects applying to be reviewed as a Planned Action.	City of Kirkland	Initiate Upon Adoption	1
49	Adopt amendments to the Comprehensive Plan General elements and neighborhood plan chapters to ensure consistency with the adoption of the Station Area Plan Subarea chapter.	City of Kirkland	Short-term	1
50	Update City forms and publications for consistency with Station Area Plan development regulations.	City of Kirkland	Initiate Upon Adoption	1
51	As part of the City's routine budget and CIP processes, identify and prioritize Station Area funding and expenditures to support infrastructure investments and service delivery.	City of Kirkland	Short-term	2

11.2

Appendix — Recommendations List

Recommendations List: Land Use and Urban Design

Land Use and Urban Design	Mechanism					Co-Benefits / Community Benefits				
	Goal	Initiative	Project	Standard	Incentive	HOUSING	MOBILITY	PARKS	SUSTAINABILITY	SCHOOLS
Transit oriented development and minimum densities	■						■			
15-minute neighborhoods and smart growth principles	■						■			
Support a mix of uses including flexible industrial, workforce development, and mixed use educational facilities	■			■	■	■				■
Support new jobs, small businesses	■	■								
Support infill housing		■				■				
Increased housing choices		■		■	■	■				
Affordable housing including inclusionary zoning and MFTE programs		■		■	■	■				
Pedestrian oriented, active public realm	■			■			■	■		
Expand development capacity of publicly owned land to increase public benefit										
Support State Climate Action Goals and City Sustainability Master Plan	■								■	
High Performance Building Standards and support 50% emissions reduction by 2030 and 80% by 2050,compared to a 2017 baseline, reduce use of natural gas in buildings				■	■				■	
Renewable Energy Production and Community Solar in alignment with SMP Actions ES 1.2 and Goals ES-3	■			■	■				■	
Encourage distributed, shared energy and thermal systems including district thermal and battery, residential-scaled networks, community solar and battery, and distributed systems	■	■			■				■	
Resilience Hubs that are community-serving facilities to support residents, augment communication, distribute resources	■				■				■	
Buffer residential uses from I-405 regarding air quality				■		■			■	
Reduce light pollution				■					■	
Transitions to adjacent neighborhoods	■			■						
Urban design modulation				■						

Recommendations List: Parks and Open Space

Parks and Open Space	Mechanism					Co-Benefits / Community Benefits				
	Goal	Initiative	Project	Standard	Incentive	HOUSING	MOBILITY	PARKS	SUSTAINABILITY	SCHOOLS
Integrate parks and open spaces throughout the area and ensure all residents have access to open space within a 10-minute walk	■			■	■		■	■		
Preserve existing trees and support enhanced canopy to support the SMP 40% tree canopy cover goal including native drought tolerant species	■			■	■		■	■	■	
Support habitat and stream, lake, and wetlands health including stormwater management, pesticide and pollutant reduction and sediment control	■	■		■	■		■	■	■	
Support bird safe and dark sky environment standards				■			■	■		
Improve access to Everest Park from the Station Area through 80th pedestrian bridge and CKC connection		■						■		
Improve access to Peter Kirk Park from the Station Area through 80th pedestrian bridge and bike lanes		■						■		
Improve access to North Rose Hill Woodland Park through Forbes Lake boardwalk and crossing			■				■	■		
Improve access to South Rose Hill Meadows Park through mid-block green connections					■		■	■		
Enhance and expand use of existing parks, open spaces and trails	■							■		
Forbes Lake Park enhancements			■		■		■	■	■	
CKC trail enhancements at 7th and at 90th/public works building			■				■	■		
Reference Peter Kirk and Everest Park enhancements		■						■		

Recommendations List: Parks and Open Space

Parks and Open Space	Mechanism					Co-Benefits / Community Benefits				
	Goal	Initiative	Project	Standard	Incentive	HOUSING	MOBILITY	PARKS	SUSTAINABILITY	SCHOOLS
Leverage existing publicly owned assets for community use	■	■						■		
Cemetery access for passive open space		■						■		
Lake Washington High School recreation shared use		■						■		
Utilize excess public rights-of-way to provide ecosystem benefits and access to natural areas		■						■	■	
Support multi-benefit projects including green infrastructure	■			■	■		■	■		
Support ecosystem and green infrastructure performance (through Green Factor)	■			■	■			■	■	

Recommendations List: Transportation and Mobility

Transportation and Mobility	Mechanism					Co-Benefits / Community Benefits				
	Goal	Initiative	Project	Standard	Incentive	HOUSING	MOBILITY	PARKS	SUSTAINABILITY	SCHOOLS
Shift toward more urban streets and support of successful places and away from throughput	■					■	■		■	
Shift mode share toward active modes	■	■					■		■	
Transit station amenities and design				■			■			
Street design standards for pedestrians and cyclists including lighting				■			■			
Intersection design standards for pedestrians and cyclists				■			■			
Reduce parking ratios				■			■		■	
Support electric vehicle infrastructure	■			■	■		■		■	
Support shared off-street parking				■	■		■		■	
Transportation Demand Management strategies							■			
Shuttle services or other first/last mile strategies		■					■			
Unbundled parking or charge fees for off-street parking							■		■	
Intelligent Transportation Systems signal timing		■					■		■	
Encourage CTR programs, emergency ride home, ridematch, and other pro-grams		■					■		■	
Transit pass provision							■		■	
Partner with TNCs for pooled ridesharing		■					■		■	
Bike amenities				■			■		■	
Bikeshare and micro-mobility systems							■		■	

For a list of recommended projects see appendix 11.3

Recommendations List: Utilities and Services

Utilities and Services	Mechanism					Objective	Co-Benefits / Community Benefits				
	Goal	Initiative	Project	Standard	Incentive	Inclusion	HOUSING	MOBILITY	PARKS	SUSTAINABILITY	SCHOOLS
Support childcare and educational spaces	■				■	■					■
Increase development capacity for Lake Washington School District		■				■					■
Allow and encourage childcare and educational spaces in mixed use developments and active frontage areas	■			■	■	■					■
Provide police, fire, and emergency response services		■									
Support decarbonization and 100% renewable energy and NZE development by 2030	■	■		■	■					■	
Support reduced potable water demand including 20% water efficiency by 2030 compared to 2019 baseline	■									■	
Support a local green economy and explore green infrastructure or other sustainable business workforce development		■				■			■	■	
Support multi-benefit projects including green infrastructure	■			■	■	■		■	■	■	
Support distributed and shared infrastructure	■	■			■	■				■	

For a list of recommended projects see appendix 11.3

11.3

Appendix — Reccommended Projects List

Recommendations List: Transportation Capital Projects

Transportation Capital Projects	Mechanism		Co-Benefits / Community Benefits				
	Description	**Project**	HOUSING	MOBILITY	PARKS	SUSTAINABILITY	SCHOOLS
1. Lee Johnson East Access	NE 83rd St/120th Ave NE signalized access, and 120th Ave NE corridor improvements of added sidewalks and NB left turn lane (NE 83rd St to NE 85th St)	■		■			
2. Lee Johnson South Access	NE 80th St/118th Ave NE mini roundabout, and 118th Ave complete street	■		■			
3. NE 80th St/ 120th Ave NE Intersection Improvement	Added SB left turn pocket, signal revisions, and 120th Ave NE corridor improvements of added sidewalks and SB bike lane (NE 80th St to NE 83rd St)	■		■			
4. 124th Ave NE Roadway Widening	Widen roadway to five lane cross section from NE 85th St through the NE 90th St intersection, widened sidewalks and raised protected bike lanes from NE 84th Ln through NE 90th St intersection	■		■			
5. NE 85th St/120th Ave NE Intersection Improvement	Revised signalization for added NB left turn lane, and curb ramps, crosswalk striping, signalization for shared use paths	■		■			
6. 5th Ave to Kirkland Way Shared Use Trail Improvements	Widen existing trail to 12 feet, minimize grade, and add lighting	■		■			
7. 5th Ave Greenway	Add pavement markings and signage for greenway designation from 6th St to 10th St	■		■			
8. 6th St Widened Sidewalks	Widen sidewalks on the east side of 6th St from Kirkland Way to NE 85th St	■		■			
9. Kirkland Way Complete Street	Add buffered bike lanes and continuous sidewalks from 6th St to NE 85th St	■		■			
10. 7th Ave/NE 87th St Complete Street	Widened sidewalks and buffered bike lanes from 6th St to 116th Ave NE. Parking lane protecting the south side (EB) bike lane from 6th St to the CKC, and landscape strips added to sidewalks from the CKC to 116th Ave NE	■		■			
11. 116th Ave NE Complete Street (NE 87th St to NE 90th St)	Buffered bike lanes and sidewalk infill from NE 87th St to NE 90th St	■		■			
12. 116th Ave NE Complete Street (NE 90th St to NE 100th St)	Buffered bike lanes and sidewalk infill from NE 90th St to NE 100th St	■		■			
13a. I-405/NE 85th St Shared Use Trail (SW Quadrant)	Shared use trail connecting BRT station to 116th Ave NE	■		■			
13b. I-405/NE 85th St Shared Use Trail (NE Quadrant)	Shared use trail connecting BRT station to Slater Ave NE	■		■			
13c. I-405/NE 85th St Shared Use Trail (SE Quadrant)	Shared use trail connecting BRT station to NE 80th St	■		■			
14. 90th Street Complete Street (I-405 to 122nd Ave NE)	Add shared use path and landscape strip on the north side of roadway, and sidewalk and landscape strip on south side of roadway	■		■			
15. 90th Street Complete Street (122nd Ave NE to 128th Ave NE)	Buffered bike lanes and sidewalks with landscape strips from 122nd Ave NE to 124th Ave NE, greenway treatments including new sidewalks and curb ramps, pavement markings and signage from 124th Ave NE to 128th Ave NE	■		■			
16. 122nd Ave NE Bike Route	Widen sidewalks, add lighting, and stripe buffered bike lanes from NE 80th St to NE 90th St	■		■			

Recommendations List: Transportation Capital Projects

Transportation Capital Projects	Mechanism		Co-Benefits / Community Benefits				
	Description	**Project**	HOUSING	MOBILITY	PARKS	SUSTAINABILITY	SCHOOLS
17. NE 82nd Green Mid-block Connection Share Use trail connection between 120th Ave NE to 122nd Ave NE in the vicinity of NE	NE 83rd St/120th Ave NE signalized access, and 120th Ave NE corridor improvements of added sidewalks and NB left turn lane (NE 83rd St to NE 85th St)			■			
18a. NE 85th St Shared Use Paths (I-405	NE 80th St/118th Ave NE mini roundabout, and 118th Ave complete street			■			
18b. NE 85th St Enhanced Sidewalks and Raised Pro-tected Bike Lanes (120th Ave NE to 122nd Ave NE)	Widened sidewalks, landscape strips, and raised protected one-way bike lanes (120th Ave NE to 122nd Ave NE)			■			
18c. NE 85th St Enhanced Sidewalks and Raised Protected Bike Lanes (122nd Ave NE to 124th Ave NE)	Widened sidewalks, landscape strips, and raised protected one-way bike lanes (122nd Ave NE to 124th Ave NE)			■			
18d. NE 85th St Enhanced Sidewalks and Raised Protected Bike Lanes (124th Ave NE to 126th Ave NE)	Widened sidewalks, landscape strips, and raised protected one-way bike lanes (124th Ave NE to 126th Ave NE)			■			
18e. NE 85th St Enhanced Sidewalks and Raised Protected Bike Lanes (126th Ave NE to 128th Ave NE)	Widened sidewalks, landscape strips, and raised protected one-way bike lanes (126th Ave NE to 128th Ave NE)			■			
19.116th Ave NE Ped/Bike Overcrossing Access Improvements	Widen sidewalk and bike lane on the northwest side of 116th Ave NE from NE 80th St to existing I-405 ped/bike bridge, includes RRFB crossing of 116th Ave NE to the south			■			
20. 120th Ave NE Corridor Improvements (NE 85th St to NE 90th St)	Overlay and sidewalk infill between NE 85th St and NE 90th St			■			
P1. 6th St/7th Ave Intersection Improvements	Bike lane striping and sidewalk improvements at the intersection to connect to 7th Ave complete street improvements			■			
P2. NE 85th St/122nd Ave NE Protected Intersection	Striping, signalization changes, and protection islands at the interesection for sidewalks and raised protected bike lanes on NE 85th St			■			
P1. 6th St/7th Ave Intersection Improvements	Bike lane striping and sidewalk improvements at the intersection to connect to 7th Ave complete street improvements			■			
P2. NE 85th St/122nd Ave NE Protected Intersection	Striping, signalization changes, and protection islands at the interesection for sidewalks and raised protected bike lanes on NE 85th St			■			
P3. NE 87th St/116th Ave NE Intersection Improvement	Mini roundabout and associated striping and sidewalk changes			■			
P4. NE 80th St/122nd Ave NE Intersection Improvement	South side curb extension, crosswalks, and RRFBs added for north-south walking and biking connection to Lake Washington High School			■			

Recommendations List: Transportation Capital Projects

Transportation Capital Projects	Mechanism		Co-Benefits / Community Benefits				
	Description	**Project**	HOUSING	MOBILITY	PARKS	SUSTAINABILITY	SCHOOLS
P5. 6th St/NE 85th St Protected Intersection	Striping, signalization changes, and protection islands at the interesection for sidewalks and raised protected bike lanes on NE 85th St						
P6. 6th and Kirkland Way Protected Intersection	Striping, signalization changes, and protection islands at the interesection for sidewalks and buffered bike lanes on Kirkland Way						

Recommendations List: Utilities and Infrastructure Project List

Transportation Capital Projects	Mechanism		Co-Benefits / Community Benefits				
	Description	**Project**	HOUSING	MOBILITY	PARKS	SUSTAINABILITY	SCHOOLS
WM2. Water in I-405, 24" diameter	From NE 85th St to NE 87th St						
97-R. Water in I-405 Off-ramp, 16" diameter	From NE 87th St to NE 85th St						
133. Water in 124th Ave NE, 16" diameter	From NE 85th St to Honda of Kirkland, 1242 NE 85th St						
134. Water in NE 92nd St, 12" diameter	From 124th Ave NE to dead end						
135-R. Water in 122nd Ave NE, 16" diameter	From NE 85th to NE 90th						
136. Water in Slater Ave/Costco, 16" diameter	From 120th Ave NE to 120th Ave NE						
137. Water in 120th Ave NE, 20" diameter	Includes 76 Gas Station, 11848 NE 85th, from NE 85th to 76 Gas Station and from 120th Ave NE to dead end						
146. Water in NE 87th, 16" diameter	Includes McLeod Auto Body, 1015 7th Ave #220, from NE 87th St to dead end						
150-R. Water in 6th St, Central Ave, and 6th Ave, 8-16" diameter	From 15th Ave to 7th Ave						
153. Water in 8th St, 8-16" diameter	From 7th Ave to 12th Ave						
169. Water in 7th Ave, 12-20" diameter	From 3rd St to 8th St						
170. Water in 6th St, 12-16" diameter	From 7th Ave to Central Way						
174. Water in NE 85th St., 24" diameter	From 116th Ave NE to 114th Ave NE						
175. Water in 128th Ave NE/NE 3rd Ct, 12" diameter	From NE 85th St to NE 80th St						
176. Water in 126th Ave NE, 8-16" diameter	From NE 85th St to NE 80th St						
177-R. Water in Safeway Parcel, 12519 NE 85th St, 12-16" diameter	From 124th Ave NE to 126th Ave NE						
178. Water in 124th Ave NE, 12" diameter	From NE 85th St to NE 80th St						
179. Water in 122nd Ave NE, 12-16" diameter	From NE 85th St to NE 80th St and in unnamed road south of 824 122nd Ave NE from 122nd Ave NE to dead ends						

Recommendations List: Utilities and Infrastructure Project List

Transportation Capital Projects	Mechanism		Co-Benefits / Community Benefits				
	Description	**Project**	HOUSING	MOBILITY	PARKS	SUSTAINABILITY	SCHOOLS
180. Water in NE 80th St, Taco Time NW, 12005 NE 85th St, 12" diameter	From 120th Ave NE to dead end and in NE 80th St from 120th Ave NE to 118th Ct NE						
184. Water in 118th Ave NE, 12" diameter	From NE 80th St to 120th Ave NE						
185. Water in 118th Ct NE, 12" diameter	From NE 80th St to dead end						
186. Water in 114th Ave NE, Kirkland Way, Ohde Ave, and Slater St, 12-20" diameter	From NE 85th to Kirkland Ave						
187. Water in 4th Ave, 5th Ave, 10th St, 3rd Ave, 9th St, 2nd Ave, and 99th Ln, 12-16" diameter	From Kirkland Way to 6th St						
536. Water in 120th Ave NE, 20" diameter	From 12020 NE 8th St PRV to Fire lane south of Costco						
537. Water in Costco, 8629 120th Ave NE, 16" diameter	From 120th Ave NE						
SAP-1 Sewer in Walgreens, 12405 NE 85th St, 12" diameter	From NE 85th to MH No. 2837						
SAP-2 Sewer in NE 85th St, 12" diameter	From 124th Ave NE to MH No. 2835						
SAP-3 Sewer in 124th Ave NE, 12" diameter	From NE 85th St to NE 90th St						
SAP- 4 Sewer in NE 90th St, 12-21" diameter	From 124th Ave NE to 122nd Ave NE (12"), 122nd Ave NE to 120th Ave NE (15"), and 120th Ave NE to I-405 (21")						
SAP-5 Sewer in 122nd Ave NE, 12" diameter	From NE 90th St to MH No. 2669						
SAP-6 Sewer in Lee Johnson, 11845 NE 85th St, 12" diameter	From MH No. 2554 to MH No. 2578						
SAP-7 Sewer in 120th Ave NE, 12" diameter	From NE 85th St to NE 90th St						
SAP-8 Sewer in I-405 and NE 87th St, 18" diameter	From Costco, NE 90th St/Slater Ave to MH No. 2322						
SAP-9 Sewer in NE 87th St, 18" diameter	From King County – East Side Interceptor to MH No. 2322						

Recommendations List: Utilities and Infrastructure Project List

Transportation Capital Projects	Mechanism		Co-Benefits / Community Benefits				
	Description	**Project**	HOUSING	MOBILITY	PARKS	SUSTAINABILITY	SCHOOLS
SAP-10 Sewer in 6th St, 12" diameter	From 7th Ave to Central Way						
Stormwater Basin 2 160k CF Detention Vault	26,570 SF						
Stormwater Basin 210k CF Detention Vault	35,350 SF						
Stormwater Conveyance Improvements within Station Area Plan	Increased conveyance pipe diameters: • Pipe 7493 (near PETCO) from 18 to 30-inch • Pipe 40640 to Pipe-5 (along 124th Ave NE) from 12 to 18-inch • Pipes 23048, 23047 and 23018 (north of NE 80th St) from 16 to 18-inch • Pipes 45955 and 7563 from 18 to 24-inch Modified conveyance pipe materials: • Pipes 6496, 6462, and 6460 (last three pipe segments in model) from CAP to RCP • Pipes C1 and 40642 (along 124th Ave NE) from CAP to SWPE • Pipes 40640 to Pipe-5 (along 124th Ave NE) from CAP, RCP, and PVC to SWPE • Pipes 45955 and 7606 (along NE 80th St) from CAP to SWPE						
Stormwater Conveyance Improvements upstream of Station Area Plan	685 LF						

11.4

Appendix — Supporting Plan Summary

	Themes	Relevance to SAP	Extents
WSDOT I-405/SR 167 Corridor Program	Long term vision to address Interstate 405's congestion problems. Major features include two new lanes in each direction, a managed lanes system, local street improvements, transit improvements (including Bus Rapid Transit system), and bicycle and pedestrian improvements. Includes urban design guidelines for the corridor.	Master plan includes an innovative triple decker interchange that will replace the I-405/NE 85th Cloverleaf. Improvements will maintain an at-grade under crossing of I-405 at NE 85th and create a new second level for HOV lanes, bike and pedestrian traffic, and bus traffic.	Within the I-405 WSDOT ROW
Sound Transit I-405 Bus Rapid Transit	This project establishes Bus Rapid Transit (BRT) from the Lynnwood Transit Center to the Burien Transit Center via I-405 and SR 518. The project relies on the I-405 express toll system where available, including through Kirkland Approved by voters as part of the ST3 package.	Includes design and construction of the BRT station with the new I-405/NE 85th St Interchange, which will support frequent transit service connecting Kirkland to Bellevue and Tukwilla, and from there to the Link Light rail to Seattle, SeaTac Airport, and eventually Tacoma and Everett.	I-405 from Lynnwood Transit Center to Burien Transit Center
Kirkland 2035 Comprehensive Plan	Community Character, Environment, Land use, Housing, Economic Development, Transportation, Parks and Recreation, Public Utilities, Public Services, Human Services, Capital Facilities, Implementation Strategies, Neighborhood Plans		All of Kirkland, Inc. 2011 annexation
Vision Statement	We are a vibrant, attractive, green and welcoming place to live, work and play. Civic engagement, innovation and diversity are highly valued. We are respectful, fair, and inclusive. We honor our rich heritage while embracing the future. Safe, walkable, bikeable and friendly neighborhoods are connected to each other and to thriving mixed use activity centers, schools, parks and our scenic waterfront. Convenient transit service provides a viable alternative to driving. Diverse and affordable housing is available throughout the city. Kirkland strives to be a model, sustainable city that values preserving and enhancing our natural environment for our enjoyment and future generations.		
Goals	Livable: High Quality of Life, Diverse and Affordable, High quality Community Design. Sustainable: Ecologically, Economically and Socially. Connected: Sense of Community , Accessible, Technology		
Future Trends	Aging population and Workforce, increasing ethnic and cultural diversity, increase demand for MF housing due to increasing housing costs, changing technology, climate change resulting in increasing use of alt energy sources, demand for more transportation options, maintaining aging infrastructure	The SAP endeavors to address these predicted trends and help Kirkland grow in a smart and inclusive fashion.	
Community Character	Public Policy should help to build a strong community through: Providing open spaces, trails, and recreation; supporting formal and informal community organizations; encouraging citizen participation. Plans should accommodate change in a way the maintains and strengthens Kirkland's livability, natural environment, and neighborhood identities.	The SAP will explore opportunities for new open spaces and create connections to existing facilities. Engagement and participation has been integrated into every phase of the SAP planning process.	
Environment	Development regulations to protect critical areas and maintain their ecological function and value are required by The Growth Management Act. Tree Code aims to increase citywide tree canopy to 40%. Green Building Program encourages new homes to be built to LEED for Homes and Built Green standards. The Climate Protection Action Plan provides goals for reductions in green house gas emissions.	Protection of Critical Areas and opportunities to preserve and expand Kirkland's Tree Canopy are further explored in this report and will be addressed in the SAP. Additional methods to encourage green building techniques will be explored. Alternatives will be analyzed to evaluate which path forward provides the greatest reduction in GHG emissions, among other considerations.	
Land use	Preserving existing community character while accommodating the predicted +8,361 housing units and +22,435 jobs (between '13-'35) will be a major challenge. The city is primarily residential; a greater mix of uses is desired to provide employment and diminish congestion and emissions. The growing elderly population has special housing and transportation needs, transit and shops close to home will support this group.	The plan should consider the unique identity of adjacent neighborhoods, and create effective transitions between different land uses. The Comprehensive Plan identifies the area east of the BRT station and along the NE 85th St Corridor for increased commercial development. The SAP will seek to facilitate a greater mix of uses and increased density near transit.	
Housing	Critical housing needs include: adding housing to meet the needs of the growing employment base; Affordable rental units for those earning 0-50% AMI; ownership housing for 80-120% AMI; Provision of housing for residents with special needs (Inc. Victims of domestic violence, homeless families, adults with developmental disabilities, and the elderly); increased diversity in housing types including small lot SFD and mid to high housing densities infilled into mixed use areas, and more ADUs.	The SAP will address policies to support additional housing units, including affordable housing. As a transit-oriented neighborhood, provision of affordable housing can increase access to opportunity. A women and family shelter is currently under construction in the station area; the SAP should consider their needs as well.	

Economic Development	Seeks to provide: A sustainable and resilient economy, diverse tax base, access to job opportunities and goods and services for the community. Promotes living wage jobs, exports goods and services and encourages small, start up, locally owned companies to achieve this. Economic growth should be focused in downtown and commercial areas. King County-wide Planning Policies have assigned +22,435 jobs to Kirkland for 2035, for a total of 61,147.	As a transit-oriented and well connected neighborhood, the station area is well suited to accommodate a significant portion of Kirkland's housing and employment targets. The SAP will explore economic development potential of the area.	
Transportation	Principles: Safely Move People w/ all viable forms of transportation. Link to land use. Be sustainable over the next 50 years. Actively build and maintain partnerships locally, regionally and nationally. Adopts a "Vision Zero" plan to create a safe, accessible environment for walking and biking.	Safe, intuitive, accessible and appealing walking and biking connections to transit will be a major consideration of the Station Area Plan. The plan will support robust non-motorized access to the Sound Transit BRT transit facility as recommended in the Comprehensive Plan.	
Parks and Recreation	Parks are key to the character neighborhoods. The 588 ac park system greatly contributes to the quality of life. As the City responds to growth, new investments will be necessary to meet the needs of the community, support youth development, provide options for residents to lead healthy active lives and foster greater social and community connections. To ensure that each person receives access to a constant amount of parks and recreational facilities as the community grows, use the formula Investment per Person= Replacement Value Capital Of Parks & Recreation Inventory / Population	The SAP will highlight opportunities to expand Kirkland's Parks system within its boundaries. Initial analysis suggests that this area is under served by existing facilities and additional investment would help meet Kirkland's goals of providing equitable access to parks. The concept of Investment per person in parks will be valuable in evaluating open space alternatives. The SAP will connect with and build upon Kirkland's trail network. Programming considerations should seek to meet the needs of diverse users, including marginalized communities or those with special needs.	
Public Utilities	Utility planning has contributed to a high quality of life for Kirkland residents and businesses by ensuring efficient utility delivery. Kirkland's existing utility infrastructure is generally adequate to meet the growth needs of the City for many years. The City's objective is to meet the needs of the present without compromising the ability of future generations to meet their own needs.	The SAP will evaluate how to support efficient and sustainable utilities required for potential future development. The SAP will consider how adjustment to the public utilities network can be used as a lever to incentive new development.	
Public Services	Fire, emergency management and police services face the challenge of maintaining an appropriate level of service as growth increases demand. Solid waste garbage and recycling endeavors to encourage recycling and reduce solid waste disposal to lessen the capacity problems of at the regional transfer stations and landfills and to increase recycling diversion. The Lake Washington School District is seeking ways to be flexible and responsive to fluctuating demand for services. Libraries face the challenge of remaining relevant in the face of technological changes and filling the gaps in access for under served communities.	The SAP will assess overcrowding in the Lake Washington School District and explore recommendations to improve conditions. The SAP should also consider how potential future development may affect demand on other public services, and how to support a high level of service for current and future residents.	
Human Services	Demographic, economic and social changes have dramatically increased the need for health and human services. Diversity and social equity are two important overarching foundations for youth services, senior services and human services. Human Services are essential to supporting other goals and elements of the comp plan.	The SAP will assess progress towards promoting diversity and social equity using the King County Equity Impact Review tool.	
Capital Facilities	A funded six-year financing plan to pay for transportation, parks, and fire and building capital projects that support existing and future development on the Land Use Map. Contains level of service standards for each type of capital facilities and a 20-year list of transportation projects, many not funded. Establishes that roads, water and sewer facilities must be available concurrent with new development or redevelopment. Establishes policies for implementing sustainable development principles with the design and construction of public facilities.	The concurrency requirements described in this section will be important to consider when designing levers to encourage the desired development types.	
Rose Hill Neighborhood Plan	A survey shows that proximity to amenities and greenspace are Rose Hill's most treasured characteristics. Residents would like to see future development maintain neighborhood built form, traffic flow and calming improvements, and pedestrian improvements.	Respondents have shown that their top priorities relate to community greenspaces. The respondents would like to be more informed about transportation infrastructure plans and proposals.	Between Interstate 405 and 132nd Avenue NE bordering Redmond
Everest Neighborhood Plan	The emphasis is on encouraging a range of residential uses and permitting limited economic activities. Recognizes the trend away from industrial and office uses adjacent to the Cross Kirkland Corridor, and encourages connections to the trail and innovative uses that may benefit from pedestrian and bicycle trail users redevelopment opportunities adjoining the Corridor arise.	Planning participants generally value the low density SFD development in their neighborhood, and identify the east Everest area, which is part of the SAP, as appropriate for slightly higher residential densities. The stormwater aspect of the SAP will consider how to preserve and improve natural streams for drainage and as a neighborhood amenity.	Between the Cross Kirkland Corridor and I-405, and between NE 68th Street and NE 85th Street

Highlands Neighborhood Plan	Residents value limited vehicle access, convenient walking access to downtown and the neighborhoods many parks, and preserving the tree canopy. Goals include preserving the predominately SFD character, but allow innovative residential development styles when specific public benefits are demonstrated.	The SAP should consider how development in the station area can support character goals of surrounding areas and provide public benefits. Managing potential traffic will be important to Highlands residents. Additional bike and pedestrian connections in the neighborhood are desired.	North of NE 85th Street, bounded by Interstate 405 to the east and the Cross Kirkland Corridor to the north and west.
Norkirk Neighborhood Plan	Resident priorities include: Maintaining LIT businesses to provide services and job growth and not allowing residential and retail. Improving transitions from industrial to single family with uses like office or multifamily Preserving the Cannery building.	Improving transitions from the SAP to adjacent areas is a goal of the SAP. The Cannery is within the proposed SAP boundary, and the Norkirk Plan identifies the Cannery preservation as important to the residents.	Between the Cross Kirkland Corridor on the east, Market Street on the west, downtown on the south, and 20th Avenue, on the north
Sustainability Master Plan	Will identify community priorities for environmental, economic, and social sustainability; Explore specific actions that to support the identified priorities; and prioritize action items in an implementation plan.	The SAP will coordinate with ongoing development of the Sustainability Master plan, and incorporate the priorities that have already been developed into alternatives analysis.	City wide
Transportation Master plan	Encourages a multimodal approach to congestion. Transportation decisions should reflect the hierarchy of modes: 1. Walking 2. Biking 3. Transit 4. Motor vehicles	The plan will consider different options for last mile connectivity to the BRT station, and will incorporate the hierarchy of modes as described in the Comprehensive Plan into alternatives analysis.	City wide
Cross Kirkland Corridor Master plan	Re-imagines the Corridor as a as a central spine and destination that unites Kirkland's neighborhoods. The corridor will serve a broad range of users providing a wide range of uses including recreation, transportation, the preservation and creation of wildlife habitat, and activating business development and investment.	SAP recognizes the Cross Kirkland Corridor as a key asset to the area. Development adjacent to the CKC will seek to enrich master plan goals of connecting Kirkland, shaping a place unique to Kirkland, fostering a greener Kirkland, and evolving with time.	The Cross Kirkland Corridor and adjacent development, form Woodinville to Bellevue
Missing Middle Housing Code Amendments	Amendments include: parking space reductions for units within 1/2 mile of frequent transit service; design guidelines specific to two and three unit homes,which would replace guidelines which state that they should be consistent with single family homes in bulk, height and scale; allowing lots to be subdivided with no minimum size.	The Missing Middle Housing Code will be important in informing the approach to encouraging the development of affordable and workforce housing within the Station Area.	City wide

Connected Kirkland

The future BRT station at 85th St won't just serve the immediate locations surrounding it. It will be part of a larger network of mobility option that connect Kirkland to destinations both within the city and across the region.

Major employers, shopping districts, and residential neighborhoods should be evaluated as major destinations which will need connections to this station. These last mile connections will benefit from a "portfolio" of transportation options that can meet the diverse range of future users.

A "Portfolio" of last-mile connections

Walking

Bikes

Shuttles

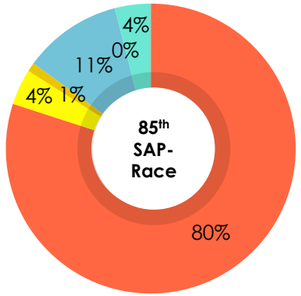
Increased Bus Service

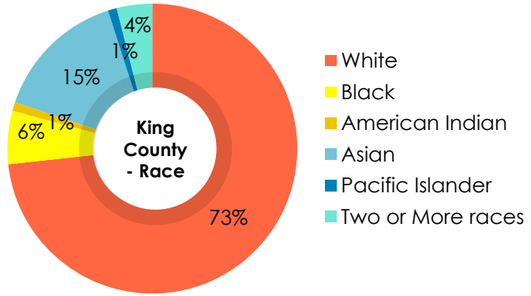
Shared Mobility

Pick up/Drop Off

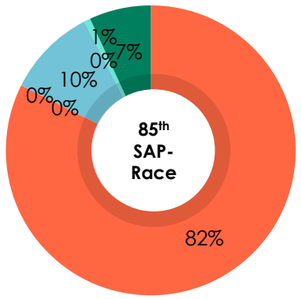
Photos by Sergio Ruiz : https://www.flickr.com/photos/urbanists

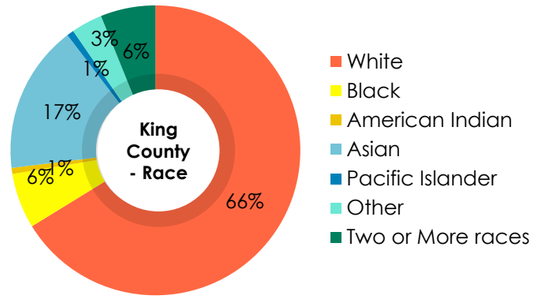
Employee Demographics

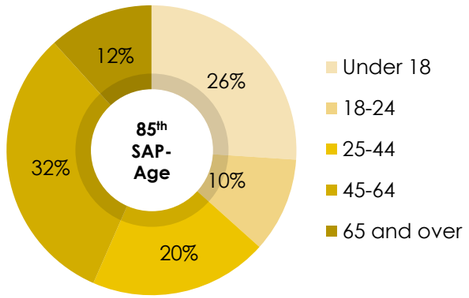


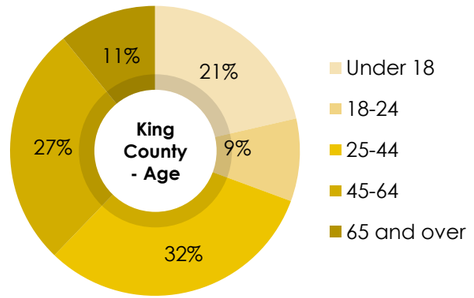


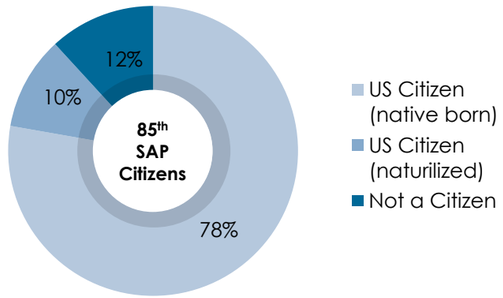
Resident Demographics

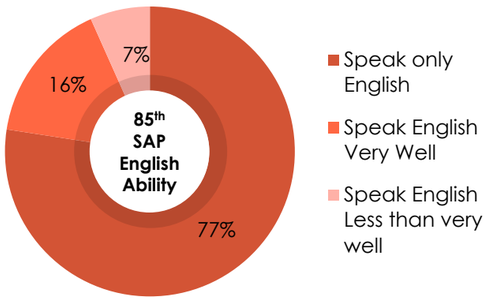












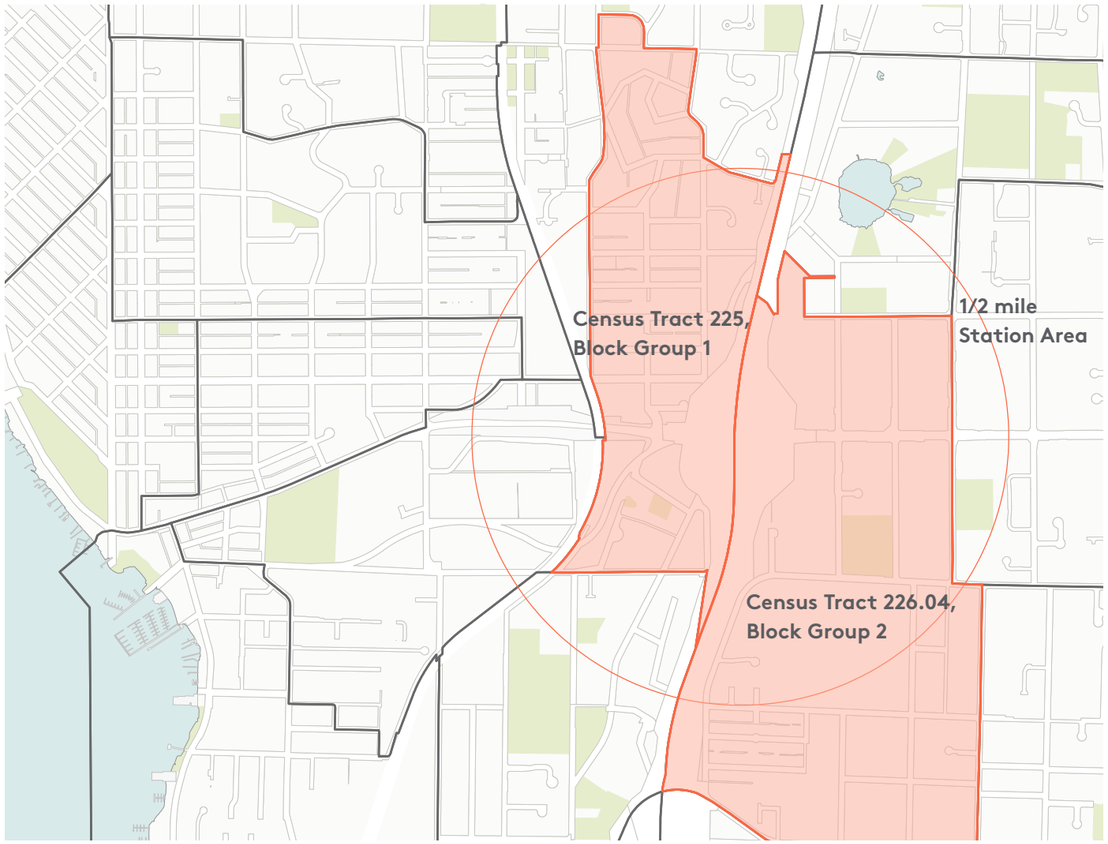
Who Will Be Affected?

A preliminary list of affected parties includes:

- Lake Washington High School students
- Rose Hill Elementary School Students
- Employees who work within 1 mile from the station for a variety of businesses and public institutions
- Transit users accessing the BRT to travel to points north and south
- Residents within the Station Area
- Future Residents and Employees - Individuals seeking housing or employment within Kirkland
- Kirkland residents, employees, and employers who live and/or work outside of the Station Area but have a stake or interest in city-wide development decisions

Special efforts will be made to include marginalized populations within the study area.

Based on analysis, marginalized populations include: residents of color (18%), limited English speakers (7%) and linguistically isolated populations (EJ Mapper estimates 1.4%), seniors (32%), youth, (26%), renters (36%), and households experiencing poverty (6%), including clients of Kirkland's new adult women and family shelter.



All Census and American Community Survey Data for the Station Area references Census Tract 225, Block Group 1, and Census Tract 226.04, Block Group 2 (shown right) unless otherwise noted.

Equity Context Assessment

The baseline equity assessment framework includes determinant or root causes based on the Social Determinants model in the King County EIR. These include Housing, Early Childhood Development, Schools, Jobs, Health and Human Services, Food Systems, Parks and Natural Resources, Built and Natural Environment, Transportation, Community and Economic Development, Neighborhoods, and Community and Public Safety. The purpose of this baseline scan of the Station Area is to assess any disparities and key issues for the project area, consider which factors the SAP can influence, and establish priority equity issues for action.

The Determinants of Equity indicator data and lived experience data from Phase One engagement show that the City of Kirkland as a whole has a high quality of life. In fact, the life expectancy of 84 years is higher than the King County average, schools are high performing, crime rates are low, and there is excellent access to high quality parks citywide.

Residents who live in the Station Area also have high access to opportunity, with a home ownership rate of 72% and only 6% of residents making below $40,000 per year. However, there are several unique challenges within the Station Area that may contribute to inequities, many which are related to infrastructure and determinants in the auto-dominated built environment.

Determinants Of Equity	Indicator	SAP Rate[1]	King County Rate	Rationale
Housing	Average Housing and Transportation Costs as a Percentage of Income	54%[1]	50%[2]	Anything above 50% is considered cost burdened. The more money that goes to Housing & Transportation, the less that is available for healthy food & health care.
	Average Monthly Housing Cost	$2,804[3]	$1,834[4]	High housing costs can be a barrier to fostering socioeconomic diversity in a community.
Early Childhood Development	Test Scores By Race	**RHES:** White (42% of Students): 72% Asian (26%): 79% Hispanic (21%): 50%[5] **LWHS** White (68%): 97% Asian (11%): 94% Hispanic (11%):85% 2+ races (8%): 100%[6]	**State Avg, Elementary:** White: 65% Asian: 75% Hispanic: 44%[7] **State Avg, H.S.:** White: 70% Asian: 80% Hispanic: 51% 2+ races: 71%	An achievement gap means that some groups of students achieve at a significantly higher level than other groups, especially on standardized tests. Racial disparities are not uncommon, and may be a result of institutional marginalization or lack of access. Because standardized tests can serve as gatekeepers to a child's opportunity, and education significantly shapes employment, closing these gaps facilitates equity.
Education	On-Time High School Graduation Rates	92%[8]	93%[9]	Most living-wage jobs require a min. high school diploma or equivalent. High school completion prepares students to go on to college, into the job market or to apprenticeship training programs.[10]
	Student to Teacher Ratios	LWHS: 21:1 RHES: 14:1[11]	19:1[12]	Researchers have found that gains in achievement generally occur when class size is < 20 students.
Job Training and Jobs	Living Wage Gap % Residents making below $40,000 a year %Employees making below $40,000 a year	Residents: 6%[13] Employees: 48%[14]	Residents: 45% Employees: 46%[15]	The living wage is defined as the minimum income necessary to purchase basic necessities and save 10% of earnings without assistance from public programs. Tracking the living wage is a means to understand gaps between the minimum wage and self-sufficiency. The living wage provides insight into self-sufficiency in a way that the Federal Poverty Threshold does not.
	Daytime pop. Density	5821 people/ sq mile[16]	912.9 people/ sq mile	Population density during a typical weekday. Anything over 1,600 persons/ sq mi is considered “Urban”

1 All Data are the average of Block Group 1 Census tract 225 and Block Group 2 Census Tract 226.04 unless otherwise noted

2 H+T Index uses 2015 ACS for Housing Costs. Transportation Costs developed by CNT using 2014 Longitudinal Employer-Household Dynamics data. htaindex.cnt.org/map/

3 2018 American Community Survey

4 2018 American Community Survey

5 The Test Score Rating examines how students at this school performed on standardized tests compared with other schools in the state. The Test Rating was created using 2017 MSP data from Washington Office of Superintendent of Public Instruction, using 2017 WA EOC data from Washington Office of Superintendent of Public Instruction, and using 2017 WA SBAC data from Washington Office of Superintendent of Public Instruction.www.greatschools.org/washington/kirkland/902-Rose-Hill-Elementary-School/#Race_ethnicity*Test_scores*Overview

6 Percent Proficient on yearly Administered Science Tests. Accessed 3/23/2020 form https://www.greatschools.org/washington/kirkland/894-Lake-Washington-High-School/#Race_ethnicity*Test_scores

7 This shows results across different races/ethnicities on Science test given to students once a year. Uses 2017 MSP data from Washington Office of Superintendent of Public Instruction. Accessed on3/23/20 from https://www.greatschools.org/washington/kirkland/902-Rose-Hill-Elementary-School/#Race_ethnicity*Test_scores*Overview

8 Lake Washington High School rates. Source: NCES, 2018 Accessed 3/20/2020 from https://www.greatschools.org/washington/kirkland/894-Lake-Washington-High-School/

9 2018 American Community Survey

10 King County Determinants of Equity Baseline Project. https://www.kingcounty.gov/elected/executive/~/media/4FF27039534048F9BC15B2A0FFDDE881.ashx?la=en

11 The average number of students per full-time teacher at this school; please note that this is not a reflection of average class size. Source: Civil Rights Data Collection, 2016.

12 https://www.publicschoolreview.com/washington/king-county

13 Based on 2018 American Community Survey Estimates for households making below $34,999 annually

14 Longitudinal Employer-Household Dynamics, 2017 https://lehd.ces.census.gov/

15 Longitudinal Employer-Household Dynamics, 2017 https://lehd.ces.census.gov/

16 2018 American Community Survey Estimates. Accessed 03/23/2020 from https://www.arcgis.com/home/webmap/viewer.html?webmap=88f17b4580e846609f92c9f75a9d9eee

	Employee Demographics	White: 80% Black: 4% Am. Indian: 1% Asian: 11% Pac. Islander: 0% 2+ Races: 4%[17]	White: 74% Black: 6% Am. Indian: 1% Asian: 15% Pac. Islander: 1% 2+ Races: 4%[18]	Employees will be some of the most frequent visitors, and their opinions are often not included in planning efforts. An equitable assessment of stakeholders influenced by the 85th SAP requires a consideration of the needs of employees and marginalized groups therein.
Health and Human Services	% Uninsured	1.7%	5.3%[19]	
	% Seniors	12%	11%[20]	
	Obesity	22% (Kirkland)[21]	22.2%[22]	Leads to higher morbidity & reduced quality of life due to cardiovascular disease, type-2 diabetes, cancers & psychological disturbance. ***Dixon J. 2010.***
	CDC Social Vulnerability Index	0.13 (low)[23]	0.09 (low)[24]	Possible scores range from 0 (lowest vulnerability) to 1 (highest). Incorporates Income and Education metrics.
	Life expectancy	84.26	81.37[25]	
Food Systems	Percent of Students with Free or Reduced Lunch	16%[26]	35%[27]	Access to healthy food choices is directly correlated to obesity and diabetes rates, which occur in higher rates among people living in low-income communities with worse food environments. ***California Center for Public Health Advocacy. 2008.***
Parks and Natural Resources	Park Accessibility Percent of Residents who live within a ten minute walk of a Park	69%	92% (Kirkland)[28]	Parks and natural open space areas promote physical activity and social interaction. Areas with natural vegetation also have direct effects on physical and mental health. ***Vries S, de Verheij RA, Groenewegen PP, Spreeuwenberg P. 2003.***
Healthy Built and Natural Environment	Air Pollution: Levels of PM 2.5 compared to National Rates. EPA Standard of is µg/m3 daily max.	6.16 µg/m3 8th %ile Nationwide	6.2 µg/m 9th %tile Nationwide [29]	Increased exposure to PM 2.5 is associated with detrimental cardiovascular outcomes, including higher blood pressure and heart disease. Traffic related noise and air pollution is associated with cardiovascular and respiratory diseases, including asthma. ***Lourens PF, Vissers JA, Jessurun M. 1999.***
	Noise levels	35 dB - 65 dB[30]		Environmental noise damages human health, particularly at night when it can interrupt sleep. The WHO suggests reducing average noise levels of road traffic below 53 dB. At night, 45 dB of road traffic noise was recommended. [31]

17 All Primary Jobs within 1/2 mile of the I-405/85th St. BRT Station. Source: Longitudinal Employer-Household Dynamics, 2017. Accessed 3/11/2020 from lehd.ces.census.gov/

18 All Primary Jobs within King County. Source: Longitudinal Employer-Household Dynamics, 2017. Accessed 3/20/2020 from lehd.ces.census.gov/

19 ACS 2018 Estimates

20 ACS 2017 Estimates

21 2016 Data from the Washington State Department of Health. https://www.kingcounty.gov/depts/health/data/~/media/depts/health/data/documents/city-health-profiles/City-Health-Profile-Kirkland-2016.ashx

22 2015 Data Collected by the Robert Woods Foundation. Accessed 3/20/2020 from https://www.opendatanetwork.com/entity/0500000US53033/King_County_WA/health.health_behaviors.adult_obesity_value?year=2015

23 https://svi.cdc.gov/prepared-county-maps.html

24 2018 CDC Social Vulnerability Index

25 Life Expectancy at Birth, Both Sexes, 2014. Accessed on 3/23/2020 from https://vizhub.healthdata.org/subnational/usa/wa/king-county

26 Average of Lake Washington High School and Rose Hill Elementary School rates for free and reduced lunch students. Source: NCES, 2018 Accessed 3/20/2020 from https://www.greatschools.org/washington/kirkland

27 The 2017 County Health Rankings used data from 2014-2015 for this measure. Accessed 3/20/2020 from https://www.countyhealthrankings.org/app/washington/2017/measure/factors/65/data

28 The Trust For Public Land. 2018 Park Serve Report. https://parkserve.tpl.org/mapping/index.html?CityID=5335940

29 Source: https://ejscreen.epa.gov/mapper/

30 National Transportation Noise Map. http://maps.bts.dot.gov/arcgis/apps/webappviewer/index.html

31 World Health Organization. Environmental Noise Guidelines for The European Region. http://www.euro.who.int/__data/assets/pdf_file/0008/383921/noise-guidelines-eng.pdf?ua=1

Transportation	Walk Score	Norkirk - 55 Everest - 50 North Rose Hill - 43 Highlands - 30	48[32] (Kirkland)	Walk rates vary from 77 along 85th Ave in Downtown Kirkland and Rose Hill to 30 in Highlands. The lack of pedestrian and bike infrastructure disproportionately affects low income communities who are more likely to depend on walking and biking for transportation and exercise.
	Bike Score	Norkirk - 48 Everest - 50 North Rose Hill - 51 Highlands - 30	50[33] (Kirkland)	Enhancing active transportation infrastructure can lead to an increase in regular physical activity, which in the long term can lead to a decrease in childhood obesity, hypertension and diabetes .
	Commute via Transit	7.6%	13.4%[34]	
	Peds. involved in fatal car accidents per 100k '17-'12	1[35] (Kirkland)	4.37[36]	
Community Economic Development	% Rent versus Own	Rent: 28% Own: 72%[37]	Rent: 39% Own: 61%[38]	Purchasing a home is often the largest financial investment a household will make. Home ownership is a measure of personal and area wealth. Home ownership is the best indicator of accumulated wealth.
Neighborhoods	Median Years Since Householder Moved in to unit	Total 9.4 Own 13.4 Rent 1.7	Total 5 Own 11 Rent 1[39]	Neighborhoods that have higher rates of turnover may experience decreased social cohesion and trust among neighbors. Residential instability may also indicate displacement, which can occur for a variety of reasons including cost of living and Job relocation.
Community and Public Safety	Crime Incident Rate per 100,000 people	112.47[40] (Kirkland)	361[41]	

32 Walk Score Rates for Kirkland. Accessed on 3/23/2020 from https://www.walkscore.com/WA/Kirkland
33 Walk Score Rates for Kirkland. Accessed on 3/23/2020 from https://www.walkscore.com/WA/Kirkland
34 2018 American Community Survey
35 http://www.city-data.com/accidents/acc-Kirkland-Washington.html
36 Road Services Division 2017 Collision Data Report. Accessed 3/24/2020 from https://www.kingcounty.gov/~/media/depts/transportation/roads/traffic/2017KingCountyCollisionDataReport.ashx?la=en
37 2018 American Community Survey
38 2018 American Community Survey
39 2018 American Community Survey
40 2018 Data from the FBI Uniform Crime Reporting Program, Accessed on 3/23/2020 from https://www.macrotrends.net/cities/us/wa/kirkland/crime-rate-statistics
41 2014 Data from the FBI Uniform Crime Reporting Program, Accessed on 3/23/2020 from https://www.opendatanetwork.com/entity/0500000US53033/King_County_WA/crime.fbi_ucr.rate?crime_type=All%20Crimes&year=2018

Priority Equity Issues

Based on the assessment, several priority equity issues were identified for consideration in the SAP. The baseline equity assessment includes a scan of indicators across determinant categories. Many are not factors that can be significantly influenced by the SAP project in the short or mid-term, however, an expansive scan is important to identify key areas of disparity or concern when compared to the surrounding community.

Research shows that between 50-70% of what determines each person's length and quality of life relate to the physical, social, and economic environment and behaviors.

The priority issues are intended to focus around equity and health determinants in the built environment and areas that the SAP can influence, that have been proven to increase equity and health opportunities.

Priority health equity issues for the SAP include Community Resilience, Jobs & Housing Equity, Park Accessibility and Mobility, Air Quality and Noise. These issues should be prioritized during preliminary concept and alternatives development, especially with priority marginalized populations in mind.

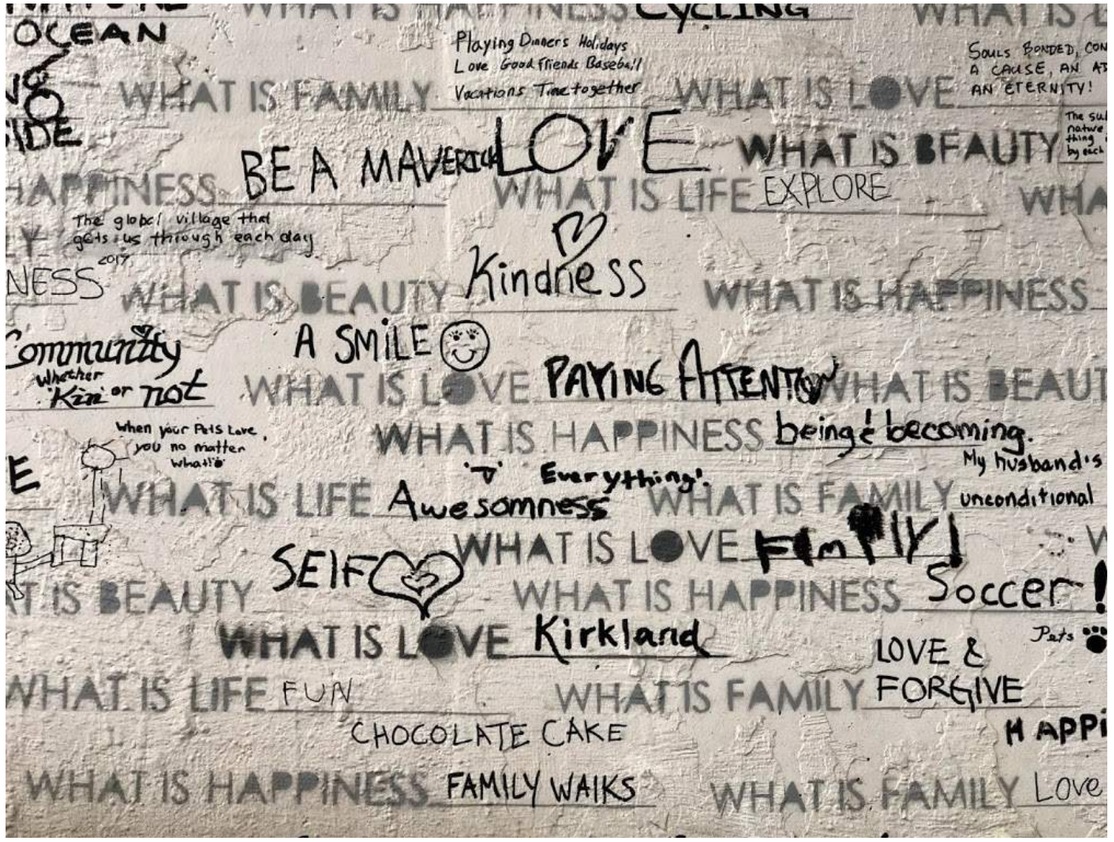
As strategies develop around the priority equity issues, a corresponding set of action indicators will be developed to set goals and track progress through evaluation.

COMMUNITY RESILIENCE

JOBS & HOUSING EQUITY

PARKS & MOBILITY

AIR QUALITY & NOISE



Cross Kirkland Corridor Art Installations

11.5

Appendix — Market Study (2020)

City of Kirkland
Draft May 21, 2020

Kirkland 85th Street Station Area Market Analysis Report

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Key Takeaways

[Note: This report was prepared in February- March 2020 using market and economic data that had not captured the ongoing impacts of the Covid-19 coronavirus pandemic facing local and regional economies across the country.]

The Study Area shows potential for increased investment and integration with the walkable center in downtown Kirkland. Market indicators reflect consistent, positive performance across office and retail sectors in the Study Area, as well as strong, increasing values for residential property. However, most commercial property in this area dates to the 1980s. Stronger transit networks and bike/pedestrian connections to downtown Kirkland create opportunities to refresh this market, modernize its character, and connect to a nearby tech hub and mixed-use district.

- There is growing regional demand for office space on the Eastside. Regional demand for office space is strong, and rents on the Eastside have been high with low ongoing vacancy rates. In addition to Bellevue and Kirkland Downtown overall, where rents are already high, smaller Eastside submarkets are likely to see demand.
- The Greater Downtown Kirkland office market is strong. High rents per square foot, low vacancy rates, and recent investments in this area make the Study Area a promising destination for worksites that enjoy access to the amenities and character of Kirkland's downtown.
- The office market of the Study Area offers a lower-cost investment opportunity to build on existing momentum for a growing tech center in Greater Downtown Kirkland.
- The Retail market in the Study Area offers a variety of services and is auto oriented in character. Adjacent to the I-405 exit, the retail market caters to auto traffic with tenants such

COVID-19 IMPACTS

With an ongoing pandemic and anticipated economic recession, there is much uncertainty about changing market conditions in communities across the globe. Cities will continue to respond and adapt as new information and public health guidance is provided.

While long-term impacts cannot be perfectly forecasted, investments in the public realm remain an important priority for promoting long-term growth, economic vitality and community health. Walkability, transit access, diverse housing options, and zoning flexibility will continue to serve those who live, work, and visit in Kirkland.

as service stations and coffee shops. Retail buildings in this zone are 1-3 star[1] and primarily built in the 1980s, mimicking trends in the office sector.

- The Study Area has maintained vacancy rates under 5% for a decade and trends show a consistent lower vacancy rates for retail when compared to a decade earlier.
- Low vacancy rates and slowly rising rents may suggest that demand for new retail spaces may increase in the future, especially as population growth continues. In addition, increased housing can drive retail demand in the Study Area – especially for types of retail that meet the day-to-day resident needs for such as groceries, pharmacies, restaurants and so on. Office space can also create additional retail demand. National research indicates that the typical downtown worker will spend as much as $130 per week in downtown. Top retail categories for office worker spending include grocery stores, discount stores, and warehouse clubs (ex: Costco).[2]
- Integrating retail spaces into new development may be a way of managing these demands through infill to build more complete neighborhoods. Given the changing landscape of brick-and-mortar retail, retail development is now increasingly integrated with housing, and public uses, such as libraries. These new strategies may also be relevant in addressing retail demand in the Study Area.
- Home values (for single family and townhomes) in the Study Area more than doubled in the 2010-2019 period. Values per square foot tend to hover about 20% lower than the Greater Downtown Kirkland market, but demonstrate a similar upward trajectory. In 2016 the average sale price in the Study Area crossed the

COVID-19 IMPACTS ON RETAIL

While it is too early to determine the full impacts of the Covid-19 Corona virus pandemic on future retail, some early trends are beginning to take shape. These include:

- The pace of adoption of online retail, especially groceries, has increased.
- Grocery and food retailers, both online and brick-and-mortar, are seeing an especially high level of demand.
- The increase of demand for food retail, coupled with a shift to online options, will change the nature of physical retail and the composition of the retail workforce.
- Brick-and-mortar retailers, and businesses such as restaurants, will need to reinvent themselves to offer customers a value proposition that's unique and differentiated from online options. This is likely to increase the importance of placemaking and integration with other uses for many retailers in the Study Area.
- Given the service-oriented jobs that were suspended during COVID-19, and the prevalence of smaller service uses in the Study Area, strategies for the future recovery and health of small businesses will be a key economic development question.

[1] Buildings are rated on a 1-5 star scale, with 5-star being the highest score. Newer construction or renovation, high quality finishes, sustainability features, and building amenities are some of the features associated with higher star ratings.
[2] International Council of Shopping Centers, 2012

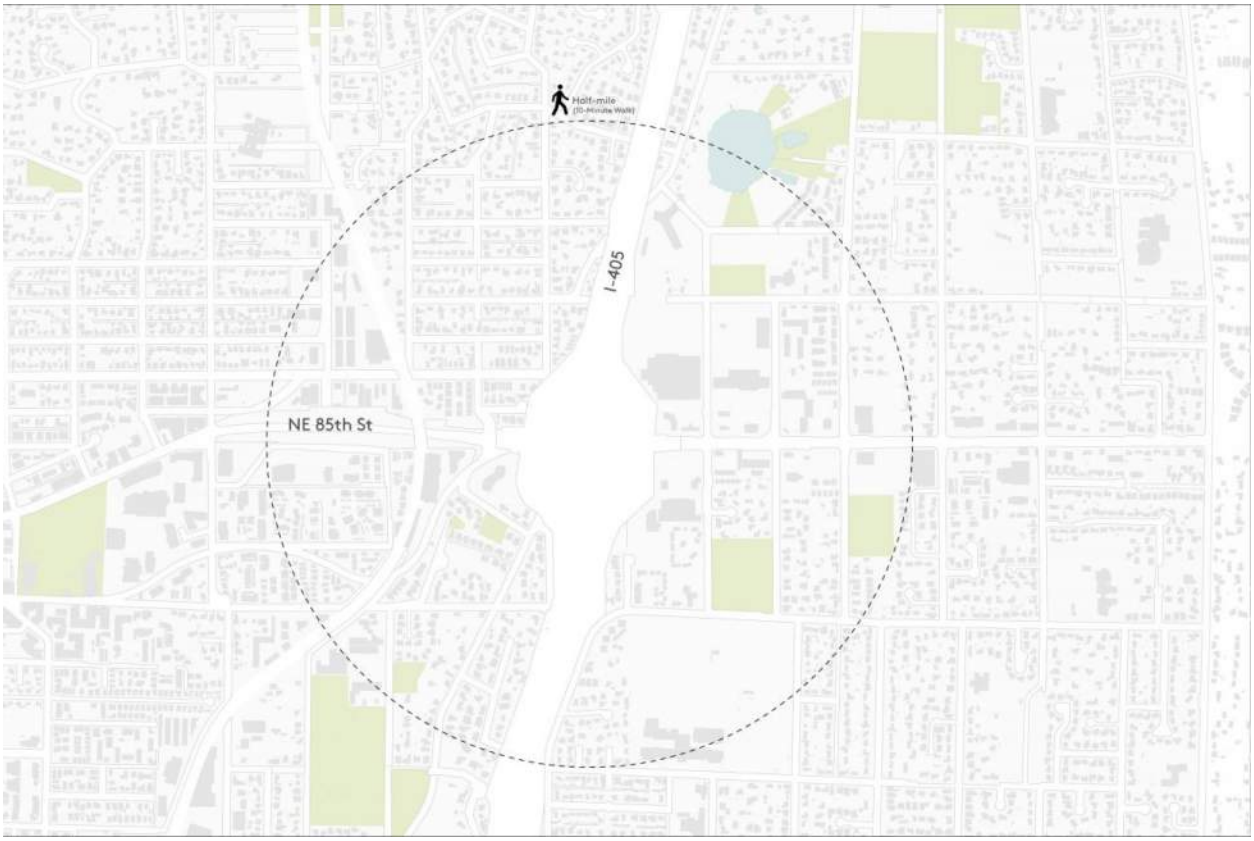
million-dollar threshold and in 2019 the median sales value was $1,475,000. This strong market performance supports the argument for increased residential activity in the Study Area.

- Greater Downtown Kirkland area performs well for multi-family housing with comparatively high rental rates and sales prices. Recent developments are 4-star quality (1-5 star scale), 4-6 stories, and often incorporate ground floor retail and shared amenity spaces.
- While Downtown Kirkland performs well for multi-family development, part of this market strength is likely due to its amenities and walkable character. Downtown Kirkland earns a walk score[3] of 89-90 while walk scores in the Study Area range from 50 to 60.
- Currently, 60% of Study Area land use is attributed to low and medium density residential development (See Exhibit 4). These restrictions limit the residential capacity of the zone and impact the proportion of Kirkland's population within walkable access of Bus Rapid Transit. Increasing residential density with the introduction of new multifamily properties will enhance the station area's capacity to leverage mobility investments.
- Investments in transit, pedestrian, and cyclist infrastructure can influence market perception and conditions and support the development of a more livable multi-family environment.
- Regional case studies and national research offer evidence that Bus Rapid Transit investments lead to increased development activity, particularly when paired with complementary policy initiatives.

[3] Walk scores are assigned to communities on a 1-100 scale, relating to neighborhood walkability for residents. A score 90-100 is described as a "Walker's Paradise" where daily errands do not require a car. Walkscore.com is a private organization assigning ratings to communities across the United States

In this report, the Study Area represents the half-mile buffer surrounding the 85th Street Station, as shown in Exhibit 1. Comparison geographies include Greater Downtown Kirkland (the proposed Urban Growth Center which incorporates much of the Study Area) and defined Urban Growth Centers at Totem Lake, Overlake, and Downtown Bellevue.

Exhibit 1. Study Area.

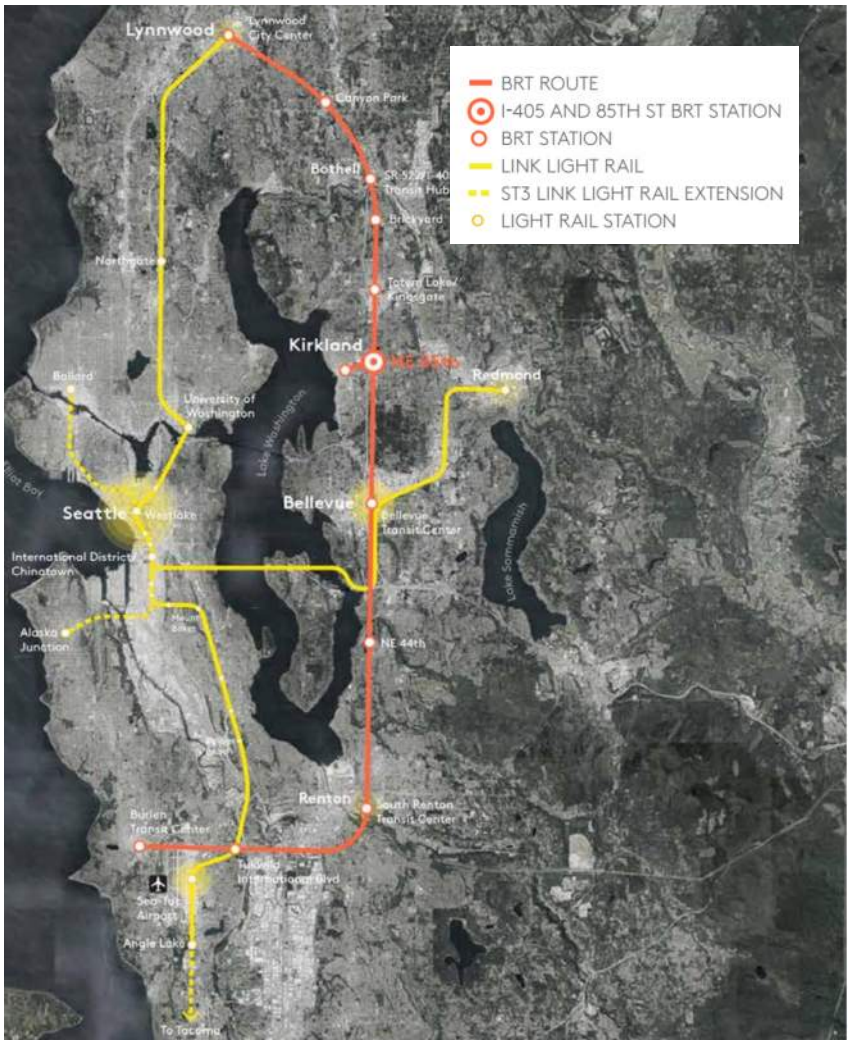


Source: Mithun, 2020.

Introduction

Project Background

ST3 is bringing a once-in-a-generation transit investment to Kirkland with a new interchange at 85th and I-405 by 2024, which includes a new BRT station which should be operational by 2025. The BRT station, developed by Sound Transit, has been designed to connect Kirkland to the Link Light Rail at Bellevue and the Lynnwood Transit Center. The City of Kirkland's Station Area Plan (SAP) considers changes to zoning and other policies and regulations to encourage transit-oriented development near the station and leverage this regional investment to create the most value and quality of life for Kirkland.

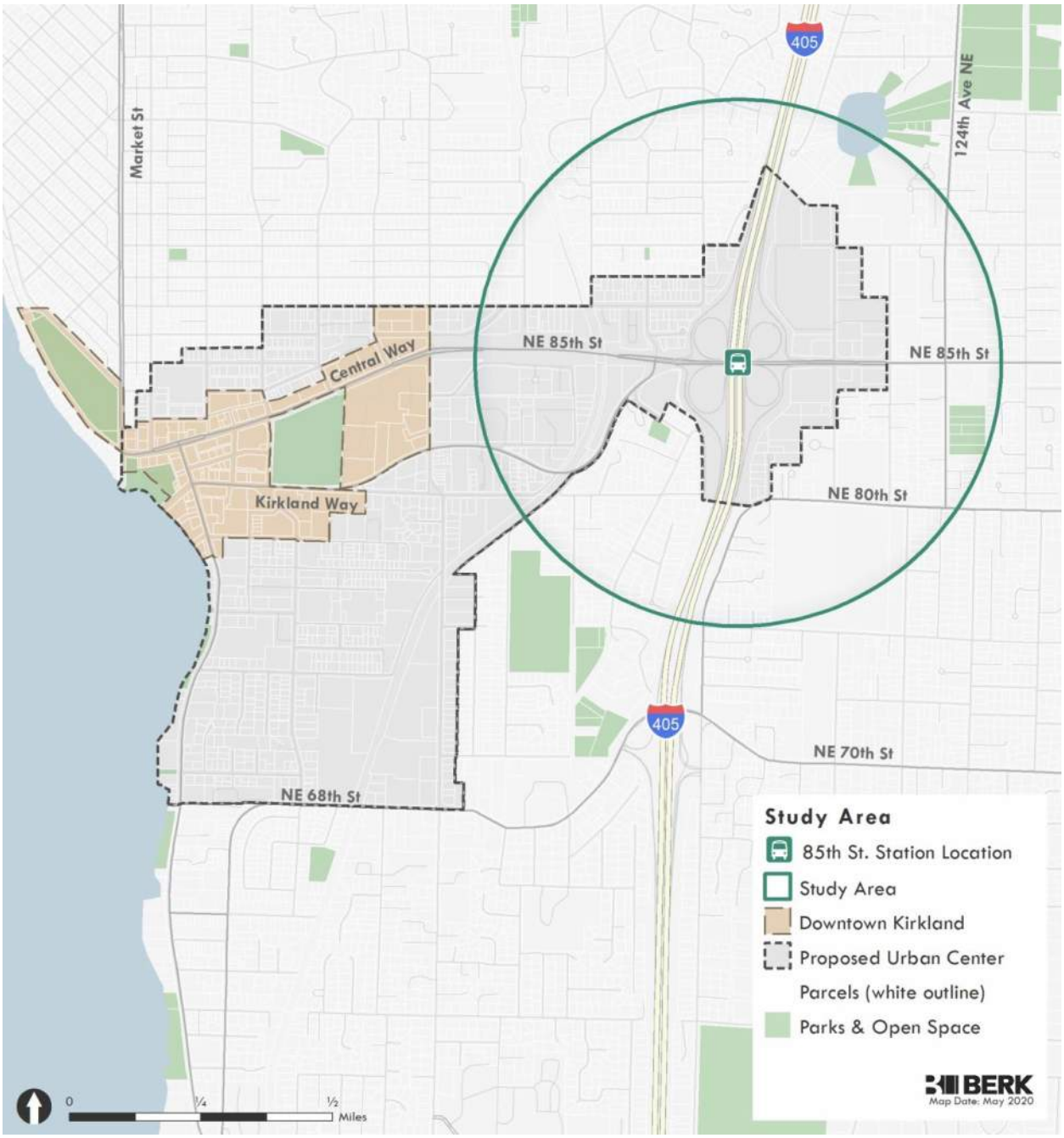


Source: Mithun, 2020.

The SAP should shape an equitable and sustainable Transit Oriented Community as part of the continued growth expected in Downtown Kirkland and the 85th Corridor. The project evaluates the feasibility of various types of development within approximately ½ mile of the station and consider changes to zoning and other regulations. The project studies opportunities to maximize the public benefit from future development, including affordable housing, open space, desired employment and job types. Using the City's Vision and Goals and the 2035 Comprehensive Plan as a foundation, the SAP is an important opportunity to advance concepts in the greater Downtown Kirkland Urban Center and to support citywide sustainability and housing goals. This market analysis report is intended to help inform the opportunities and constraints analysis of the SAP. It evaluates the economic and market context of the area within ½ mile of the station, and existing zoning and development regulations that influence market

activity and perception. It is also useful as background information for the development of alternatives that would be evaluated in the SAP and environmental impact statement (EIS).

Exhibit 2: Study Area in Context of Kirkland Downtown



Report Overview

This report includes the following sections:

- A **Methods and Approach** section, defining the sources of data and interviews conducted.
- **Existing Conditions analyses** with major development considerations, as well as current and potential land entitlements that will impact future development scenarios. This includes a focus on the economic and market context, with a broad description of the Kirkland metro area market, including major economic drivers for the area, key sociodemographic information, descriptions of major growth trends, and the expected impacts on the city and regional economy.
- **Case Studies** outlines categories of development which provide examples of similar opportunities and challenges.

Methods and Approach

For this market study, the following data sources and approaches were used:

- **Population and household data.** Historical counts of population and households were obtained from Puget Sound Regional Council (PSRC) estimates. Citywide population counts were obtained from the Washington State Office of Financial Management (OFM), with city population projections obtained from the PSRC and the City of Kirkland Comprehensive Plan.
- **Employment data.** Information on employment for the Study Area and the City of Kirkland were obtained from the PSRC. Aggregations of sector-based employment counts were conducted where data suppression permitted.
- **Real estate market data.** Real estate market data, including information on rents, vacancies, age, locations, and development trends were obtained from CoStar.
- **Peer geographies.** Information from other growth centers and Kirkland's Greater Downtown will provide context for the Study Area's market and economic data.
- **Property data.** Information on current development, land use, and assessed property values was derived from King County Assessor data, downloaded in March 2020. This information was used in conjunction with CoStar data on multifamily properties to develop housing unit counts for the Study Area.
- **GIS data.** GIS data sets for parcel boundaries, building footprints, and other base data were obtained from King County GIS. Additional data on zoning, land capacity, and other base features were obtained from the City of Kirkland.
- **Additional literature sources.** Several sections include research from sources in the available literature, as well as from current plans and policies, and project and program websites. These sources are referenced with footnotes in the text as applicable.

Existing Conditions

Land Use

Use Patterns

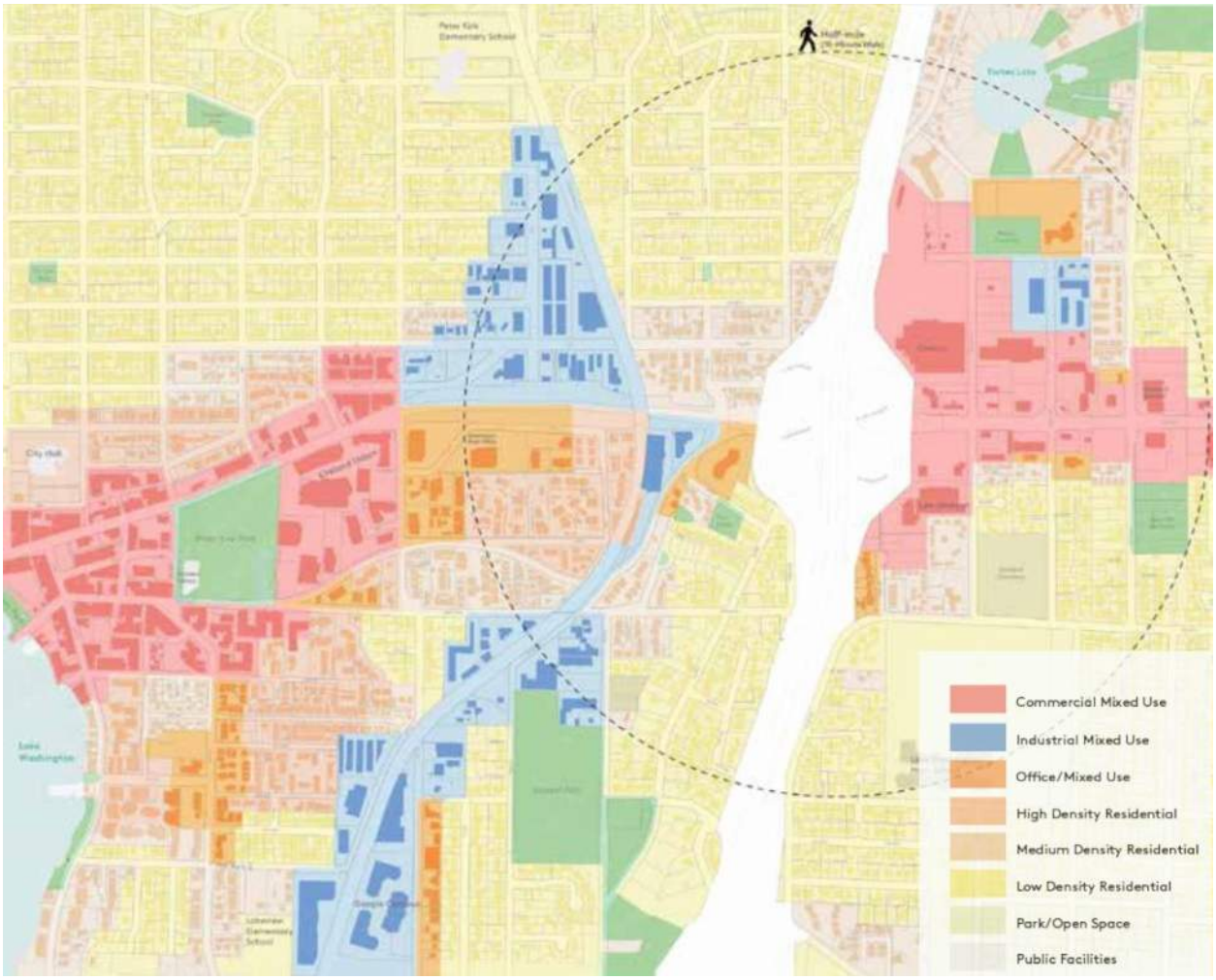
As shown in Exhibit 3 and Exhibit 4, single family residential uses comprise the largest single use of land in the Study Area, occupying 43% of land acreage. Residential uses in the northwestern portion of the Study Area include a mix of townhouses and other medium density residential, and small apartment complexes. The southwestern part of the Study Area includes office buildings, light industrial developments, and multi-family complexes in an auto-oriented pattern, occupying nearly 12% of the overall acreage in the Study Area.

The northeastern and southeastern portions of the Study Area are dominated by large parcels of strip retail occupying close to 15% of land within the Study Area. This development is marked by large surface parking lots, auto-oriented sites with frequent driveways and curb cuts, and weak relationship to street frontages.

With over 13% of the Study Area, the WSDOT right of way and associated road infrastructure plays an influential role in the character in the Study Area. These parts of the Study Area are prone to significant noise, unused open space, and uneven maintenance and vegetation.

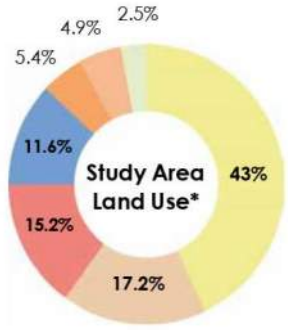
There are a few parks within the Study Area, indicated by green in Exhibit 3, but overall the area has low access to parks relative to the rest of the city. It also has a poor environment for walking and biking with significant physical barriers, and both residents and employees have very limited opportunities for safe physical activity or easy access to amenities.

Exhibit 3. Current Land Use, Study Area.



Source: Mithun, 2020.

Exhibit 4. Land Uses in the Study Area, by Acreage.

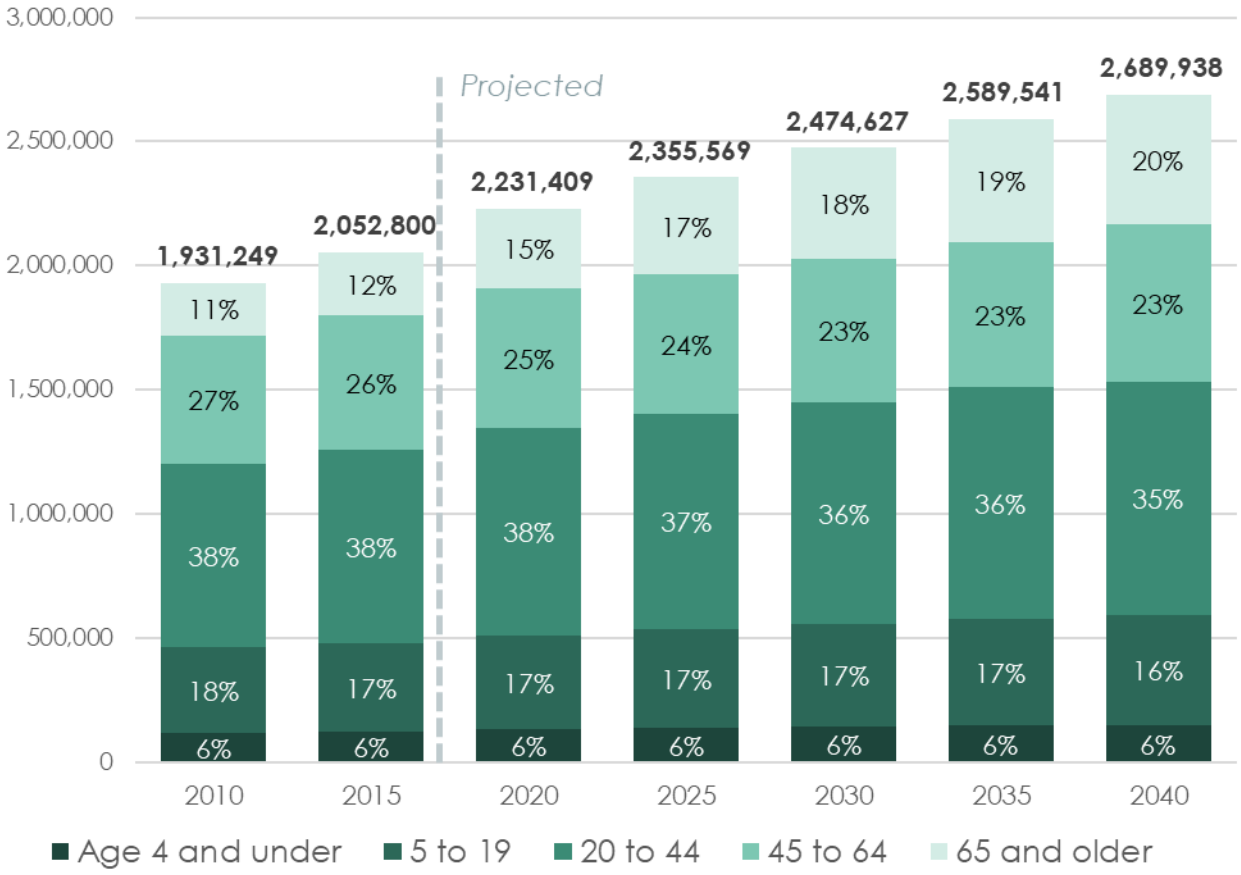


Source: Mithun, 2020.

Population and Employment

King County's population has grown since 2010 and is expected to continue to grow. King County's population grew 1.6% from 2018-19 but growth across the county has not been even. Seattle, Redmond, Bellevue and Kirkland grew faster than the county overall, with Kirkland's population growing by 1.9% from 2018 -19. See Exhibit 5.

Exhibit 5. Population by Age Cohort, King County, 2000–2040 (projected).

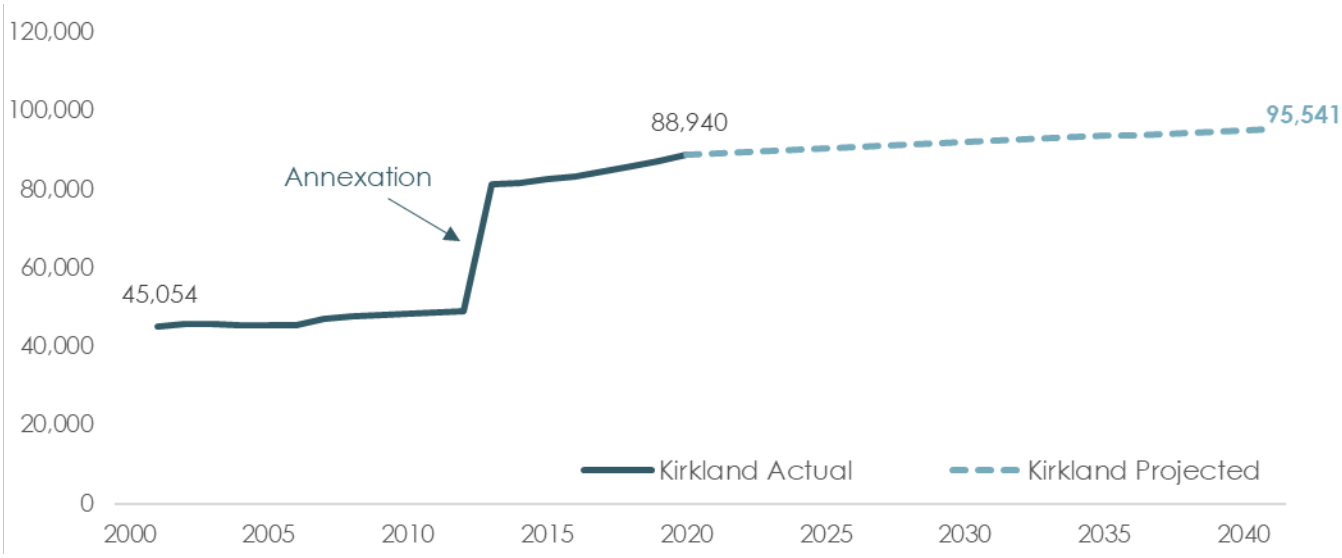


Source: WA OFM, 2020; BERK, 2020.

Kirkland's population has grown steadily, largely due to annexations, and it is now home to 88,940 people. The city is expected to continue to grow, In the next 20 years, Kirkland's

population is forecasted to increase by roughly 6,600 new residents, bringing its total population to 95,540 people. See Exhibit 6.

Exhibit 6. Population, City of Kirkland, 1990–2040 (projected).



Source: WA OFM, 2019; PSRC, 2017; City of Kirkland 2016; BERK, 2020

Local Employment and Economy

According to PSRC's 2018 estimates, there are 48,572 jobs in the City of Kirkland. The services sector is the source for more than half of these jobs, likely reflecting Kirkland's evolution as a technology hub and employment growth at fast-growing technology firms. The proposed Greater Downtown Area, which includes the Study Area, is home to over 6,700 residents and more than 17,000 jobs. Exhibit 7 details employment within the Study Area and City by sector.

Based on PSRC estimates of covered employment in 2018, the Study Area (the half-mile buffer around the proposed station) currently includes an estimated 3,616 jobs[4]. Key characteristics of local employment in the Study Area include the following:

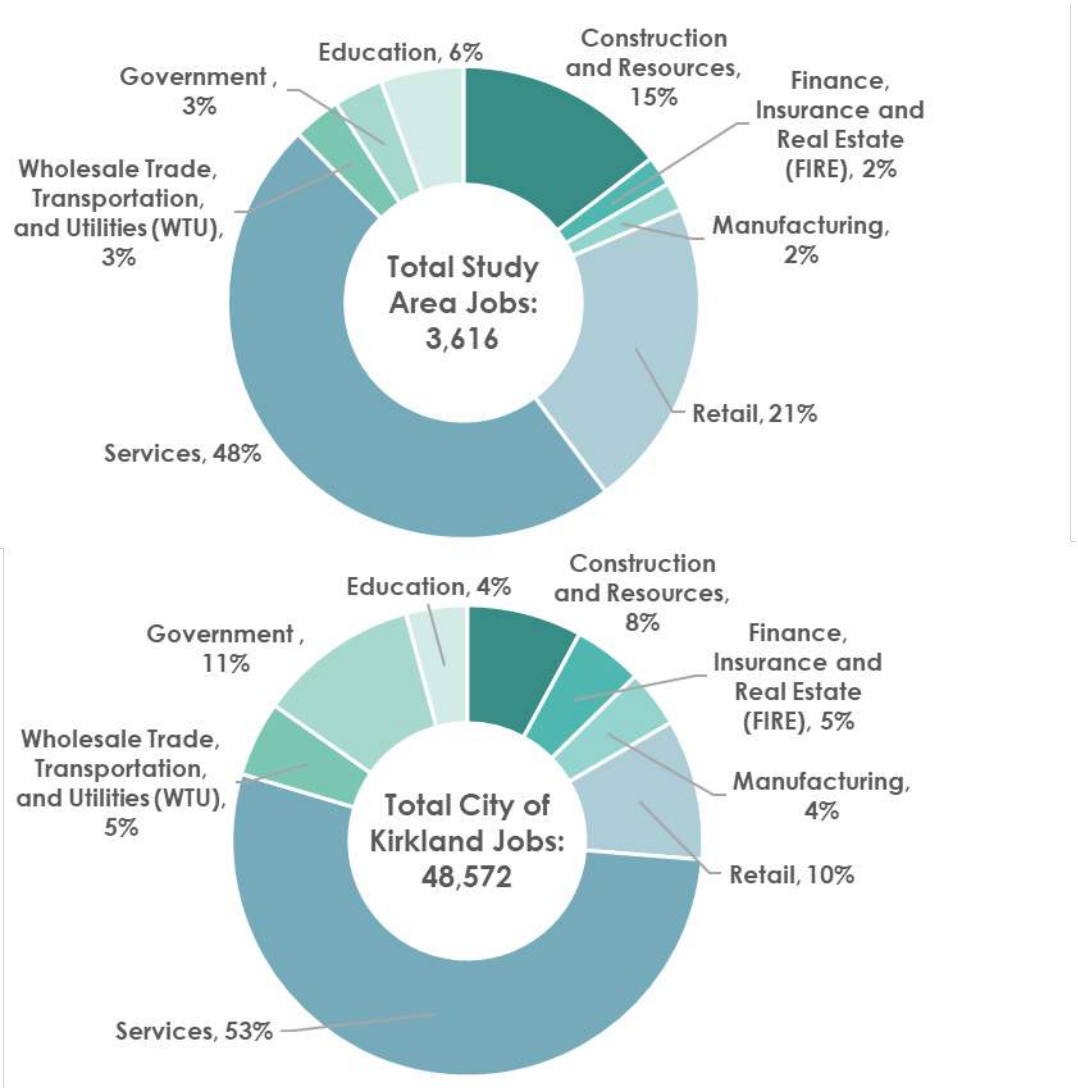
- Reflecting citywide trends, close to half of these jobs are in the services sector, which includes jobs in Professional and Business Services (scientific, technical, corporate offices, and administrative services) as well as Health Services, Food Services, and Information

[4] The Kirkland NE 85th St. Station Area Plan Opportunities and Analysis Report, April 15th, 2020, estimated 3,097 Jobs based on Total Primary Jobs: LEHD, 2017 https://lehd.ces.census.gov/. Thus the PSRC estimtes are for a newer year and a different source.

Services. In addition to maintaining the existing workforce, the availability of amenities and services is important to draw additional knowledge workers. This highly mobile workforce typically prefers to be physically close to other knowledge workers, and services and amenities match their lifestyle preferences. Recognizing these preferences developing supportive amenities and retail services can help to promote economic health the Study Area.

- The retail sector accounts for close to 21% of jobs, compared to 10% for the City overall. Many of these jobs are in businesses such as the Costco store, auto-repair and sales, and smaller salons and goods. An evolution toward higher quality retailing spaces could potentially displace some small-scale businesses, since many rely on the lower rents available in older shopping centers.
- Smaller proportions of jobs are in the Construction/Resources and Education sectors.

Exhibit 7. Covered Employment by Sector, Study Area (top) and City of Kirkland (bottom), 2018.



Source: PSRC, 2019; ESD, 2020; BERK 2020.

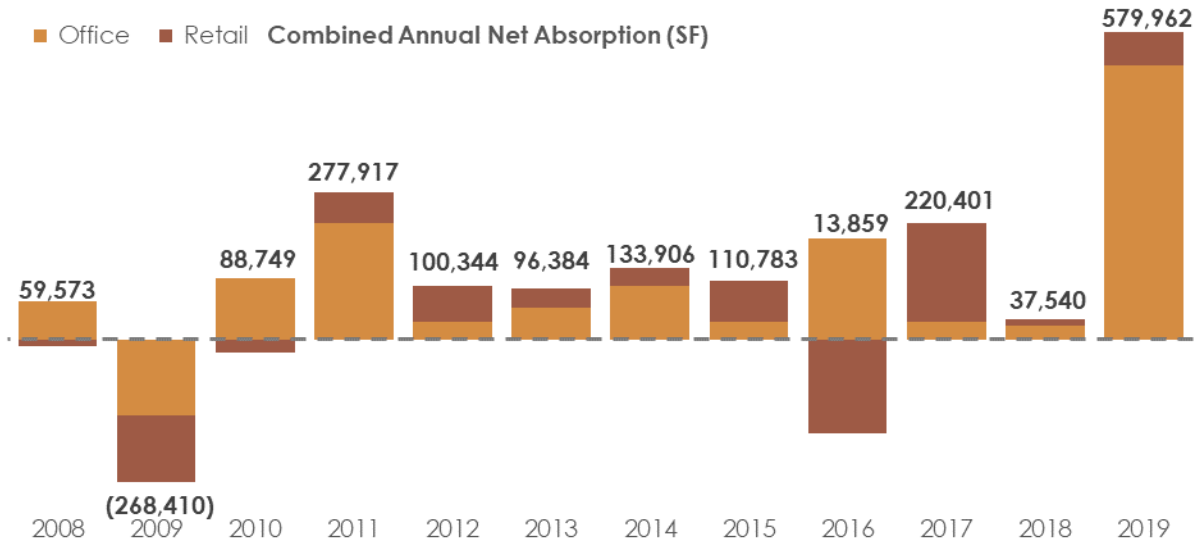
Real Estate Market and Trends

Kirkland's regional real estate market provides insights about the available supply of properties that can accommodate future residential and employment growth. For the Station Area, three distinct types of real estate products have been considered for future development:

- Office commercial.
- Retail commercial.
- Multifamily residential.

Exhibit 8 and Exhibit 9 summarize absorption trends for these uses in Kirkland 2008-2019. Across this timeframe, average annual net absorption is 104,601 SF for office properties, 16,316 SF for retail properties, and 135 units of multifamily residential. Office square footage for 2019 is particularly high, due to the Kirkland Urban development, described in further detail on the next page.

Exhibit 8: Annual Net Absorption (SF), Office and Retail Property in Kirkland, 2008-2019.



Sources: Costar, 2020; BERK, 2020.

Exhibit 9: Total Annual Absorption (Units), Multifamily Residential in Kirkland, 2008-2019.

Sources: Costar, 2020; BERK, 2020.

Mixed-use/flex use developments are another building format which may work well within the Study Area. Market data classifies buildings by their primary use and does not distinguish mixed use as a unique real estate category (ex: a multifamily building incorporating ground level retail is simply classified as multifamily). This makes comparing data for these specific buildings more of a challenge. However, mixed use properties tend to thrive in vibrant communities near transit.[5]

Establishing market feasibility for multiple use types and likelihood of high visitor traffic suggests that combining multiple uses within one development is market supported. Multifamily buildings with ground floor retail and commercial spaces can be observed in Downtown Kirkland with properties such as Voda Apartments, built in 2018 with 127 residential units and ground level tenants including bank branches and restaurants, or Capri Apartments with 73 residential units and ground floor tenants offering services such as medical care and exercise classes.

An exceptional example of a mixed-use development in adjacent Downtown Kirkland is the Parkplace site now called Kirkland Urban. While this is not a typical site, it demonstrates the capacity of Kirkland's market to support large, mixed-use developments across sectors. The City has approved a master plan for the 11.5-acre site. Phase I Construction began in 2016, which included:[6]

- Office: 374,416 SF
- Retail: 151,533 SF
- Residential Units/SF: 185/182,661 SF

[5] https://www.psrc.org/mixed-use-development
[6] https://blue.kingcounty.com/Assessor/eRealProperty/Detail.aspx?ParcelNbr=3900160000

The maximum development levels approved as of January 2019 including Phase I and Phase II are as follows: [7]

- Office: 744,655 SF
- Retail/fitness/entertainment: 218,345 SF
- Residential Units/SF: 367 units / 352,000 SF

Within the Study Area, retail space forms the bulk of the commercial property, with only 39% of space in office use. This ratio contrasts from the levels of employment by sector but reflects the general market trend that retail businesses have higher ratios of square feet per employee than service industries found in office properties.[8] See Exhibit 10.

Exhibit 10: Commercial Property in the Study Area by Type, 2020.

	Total Rentable SF
Office Properties	261,875 (39%)
Retail Properties	414,813 (61%)

Sources: Costar, 2020; BERK, 2020.

In terms of the distribution of commercial use, the bulk of commercial properties are found in the eastern portion of the Study Area, likely reflecting the Rose Hill business district. Retail development here is auto oriented in character with large surface parking lots, on sites with frequent driveways and curb cuts, and weak relationship to street frontages. Smaller pockets of commercial use are found west of the freeway likely reflecting smaller office buildings, and accessory office spaces within light industrial developments. See Exhibit 11.

INSTITUTIONAL USES

An additional real estate category that could be considered in the Study Area is institutional use. This includes schools, colleges and universities, hospital campuses, and civic or public buildings. These uses support a stable workforce, a mix of demographics, and amenities. These unique properties often play a big role in shaping the character of their surrounding neighborhood environment but operate outside typical market forces. They tend to have specific needs for consideration when making site location decisions. Some common factors include:

- Need for large parcel(s)
- Transportation access
- Amenity-rich environments

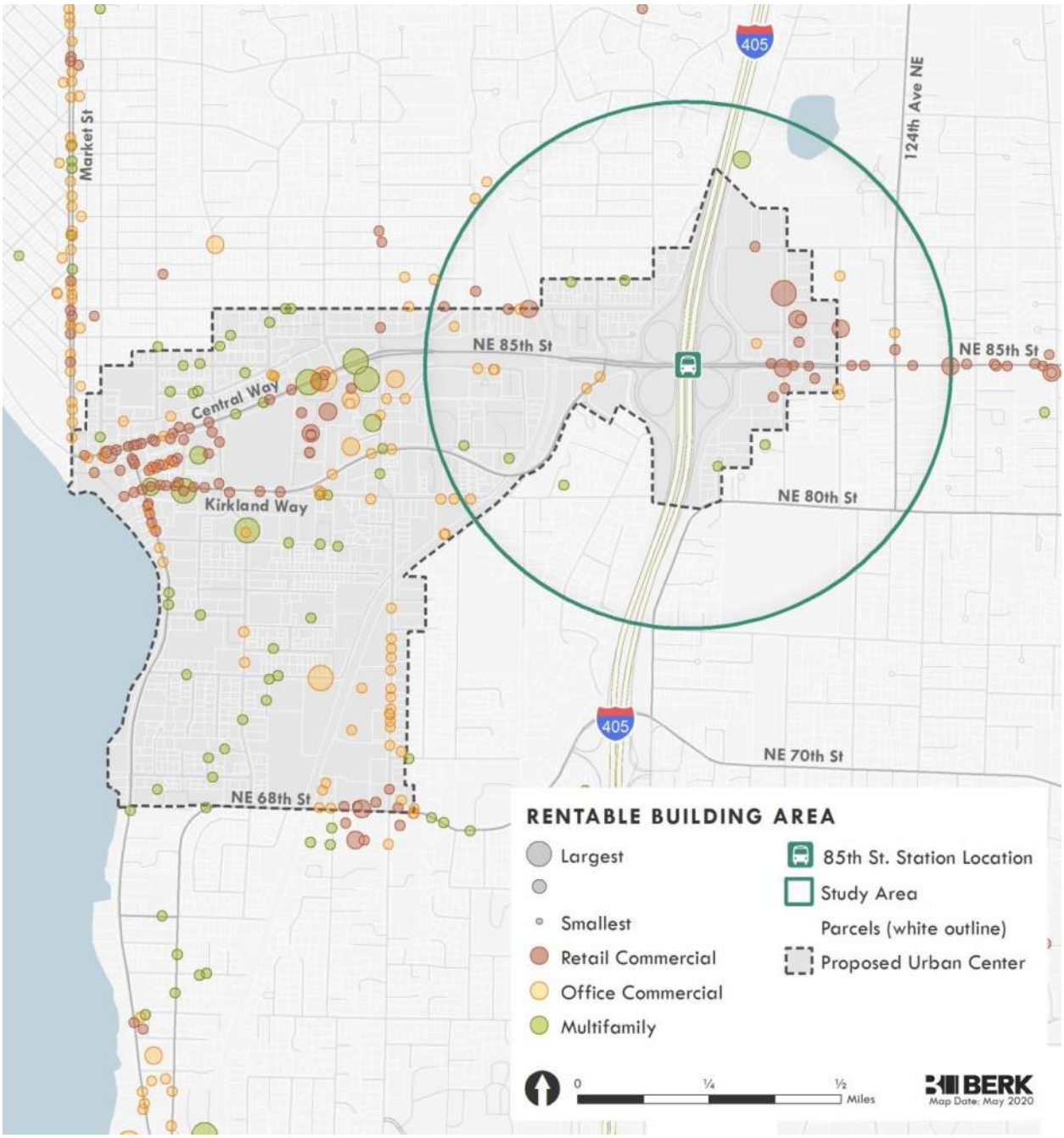
One regional example of institutional location trends can be found in Seattle's technology employment hub, South Lake Union (SLU). SLU now also attracts academic institutions interested in collocating degree programs with employers who hire graduates with associated skillsets.

Attracting public or private institutions could be one development strategy to consider for the Study Area.

-Sources: National Association of Realtors, 2018; Health Facilities Management Magazine, 2017; Puget Sound Business Journal, 2012.

[7] https://www.kirklandwa.gov/depart/planning/Development_Info/projects/Parkplace.htm
[8] https://snohomishcountywa.gov/DocumentCenter/View/7660/Employment-Density-Study?bidId=

Exhibit 11: Distribution of Commercial Properties, Study Area and Greater Downtown Kirkland

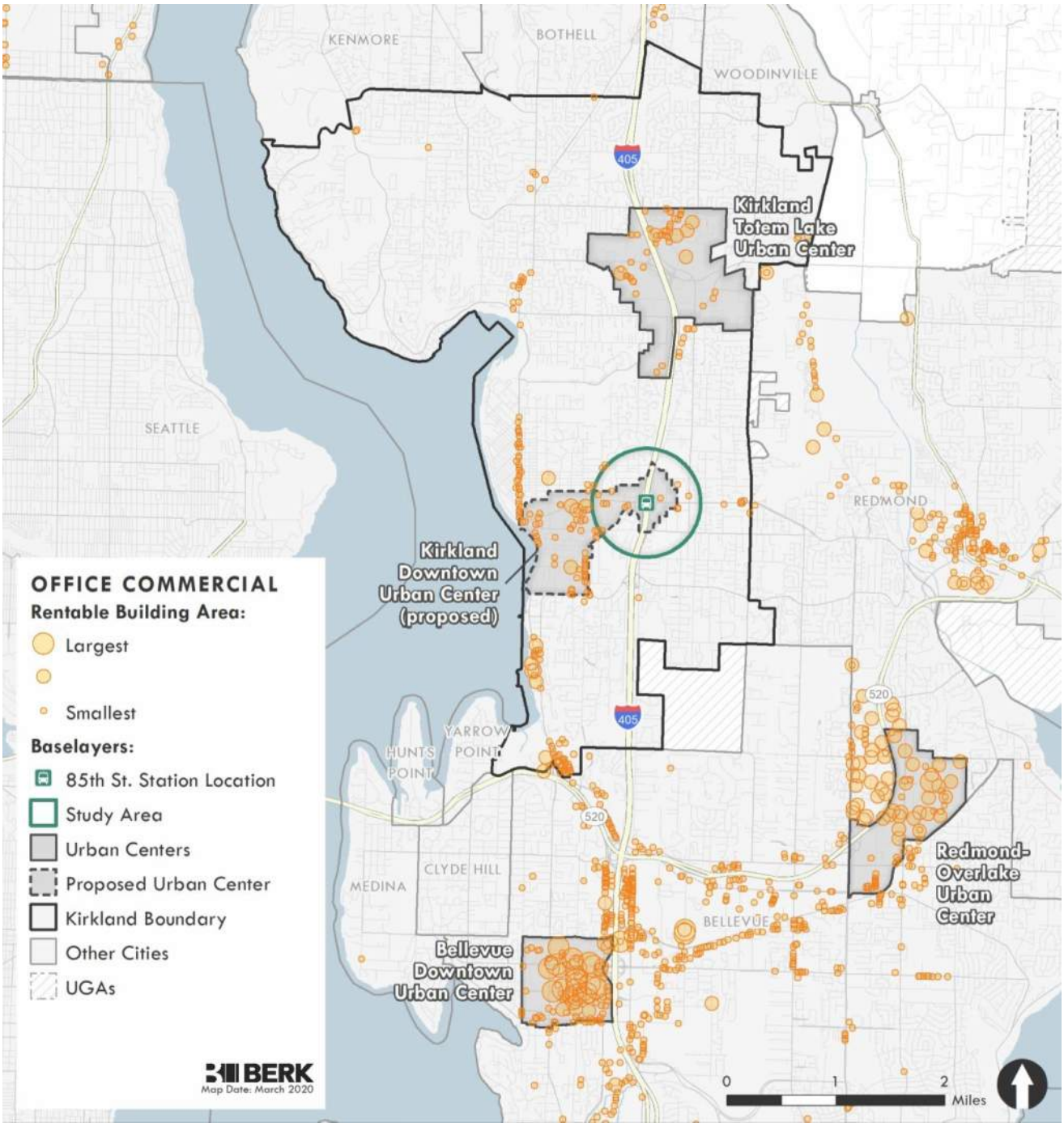


Sources: Costar, 2020; PSRC, 2020; BERK, 2020

Office Commercial

As shown in Exhibit 12 office properties in the region are clustered in existing and proposed urban centers. The Study Area's location within a proposed urban center, existing concentrations of commercial space, and highways, is a key asset with positive implications for future development. See Exhibit 12

Exhibit 12. Distribution of Office Commercial Real Estate, Study Area and Peer Geographies.



Source: CoStar, 2020; PSRC, 2020; BERK, 2020.

Key Findings

Key findings about the office market in in the Study Area include the following:

- **There is growing regional demand for office space on the Eastside.** Regional demand for office space is strong, and rents on the Eastside (includes cities of Bellevue, Kirkland, Redmond, Sammamish, Issaquah, Newcastle, and Mercer Island east of Lake Washington) have been high with low ongoing vacancy rates. According to local real estate databases, more than 1.2 million SF is scheduled to be delivered on the Eastside in 2020, only 313,000 SF of which is available for lease.[9] A significant proportion of this new development will be in Bellevue. Demand from technology companies expanding out of the Seattle market is likely to drive continued demand for 4- and 5-star office space. In addition to Bellevue and Kirkland Downtown overall, where rents are already high, smaller Eastside submarkets are likely to see demand.
- **The Greater Downtown Kirkland office market is strong**. High rents per square foot, low vacancy rates, and recent investments in this area make the Study Area a promising destination for worksites that enjoy access to the amenities and character of Kirkland's downtown. Google expanded its Kirkland presence with the purchase of over 400,000 SF in downtown office space and leasing an additional 180,000 SF at Sixth Street South for a total Kirkland presence over 1 million square feet.[10] As an anchor tenant, Google is likely to spark additional office investment in Greater Downtown Kirkland.
- **The Office market in the Study Area presents an opportunity for reinvestment.** Existing buildings in the Study Area are rated at 1-3 stars out of 5, primarily built in the 1980s. Developers may begin to purchase lower-rent office buildings in the area and make improvements to the properties to respond to high demand and attract different tenant types. The area's strategic location adjacent to major interstates and a bustling downtown, coupled with planned mobility investments, especially for transit, pedestrians and bicycles, makes the Study Area desirable for increased office activity.

OFFICE BUILDING CLASSES

Costar rates office building quality on a 1-5 star scale.

- **5-Star:** State-of-the-art structure that represents the latest trends and quality in design and construction.
- **4-Star:** High quality building with strong initial construction and continual, above average maintenance and desirability.
- **3-Star:** Building with modest features: some amenities, average aesthetics, and minimal ceiling heights.
- **2-Star:** Aging building with minimal or no amenities, functional aesthetics and systems, and potentially low levels of natural light.
- **1-Star:** Uncompetitive with respect to the needs of typical office tenants and may need significant renovation.

[9] Colliers Q4 2019 Puget Sound Office Market Report
[10] Puget Sound Business Journal, Jan 2020

- **There is a potential for redevelopment in future market cycles**. Current vacancy rates are higher than other regional centers and there have been no property sales in the past year. Developers can find lower prices per square foot in this market, making redevelopment a more attractive option. Market anticipation of future transit investment may be a reason for this stalled activity, but increased activity to take advantage of Study Area capacity is anticipated in coming years.[11]
- **The addition of supportive amenities could attract additional office investment.** Workers desire walkable retail amenities that provide convenient access to meals and personal errands. The Study Area may become more attractive for offices with the integration of these businesses.

Conditions and Trends

The Study Area has among the most affordable office rents in the Eastside market, with only Overlake in Redmond with lower rent per square foot. While office space in Totem Lake can be attained at similar rates to the Study Area, even for 4- and 5-star properties, this is likely related to the larger square footage and lower height buildings typical in a more suburban, office-park setting. However, the current suburban office development outlook is not promising, with most new office development taking place in amenity-rich, walkable settings. The Study Area is located directly adjacent to downtown which offers amenities, proximity to major tech employers, and diverse uses in a more walkable environment. This contrast defines a unique commercial base, particularly with mobility investments to better connect pedestrians and cyclists from the Study Area to the downtown core. See Exhibit 13 and Exhibit 14.

ECONOMIC DEVELOPMENT FOR SOCIAL MOBILITY

Community investment in economic development should benefit all residents. Great public spaces, affordable home ownership and rental opportunities, and an economy with opportunities for adults of various backgrounds cultivates livability for a wide range of family types.

Certain industries and jobs provide greater promise for economic opportunity for non-college educated adults. Research by the Brookings Institute identifies "opportunity industries" as those which provide more longevity and professional growth for non-college educated adults.

This research defines good jobs as those which are stable, pay a middle-class wage, and provide benefits. Promising jobs do not provide the same level of pay or benefits but offer pathways toward attaining good jobs within 10 years.

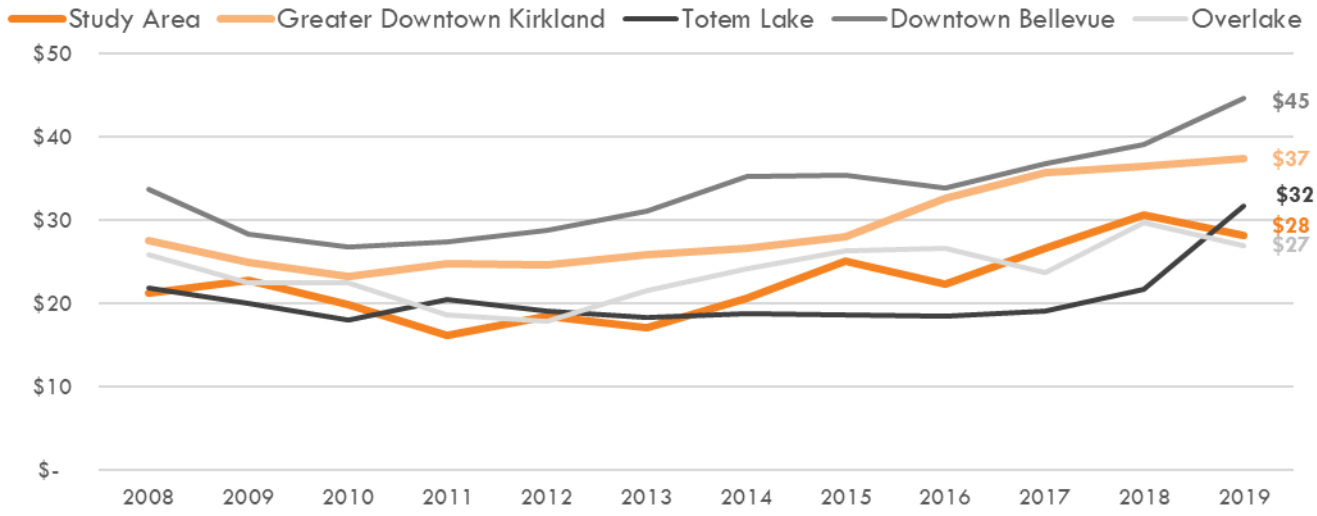
The Brookings' report indicates that the below sectors have higher rates of good and promising jobs:

- Maintenance, Construction, Media Production, and Transportation
- Management, Business, Computer, Engineering, and Health Care

Source: Brookings Institute, 2018

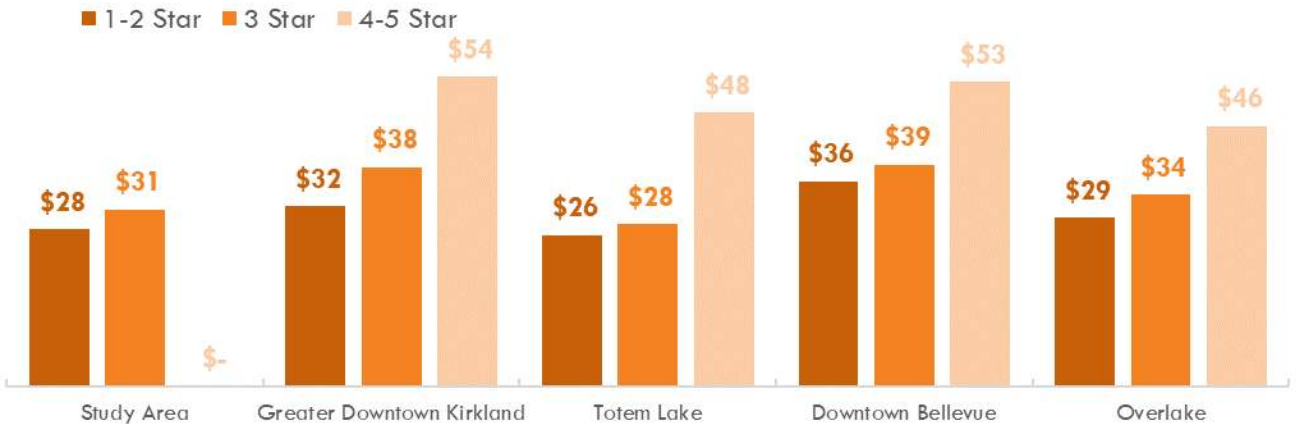
[11] CBRE Economic Study of Downtown Kirkland, Attachment O

Exhibit 13. Base Rent per Square Foot, Office Commercial, Study Area and Peer Geographies 2008–2019.



Source: CoStar, 2020; BERK, 2020.

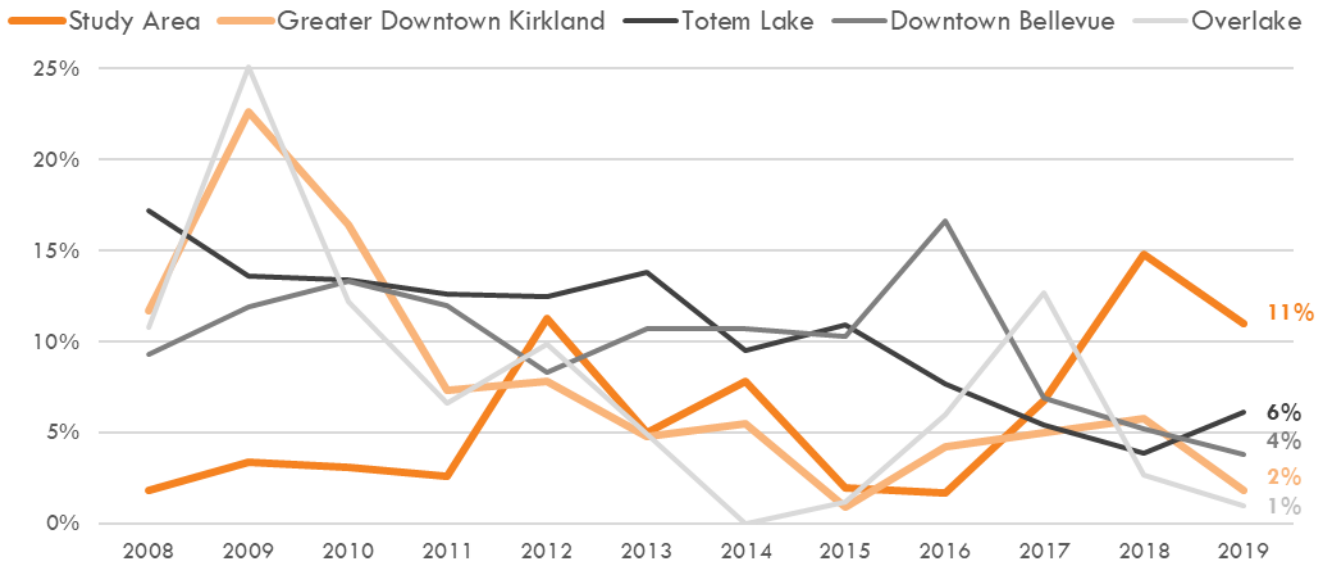
Exhibit 14. Rent per Square Foot by Construction Class, Office Commercial, Study Area and Peer Geographies 2019.



Source: CoStar, 2020; BERK, 2020.

Vacancy rates are a god indicator of tightness in a market. Lower vacancy rates indicate higher demand for space, and potentially higher rental rates as a result. Higher vacancy rates are associated with lower levels of demand and decreased rental rates. Single year spikes in smaller geographies like these concentrated growth centers may reflect a major employer leaving a building or a new, large building coming to market and needing some time to lease up. Retail and office vacancy rates trend higher than vacancy in the housing market, with the national average over the past 10 years hovering between 10-12% for office space.[12] After experiencing higher vacancy in the wake of the 2008 recession, the Greater Downtown Kirkland market has consistently maintained sub-10% vacancy in its office market, signaling a constrained market with high demand (See Exhibit 15). While the Study Area experienced some recent volatility with a peak in vacancy rate in 2018, it has since decreased. Reflecting Downtown Kirkland, the Study Area also has consistently maintained vacancy rates at or below 10% vacancy since 2008. See Exhibit 15.

Exhibit 15. Vacancy, Office Commercial, Study Area and Peer Geographies 2008–2019



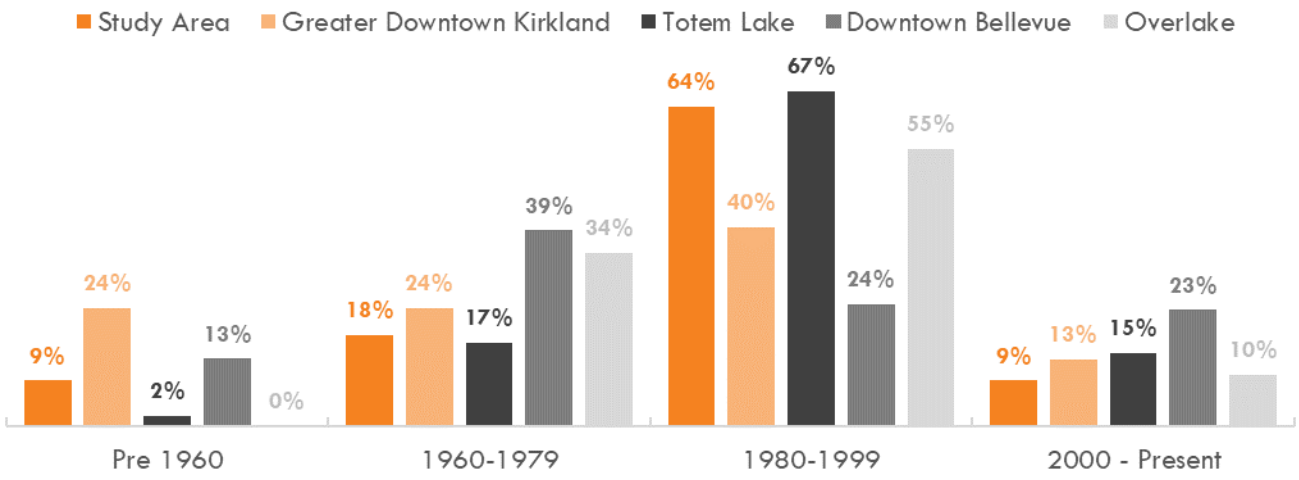
Source: CoStar, 2020; BERK, 2020.

Building age speaks to the character and levels of investment in each focus area. Overall Eastside trends show that significant growth in commercial office development occurred in the 1980s and 1990s (See Exhibit 16). This is particularly true in the Study Area, Totem Lake, and

[12] Transwestern Market Report, Q4 2019

Overlake. Downtown Bellevue has the highest percentage of newer buildings while Downtown Kirkland features a higher percentage of older buildings, contributing to its unique character.

Exhibit 16. Age of Buildings, Office Commercial, Study Area and Peer Geographies.



Source: CoStar, 2020; BERK, 2020.

Recent building sales demonstrate the potential value of property in each focus area. Property valuations are based on a variety of factors, including the estimated future revenue potential of an area. Given similarities in building age and rental rates, it is likely that Overlake and Totem Lake sales prices are more closely aligned with what might be expected in the Study Area. In recent sales, Downtown Kirkland and Bellevue achieve higher values per square foot.

Exhibit 17: Kirkland Urban Office Buildings

Image Source: Geekwire, 2019

As noted previously, the Kirkland Urban development is a 11.5-acre mixed use project in Downtown Kirkland.[13] This includes two large office buildings sold to Google in 2019. This project creates activity and contributes to a walkable business district less than one mile from the proposed 85th Street Station. Mobility investments connecting the station to downtown for pedestrians and bikes will enhance the desirability of the station area for future investment.

[13] Kirkland Reporter, March 2019

Exhibit 18. Sales Comps, Office Commercial, Study Area and Peer Geographies.

	Study Area	Greater Downtown Kirkland	Totem Lake	Downtown Bellevue	Overlake
Location	n/a	469 Central Way	11521 NE 128th St	333 108th Ave NE	2121 152nd Ave
Sale Price per SF	n/a	$787	$627	$922	$426
Star Rating	n/a	4	3	5	3
Stories	n/a	7	2	20	1
Year of Sale	n/a	2019	2019	2020	2019
Year Built	n/a	New	2003	2008	1979

n/a = no sales within the past year
Source: CoStar, 2020; BERK, 2020.

Retail Commercial

Key Findings

- **The Retail market in the Study Area offers a variety of services and is auto oriented in character.** Adjacent to the I-405 exit, the retail market caters to auto traffic with tenants such as service stations and coffee shops. Retail buildings in this zone are 1-3 star and primarily built in the 1980s, mimicking trends in the office sector.
- **The Study Area has maintained vacancy rates under 5% for a decade.** In all centers studied, recent trends show lower vacancy rates for retail when compared to a decade earlier, with the Study Area and Overlake being the least volatile during this time period.
- **There may be a potential for retail as part of new development.** Low vacancy rates and slowly rising rents may suggest that demand for new retail spaces may increase in the future, especially as population growth continues. In addition, increased housing can drive retail demand in the Study Area – especially for types of retail that meet the day-to-day resident needs for such as groceries, pharmacies, restaurants and similar.
- **Office space can also create additional retail demand.** National research indicates that the typical downtown worker will spend as much as $130 per week in downtown. Top retail categories for office worker spending include grocery stores, discount stores, and warehouse clubs (ex: Costco).[14] The Seattle region, in particular, is noted for its high levels of spending on groceries. Using BLS 2018 Consumer Expenditure Surveys, Business Insider reports the Seattle area as the top of 22 US metropolitan areas for spending on groceries, estimating $951/month per household on total food expenses.[15]
- **Integrating retail spaces into new development** may be a way of managing these demands through infill to build more complete neighborhoods. The Google-purchased offices in

RETAIL BUILDING CLASSES

Costar rates retail building quality on a 1-5 star scale.

- **5-Star:** Located in a prime retail district with national or high-end local retailers. New or very well maintained structure.
- **4-Star:** High concentration of retail tenants, including recognized national brands. New or well-maintained structure.
- **3-Star:** Average concentration of retailers, with a mix of national, regional, or local brands. Building may be older.
- **2-Star:** Low concentration of local or regional retailers. Older property.
- **1-Star:** Suitable only for very unique retailers. Building may require significant renovation.

[14] International Council of Shopping Centers, 2012
[15] Business Insider, 2020

Kirkland are a good example of this, integrating retail businesses such as Top Golf into what is primarily an office property.[16]

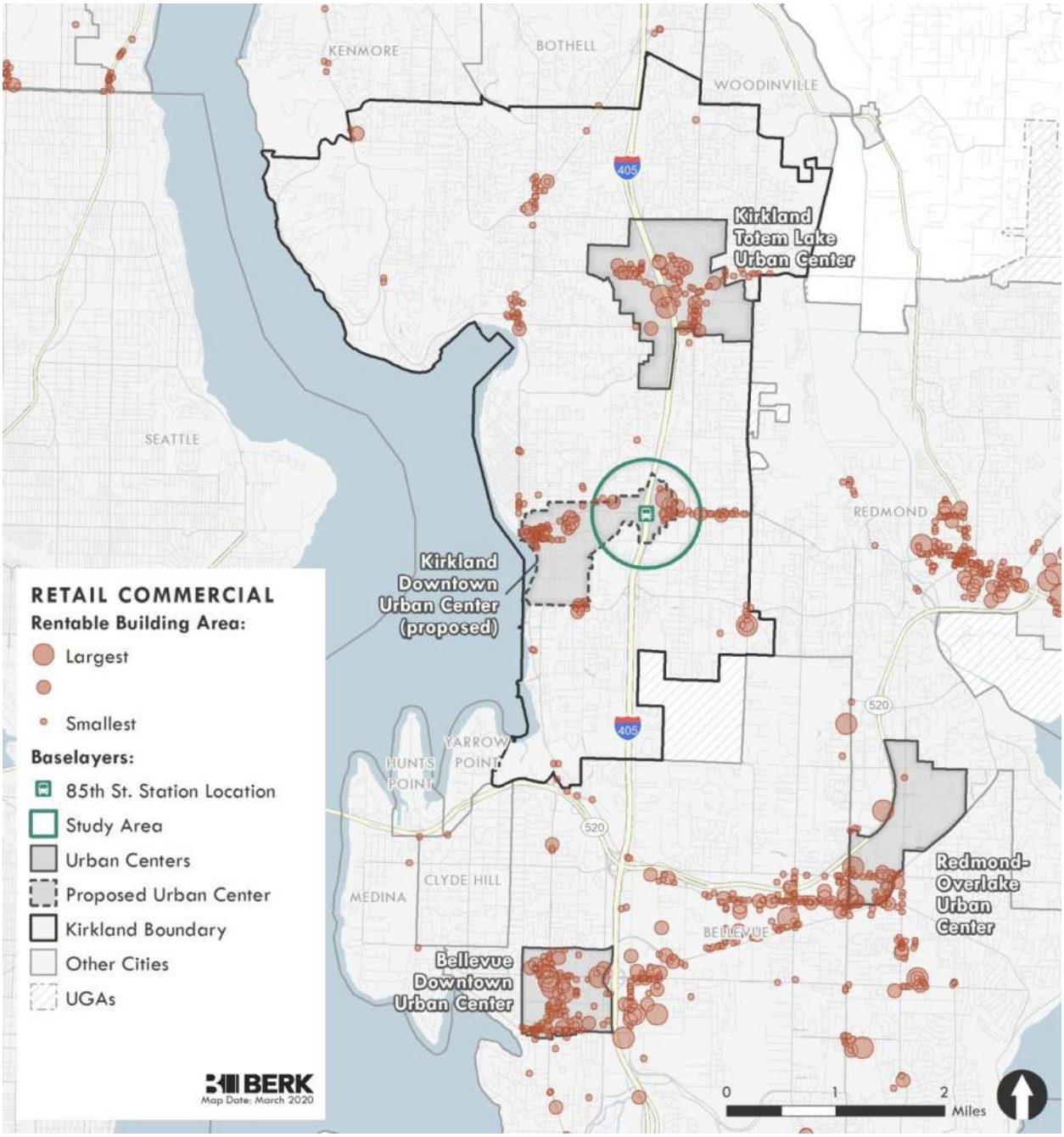
- **Changing nature of retail.** Given the changing landscape of brick-and-mortar retail, retail development is now increasingly integrated with experiences, housing or other complementary uses. These new strategies may also be relevant in addressing retail demand in the Study Area. The Village at Totem Lake development, discussed in greater detail on page 30, is an example of retail's integration with a wider variety of uses to create lifestyle centers that promote livability through walkable amenities.

Conditions and Trends

Retail space on the Eastside clusters in downtowns, along arterials, and around major road intersections. Few stand-alone retail developments have been built within the past 20 years, as newer construction favors integration of retail space within office or multifamily properties over dedicated shopping centers. Research into BRT impacts on the retail sector are still being explored, without conclusive evidence of direct ties to growth in this sector.[17]

[16] https://topgolf.com/lounge/
[17] Nelson and Ganning, 2015 "National Study of BRT Development Outcomes"

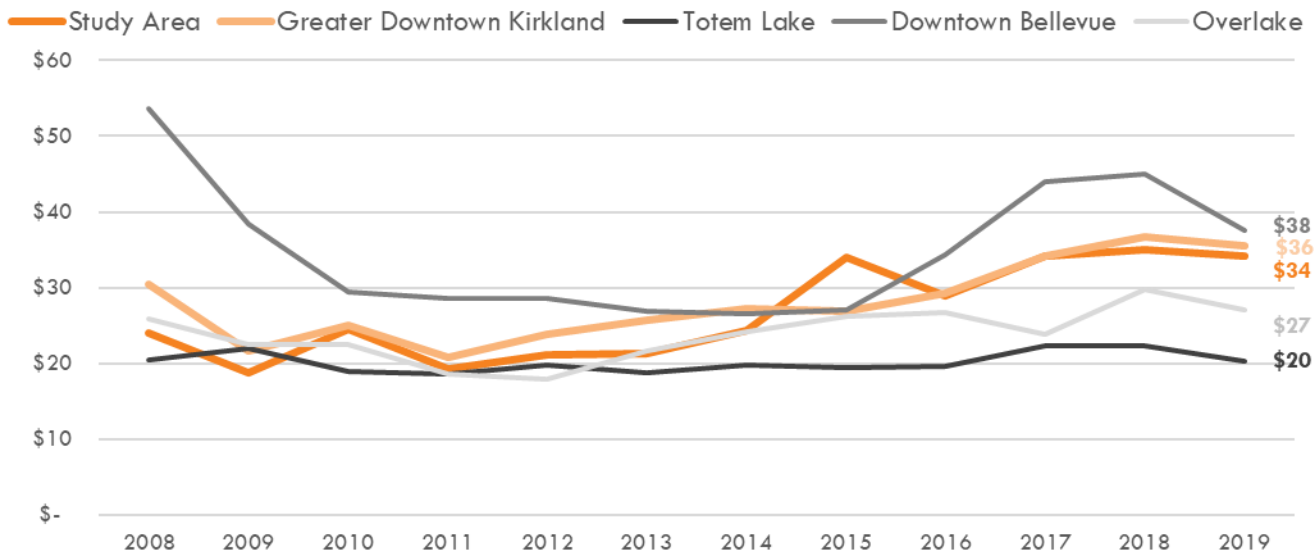
Exhibit 19. Distribution of Retail Commercial Real Estate, Study Area and Peer Geographies



Source: CoStar, 2020; PSRC, 2020; BERK, 2020.

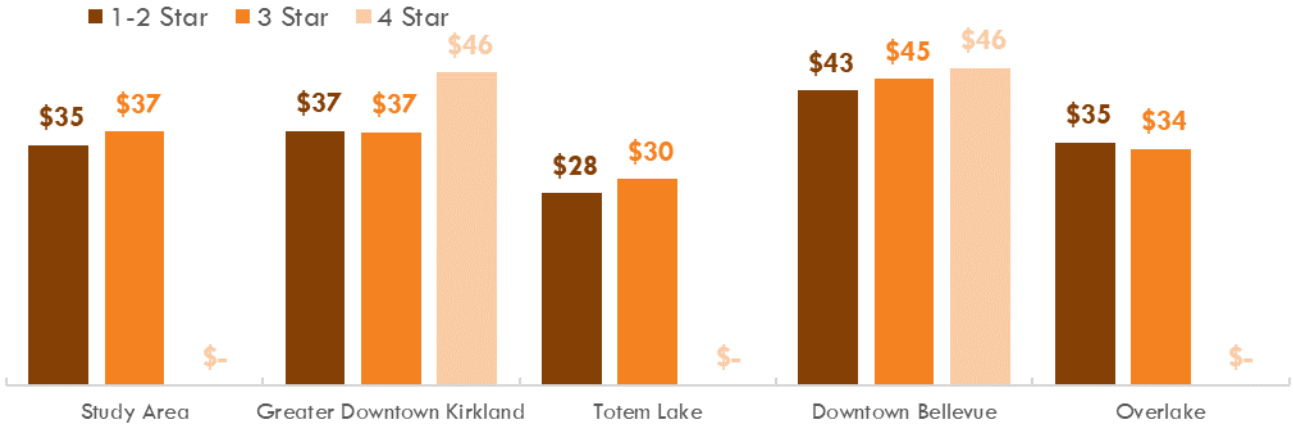
Rental rates for retail space in the focus areas are highest in Downtown Bellevue and Greater Downtown Kirkland. Within these zones, the highest rents per square foot are achieved along main downtown streets such as Bellevue Way and Main Street in Kirkland. Totem Lake and Overlake show lower price points for retail space, with neither area offering 4-star spaces. The Study Area reports strong rents despite its lack of 4-star properties, however only two of 21 properties report rental rates and may not reflect the full picture of the retail market. See Exhibit 20 and Exhibit 21.

Exhibit 20. Rent per Square Foot, Retail Commercial, Study Area and Peer Geographies, 2008–2019.



Source: CoStar, 2020; BERK, 2020.

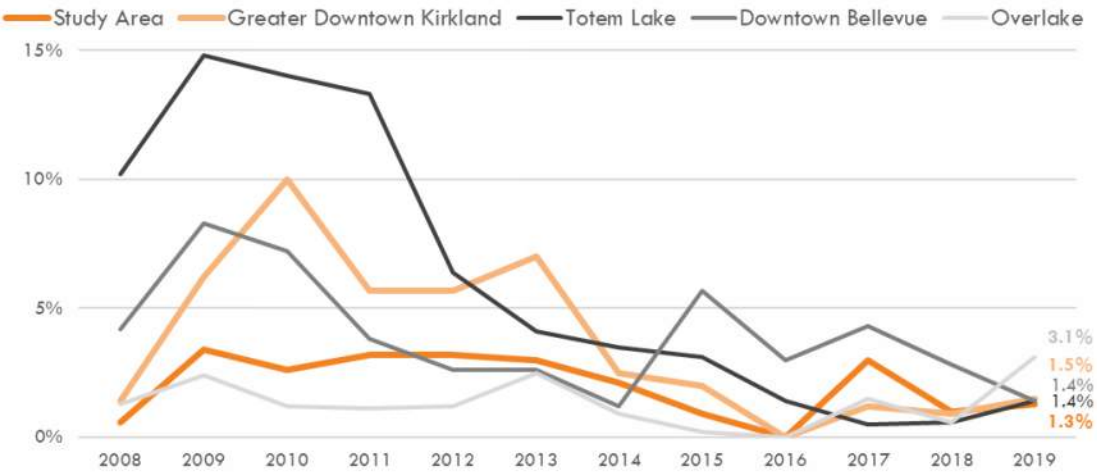
Exhibit 21. Rent per Square Foot by Construction Class, Retail Commercial, Study Area and Peer Geographies 2008–2019.



Source: CoStar, 2020; BERK, 2020.

Despite national trends hovering around 10% for retail vacancy, Eastside markets have maintained rates at 5% or less for the past 5 years.[18] Totem Lake experienced the most volatility during the 2008-2012 recession period but has since recovered to rates on par with the other areas. Exhibit 22.

Exhibit 22. Vacancy, Retail Commercial, Study Area and Peer Geographies, 2008–2019.



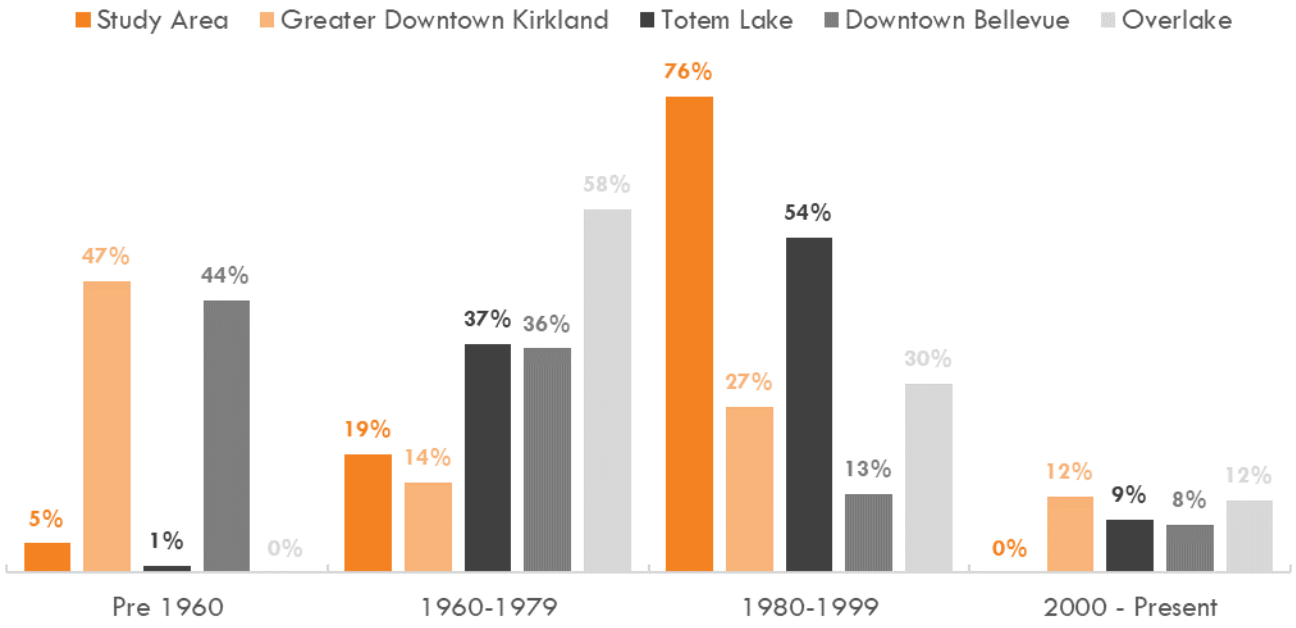
Source: CoStar, 2020; BERK, 2020.

[18] Reis, Real Estate Solutions by Moody Analytics, Q2 2019

Retail properties in the Study Area were overwhelmingly developed in the 1980s, with the newest building developed in 1997. Development from this era includes large areas of surface parking, auto-oriented sites with frequent driveways and curb cuts, and a weak relationship to street frontages.

Retail properties in downtown Kirkland area are older, many dating to the 1920s and 1940s. These construction eras favored more compact development styles, which transition well to a modern, walkable downtown center. This fits well with modern development trends, where ground floor retail space is integrated into multifamily and office buildings. While the bulk of Totem Lake's retail properties were developed between 1960-2000 as free-standing single use retail buildings and an auto-oriented focus, recent redevelopment features a mix of uses. Newer redevelopment includes the 10-building mixed use Village at Totem Lake development. This integrates a public park with retail shopping, a cinema, and residential units. This "lifestyle center" concept reiterates the more recent trend of retail property as incorporated into mixed use developments rather than free-standing buildings. Downtown Bellevue's retail scene features a large, regional mall along with a mix of building types and ages. See Exhibit 23.

Exhibit 23. Building Age, Retail Commercial, Study Area and Peer Geographies.



Source: CoStar, 2020; BERK, 2020.
Note: Buildings in Village at Totem Lake project are shown with older built dates, despite recent re-development.

Retail property sales in the comparison areas show a wide range of achieved value per square foot. Downtown Bellevue is the highest valued, with 3-star properties selling at almost $1,900 per square foot. The Study Area, in contrast, sold a 3-star property of similar age for less than 1/3 the value at $587 per square foot. This demonstrates the room for growth in the Study Area and its potential desirability for an investor looking for sales at a lower price point. See Exhibit 20.

Exhibit 24. Sales Comps, Retail Commercial, Study Area and Peer Geographies.

	Study Area	Greater Downtown Kirkland	Totem Lake	Downtown Bellevue	Overlake
Address	12004-12006 NE 85th St (Strip Mall)	134-140 Central Way (Ground floor of condo building)	11932 124th Ave NE (Auto Dealership)	10350 Bellevue Way (Bank)	2150 148th Ave NE (Fast Food Restaurant)
Sale Price per SF	$587	$536	$1,304	$1,894	$643
Star Rating	3	2	3	3	3
Stories	1	1	1	1	1
Year of Sale	2019	2019	2019	2019	2019
Year Built	1982	1996	1997	1986	1986

Source: CoStar, 2020; BERK, 2020.

Multifamily Residential

Residential use in the Study Area is dominated by single-family housing. Multifamily development is limited, as shown in Exhibit 25.

Exhibit 25: Residential Property in the Study Area by Type, 2020.

	Total SF
Multifamily Units	164,696 (3%)
Single Family Lots	5,834,339 (97%)

Sources: Costar, 2020; BERK, 2020.

Key Findings

- **Multifamily buildings in the Study Area are low-rise and 30 units or less.** One newer senior housing development features 100+ units catering to moderate income levels. In general, single-family and townhome developments are more prevalent for residential property in this market. Higher intensity zones do exist within the Study Area, which allow for denser housing styles and leave room for development potential to increase capacity for capturing benefits of mobility investments.
- **Home values within the Study Area are strong and have grown significantly since 2010.** Average sale price per square foot more than doubled 2010-2019 for residential homes within the Study Area.
- **Currently, 60% of Study Area land is zoned for low and medium density residential development.** These restrictions limit the residential capacity of the zone and impact the proportion of Kirkland's population within walkable access of Bus Rapid Transit.
- **Greater Downtown Kirkland area performs well with comparatively high rental rates and sales prices.** Recent developments are 4-star quality, 4-6 stories, and often incorporate ground floor retail and shared amenity spaces. Beautiful views over the

MULTIFAMILY BUILDING CLASSES

Costar rates multifamily building quality on a 1-5 star scale.

- **5-Star:** Luxury, defined by finishes, amenities, and overall design.
- **4-Star:** Higher end finishes and specifications, desirable amenities, and designed to modern standards.
- **3-Star:** Average aesthetics and finish quality, likely a smaller or older structure with a few amenities.
- **2-Star:** Aging building with average aesthetics, few or no amenities.
- **1-Star:** Uncompetitive for typical investors and may require significant renovation.

downtown lakefront and nearby shopping amenities create an attractive environment for residents.

- **Newer multifamily developments incorporate a mix of uses, such as ground floor retail and commercial space.** This variety adds to neighborhood walkability and often provides amenities that benefit office workers and residents alike.
- **Affordable housing incentives should be considered to foster a mixed-income community.** Transit-rich environments are beneficial to lower income households who rely on public transit to meet their daily needs. Home values and rental rates have dramatically increased in the Study Area over the past decade (See Exhibit 28 and Exhibit 30), and it cannot be assumed that the housing market will respond appropriately (in the number, price or type of housing) to meet the needs of those who stand to benefit most from improved access to opportunity.

Conditions and Trends

Multifamily development on the Eastside clusters in Urban Centers and near shorelines. Unlike office or retail properties, residential development tends to prefer a block or two of distance from major arterial roads or highways to maintain a safer street environment and quieter neighborhood character. Multifamily development in the Study Area is limited. Walk scores in the Study Area range from 50 to 60 and reflect the needed investments in transit, pedestrian, and cyclist infrastructure to strengthen connections with downtown Kirkland. The area's walkability ratings will improve after mobility improvements are complete. See Exhibit 27.

Exhibit 26: WalkScore Range for Focus Areas

Focus Area	WalkScore Range (Approximate)
Study Area	50 – 60
Downtown Kirkland (outside Study Area)	75 – 95
Totem Lake	50 – 70
Downtown Bellevue	85 – 95
Overlake	30 - 60

Walk Scores

Walkscore.com rates neighborhoods across the country for walkability. Scores are based on access to amenities without using a car.

90-100 Walker's Paradise: Daily errands do not require a car

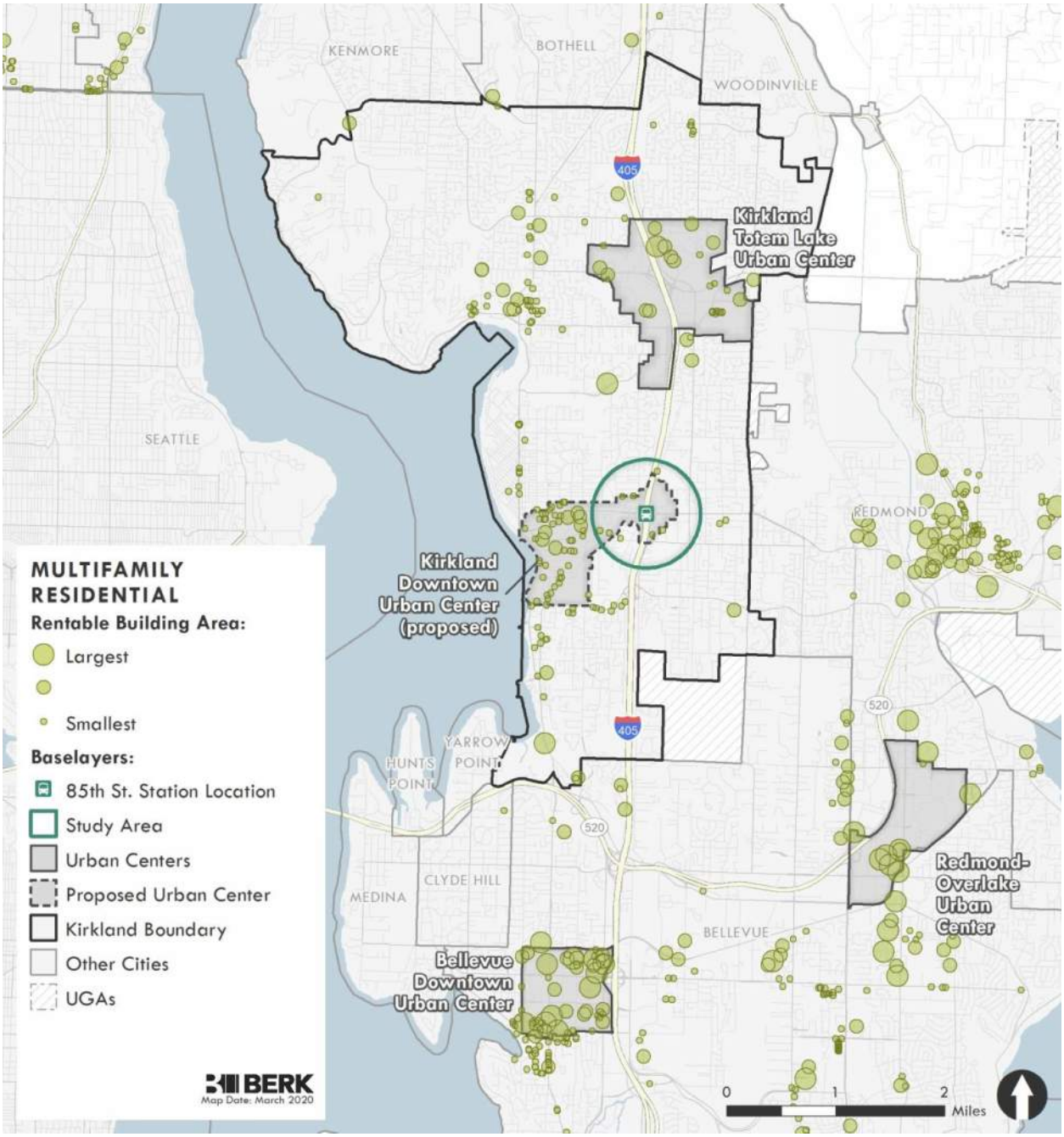
70-89 Very Walkable: Most errands can be accomplished on foot

50-69 Somewhat Walkable: Some errands can be accomplished on foot

25-49 Car-Dependent: Most errands require a car

0-24 Car-Dependent: Almost all errands require a car

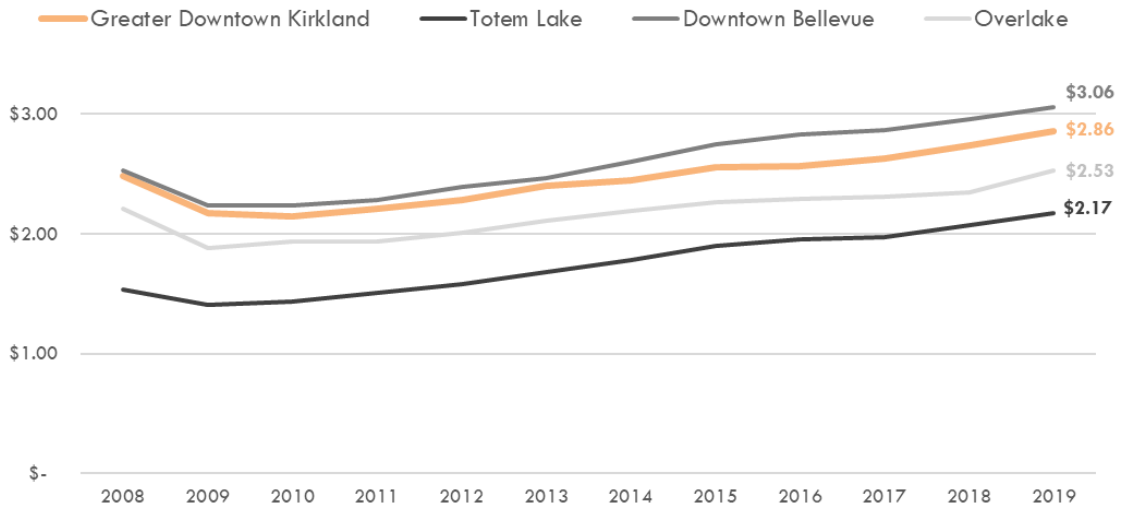
Exhibit 27. Distribution of Multifamily Residential Real Estate, Study Area and Peer Geographies



Source: CoStar, 2020; PSRC, 2020; BERK, 2020.

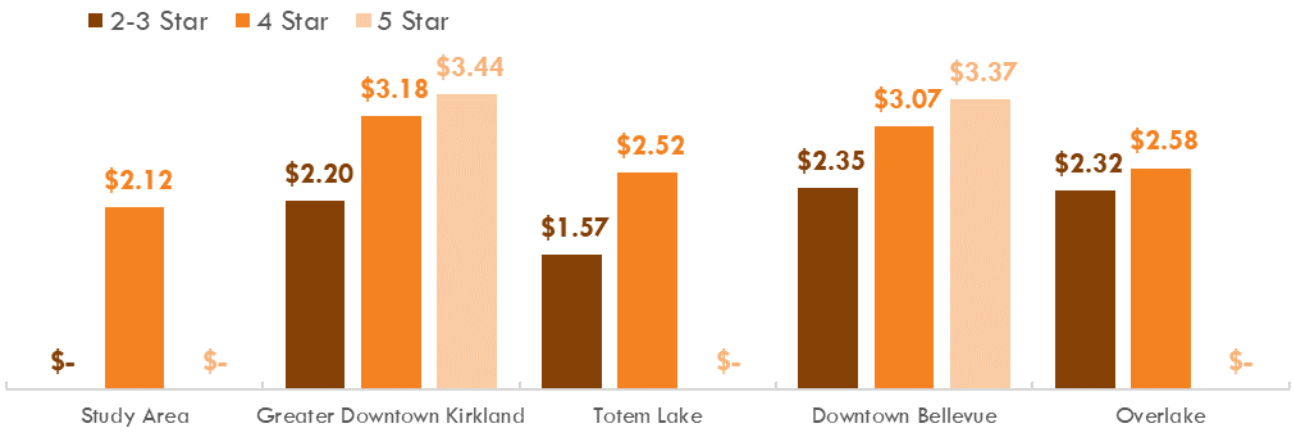
Multifamily residential living is more popular in the downtown areas than in the more suburban-styled development typologies of the Study Area, Totem Lake, or Overlake. This is consistent with the pedestrian-oriented, livable character of these districts, which earn walk scores of 89 in Kirkland and 95 in Bellevue. They are also the only two markets which feature 5-star buildings. Average rental rates in Downtown Bellevue and Greater Downtown Kirkland are 15-40% higher than those found in Overlake or Totem Lake (rental rates not reported for Study Area properties). See Exhibit 28. Totem Lake and Overlake multifamily properties earn walk scores 50 to 70 and 30 to 60, respectively.

Exhibit 28. Rent per Square Foot, Mulitfamily Residential, Peer Geographies, 2008–2019.



Source: CoStar, 2020; BERK, 2020.

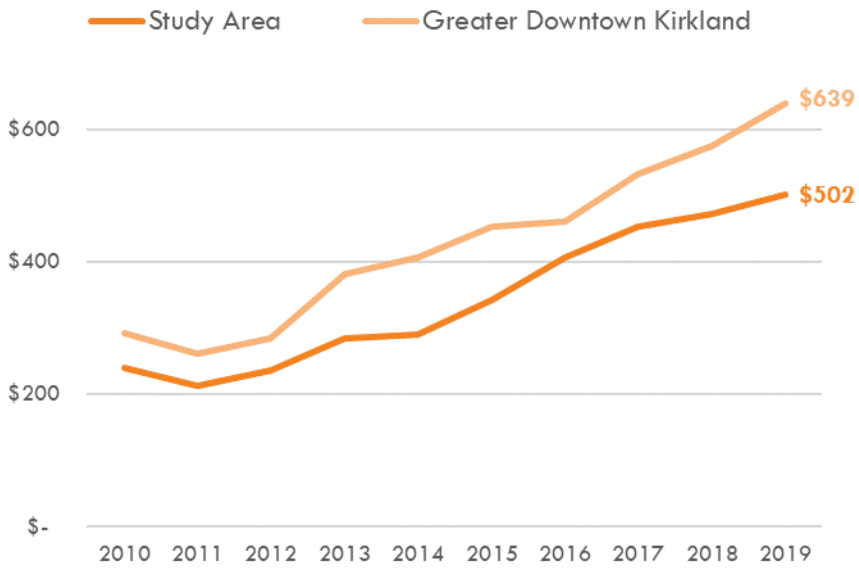
Exhibit 29. Rent per Square Foot by Construction Class, Mulitfamily Residential, Peer Geographies, 2019.



Source: CoStar, 2020; BERK, 2020

The Study Area and Greater Downtown Kirkland are the only two zones with active sales for single family residential properties. Home values in the Study Area more than doubled in the 2010-2019 period. Values per square foot tend to hover about 20% lower than the Greater Downtown Kirkland market, but demonstrate a similar upward trajectory. In 2016 the average sale price in the Study Area crossed the million-dollar threshold and in 2019 the median sales value was $1,475,000. This strong market performance supports the argument for increased residential activity in the Study Area. See Exhibit 30. Increased population through multifamily developed should be coupled with school district analysis to ensure adequate capacity and educational resources from area schools. Nearby public schools include: Lake Washington High School, Kirkland Middle School, Rose Hill Middle School, Rose Hill Elementary School, Mark Twain Elementary School, Lakeview Elementary School, and Peter Kirk Elementary School.

Exhibit 30. Median sales price per SF for Single Family and Townhome Development, Study Area and Greater Downtown Kirkland, 2010–2019.



Source: King County Assessor, 2020; BERK, 2020.

WHO IS ATTRACTED TO TRANSIT-RICH COMMUNITIES?

Reliable transit service is beneficial to many family types and has shown to be particularly attractive to certain households such as:

The transit dependent. This includes those who cannot afford a car, have visual impairments preventing their ability to drive, and older residents who no longer prefer to drive.

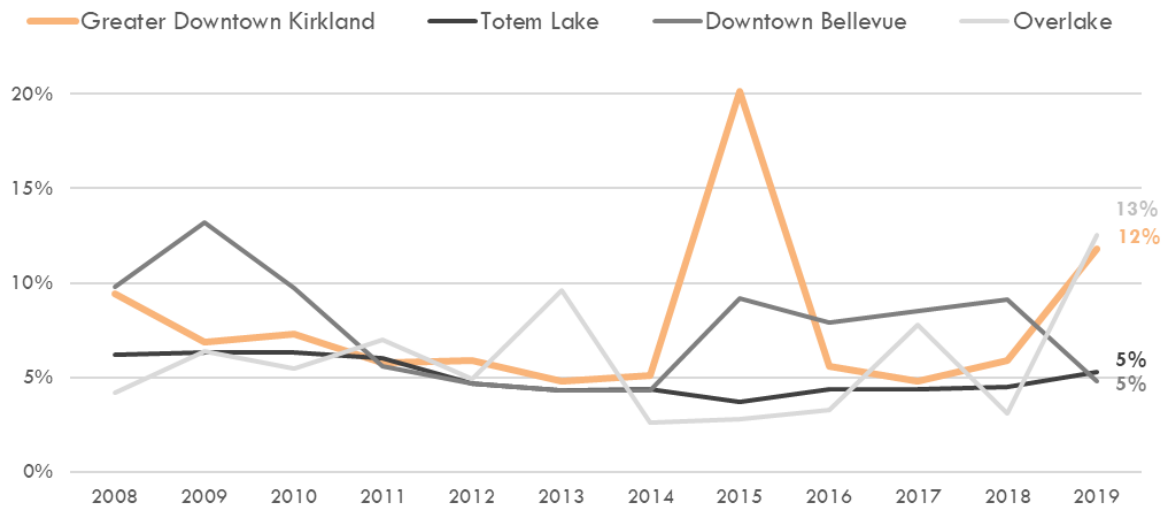
Young urbanites. These residents may be single or married and potentially are parents to young children. They enjoy urban neighborhoods with access to restaurants and value multiple mobility options, such as walking, biking, or riding transit.

As transit access improves, the Study Area should anticipate increased residential interest from these groups. These groups are also likely to demonstrate preference for multifamily housing.

Source: "Families and Transit-Oriented Development", 2014.

Healthy market vacancy rates vary across community types and geographic regions. The Lincoln Institute of Land Policy reviewed nation-wide rental vacancy rates over 50 years and determined rates under 4% to be considered low, 4-7.9% reasonable, and 8-12% as moderately high.[19] Overall the studied geographies have remained within the low and reasonable range across the past 10 years, with a few exceptions. Single year jumps likely represent years where large projects came to market (ex: 2015 in Downtown Kirkland with the 290-unit apartment development, Arete). Downtown Bellevue perhaps experienced an oversupply of units to market 2015-2018, reflected in its higher vacancy rates over that time period. Overall, vacancy rates in the studied multifamily markets are strong. With continued expectations for population growth and good transit access in each location, market expectations remain positive for continued occupancy demand. See Exhibit 31.

Exhibit 31. Vacancy, Multifamily Residential, Peer Geographies, 2008–2019.

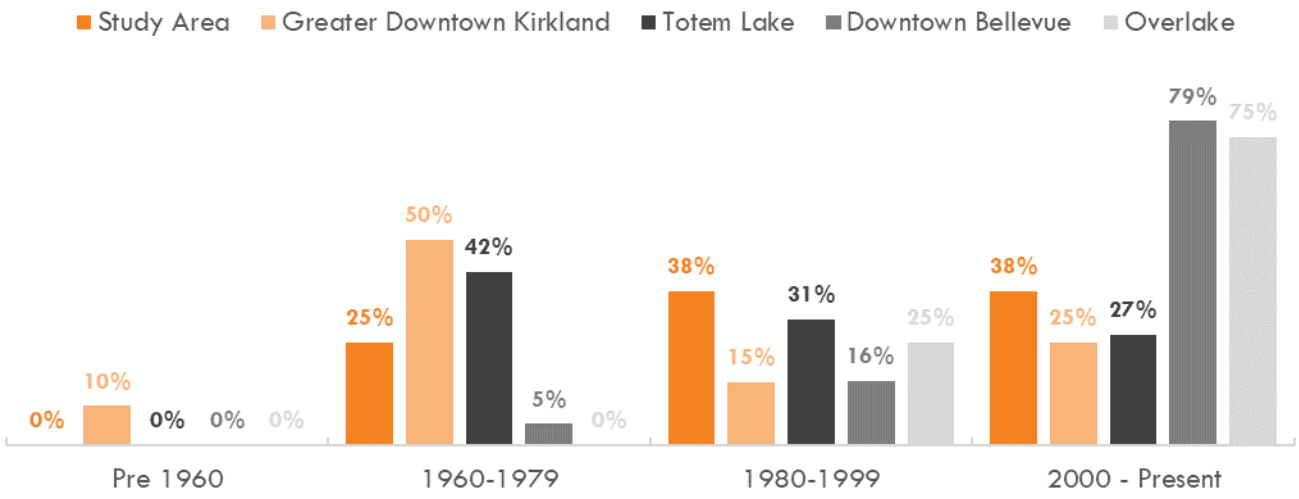


Source: CoStar, 2020; BERK, 2020.

The multifamily commercial market has seen higher levels of investment in the past 20 years. Downtown Bellevue and Overlake's rental markets are 79% and 75% buildings completed since 2000. Downtown Kirkland and Totem Lake multifamily buildings are more evenly aged between decades, although the largest developments by unit count are the most recently developed. The eight properties within the Study Area were built between 1978 – 2015, with about 2 buildings coming to market per decade over this period. See Exhibit 32.

[19] Lincoln Institute of Land Policy, 2018

Exhibit 32. Building Age, Multifamily Residential, Study Area and Peer Geographies.



Source: CoStar, 2020; BERK, 2020.

The Study Area and Overlake's recent multifamily sales reflect a low value per square foot in contrast with comparison areas, although it is notable that the Study Area sale was for an income-restricted senior living center. Downtown Bellevue and Greater Downtown Kirkland show the highest sales value per square foot figures, pointing to their proximity to neighborhood amenities and tech job centers. See Exhibit 33.

Exhibit 33. Sales Comps, Multifamily Residential, Study Area and Peer Geographies.

	Study Area	Greater Downtown Kirkland	Totem Lake	Downtown Bellevue	Overlake
Property Description	Income-restricted senior living	Low-rise apartment building	Low-rise apartment complex	Mid-rise luxury apartment building	Mid-rise modern apartment building
Sale Price per SF	$220	$613	$402	$740	$320
Unit Count	110	6	207	68	240
Star Rating	4	3	3	5	4
Year of Sale	2019	2019	2019	2020	2019
Year Built	2004	1987	1983	2010	2019

Source: CoStar, 2020; BERK, 2020.

Regulatory Environment

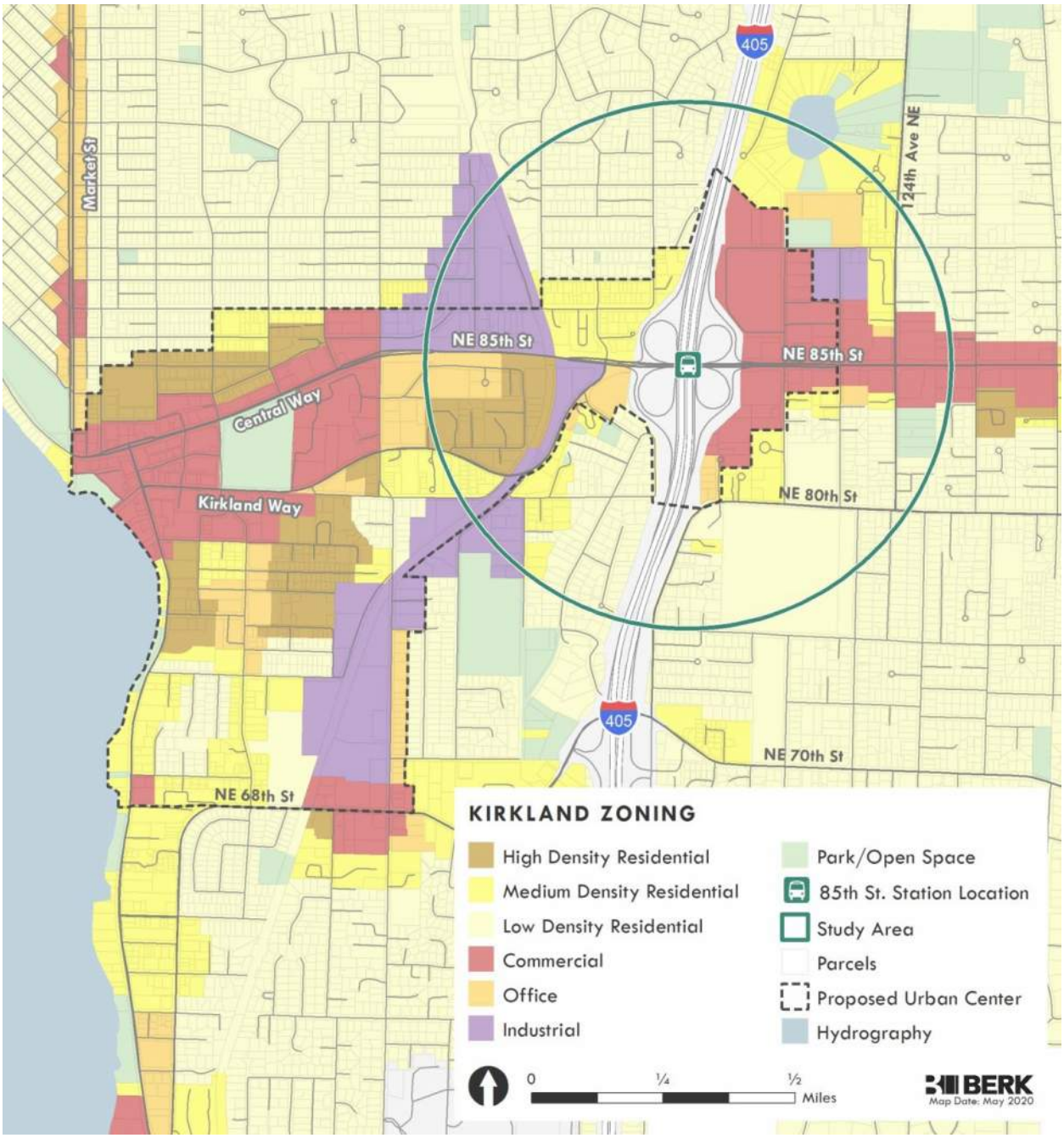
Land Use and Zoning

Study area zoning is shown in Exhibit 35. There is a predominance of Commercial/Mixed Use zoning east of the freeway (Rose Hill Commercial) and Medium and Low Density Residential to the west. There are additional areas of Central Business District and Industrial zoning too. There are numerous zones in the Study Area. See Exhibit 34 and Exhibit 35.

Exhibit 34. Zoning, Study Area.

Zone Category	Individual Zones in Study Area
Commercial	RH 5C
	RH 5B
	RH 3
	RH 1A
	RH 1B
	RH 2A; RH 2B; RH 2C
	CBD 5A
	CBD 5
	CBD 6
Low Density Residential	RS 5.0; RS 7.2; RS 8.5; RS 12.5; RSX 5.0; RSX 7.2;
Medium Density Residential	RM 3.6; RM 5.0; PLA 17
High Density Residential	RM 1.8; RM 2.4; PLA 5A; PLA 5D; PLA 5E
Industrial	LIT
Office	PLA 17A; PR 3.6; PLA 5B; PO; PLA 5C
Office	RH 4
Park/Open Space	P

Exhibit 35. Zoning Map, Study Area.



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

Allowed land uses are summarized into major categories by zone in Exhibit 36. The allowed uses are noted with required review processes:

- Process I: Review and decision by the Planning Director
- Process IIA: Public hearing and decision by the Hearing Examiner
- Process IIB: Public hearing, Hearing Examiner recommendation, and decision by City Council
- DR = Design Review, Chapter 142 KZC

Exhibit 36. Study Area Use Summary, Current Regulations

		Required Review Process			
Zoning Districts	**Permitted Uses**	**None**	**I**	**IIA, IIB**	**DR**
Rose Hill Business District Zones					
RH 1A	Vehicle fuel and services				X
	Restaurant/tavern				X
	General retail				X
	Office				X
	Hotel/motel				X
	Entertainment facility				X
	Attached housing				X
	Assisted living facility				X
RH 1B	Vehicle fuel and services				X
	Business park				X
	General retail				X
	Office				X
	Assisted living facility				X
RH2A, 2B, 2C	Vehicle fuel and services				X
	Restaurant/tavern				X
	Entertainment facility				X
	General retail				X
	Office				X
	College or university				X
	Attached housing				X
	Assisted living				X
	Hotel/motel				X
RH 3	Mixed use retail, service, financial service, restaurant, tavern uses				X
	Vehicle fuel and services				X
	Restaurant/tavern				X
	General retail				X
	Hotel/motel				X
	Entertainment facility				X
	Office				X
	Stacked dwelling units				X

		Required Review Process			
Zoning Districts	**Permitted Uses**	**None**	**I**	**IIA, IIB**	**DR**
	Assisted living facility				**X**
RH 4	Detached/attached housing	**X**			**X**
	Assisted living facility				**X**
	Office				**X**
	Mixed use attached housing and office uses				**X**
	Funeral home/mortuary				**X**
RH 5B	Vehicle fuel and services				**X**
	Entertainment facility				**X**
	Restaurant/tavern				**X**
	General retail				**X**
	Office				**X**
	Hotel/motel				**X**
	Detached/attached housing				**X**
	Assisted living facility				**X**
RH 5C	Accessory parking for commercial use located in RH 5A fronting on NE 85th Street	**X**			
Central Business District Zones					
CBD 5A	Mixed use development containing office, retail and restaurant uses	**X**			
CBD 5	Restaurant/tavern				**X**
	Entertainment facility				**X**
	Hotel/motel				**X**
	General retail				**X**
	Office				**X**
	Assisted living facility				**X**
CBD 6	Restaurant/tavern				**X**
	General retail				**X**
	Hotel/motel				**X**
	Entertainment facility				**X**
	Office				**X**
	Attached housing				**X**
	Assisted living facility				**X**
Low Density Residential Zones					
RS 5.0, 7.2, 8.5, 12.5 RSX 5.0, 7.2	Detached housing	**X**			
	Golf course			**X**	
Medium Density Residential Zones					
RM 3.6 and 5.0	Assisted living facility, nursing home, convalescent center	**X**		**X**	
	Detached, attached housing	**X**			
	limited local retail[20]			**X**	

[20] Grocery store; drug store, laundromat, dry cleaners, barber shop, beauty shop, shoe repair shop

		Required Review Process			
Zoning Districts	**Permitted Uses**	**None**	**I**	**IIA, IIB**	**DR**
PLA 17	Assisted living facility			X	
	Detached, attached housing	X		X	
	Golf course			X	
High Density Residential Zones					
RM 1.8, RM 2.4	Assisted living facility	X		X	
	Detached, attached housing	X			
	Limited local retail[1]			X	
PLA 5A	Assisted living facility	X	X		
	Detached, attached housing	X			
PLA 5D	Assisted living facility	X	X		
	Detached, attached housing	X			
PLA 5E	Assisted living facility	X		X	
	Detached, attached housing				
Office Zones					
PLA 5B	Assisted living facility	X	X		
	community facility		X		
	Attached housing	X			
	Office	X			
	Mixed use housing and office	X			
PLA 5C	Assisted living facility				X
	detached/attached housing;	X			X
	mixed use attached housing and office uses;				X
	office				X
PLA 17A	Convalescent center, nursing home				X
	Attached/stacked housing				X
	Detached housing	X			
	Office				X
PO	Funeral home	X			
	Convalescent center, nursing home		X		
	Hospital			X	
	Office	X			
	Restaurant/tavern	X			
	Limited local retail[1]	X			
	Banking/financial services	X			
PR 3.6	Assisted living facility	X	X		X
	Detached, attached housing	X			X
	Mixed use attached housing and office	X			
	Funeral home		X		
	Office	X			
	Restaurant/tavern		X		
	Retail		X		

		Required Review Process			
Zoning Districts	**Permitted Uses**	**None**	**I**	**IIA, IIB**	**DR**
Industrial Zone					
LIT[21]	Breweries/wineries/distilleries;	**X**			
	Hazardous waste treatment/storage	**X**			
	High technology	**X**			
	Industrial laundry	**X**			
	Office	**X**			
	Packaging	**X**			
	Recycling center	**X**			
	Restaurant	**X**			
	Retail banking/financial services	**X**			
	Rental and storage services	**X**			
	Marijuana sales	**X**			
	Vehicle/boat service, and storage	**X**			
	Wholesale services and trade	**X**			

Source: Kirkland Zoning Code, 2020; BERK, 2020.
Notes:

- Assisted living facilities includes assisted living, convalescent centers and nursing homes, unless otherwise noted.
- Entertainment facility includes entertainment, cultural, recreational facilities and private clubs/lodges
- Several uses are commonly included in most zones and are not listed here. These include church, school, day-care center, public utility, government facility, community facility, public park.
- The Study Area contains a Public Park (P) zone which contains community facility, government facility, public park, and public utility permitted uses. This zone is not included in the table.
- Review processes
    - Process I: Review and decision by the Planning Director
    - Process IIA: Public hearing and decision by the Hearing Examiner
    - Process IIB: Public hearing, Hearing Examiner recommendation, and decision by City Council
    - DR = Design Review, Chapter 142 KZC
- Where more than one review process is shown for a permitted use, the different requirements are usually based on geographic location or specific features of the use.

Exhibit 37 summarizes the development standards for zones within the Study Area. This includes minimum lot sizes, setback requirements, lot coverage maximums, and height restrictions. Some zones also incorporate intensity controls such as floor area ratio (FAR) maximums or minimum lot area per dwelling unit standards.

[21] Development review required for uses in the Rose Hill Business District

Exhibit 37: Study Area Zones, Development Regulations

	Development Standards[22]				
Zoning Districts	**Lot Size (sq ft)**	**Required Yards**	**Lot Coverage**	**Structure Height[23]**	**Other Intensity Controls (FAR, Max Density, etc)**
Rose Hill Business District Zones					
RH 1A	None	Front: 10' Side: 0' Rear: 0'	80%	67'	
RH 1B	None	Front: 10'[24] Side: 0' Rear: 0'	80%	35'	
RH 2A, 2B, 2C	None	Front: 20'[25] Side: 0' Rear: 0'	RH 2C: 70% RH 2A, 2B: 80%	RH 2C: 35' RH 2B: 55' RH 2A: 67'	RH 2C: Min. lot area per dwelling unit is 3,600 SF.
RH 3[26]	6 acres	Established through design review process	100%	45'-75'	Individual retail uses limited to max. gross floor area of 65,000 SF.
RH 4	3,600	Front: 20' Side: 5' Rear: 10'	70%	30'	Min. lot area per dwelling unit is 3,600 SF.
RH 5A, 5B	None	Front: 20'25 Side: 0' Rear: 15'	80%	35'	Individual retail uses limited to max. gross floor area of 65,000 SF.
RH 5C[27]	7,200	Front: 20'	50-70%	30'	

[22] Standards shown are for the majority/primary permitted uses in each district; development standards for a specific use may differ.
[23] Measured as the vertical distance measured from the average building elevation to the highest point of any element of feature of a structure.
[24] 20' adjoining a residential zone
[25] 10' adjacent to NE 85th St.
[26] Development standards listed for highest/best use of mixed-use development with Conceptual Master Plan. Standards for other uses listed in KZC 53.34.
[27] Development standards for accessory parking use (associated with auto sales fronting NE 85th) listed in KZC 53.59.

	Development Standards[22]				
Zoning Districts	**Lot Size (sq ft)**	**Required Yards**	**Lot Coverage**	**Structure Height[23]**	**Other Intensity Controls (FAR, Max Density, etc)**
		Side: 5'-20' Rear: 10'-20'			
Central Business District Zones					
CBD 5A	None	Variable[28]	100%	Variable[29]	
CBD 5	None	Front: 20' Side: 0' Rear: 0'	80%	67'	
CBD 6	None	Front: 20' Side: 10' Rear: 10'	80%	54'	
Low Density Residential Zones					
RS 5.0, 7.2, 8.5, 12.5 RSX 5.0, 7.2	RS/RSX 5.0: 5,000 RS/RSX 7.2: 7,200 RS 8.5: 8,500 RS 12.5: 12,500	Front: 20' Side: 5' Rear: 10'	50%	RS Zones: 25' RSX Zones: 30'	RS and RSX zones have maximum FAR of 50%.
Medium Density Residential Zones					
RM 3.6 and 5.0	3,600 (Residential uses); 7,200 (Commercial Uses)	Front: 20' Side: 5' Rear: 10'	60%-80%	30'	Min. lot area per dwelling unit is 3,600 SF (RM 3.6) or 5,000 SF (RM 5.0).
PLA 17	7,200	Front: 20' Side: 5' Rear: 10'	60%-80%	30'	For multi-family development, min. lot size is 2 acres. Allowed density is minimum 3,600 SF per unit.
High Density Residential Zones					

[28] See Plate 5, KZC 180.
[29] See Plates 6 and 7, KZC 180.

	Development Standards[22]				
Zoning Districts	**Lot Size (sq ft)**	**Required Yards**	**Lot Coverage**	**Structure Height[23]**	**Other Intensity Controls (FAR, Max Density, etc)**
RM 1.8, RM 2.4	3,600	Front: 20' Side: 5' Rear: 10'	60%-80%	30'	Min. lot area per dwelling unit is 1,800 SF (RM 1.8) or 2,400 SF (RM 2.4).
PLA 5A	3,600	Front: 20' Side: 5' Rear: 10'	60%-80%	30'	Min. lot area per dwelling unit is 1,800 SF.
PLA 5D	3,600	Front: 20' Side: 5' Rear: 10'	60%-80%	The lower of 4 stories or 40' above ABE.[30]	Min. lot area per dwelling unit is 1,800 SF.
PLA 5E	3,600	Front: 20' Side: 5' Rear: 10'	60%-80%	30'	Min. lot area per dwelling unit is 1,800 SF.
Office Zones					
PLA 5B	3,600	Front: 20' Side: 5' Rear: 10'	70%	30'	Min. lot area per dwelling unit is 1,800 SF.
PLA 5C	3,600	Front: 20' Side: 5' Rear: 10'	70%	30'	
PLA 17A	5,000	Front: 20' Side: 5' Rear: 10'	70%-80%	30'	Min. lot area per dwelling unit is 5,000 SF.
PO	None	Front: 20' Side: 10' Rear: 20'	70%	30'	

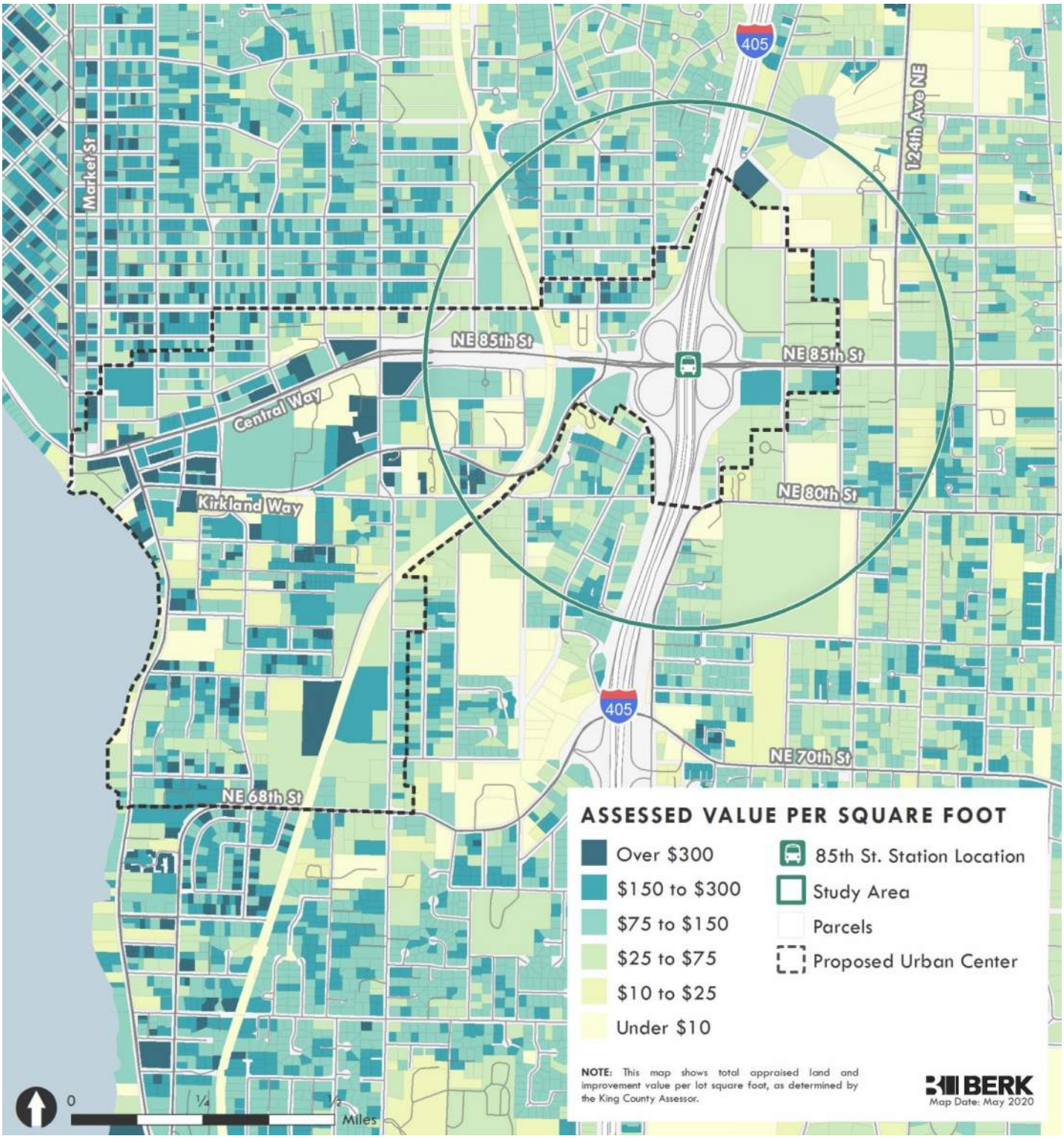
[30] 30' above ABE for structures containing multi-family units only.

	Development Standards[22]				
Zoning Districts	**Lot Size (sq ft)**	**Required Yards**	**Lot Coverage**	**Structure Height[23]**	**Other Intensity Controls (FAR, Max Density, etc)**
PR 3.6	3,600	Front: 20' Side: 5' Rear: 10'	70%	30'	Min. lot area per dwelling unit is 3,600 SF.
Industrial Zone					
LIT	None	Front: 20' Side: 0' Rear: 0'	80%-90%	35'	

Exhibit 38 shows the range of total assessed values per square foot across the Study Area. The range of assessed value per square foot highlights that several sites in the Study Area, especially in the eastern and western edges, have lower assessed values (below $25 per SF and between $25 and $75 per SF). The city's land capacity model evaluates development capacity based on the ratio of the value of land to improvements which shows development capacity on lands with lower ratios. See appendix B for a map reflecting development capacity by parcel data as of about 2015. Changes in land use and development may or may not occur on these properties and other properties not shown may actually change. As well, redevelopment could take the form of adding uses or space with existing uses remaining in place or could mean new uses. However, any changes would be based on property owner desires, market forces, and local regulations.

These sites likely include older and potentially obsolete buildings, and their lower valuation, along with existing development capacity, suggests that they could be potential locations for new, more intensive uses. However, lower valuation alone is not enough for redevelopment to occur. Factors such as property owner preferences, desired return on investments, and competition from other sites, can all affect which sites redevelop to their full development capacity.

Exhibit 38. Total Assessed Value Per Square Foot, Study Area.



Source: King County Assessor, 2020; BERK, 2020.

Parking Requirements

Exhibit 39 summarizes parking requirements by zone and use.

Exhibit 39: Parking Standards by Zone

Zoning Districts	Permitted Uses	Parking Standards[31]
Rose Hill Business District Zones		
RH 1A	Vehicle fuel and services	Case-by-case[32]
	Restaurant/tavern	1 space/100 gsf
	General retail	1 space/300 gsf
	Office	1 space/300 gsf[33]
	Hotel/motel	1 space/room
	Entertainment facility	Case-by-case[34]
	Attached housing	1.2 – 1.8 spaces/unit, depending on # of bedrooms[35]
	Assisted living facility	Assisted living: 1.7/unit Nursing home: 1.0/bed
RH 1B	Vehicle fuel and services	Case-by-case[2]
	Business park	Case-by-case[4]
	General retail	1 space/300 gsf
	Office	1 space/300 gsf[3]
	Assisted living facility	Assisted living: 1.7/unit Nursing home: 1.0/bed
RH 2A, 2B, 2C	Vehicle fuel and services	Case-by-case[2]
	Restaurant/tavern	1 space/100 gsf
	Entertainment facility	Case-by-case[4]
	General retail	1 space/300 gsf
	Office	1 space/300 gsf[3]
	College or university	Case-by-case[4]

[31] Number of spaces per gross square feet of floor area (shown as gsf) unless otherwise noted.
[32] KZC 105.25; auto service center 1 space 250/gross sf. See also KZC 53.06 Special Regulation #1,
[33] 1 space/200 gsf for medical, dental, veterinary office uses.
[34] KZC 105.25.
[35] KZC 105.20 for visitor parking requirements.

Zoning Districts	Permitted Uses	Parking Standards[31]
	Attached housing	1.2 – 1.8 spaces/unit, depending on # of bedrooms[5]
	Assisted living	Assisted living: 1.7/unit Nursing home: 1.0/bed
	Hotel/motel	1 space/room
RH 3	Mixed use containing retail, service, financial service, restaurant, tavern uses	As established in a Conceptual Master Plan.
	Vehicle fuel and services	Case-by-case34
	Restaurant/tavern	1 space/100 gsf
	General retail	1 space/300 gsf
	Hotel/motel	1 space/room[36]
	Entertainment facility	Case-by-case34
	Office	1 space/300 gsf[3]
	Stacked dwelling units	1.2 – 1.8 spaces/unit, depending on # of bedrooms35
	Assisted living facility	Assisted living: 1.7/unit Nursing home: 1.0/bed
RH 4	Detached dwelling unit (Single-family)	2 spaces/unit
	Detached/attached housing (Multi-family)	1.2 – 1.8 spaces/unit, depending on # of bedrooms[5]
	Assisted living facility	Assisted living: 1.7/unit (independent); 1/unit (assisted) Nursing home: 1.0/bed
	Office	1 space/300 gsf[3]
	Mixed use attached housing and office uses	Residential: 1.2 – 1.8 spaces/unit, depending on # of bedrooms[5.] Office: Case-by-case[4]
	Funeral home/mortuary	1 space/300 gsf
RH 5B	Vehicle fuel and services	Case-by-case[4]
	Entertainment facility	Case-by-case[4]
	Restaurant/tavern	1 space/100 gsf
	General retail	1 space/300 gsf
	Office	1 space/300 gsf[3]
	Hotel/motel	1 space/room[6]

[36] Does not include parking for ancillary meeting facilities. Parking for such facilities determined case-by-case.

Zoning Districts	Permitted Uses	Parking Standards[31]
	Detached/attached housing	Residential: 1.2 – 1.8 spaces/unit, depending on # of bedrooms[5] [37].
	Assisted living facility	Assisted living: 1.7/unit (independent); 1/unit (assisted) Nursing home: 1.0/bed
RH 5C	Accessory parking for commercial use located in RH 5A fronting on NE 85th Street	**Case-by-case[4]**
Central Business District Zones		
CBD 5A	Mixed use development containing office, retail and restaurant uses	KZC Section 50.38.010, Special Regulation 7
CBD 5	Restaurant/tavern	1 space/125 gsf
	Entertainment facility	Case-by-case[4]
	Hotel/motel	1 space/room
	General retail	1 space/350 gsf
	Office	1 space/350 gsf
	Assisted living facility	1.0 – 1.7 spaces/unit
CBD 6	Restaurant/tavern	1 space/125 gsf
	General retail	1 space/350 gsf
	Hotel/motel	1 space/room
	Entertainment facility	Case-by-case[4]
	Office	1 space/350 gsf
	Attached housing	1.2 – 1.8 spaces/unit, depending on # of bedrooms[5]
	Assisted living facility	1.0 – 1.7 spaces/unit
Low Density Residential Zones		
RS 5.0, 7.2, 8.5, 12.5 RSX 5.0, 7.2	Detached housing	2 spaces/unit
	Golf course	Case-by-case[4]
Medium Density Residential Zones		
RM 3.6 and 5.0	Assisted living facility, nursing home, convalescent center	Assisted living: 1.7/unit (independent); 1/unit (assisted) Nursing home: 1.0/bed

[37] If one detached dwelling unit, 2 spaces required on-site.

Zoning Districts	Permitted Uses	Parking Standards[31]
	Detached, attached housing	Residential: 1.2 – 1.8 spaces/unit, depending on # of bedrooms[5 38.]
	limited local retail	1 space/300 gsf
PLA 17	Assisted living facility	Assisted living: 1.7/unit (independent); 1/unit (assisted) Nursing home: 1.0/bed
	Detached, attached housing	Residential: 1.2 – 1.8 spaces/unit, depending on # of bedrooms[5 7.]
	Golf course	Case-by-case[4]
High Density Residential Zones		
RM 1.8, RM 2.4	Assisted living facility	Assisted living: 1.7/unit (independent); 1/unit (assisted) Nursing home: 1.0/bed
	Detached, attached housing	Residential: 1.2 – 1.8 spaces/unit, depending on # of bedrooms[5 7.]
	Limited local retail	1 space/300 gsf
PLA 5A	Assisted living facility	Assisted living: 1.7/unit (independent); 1/unit (assisted) Nursing home: 1.0/bed
	Detached, attached housing	Residential: 1.2 – 1.8 spaces/unit, depending on # of bedrooms[5 7.]
PLA 5D	Assisted living facility	Assisted living: 1.7/unit (independent); 1/unit (assisted) Nursing home: 1.0/bed
	Detached, attached housing	Residential: 1.2 – 1.8 spaces/unit, depending on # of bedrooms[5 7.]
PLA 5E	Assisted living facility	Assisted living: 1.7/unit (independent); 1/unit (assisted) Nursing home: 1.0/bed
	Detached, attached housing	Residential: 1.2 – 1.8 spaces/unit, depending on # of bedrooms[5 7.]
Office Zones		
PLA 5B	Assisted living facility	Assisted living: 1.7/unit (independent); 1/unit (assisted) Nursing home: 1.0/bed
	community facility	Case-by-case[4]

Zoning Districts	Permitted Uses	Parking Standards[31]
	Attached housing	Residential: 1.2 – 1.8 spaces/unit, depending on # of bedrooms[5].
	Office	1 space/300 gsf[3]
	Mixed use housing and office	Residential: 1.2 – 1.8 spaces/unit, depending on # of bedrooms[5.] Office: Case-by-case[4]
PLA 5C	Assisted living facility	Assisted living: 1.7/unit (independent); 1/unit (assisted) Nursing home: 1.0/bed
	Detached/attached housing;	Residential: 1.2 – 1.8 spaces/unit, depending on # of bedrooms[5 7.]
	Mixed use attached housing and office uses;	Residential: 1.2 – 1.8 spaces/unit, depending on # of bedrooms[5.] Office: Case-by-case[4]
	Office	1 space/300 gsf[3]
PLA 17A	Convalescent center, nursing home	Assisted living: 1.7/unit (independent); 1/unit (assisted) Nursing home: 1.0/bed
	Attached/stacked housing	Residential: 1.2 – 1.8 spaces/unit, depending on # of bedrooms[5 7.]
	Detached housing	2 spaces/unit
	Office	1 space/300 gsf[3]
PO	Funeral home	1 space/300 gsf
	Convalescent center, nursing home	Assisted living: 1.7/unit (independent); 1/unit (assisted) Nursing home: 1.0/bed
	Hospital	Case-by-case[4]
	Office	1 space/300 gsf[3]
	Restaurant/tavern	1 space/100 gsf
	Limited local retail[1]	1 space/300 gsf
	Banking/financial services	1 space/300 gsf
PR 3.6	Assisted living facility	Assisted living: 1.7/unit (independent); 1/unit (assisted) Nursing home: 1.0/bed
	Detached, attached housing	Residential: 1.2 – 1.8 spaces/unit, depending on # of bedrooms[5 7.]
	Mixed use attached housing and office	Residential: 1.2 – 1.8 spaces/unit, depending on # of bedrooms[5.]

Zoning Districts	Permitted Uses	Parking Standards[31]
		Office: Case-by-case[4]
	Funeral home	1 space/300 SF floor area
	Office	1 space/300 gsf[3]
	Restaurant/tavern	1 space/100 SF floor area
	Retail	1 space/300 SF floor area
Industrial Zone		
LIT[39]	Breweries/wineries/distilleries;	**1 space/1,000 gsf. Tasting rooms: 1 space/100 gsf**
	Hazardous waste treatment/storage	**1 space/1,000 gsf**
	High technology	**Manufacturing: 1 space/1,000 gsf. Office: 1 space/300 gsf**
	Industrial laundry	**1 space/1,000 gsf**
	Office	**1 space/300 gsf[3]**
	Packaging	**1 space/1,000 gsf**
	Recycling center	**Case-by-case[4]**
	Restaurant	**1 space/100 gsf**
	Retail banking/financial services	**1 space/300 gsf**
	Rental and storage services	**Case-by-case[4]**
	Marijuana sales	**1 space/300 gsf**
	Vehicle/boat service, and storage	**Case-by-case[4]**
	Wholesale services and trade	**1 space/1,000 gsf**

Exhibit 40: Parking Spaces Provided by Building Type for Study Area and Comparison Geographies.

Parking Spaces/Unit (average)	Office (Spaces/1,000 SF)	Retail (Spaces/1,000 SF)	Multifamily (Spaces/Unit)
Study Area	3.8	4.8	2.7
Greater Downtown Kirkland	3.3	3.4	1.5
Totem Lake	4.1	4.2	1.6
Downtown Bellevue	3.1	4.4	1.1
Overlake	4.2	4.6	1.5

Sources: CoStar, 2020; BERK, 2020.

Case Studies

In 2015, the National Institute for Transportation and Communities in Portland, Oregon released a national survey of BRT systems which attempts to quantify their impacts on development. **Key findings from this study indicate an increase in development along BRT corridors, both for multifamily and office construction.** The report emphasizes that results are strongest for corridors connecting to employment centers, where opportunities for redevelopment exist, and when paired with economic development incentives.[40] The following case studies profile transit investments across the region as examples of development change which may be anticipated for the 85th Street Station. In each example, policy initiatives are coupled with increased and improved transit service to achieve overall development outcomes.

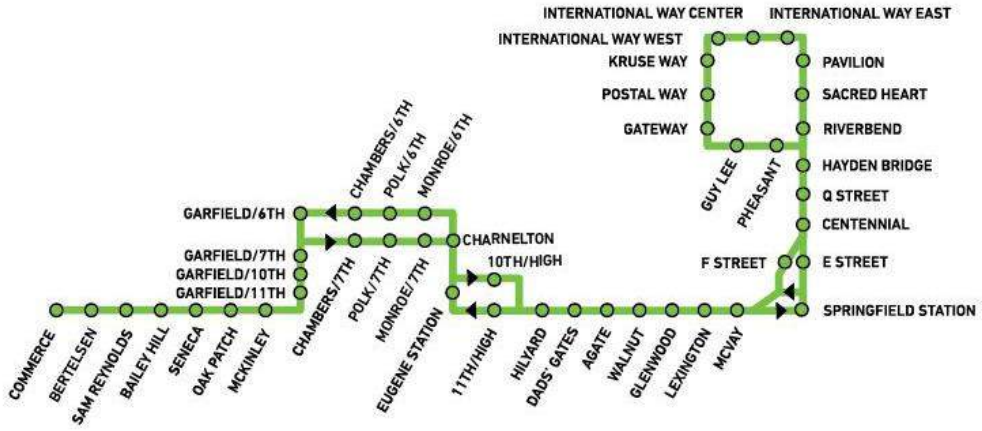
[40] Nelson and Ganning, 2015 "National Study of BRT Development Outcomes"

Case Study One: Springfield, Oregon

Photo credit: https://blogs.uoregon.edu/ ahicks3su16gateway/

Springfield, Oregon lies directly east of Eugene. Eugene introduced Bus Rapid Transit service in 2007 and has since added two extensions to the route in response to its strong performance.[41] Ridership along the corridor dramatically increased and studies show positive impacts to home values near its stations.[42] **An employment study of this BRT corridor finds that despite job loss experienced in the metro area during the 2004 – 2010 timeframe, jobs actually grew by about 10% within a 0.25 mile radius of BRT stations in Eugene and Springfield.[43] This study notes that providing incentives such as expedited permitting and upzones are effective tools for incentivizing development alongside BRT investments.** Authors suspect that developers perceive BRT service as more permanent than standard bus service, and this confidence eases financial concern for investment protection.

Exhibit 41: West Emerald Express (EmX) BRT route.



Source: Oregon Business, 2017.

[41] Institute for Transportation & Development Policy, 2013
[42] Perk et al., 2017 "Impacts of BRT on Surrounding Residential Property Values"
[43] Nelson et al., 2013 "Bus Rapid Transit and Economic Development"

Case Study Two: Vancouver, Washington

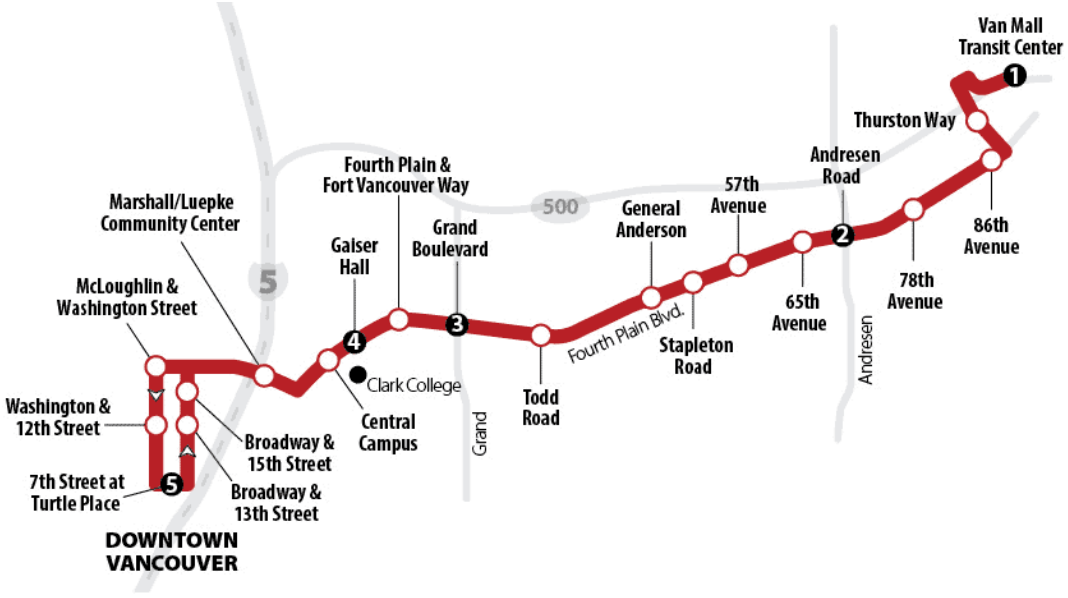
Vancouver, Washington is located adjacent to the metro hub of Portland, Oregon. Similar to Kirkland, Vancouver both feeds into the nearby economy of Portland and maintains a downtown and economic base of its own. BRT service, coined "The Vine", was introduced to the community in 2017. The service runs with 17 stations from the downtown core to the Transit Center at Vancouver Mall. **This introduction was coupled with a Multifamily Tax Exemption (MFTE) buffer zone surrounding the corridor to promote denser housing development near transit amenities. This combination of policy change and mobility investment sparked commercial development throughout the corridor. Over 1,000 multifamily units came to market between 2016-2019 along the six-mile corridor, with locations clustering near bus stations.** The combination of policy change in concert with improved public services was a key component of this successful boost to development.

Exhibit 42: Multifamily Development Along Vancouver Vine Corridor, Existing and Planned.

Project Phase	Multifamily Units
Developed	1,023
Under Construction	254
Land Use Review	559

Source: City of Vancouver, 2019.

Exhibit 43: The Vine Route Map; Vancouver, Washington.



Source: C-Tran, 2020.

Case Study Three: Portland, Oregon

The 60th Avenue light rail station in Portland, Oregon offers an example of station development which sparked new investment in an area with auto-centric development patterns around a highway connecting to major urban centers in the region. **Portland's regional government strengthens the impact of its light rail investments with TOD policies which provide funding for public-private development partnerships. These initiatives yield projects which reflect desired growth patterns incorporating a mix of uses and denser residential styles near transit.**[44] One such example is the Center Commons project, a brownfield site redeveloped in 2000 as a mixed-income community with 4 apartment buildings, 26 townhomes, and on-site daycare.[45] Residents of this project live within a five-minute walk of the light rail station.

Exhibit 44: Development patterns surrounding 60th Street Station in Portland.

Image Source: Google Maps, 2020.

[44] Cervero, Robert, 2004; "Transit-oriented Development in the United States: Experiences, Challenges, and Prospects" p. 363

[45] https://www.oregonmetro.gov/sites/default/files/2016/08/25/centercommons_final.pdf

Appendix A – Real Estate Data

Real estate market data used in this report comes from Costar. Sample sizes vary by area and type of property, summarized in the below tables. Proposed and demolished projects were excluded from this dataset, while existing and under construction projects were included. While most properties report building class, size, and age, a smaller proportion report rental rate. This ratio is included in these tables as well, for reference.

Office Properties

Focus Area	Number of Properties	Properties Reporting Rental Rates
Study Area	14	3
Greater Downtown Kirkland	73	73
Totem Lake	46	10
Downtown Bellevue	87	87
Overlake	59	59

Retail Properties

Focus Area	Number of Properties	Properties Reporting Rental Rates
Study Area	21	21
Greater Downtown Kirkland	87	86
Totem Lake	85	6
Downtown Bellevue	122	122
Overlake	41	41

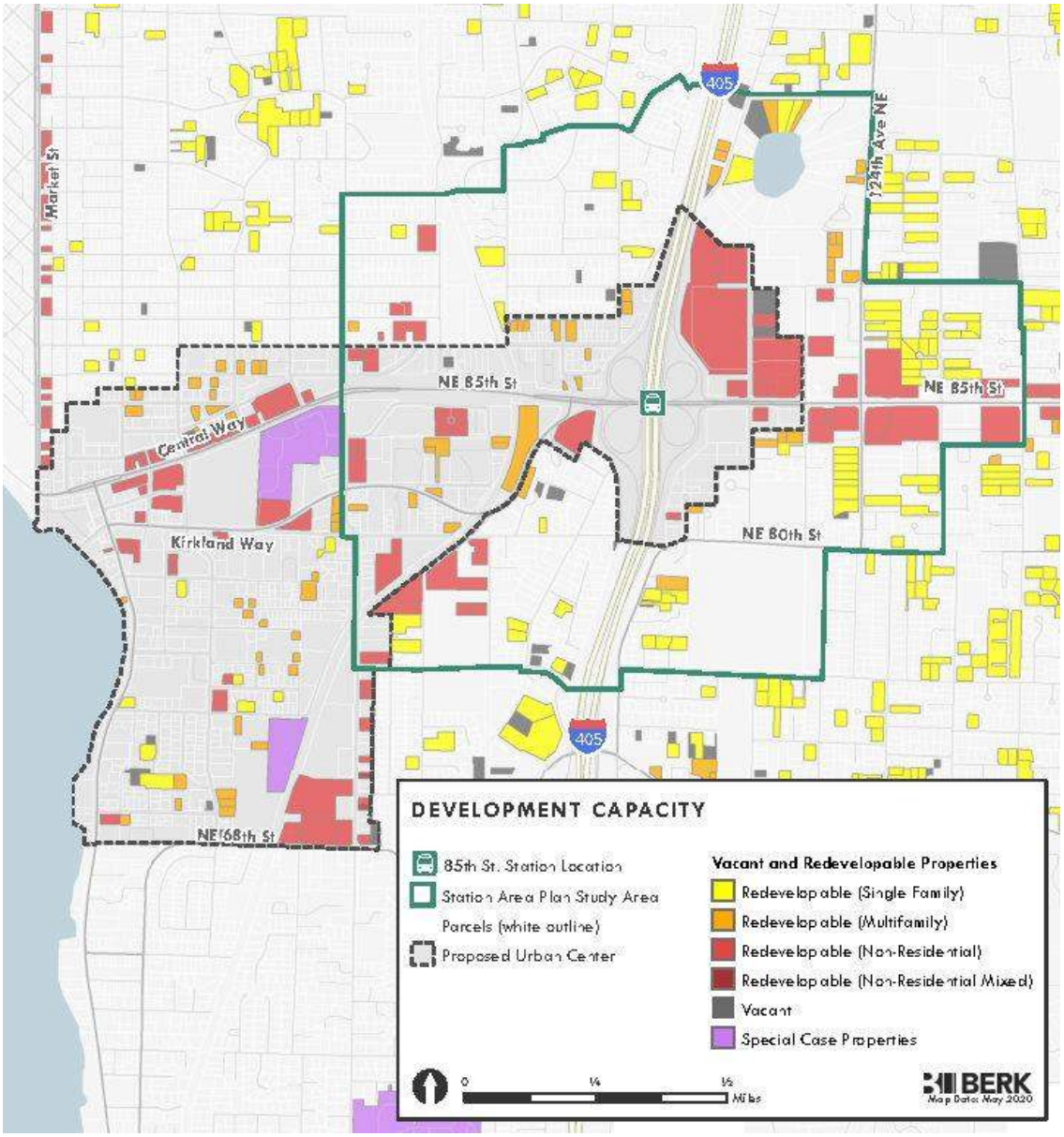
Multifamily Properties

Focus Area	Number of Properties	Properties Reporting Rental Rates
Study Area*	8	1
Greater Downtown Kirkland	53	24
Totem Lake	27	14
Downtown Bellevue	42	39
Overlake	8	7

**Not included in reported statistics for rental rates, due to a lack of data points.*

Appendix B – City Development Capacity Model

Development Capacity, Study Area.



Source: City of Kirkland, 2015; BERK, 2020.

In the city's development capacity model each parcel is classified into one of the following three categories:

- Vacant – parcels that have no existing development and that are anticipated to develop to the maximum allowed by existing zoning.
- Redevelopable - parcels that are partially developed but have the capacity for additional development. Parcels are considered to be redevelopable as follows:
- In single family residential zones: parcels which have the potential to be subdivided into additional lots. Parcels that are large enough to be divided into only two lots, are considered to be redevelopable only when the assessed improvement value is less than 50% of the assessed land value.
- In multi-family zones: parcels that are developed with apartments (not condominiums) and the existing number of dwelling units is less than 60% of the maximum number of dwelling units allowed by the zoning.
- In commercial, office and industrial zones other than the Totem lake Business District zones, parcels with an assessed value of improvements which is < 50% of the assessed land value.
- Developed – parcels that contain development but are not determined to be redevelopable. These parcels are eliminated from the analysis.
- For parcels with existing development, the determination of whether the parcel is classified as Redevelopable or Developed is based on the calculation of additional development potential.

11.6

Appendix — Forbes Lake Technical Memo

HERRERA

TECHNICAL MEMORANDUM

Date: December 10, 2021

To: Brad Barnett, Erin Christensen Ishizaki, and Becca Book; Mithun

From: Brianna Blaud, Tina Mirabile, PWS, and Chris Webb, PE; Herrera Environmental Consultants, Inc.

Subject: City of Kirkland Forbes Lake Park Open Space Strategy Permitting

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This technical memorandum provides an overview of preliminary planning to expand public open space and neighborhood connectivity near the City of Kirkland's Forbes Lake Park as part of the new Bus Rapid Transit (BRT) station at 85th Street NE and I-405. Existing protected critical areas, including Forbes Lake and associated wetlands and tributary drainages to Forbes Creek, including some piped conveyances, appear to restrict options for developing open space, however the attraction of these natural features provide opportunities for passive and active recreational public use and environmental education. The attached Figure 1 was developed by Mithun based in part on discussions conducted during a November 22, 2021, meeting with Herrera staff.

Based on the City's mapping of critical areas, the proposed open space options have been selected to avoid and or minimize potential environmental impacts, as required for regulatory compliance and permitting by federal, state, and local agencies, as applicable. Where environmental impacts are proposed, compensating mitigation measures, and permitting feasibility with environmental regulatory agencies were considered.

To accurately measure environmental impacts, field investigations to ground-truth mapping and or update critical area boundaries according to jurisdictional requirements for permitting review will be required for project design. Wetland identification and delineation needs to be conducted in accordance with approved federal and Ecology methodologies described in WAC 173-220035 and Kirkland Zoning Code (KZC) 90.110.

Table 1 outlines the estimated permitting review requirements of federal, state, and local jurisdictional environmental regulatory agencies, as applicable, for each open space option. All proposed options will minimally require City review for critical areas compliance (Chapter 90 KZC), fill and grading, stormwater management, building permits, right-of-way uses and encroachments. Construction of public park facilities associated with Forbes Lake is being reviewed through a Park Master Plan process, pursuant to KZC 90.40(6) (KZC 90.90).

Only those actions that require in-water work within Forbes Lake, wetlands and or streams will require federal permitting by the US Army Corps of Engineers (USACE) for compliance with Section 404 of the Clean Water Act (CWA) and 401 Water Quality Certification (administered by

Washington Department of Ecology [Ecology]) Federal funding and permitting also requires National Environmental Policy Act (NEPA) compliance and Section 7 of the Endangered Species Act (ESA) and Section 106 of the National Historic and Preservation Act (NHPA) reviews.

Washington Department of Fish and Wildlife (WDFW) also has jurisdiction for work occurring in and or over the water, including lakes and stream and daylighting of piped conveyances as outlined by the State's Hydraulic Code Chapters 75.20 RCW and 220-110 WAC).

Table 1. Anticipated Environmental Regulatory Reviews By Each Open Space Option.

Proposed Open Space Opportunity	Proposed Environment Impacts	Environmental Regulatory Agency Authorization		
		USACE Section 404, Section 7 ESA, EFH, Section 106 NHPA	WDFW HPA	City of Kirkland Zoning Code Chapter 24.02 (SEPA) and Chapter 90 (Critical Areas)
1 – New park fronting 120th Ave and 90th Street	Potential wetland fill and mitigation	X		X
	Potential daylighting of stream – may result in mitigation credit	X	X	
2 – New Park NW corner 120th Ave @ 90th Street	Potential wetland fill and mitigation	X		X
3 – NW corner of 120th Ave @ 90th Street	Frequently flooded area, stormwater management			X
4 – New park opportunities along 120th blue/green Corridors	Riparian buffer enhancement			X
5, 7, and 8 – New raised boardwalks	In- and over-water, mitigation	X	X	X
6 – New trailheads	Wetland buffer impacts			X
9 – Enhance existing parks				X

As the table indicates, the proposed open space options requiring in-water work (1, 2, 5, 7 and 8) will require more resource time and reporting preparation than options occurring in upland areas only. A summary of project-associated potentially applicable federal, state and City of Kirkland environmental regulations is attached as Appendix A.

As site specific options are developed pre-application meetings should be coordinated with the various agencies, including USACE, WDFW, and the City of Kirkland's planning and public works departments, as well as the Muckleshoot Tribe; to obtain verification of required permits, submittal requirements, and timelines to authorize the various project components.

MITIGATION CONSIDERATIONS

Environmental agency requirements to compensate or mitigate for wetland impacts are based on achieving "no net loss of functions" through best available science. Mitigation ratios assigned to compensate for environmental impacts typically require more square footage/acreage that the impacted area and a greater restoration uplift than the impacted existing environmental conditions. The City's mitigation ratios required for wetland, stream and buffer impacts are presented in Table 2 (Chapter 90.150 KZC). Wetland categorizations are consistent with Ecology's Washington State Rating System for Western Washington, as updated (Hruby, 2014).

Table 2. City of Kirkland Mitigation Ratios for Wetlands and Buffers.

Category of Wetland Impacted	Creation	Re-establishment/ Rehabilitation Only	Creation and Rehabilitation	Creation and Enhancement	Enhancement Only
Category I: Forested	6:1	12:1	1:1C 10:1 RH	1:1C 20:1 E	24:1
Category I: Based on Total Function	4:1	8:1	1:1 C 6:1 RH	1:1 C 12:1 E	16:1
Category I: Bog	Not possible	6:1 RH of a bog 8:1	Not possible	Not possible	Case-by-case
Category II	3:1	6:1	1:1C 4:1 RH	1:1 C 8:1 E	12:1
Category III	2:1	4:1	1:1 C 2:1 RH	1:1C 4:1 E	8:1
Category IV	1.5:1	3:1	1:1 C 1:1 RH	1:1 C 2:1 E	6:1
Buffer[a]	Minimum 1:1	Minimum 1:1	Minimum 1:1	Minimum 1:1	Minimum 1:1

[a] Additional requirements shown in Kirkland Municipal Code (KZC) 90.150(2)(c).

C = Creation RH = Rehabilitation E = Enhancement

Designated wetland buffers to protect wetlands are established based on the wetland category and or its associated habitat, as documented on Ecology's wetland rating forms. The City's standard wetland buffers are displayed in Table 3.

Table 3. City of Kirkland Standard Buffer Widths Based on Habitat Points.

Wetland Category	3-5 Habitat Points	6-7 Habitat Points	8-9 Habitat Points
Category I: Bogs and Wetlands of High Conservation Value	190 feet	190 feet	225 feet
Category I: Others	75 feet	110 feet	225 feet
Category II	75 feet	110 feet	225 feet
Category III	75 feet	110 feet	225 feet
Category IV	40 feet		
See KZC 90.130 for buffer vegetation requirements			

Allowances for alternative wetland buffer widths and or buffer width averaging are described in 90.55 and 90.114 KZC.

The City's standard buffers to protect streams, as designated in Table 4, are based on their water type classification in accordance with WAC 222-16-030, as amended (90.65 KZC).

Table 4. City of Kirkland Stream Types and Standard Buffer Width.

Stream Type	Buffer Width
F (Fish bearing)	100 feet
Np (Perennial, non-fish bearing)	50 feet
Ns (Seasonal, non-fish bearing)	50 feet
See KZC 90.130 for buffer vegetation requirements	

Allowances for alternative stream buffer widths and or buffer width averaging are described in 90.65 and 90.114 KZC.

The City encourages daylighting a stream that is located in a culvert to restore it to a more natural and open condition (90.75 KZC). The purpose is to improve the values and functions of the stream, including maintaining water quality, reducing storm and flooding water flow, and providing wildlife habitat. Chapter 90.80 KZC describes allowances for buffer reductions for the meandering or daylighting of streams. A stream daylighting plan is required for submittal to the City for project review. It should be noted that the conversion of wetland habitat to a stream is not applicable for review by the USACE for a nationwide permit based on habitat enhancement. The USACE would review such a conversion according to an Individual Permit and Individual 401 Water Quality Certification.

There are additional City standards regarding tree preservation and native buffer vegetation requirements which can be addressed in the preparation of a critical areas report for specific project review. The City's codes however appear to flexible in allowing modifications to critical areas that will benefit public use and habitat functions.

STORMWATER

Stormwater within the City of Kirkland is regulated under the Kirkland Municipal Code Section 15.52. Any work that results in five hundred square feet or more of new impervious surface, replaced impervious surface or new plus replaced impervious surface; or is located with a sensitive area will need to be reviewed for compliance with the 2016 King County Surface Water Design Manual (KCSWDM). The KCSWDM requires water quality treatment for pollution generating impervious surfaces (i.e., roadways and parking lots) if more than 5,000 sf of new plus replaced impervious surfaces are created and stormwater flow control if more than 10,000 sf of new plus replaced impervious surfaces are created.

Within natural areas stormwater dispersion can be a simple and cost-effective flow control practice without the impacts of a pond or vault. However, when constructing more than 10,000 sf of new impervious surface for trails that are near wetlands boundaries or open water this strategy is often not feasible. Where it is not feasible to disperse stormwater, or soils are saturated and stormwater cannot be infiltrated, topography does not allow stormwater to be routed to different threshold discharge areas[1], and stormwater cannot be collected and routed to another flow control facility it may be necessary to use an elevated boardwalk with open grate decking. Therefore, projects need to be strategic in how trails are routed (to facilitate dispersion) or what materials are used (i.e., boardwalks with open grate decking) to avoid exceeding the 10,000 sf maximum within any single threshold discharge area.

Because Forbes Lake is sensitive to phosphorus, any water quality treatment for any pollution generating impervious surfaces will need to be selected from the Sensitive Lake Protection menu in the KCSWDM. Proprietary stormwater filters with a General Use Level Designation for phosphorus treatment and the new non-proprietary High Performance Bioretention Soil Mixture would need to be used. More information on this new soil mixture can be found here: <https://apps.ecology.wa.gov/publications/documents/2110023.pdf>.

[1] A threshold discharge area means an onsite area draining to a single natural discharge location, or multiple natural discharge locations that combine within one-quarter-mile downstream.

Note:
Some pages in this document have been purposely skipped or blank pages inserted so that this document will print correctly when duplexed.

Open Space Opportunities

1. New park space fronting 120th Ave & 90th St. This park can have an urban frontage on 120th with the eastern portion acting as a stormwater park or with focus on the restored/daylighted Forbes Creek. The park space along 120thAve will require mitigation as a portion of it is currently designated wetland.

2. New park space at the northwest corner of 120th Ave and 90th St. A portion of this area is upland and not designated wetland. This can be used for active and passive recreation and could be connected to the park at the southeast corner of this intersection through an enhanced frontage along 90th St. This frontage improvement would need mitigation as it is currently wetland.

3. Potential open space/park at the southwest corner of 120th Ave and 90th st. This corner of the parking lot experiences frequent flooding and can used for stormwater treatment or to open space as a floodable park.

4. New Pocket parks or a linear park along the 120th Blue/Green Corridor or along the east/west portion of the Forbes Creek Drainage course

5. Obtain an easement between Forbes Lake and the Lochshire Condominiums to allow for a raised boardwalk and wetland mitigation in that area

6. New trailheads at 120th Ave & 90th St. and the connection to North Rose Hill Woodlands Park at 124th

7. New boardwalks to connect pedestrians and cyclists from 120th Ave & 90th St. to North Rose Hill Woodlands Park at 124th.

8. New boardwalk connections to Forbes Lake

9. Enhance existing park space at North Rose Hill Woodlands Park and/or Rose Hill Meadows Park to support more functional active and passive park uses

Habitat Creation/Restoration/Mitigation Opportunities

A. Create a new, sinuous Forbes Creek channel between Forbes Lake and 90th St with enhanced wetland/riparian habitat.

B. Improve hydrological connections between the wetlands on either side of 90th St. This can be achieved through daylighting Forbes Creek in a large box culvert or by adding a number of smaller culverts to connect the wetlands.

C. Daylight a portion of Forbes Creek South of 90th St.

D. Create an open stormwater channel for Forbes Creek along the Blue/Green corridor and potentially in the east/west direction connecting all the way to Rose Hill Meadows Park

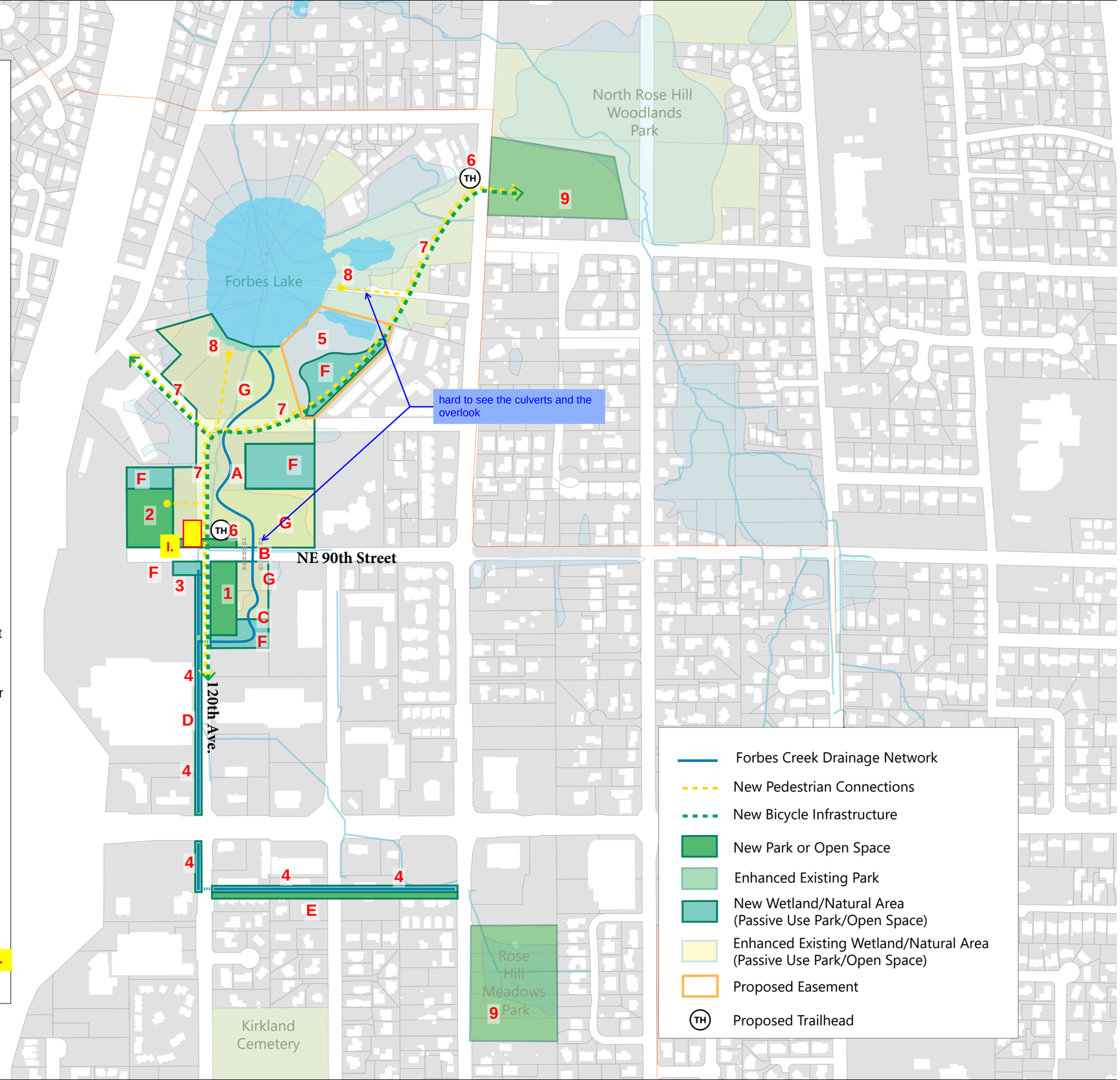
E. Create a treed/riparian corridor along the open channel.

F. Create new wetlands adjacent to existing wetlands near Forbes Lake

G. Enhance existing wetlands near Forbes Lake to remove invasives and revegetate with native plants

H. Private homeowner program within the basin to improve phosphorus issues in Forbes Lake

I. Potential site for regional stormwater facility integrated with park functions.



APPENDIX A

Permit Matrix

Appendix A. Permit Applications, Supporting Documentation, and Estimated Timelines for Authorizations.					
Permit/Approval	**Lead Agency**	**Jurisdiction/Trigger**	**Permit/Approval Regulatory Code and Pertinent Information**	**Dependencies/Predecessors**	**Estimated Processing Time**
FEDERAL					
NEPA Environmental Assessment (EA) and Finding of No Significant Impacts (FONSI)	Funding Agency or USACE	Federally funded or permitted projects with potential but unknown significant adverse impacts. Could evolve to an EIS if significant impacts are discovered	National Environmental Policy Act (1969) <https://www.environment.fhwa.dot.gov/nepa/classes_of_action.aspx#ea> NEPA requires compliance with Section 7 ESA and Section 106 NHPA	• Identified project alternatives • Discipline Reports/Studies: discussing the affected environment; impacts to (non-exclusive list) air, water, wetlands, streams, historic and cultural resources, 4(f)/6(f) resources, community (social and economic), transportation, noise, visual aesthetics, and wildlife (including threatened and endangered species); and proposed impact mitigation. • 30 percent design • Conceptual mitigation • Property ROE (if applicable)	180 days
Clean Water Act Section 404 Individual Permits and Nationwide Permits	USACE	Any discharge of fill in the waters of the US (includes tidal, lakes, streams, and wetlands). Includes temporary discharges such as sandbags or incidental fallback during dredging.	Clean Water Act 1972 <https://www.ecfr.gov/current/title-33/chapter-II/part-323/section-323.3> Discharges requiring a permit 33 CFR 323.3	• Joint Aquatic Resource Permit (JARPA) • 60 percent design (USACE drawings) • Project description (purpose and need) • Identification and evaluation of stream and wetland impacts • Conceptual Mitigation Report and Design • Property ROE for surveys (if applicable)	1–2 years
Section 106 Review	NEPA Lead Funding Agency or USACE	All ground-disturbing projects are screened for potential cultural resources, regardless of funding, which will determine if a survey is required to comply with Section 106 and the King County Historic Preservation Program requirements.	Section 106 of the National Historic Preservation Act of 1966 <https://www.gsa.gov/real-estate/historic-preservation/historic-preservation-policy-tools/legislation-policy-and-reports/section-106-national-historic-preservation-act-of-1966>	• 30 to 60 percent design • Project description and scope of Area of Potential Effects (APE) (temporary and permanent horizontal and vertical impacts) • Some impacts may require mitigation and/or preparation of a Memorandum of Agreement (MOA) that must be signed by affected parties before the process is deemed complete	Approximately 90 days for no impacts; there is no known timeline if an MOA is needed.
Biological Assessment/ Biological Evaluation Or No Effect Letter	National Marine Fisheries Service (NMFS)	In-water work with potential impacts to Endangered Species Act (ESA) listed species or Essential Fish Habitat (EFH).	Endangered Species Act (1973), Section 7 and Section 4(d); 50 CFR, Part 402 <https://www.fisheries.noaa.gov/topic/endangered-species-conservation> Magnuson-Stevens Fishery Conservation and Management Act, as amended by the Sustainable Fisheries Act of 1996 (Public Law 94-265) <https://www.fisheries.noaa.gov/resource/document/magnuson-stevens-fishery-conservation-and-management-act>	• 30 to 60 percent design • Project description and scope, including haul routes, construction techniques, and equipment • Impact minimization measures • Construction sequence/timing • Project impacts • Conceptual mitigation plan • Critical areas studies, hydraulics analysis, stormwater analysis (TIR) • EFH Assessment, typically included in Biological Assessment report for ESA consultation • Property ROE for stream and wetland surveys	90 – 230 days for Biological Assessment/ Biological Evaluation 28 days for No Effect letter
Migratory Bird Treaty Act (MBTA)	US Fish and Wildlife Service (USFWS)	Any clearing/grubbing and/or vegetation removal, impacts to structures, and routine maintenance of bridges between the dates of March 15–August 31.	16 U.S.C. 703–712 50 CFR 10.12–13 <https://fwsepermits.servicenowservices.com/fws>	• Scope of work/project description • Timing/construction schedule • Clearing and grading limits • Bird screening/survey • Property ROW (if applicable)	Must submit a Management Plan at the beginning of each year detailing upcoming proposed projects. Once USFWS has the Plan, activation of the permit, if needed, can take less than a week.

Appendix A (continued). Permit Applications, Supporting Documentation, and Estimated Timelines for Authorizations.					
Permit/Approval	**Lead Agency**	**Jurisdiction/Trigger**	**Permit/Approval Regulatory Code and Pertinent Information**	**Dependencies/Predecessors**	**Estimated Processing Time**
STATE					
SEPA Environmental Checklist (ECL) and Determination of Non-Significance	Washington State Department of Ecology (Ecology)	Non-exempt action that does not have significant adverse impacts.	State Environmental Policy Act (1971); RCW 43.21C; WAC 197-11 <https://ecology.wa.gov/regulations-permits/SEPA-environmental-review>	• 30 to 60 Percent Design Plans • Project description (purpose and need) • Project impacts and minimization measures • Conceptual mitigation plan • Discipline Reports/Studies: Critical Areas (wetland, stream, floodplain, etc.), wildlife, water quality, noise, air, transportation, etc. • Engineers Estimate (for GHG calculations)	60 days
Hydraulic Project Approval (HPA)	Washington Department of Fish and Wildlife (WDFW)	Working within or impacting fresh waters or salt waters of the state. This also includes work that has the potential to impact waters of the state occurring landward within 200 feet of the OHWM.	Chapter 75.20 RCW Chapter 220-110 WAC <https://wdfw.wa.gov/licenses/environmental/hpa>	• SEPA complete or determination pending 60 percent design (JARPA drawings) • Project description (purpose and need) • Identification and evaluation of critical area impacts • Conceptual Mitigation Report and Design	45 days
Water Quality Certification (401) (Programmatic Approval or Individual Permits)	Ecology	Applying for federal permit (i.e., USACE) to conduct any action that might result in discharge of dredge or fill materials into waters or excavation in waters of the State.	Clean Water Act, Section 401 Chapter 173–225 WAC <https://apps.leg.wa.gov/wac/default.aspx?cite=173-225> Individual USACE permits require an individual 401 WQ Certification and separate application process. Most activities conducted under a USACE Nationwide permit have programmatic 401 WQ Certification approval and only require a concurrence letter from Ecology.	• If applicable to the project: o Mitigation plans o Operation and maintenance plans o Stormwater site plans o Restoration plans	Programmatic Approvals 30–60 days after USACE approval Individual Permits 6 to 12 months
Construction Stormwater General Permit of the National Pollutant Discharge Elimination System (NPDES)	Ecology	Disturbance of more than 1 acre of land.	Clean Water Act (90.48 RCW; Chapter 176-226 WAC) <https://apps.leg.wa.gov/RCW/default.aspx?cite=90.48> <https://ecology.wa.gov/Regulations-Permits/Permits-certifications/Stormwater-general-permits/Construction-stormwater-permit>	• Public Notice and issue SEPA Threshold Determination • Two week notice in the newspaper, with a 30 day comment period following the final publication	60–90 days
Order 21-02 Archeological and Cultural Resources	Department of Archaeology and Historic Preservation (DAHP)	Any project not undergoing a Section 106 review.	Archeological and Cultural Resources Executive Order 21-02 (formerly 05-05) https://dahp.wa.gov/2102	• EZ/Project Review Form	30 days
LOCAL					
Pre-application Meeting	City of Kirkland	A virtual appointment to go over project design and inform on local permitting needs.	City of Kirkland Department Services Center <https://www.kirklandwa.gov/Government/Departments/Development-Services-Center>	• 30 to 60 percent design plans • Project description (purpose and need)	2 weeks
Utilities, Grading, and Right of Way	City of Kirkland	Required for land surface disturbance or tree and vegetation maintenance.	City of Kirkland Department Services Center <https://www.kirklandwa.gov/Government/Departments/Development-Services-Center/Apply-for-a-Permit/Utilities-Grading-and-Right-of-Way-Permit-Process>	• LSM Permit Checklist	

11.7

Appendix — Transit Travel Time Analysis

FEHR PEERS

Memorandum

Date: April 20, 2022 (Updated April 26, 2022)

To: Victoria Kovacs, City of Kirkland

CC: Erin Ishizaki, Mithun

From: Jeff Pierson and Kendra Breiland, Fehr & Peers

Subject: NE 85th St SAP – Transit Travel Time and Person Trip Analysis

SE20-0719

This memorandum presents the results of additional analysis requested by the City of Kirkland for the Preferred Alternative for the NE 85th St Station Area Plan.

Transit Time Analysis

Transit travel times within the NE 85th St Station Area were estimated using a combination of data from Google Maps and the existing and future year intersection operations analysis results. Two different routes were evaluated to estimate how travel times for transit vehicles might change from existing conditions to 2044 conditions under the 2044 Preferred Alternative for the Station Area Plan. The two routes are:

- Along NE 85th St between 128th Ave NE and 6th St (Route 250)
- Along NE 85th St and 124th Ave NE between NE 90th St and 6th St (Route 239 and K Line)

The existing range of travel times between these origins and destinations was estimated using historical travel time data from Google Maps for a Tuesday afternoon around 5pm. **Table 1** shows the range, distance, and estimated averaged speeds for each section. These speed estimates are consistent with the data collected as part of Metro's Speed and Reliability Study for the K Line which showed speeds in this corridor ranging from less than 10mph to 20mph.

Table 1. Existing Travel Time Estimates

Transit Route	Direction	Distance	Travel Time	Average Speed
250	Westbound	1.4 miles	5 to 10 minutes	8 to 17 mph
250	Eastbound	1.4 miles	5 to 8 minutes	11 to 17 mph
239 / K Line	Westbound	1.3 miles	5 to 9 minutes	9 to 16 mph
239 / K Line	Eastbound	1.3 miles	5 to 9 minutes	9 to 16 mph

Source: Fehr & Peers.

For the 2044 Preferred Alternative, the change in travel time was calculated using the average delay per movement from the intersection Level of Service (LOS) results for the existing year and future year scenarios at the following locations:

- NE 85th St / 6th St
- NE 85th St / Kirkland Way
- NE 85th St / 120th Ave NE
- NE 85th St / 124th Ave NE
- NE 85th St / 128th Ave NE
- NE 90th St / 124th Ave NE

The additional travel time for transit vehicles through the new interchange at I-405 is assumed to be negligible since transit has dedicated right-of-way. The differences in delay for each of the movements along the transit routes were added to the existing travel time estimates in Table 1. As shown in **Table 2**, the travel times increase by approximately 1 to 2 minutes in each direction through the study area.

Table 2. 2044 Alternative B (Preferred) Travel Time Estimates

Transit Route	Direction	Distance	Travel Time	Average Speed
250	Westbound	1.4	7 to 12 minutes	7 to 12 mph
250	Eastbound	1.4	6 to 9 minutes	9 to 14 mph
239 / K Line	Westbound	1.3	7 to 11 minutes	7 to 11 mph
239 / K Line	Eastbound	1.3	6 to 10 minutes	8 to 13 mph

Source: Fehr & Peers.

These estimates assume the proposed intersection mitigations at the intersections of NE 85th St / 120th Ave NE and NE 90th St / 124th Ave NE which reduce the overall vehicular delay and also accommodate transit vehicles travelling through the study area. Beyond these mitigations, no additional changes are recommended to specially accommodate transit since right-of-way along

the corridor is limited and converting general purpose travel lanes to transit-only lanes significantly increase congestion for all vehicles, including the transit.

Mode Share

The number of person trips and modal percentages for each quadrant of the study area were estimated using information from the Bellevue-Kirkland-Redmond (BKR) travel demand model and the Puget Sound Regional Council (PSRC) regional travel demand model. The initial number of PM peak hour vehicle trip generated by the project were calculated using Fehr & Peers' MainStreet tool, which incorporates built environment variables to better reflect trip generation rates in dense urban areas compared with standard rates from the ITE Trip Generation Manual. The BKR model was used to estimate the number of transit trips and the PSRC model was used to estimate the number of walk and bike trips.

Table 3 and **Table 4** on the next page show the number of person trips and mode splits for 2044 Alternatives A and B. The modal splits between the alternatives are similar with the preferred alternative showing a 1% increase in the mode shares for transit, walk, and bike trips. Overall, the number of vehicle trips (SOV and HOV) increased by 45% while other modes increased by 55% between Alternative A and Alternative B.

Table 5 shows how the number of person trips by mode could shift due to travel demand management (TDM) policies that encourage drivers to shift to alternate modes. Based on the TDM strategies identified in Fehr & Peers' October 12th, 2021 Supplemental Transportation Analysis memo, a 13% reduction in vehicle trips was determined to be reasonable based on the policies that will be implemented as part of the subarea plan. The trips are assumed to proportionally shift from SOV and HOV trips to transit, walk, and bike trips.

Table 6 shows the percent change in person trips by quadrant assuming a 13% reduction in SOV and HOV trips between Alternative B with and without the TDM policies. This translates to a 31% increase in the number of transit, walk, and bike trips. **Table 7** shows the absolute change in modal splits with SOV and HOV trips decreasing by 7% and 2% respectively and transit and walk/bike trips increasing by 4% and 6% respectively.

Table 3. 2044 Alternative A (No Action) PM Peak Hour Person Trips

Quadrant	SOV	HOV	Transit	Walk/Bike	*Total*
Northwest	830	230	140	240	*1,440*
Northeast	3,920	1,280	700	1,350	*7,250*
Southwest	1,650	460	390	440	*2,940*
Southeast	3,380	1,120	610	1,080	*6,190*
Total	*9,780*	*3,090*	*1,840*	*3,110*	*17,820*
Quadrant	**SOV**	**HOV**	**Transit**	**Walk/Bike**	***Total***
Northwest	57%	16%	10%	17%	*100%*
Northeast	54%	18%	10%	19%	*100%*
Southwest	56%	16%	13%	15%	*100%*
Southeast	55%	18%	10%	17%	*100%*
Total	*55%*	*17%*	*10%*	*17%*	*100%*

Source: Fehr & Peers.

Table 4. 2044 Alternative B (Preferred) PM Peak Hour Person Trips

Quadrant	SOV	HOV	Transit	Walk/Bike	*Total*
Northwest	1,140	330	200	380	*2,050*
Northeast	4,350	1,300	800	1,380	*7,830*
Southwest	2,100	590	500	570	*3,760*
Southeast	6,670	2,060	1,500	2,400	*12,630*
Total	*14,260*	*4,280*	*3,000*	*4,730*	*26,270*
Quadrant	**SOV**	**HOV**	**Transit**	**Walk/Bike**	***Total***
Northwest	56%	16%	10%	19%	*100%*
Northeast	56%	17%	10%	18%	*100%*
Southwest	56%	16%	13%	15%	*100%*
Southeast	53%	16%	12%	19%	*100%*
Total	*54%*	*16%*	*11%*	*18%*	*100%*

Source: Fehr & Peers.

Table 5. 2044 Alternative B (Preferred) with TDM PM Peak Hour Person Trips

Quadrant	SOV	HOV	Transit	Walk/Bike	*Total*
Northwest	990	290	270	510	*2,060*
Northeast	3,780	1,130	1,070	1,840	*7,820*
Southwest	1,830	510	660	760	*3,760*
Southeast	5,800	1,790	1,940	3,100	*12,630*
Total	*12,400*	*3,720*	*3,940*	*6,210*	*26,270*
Quadrant	**SOV**	**HOV**	**Transit**	**Walk/Bike**	***Total***
Northwest	48%	14%	13%	25%	*100%*
Northeast	48%	14%	14%	24%	*100%*
Southwest	49%	14%	18%	20%	*100%*
Southeast	46%	14%	15%	25%	*100%*
Total	*47%*	*14%*	*15%*	*24%*	*100%*

Source: Fehr & Peers.

Table 6. 2044 Alternative B (Preferred) with TDM Percent Change in Person Trips

Quadrant	SOV	HOV	Transit	Walk/Bike	*Total*
Northwest	-13%	-12%	35%	34%	*0%*
Northeast	-13%	-13%	34%	33%	*0%*
Southwest	-13%	-14%	32%	33%	*0%*
Southeast	-13%	-13%	29%	29%	*0%*
Total	*-13%*	*-13%*	*31%*	*31%*	*0%*

Source: Fehr & Peers.

Table 7. 2044 Alternative B (Preferred) with TDM Change in Mode Split

Quadrant	SOV	HOV	Transit	Walk/Bike	*Total*
Northwest	*-8%*	*-2%*	*3%*	*6%*	*0%*
Northeast	*-7%*	*-2%*	*3%*	*6%*	*0%*
Southwest	*-7%*	*-2%*	*4%*	*5%*	*0%*
Southeast	*-7%*	*-2%*	*3%*	*6%*	*0%*
Total	*-7%*	*-2%*	*4%*	*6%*	*0%*

Source: Fehr & Peers.

Appendix – Transit Travel Time Analysis Assumptions

Intersection volume forecasts were developed using 2035 land use projections outside of the station area and 2044 land use protections within the station area. The following intersections were used to estimate changes in travel time between existing conditions and the preferred alternative. The proposed mitigations at two of the intersections are described.

- **NE 85th St / 6th St** – no mitigations proposed.
- **NE 85th St / Kirkland Way** – no mitigations proposed/not a study intersection.
- **NE 85th St / 120th Ave NE** – identified mitigation for this intersection includes widening the northbound approach to include a dual left turn lane and a shared through/right turn lane; an additional eastbound through lane was assumed consistent with the planned improvements for the I-405/NE 85th St Interchange project.
- **NE 85th St / 122nd Ave NE** – no mitigations proposed/not a study intersection.
- **NE 85th St / 124th Ave NE** – no mitigations proposed.
- **NE 85th St / 128th Ave NE** – no mitigations proposed/not a study intersection.
- **NE 90th St / 124th Ave NE** – identified mitigation for this intersection includes adding northbound and southbound through lanes and restriping the eastbound through lane to be an eastbound through/left/right lane with east/west split phasing.

In addition to the above mitigations, the LOS analysis for the preferred alternative assumed lower demand volumes due to the proposed TDM policies.

NE 85th St / Kirkland Way was not evaluated for the updated land use alternatives so the delay results from Alternative 2 in the DEIS were used instead in order to capture the benefit of the proposed roundabout configuration.

NE 85th St / 122nd Ave NE was not evaluated for the updated land use alternatives so the future delays were increased 25% from existing conditions, consistent with the change in delay at nearby intersections.

NE 85th St / 128th Ave NE was not a study intersection for the station area plan, but the City provided existing volumes and signal timings such that delays could be calculated. For the future scenario, delays were increased 25% from existing conditions, consistent with the change in delay at nearby intersections.

The tables on the following pages show the calculations for the change in travel time for each of the transit routes.

Route 250 – Westbound

Intersection	Movement	Existing Delay (s)	Future Delay (s)	Difference (s)
NE 85th St / 128th Ave NE	WBT	10.1	12.6	2.5
NE 85th St / 124th Ave NE	WBT	47.6	50.2	2.6
NE 85th St / 122nd Ave NE	WBT	1.7	2.1	0.4
NE 85th St / 120th Ave NE	WBT	9.3	107.3	98.0
NE 85th St / Kirkland Way	WBT	21.8	6.9	-14.9
NE 85th St / 6th St	WBT	48.9	46.1	-2.8
Total	-	*139.4*	*225.2*	*85.8*

Source: Fehr & Peers.

Route 250 – Eastbound

Intersection	Movement	Existing Delay (s)	Future Delay (s)	Difference (s)
NE 85th St / 6th St	EBT	53.8	60.6	6.8
NE 85th St / Kirkland Way	EBT	32.0	15.4	-16.6
NE 85th St / 120th Ave NE	EBT	18.9	40.4	21.5
NE 85th St / 122nd Ave NE	EBT	1.3	1.6	0.3
NE 85th St / 124th Ave NE	EBT	2.7	28.0	25.3
NE 85th St / 128th Ave NE	EBT	11.0	13.8	2.8
Total	-	*119.7*	*159.8*	*40.1*

Source: Fehr & Peers.

Route 239/K Line – Westbound

Intersection	Movement	Existing Delay (s)	Future Delay (s)	Difference (s)
NE 90th St / 124th Ave NE	SBT	16.1	48.6	32.5
NE 85th St / 124th Ave NE	SBR	27.3	33.7	6.4
NE 85th St / 122nd Ave NE	WBT	1.7	2.1	0.4
NE 85th St / 120th Ave NE	WBT	9.3	107.3	98.0
NE 85th St / Kirkland Way	WBT	21.8	6.9	-14.9
NE 85th St / 6th St	WBT	48.9	46.1	-2.8
Total	-	*125.1*	*244.7*	*119.6*

Source: Fehr & Peers.

Route 239/K Line – Eastbound

Intersection	Movement	Existing Delay (s)	Future Delay (s)	Difference (s)
NE 85th St / 6th St	EBT	53.8	60.6	6.8
NE 85th St / Kirkland Way	EBT	32.0	15.4	-16.6
NE 85th St / 120th Ave NE	EBT	18.9	40.4	21.5
NE 85th St / 122nd Ave NE	EBT	1.3	1.6	0.3
NE 85th St / 124th Ave NE	EBL	69.4	58.8	-10.6
NE 90th St / 124th Ave NE	NBT	18.7	48.6	29.9
Total	-	*194.1*	*225.4*	*31.3*

Source: Fehr & Peers.

We did not perform a quantitative analysis of converting a general-purpose travel lane into a transit-only lane along NE 85th St since the PM peak hour demand for through travel along the corridor is between 1,200 to 1,500 vehicles per hour in each direction. The assumed capacity of a single travel lane at a signalized intersection is between 600 to 800 vehicles per hour. The delay experienced by all vehicles would be substantial with this conversion.

There would be limited benefit from installing an eastbound transit queue jump or transit signal priority in the dedicated right-turn lane at the intersection of NE 85th St / 122nd Ave NE due to the low future delay estimate (less than two seconds on average).

The highest delay for transit at the evaluated intersections is for westbound routes at NE 85th St / 120th Ave NE. The proposed design at this location:

- Provides an enhanced landscape buffer and dedicated pedestrian/bike facilities along NE 85th Street to increase comfort for those walking and biking;
- Installs a bumpout on the northwest corner, which reduces the north-south crosswalk length and tightens the radius for southbound right-turning vehicles.

With these design elements, there is not sufficient right-of-way to include dedicated transit lanes. Overall, the increase in travel times along the entire segments are between 1-2 minutes

11.8

Appendix — Engagement Comment Summaries

DSEIS Comment Summary

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Overview

This summary provides an overview of public comments received throughout the Draft Supplemental Environmental Impact Statement (DSEIS) outreach and engagement period. Outreach was conducted consistent with the overall engagement objectives set forth in the Station Area Plan Public Engagement Plan, and as part of the City's commitment to an inclusive and robust community engagement process. The comment period was held January 5, 2021 through February 19, 2021.

This is a preliminary summary of comments. Comments will be considered in the preparation of the Final Supplemental Environmental Impact Statement (FSEIS), which may include analysis of the topics in the DSEIS or referencing other planning or environmental documents or current development regulations that address the concerns. For a description of SEIS topics and a checklist, please see the project website at www.kirklandwa.gov/stationareaplan.

Outreach

The project team conducted outreach through several channels to inform public and stakeholders of the project and opportunities to engage. Channels included:

- **Legal publication** in the Seattle Times.
- **Notice of availability** sent to agencies according to the City's standard procedure.
- **Press releases**.
- **Posters** mailed to essential locations within and nearby the study area.
  - 20 multifamily housing buildings within the study area.
  - 5 senior housing facilities within the study area.
  - 16 ethnic groceries and businesses within the study area and neighboring communities.
- **Email and phone notification and coordination** with 51 community contacts, including:
  - Businesses and employers, including large employers.
  - Service- and faith-based organizations.
  - Transit-, pedestrian-, and bike-based organizations.
  - Unions.
  - Community organizations.
  - Lake Washington School District and Lake Washington High School

  Many of these organizations distributed messages about the engagement

period to their membership via emails, social media postings, and announcements at events.

- **Project Listserv emails** sent at three points leading up to, and during, the DSEIS comment period to 170 subscribers (subscribers as of February 2021).
- **Social media posts** on City of Kirkland Facebook and Twitter accounts at least once per week throughout the comment period.
- Weekly **articles** in This Week in Kirkland, the City's e-newsletter, throughout the comment period. The e-newsletter listserv reaches approximately 4,000 recipients (subscribers as of February 2021).
- A City-produced **DSEIS Introduction video** with information about what a DSEIS is, and how community members could participate in the project posted to the City's YouTube channel and linked in social media posts.
- Project **materials in Chinese**, distributed through the Chinese Information Service Center to over 500 recipients. The materials included instructions for how to request a Chinese-language community meeting with the City.
- City Staff presentations at 10 virtual community organization meetings.

Engagement

The project team conducted several engagement activities to provide the public and stakeholders with a range of methods of providing input.

Real-time Online Open House

At 6 PM on January 7, 2021, the City hosted a live online open house. The meeting included a large presentation to share out information and small group activities to collect input. Approximately 140 people participated in the open house. After the open house was completed, a video of the event was made available for viewing on the City's website.

Online Survey

An online survey offered an opportunity for stakeholders and the public to learn about and provide input on the three alternatives in the DSEIS. The survey was made available to participants at the conclusion of the open house on January 7, 2021 and remained open throughout the comment period. The survey received 408 responses.

Written Comment

Stakeholders and members of the public submitted written comments. The City received 114 written comments from individuals, corporations, small businesses, and organizations, one regional transportation district, and one State agency.

Service Provider Work Group

Representatives from four human service providers with clients in the Station Area joined a virtual roundtable discussion to learn about the SAP and provide input about how the plan can support client needs. The first portion of the meeting included a brief presentation about the Plan and the planning process, including an overview of the three alternatives. Following this presentation, participants engaged in a roundtable discussion about how their clients use the Station Area and their top concerns and hopes about the outcomes of the SAP.

Meetings-in-a-Box

Staff from The Sophia Way, a service provider located in the Station Area, hosted two in-person meetings-in-a-box and a few one-on-one discussions to gather input from 26 clients on the DSEIS. The meetings occurred during the weeks of January 18, 2021 and February 5, 2021. All participants were women experiencing homelessness. About one-third were full-time employed and about two-thirds have received disability or have a disability claim filed. Participants' ages ranged from approximately 30-70 years, with a large proportion aged 55 and older.

Student engagement at Lake Washington High School

Students from two economics classes at Lake Washington High School engaged in a monthlong project to learn about the SAP and to provide input during the comment period. The project culminated with student presentations to City staff and members of the Kirkland City Council. Members of the project team joined eight class sessions (four per class) in December 2020 and January 2021 to teach and support students in the project.

City Staff Presentations at Virtual Community Organization Meetings

In the weeks leading up to, and during, the DSEIS public comment period City staff accepted several invitations to present information about the Station Area Plan to various community organizations. Community organization meetings were all held virtually. Staff presentations generally included a NE 85th St Station Area Plan project introduction, a summary of the three DSEIS alternatives,

information about how to provide DSEIS comments or otherwise engage with the project, and responses to questions from the respective membership.

Comment Themes

Comments from the various sources illustrated a range of support or concern about:

- Need for affordable and diverse housing opportunities.
- Integrating greenspace and public parks, adding/retaining trees.
- Traffic congestion and costs.
- Enhancing pedestrian and bicycle connections.
- Balancing jobs and housing.
- Providing jobs for employees from a range of backgrounds and experience levels.
- Density and transitions of heights and activity to protect residential character and views.
- Considering growth impacts on schools and solutions.
- Preferences for growth or heights at lower levels in particular locations or overall but with affordable housing and amenities, as well as preferences for greater growth near transit and to provide more housing and jobs as well as amenities.

Summaries of Engagement Activities

A Real-time Online Open House

Exhibit 2: Online Open House Participants

Source: Mithun, 2021.

Overview and Executive Summary

The City of Kirkland held a live, online public open house on January 7, 2021. Given the technical nature of the DSEIS document, the City held the meeting early in the comment period to introduce the concepts and alternatives studied to improve understanding of the choices being considered.

There was robust participation in the meeting, estimated at about 140 participants. Outreach to notify the community about the engagement period and the public meeting began in December 2020. The meeting was conducted over zoom, and there were 122 zoom accounts that participated in the meeting.[1] However the number of participants was higher, as several accounts included multiple participants. Participation was greater than a summer 2020 workshop, which had about 80 participants, and typical pre-COVID in-person open house of about 30-45 participants.

Presentations included an overview of the DSEIS process and commenting, a summary of the three Alternatives studied, their alignment with project objectives and evaluation, and next steps toward a Preferred Alternative which will likely be

[1] City of Kirkland representatives and members of the consulting team were not included in this number.

a combination of features from multiple alternatives. Small group discussions followed the presentation.

Common themes and priorities from these discussions included desire for open space, bike, and pedestrian connections; strong support for better transit and mobility connections with the new bus rapid transit (BRT) and potential Houghton P&R connections; importance of more affordable housing opportunities; desire to focus density around transit and concerns about transitions between higher density areas and adjacent neighborhoods; questions around the balance of jobs/housing as well as balance of new development and required infrastructure and services; and concerns and questions about traffic impacts.

After group discussion, Q&A lasted for about 15 minutes, which primarily revolved around questions related to process and participation. The meeting ended with a summary on how and where to comment, ask questions, how to participate in the survey, and a reminder to submit comments by February 5th at 5 p.m. by postal or electronic mail.[2]

A recording of the open house and the presentation slide deck was made available on the City's website for people who were unable to attend. This allows anyone interested in the plan access to this information and benefit from the summary and explanatory information.

Detailed Agenda

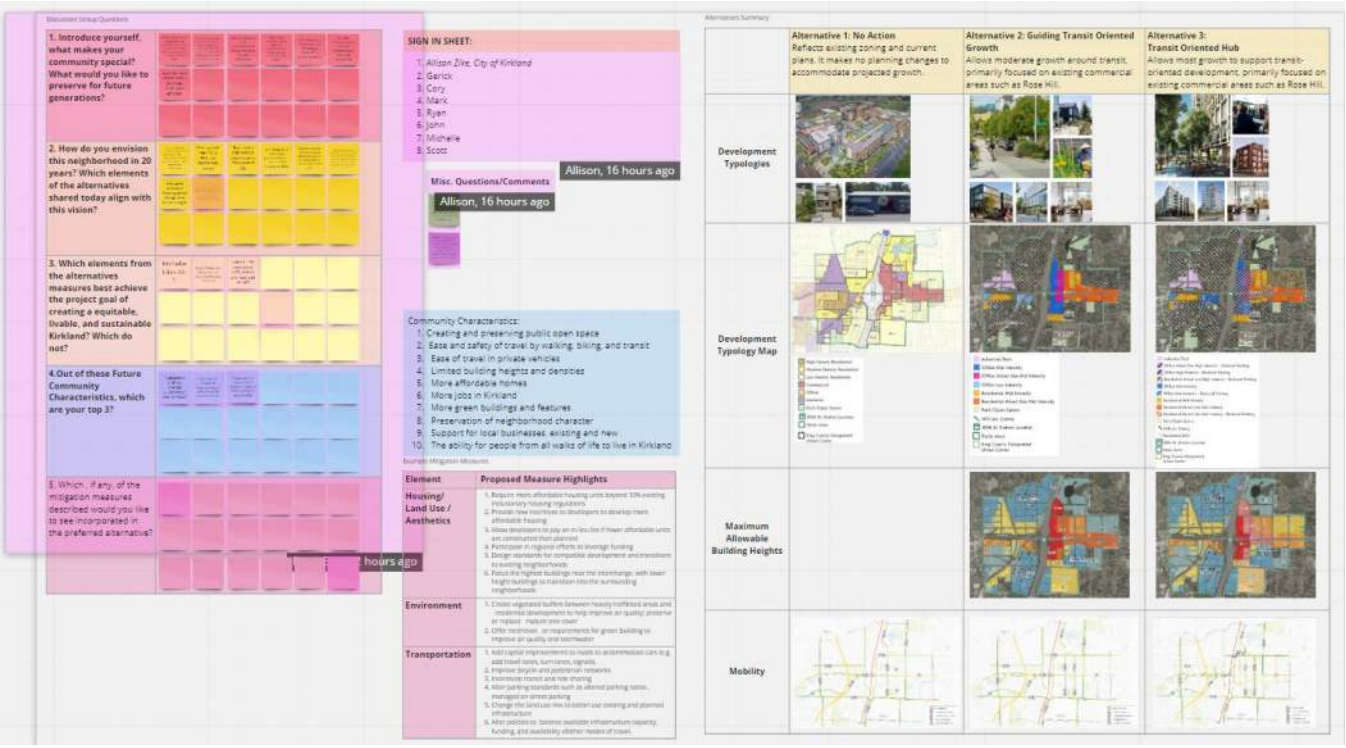
The meeting began with a presentation by City staff and the project team. Adam Weinstein, Director of Planning, gave an overview of the project and its purpose. Becca Book of Mithun introduced participants to meeting protocols, including tips on effectively using the zoom platform and meeting ground rules and the overall planning process. Lisa Grueter of BERK Consulting explained the overall process for the DSEIS and how to submit comments. Brad Barnett of Mithun summarized the three alternatives that were studied, highlighting areas of similarity and contrast. Erin Ishizaki of Mithun presented an evaluation of the alternatives and their consistency with overall project and community goals.

At the conclusion of the presentation, participants joined small group discussions for about 30-40 minutes in virtual breakout rooms. Facilitators, which included City staff and consultant team members, supported these discussions, and took live notes using the Miro platform. The Miro platform was set up to provide visuals and other support materials, as would be available to participants in a traditional open-house setting. Facilitators took notes on participant comments using virtual

[2] The comment period deadline was later extended to February 19, 2021.

"sticky-notes." A sample tableau of the materials available in each virtual breakout room is shown in Exhibit 1

Exhibit 1. Sample Tableau of Materials Available in Each Virtual Breakout Room.



Source: Mithun, 2021.

After participants introduced themselves in their small groups, facilitators led discussion of five questions:

- What makes your community special? What would you like to preserve for future generations?
- How do you envision this neighborhood in 20 years? Which elements of the alternatives shared today align with this vision?
- Which elements from the alternatives measures best achieve the project goal of creating an equitable, livable, and sustainable Kirkland? Which do not?
- Out of the Future Community Characteristics, which are your top 3?
- Which, if any, of the mitigation measures described would you like to see incorporated in the preferred alternative?

At the conclusion of the discussion groups, participants were asked to submit their three top ideas for the NE 85th Street Station Area plan. This generated the word

cloud in Exhibit 2.

Exhibit 2. Participants' Three Top Ideas for the SAP

Source: Mithun, 2021.

While the word cloud activity was happening, a handful of participants jumped in and provided overall comments on the plan, process, and public engagement. The meeting ended with a reprise of information on how to comment, where to get more information or ask questions, tips for effective comments, and a reminder to submit comments by February 5th at 5 p.m. by postal or electronic mail.[3] A survey was also available on the project website.

Summary of Input

What Makes Kirkland Special? Unique Qualities to Preserve

- Charming, small town feel.
- Nonprofit and arts organizations.
- Welcoming place to live.
- Sense of community and neighborliness.
- Parks, open spaces, trails.
- Views of lakes, mountains.
- Can walk to grocery store and shopping.
- Community diversity.
- Trees.
- Several participants noted that "preserving" qualities is not inclusive and

[3] The comment period deadline was later extended to February 19, 2021.

welcoming and suggested modifying this question to Unique Qualities to see for Future Generations.

Overall growth

- Desire to keep growth and density focused near new BRT station, growth will help maximize transit.
- High growth in Kirkland is not in line with the community's history.
- The project is biased toward big growth.
- Kirkland does not need another urban center.
- People who moved to Kirkland for a suburban experience do not want urban style growth.
- Growth should go to other parts of the region.
- Concerns that growth in this area will add noise and traffic similar to recent trends.
- Socio-economic diversity is important – people who work here should be able to live here.
- Lower growth seems appropriate for the west side of the interchange and higher growth seems appropriate for the east side of the interchange.
- Desire to balance growth with mobility, infrastructure, and service needs. Moderate growth is a compromise.
- Form of growth and density should provide quality of life with open spaces and views.
- Strong desire to keep housing away from I-405 due to noise and air quality.

Land Use and Zoning

- It's worthwhile to plan for better utilization of this area.
- New development and improvements are not spread equally across the full station area.
- Center density around the transportation hub. Good TOD [transit-oriented development] will reduce traffic impacts.
- What makes this area a destination? Ensure it is a destination for the region.
- Support single-family neighborhoods.
- Create child-friendly neighborhoods where housing has play areas and parks that are easy to walk to.
- Ensure views are preserved.

- High rises support more population vertically and prevent sprawl.
- Integrate density with transit opportunities to get rid of auto-dependence.
- Add mixed use to existing commercial areas.
- Use townhouses to achieve medium densities.
- Could the light industrial areas near the Cross-Kirkland-Corridor be changed to residential?
- Ensure that there are amenities and parks to make densities and smaller living spaces livable – integrate green spaces with new development.
- Form based zoning is a good approach.
- Require sustainable development, LEED.
- This area needs to be optimized for people.
- Do not place housing near the highway.
- Zone to leverage investment in transit.
- Ensure the integration of public art.
- Create a unified design theme and public gateways.
- Focus on infill housing instead of large complexes.

Housing

- Importance of preserving affordability in the community- both market rate and subsidized.
- Increase the diversity of housing in this area: missing middle, mixed use, etc.
- What are the effects of bringing low income housing into this area on existing homes?
- Will new housing displace existing residents by raising taxes?
- 10% provision does not create enough affordable housing. Hold developers to more.
- Housing needs daycares and other amenities like play areas, open spaces, and access to parks.

Transportation and Parking

- Traffic is already a concern in the 85th street corridor and adding new growth will make it worse.
- Consider diverting traffic to 87th and put the crossing with 114th there.
- Making biking feasible. Is there adequate ROW space to support safe biking? Particularly in neighborhoods?

- Making walking feasible. Add greenspaces for safety and widen sidewalks. More midblock pedestrian connections.
- Connect to the Cross Kirkland Corridor.
- Google expansion will affect residential streets.
- Green street should be at: 120th, near the high school, near the women and children's center.
- More people and less parking will not work in this area.
- How will construction impacts to 85th be mitigated during development?
- Address the dead-end streets near Costco.
- Connect Houghton P&R to this area via bus connections and walking / biking trails.
- Is 80th street wide enough?
- Need to move people up/down hill on 85th to connect downtown to the station.
- Buses get stuck in traffic too – need dedicated transit lanes.
- BRT is not as impactful on transportation habits as light rail.
- Address pass through and cut through traffic.

Environment and Open Space

- Preserving wetlands and the ecosystem is a priority.
- More open spaces are needed in these alternatives – and more access to nature.
- Restore native plants to this area.
- Address the increase in noise.
- Preserve and add tree canopy.
- Address climate change.
- Desire for open space, bike, and pedestrian connections
- Ensure that there are amenities and parks to make densities and smaller living spaces livable – integrate green spaces with new development.
- Create child-friendly neighborhoods where housing has play areas and parks that are easy to walk to.

Economic Development and Employment

- A full range of employment is needed. Are the jobs anticipated to be service jobs? Office jobs?

- Does this area need 30,000 jobs?
- It's important to plan for new jobs from Google and other major employers in this area.
- Is the jobs-housing balance right? Are there enough jobs to support the proposed housing?
- Reduce commercial development in this area in favor of greening the area.
- Costco doesn't fit with the plans for this area.

Neighborhoods

- Highland neighborhood should not be connected to 405 in the future.
- Neighborhoods should not be pressured to change.

Services and Infrastructure

- Question about City's anticipated revenues versus expenses for providing services for new developments.
- What are impacts on schools?
- What will be the impact on crime?

Overall process concerns and questions

- The process should include significant outreach efforts and follow the established outreach plan.
- Questions regarding what outreach was conducted especially postcards and mailers.
- Project team should update public on progress toward outreach plan.
- Questions about when public can comment and how that relates to decision making.
- New City website format is not user friendly and previous plans and EIS documents need to be added back.
- Better coordination with Sound Transit.

B Online Survey

Below is a summary of the 408 responses to the online survey. The first several subsections summarize responses to multiple choice and ranking questions. Free-response comment themes are summarized in the last subsection.

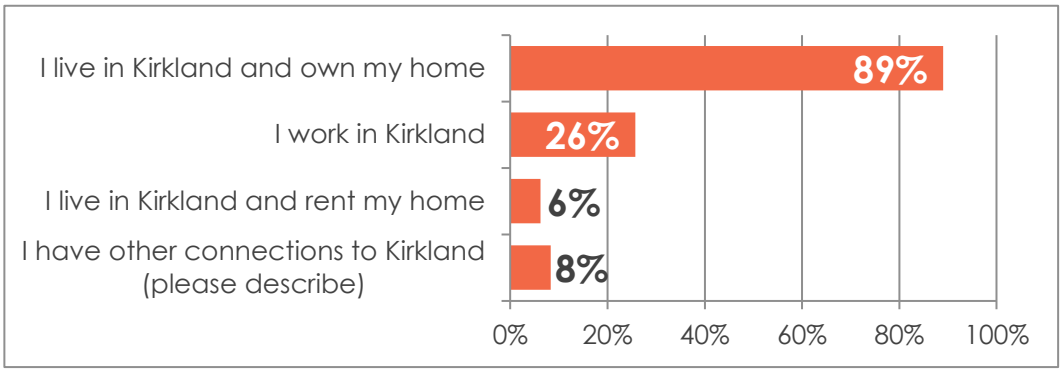
Survey responses are disaggregated by age when trends differ meaningfully by age. Responses do not differ meaningfully by other demographics. Unless otherwise noted, demographic information of participants is compared to demographics of Station Area and Kirkland residents based on the Opportunities and Challenges Report, 2020 or citywide statistics consistent with Census or other noted data.

Respondent Characteristics and Demographics

Exhibit 3 shows some of the key characteristics of respondents. Response to demographic questions was an optional section of the survey.

- 89% of survey respondents live in Kirkland and own their home, and just 6% live in Kirkland and rent their homes. This is a significantly higher rate of homeownership than residents of the Station Area, of whom 36% are renters.
- 26% of survey respondents work in Kirkland. This is a higher rate of Kirkland employment than Kirkland residents, of whom 11% work in Kirkland.

Exhibit 3. Respondent Characteristics (338 responses)

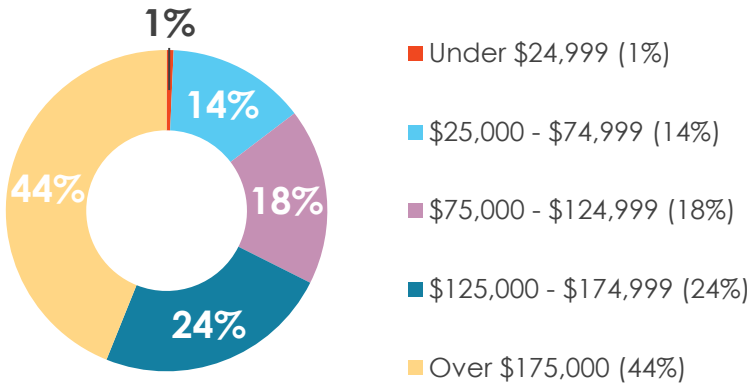


Note: Percentages do not sum to 100% because respondents could select multiple options.
Source: BERK, 2021.

Exhibit 4 shows the household incomes of survey respondents.

- Survey respondents have relatively high incomes, as over two-thirds of respondents have annual household incomes of $125,000 or more. The median household income for the city as a whole per the American Community Survey 2015-2019 was $117,190.
- 15% of survey respondents have household incomes below $75,000 per year, compared to 31% of Kirkland households with household incomes below $75,000. [4] 6% of Station Area residents have household incomes below $40,000 per year, and 48% of Station Area Employees make under $40,000 per year.

Exhibit 4. Respondent Household Incomes (287 responses)



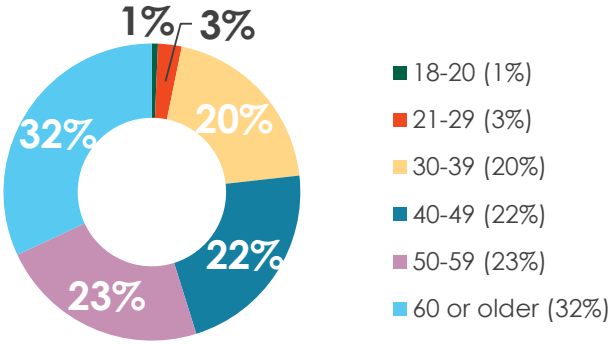
Source: BERK, 2021.

Exhibit 5 shows the ages of survey respondents.

- Survey respondents are more likely to be older adults than Station Area residents. One-third of survey respondents are aged 60 or older, compared to 12% of Station Area residents who are aged 65 or older.
- Station Area residents are 26% under the age of 18, 10% between 18-24, 20% between 35-44, 32% 45-64, and 12% 65 or older.

[4] American Community Survey 5-year estimates 2015-2019 S1901.

Exhibit 5. Respondent Ages (310 responses)

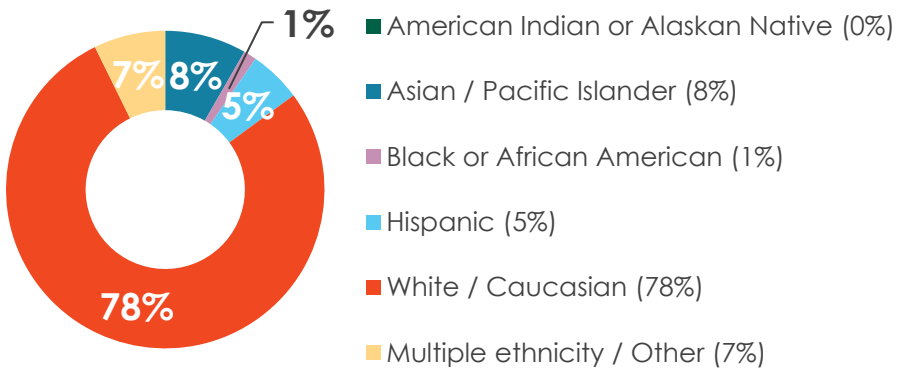


Source: BERK, 2021.

Exhibit 6 shows the race and ethnicity of survey respondents, and Exhibit 7 disaggregates race and ethnicity by the age of survey respondents.

- The race and ethnicity of survey respondents closely matches the demographics of Station Area Residents. 82% of Station Area residents are White, 10% are Asian, and 7% identify with two or more races.
- Younger survey respondents are less likely to be White than older survey respondents.

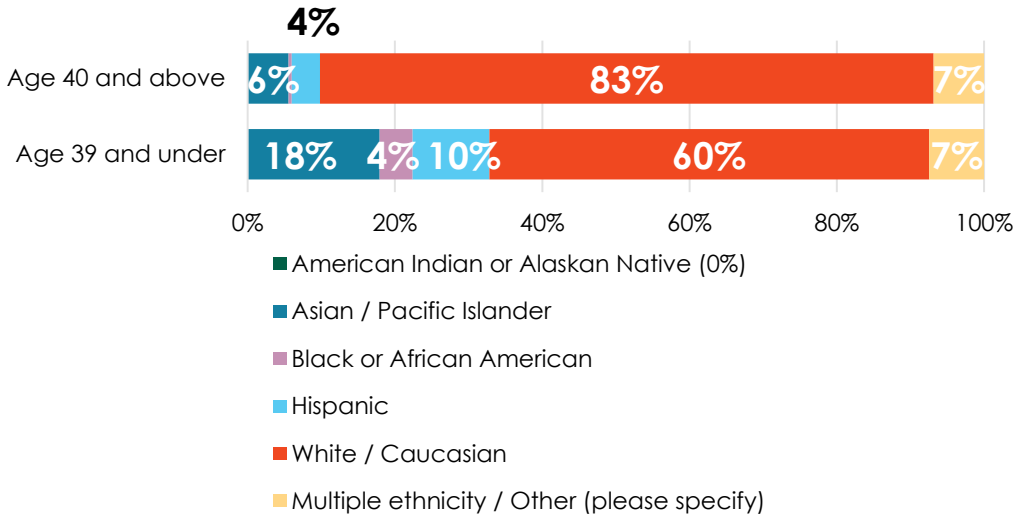
Exhibit 6. Respondent Race or Ethnicity (302 responses)



Note: Respondents were asked to select a single option that best described them.
Source: BERK, 2021.

Exhibit 7. Respondent Race or Ethnicity, Disaggregated by Age (301 respondents)

- 234 Responses from Participants Ages 40 and above
- 67 Responses from Participants Ages 39 and under



Note: Respondents were asked to select a single option that best described them.
Source: BERK, 2021.

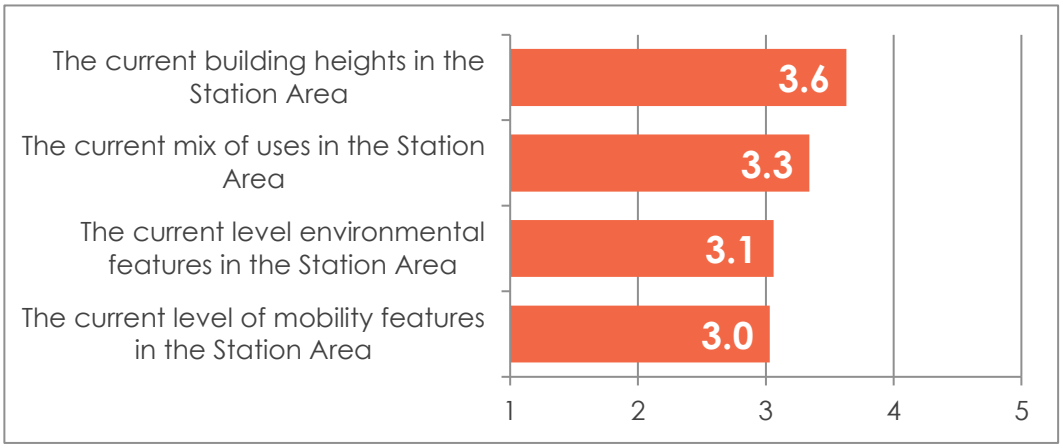
Respondent Opinions on Existing Conditions

Exhibit 8 shows survey respondents' level of support for existing station area features.

- On average, survey respondents are neutral about or support all listed features.
- Survey respondents are most supportive of the current building heights in the Station Area.
- Survey respondents feel neutral or slightly supportive of the current level of environmental features and mobility features in the Station Area.

Exhibit 8. Respondents' Level of Support* for Existing Station Area Features (401 responses)

Survey Question: "The no action alternative assumes no planning adjustments to accommodate the growth which the Eastside is experiencing. Indicate your level of support on a scale of 1 (strongly dislike) to 5 (strongly support) for:"

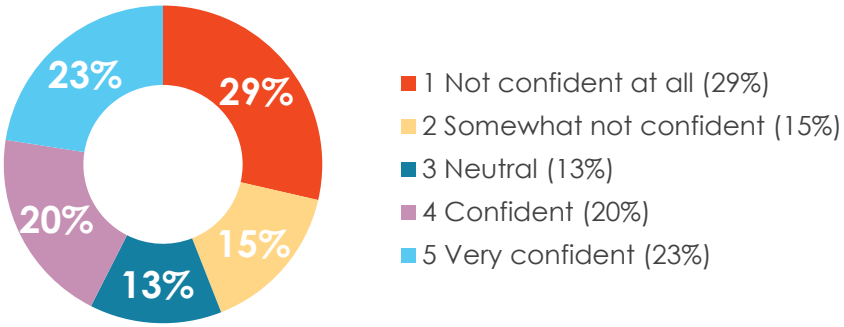


*Weighted averages. Response options included: 1 (Strongly Dislike), 2 (Dislike), 3 (Neutral), 4 (Support), and 5 (Strongly Support).
Source: BERK, 2021.

Exhibit 9 shows survey respondents' levels of confidence that the existing zoning and mix of uses will accommodate Kirkland's continued growth in an equitable, livable, and sustainable fashion.

- Survey respondents are split equally between confidence and lack of confidence in the current zoning and mix of uses, with 43% confident or very confident, and 44% somewhat not confident or not confident at all.

Exhibit 9. Survey Respondents' Confidence that the Existing Zoning and Mix of Uses will Accommodate Kirkland's Continued Growth in an Equitable, Livable and Sustainable Fashion (395 responses)



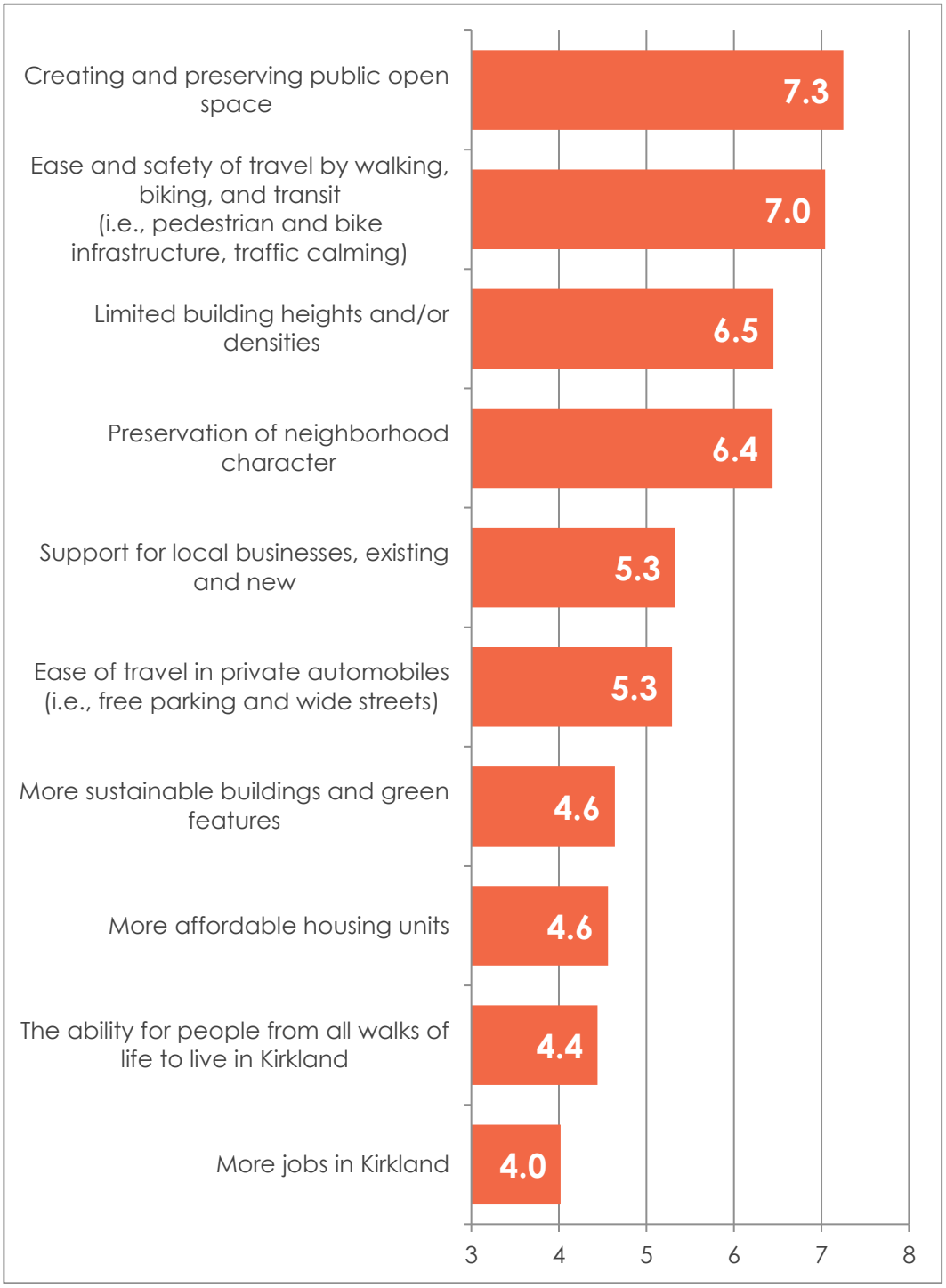
Source: BERK, 2021.

On the next page, Exhibit 10 shows survey respondents' ranking of community characteristics.

- **Top priorities:** Respondents most highly prioritize creating and preserving public open space and ease of transportation by bike, walking, and public transit. Respondents also value limited building heights and densities and preservation of neighborhood character.
- **Lowest priorities:** Respondents least prioritize the addition of jobs in Kirkland. Respondents also are less likely to prioritize sustainable buildings, affordable housing, and the ability for people from all walks of life to live in Kirkland.

Exhibit 10. Survey Respondents' Ranking* of Community Characteristics (362 responses)

Survey Question: "Please rank the following community characteristics from most important to least important to help us understand where the City should invest."



*Average ranking. Respondents ranked all characteristics from least important (1) to most important (10).
Source: BERK, 2021.

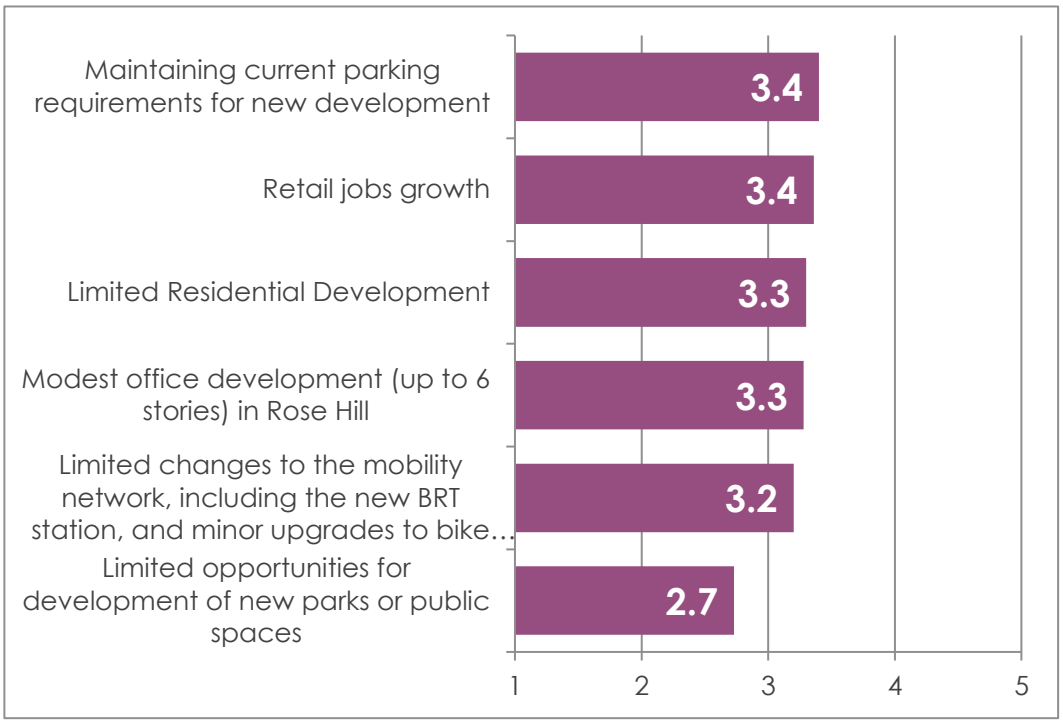
Respondent Opinions on the Alternatives

Exhibit 11 shows survey respondents' level of support for aspects of Alternative 1.

– On average, survey respondents equally value and feel some support for all features of the alternative, with one exception: respondents slightly dislike the alternative's limited opportunities for development of new parks or public space.

Exhibit 11. Survey Respondents' Level of Support* for Aspects of Alternative 1 – No Action (397 responses)

Survey Question: "Indicate your level of support on a scale of 1 (strongly dislike) to 5 (strongly support) for the following aspects of the Alt 1 - No Action plan. Note - these are likely outcomes based on what existing policies and regulations already allow in the Station Area."



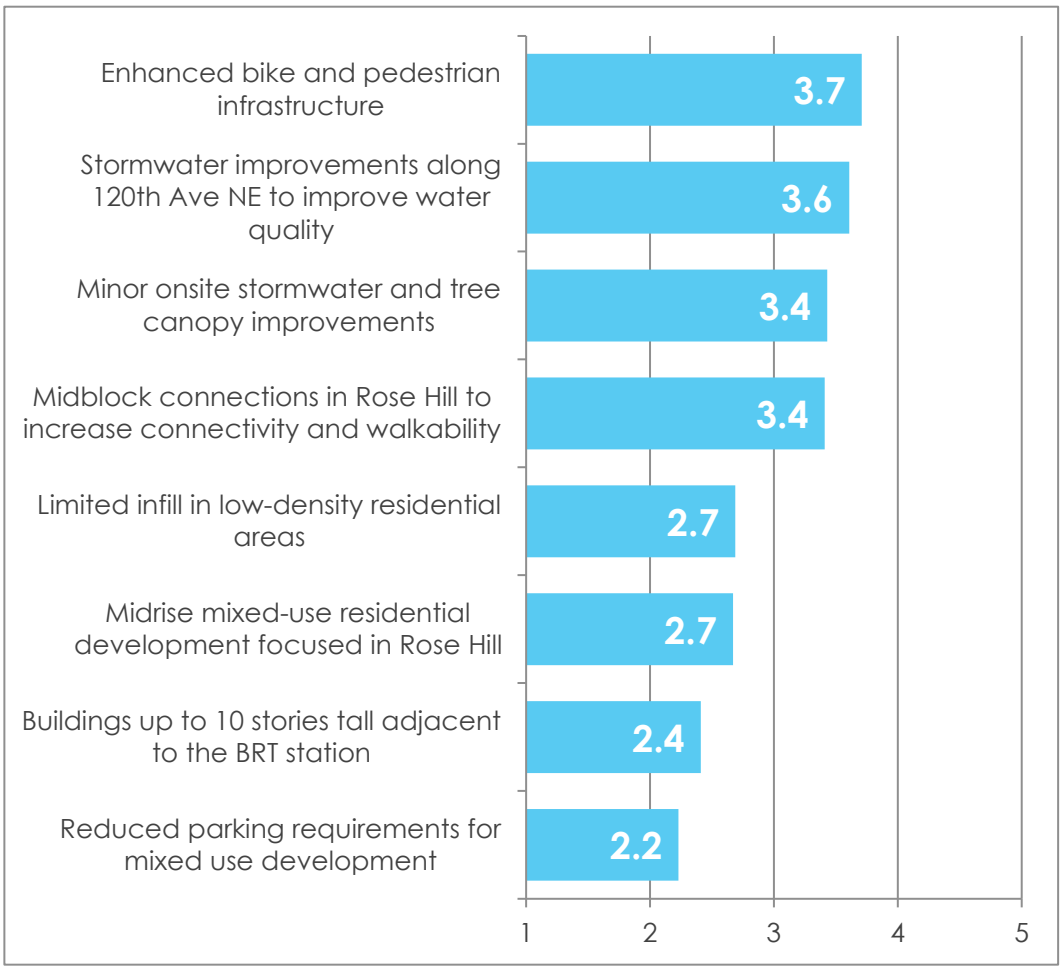
*Weighted averages. Response options included: 1 (Strongly Dislike), 2 (Dislike), 3 (Neutral), 4 (Support), and 5 (Strongly Support).
Source: BERK, 2021.

Exhibit 12 shows survey respondents' level of support for aspects of Alternative 2.

- On average, survey respondents support the aspects of this alternative surrounding increased bike and pedestrian connectivity and improved stormwater management.
- Survey respondents dislike the reduced parking aspects of Alternative 2 most strongly. Respondents are also less supportive of the alternative's building heights, mixed use development, and limited residential infill.

Exhibit 12. Survey Respondents' Level of Support* for Aspects of Alternative 2 (378 responses)

Survey Question: "Indicate your level of support on a scale of 1 (strongly dislike) to 5 (strongly support) for the following aspects of the Alt 2- Guiding Transit-Oriented Growth plan:"



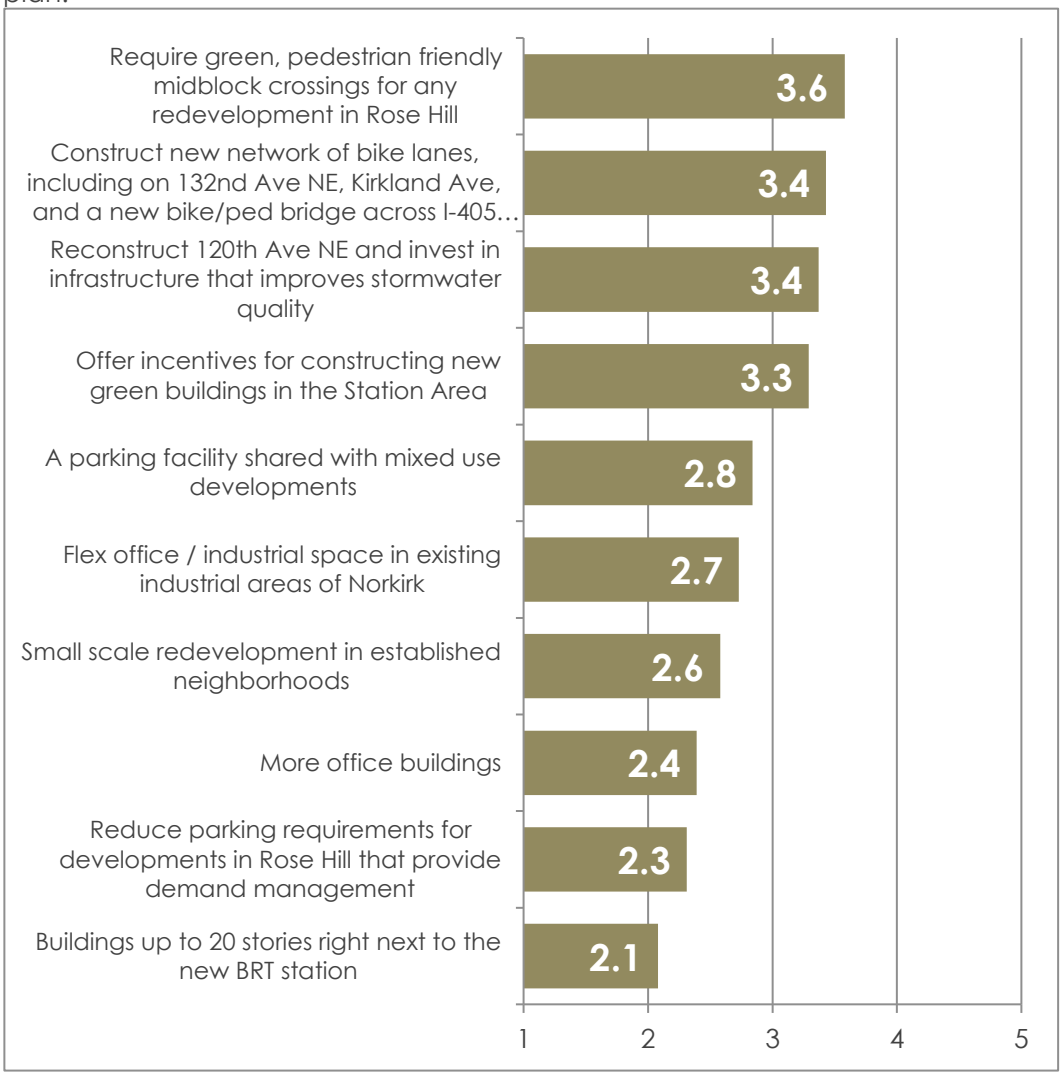
*Weighted averages. Response options included: 1 (Strongly Dislike), 2 (Dislike), 3 (Neutral), 4 (Support), and 5 (Strongly Support).
Source: BERK, 2021.

Exhibit 13 shows survey respondents' level of support for aspects of Alternative 3.

- On average, survey respondents support the aspects of this alternative surrounding increased bike and pedestrian connectivity, green buildings, and improved stormwater management.
- Survey respondents dislike reduced parking and increased office development aspects of Alternative 3. Of all features of this alternative, respondents most dislike the possibility of buildings up to 20 stories in height right next to the BRT station.

Exhibit 13. Survey Respondents' Level of Support* for Aspects of Alternative 3 (373 responses)

Survey Question: "Indicate your level of support on a scale of 1 (strongly dislike) to 5 (strongly support) for the following aspects of the Alt 3 Transit-Oriented Hub plan:"



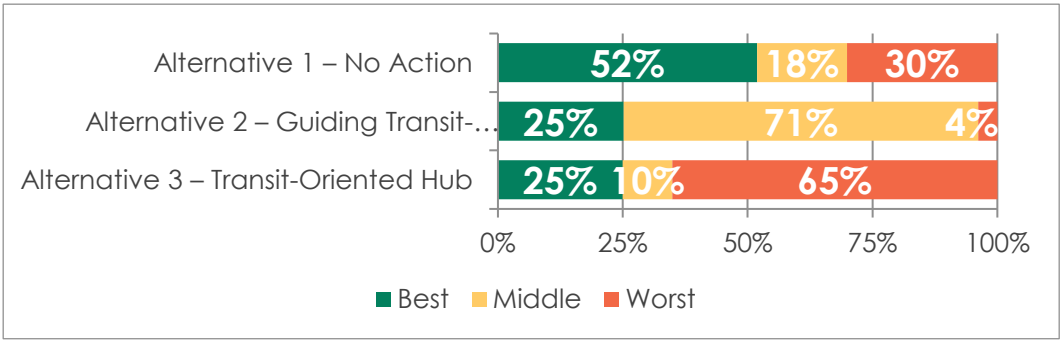
*Weighted averages. Response options included: 1 (Strongly Dislike), 2 (Dislike), 3 (Neutral), 4 (Support), and 5 (Strongly Support).
Source: BERK, 2021.

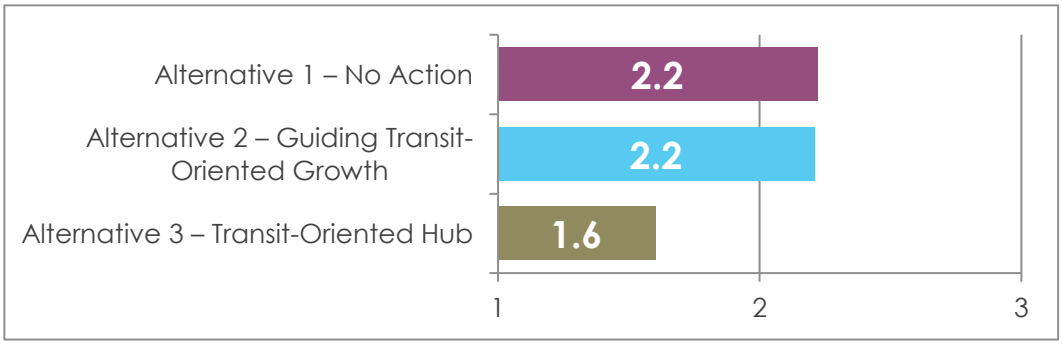
Exhibit 14 shows how survey respondents rank the three alternatives by how well each will promote the project vision of livability, sustainability, and equity.

- Over half of respondents rank Alternative 1 as the best alternative. The remaining respondents are equally likely to select either alternatives 2 or 3 as the best alternative.
- Two-thirds of respondents rank Alternative 3 as the worst alternative. Nearly one-third of respondents rank Alternative 1 as the worst alternative. Few respondents – 4% -- rank Alternative 2 as the worst.
- Respondents feel most neutral about alternative 2, with 71% of respondents ranking this as the middle alternative in terms of promoting the project vision.
- As shown in the lower chart in Exhibit 14, on average, respondents are equally supportive of alternatives 1 and 2. Even though more respondents select Alternative 1 as the best alternative (52% rank Alternative 1 as best compared to 25% for Alternative 2), more respondents also rank Alternative 1 as the worst alternative (30% rank Alternative 1 as the worst compared to 4% for Alternative 2).

Exhibit 14. Survey Respondents' Ranking* of How Well Each Alternative Will Promote the Project Vision of Livability, Sustainability, and Equity (326 responses)

Survey Question: "Rank the alternatives based on how well they promote the project vision of Livability, Sustainability and Equity from best to worst."





*Top chart shows distribution of rankings. Bottom chart shows weighted averages, with 3 points given for "Best," 2 points given for "Middle," and 1 point given for "Worst."
Source: BERK, 2021.

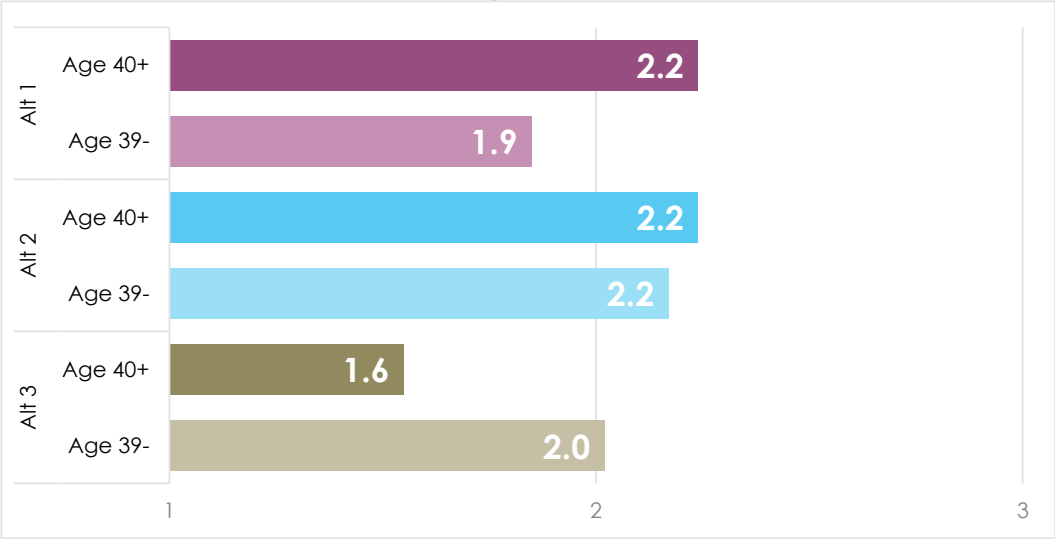
On the next page, Exhibit 15 disaggregates respondents' rankings of the alternatives by age.

- Across all ages, survey respondents give Alternative 2 an average ranking of 2.2 points, on a scale from 1 (worst) to 3 (best).
- Respondents **below the age of 40** prefer Alternative 3 to Alternative 1.
  - Sample comment in **support of Alternative 3:** "Alternative 3 maximizes the development opportunities around the future BRT station. As a bonus, the tall building heights would be the most useful in blocking out freeway noises from surrounding neighborhoods. Most importantly it allows for the most affordable housing, best green spaces, and best walking/biking infrastructure. As a long time resident (born and raised) I still feel like we could do more to densify. However, Alt 3 does a great job and would be a welcome change/addition to Kirkland"
  - Sample comment in **opposition to Alternative 1:** "No action isn't sustainable. People keep moving to Kirkland and to WA, and growth is unavoidable. Pretending that everything can stay the same will be a huge source of long-term problems and drive people out of the area."
- Respondents **above the age of 40** prefer Alternative 1 to Alternative 3.
  - Sample comment in **support of Alternative 1**: "Please stop trying to make Kirkland another Bellevue. Families who moved here 15 years ago because it was a nice community are being forced out because it is too expensive."
  - Sample comment (lightly edited for typos) in **opposition to Alternative 3:** "Way out of scale for existing neighborhoods, will ruin quality of life for current residents. This kind of development is appropriate for the existing light industrial area near Totem Lake and north. Traffic already a nightmare on 85th, this will result in non-stop traffic jams. Also doubt this will result in any significant increase in affordable housing. Developers will not stop building market rate housing."

Exhibit 15. Survey Respondents' Ranking* of How Well Each Alternative Will Promote the Project Vision of Livability, Sustainability, and Equity, Disaggregated by Age (274 responses)

Survey Question: "Rank the alternatives based on how well they promote the project vision of Livability, Sustainability and Equity from best to worst."

– 66 Responses from Participants Ages 39 and below
– 208 Responses from Participants Ages 40 and above



*Weighted averages, with 3 points given for "Best," 2 points given for "Middle," and 1 point given for "Worst."
Source: BERK, 2021.

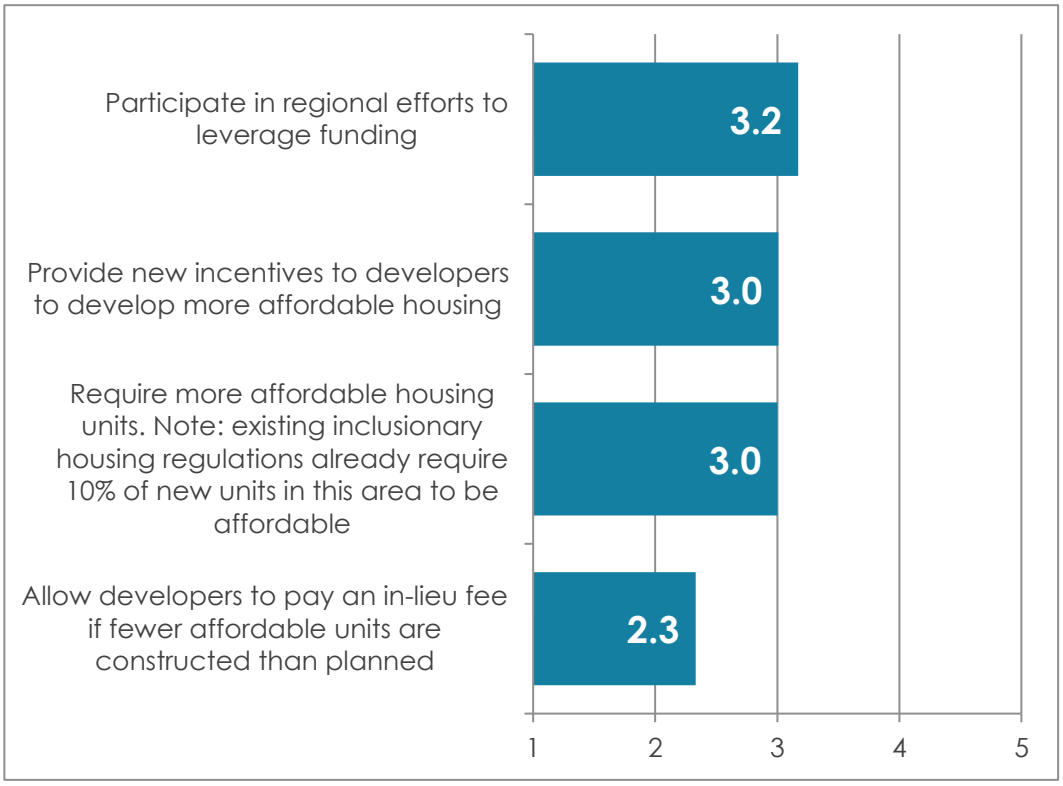
Respondent Opinions on Mitigation Measures

Exhibit 16 shows survey respondents' opinion on proposed housing and land use mitigation measures.

– Survey respondents feel neutral or slightly supportive about all mitigation measures except one: respondents dislike the option to allow developers to pay an in-lieu fee if fewer affordable units are constructed than planned.

Exhibit 16. Survey Respondents' Support* for Proposed Housing and Land Use Mitigation Measures (346 responses)

Survey Question: "Indicate your level of support on a scale of 1 (strongly dislike) to 5 (strongly support) for the following proposed Mitigation Measures:"



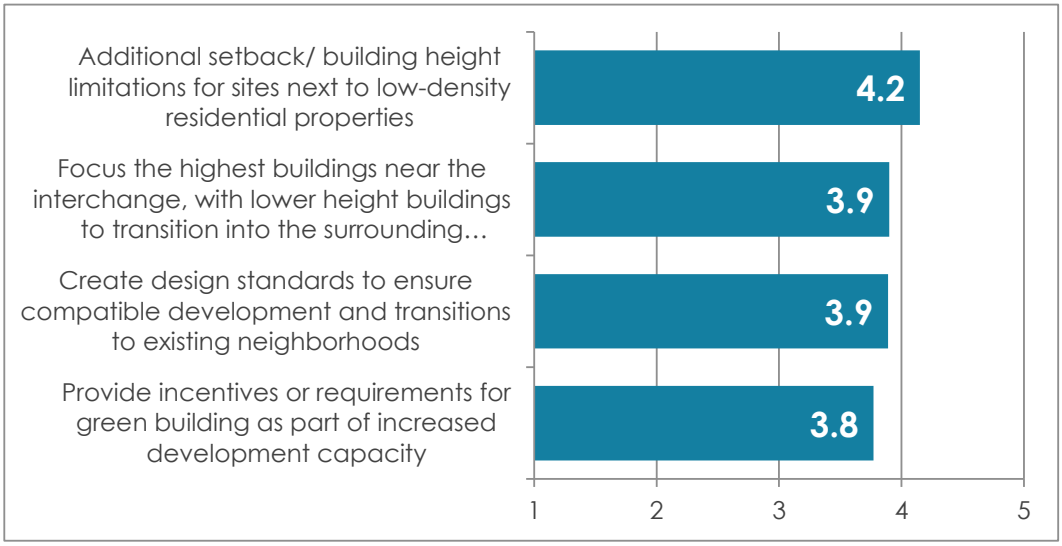
*Weighted averages. Response options included: 1 (Strongly Dislike), 2 (Dislike), 3 (Neutral), 4 (Support), and 5 (Strongly Support).
Source: BERK, 2021.

Exhibit 17 shows survey respondents' opinion on proposed aesthetics mitigation measures.

– Survey respondents support all proposed measures about equally. Of the Aesthetics Mitigation Measures listed, respondents like setback and height limitations to transition to low-density residential properties the most.

Exhibit 17. Survey Respondents' Support* for Proposed Aesthetics Mitigation Measures (346 responses)

Survey Question: "Indicate your level of support on a scale of 1 (strongly dislike) to 5 (strongly support) for the following proposed Mitigation Measures:"



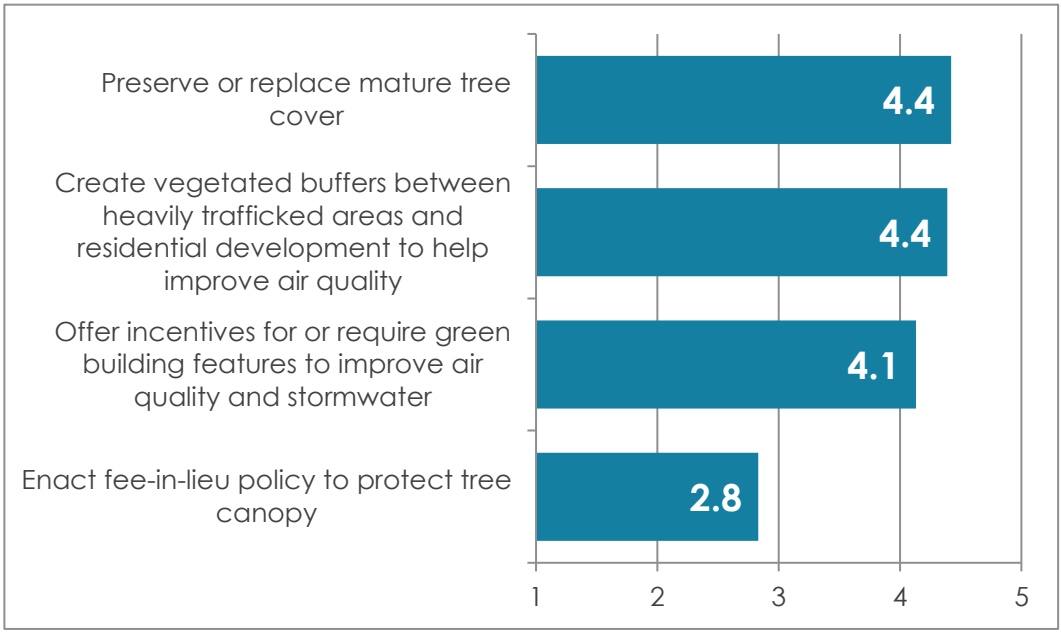
*Weighted averages. Response options included: 1 (Strongly Dislike), 2 (Dislike), 3 (Neutral), 4 (Support), and 5 (Strongly Support).
Source: BERK, 2021.

Exhibit 18 shows survey respondents' opinion on proposed environmental mitigation measures.

- Respondents support or strongly support the presented Environmental Mitigation Measures, except the option of allowing developers to pay an in-lieu fee to remove tree canopy. The most highly supported mitigation measures were preserving or replacing mature trees and adding vegetated buffers, as well as incentives for green building features.

Exhibit 18. Survey Respondents' Support* for Proposed Environmental Mitigation Measures (342 responses)

Survey Question: "Indicate your level of support on a scale of 1 (strongly dislike) to 5 (strongly support) for the following proposed Mitigation Measures:"



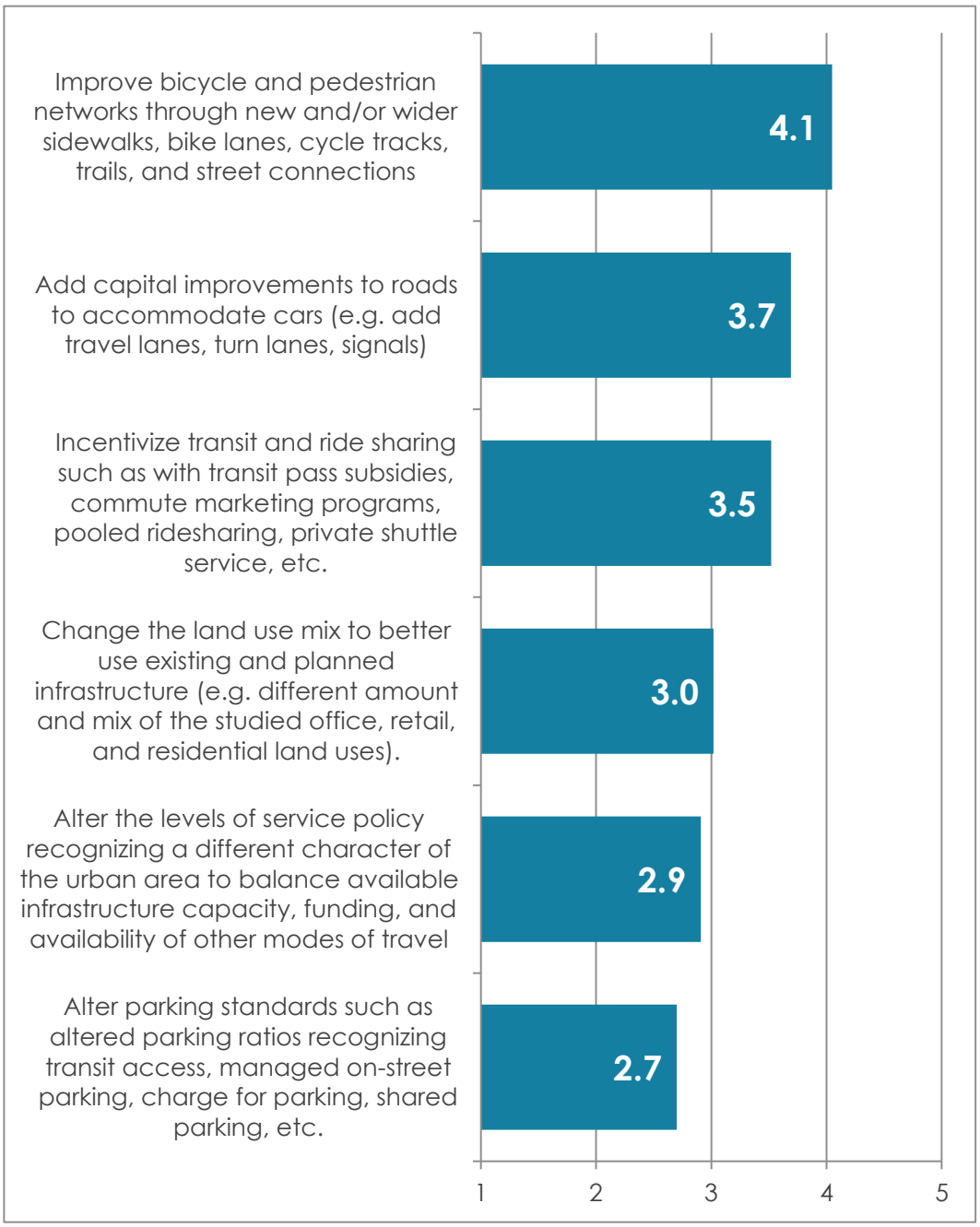
*Weighted averages. Response options included: 1 (Strongly Dislike), 2 (Dislike), 3 (Neutral), 4 (Support), and 5 (Strongly Support).
Source: BERK, 2021.

On the next page, Exhibit 19 shows survey respondents' opinion on proposed transportation mitigation measures.

- Survey respondents most support the proposed mitigation measure to improve bicycle and pedestrian networks.
- Respondents also support capital improvements to better accommodate cars and incentives for transit and ride sharing.
- Respondents feel neutral or nearly neutral about changes to the land use mix and level of service policies.
- Respondents slightly dislike altered parking standards.

Exhibit 19. Survey Respondents' Support* for Proposed Transportation Mitigation Measures (345 responses)

Survey Question: "Indicate your level of support on a scale of 1 (strongly dislike) to 5 (strongly support) for the following proposed Mitigation Measures:"



*Weighted averages. Response options included: 1 (Strongly Dislike), 2 (Dislike), 3 (Neutral), 4 (Support), and 5 (Strongly Support).
Source: BERK, 2021.

Summary of Themes from Free Response Comments

The following qualitative summary presents the range of topics raised throughout the free-response comment sections of the online survey. The summary does not reflect the frequency with which commenters raised topics and themes.

What Makes Kirkland Special? Unique Qualities to Preserve

- A small-town perspective and sense of community. People-friendly character and neighborhoods with a feeling of "togetherness". Quant and quiet surroundings with charm and character.
- Amenities for growing families and seniors.
- Urban forests, vibrant parks, outstanding air- and water quality.
- Walkable streets for transportation and leisure. A sense of safety at all hours of the day and night.
- Lack of high-rise buildings allows for views of mountains and sunsets.
- Small, unique, locally owned, and minority-owned businesses.
- Concern about Kirkland becoming too similar to Bellevue, Redmond, or Seattle. Kirkland is less congested and less densely populated than surrounding communities, but nonetheless has amenities, infrastructure, and moderate-sized office and retail.

Overall growth

- Concerns about impacts of growth on the community.
  - Some opposition to accommodating growth beyond that in the Comprehensive Plan, doubt that growth will occur, or concern that Kirkland already has unused office and residential developments.
  - Some interest in developing proactive solutions to accommodate growth, ensure adequate infrastructure, and minimize sprawl.
- Questions about projected growth following COVID-19 pandemic.
- West side of the station area can better accommodate growth as the East side has a steep incline that makes it less pedestrian- and bike-friendly.
- Interest in aligning growth with Redmond's and Bellevue's plans.

Land Use and Zoning

- Varied perspectives on land use and zoning. Some support for height restrictions and building setbacks to minimize shadow. Some interest in maintaining existing zoning, and some interest in increasing housing or jobs in the area. Some interest in infilling and densifying the project area.
- Desire for homes to have yards and green space to support stormwater management.

- Question about geological stability has been considered/studied regarding the large building plans uphill. Concern about increased load on the hillside.

Housing

- **Affordable housing**
  - Desire for higher proportion of affordable housing. Concern that the plan will not create enough affordable housing. Permit priority to projects that include affordable and Section 8 housing.
  - Questions around the definition of affordability.
  - Market has too many luxury apartments.
  - Concern that the 50% AMI level is too low for smaller sites or high-cost land, and that the City should leverage larger sites with over 200 units.
  - Concern that more affordable housing will be located in less desirable areas like near arterial roads and highways.
  - Balance affordable housing requirements with need to promote development of new units by keeping costs low for developers.
  - Tie affordability requirements to the height of buildings
  - If in-lieu fee is used, locate alternate housing units near transit and commercial hubs elsewhere in the city.
- **Housing supply**
  - Support for mixed-income housing.
  - Need for missing middle duplexes, triplexes, and groups of cottages.
  - Streamline permit process for accessory dwelling units (ADUs) and cottage houses.
  - Varied perspectives about developer incentives and perks. Support for city incentives for missing middle or workforce housing. Concern that City favors developers over residents.
  - Support for the City to facilitate improvements to existing housing stock, including easing remodel permits.
  - A few comments wanting less housing in favor of more jobs or parking.
- **Housing costs and workforce housing**
  - Concern over rising property taxes and displacement of existing residents.
  - Coordinate additional retail job growth with additional housing that is affordable for these employees.
- **Housing quality and amenities**
  - Ensure building management can maintain and renovate buildings over time to maintain quality of living spaces as families grow and move out.
  - Livability for families and seniors beyond large-scale multifamily housing.

Consider townhouses.

- Child-friendly housing, including play areas and green space.
- Houses with yards and gardens.

Transportation and Parking

- **Public transit**
  - Concern about low ridership projections.
  - Maximize ADA accessibility beyond minimum compliance.
  - Incorporate additional east-west transit. Not everyone can afford or wants a car.
  - Amenities for commuters, such as covered bus stops and shelter to protect from wind and rain and charging stations for phones/laptops.
  - Clear wayfinding signage.
- **Traffic**
  - Concerns about traffic congestion and impact to commuters. Should consider traffic impact and relieve existing traffic.
  - Impact of traffic on emergency response times.
  - Impacts of potential sprawl on traffic.
- **Car infrastructure and parking**
  - Concern that the plan will not change people's preferred method of transportation from cars to public transit, especially for seniors.
  - Support for maintaining parking via a park & ride, parking lots, or parking garages. Concern that lack of available parking will drive away prospective patrons of local businesses and decrease tax revenues.
  - Some support for wider roads. Some concern that wider streets outside the Station Area would into high-traffic thoroughfares for pass-through residents of surrounding communities.
  - Incorporate electric vehicle charging stations.
- **Pedestrian and bike infrastructure**
  - Safe bike and pedestrian infrastructure, separated from traffic, including safe crossings, extra-wide sidewalks, and secure bike parking. Some concern that putting more bicycles on busy streets is dangerous for both cars and bicycles.
  - Improve existing bike trails and minimize bike use on sidewalks.
  - Design for a walking/bike scale to support seniors and alternative transportation.
  - Develop consistent and continuous curb, gutter, sidewalk in right-of-way throughout the station area.

- **Neighborhood connections**
  - More connections from downtown Kirkland to the BRT station and to neighboring communities. Suggestions include:
    - Shuttle service, possibly electric buses.
    - Rail or streetcar access.
    - Links to the Cross Kirkland Corridor.
    - Gondola or funicular.
    - Pedestrian and bike bridges over I-405.
  - Improve dedicated alternative transport (bike/walk/e-scooter) through dedicated bridge/overpasses.

Environment and Open Space

- Green development
  - Development should be electric-only to phase out fossil fuels and minimize GHG emissions.
  - Support or require net zero development or provide credit for onsite power generation (solar).
  - Incentivize rainwater capture, onsite greywater reuse to reduce grid stress and minimize runoff, impervious surface, stormwater issues associated with increased density.
- Parks and open space
  - Create shared public park space around the new developments to encourage community interaction. Include green community areas such as walkways, parks, pea patches, pocket parks, wetland interaction.
  - Provide lighting, benches, and covered outdoor areas. Consider amenities like natural gas fireplaces.
  - Incorporate recreation such as a play area for children or a dog park.
  - Incorporate more tree cover. Maintain old-growth trees and established urban forests.
  - Pave the Cross Kirkland Corridor.
  - Add a lid over I-405
  - Roof-top public spaces on buildings over 150 ft
  - Urban design elements that provide identification and wayfinding.
- Noise pollution due to traffic.

Economic Development and Employment

- Importance of jobs in the station area, including for workers with middle incomes. Wages should allow Kirkland workers to live in Kirkland.

- Mixed-use space should be accessible to service businesses, not just retail that only high-cost vendors can afford. Concern about displacement of small local businesses. Provide support for downtown parking during construction to support local businesses.
- Support for maintaining Costco in its current location.
- Impacts of long-term work from home as economy changes post COVID-19. Will office buildings still be needed?
- Provide incentives like deferred taxes or permits for black owned businesses and other minority owned businesses to come into the area.
- Support unique shops, experiences, gathering spaces, and restaurants near the BRT that would draw customers from outside Kirkland. Make parking free to support retail business customers.
- Sidewalk storefronts create interest on a walkable scale. Business may not want storefront at 85th Hillside.
- Hold Google to a higher responsibility in the community.

Aesthetics

- Strong interest in public art that represents Kirkland and creates an inclusive and welcoming space, including art by black, Indigenous and people of color (BIPOC) artists.
- Design standards. Contemporary look that is distinctive.
- Create a stronger Kirkland identity by adding a welcome at the entrance to Kirkland. Add wayfinding signage.
- Plantings for year-round visual interest
- Support for maintaining public north-south sweeping views of nature and the Olympic Mountains. Concern that development would create permanent loss of views.

Neighborhoods

- Neighborhood preservation. Some comments expressed disinterest in preserving the existing neighborhood.
- Concerns about how parking will impact neighborhoods.

Services and Infrastructure

- **Amenities:** Restrooms, garbage cans, and compost bins for pedestrians and transit riders. Variety of cuisines and cultural offerings.
- **City staffing:** Hire more BIPOC City personnel and police.
- **Emergency services:** Concern that emergency services like the fire department will need to accommodate growth.

- **Facilities:** Interest in a subsidized space for child and elderly care services within new developments. Community center with athletic and flexible spaces to support health, wellness, gathering, education. Communal meeting rooms open to public use. A community bulletin board
- **Funding:** Concerns about taxes and bonds. Desire for developers to pay for increased services needed to accommodate growth.
- **Homelessness:** Dedicated spaces for addressing homelessness
- **Schools:** Need for additional schools and school funding to support increased density. Include daycares in office buildings to support workers' use of public transit.

Overall process concerns and questions

- Concern about project budget.
- Questions about how the plan will address long-term COVID-19 impacts. Need for a flexible plan to adapt to unanticipated future needs.
- Questions around how the SAP would integrate with Redmond's or Bellevue's plans.
- Questions about the definitions of the project objectives, affordability, and inclusivity.
- Concern about perceived biased survey wording. Confusion around survey design and questions, especially with language in the transportation mitigation section (e.g., "midblock connections"). Desire for additional outreach to share survey with more people.
- Requests for charts to be reformatted for accessibility by people with vision impairments or color blindness.

C Written Comment

Stakeholders and members of the public submitted written comments during the Draft Supplemental Environmental Impact Statement (DSEIS) comment period. The City received 114 written comments from individuals, corporations, small businesses, and organizations, one regional transportation district, and one State agency. Exhibit 20 shows a full list of commenters.

Full copies of these comments will be posted on the City's project webpage. Detailed responses to comments will be provided in the Final SEIS.

Exhibit 20. Individuals and entities that submitted written comments

Commenter	Commenter Affiliation
Jason Bendickson	Salt House Church
Marc Boettcher	MainStreet Property Group LLC
Brian Buck	Lake Washington School District
Colleen Clement	People for Climate Change - Kirkland
Paul Cornish	Sound Transit
Lisa Hodgson and Dylan Counts	Washington State Department of Transportation
John McCullough	Lee Johnson
Mark Rowe	Google
Mike Anderson	Individual
Anne Anderson	Individual
Yasminah Andrilenas	Individual
David Aubry	Individual
Anna Aubry	Individual
JoAnne Baldwin	Individual
Preetesh & Heena Banthia	Individual
Christy Bear	Individual
Brad Beckmann	Individual
Brandon Bemis	Individual
Mari Bercaw	Individual
Christy Bibler	Individual
Seth Bibler	Individual
Jennifer Bosworth	Individual

Commenter	Commenter Affiliation
Margaret Bouniol Kaifer	Individual
Peder Brakke	Individual
Curtis Brown	Individual
Margaret Bull	Individual
Carl Burch	Individual
Susan Busch	Individual
Peggy Bush	Individual
Sylvia Chen	Individual
Lisa Chiappinelli	Individual
Sharon Cox	Individual
Susan Davis	Individual
Christine Deleon	Individual
Robbi Denman	Individual
Ken & Jill DeRoche	Individual
Jivko Dobrev	Individual
Bari Dorward	Individual
Keith Dunbar	Individual
Paul Elrif	Individual
Lana Fava	Individual
Alice Fleck	Individual
Syd & Margaret France	Individual
Kathy Frank	Individual
Jill Gough	Individual
Betty Graham	Individual
Brian Granowitz	Individual
Gayle Gray	Individual
Matt Gregory	Individual
Boaz Gurdin	Individual
Kathryn Hammer	Individual
Kirsten Hansen	Individual
Brian Harper	Individual
Jess Harris	Individual

Commenter	Commenter Affiliation
Christine Hassett	Individual
Brad Haverstein	Individual
Mark Heggenes	Individual
Matt Holle	Individual
Jeffrey Hoyt	Individual
Stephanie Hurst	Individual
Kathy Iverson	Individual
John Janssen	Individual
Jill Keeney	Individual
Erika Klimecky	Individual
Teri Lane	Individual
Leah Lang	Individual
Paula Lavin	Individual
Jim & Sandy Lazenby	Individual
Patty Leverett	Individual
Andy Liu	Individual
Peter & Janice Lyon	Individual
David Macias	Individual
Ken MacKenzie	Individual
Angela Maeda	Individual
David Malcolm	Individual
Beverly Marcus	Individual
Cheryl Marshall	Individual
Ingrid Martin	Individual
Carolyn McConnell	Individual
Bob McConnell	Individual
Dave Messner	Individual
Doug Murray	Individual
Erik Oruoja	Individual
Louise Pathe	Individual
Kara Peitila	Individual
Bruce & Heidi Pelton	Individual

Commenter	Commenter Affiliation
Robert Pope	Individual
Scott Powell	Individual
Cindy Randazzo	Individual
Matthew Sachs	Individual
Kim Saunders	Individual
Rachel Seelig	Individual
Susan Shelton	Individual
Taylor Spangler	Individual
Katie Stern	Individual
Karen Story	Individual
Kent Sullivan	Individual
Jeanne Tate	Individual
Paula Templin	Individual
Susan Tonkin de Vries	Individual
Elizabeth Tupper	Individual
Al Vaskas	Individual
Don & Jane Volta	Individual
Susan Vossler	Individual
Dan & Cass Walker	Individual
Vivian & Robert Weber	Individual
Brad Weed	Individual
Steve Wilhelm	Individual
Bob Willar	Individual
Oksana Willeke	Individual
Scott Willeke	Individual
Macy Zwanzig	Individual
Syd [No last name given]	Individual
Tony [No last name given]	Individual

Source: BERK, 2021.

Across activities, comment themes include but are not limited to:

- Preferences for or opposition to Alternatives 1, 2, or 3, or elements of them (e.g. level of growth and height)
- Increasing affordable housing
- Requiring energy efficiency
- Incorporating public green spaces
- Addressing school capacity and needs
- Mitigating traffic through managing growth, operational improvements, or capital improvements
- Appropriate building heights and transitions to other residential areas
  - Some requests in particular areas wished to retain lower heights in NW and SW quadrants
  - Concern about maximum heights east of I-405 as well as support for heights east on I-405
- Requests for more information on traffic, parks, schools, power

Exhibit 21. Key Words DSEIS Comments

D Service Provider Work Group

Representatives from four service providers with clients in the Station Area joined a virtual roundtable discussion on February 2, 2021 to learn about the Station Area Plan and provide input about how the plan can support client needs. Attendees are noted below. Allison Zike from the City of Kirkland delivered a brief presentation about the Station Area Plan and the planning process, including an overview of the three alternatives presented in the DSEIS. Following this presentation, participants engaged in a roundtable discussion about how their clients use the Station Area and their top concerns and hopes about the outcomes of the Station Area Plan. For details, see the full agenda at the end of this document.

The two meeting objectives were to:

1. Gather input on three draft alternatives from service providers who represent clients who use the Station Area and are experiencing housing insecurity, food insecurity, or low incomes.
2. Build project awareness among service providers.

Attendees included the following service providers and Project Team members:

- **Service Providers**
  - **Hopelink Kirkland:** *Cindy Donohue, Center Manager***.** Clients mostly use the SA through interchanging on buses to Kirkland or Redmond centers.
  - **New Bethlehem Day Center and Catholic Community Services:** *Amber North, Program Manager***.** Amber will be project manager for new shelter for families and women. Clients use the service area near the shelter to do most of their shopping, errands, and connect to other places for services.
  - **Sophia Way:** *Eric Ballentine, Vehicle Outreach & Lead Housing Case Manager***.** Clients use the SA to connect to Helen's Place shelter in Bellevue. Transportation and transit are a main focus.
  - **Salt House Church:** *Pastor Ryan March and David Trice, Church councilmember***.** Church neighbors LWHS and Kirkland Place. COVID-19 pandemic and resulting remote worship has created a much wider community, but focus is on service and advocacy.
- **Project Team**
  - Allison Zike, City of Kirkland
  - Erin Ishizaki, Mithun
  - Julia Tesch, BERK Consulting

Summary of Input

Each service provider identified their most important theme(s) about the Station Area Plan:

- *Sophia Way*: **Affordability.**
- *Hopelink*: **Affordability and access to services.**
- *Amber*: **Affordability, access, and "small town" feel that includes open spaces.**
- Salt House: **Equity and affordability.**

Transit is also a main priority for clients:

- "Right now, about 20% of the women [who Helen's Place serves] have cars. Increasing transit will be a great thing."
- "The Day Center use can sometimes be more car-dominant – often people who are unsheltered and in Kirkland stay in their cars in safe parking place…. Even if people have cars, they're not always working cars. They need to be able to park that car and also access the transit."
- "Many clients who use public transportation have to walk up to 2 miles to get to City Center, and up to half of that has no sidewalk. They're walking past big trucks, it's pretty scary, and they may have groceries. Used to have a bus system that came to the center, but that's been eliminated. Since then, it's been a nightmare."

Amber North recommended three projects that could provide additional insight:

- Lake Washington United Methodist Church Safe Parking program. Has a long-term connection to Kirkland and familiarity with the program's long-term overflow problem, requiring people to park on the street.
- An affordable housing project being developed in conjunction with commercial development and the Redmond Together Center.
- Homeless Youth Services at Friends of Youth could provide information about the development of the youth shelter.

Questions from Attendees

- What are the drivers of the city planning piece in terms of what the City envisions?
  - **Answer**: Main driver is that we expect the Puget Sound region will continue to grow and a lot of that growth is coming to Kirkland. The biggest driver of the SAP process is that we have a great opportunity to

locate anticipated growth with access to transit with the introduction of the BRT station. If growth will happen, how can we guide it to make sure it fits the community's vision?

- Can you explain where affordable housing fits within the scope of these plans?
  - **Answer**: We've issued an EIS, which looks at a lot of different elements like housing, land use, transportation, several environmental factors. Then it tests the impacts of each of these elements at different levels of growth. E.g., if we introduce X new housing units, how much affordable housing can we expect? Kirkland currently has inclusionary affordable housing in most zones, which requires a certain number of affordable housing units in new development. In this EIS, we could be more aggressive with that. We have some proposals for different options that could be integrated into the final plan, like including commercial linkage fees or requiring inclusion of more than 10% affordable housing. Want to know: what level of interest do we have in the options we've put out there to get more affordable housing in the community? Do we have support? Do we have other ideas? Where do other people want to see affordable housing?
- 120th Ave NE, where Salt House is located, gets super congested, especially when school lets out. You mentioned a blue and green road. What does that mean?
  - **Answer**: A blue and green street looks at how to handle stormwater. One concept might be a bioswale integrated into the street that can carry stormwater, create more separation between vehicles and pedestrians, and create more visual interest for pedestrians. We need to look for more creative ways to handle additional stormwater runoff.
  - **Answer 2**: A regular street except there's more space in the planting/landscape area to handle more stormwater. A nicer experience for walking, biking. A street with a nicer streetscape.
- Can you speak to the addition of larger buildings, parking, and congestion?
  - **Answer**: This is one of the impacts we're looking for in the EIS. If we have buildings up to 20 stories, there will be more people and potentially more cars. First and foremost: How can we make this the best transit-oriented district by setting up a framework to make it easy for people to get around that doesn't rely on cars? Any new development will need to include mitigation.
- **Follow-up question**: Will street parking go away? Street parking is important for Salt House because it has a small parking lot. Parking needs to be developed. Already tight. If the school didn't allow for parking in their lot,

would be tough.

- **Answer 1**: In the planning stages of the new shelter, the parking capacity of the people using it includes the street. That was a part of the parking permit plan for the shelter.
- **Answer 1**: Alternative 3 includes the analysis of a new parking facility as a potential mitigation measure.

– What are mid-block pathways?

- **Answer**: Especially north of 85th – where Petco site is, blocks are large. As those areas develop, would look at creating more pedestrian connections to make it easier for people to get around on a more micro level.

– What is happening with Google?

- **Answer**: Lee Johnson site is under contract (but nothing yet bought or sold). We would imagine potential for some office. Planning process is looking at total number of office and residents as calculations. Looking at total numbers of people, cars, and traffic that can relate to how many employees might be in an area. The plan for the City doesn't hinge on one company owning it over another.

– What's going into atmosphere, beauty, public art, aesthetic – the feel of the place?

- **Answer**: Some Zoning will get to better design of buildings and how they relate to the street and pedestrians. There's been interest in how to incorporate art and inclusive art into the place. Not yet sure how it'll play out – open to ideas.

E Meetings-in-a-Box

Eric Ballentine, Vehicle Outreach and Lead Housing Case Manager at The Sophia Way, hosted two in-person group sessions and a few one-on-one discussions to gather input from his clients on the NE 85th St Station Area Plan (SAP) Draft Supplemental Environmental Impact Statement. These meetings-in-a-box took place during the weeks of January 18, 2021 and February 5, 2021.

In total, 26 participants joined either session or a one-on-one discussion. All participants were women experiencing homelessness. About one-third were full-time employed and about two-thirds have received disability or have a disability claim filed. Participants' ages ranged from approximately 30-70 years, with a large proportion ages 55 and older.

Summary of Input

How could the Station Area be safer?

- **Lighting:** both at the station and along pathways/roads to access the station.
- **Accessibility:** Kirkland has a lot of hills. Not as accessible – especially for older women – for people to use public transportation. Often a deterrent. Some people have disabilities but aren't qualified for [King County Metro] Access. People with walkers could use more ramps and support to access sidewalks (e.g., mid-block crosswalks). Transit station curbs are typically especially difficult because they are raised to accommodate the bus.
- **Blue emergency call box:** at the station, as a lot of Sophia Way clients don't have cell phones.
- **Spaces to spend time outside the station**: If there will be high-traffic pedestrian zones nearby, include an area for people to wait that's near the station, if they don't feel safe at the station itself. Ideally, a high area of walkability to hang out while waiting for the bus.

What are the key transportation features that should be included in this area?

- **Pedestrian connections** with lighting.
- **Ramps** for people with walkers.
- **Benches with lighting** – take a break while walking.
- **Restrooms** – many neighboring businesses won't let people use the restroom without buying something. For older women, this can be a major issue.

What are the key housing features that should be included?

- **Senior community living that's affordable**. A strong sense of community is especially important. Many of Sophia Way's older women clients get along with one another and would like to have affordable living together for seniors.
- **Parking**. Some people work in Seattle. Want a potential park & ride option. With the bus station, will there be more bus routes therefore making housing in Kirkland more accessible? Sophia way gives bus tickets.

What employment supports should be included in this area?

- **More jobs in the area**. Entry-level positions, but not necessarily low-paying service jobs.
  - New Bethlehem is right below Sophia Way. A broad range of people experiencing homelessness – not just older women. There is a need for professional development/growth opportunities.
  - Walkability to work, access to healthcare needs.
- **Affordable living with a decent wage** to live in the area that you work. Especially important.
- **Jobs to supplement incomes of people with fixed incomes/disability.** Most people on fixed income/disability receive around $850, more broadly between $700-$1100. Need a decent job to supplement income, whether part-time or full-time, combined with affordable housing.

What are the most important needs for youth in this area?

- No specific conversation around this, though it can be challenging for youth experiencing homelessness.

Anything else?

- **Primary takeaway: Public space.** It's hard to experience homelessness and to be stuck in a shelter all day. People really enjoy having really nice public space areas, whether it's a park, water fountain, or a dog park. Loitering can be an issue sometimes, but don't think this is as big of an issue in Kirkland.

F Lake Washington High School Student Presentations

Students from two economics classes taught by Ms. Bethany Shoda at Lake Washington High School engaged in a monthlong project to learn about the SAP and to provide input during the comment period. Members of the project team joined eight class sessions (four per class) in December 2020 and January 2021 to teach and support students in the project. During the project, students reviewed project materials, participated in public meetings, interviewed community members, hosted meetings-in-a-box, analyzed the three DSEIS alternatives, and developed their own preferred alternatives.

The project culminated with student presentations of their preferred alternatives to members of the Kirkland City Council and of the Project Team. Councilmembers and Project Team members in attendance at each final presentation are noted in Exhibit 22.

Exhibit 22. Councilmember and Project Team Attendance at Student Final Presentations

Class Session 1: Thursday, January 21	Class Session 2: Friday, January 22
City of Kirkland Deputy Mayor Jay Arnold	City of Kirkland Councilmember Toby Nixon
City of Kirkland Councilmember Jon Pascal	City of Kirkland Councilmember Neal Black
City of Kirkland Councilmember Kelli Curtis	City of Kirkland Councilmember Amy Falcone
Adam Weinstein, Planning and Building Director, City of Kirkland	Jeremy McMahan, Deputy Planning Director, City of Kirkland
Julia Tesch, Associate, BERK Consulting	Allison Zike, Senior Planner, City of Kirkland
	Julia Tesch, Associate, BERK Consulting

Source: BERK, 2021.

Summary of Input

Students' presentations demonstrated that they had engaged deeply with project materials. Councilmembers asked students challenging and thoughtful questions, which offered students the opportunity to clarify their ideas and provide additional detail. Students' opinions varied, reflecting the diversity of opinion community members shared at the open house.

Overall, many students supported moderate change, with Alternative 2 receiving the most support. However, all three alternatives received support from different student groups, and yet other groups created custom preferred alternatives that drew from existing alternatives or incorporated original elements.

Student Presentations

Student Group 1

- Key takeaways:
  - Preferred alternative includes mobility and environmental elements from Alternatives 2 and 3, and infrastructure and development elements from Alternative 1.
  - Emphasis on more bike and walking infrastructure, including for youth and ADA accessibility.
  - Addition of parks, including dog parks.
  - Infrastructure should focus on green development and smaller buildings.
- Questions:
  - Can you describe your concerns about the growth in Alternatives 2 and 3?
    - Answer: Concerns about increase in height of buildings.
  - When you graduate college, what is your future in the City of Kirkland?
    - Answer: Youth see Kirkland as a stepping-off place to launch their adult lives, potentially outside Kirkland.
  - Where in the Station Area would be a good location to add parks?
    - Answer: Should be close to houses and communities. People typically visit parks within walking distance of their homes.

Student Group 2

- Key Takeaways:
  - Interest in increasing housing diversity.
  - Need to balance growth with maintaining a small-town feel.
  - Want to avoid City of Kirkland being a "pass-through" town for other larger destinations like Bellevue and Seattle.
  - Preferred alternative is Alternative 2.
- Questions:
  - What (if anything) is good about tall buildings?
    - Answer: More retail space and residential units. Group's opinion is based in personal preference and experience.
  - Are you interested in auto infrastructure, or do you prefer alternative

modes of transportation?

- Answer: Don't value driving as much as earlier generations. Priority is to simply reach the destination, rather than caring about the mode of transportation. If there's enough time to reach a destination by foot or bike, would choose that mode.

- Have you had discussions about the importance of having jobs in Kirkland?
  - Answer: Especially now during the COVID-19 pandemic, many people are out of work. It will take time to establish a new sense of normal. More jobs in Kirkland will lead to more residents and more diversity. It will bring a desirable amount of change.

- What amenities are missing in Kirkland that you'd like to see here?
  - Answer: A "go-to" place that's the clear space to spend time.
  - Follow-up question: How do we build that kind of place?
  - Answer: Takes some growth and experimenting. Getting more ideas from residents – what do they value in the city? What do people from out-of-town want to see? Could be a tourist attraction where people go to take pictures. Instagram is popular, so consider a park with statues and art for people to spend time and listen to music. An outdoor activity that combines music and photography could gain people's interest.

Student Group 3

- Key takeaways:
  - Interviewed a business employee who lives in the Station Area.
  - Environmental protections and mitigation are important.
  - Equity is one of the primary goals of the plan.
  - Alternative 1 does not meet project objectives. Alternatives 2 and 3 do.
  - A con of Alternative 1 is that it creates housing scarcity [Note – this is an amendment from a misspoken remark during the presentation.]
  - Preferred alternative: Alternative 2 with addition of environmental protections of Alternative 3
  - Want to allow for growth near transit without disturbing surrounding areas, increase transit connections, environmental sustainability, and diversity of housing and communities.
- Questions:

- How did you draw connections between new housing and gentrification?
  - Answer: Personal experience. Have lived in Kirkland for 10 years and seen people leave their homes because new apartment buildings with higher rent have increased housing costs.
- What are you thinking along the lines of additional environmental regulations?
  - Answer: Liked the ideas of Alternative 2, but also liked the environmental points from Alternative 3. Preferred alternative uses the points from Alternative 2 but incorporates environmental points from Alternative 3 that benefit the area. Specifically, liked the stormwater infrastructure, green building design, intensive green streets.
- People will need to take the bus to make this work. What can we add to the plan to draw people to the bus station, especially from a student perspective?
  - Teacher answer: Live up north of Kirkland because can't afford to live in Kirkland. Would live in Kirkland if could afford and would take transit if it were available. When commuted into the building before COVID-19, would drive 1 hour into school and 1.5 hour home. Transit stations up north have amenities like coffee shops and waiting places – this is a great amenity as a commuter.
- Did your group discuss the potential impacts to schools and education as new residents arrive? Currently seeing that in LWSD – have crowding in schools, lack of space.
  - Answer: LWHS has built a new wing, new gym, Rose Hill Elementary has a new wing. Schools are growing capacity, but this will only address growth to date. Lakeview Elementary will probably have more students, which are currently supported by portables.

Student Group 4

– Key takeaways:

- Alt 1: pros include residential housing and office development, but cons include limited street improvement and no low-income/affordable housing.
- Alt 2: pros include affordable housing, bike infrastructure and sidewalks, stormwater improvements, and green infrastructure. Cons include a failure to reduce all parking requirements for mixed-use zoning and no residential housing construction.

- Most people interviewed favored alternative 2.
- Alternative 3: No one favored.
- Preferred alternative: Limited version of Alternative 2. Mixed-use structures up to 8 stories that include affordable housing. Infrastructure improvements to sidewalks and bike lanes, trees, green infrastructure.
  - Pros: Accommodates predicted growth, creates affordable housing, implements green infrastructure, and improves sidewalks and bike paths.
  - Cons: Could lead to scarcity in housing or waste money if changes don't adequately address growth.
- Don't want high rises but do want to accommodate growth.

– Questions:

- We often hear "we don't want Kirkland to be another Bellevue." What is it about Bellevue that is bad?
  - Answer: It's a matter of urbanization. Bellevue isn't bad in and of itself, but Kirkland and Bellevue are different places in terms of their size as a city. Kirkland is more of a suburban area and Bellevue is more of a city, at least in the downtown area. People want Kirkland to remain like a suburban area.
- Did you come across the internal conflict of wanting to encourage types of growth – like more affordable housing, that allows workers to live near where they work – and not wanting to see growth? Is there a conflict between avoiding growth but achieving the economic incentive for more affordable housing?
  - Answer: Yes. There's a challenge between balancing keeping an area suburban and accommodating for growth. There will likely be an influx of people into the city, and we need to accommodate them at least to some extent.

Student Group 5

– Key takeaways:

- Alt 1: Pros are limited construction work and keeping things like they are. Cons are that it doesn't account for future development, limited bike lanes and walkways, and no stormwater improvement. This alternative does not meet project objectives.
- Alt 2: Pros are that it enhances existing bike lanes and walking, improves stormwater, and predicts some growth. Cons include no major

improvement and not enough bike lanes. This alternative meets project objectives.

- A comfortable transformation, with a livable atmosphere. But not too extreme.

- Alt 3: Pros include addressing predicted growth, inclusion of green buildings, new retail near the transit center, major stormwater improvements. Cons include obscured skyline and lots of construction. This alternative meets project objectives but makes other goals harder to maintain. Kirkland would become more connected but would require high maintenance to keep the City clean.
- Preferred alternative: Alternative 2. Offers enough development to support Kirkland's future population. Community engagement with others indicates strong support for Alternative 2.

– Questions:

- What does an inclusive district mean to you?
  - Answer: An area where everything comes together and everything is all together as one. Different types of people are all included. A mix of everything. Mixed-use buildings, stores, apartments, different types of buildings that meet everyone's needs.
- What would be a worthwhile public benefit that developers could provide in exchange for higher buildings?
  - Answer: Affordable housing, allowing people to be closer to their jobs (creates less pollution from commuting, less traffic), mixed-use buildings to create retail, restaurant, market space. That way, a person can live in an area and be completely sustainable without having to drive 30 minutes away to a grocery store.
- Does Kirkland have enough places for people your age to spend time?
  - Answer: Kirkland has a good amount of areas. Lots of parks on Lake Washington Avenue, parks in the Juanita area, new complex downtown (don't recall area). Station Area could provide a new desirable area along the lines of the downtown Redmond shopping area.

Student Group 6

– Key takeaways:

- Alternative 2 is the best option for Kirkland.
- Pros:

- Supports affordable housing and quality of life for current and upcoming residents. Job and population growth while still preserving the suburban feel.
- Moderate development with office buildings up to 10 stories.
- Additional bike routes and sidewalks on key streets to create additional transportation. Provides easier transit to areas near Seattle. Increased transit opportunities can also be fairer for young individuals or people with low incomes. Can make it easier for people to afford housing if they don't need a car – can build additional affordable housing. Incentives for green infrastructure.
- Reduced parking requirements for certain areas.
- Stormwater improvements. More trees, stormwater infrastructure for better water quality.

› Cons: Increased property values, causing a lot of people to have to move out of the area because they won't be able to afford their apartment. A long transition period – a lot of work to be done. In moderate growth, it will take multiple years. People won't want to deal with construction and the traffic issues that go along with constructing bike paths and sidewalks over multiple years.

› Better than other alternatives because it encourages better transit for all to encourage more people to move there. Provides youth and people with lower incomes with access.

› Alternative 3 would make Kirkland residents very unhappy. Many people moved here because they want to raise families and enjoy a suburban feel. They choose Kirkland over Seattle and Bellevue for this reason. It's important to allow for growth but maintain this feel.

– Questions:

› What does the distinction between urban and suburban mean to you?

- Answer: Types of shops – e.g., big retail chain stores versus local small businesses. Important to stick to local businesses.

› *Where* should growth occur, given that growth is happening?

- Answer: All around Kirkland – e.g., Redmond, Seattle, Bellevue – there's options for significant growth. Kirkland is already so congested. Don't have a lot of roads, and they're often under construction. Is any growth attainable for Kirkland without making it so overpopulated that it becomes unenjoyable to live there?

Student Group 7

- Key takeaways:
  - Alt 1: Pros is that it's inexpensive. Cons include little to no development and that it won't fulfill the project requirements.
  - Alt 2: Pros include that it maximizes some goals of the project. Gives Kirkland the unique identity it wants. Area can have an increased amount of productivity. Cons: Doesn't meet all the goals of the project and might cause more traffic in the area.
  - Alt 3: Meets all project goals, as it expands job and housing opportunities. Gives opportunity to not use cars to reduce pollution and increase quality of life. Increased use of transit will provide additional revenues for the city. Sustainable option that uses land effectively. Most desirable option for people to move into the area. Cons include the cost, potential traffic, and limited parking space.
  - Interview: POC who is a transit rider. Preferred alternative is no action. Does not see buses as a good option for traffic and feels the area is already adequately developed. Buses get stuck in traffic and take time. Need transit that is faster and better for the environment – like rail or subway. Especially true because transit station is not expected to be ready for 10-15 years.[5]
  - Community engagement discussion with 6 residents: unanimous consensus for alternative 3. Biggest concerns around traffic, parking, and potential tax increases. A growing population in the area needs more space for students to be in schools. Overall, enthusiastic about the changes and growth with alternative 3.
  - Preferred alternative: Alternative 3. Meets all the project requirements and has greatest development in the City. Need to focus on reducing traffic and not to impact the streets.
- Questions:
  - What would you think about schools in urban settings, such as a high-rise, as opposed to portables?
    - Answer: I don't think an urban schooling system would be ideal. This would be farthest from what people want and a lot of change. Better to create more schools in the district or to expand existing schools.

[5] The BRT will be complete in 2025.

- Did your group discuss the addition of more families and students in the area?
  - Answer: All the schools in LWSD are always needing to expand. Students are having to go to school on campuses that are under construction. Disruptive to the school environment. Might be easier to add another school outside the Station Area.

Student Group 8

- Key takeaways:
  - Preferred Alternative: Alternative 1. Don't want to see Kirkland turn into another Bellevue.
    - Pros include: Modest office development, minor traffic/parking impacts, minor street work, and includes housing/job growth.
    - Cons include: limited landscaping, not enough construction to assist growing population, no stormwater improvements, no additional affordable housing, a limited amount of eco-friendly buildings, and no additional bike/pedestrian routes.
  - Group discussion: Talked with three youth.
    - Cons from Alternative 2 and 3: Didn't like the ideas of big buildings being constructed. Would change the characteristics of Kirkland – transition from the small community into a big city. But also didn't love that there wouldn't be any development.
    - Liked that Alternative 1 would allow some development, but not too much.
    - Pros of Alternative 2 and 3 include environmental awareness – green buildings, conservation of resources. Loved the ideas of new biking/walking paths because many don't have cars or driver's licenses and some can't afford to take buses.
  - Interviews: Interviewed two stakeholders.
    - A business owner who preferred Alternative 3 as it creates more jobs and opportunities for people in Kirkland.
    - A renter who preferred Alternative 1 as it creates minimal disruption, minimizes commercialization, and limits construction.
    - Both interviewees agreed that the project is meeting project goals. Both were concerned about the length of the project.
- Questions:

- Are there specific reasons that people are concerned about big buildings? Is there a certain type of building that people called out?
  - Answer: No mention of a specific building, but many people felt that communities like Bellevue have their own aesthetic and character, and Kirkland has its own too. Concern was about taking in the characteristics of big buildings because it changes how the city works, how we get around, and what kind of shops and businesses come into the area.
- One difference between Bellevue and Kirkland is that Bellevue can explore an aquatic center (something Kirkland wants too) in part because it has more resources due to taxation. New jobs and new housing and commercial development in the Station Area could contribute to the resources that Kirkland has, bringing it more in line with Bellevue. What does this group think about these kinds of public benefits?
  - Answer: Those public benefits would be nice, but people choose to live in Kirkland because of what Kirkland has. People like that it's smaller, it has more of a homey feel. Would live in Bellevue if wanted those resources. Losing the soul of Kirkland isn't a fair price to pay.

Student Group 9

- Key takeaways:
  - Five major community concerns include:
    1. Where will funding come from? What is the necessity of major spending?
    2. Tall buildings blocking views of Lake Washington.
    3. Negative environmental impacts.
    4. Traffic.
    5. Overcrowding in parking in neighborhoods.
  - Alternative 1:
    - Pros: environmentally friendly, cheap, low building heights.
    - Cons: Rapidly run out of housing, housing prices will increase, traffic will only get worse, lack of improvement to bike lanes and sidewalks.
  - Alternative 2:
    - Pros: Moderate residential and office development, less parking requirements, additional path and walkways, sidewalks, bike lanes.

- Cons: less parking, less environmentally friendly, and expensive. Concerns around uncertainty about eventual cost.

› Alternative 3:

- Pros: Allows the most growth to support TOD, including significant housing production, bike facilities, sidewalks, parking facility, and new environmental standards.
- Cons: Most expensive, doesn't address traffic, height of buildings, and significant housing production without affordability will attract more outside buyers. This isn't what the current residents of Kirkland wants or needs.

› Preferred alternative: A mix of Alts and 2. Additions not in either include:

- Build underground parking garages.
- Add electric scooters to be more environmentally friendly.
- Pros: environmentally friendly, little change to development policies, some housing development, some bike lane/sidewalk development. Cons are expensive and more traffic, but costs are inevitable.
- Helps meet initial goals of development and equity access. Doesn't infringe on traffic and parking access.

– Questions:

› What do you think will be the role of cars in Kirkland 20 years from now?

- Answer: Cars will still be the main option for transportation. It's unrealistic to expect a lot of people to take transit. Cars are so much easier and so much more effective. There are a lot of areas to get to in Kirkland that transit can't access. Most people who use BRT will be the same people who use affordable housing and are limited to the transportation that's available. People who currently have opportunities to use cars will continue to use cars.

› What have been your conversation around active transportation? E.g., people who choose to bike or walk instead of using cars.

- Answer: A lot of the conversations were structured around a theoretical approach around the importance of additional sidewalks and bike lanes. But when you break it down in a practical sense, most people will still choose to travel by car. They might prefer sidewalks when considering other members of the community, but they have more questions around traffic and parking for their own lives.

G City Staff Presentations at Virtual Community Organization Meetings

In the weeks leading up to, and during, the DSEIS public comment period City staff accepted several invitations to present information about the Station Area Plan to various community organizations. Community organization meetings were all held virtually and attended by Senior Planner Allison Zike and/or Planning & Building Deputy Director Jeremy McMahan. Staff presentations generally included a NE 85th St Station Area Plan project introduction, a summary of the three DSEIS alternatives, information about how to provide DSEIS comments or otherwise engage with the project, and responses to questions from the respective membership. Below is a list of community organization meeting presentations and dates that were associated with the DSEIS phase of the project.

- September 21, 2020: North Rose Hill Neighborhood Association
- October 14, 2020: Kirkland Alliance of Neighborhoods
- November 9, 2020: Moss Bay Neighborhood Association
- November 18, 2020: Highlands Neighborhood Association
- December 1, 2020: Everest Neighborhood Association
- December 16, 2020: Highlands Neighborhood Association (with Washington State Dept. of Transportation and Sound Transit staff)
- January 13, 2021: Kirkland Alliance of Neighborhoods
- January 18, 2021: North Rose Hill Neighborhood Association
- January 25, 2021: Kirkland Chamber of Commerce
- February 3, 2021: Norkirk Neighborhood Association

11.9

Appendix — High performance Buildings and Sustainability Protocols

Kirkland Station Area Plan:
High-Performance Buildings & Sustainability Protocols

Revised: April 19, 2022

SUBMITTED BY:

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Goals of Study

Establish a protocol comparison utilizing two sample projects based on typical development in the Puget Sound region in an urban, transit-oriented area.

One project represents a housing complex and the second represents a commercial office space featuring ground-floor retail. The sample buildings will be evaluated using multiple sustainability protocols for high-performance buildings.

The comparison between sustainability protocols supports the City of Kirkland's investigation of High-Performance Building Standards Zoning Code Amendments[1], and the adoption of new standards that may align future development with the City's Sustainability Master Plan (SMP).

This is a comparative analysis of sustainability protocols to a baseline of a code-compliant building in Kirkland. The deliverable from this activity is:

1. Documentation of side-by-side paths for sustainability protocol compliance
2. Evaluation of comparable levels of certification, e.g. LEED Platinum, Built Green 4 Star, etc.
3. A guide to determine where Kirkland might fall within the regional benchmarking.

This deliverable will provide the City of Kirkland with information about the implementation of the SMP goals for Net Zero Energy building certification and help calibrate the Green Innovation Development Standards baseline requirement and incentive program recommendations.

Using the sample project, compare the protocols using the following metrics:

- Strategies for prescriptive Green Building Protocol Compliance, tracked via Scorecards[2]:
  - Living Building Challenge v4 for both New Construction as well as Multifamily typologies
  - LEED New Construction v4, targeting the Platinum level: **80 points** total and a 4-point buffer
  - LEED for Homes Multifamily v4, targeting the Platinum level: **80 points** total and a 4-point buffer
  - Built Green 4-Star v2021, targeting the 4-Star level: minimum **400 points** (**60 points** from Sections 2-5 and a 7-point buffer in each Section)
  - Passive House v2021 for both New Construction as well as Multifamily typologies
  - Salmon Safe for both New Construction as well as Multifamily typologies[3]
- Evaluation of Comparable Levels of Certification
- Soft Costs ROM (Rough Order of Magnitude)
- Hard Costs ROM (Rough Order of Magnitude)
- Design & Construction Impacts

[1] City of Kirkland, "High Performance Buildings Standards Zoning Code Amendments, File No. CAM22-00046." February 17, 2022.
[2] See ***Appendix*** for fully completed Scorecards per Protocol
[3] Information regarding Salmon Safe is seen in the Commercial typology due to formatting.

Code Compliance Assumptions

The following code and building development assumptions set a baseline for features of a building that are evaluated across multiple protocols.

Category	Residential Multifamily	Commercial Office

Parking	• For proposed Station Area zoning, assume:
	  • Residential: 1 stall per unit
	  • Retail: 3 stalls per 1,000 GSF (first 2,000GSF exempt)
		• For proposed Station Area zoning, assume:
		  • Office: 2 stalls per 1,000 GSF
		  • Industrial: 0.5 stalls per 1,000 GSF
		  • Retail: 3 stalls per 1,000 GSF (first 2,000GSF exempt)
		  • Restaurant: 5 stalls per 1,000 GSF (first 2,000GSF exempt)

Bike Parking	City of Kirkland Construction Code, Bicycle Parking [4] • **1:12** bike-to-vehicle parking stall ratio • Located **within 50 ft of an entrance** and **under a covering**	City of Kirkland Construction Code, Bicycle Parking • **1:12** bike-to-vehicle parking stall ratio • Located **within 50 ft of an entrance** and **under a covering**

Green / Alternative Fuel Vehicles	Kirkland High-Performance Building Code
	  • 10% of parking stalls feature EV charging
	  • 20% of parking stalls are EV-ready
	  • 100% of bike parking stalls feature electrical outlets
		Kirkland High-Performance Building Code
		  • 10% of parking stalls feature EV charging
		  • 20% of parking stalls are EV-ready
		  • 100% of bike parking stalls feature electrical outlets

Indoor water use	Washington Administrative Code – Plumbing fixtures and fixture fittings[5] • Water closets (toilets): **1.28 GPF** (gallons per flush) • Showerheads: **1.8 GPM** (gallons per minute) • Private lavatory faucets: **1.2 GPM** • Kitchen lavatory faucets: **1.8 GPM**	Washington Administrative Code – Plumbing fixtures and fixture fittings • Water closets (toilets): **1.28 GPF** (gallons per flush) • Showerheads: **1.8 GPM** (gallons per minute) • Private lavatory faucets: **1.2 GPM** • Kitchen lavatory faucets: **1.8 GPM**
Outdoor Water Use	**2019 Stormwater Management Manual for Western WA**	**2019 Stormwater Management Manual for Western WA**
Energy code	**2018 WA State Energy Code**	**2018 WA State Energy Code**
Indoor Environmental Quality	**2018 WA State Building Code–** Chapter 12 Interior Environment	**2018 WA State Building Code –** Chapter 12 Interior Environment

[4] City of Kirkland Construction Code, KZC Chapter 105 – PARKING AREAS, VEHICLE AND PEDESTRIAN ACCESS, AND RELATED IMPROVEMENTS (codepublishing.com)
[5] Washington Administrative Code, WAC 51-56-0400:

Sample Project Data

From the baseline assumptions above, two sample projects are demonstrated below. The most cost-efficient path was utilized to meet code compliance.

Sample Building	Residential Multifamily	Commercial Office
Basic Information	• **Applicable Codes**: 2018 WSEC/WSBC/WSMC • **Stories:** 7 (+2 levels below-grade parking) • **Number of Units and Occupants**: 385 units, 1105 occupants • **Square footage:** 492,330 • **Residential Parking Stalls Required:** 383 • **Residential Parking Stalls Provided: 557 stalls** • **Commercial Parking Stalls Required:** 35 • **Commercial Parking Stalls Provided:** 53 • **Bike Parking:** 110 racks • **EV Charging:** 61 stalls are EV-ready (10% of total)	• **Applicable Codes**: 2018 WSEC/WSBC/WSMC • **Stories:** 9 (+3 levels below-grade parking and roof-top deck) • **Occupant Count**: 700 occupants • **Square footage:** 244,000 sqft of office • **Parking stalls:** 207 • **Bike Parking:** 119 • **EV Charging:** 11
Systems	• **Units and Home Size Adjuster (HSA)**: 5.5 • 10 Studios, 105 1-Beds, 205 2-beds, 65 3-beds. • **Electric heat** • **No Cooling** • **Gas Domestic Hot Water** • **C406:** Dedicated Outdoor Air System (DOAS), required; 20% Lighting Reduction	• **HVAC:** Air-Source Variable Refrigerant Flow (VRF) • **Ventilation:** Rooftop DOAS, DX Cooling + Gas Furnace Heat • **Domestic hot water:** Electric Resistance water heaters • **C406:** 20% Lighting Reduction, Reduced Infiltration, 1 Point PV
Fixtures & Appliances	• **Water closets (toilets):** 1.28 GPF (gallons per flush) • **Showerheads: 1.8 GPM** (gallons per minute) • **Private lavatory faucets:** 1.2 GPM • **Kitchen lavatory faucets:** 1.8 GPM • **Refrigerators / Dishwashers / Clothes Washers:** ENERGY STAR	• **Water closets (toilets):** 1.28 GPF (gallons per flush) • **Urinal:** 0.125 GPF • **Showerheads:** 1.8 GPM (gallons per minute) • **Public lavatory faucets:** 0.5 GPM • **Kitchen lavatory faucets:** 1.8 GPM

Analysis Assumptions

- **Location:** Project is in the City of Kirkland located near a transit station. Density reflects the sample projects (i.e., projects which do not have density, access to transit, and community resources nearby would need to be evaluated differently).
- **Unit Size:** All residential units are below 1200 square feet**.**
- **Combustion Uses:** Gas fireplace is EPA Certified and installed with doors. Gas hot water heaters are designed and installed with closed combustion.
- This study has been conducted by selecting credits in each rating system that are the most cost-effective.

Parking and Electric Vehicle Charging

Transportation is one of the largest drivers of CO_2 emissions in the City of Kirkland. Transit-oriented developments address CO_2 emissions through strategies that reduce parking demand and transition behavior towards mass and active transportation modes. Several of the protocols outlined in the comparative analysis require and/or elevate strategies that reduce emissions from transportation through different methods. The table below demonstrates the following:

- The protocol's requirement to reduce parking stalls and provide for electric vehicles.
- The requirement of the proposed Station Area code on the sample project.
- The sample project's targeted design.
- The target that the sample project would need to design to achieve the protocol's credit.

Sustainability Protocol Parking and Electric Vehicle (EV) Charging Requirements

	Living Building Challenge v4 (LBC)		LEED Multifamily v4 Platinum	Built Green v2021 4 Star	LEED New Construction v4 Platinum
	Multifamily	Commercial			
Parking Stall Reduction	Reduce Single Occupancy Vehicle trips by 30% Employ at least four transportation demand management alternatives approved by the Living Building Challenge. **Multifamily Example** There is not a direct parking footprint impact as a result of LBC requirements for below-grade garages. However, LBC features multiple prescriptive measures for surface-parking lots.	Reduce Single Occupancy Vehicle trips by 30% Employ at least four transportation demand management alternatives approved by the Living Building Challenge. **Commercial Example** There is not a direct parking footprint impact as a result of LBC requirements for below-grade garages.	LEED for Homes does not provide credit for parking reductions.	Providing zero parking stalls achieves 10 points, which is a heavyweight in the Built Green scoring scheme. **Multifamily Example** • **Station Area:** Requires a minimum of 383 stalls for residents. • **Example:** Provides 557 stalls for residents. • **Built Green:** 4-star is achievable without reducing parking footprint.	**LEED states:** Buildings should not exceed local minimum code requirements • Projects in dense, transit-oriented areas must achieve **40% below** the base ratio provided by the Institute of Transportation Engineers. ITE base ratio recommends 589 stalls for the sample multi-family building. **Commercial Example** • **Station Area:** Requires a minimum of 357 stalls. • **Example:** Provides 207 stalls for occupants. • **LEED NC:** Requires max of 235 to achieve credit.

Sustainability Protocol Parking and Electric Vehicle (EV) Charging Requirements, continued.

	Living Building Challenge v4 (LBC)		LEED Multifamily v4 Platinum	Built Green v2021 4 Star	LEED New Construction v4 Platinum
	Multifamily	Commercial			
Electric Vehicle (EV) Charging	All projects must be "zero ready" such that EV stalls must be pre-wired for solar power supply. 1 EV charging stall per 30 spaces. Electric bike charging does not fulfill a requirement. **Multifamily Example** • **Station Area:** Requires a minimum of 34 stalls with EV chargers, and 78 stalls are EV-ready. • **Example:** Provides 58 EV-ready stalls for residents. **LBC**: Requires 19 EV chargers for residents.	All projects must be "zero ready" such that EV stalls must be pre-wired for solar power supply. 1 EV charging stall per 30 spaces. Electric bike charging does not fulfill a requirement. **Commercial Example** • **Station Area:** Requires 21 stalls that have EV chargers, and 42 are EV-ready. • **Example:** Meets Station Area code. **LBC:** Requires 7 EV chargers.	LEED Multifamily Innovation Design Credit requires 2% of stalls to feature EV charging. Electric bike charging does not fulfill a credit. Electric bike charging does not receive points. **Multifamily Example** • **Station Area:** Requires a minimum of 34 stalls with EV chargers, and 78 stalls are EV-ready. • **Example:** Provides 58 EV-ready stalls for residents. • **LEED Multifamily**: requires 12 stalls with EV charging.	Built Green requires 6 stalls feature EV charging infrastructure to achieve 20 points, which is the maximum points available for that credit. Electric bike charging does not receive points. **Multifamily Example** • **Station Area:** Requires a minimum of 34 stalls with EV chargers, and 78 stalls are EV-ready. • **Example:** Provides 56 chargers for residents **Built Green:** 6 stalls may be counted towards the point threshold, achieving a maximum of 20 points.	LEED NC requires EV infrastructure for 5% and EV-ready options for 10%. Electric bike charging does not fulfill a credit. **Commercial Example** • **Station Area:** Requires 21 stalls that have EV chargers, and 42 are EV-ready. • **Example:** Meets Station Area code. **LEED NC:** Requires 11 stalls with EV charging and 21 stalls are EV-ready.

Multifamily Protocol Comparison: Benefits

The following matrix provides a high-level, comparative summary of benefits for each Multifamily protocol and how they compare to standard code requirements. Where applicable, the High-Performance Building Code for the Station Area has been indicated as the code baseline.

One Star (★) if the protocol does not go beyond code requirements. Maximum five stars (★★★★★) awarded if protocol provides an opportunity to greatly exceed code or typical practices. *Note: The sample building used in this study may not take advantage of all opportunities to incorporate these comprehensive environmental benefits, based on credits selected to achieve the certification threshold.*

Benefit	Code Compliance	Living Building Challenge v4	LEED Multifamily Platinum v4	Built Green 4-Star v2021	Passive House v2021
Land Management (Preservation of land)	★	★★★★★ Required financial contribution to conserve land of equal area to project site.	★	★★ Option to set aside conservation easement equal to project size.	★
Energy (CO_2 emissions reduction)	★	★★★★★ **100% CO_2 emissions** reduced / year (Net Positive Energy)	★★ **21% CO_2 emissions** reduced / year	★★ **21% CO_2 emissions** reduced / year	★★★ **39% CO_2 emissions** reduced / year
Water (Potable water reduction)	★	★★★★★ **3.13 million gallons** reduced / year	★★★ **0.74 million gallons** reduced / year	★★ **0.57 million gallons** reduced / year	★
Transportation Reduce Vehicle Miles Travelled	★ 1 stall per unit	★★★★ Reduce SOV travel by 30%. Employ transportation demand management programs	★★★ Within ½ mile of high-frequency transit infrastructure; Adjacency to bike infrastructure, i.e. parking, protected lanes.	★★★ Option for parking stall reductions; multiple transportation demand management alternatives available.	★
Transportation EV Charging	★★★★ 10% features EV Charging. 20% is EV-ready.	★★★ 1 EV stall per 30 regular stalls		★★ Point system caps points earned at 20 points (6 stalls)	
Habitat (Developing sites that support ecosystems)	★	★★★ Native planting and tree preservation.	★★★ Native planting and tree preservation.	★★★ Optional strategies to preserve landscape and vegetation.	
Building Materials (Improve indoor air quality & reduce exposure to toxins)	★	★★★★★ Required limitations on use of VOCs. Required exclusion of "red list" products.	★★★★ Option to limit VOCs and apply design strategies to improve IAQ. Avoid gas combustion.	★★★ Option to limit VOCs and apply design strategies to improve IAQ. Avoid gas combustion.	★★

Multifamily Protocol Comparison: Benefits, continued

Benefit	Code Compliance	Living Building Challenge v4	LEED Multifamily Platinum v4	Built Green 4-Star v2021	Passive House v2021
Equity & Inclusion (Ensure all are welcome & have a voice)	★	★★★★★ Project team must meet threshold for Just Label certification.	★	★★★ Required Equity and Social Justice (ESJ) plan	
Food Access (Access to healthy food)		★★★★★ Urban agriculture and food production requirements			
Education and Stewardship (Occupants and Public)	★	★★★★ Requirements for occupant outreach; signage; and public access.	★★★ Requirement for tenant education manual regarding building's green investments.	★★ Optional manual regarding building's green investments	★
Emergency & Disaster Preparation (Resilience)	★	★★★★ Requirements for disaster preparedness in Net Zero Carbon strategies.	★		★
Aesthetic (Beauty)	★	★★★★ Requirements for biophilic design.	★		★

Multifamily Protocol Comparison: Opinionated costs and strategies for compliance

The following matrix provides a high-level, comparative summary of strategies required to meet the certification level of each protocol and how they compare to standard code requirements. Where applicable, the High-Performance Building Code for the Station Area has been indicated as the code baseline. The checklists provided in the Appendices provide a deeper dive into the requirements of the protocol. Note, that the Living Building Challenge design impacts are extensive. Please see the appendix for full design impacts.

ROM Cost per Protocol: All opinionated costs reflect the experience of the consultant and represent a moment in time. Costs may vary by provider and general contractor and are subject to inflation.

1. Living Building Challenge v4: $9.8M-$22.9M
2. LEED Multifamily v4, Platinum: $3.4M-$6.3M
3. Built Green v2021, 4 Star: $3.3M-$6.1M
4. Passive House v2021 Core: $7.4M-$12.4M

Impact	Living Building Challenge v4	LEED Multifamily Platinum v4	Built Green 4-Star v2021	Passive House v2021

Soft Costs	**SUB-TOTAL: See Appendix**
	• Registration & Certification: $60K-$65K
	• LBC Consulting: $400K-$600K
	• LBC Commissioning: $180K-$450K
	• LBC Energy Modeling: $65K-$85K
	• Embodied Carbon Off-sets: $10K-$65K
	• Beauty Imperatives: $26K-161K
	  ◦ I-19, I-20
	• Equity Imperatives: *Design requirement, no cost add*
	  ◦ I- 17, I-18
	• Material Imperatives: $1.2M-$2.2M
	  ◦ I-12, I-13, I-14, I-15, I-16
	• Place Imperatives: $59K-$405K
	  ◦ I-01, I-02, I-03, I-04
	• Health and Happiness Imperatives: *Design requirement, no cost add*
	  ◦ I-09, I-10, I-11
		SUB-TOTAL: $181K-$340K
		• Registration & Certification: $15K-$20K
		• LEED Consulting and Onsite Verification: $60K-$95K
		• IPc1 - Integrated Project Planning, Trades Training: $4K-$15K
		• IPc1 - Integrated Project Planning, Design charrette: $4K-$15K
		• SSc3 Integrated Pest Mgmt. Plan: $0-$5K
		• EAp1 - Energy Modeling: $18K-$20K
		• EAp1 - Commissioning: $68K-$75K
		• EAp3 - O&M + Homeowner Education Manual: $0-$25K
		• MRc1 - Durability Verification $4K-$15K
		• EQc3.2 - Air Flow Testing: $4K-$15K
		• EQc3.3 - Pressure Balancing: $4K-$15K
		• EQc7 Low-Emitting Products, submittal reviews: $0-$25K
			SUB-TOTAL: $153K-$285K
			• Registration & Certification: $20K-$45K
			• Built Green Consulting & Verification: $55K-$90K
			• 3.3 - Energy Modeling: $18K-$20K
			• 3.8 - Commissioning: $55K-$85K
			
			Credits dependent on whether owner provided/discretion:
			• 4.15 Low VOC adhesives, sealants, paints & coatings submittal review: $0-$25K
			• 6.9: Equity & Social Justice (ESJ) credit implementation, including developing a project-specific Equity and Social Justice (ESJ) plan: $5K-$20K
				SUB-TOTAL: $365K-$555K
				• Registration & Certification: $20K-$45K
				• Passive House Consultant: $100K-$120K
				• Commissioning: $100K-$120K
				• Passive House Modeling: $65K-$85K
				• Duct Leakage Testing: $30K-$60K
				• Additional Verification Requirements: $50K-$125K

Multifamily Protocol Comparison: Opinionated costs and strategies for compliance, continued

Impact	Living Building Challenge v4	LEED Multifamily Platinum v4	Built Green 4-Star v2021	Passive House v2021

Hard Costs	**SUB-TOTAL: See Appendix**
	Envelope:
	• Reduced building air leakage (< 0.1 W/CFM): $50K-$370K
	• 30-35% Max Glazing Area: *Design requirement, no cost add*
	• Triple Pane or Fiberglass Glazing System: $372K-$558K *($6-$9/sqft)*
	Mechanical/Plumbing:
	• Heat Pump Heating/Cooling in all dwelling units: $2M-$4M *($5K-$10K/DU)*
	• Improved Air Barrier: $50K-$370K
	• High-Performance Energy Recovery Ventilation (ERV): $770K-$1.6M *($2K-$4K/DU)*
	• Full Heat Pump Water Heating Plant, installed in garage if possible, to maximize operating efficiency: $750K-1.2M *($2K-$3K/DU)*
	• I-05 Stormwater Treatment onsite, no chemicals: $1M-5M
	• I-06 Blackwater/Greywater system, no potable water for non-potable uses
	  ◦ Greywater: $350K-450K; OR
	  ◦ Blackwater: $300K-$500K
	  ◦ Composting system: $100K-$115K in maintenance, +1 FTE
	• I-08 Net Positive Carbon (Resilience): $50K-$200K
	Electrical:
	• Battery Storage System: $155K-$309K
	• Maximize On-Site PV: 0.25-0.5 W/SF: $625K-$1M *($5K-$8K/kW)*
	• Off-Site PV - Net Positive – 4-7 W/SF: $1.5M-$2.3M *($890-$2,500/1000 kWh)*
	• EUI Reduction "Handprinting": $940K-$1.5M
		SUB-TOTAL: $3.2M-$5.9M
		Mechanical/Plumbing:
		• High-Performance Energy Recovery Ventilation (ERV): $800K-$1.6M *($2K-$4K/DU)*
		• Heat Pump Heating/Cooling in all dwelling units: $1.5M-$3M *($3.75K-$7.5K/DU)*
		• Partial Heat Pump Water Heating (>75%): $770K-$970K *($2K-$2.5K/DU)*
		• SSc1.2 white roof: $10K-$15K
		• MRp2 braided hoses for clothes washers, if not supplied by appliance rep: $0-$25K
		• EQp7 Potential additional sealing/caulking to meet blower door test threshold: $0-$65K
		• INc1.5 EVs – 12 Level 2 EV stations: $72K-$96K *($6K-$8K per EV charger)*
		• EQc7 Low-Emitting Products (third party certification, e.g. GreenGuard Gold, CARB II ULEF) – insulation, wall panels, ceiling, flooring, composite woods: $5K-$100K
			SUB-TOTAL: $3.1M-$5.8M
			• Heat Pump Heating/Cooling in all dwelling units: $1.5M-$3M *($3.75K-$7.5K/DU)*
			• High-performance Energy Recovery Ventilation (ERV): $800K-$1.6M *($2K-$4K/DU)*
			• Partial Heat Pump Water Heating (>75%): $770K-$970K *($2K-$2.5K/DU)*
			• REQ'd: Design for solar readiness: *Design requirement, no cost add*
			• 4.15 CARB II and/or NAUF composite wood products for indoor applications: $0-$100K
			• 4.15 GreenGuard Gold certified insulation: $0-$25K
			• 6 Level 2 EV stations: $36K-$48K *($6K-$8K per EV charger)*
				SUB-TOTAL: $7M-$11.8M
				Envelope:
				• Minimize Glazing Area - 25-30% Maximum: *Design requirement, no cost add*
				• Triple Pane Glazing: $370K-$600K, *($6-9/SF of façade).*
				• Improved Opaque Envelope Assemblies: $275K-$411K ($/building)
				- 2x8 + 2" C.I. Walls
				- R-50+ Roofs/Floors
				- Fiberglass Ground-Floor Storefront Systems
				- Improved details to minimize thermal bridging
				• Improved Air Barrier - <0.1 CFM/SF: $50K-$370K ($/building)
				Mechanical/Plumbing:
				• Heat Pump Heating/Cooling in all dwelling units: $2M-$4M *($5K-$10K/DU)*
				• High-Performance Central Energy Recovery Ventilation (minimize envelope penetrations): $2.7M-$3.85M *($7K-$10K/DU)*
				• Full Heat Pump Water Heating Plant + Sewer Heat Recovery: $960K-$1.5M *($2.5K-$3.8K/DU)*
				Electrical:
				• Maximize On-Site PV - 0.3-0.5 W/SF: $625K-$1M *($5K-$8K/kW)*

Multifamily Protocol Comparison: Opinionated costs and strategies for compliance, continued

Impact	Living Building Challenge v4	LEED Multifamily Platinum v4	Built Green 4-Star v2021	Passive House v2021
TOTAL ROM COSTS	**TOTAL: $9.8M-$22.9M**	**TOTAL: $3.4M-$6.3M**	**TOTAL: $3.3M-$6.1M**	**TOTAL: $7.4M-$12.4M**
Notable Design/Construction Impacts (not all-inclusive)	• ENERGY STAR appliances • Maximum Efficiency Appliances: Heat Pump Dryers, Induction Stoves, Recirculating kitchen hoods • Advanced BMS and energy metering • Biophilic Design strategies • Low impact development • Electric vehicle charging stations • No Red List materials • Low flow plumbing fixtures • Carbon offsets **See Appendix for a full list of LBC design and construction impacts.**	• ENERGY STAR Portfolio Manager utility tracking – energy and water use • WaterSense certified and low-flow plumbing fixtures • ENERGY STAR appliances – dishwasher, clothes washer, refrigerators, exhaust fans • Shower/bath: greenboard • All tropical wood FSC • CO sensors in all spaces adjacent to garage/ductwork outside fire-rated envelope of garage (or soffit) • ENERGY STAR plus occupancy sensors, humidistat, or timer delay on all bath fans.	• ENERGY STAR Portfolio Manager utility tracking – energy, water use, and waste • WaterSense certified and low-flow plumbing fixtures • ENERGY STAR appliances – dishwasher, clothes washer, refrigerators, exhaust fans • Low-VOC interior paints, primers, and finishes • Low to no-VOC requirements for woodwork, plywood, and carpet • All tropical wood FSC • Ductwork outside fire-rated envelope of garage (or soffit) • ENERGY STAR plus occupancy sensors, humidistat, or timer delay on all bath fans. • No gas burning fireplace within the building	• ENERGY STAR appliances • Maximum Efficiency Appliances: Heat Pump Dryers, Induction Stoves, Recirculating kitchen hoods • DHW System optimization and testing requirements • Water Managed site/foundation/walls/roofs • Radon, Pest & Combustion pollutant Mitigation

Commercial Protocol Comparison: Benefits

The following matrix provides a high-level, comparative summary of benefits for each Commercial protocol and how they compare to standard code requirements. Where applicable, the High-Performance Building Code for the Station Area has been indicated as the code baseline.

One Star (★) if the protocol does not go beyond code requirements. Maximum five stars (★★★★★) awarded if protocol provides an opportunity to greatly exceed code or typical practices. *Note: The sample building used in this study may not take advantage of all opportunities to incorporate these comprehensive environmental benefits, based on credits selected to achieve the certification threshold.*

Benefit	Code Compliance	Living Building Challenge v4	LEED NC Platinum v4	Passive House v2021	Salmon Safe v2021
Land Management (Preservation of land)	★	★★★★★ Required financial contribution to conserve land of equal area to project site.	★★	★	
Energy (CO_2 emissions reduction)	★	★★★★★ **100% CO_2 emissions** reduced / year (Net Positive Energy)	★★★ **22% CO_2 emissions** reduced / year	★★★ **22% CO_2 emissions** reduced / year	
Water (Potable water reduction)	★	★★★★★ **0.94 million gallons** reduced / year	★★ **0.39 million gallons** reduced / year	★	★★★★★ Site Dependent investment in water re-use and conservation
Transportation (Reduce Vehicle Miles Travelled)	★★ 2 stalls per 1,000 SQFT	★★★★ Reduce SOV travel by 30%. Employ transportation demand management programs.	★★★ Reduce parking from Institute of Transportation Engineers base ratio by 40%	★	★★ Reduce parking footprint
Transportation (EV Charging)	★★★★ 10% features EV Charging. 20% is EV-ready.	★★★ 1 EV stall per 30 regular stalls	★★		
Habitat (Developing sites that support ecosystems)	★	★★★ Native planting and tree preservation.	★	★	★★★★ Stream habitat protection and restoration.

Commercial Protocol Comparison: Benefits, continued

Benefit	Code Compliance	Living Building Challenge v4	LEED NC Platinum v4	Passive House v2021	Salmon Safe v2021
Building Materials (Improve indoor air quality & reduce exposure to toxins)	★	★★★★★ Required limitations on use of VOCs. Required exclusion of "red list" products	★★★	★★	★★★ Reduction of metals and toxic materials from run-off
Building Materials (Local & recycled)	★	★★★★★ 80% construction waste recycling required	★★★★		
Equity & Inclusion (Ensure all are welcome & have a voice)	★	★★★★★ Project team must meet threshold for Just Label certification	★★	★	★★
Food Access (Access to healthy food)		★★★★★ Urban agriculture and food production requirements			
Education and Stewardship (Occupants and Public)	★	★★★★ Requirements for occupant outreach; signage; and public access	★★	★	★★★★ Public education program
Emergency & Disaster Preparation (Resilience)	★	★★★★★ Requirements for disaster preparedness in Net Zero Carbon strategies	★	★	★★★ Site climate resiliency for habitat
Aesthetic (Beauty)	★	★★★★ Requirements for biophilic design	★	★	★

Commercial Protocol Comparison: Opinionated costs and strategies for compliance

The following matrix provides a high-level, comparative summary of strategies required to meet the certification level of each protocol and how they compare to standard code requirements. Where applicable, the High-Performance Building Code for the Station Area has been indicated as the code baseline. The checklists provided in the Appendices provide a deeper dive into the requirements of the protocol. Note, the Living Building Challenge design impacts are extensive. Please see the appendix for full design impacts.

ROM Cost per Protocol:

1. Living Building Challenge v4: $9.5M-$21.9M
2. LEED New Construction v4, Platinum: $968K- $2.1M
3. Passive House v2021: $1.9M-$3.5M
4. Salmon Safe: $20K- $12M

Impact	Living Building Challenge v4	LEED NC Platinum v4	Passive House v2021	Salmon Safe v2021

Soft Costs	**SUB-TOTAL: See Appendix**
	• Registration & Certification: $35K-45K
	• LBC Consulting: $400K-$600K
	• LBC Commissioning: $180K-$450K
	• LBC Energy Modeling: $65K-$85K
	• Embodied Carbon Off-sets: $10K-$65K
	• Beauty Imperatives: $26K-$160K
	  • I-19, I-20
	• Equity Imperatives: *Design requirement, no cost add*
	  • I- 17, I-18
	• Material Imperatives: $1.2M-$2.1M
	  • I-12, I-13, I-14, I-15, I-16
	• Place Imperatives: $49K-$365K
	  • I-01, I-02, I-03, I-04
	• Health and Happiness Imperatives: *Design requirement, no cost add*
	  • I-09, I-10, I-11
	See Appendix for full list of LBC design and construction impacts and costs.
		SUB-TOTAL: $198K-$625K
		• Registration & Certification: $15K-$20K
		• LEED Consulting: $40K-$95K
		• EAp1/c1 – Fundamental & Enhanced Commissioning: $55K-$125K
		• EAp1/c1 – Building Envelope Commissioning: $50K-$120K
		• EAp2/c2 - Energy Modeling: $18K-$25K
		• EAc7 Green Power and Carbon Offsets: $10K-$65K
		• MRc1: LCA Analysis: $0-$75K
		• EQc2 Low-Emitting Products, submittal reviews for the following - insulation, wall panels, ceiling, flooring: $0-$25K
		• EQc4 Air quality testing and management: $10K-$50K
		• INc1 O&M Starter Kit: $0-$25K
			SUB-TOTAL: $330K-$485K
			• Registration & Certification: $20K-$45K
			• Passive House Consultant: $100K-$120K
			• Commissioning: $100K-120K
			• Passive House Modeling: $65K-$85K
			• Duct Leakage Testing: $15K-$30K
			• Additional Verification requirements: $30K-$85K
				SUB-TOTAL: $20K-$40K
				• Salmon Safe Registration: $15K-$20K
				• Salmon Safe Consultant: $5K-$20K

Commercial Protocol Comparison: Opinionated costs and strategies for compliance, continued

Impact	Living Building Challenge v4	LEED NC Platinum v4	Passive House v2021	Salmon Safe v2021

Hard Costs	**SUB-TOTAL: See Appendix**
	Envelope:
	• Reduced building air leakage (< 0.1 W/CFM): $24K-$180K
	• 35-40% Max Glazing Area: *Design requirement, no cost add*
	• Upgraded glazing system or Fiberglass Glazing System: $600K-$1M *($15-$25 /SF)*
	• Low Solar Heat Gain Coefficient Glazing: *Design requirement, no cost add*
	Mechanical/Plumbing:
	• Air-Source VRF Heating/Cooling, Ventilation in Parallel: *Design requirement, no cost add*
	• High-Performance Energy Recovery Ventilation: $100K-$250K ($/building)
	• I-06 Blackwater/Greywater system, no potable water for non-potable uses
	  ◦ Greywater: $350K-$450K; OR
	  ◦ Blackwater: $300K-$500K
	  ◦ Composting system: $100K-115K in maintenance, +1 FTE
	• I-08 Net Positive Carbon (resilience): $50K-$200K
	Electrical:
	• Maximize On-Site PV: 0.25-0.5 W/SF: $375K-$600K *($5K-$8K$/kW)*
	• Off-Site PV - Net Positive - 7-10 W/SF: $1.4M-$2M *($595-892.5/1000 KWh)*
	• Advanced Plug Load Management Strategies: $250K-300K ($/building)
	• Battery Energy Storage System: $95K-$185K ($/building)
	• EUI Reduction "Handprinting": $1.5M-$2.5M
		SUB-TOTAL: $770K-$1.5M
		Envelope:
		• 35-40% Maximum Glazed Area: *Design requirement, no cost add*
		• Low Solar Heat Gain Coefficient Glazing: *Design requirement, no cost add*
		• SSc1.2 White Roof: $0-$55K
		Mechanical/Plumbing:
		• Air-Source VRF Heating/Cooling, Ventilation in Parallel: *Design requirement, no cost add*
		• High-Performance Energy Recovery Ventilation: $100K-$250K ($/building)
		Electrical:
		• Maximize On-Site PV - 0.3-0.5 W/SF: $375K-600K *$5K-$8K/kWh*
		• EAc3 Advanced Energy Metering: $30K-$90K
		• EAc7 Green Power and Carbon Offsets: $10K-$65K
		• Advanced Plug Load Management Strategies: $250K-$300K ($/building)
		• EQc7 Low-Emitting Products (third party certification, e.g. GreenGuard Gold, CARB II ULEF) – insulation, wall panels, ceiling, flooring, composite woods: $5K-$100K
			SUB-TOTAL: $1.6M-$3M
			Envelope:
			• Minimize Glazing Area - 25-30% Maximum: *Design requirement, no cost add*
			• Upgraded or Fiberglass Glazing System: $600K-$1M *($15-$25/sqft)*
			• Low Solar Heat Gain Coefficient Glazing: *Design requirement, no cost add*
			• Improved Opaque Envelope Assemblies: $200K-$500K
			  ◦ High-Perf Spandrel Assembly
			  ◦ 3" inboard spandrel insulation
			  ◦ R-50+ Roofs/Floors
			  ◦ Improved details to minimize thermal bridging, particularly within WW or CW system
			• Improved Air Barrier - <0.1 CFM/SF: $25K-$185K ($/building)
			Mechanical/Plumbing:
			• Air-Source VRF Heating/Cooling, Ventilation in Parallel: *Design requirement, no cost add*
			• High-Performance Energy Recovery Ventilation: $100K-$250K ($/building)
			Electrical:
			• Maximize On-Site PV - 0.3-0.5 W/SF: $375K-$600K *($5K-$8K$/kW)*
			• Advanced Plug Load Management Strategies: $250K-$300K ($/building)
			• Battery Energy Storage System: $95K-$185K ($/building)
				SUB-TOTAL: $0-$11.9M
				• Build green infrastructure to reduce run-off to the greatest extent operationally feasible (there are multiple low cost design items):
				  ◦ Green roof with the capability to provide volumetric and water quality benefits: $0-$6M (20-300 $/sqft)
				  ◦ Water harvesting from roof runoff and greywater, used for non-potable uses: $0-450K ($/building)
				• Mitigate the impact of run-off contacting galvanized materials: *Design requirement, no cost add*
				• Reuse runoff and greywater for irrigation and toilet flushing after treatment: $0-$450K ($/building)
				• Reuse greywater and rainwater for potable uses after extensive treatment: $0-$5M ($/building)

Commercial Protocol Comparison: Opinionated costs and strategies for compliance, continued

Impact	Living Building Challenge v4	LEED NC Platinum v4	Passive House v2021	Salmon Safe v2021
TOTAL ROM COSTS	**TOTAL: $9.5M-$21.9M**	**TOTAL: $968K-$2.1M**	**TOTAL: $1.9M-$3.5M**	**TOTAL: $20K-$12M**
Notable* Design / Construction Impacts (*not all inclusive)	• ENERGY STAR Equipment: Computers, servers, appliances, etc. • Advanced BMS and energy metering • Biophilic Design strategies • Low impact development • Electric vehicle charging stations • Restricted materials selection • Low flow plumbing fixtures • Carbon offsets **See Appendix for full list of LBC design and construction impacts.**	• ENERGY STAR Equipment: Computers, servers, appliances, etc. • Advanced Plug Load Management Strategies • Advanced BMS and energy metering • EPD/HPD Materials • Low flow plumbing fixtures • Design and materials to reduce impacts of Heat Island Effect	• ENERGY STAR Equipment: Computers, servers, appliances, etc. • DHW System optimization and testing requirements • Water Managed site/foundation/walls/roofs • Radon, Pest & Combustion Polluant Mitigation	• Habitat features that support local flora and fauna. • Reuse 'clean' roof runoff without treatment for toilet flushing, irrigation, and wash down. • Construction practices, landscaping, and plantings eliminate risk of pesticides and chemicals. • Façade and materials reduce risk of harm to local fauna. • Water Use Management • Erosion Prevention and Sediment Control • Water Quality Protection in Landscaping • Enhancement of Urban Ecological Function

Appendix

A. **Glossary of Terms**

B. **Living Building Challenge v4, Multifamily & Commercial Checklist**

C. **LEED Multifamily v4, Platinum Checklist**

D. **Living Building Challenge v4 Certification Levels**

E. **Built Green v2021, 4 Star Checklist**

F. **LEED New Construction v4, Platinum Checklist**

G. **Salmon Safe Additional Information**

H. **Green Factor**

Appendix A Glossary of Terms

Comparative Analysis of Living Building Challenge, LEED, Built Green, Passive House, & Salmon Safe

Commissioning - the process of verifying, in new construction, all (or some, depending on scope) of the subsystems for mechanical (HVAC), plumbing, electrical, fire/life safety, building envelopes, interior systems, co-generation, utility plants, sustainable systems, lighting, wastewater, controls, and building security to achieve the owner's project requirements as intended by the building owner and as designed by the building architects and engineers.

Energy Recovery Ventilators - the energy recovery process of exchanging the energy contained in normally exhausted building or space air and using it to treat (precondition) the incoming outdoor ventilation air in residential and commercial HVAC systems.

Hard Costs - include expenses *directly* related to the physical construction a building, including tangible assets that you need to acquire to complete your construction project. These costs cover the materials that go into buildings, including cement, drywall, carpet, sod grass; and labor for grading, site excavation, landscaping, and carpentry.

No Added Urea Formaldehyde (NAUF) – refers to products and materials that do not include the permanent adhesive created by the resin of urea and formaldehyde.

Occupancy Sensors - an indoor motion detecting devices used to detect the presence of a person to automatically control lights or temperature or ventilation systems.

Rough Order of Magnitude (ROM) - an estimation of a project's level of effort and cost to complete. A ROM estimate takes place very early in a project's life cycle — during the project selection and approval period and prior to project initiation in most cases.

Soft Costs - include expenses *indirectly* related to construction of a building. Soft costs include architectural, engineering, financing, and legal fees, and other pre- and post-construction expenses.

Thermoplastic Polyolefin (TPO) - refers to polymer/filler blends usually consisting of some fraction of a thermoplastic, an elastomer or rubber, and usually a filler. Outdoor applications such as roofing frequently contain TPO because it does not degrade under solar UV radiation, a common problem with nylons.

Walk-off Mats - used to describe an entire category of commercial floor mats that either scrape or wipe debris from the under soles of shoes.

Appendix B Living Building Challenge, Multifamily & Commercial Checklist

Comparative Analysis of Living Building Challenge, LEED, Built Green, Passive House, & Salmon Safe

Appendix B Living Building Challenge, Multifamily & Commercial Checklist

Imperatives & Requirements			Multifamily		Commercial	
			Building Impacts	ROM Cost	Building Impacts	ROM Cost
Place Petal	I01 - Ecology of Place	Build on greyfield	None	*Location decision*	None	*Location decision*
		Document site + community conditions prior to start of work	Additional documentation	*Design requirement*	Additional documentation	*Design requirement*
		Use “reference habitat” as design guide for landscape, as appropriate for project's Living Transect (L5)	Native planting - typical	*Design requirement*	Native planting - typical	*Design requirement*
		Develop an adaptive landscape plan including measures to assess performance, milestones, monitoring and maintenance to evaluate progress at end of 12-month period	Creation of adaptive landscape plan, with monitoring	$10-$20K	Creation of adaptive landscape plan, with monitoring	$10-$20K
		Assess cultural and social equity factors and needs in community; consider identified needs to inform design and process decisions	Coordination & community outreach	*Design requirement*	Coordination & community outreach	*Design requirement*
		Use no petrochemical fertilizers or pesticides for O+M of landscapes	Operations and landscaping team to acquire plants and management practices that protect the health of habitat.	*Operational & design requirement*	Operations and landscaping team to acquire plants and management practices that protect the health of habitat.	*Operational & design requirement*
	I02 – Urban Agriculture	5% of project area dedicated to growing food	8,800 SQFT	$40K-$120K	1,660 SQFT	$30K-$80K
		Provide weekly community access to healthy local food that addresses a community need (e.g. farmer’s market, CSA, etc)	Operations manager to provide access to a Community Supported Agriculture (CSA) connection.	*Operational requirement*	Operations manager to provide access to a Community Supported Agriculture (CSA) connection.	*Operational requirement*
		Multifamily: Demonstrate capacity to store at least a two-week supply of food. Commercial: Provide access to food for 75% of FTE occupants for a minimum of three days during an emergency.	Identify operations and storage procedures.	$5K-$15K	Identify operations and storage procedures.	$5K-$15K

Appendix B Living Building Challenge, Multifamily & Commercial Checklist

Imperatives & Requirements			Multifamily		Commercial	
			Building Impacts	ROM Cost	Building Impacts	ROM Cost
Place Petal	I03 – Habitat Exchange	Set aside land equal to the project area or (1 acre, whichever is greater) away from the project site, in perpetuity through an approved land trust organization.	Work through an accredited land trust to set aside 176,000 SQFT of land for conservation.	$4K-$250K	Work through an accredited land trust to set aside 33,214 SQFT of land for conservation.	$4K-$250K
	I04 – Human-scaled living	Build to human scale appropriate for location (openings, signage)	Typical practice	*Standard baseline design*	Typical practice	*Standard baseline design*
		Provide places to gather/connect with community	Provide courtyard, garden areas, community rooms, and/or indoor shared facilities.	*Standard baseline design*	Provide courtyard, garden areas, community rooms, and/or indoor shared facilities.	*Standard baseline design*
		Bike amenities: facilities to encourage biking, e.g. showers/lockers for all building occupants	Provide amenities for cyclists such as a mechanic station, pump, and bike washing area.	*Standard baseline design*	Provide amenities for cyclists such as lockers, showers, mechanic station, pump, and bike washing area.	*Standard baseline design*

Appendix B Living Building Challenge, Multifamily & Commercial Checklist

Water Petal	Imperatives & Requirements		Multifamily		Commercial	
			Building Impacts	ROM Cost	Building Impacts	ROM Cost
	I05 - Responsible Water Use	Non-potable Water for Irrigation. 50% less water usage than regional baseline	Target: ~26 gallons/person/day Design: ~22 gallons/person/day	*Result of greywater/blackwater system*	Target: ~5.3 gallons/person/day	*Result of greywater/ blackwater system*
		Flow Rates: ▪ Private Lavs: 1.2 gpm ▪ Public Lavs: 0.5 gpm ▪ Shower/Bathtub: 1.75 gpm ▪ Kitchen Sink: 1.5 gpm Zero Potable Flow Rate & Greywater Supply: ▪ Water Closets: 0 gpf potable (1.28 gpf greywater) ▪ Urinals: 0 gpf potable (0.125 greywater)	▪ Dishwasher: 3.5 gpc (0.1 cycles per resident per day) ▪ Clothes Washers: 14 gpc (2 loads per resident per week)	*Design requirement & additional coordination*	No additions	*Design requirement & additional coordination*
		Greywater/Blackwater Treatment System: (Irrigation dependent on final landscape design.)	▪Irrigation: 600 gallons/day (peak summer demand) ▪Hose Bibbs: 50 gallons/day ▪Water Closet: 1.28 gpf ▪Urinal: 0.125 gpf	$1M-$5M	▪Irrigation: 100 gallons/day (peak summer demand) ▪Hose Bibbs: 50 gallons/day ▪Water Closet: 1.28 gpf ▪Urinal: 0.125 gpf	$1M-$5M
		Stormwater Treatment	On-site, without use of chemicals (e.g. infiltration, bioretention, etc)	*Result of greywater/blackwater system*	On-site, without use of chemicals (e.g. infiltration, bioretention, etc)	*Result of greywater/ blackwater system*
		If in Combined Sewer Overflow System (CSO), then avoid sheet flow.		*N/A: Not in a CSO basin*		*N/A: Not in a CSO basin*

Appendix B Living Building Challenge, Multifamily & Commercial Checklist

Water Petal	Imperatives & Requirements		Multifamily		Commercial	
			Building Impacts	ROM Cost	Building Impacts	ROM Cost
	I06 – Net Positive Water	Greywater/Blackwater treatment system (Treated blackwater could be reused in building or could be ground infiltrated – to be determined by individual project team. Note, there are a multitude of code requirements to meet, e.g. WA State Health Department)	Non-potable water for all toilets, urinals, irrigation, hose bib, cooling towers, and water features	$500K-$1M	Non-potable water for all toilets, urinals, irrigation, hose bib, cooling towers, and water features	$500K-$1M
		Double-piping	Accommodates treated greywater/blackwater usage throughout building alongside potable water.	*Included in system cost*	Accommodates treated greywater/blackwater usage throughout building alongside potable water.	*Included in system cost*
		Hot Water Meters in Dwelling Units	Required	*Code requirement*	N/A	*Code requirement*
		Provide drinking water for up to a week for all regular building occupants through water storage on site.		$5K-$75K		$5K-$75K

Appendix B Living Building Challenge, Multifamily & Commercial Checklist

Energy Petal	Imperatives & Requirements		Multifamily		Commercial	
			Building Impacts	ROM Cost	Building Impacts	ROM Cost
	I07 - Energy + Carbon Reduction	Energy reduction target	70% reduction from Zero Tool baseline	*Result of systems and design*	70% reduction from Zero Tool baseline	*Result of systems and design*
		Combustion not allowed	Required	*Code requirement*	Required	*Code requirement*
		On-site renewables	0.3-0.5 W/SF PV On-Site *SF = full building conditioned square footage	$625K-$1M *($5K-$8K/kW)*	0.3-0.5 W/SF PV On-Site *SF = full building conditioned square footage	$375K-$600K *($5K-$8K/kW)*
		Embodied Carbon Reduction: Primary materials	20% reduction of primary materials (ex: concrete, steel)	*Regionally dependent*	20% reduction of primary materials (ex: concrete, steel)	*Regionally dependent*
		Embodied Carbon Reduction: Interior materials	Lower than industry average (ex: carpet tile, gypsum)	*Dependent on product selection*	Lower than industry average (ex: carpet tile, gypsum)	*Dependent on product selection*
		"Zero-Ready" Design	▪ Pre-wire for EV charging and PV. ▪ On-site PV meets this requirement. Installation of PV not required.	*Result of systems and design*	▪ Pre-wire for EV charging and PV. ▪ On-site PV meets this requirement. Installation of PV not required.	*Result of systems and design*
		Target EUI. Energy Strategies to meet EUI below.	12-16 kBtu/SF-yr EUI	*Result of systems and design*	26-32 kBtu/SF-yr EUI	*Result of systems and design*
		Domestic Hot Water (DHW) Plant	Air-to-water heat pumps for DHW production and recirculation reheat. Install in garage if feasible to max operating perf.	$750K-$1.2M *($2K-$3K/DU)*	Air-to-water heat pumps for DHW production and recirculation reheat. Install in garage if feasible to max operating perf.	$750K-$1.2M
		Heating/Cooling	Air source VRF, or similar heat pump system for all dwelling units	$2M-$4M *($5K-$10K /DU)*	Air source VRF, Ventilation in Parallel	$2M-$4M
		Ventilation	High-Efficiency Energy Recovery Ventilators (ERVs) in dwelling units; minimize corridor pressurization	$770K-$1.6M *($2K-$4K/DU)*	High Efficiency Rooftop DOAS	$100K-$250K

Appendix B Living Building Challenge, Multifamily & Commercial Checklist

Energy Petal	Imperatives & Requirements		Multifamily		Commercial	
			Building Impacts	ROM Cost	Building Impacts	ROM Cost
	I07 - Energy + Carbon Reduction	Energy reduction target	Premium efficiency appliances – heat pump dryers, induction stoves, 100% Energy Star equipment	*Design requirement*	Energy Star computer equipment, servers, Amenity appliances. Advanced plug load control strategies.	*Design requirement*
		Lighting Energy	Stricter than code lighting power allowance.	*Design requirement*	Stricter than code lighting power allowance.	*Design requirement*
		Reduced building air leakage	< 0.1 W/CFM	$50K-$370K		$24K-$180K
		Optimize glazing selection for heat loss/gain	Triple pane glazing, optimized SHGC	$372K-$558K	Triple Pane glazing, optimized SHGC	$600K-$1M
		Offset gap in Core Imperative EUI target – Evaluate "Handprinting" approach with ILFI	1. Portfolio approach – additional PV installed on other buildings w/in purview of owner. Building improvements within market-rate projects. 2. Partnership with non-profits or affordable housing providers (e.g. building improvements, education)	$940K-$1.5M	1. Portfolio approach – additional PV installed on other buildings w/in purview of owner. Building improvements within market-rate projects. 2. Partnership with non-profits or affordable housing providers (e.g. building improvements, education)	$1.5M-$2.5M

Appendix B Living Building Challenge, Multifamily & Commercial Checklist

	Imperatives & Requirements		Multifamily		Commercial	
			Building Impacts	ROM Cost	Building Impacts	ROM Cost
Energy Petal	I08 - Net Positive Carbon	105% of project's energy needs supplied by off-site renewable energy.	The kW needed to provide this energy will vary based on off-site approach and location. The off-site estimates assume an array located in Eastern WA with 1,300 kWh/kW production. 4-7 W/SF.	$1.5M-$2.3M *($890-$2.5K/1000 kWh)*	The kW needed to provide this energy will vary based on off-site approach and location. The off-site estimates assume an array located in Eastern WA with 1,300 kWh/kW production. 7-13 W/SF.	$1.4M-$2M *($595-$893/1000 kWh)*

		Resilience strategy to allow building to remain habitable for 1 week
		• Emergency Preparedness Plan, managed by Building Management
		  • Emergency Planning - Annual resident orientation
		  • Evacuation routes, posted on each floor
		  • Floor marshal designation and training – volunteer resident on each floor
		  • Fire lookout – in event where power outage lasts longer than fire alarm function
		  • Encouragement to have unit-specific plan
		• Emergency Kits
		• Community Provisions
		  • Emergency food supply (e.g. enough for 800 people for 3 days via high calorie food bars)
		  • Potable water, ability to filter via standalone system (e.g. Berkey filter)
		  • Shared refrigeration source and/or an ice machine for residents to keep critical materials cool (e.g. medications, breastmilk).
			See list under requirements & below
			• Small battery packs for cell phone charging ($30 per unit)
			• Lighting, hand crank flashlights ($15 per unit)
			• First aid kits ($10 per unit)
				$50K-$200K	See list under requirements & Emergency Kits	$50K-$200K

		One-time carbon offset accounting for total embodied carbon (tCO2e) of construction materials & processes Incorporate carbon reduction strategies in design phase (e.g. type and distance of material)	Embodied carbon calculation.	$10K-$65K *(Dependent on material selection and availability)*	Embodied carbon calculation. *(Dependent on material selection and availability)*	$10K-$65K *(Dependent on material selection and availability)*

Appendix B Living Building Challenge, Multifamily & Commercial Checklist

Health and Happiness Petal	Imperatives and Requirements		Multifamily		Commercial	
			Building Impacts	ROM Cost	Building Impacts	ROM Cost
	I-09 Healthy Interior Environment	Meet Current ASHRAE 62 Standards (current at the time of the project's registration for the Living Building Challenge)	Comply with ASHRAE 62.1/62.2 2019 Note: 2016 is referenced, but not req'd by 2018 code	*Design requirement*	Comply with ASHRAE 62.1/62.2 2019 Note: 2016 is referenced, but not req'd by 2018 code	*Design requirement*
		Prohibit smoking within building and within 25' of openings and supply vents	Code Required	*Design requirement*	Code Required	*Design requirement*
		Develop a Healthy Indoor Environment Plan, Including:	▪ Cleaning Protocols ▪ Prevention of particulates and toxins through entry approach ▪ Strategy to improve air quality	*Standard operational requirement*	▪ Cleaning Protocols ▪ Prevention of particulates and toxins through entry approach ▪ Strategy to improve air quality	*Standard operational requirement*
		Views Outside & Daylight For 75% Of Occupied Spaces	Review current façade & ground floor fenestration design	*Design requirement*	Review current façade & ground floor fenestration design	*Design requirement*
		Direct exhaust for kitchens, bathrooms, & janitor closets	Code Required	*Design requirement*	Code Required	*Design requirement*

Appendix B Living Building Challenge, Multifamily & Commercial Checklist

	Imperatives and Requirements		Multifamily		Commercial	
			Building Impacts	ROM Cost	Building Impacts	ROM Cost
Health and Happiness Petal	I-10 Healthy Interior Performance	Promote good indoor air quality: Implement a cleaning protocol that uses cleaning products that comply with the EPA Safer choice label	▪ Provide results of IAQ tests within 6 months after occupancy ▪ Comply with CDHP standard method v1,1-2010 for interior building products with potential VOCs.	*Standard operational requirement*	▪ Provide results of IAQ tests within 6 months after occupancy ▪ Comply with CDHP standard method v1,1-2010 for interior building products with potential VOCs.	*Standard operational requirement*
		All projects must provide 95% of occupants access to view and daylight and opportunities for the remaining five percent of occupants to move to compliant spaces for a portion of their day. Flexible options for working and learning (sit/stand desks or varied sensory experiences)	▪ Sufficient operable windows to provide natural ventilation for at least 6 months ▪ Ability for the occupants to influence their local airflow and temperature through direct input or controls.	*Design requirement*	▪ Sufficient operable windows to provide natural ventilation for at least 6 months ▪ Ability for the occupants to influence their local airflow and temperature through direct input or controls.	*Design requirement / Tenant requirement*
	I-11 Access to Nature	Provide occupants with direct access to nature. Occupants must complete a post-occupancy evaluation (in first 6 months of occupation) that addresses benefits of including daylight, fresh air and access to nature.	Design element to be determined by design team	*Design requirement*	Design element to be determined by design team	*Design requirement*

Appendix B Living Building Challenge, Multifamily & Commercial Checklist

Materials Petal	Imperatives & Requirements		Multifamily		Commercial	
			Building Impacts	ROM Cost	Building Impacts	ROM Cost
	I12 - Responsible Materials	Careful Material Selection	Wood: 50% FSC, salvaged, or harvested from site	$100K-$200K	Wood: 50% FSC, salvaged, or harvested from site	$100K-$200K
			Declare labels: 1 Declare product every 2,152 SQFT	Factored into I-13, Red List	Declare labels: 1 Declare product every 2,152 SQFT	Factored into I-13, Red List
			1 Living Product Challenge (LPC) certified product	Factored into I-13, Red List	1 Living Product Challenge (LPC) certified product	Factored into I-13, Red List
			20% of the materials construction budget must be manufactured within 310 miles of the construction site	Factored into I-13, Red List	20% of the materials construction budget must be manufactured within 310 miles of the construction site	Factored into I-13, Red List
			Construction Waste Diversion Rate: 80%	Factored into I-13, Red List	Construction Waste Diversion Rate: 80%	Factored into I-13, Red List
			Waste During Occupancy: infrastructure to collect recyclables & compostables.	Factored into I-13, Red List	Waste During Occupancy: infrastructure to collect recyclables & compostables.	Factored into I-13, Red List
	I13 - Red List	90% of projects' materials (by cost) cannot contain Red List chemical classes: Antimicrobials; Alkylphenols and related compounds; Asbestos compounds; Bisphenol A (BPA) and structural analogs; California-banned solvents; Chlorinated Polymers; Chlorobenzenes; Chlorofluorocarbons (CFCs) and hydrochlorofluorocarbons (HCFCs); Formaldehyde (added); Monomeric, polymeric, and organophosphate halogenated flame retardants (HFRs); Organotin Compounds; Perfluorinated compounds (PFCs); Phthalates (orthophthalates); Polychlorinated biphenyls (PCBs); Polycyclic aromatic hydrocarbons (PAHs); Short-chain and medium-chain chlorinated paraffins; Toxic heavy metals; VOCs in wet-applied products; and Wood Treatments containing creosote or pentachlorophenol.	All materials vetted during design and construction.	$750K-$1.3M *Hard: $250K-$500K* *Soft (consultant vetting): $500K-$800K*	All materials vetted during design and construction.	$750K-$1.3M *Hard: $250K-$500K* *Soft (consultant vetting): $500K-$800K*

Appendix B Living Building Challenge, Multifamily & Commercial Checklist

Materials Petal	Imperatives & Requirements		Multifamily		Commercial	
			Building Impacts	**ROM Cost**	**Building Impacts**	**ROM Cost**
	I14 - Responsible Sourcing	Material Selection	▪ Wood Formwork must be FSC or salvage ▪ Wood Lagging /Shoring, locations where permanent must be FSC or salvage	*See above*	▪ Wood Formwork must be FSC or salvage ▪ Wood Lagging /Shoring, locations where permanent must be FSC or salvage	*See above*
			▪ Use 40 Declare products ▪ Send advocacy letters to all other manufacturers not in Declare.	*Procurement requirement*	▪ Use 40 Declare products ▪ Send advocacy letters to all other manufacturers not in Declare.	*Procurement requirement*
			3 Living Product Challenge (LPC) certified products	*Procurement requirement*	3 Living Product Challenge (LPC) certified products	*Procurement requirement*
	I-15 Living Economy	Local sourcing based on materials construction budget (excludes labor, soft costs, land):	▪ 20% of construction budget manufactured within 311 miles of site ▪ 30% within 621 miles ▪ 25% within 3,107 miles ▪ 25% any location	$250K-$500K *(dependent on General Contractor and materials market)*	▪ 20% of construction budget manufactured within 311 miles of site ▪ 30% within 621 miles ▪ 25% within 3,107 miles ▪ 25% any location	$250K-$500K *(dependent on General Contractor and materials market)*

Appendix B Living Building Challenge, Multifamily & Commercial Checklist

Materials Petal	Imperatives & Requirements	Multifamily		Commercial	
		Building Impacts	**ROM Cost**	**Building Impacts**	**ROM Cost**
I16 - Net Positive Waste	Pre-Building Audit & Materials conservation management plan	Inventory available materials + assemblies for reuse or donation of existing site	$20K-$30K	Inventory available materials + assemblies for reuse or donation of existing site	$20K-$30K
	Material-specific diversion rate requirements	▪Metals 99% ▪Paper and carboard 99% ▪Soil and biomass 100% ▪Rigid foam, carpet, and insulation 95% ▪All others, combined weighted avg 90%	$100K-$150K *(dependent on General Contractor and materials market)*	▪Metals 99% ▪Paper and carboard 99% ▪Soil and biomass 100% ▪Rigid foam, carpet, and insulation 95% ▪All others, combined weighted avg 90%	$60K-$90K *(dependent on General Contractor and materials market)*
	Demolition waste diversion rate	Track & execute demolition diversion rate of 80%	*Dependent on waste recycling market*	Track & execute demolition diversion rate of 80%	*Dependent on waste recycling market*
	Salvage materials design cost	Architectural curation	$10K-$20K	Architectural curation	$10K-$20K
	Waste During Occupancy:	Infrastructure to collect recyclables & compostable materials.	*Standard practice*	Infrastructure to collect recyclables & compostable materials.	*Standard practice*

Appendix B Living Building Challenge, Multifamily & Commercial Checklist

Equity Petal	Imperatives & Requirements	Multifamily		Commercial	
		Building Impacts	ROM Cost	Building Impacts	ROM Cost
I17 - Universal Access	All non-building infrastructure (e.g. plazas, seating or park space) must be equally accessible to all members of the public		*Operational requirement*		*Operational requirement*
	Enhance public realm	Provide furniture, art, garden, benches, etc.	*Design Requirement*	Provide furniture, art, garden, benches, etc.	*Design Requirement*
	Meet ADA, ABA, and 7 Principals of Universal Design		*Design Requirement*		*Design Requirement*
	Do not block access to (nor diminish quality of): fresh air, sunlight, natural waterways Operational emissions free of Red List (e.g. VOCs)	Solar shading study/calculations	*Design Requirement*	Solar shading study/calculations	*Design Requirement*
I18 - Inclusion	2 project team orgs with JUST labels; 5 to complete self-assessment	Select project team members with JUST label	*Project team requirement*	Select project team members with JUST label	*Project team requirement*
	Option 1: 20% of design and construction contracts and 10% of maintenance contracts w/ JUST org that meets req'd diversity category OR registered MWDBE. OR - Workforce development/ training are employed for 10% of GC contracts. **Option 2:** Donate 0.1% of total project cost to regional non-profit focused on equity & inclusion	Workforce development/ training are employed for 10% of GC contracts.	$0-$1M	Workforce development/ training are employed for 10% of GC contracts.	$0-$1M

Appendix B Living Building Challenge, Multifamily & Commercial Checklist

Beauty Petal	Imperatives and Requirements	Multifamily		Commercial	
		Building Impacts	ROM Cost	Building Impacts	ROM Cost
I-19 Beauty and Biophilia	Meaningfully integrate public art and contain design features intended solely for human delight.		*Design Requirement*		*Design Requirement*
	Biophilic Design: One (1) day biophilic design exploration (workshop)	Integrative design team effort/ time commitment	$12K-$22K	Integrative design team effort/ time commitment	$12K-$22K
	Biophilic Design: Workshop results in development of biophilic design framework and plan, track throughout design and construction	Meeting/s & documentation	$8K-$18K	Meeting/s & documentation	$8K-$18K
	Biophilic Design: implementation and construction of biophilic design strategies	Design coordination	$5K-$25K	Design coordination	$5K-$25K
I-20 Education + Inspiration	LBC Case Study Questionnaire - for ILFI website	Facilitation of case study	$0-$5K	Facilitation of case study	$0-$5K
	Annual Open Day for the public	Owner/Property Manager to facilitate	$0-$5K	Owner/Property Manager to facilitate	$0-$5K
	O&M Manuals (building manager & resident)	Content for resident manual	$0-25K	Content for resident manual	$0-25K
	Brochure, describing the design & environmental features	Content for brochure	$0-$12K	Content for brochure	$0-12K
	Interpretive/educational Signage	Design/operations coordination	$1K-$30K	Design/operations coordination	$1K-$30K
	Website - LBP content/storytelling	Website LBP content	$0-$18K	Website LBP content	$0-$18K
	One Living Future Accredited Professional on project team	No design impact	$0-$1K	No design Impact	$0-$1K

Appendix C LEED Multifamily v4, Platinum Checklist

Comparative Analysis of Living Building Challenge, LEED, Built Green, Passive House, & Salmon Safe

SAMPLE BUILDING

LEED for Homes v4 Preliminary Project Checklist | 04.04.2022 | Project Goal: Platinum

RUSHING

Yes	Likely	Unlikely	No	
84.0	14.0	11.0	3.0	**PROJECT TOTALS | pre-certification estimates**

Certification Thresholds: Certified 40 points Silver 50 points **Gold 60 points** Platinum 80+

Yes	Likely	Unlikely	No			Max. Points
2	0	0	0	**Integrative Process**		2
1				Credit 1.1	**Integrative Project Team**	1
			-	Credit 1.2	**Design Charrette**	1
1				Credit 1.3	**Trades Training**	1

Yes	Likely	Unlikely	No			Max. Points
15	0	0	0	**Location and Transportation**		15
Y				Prereq 1	**Floodplain Avoidance**	Req'd
			-	Credit 1	**LEED for Neighborhood Development**	15
4				Credit 2.1	**Site Selection,** Sensitive Land Protection	4
2				Credit 2.2	**Site Selection,** Infill Development	2
1				Credit 2.3	**Site Selection,** Open Space	1
1				Credit 2.4	**Site Selection,** Street Network	1
			-	Credit 2.5	**Site Selection,** Bicycle Network and Storage **- v4.1**	1
3				Credit 3	**Compact Development**	3
2				Credit 4	**Community Resources**	2
2				Credit 5	**Access to Transit - v4.1**	2

Yes	Likely	Unlikely	No			Max. Points
4	1	2	0	**Sustainable Sites**		7
Y				Prereq 1	**Construction Activity Pollution Prevention**	Req'd
Y				Prereq 2	**No Invasive Plants**	Req'd
			-	Credit 1.1	**Heat Island Reduction,** Shading	2
2				Credit 1.2	**Heat Island Reduction,** Non-absorptive Materials	2
	1	2		Credit 2.1	**Rainwater Management,** Low Impact Development	3
			-	Credit 2.2	**Rainwater Management,** NPDES	3
2				Credit 3	**Non-Toxic Pest Control**	2

Yes	Likely	Unlikely	No			Max. Points
10	0	0	0	**Water Efficiency**		12
Y				Prereq 1	**Water Metering**	Req'd
			-	Credit 1	**Total Water Use** (Performance Path)	12
6				Credit 2	**Indoor Water Use** (Prescriptive Path)	6
4				Credit 3	**Outdoor Water Use** (Prescriptive Path)	4

Yes	Likely	Unlikely	No			Max. Points
27	7	5	0	**Energy and Atmosphere**		37
Y				Prereq 1	**Minimum Energy Performance**	Req'd
Y				Prereq 2	**Energy Metering**	Req'd
Y				Prereq 3	**Education of the Homeowner, Tenant or Building Manager**	Req'd
25	5			Credit 1	**Annual Energy Use** (HSA 5.5 pts, 30% energy cost savings)	30
		2		Credit 2.1	**Efficient Hot Water Distribution**	2
		3		Credit 2.2	**Efficient Hot Water Distribution,** Performance Test	3
	2			Credit 2.3	**Efficient Hot Water Distribution,** Pipe Insulation	2
1				Credit 3.1	**Advanced Utility Tracking,** Electric and Water	1
1				Credit 3.2	**Advanced Utility Tracking,** Third Party Utility Reporting	1

Yes	Likely	Unlikely	No			Max. Points
5	2.5	1	1	**Materials and Resources**		9
Y				Prereq 1	**Certified Tropical Wood**	Req'd
Y				Prereq 2	**Durability Management**	Req'd
1				Credit 1	**Durability Management Verification**	1
1	0.5			Credit 2.1	**Local Production**	1.5
1	2	1		Credit 2.2	**Environmentally Preferable Products**	4
2			1	Credit 3	**Construction Waste Management**	3

Yes	Likely	Unlikely	No			Max. Points
11.0	3.5	3	2	**Indoor Environmental Quality**		18
Y				Prereq 1	**Ventilation**	Req'd
Y				Prereq 2	**Combustion Venting**	Req'd
Y				Prereq 3	**Garage Pollutant Protection**	Req'd
Y				Prereq 4	**Radon-Resistant Construction**	Req'd
Y				Prereq 5	**Air Filtering**	Req'd
Y				Prereq 6	**Environmental Tobacco Smoke**	Req'd
Y				Prereq 7	**Compartmentalization**	Req'd
1				Credit 1.1	**Enhanced Local Exhaust**	1
	2			Credit 1.2	**Enhanced Whole-House Ventilation**	2
0.5				Credit 2.1	**Contaminant Control,** Walk-off Mats	0.5
	0.5			Credit 2.2	**Contaminant Control,** Shoe Removal and Storage	0.5
0.5				Credit 2.3	**Contaminant Control,** Preoccupancy Flush	0.5
		1		Credit 2.4	**Contaminant Control,** Air Testing	1
1				Credit 3.1	**Balance of Heating & Cooling,** Multiple Zones	1
1				Credit 3.2	**Balance of Heating & Cooling,** Supply Air-Flow Testing	1
1				Credit 3.3	**Balance of Heating & Cooling,** Pressure Balancing	1
	1	2		Credit 4	**Enhanced Compartmentalization**	3
			2	Credit 5.1	**No Fireplace or Wood Stove**	2
1				Credit 5.2	**Enhanced Combustion Venting Measures**	1
1				Credit 6.1	**Exhaust Fans on Controls in Garage**	1
			-	Credit 6.2	**Detached Garage or No Garage or Carport**	1
3				Credit 7	**Low-Emitting Products - v4.1**	3
1				Credit 8	**No Environmental Tobacco Smoke**	1

Yes	Likely	Unlikely	No			Max. Points
6	0	0	0	**Innovation**		6
Y				Prereq 1	**Preliminary Rating**	Req'd
1				Credit 1.1	**Exemp Perf** - LTc4 Community Resources	1
1				Credit 1.2	**Examp Perf** - LTc5 Access to Transit	1
1				Credit 1.3	**Pilot Credit** - Social Equity w/in Project Team (JUST label)	1
1				Credit 1.4	**Innovation Credit -** Green Vehicles	1
1				Credit 1.5	**Pilot Credit -** Salmon Safe Certification	1
1				Credit 2	**LEED AP for Homes**	1

Yes	Likely	Unlikely	No			Max. Points
4	0	0	0	**Regional Priority**		4
		-		Credit 1	**SSc2 Rainwater Management,** 3 pt threshold	
1				Credit 2	**SSc3 Nontoxic Pest Control,** 2 pt threshold	1
			-	Credit 3	**WEc1 Total Water Use,** 2 pt threshold	1
1				Credit 4	**WEc2 Outdoor Water Use,** 4 pt threshold	1
1				Credit 5	**EAc1 Annual Energy Use,** 15 pt threshold	1
1				Credit 6	**MRc3 Construction Waste Management,** 1 pt threshold	1
		-		Credit 7	**EQc1 Enhanced Ventilation,** 2 pt threshold	1

Appendix D Living Building Challenge v4 Certification Levels

Sample costs

Exclusions: The highest level of certification, Living Building Certification, is excluded from the matrix. Additionally, the Water Petal is excluded from Petal Certification. All costs reflect an opinion based on consultant experience and capture a moment in time. They will vary per building design.

<table>
<tr><th>Zero Carbon</th><th>Zero Energy</th><th>Core</th><th>Petal Certification</th></tr>
<tr><th colspan="2">Tier 1</th><th>Tier 2</th><th>Tier 3</th></tr>
<tr><td colspan="2">Systems and certification requirements impact design and construction in similar capacities.
A project proponent may select either strategy depending on the design of the building and market conditions of off-stie PV and carbon offsets.</td><td rowspan="2">Required Imperatives:
• C1: 01 Ecology of Place
• C2: 04 Human Scaled Living
• C3: 05 Responsible Water Use
• C4: 07 Energy + Carbon Reduction
• C5: 09 Healthy Interior Environment
• C6: 12 Responsible Materials
• C7: 17 Universal Access
• C8: 18 Inclusion
• C9: 19 Beauty and Biophilia
• C10: 20 Education + Inspiration</td><td rowspan="2">• All Imperatives from Core Certification, plus remaining imperatives (listed below) from of either Water (excluded), Energy, or Materials Petal.
Energy:
• 08 Net Positive Energy
Materials:
• 13 Red List
• 14 Responsible Sourcing
• 15 Living Economy Sourcing
• 16 Net Positive Waste</td></tr>
<tr><td>• 100% building energy load off set with on- or off -site renewables
• Off-set operational carbon
• Embodied carbon off-set?</td><td>• 100% building energy load off set with on-site renewables, driving efficiency
• Pathway for premium off -site renewables for certain project types</td></tr>
<tr><td>Commercial
$2.7M-$4.5M

Multifamily
$6.5M-$11.6M</td><td>Commercial
$3.2M-$5.3M

Multifamily
$6.6M-$11.5M</td><td>Commercial
$6.5M-$16.1M

Multifamily
$6.6M-$16.7M</td><td>Commercial (Core + Petal)
Material Petal: $7.5M-$18.2M
Energy Petal: $7.9M-$18.3M

Multifamily (Core + Petal)
Material Petal: $7.7M-$18.9M
Energy Petal: $8.1M-$19.3M</td></tr>
</table>

Appendix E Built Green v2021, 4 Star Checklist

Comparative Analysis of Living Building Challenge, LEED, Built Green, Passive House, & Salmon Safe

Multi-Family Residential New Construction Certification Checklist

Please indicate:

☐ **Preliminary checklist** (for own or verifier's use)

☐ **Final checklist** (for certification review)

Company Name	
Project Address	
Number of Units	

Last updated Febuary 1, 2022

REQUIRED CREDITS

Credit #	Category	Credit		Comments
THREE-STAR REQUIREMENTS (300 points minimum)				
1-1		Built Green assumes building meets local code regulations	★	
1-2		Third-party verification	★	
1-3		Achieve a minimum of 50 points from sections 2-5	★	
1-4	**Site & Water**	Document a water efficiency score through WERS or WRI of 70 or less, or certify under WaterSense 2.0 (Credit 2-39); OR Prescriptively all plumbing fixtures and appliances are low-flow (Credits 2-50 to 2-53)	★	
1-5	**Energy**	Install all ENERGY STAR appliances and fans (if provided by builder)	★	
1-6	**Energy**	Ventilation system flow rates are tested and within 20% of design flows. Controls and settings are consistent with design	★	
1-7	**Energy**	Building performance modeled ERI of 58 or less OR BPF of 0.55 or less; OR achieves prescriptive credits on the 2018 WSEC R406.3 (5.5 credits) or C406.1 (11 credits) tables (Credits 3-1, 3-2, 3-3, or 3-4). See Built Green 2018 WSEC Energy Modeling Guidelines	★	
1-8	**IAQ**	CARB II compliant materials for cabinets and hard-surface flooring, Greenguard Gold or Formaldehyde-free insulation, and low-VOC paints and wet-applied interior finishes (Credits 4-15, 4-16, 4-21)	★	
1-9	**IAQ**	If gas cooktop or range is installed: provide range exhaust hood directly over cooking appliance. Exhaust hood shall vent directly to the exterior of the building. General kitchen exhaust or recirculating hoods shall not meet this requirement.	★	
1-10	**Materials**	Post jobsite recycling plan on site and maintain at least three bins (Credits 5-5 and 5-15)	★	
1-11	**Materials**	Recycle all clean wood, cardboard, new gypsum scrap, metal, asphalt paving/brick/concrete, electronics, and batteries (Credits 5-15, 5-16, 5-17)	★	
1-12	**Materials**	Use no endangered species or old growth wood (Credit 5-26)	★	
1-13	**ESJ**	Achieve at least 25 points in Equity and Social Justice Section (Section 6); not all points can come from EV charging	★	
FOUR-STAR REQUIREMENTS (400 points minimum)				
1-14		Meet 3-Star requirements	★	
1-15		Achieve a minimum of 60 points from Sections 2-5	★	
1-16	**Site & Water**	Amend disturbed soil with compost to a depth of min. 10 inches to restore soil environmental functions (Credit 2-16)	★	
1-17	**Site & Water**	Document a water efficiency score through WERS or WRI of 60 or less (Credit 2-39); OR Prescriptively all plumbing fixtures and appliances are low-flow (Credits 2-50 to 2-53) and emphasize drought-tolerant vegetation (food production excluded) (Credit 2-43)	★	
1-18	**Energy**	Building performance modeled ERI of 55 or less OR BPF of 0.52 or less; OR achieves prescriptive credits on the 2018 WSEC R406.3 (6 credits) or C406.1 (16 credits) tables (Credits 3-1, 3-2, 3-3, or 3-4). See Built Green 2018 WSEC Energy Modeling Guidelines	★	
1-19	**Energy**	Set up automatic energy and water benchmarking in EnergyStar Portfolio Manager and share data with Built Green (Credits 2-63 and 3-45)	★	
1-20	**Energy**	Design for solar readiness (see handbook for details)	★	
1-21	**IAQ**	Do not install a gas-burning fireplace inside unit or building (direct-vent fireplaces excluded) (Credit 4-63)	★	
1-22	**IAQ**	CARB II compliant or better for all finish woodwork, subfloors, plywood and composite wood materials, CRI Green Label Plus or better for all installed carpeting (Credits 4-15, 4-16, 4-21) (excludes structural lumber)	★	
1-23	**IAQ**	Provide EnergyStar or HVI certified range exhaust hood directly over cooking appliance and vent directly to the exterior of the building. General kitchen exhaust or recirculating hoods shall not meet this requirement. (Credit 4-53)	★	
1-24	**IAQ**	Provide track-off mats, carpets, and/or shoe grates at principal entryways to building (Credit 4-61)	★	
1-25	**Materials**	Use at least one material or product with an HPD or EPD (Credit 4-23 or 5-88)	★	
1-26	**Materials**	Achieve minimum recycling rate of 50% by weight (Credit 5-16)	★	
1-27	**ESJ**	Create a project-specific ESJ plan (Credit 6-9) and achieve at least 30 points in Equity and Social Justice Section; not all points can come from Universal Design or required ESJ plan	★	

FIVE-STAR REQUIREMENTS (600 points minimum)				
1-28		Meet 4-Star requirements	★	
1-29		Achieve a minimum of 90 points from Sections 2-5	★	
1-30	**Site & Water**	Manage at least 60% of stormwater on site (Credit 2-20)	★	
1-31	**Site & Water**	Document a water efficiency score through WERS or WRI of 50 or less (Credit 2-39); OR Prescriptively all plumbing fixtures and appliances are low-flow (Credits 2-50 to 2-53) and landscaping requires no potable water irrigation after establishment period (Credit 2-47)	★	
1-32	**Energy**	Building performance modeled ERI of 47 or less OR BPF of 0.48 or less; OR achieves prescriptive credits on the 2018 WSEC R406.3 (7 credits) or C406.1 (28 credits) tables (Credits 3-1, 3-2, 3-3, or 3-4). See Built Green 2018 WSEC Energy Modeling Guidelines	★	
1-33	**Energy**	Install solar PV producing 150 kWh for every 1000 sq ft (Credit 3-44)	★	
1-34	**IAQ**	All hard surface flooring must contain no orthophthalates (Credit 4-18)	★	
1-35	**IAQ**	All carpet must contain no fly ash (Credit 4-21)	★	
1-36	**Materials**	Achieve a minimum recycling rate of 75% of waste by weight (Credit 5-16)	★	
1-37	**Materials**	Calculate embodied carbon of the new building (Credit 5-90)	★	
1-38	**ESJ**	Achieve at least 35 points in Equity and Social Justice Section	★	

NET ZERO ENERGY LABEL (OPTIONAL)				
1-39		Meet any star-level requirements plus point minimum	★	
1-40	**Energy**	Demonstrate net zero energy performance over the course of a year	★	
1-41	**Energy**	Provide an energy performance disclosure waiver	★	

Check items included this project to qualify for a BUILT GREEN star rating. **2021 version**

QUALIFYING CREDITS

Credit #	Possible Points	Credits	Total Points	Comments
SECTION 2: SITE & WATER				
SITE PROTECTION				
Overall				
2-1	10	Build on an infill lot to take advantage of existing infrastructure and reduce development of virgin sites	10	
2-2	10	Build in a planned Built Green development or certified Built Green Community		
2-3	20	Build on a greyfield or brownfield site		
2-4	30	Create a Low Impact Development as defined in handbook		
2-5	5-25	Meet or exceed City of Seattle's Green Factor standards (point tiers in handbook)	5	
2-6	1-5	Bonus points: Use of Green Factor where it is not part of the project's jurisdictional development requirements		
2-7	20	For each acre of development, set aside an equal amount of land as a conservation easement or transfer of development rights		
		Subtotal	**15**	
Protect Site's Natural Features				
2-8	3	Avoid soil compaction by limiting heavy equipment use to building footprint and construction entrance	3	Typical practice
2-9	3	Preserve existing native vegetation as landscaping (min. 25% preserved)		
2-10	1-5	Retain trees on site (1 pt per 20% preserved)		
2-11	10 or 12 or 15	Restore percentage of site outside the footprint for the life of the building (10%, 20%, 30%)		
		Subtotal	**3**	
Protect Natural Processes On-Site				
2-12	2	Install and maintain temporary erosion control devices that significantly reduce sediment discharge from the site beyond code requirements	2	Typical practice
2-13	3	Use compost to stabilize disturbed slopes during construction		
2-14	2 or 5	Retain all native topsoil in-situ, or stockpile and protect from erosion		
2-15	3	Balance cut and fill, while minimizing change to original topography		
2-16	4	Amend disturbed soil with compost to a depth of min. 10 inches to restore soil environmental functions	4	Typical practice; 4-star requirement
2-17	2	Replant or donate removed vegetation for immediate reuse		
2-18	2	Use plants salvaged from another site		
2-19	3	Grind land clearing wood and stumps for reuse on site		
2-20	10 or 20 or 30	Manage specified percentage of stormwater from roof and site on site by 60%, 80%, or 100%		
		Subtotal	**6**	
Hardscapes				
2-21	5 or 10 or 15	Design to achieve 50%, 75%, or 90% effective pervious surface outside of building footprint; pervious hardscapes must meet minimum ASTM infiltration testing requirements to earn credit		
2-22	10 or 15 or 25	Install vegetated roof system (e.g. green roof) to reduce impervious surface on 25%, 50%, or 90%+ of total roof surface		
2-23	1	Integrate landscaping with parking area beyond code		
		Subtotal	**0**	
Reduce Urban Heat Island Effect				
2-24	5	Install an ENERGY STAR Qualified roof	5	
2-25	5	Provide shading for 30% of hardscapes by using landscape, landscape features, or overhangs		
2-26	5	For all exterior hardscape, including surface parking, use only light-colored pavement for 90% of project area (Solar Reflective Index of .28 or better)	5	
		Subtotal	**10**	

Eliminate Water Pollutants				
2-27	1	Wash out concrete trucks in slab or pavement subbase areas, or use washout boxes	1	
2-28	3	Establish and post clean up procedures for spills to prevent illegal discharges	3	Typical practice
2-29	1	Reduce hazardous waste through good jobsite housekeeping	1	Typical practice
2-30	2	Construct tire wash, establish and post clean up protocol for use		
2-31	2	Use slow release organic fertilizers to establish vegetation	2	
2-32	2	Use less toxic form release agent	2	
2-33	8-10	Use non-toxic (10 pts) or low-toxic (8 pts) outdoor materials for all landscaping	10	Typical practice
2-34	5	Use only "Low Hazard" pesticides and herbicides for landscape installation and in Operations & Maintenance Plan	5	
2-35	5	Do not use galvanized metal, EPDM, or PVC roofing materials		
2-36	2	Use a modified bitumen built-up or TPO membrane roof	2	
2-37	5	No clearing or grading during wet weather periods (November - April)	5	
2-38	40 or 50	On-site wastewater treatment for greywater only (40 pts) or for blackwater and greywater (50 pts), min. 50% captured		
		Subtotal	**31**	
WATER CONSERVATION				
Occupant Water Reduction (Select either Performance or Prescriptive Pathway)				
Performance Pathway				
2-39	30 or 50 or 80 or 100	Document a Water Efficiency Rating through WERS or WRI of 70 or less (see handbook for point tiers and approved modeling methods)		
2-40	5	Bonus: achieve EPA WaterSense 2.0 certification or Water Efficiency Rating Score (WERS or WRI) certification of 70 or less		
		Subtotal	**0**	
Prescriptive Pathway				
2-41	2	Mulch landscape beds with 4 inches of organic mulch	2	
2-42	3-12	Limit use of turf grass, or use no turf grass (3 pts per 25%)	3	
2-43	5 or 8	Landscape with plants appropriate for site topography and soil types, emphasizing use of plants with low watering requirements (drought tolerant)	5	4-star requirement
2-44	2	Install sub-surface or drip systems for irrigation with controls for each zone, including weather or soil moisture-based modulation	2	
2-45	5	Install a WaterSense irrigation system	5	
2-46	3	Irrigation system commissioned by a professional to ensure no leaks, efficient system	3	
2-47	10	Install landscaping that requires no potable water for irrigation whatsoever after initial establishment period (approximately 2 years)		
2-48	5-20	Install rainwater collection system (cistern) that reduces water consumption for irrigation (5 pts for each 25% of irrigation needs met by cistern)		
2-49	80	Provide 100% of building and landscaping water use with captured precipitation or reused water purified without the use of chemicals		
2-50	1-3	Install ALL bathroom faucets with 1.0 gpm (1 pt), 0.5 gpm or less (3 pts), must be WaterSense labelled	1	4-star requirement
2-51	3	Install ALL kitchen faucets with 1.8 gpm or less	3	Code requirement
2-52	5-7	Install ALL showerheads with 1.75 gpm (5 pts), 1.5 gpm or less (7 pts), must be WaterSense labelled	5	4-star requirement
2-53	4-12	Install WaterSense labelled toilets (1.28 gpf = 4 pts, 1.1 gpf = 8 pts, 0.8 gpf = 12 pts. All toilets must comply.)	4	Code requirement
2-54	4	Install no-cartridge waterless urinals or 1/8 gallon urinals and 1.28 gpf maximum (WaterSense if not flushometer) toilets in all common areas		Target
2-55	15	Stub-in plumbing to use greywater for toilet flushing (must test for leaks)		
2-56	30	Use greywater or rainwater for toilet flushing		
2-57	3	Provide water sub-metering for each unit	3	
2-58	3-5	Limit pipe volume between water heat source and furthest fixture. Pipe run should store no more than 0.5 gallons (3 pts) or 0.3 gallons (5 pts)		
		Subtotal	**16**	
Eliminate Water Pollutants				
2-59	1	Do not install garbage disposal		
		Subtotal	**0**	
DESIGN ALTERNATIVES				
2-60	10	Follow comprehensive integrated design plan for site and structure (as described in the handbook)		
2-61	2 or 10	Take advantage of parking reduction credits that are available in your jurisdiction (2pts), or no parking (10pts)		
2-62	5-10	Provide structured parking within the proposed building footprint at a 50% minimum (5pts), or 100% (10pts)		
		Subtotal	**0**	
BENCHMARKING				
2-63	5	Commit to annual benchmarking of building water consumption using ENERGY STAR Portfolio Manager and to sharing this information with Built Green	5	
2-64	7	Install a prominent water use display in high traffic common area		
		Subtotal	**5**	
EXTRA CREDIT/INNOVATION for Site and Water				
2-65	1-10	Extra credit for innovation in Site and Water, subject to approval by Built Green Program Manager		
		Subtotal	**0**	
		SITE & WATER TOTAL	**106**	

SECTION 3: ENERGY				
ENERGY IMPROVEMENT				
Multifamily permitted under Residential code (Select one)				
3-1	30 or 50 or 80	Document a building performance ERI of 58 or less, before PV Solar generation is included (see handbook for point tiers)		
3-2	30 or 50 or 80	Document building improvements beyond 2018 WSEC using a prescriptive approach by earning at least 5.5 credits on R406.3 table, less than 50% of points may come from PV solar generation (See handbook for point tiers)		
Multifamily permitted under Commercial code (select one)				
3-3	30 or 50 or 80	Document a building performance factor of 0.55 or less (see handbook for point tiers)	50	
3-4	30 or 50 or 80	Document building improvements beyond 2018 WSEC using a prescriptive approach; earning at least 11 credits on the C406.1 table, less than 50% of points may come from PV solar generation (see handbook for point tiers)		
		Subtotal	**50**	

ADDITIONAL CERTIFICATIONS				
3-5	30 or 40	Build a net zero or net positive energy building that draws zero outside power or fuel on a net annual basis		
3-6	5 or 10	Achieve Energy Star Multifamily (5pts), DOE Zero Energy Ready, or PHIUS+ certifications (10pts)		
3-7	3	Register project with RESNET or Utility Program of equal or greater quality assurance		
		Subtotal	**0**	
SYSTEMS COMMISSIONING				
3-8	5 or 10	Provide Fundamental Commissioning of building systems (see handbook for point tiers)	5	
		Subtotal	**5**	
AIR SEALING				
3-9	3	Exceed air sealing target for the assumed performance model	3	.25 for code. Pass up to .4 (whole building air leakage)
3-10	10	Use airtight building method, such as SIP or ICF for all walls		
3-11	2	Use of continuous insulation		
3-12	3	Conduct unit compartmentalization test with sample rate of 1 and 10 or less, must meet shall pass 0.30 CFM per SF or less		
3-13	5	Use a blown-in wall insulation system (i.e. BIBs, cellulose)		
3-14	5 or 10 or 15	Conduct blower door test for the whole building with results better than base code requirement (see handbook for point tiers)		
		Subtotal	**3**	
PASSIVE DESIGN FEATURES				
3-15	6 or 12	Passive solar: three of the below strategies (6 pts), or five (12 pts)		
	a	East/west orientation		
	b	Glazing is tuned to the orientation of the building		
	c	Proper overhang sizing on south and movable shades on west glazing		
	d	Natural shading on south side with trees		
	e	Limit glazing to 20-25% of wall area		
3-16	2	Operable windows that create cross ventilation in both units and common areas		
		Subtotal	**0**	
HEATING/COOLING				
Distribution				
3-17	3	Install ENERGY STAR ceiling fans in all units that is 5 CFM/ watt or greater - minimum one per unit	3	
3-18	5 or 10	Third-party total duct leakage performance test (see handbook for point tiers)	5	Beyond typical
3-19	5	All ducts are in conditioned space	5	
3-20	3	Locate heating/cooling equipment inside the conditioned space		
		Subtotal	**13**	
Controls				
3-21	2	Install programmable thermostats for all individual heating zones	2	
3-22	1	Provide separate switching for bathrooms fan/heat lamp and fan/light combination fixtures	1	
3-23	3	Provide electricity and/or natural gas direct metering for each unit	1	
3-24	5	Install window switch and thermostats with temperature setbacks to react to operable window use		
3-25	3	Black or smart switches in all units for turning off associated outlets		
		Subtotal	**4**	
Heat Recovery				
3-26	5 or 10	Install a heat recovery ventilator (HRV) or an energy recovery ventilator (ERV) with fan power limited to 0.8 watts/CFM or less (not applicable if using performance pathway)	5	
3-27	2	If HRV or ERV installed in Low-rise building, commission and make sure system is balanced		
		Subtotal	**5**	
WATER HEATING				
Overall				
3-28	5	Install drainwater heat recovery system (DHR)		
3-29	2	Install whole building "smart" variable-speed recirculation pump		
3-30	2	Install the water heater inside the heated space (electric, direct vent, or sealed venting only)		
		Subtotal	**0**	
Distribution				
3-31	10	Insulate all hot water recirculation lines above code and include thermally broken hangers		
		Subtotal	**0**	
EFFICIENT LIGHTING				
3-32	1-2	Install lighting dimmer, photo cells, timers, and/or motion detectors for high efficiency fixtures - common areas and in-unit lighting		
3-33	2	Install motion detectors for minimum 90% of exterior fixtures		
		Subtotal	**0**	
APPLIANCES				
3-34	2	Install heat pump clothes dryers in all units		
3-35	3	Install heat pump clothes dryers in common laundry facilities instead of in each unit		
3-36	1	Do not use conditioned air for common laundry dryer make-up air		
3-37	2	Provide clotheslines to each tenant and "wet room" or outside space in unit or common area for hang drying clothes		
3-38	2	Install induction cooktop in all units		
3-39	2	Install ENERGY STAR exhaust fans in all units, with fan sone rating of 0.3 or less	2	
		Subtotal	**2**	
BUILDING ENERGY FUEL TYPE				
3-40	10	100% Electric building. No combustion fuel sources used in the building.		
		Subtotal	**0**	

ALTERNATIVE ENERGY				
3-41	7	Participate in the local utility's electricity program for renewable electricity sources (covers minimum 25% of energy used)		
3-42	4	Develop incentive program for tenants to purchase Green-e certified RECs		
3-43	1	Solar-powered or low-voltage walkway or outdoor area lighting		
3-44	5-25	Install photovoltaic system (excluding solar hot water): 5 pts for 300 W/1000 sq ft and 5 pts for each additional 150 W/1000 sq ft.	5	Beyond typical
		Subtotal	**5**	
BENCHMARKING				
3-45	5	Provide whole building benchmarking using Energy Star Portfolio Manager and share with Built Green	5	
3-46	5	Include provisions in tenant leases releasing utility consumption and billing data to building owner and authorized agents		
3-47	10	Commit to performing a post-occupancy comparison of modeled vs. actual energy performance and to sharing with Built Green through Energy Star Portfolio Manager		
		Subtotal	**5**	
EXTRA CREDIT/INNOVATION for Energy				
3-48	1-10	Extra credit for innovation in Energy, subject to approval by Built Green Program Manager		
		Subtotal	**0**	
		ENERGY TOTAL	**92**	

SECTION 4: HEALTH & INDOOR AIR QUALITY				
OVERALL				
4-1	5	A WELL Accredited Professional is a member of the project design or build team	5	Beyond Typical
4-2	15	Certify the building through a third-party verified program emphasizing indoor air quality (e.g., WELL, EPA Indoor Air Plus)		
4-3	1	Building is designated non-smoking	1	
		Subtotal	**6**	
JOBSITE OPERATIONS				
4-4	1	Use less-toxic cleaners	1	
4-5	1	Require workers to use VOC-safe masks when applying VOC containing wet products and N-95 dust masks when generating dust	1	
4-6	1-5	Take measures during construction operations to avoid moisture problems later (see handbook for examples; 1 pt per action)	5	
4-7	2-4	Take measures to avoid problems due to construction dust (see handbook for point tiers)	2	
4-8	3	Ventilate during all new wet finish applications	3	
4-9	2	No use of unvented combustion heaters during construction	2	
4-10	3	Clean duct, furnace, and filter thoroughly before occupancy	3	
4-11	3	Institute a jobsite anti-idling program for construction vehicles	3	
4-12	3-12	Use non-diesel alternative fuels in construction equipment: electricity, propane, or natural gas (3 pts per 25% of equipment using alternative fuels)		
4-13	4	Require healthy jobsite plan for workers' compliance	4	
4-14	4	Implement construction management plan to ensure healthy jobsite plan is implemented optimally and adhered to	4	
		Subtotal	**28**	
LAYOUT AND MATERIAL SELECTION				
4-15	6	Inside the building envelope use only low-VOC, low-toxic, water-based, solvent-free sealers, grouts, mortars, caulks, adhesives, stains, pigments, and additives on all wet-applied applications	6	
4-16		Use No Added Urea Formaldehyde (NAUF), No-Added Formaldehyde (NAF) or Ultra-Low Emitting Formaldehyde (ULEF) finishes and materials (including adhesives and resins):		
	3	Insulation or Greenguard Gold certified insulation product	3	
	3	Plywood and composites of exterior grade for interior use	3	
	2	Finish work, trims and Molding (e.g. window trim, door trim, base molding, etc.)	5	
	5	Flooring material (excludes carpet)	5	
	5	Cabinets and shelving		
	5	Interior Doors		
4-17	1	Use pre-finished flooring	1	Typical
4-18	5	Use hard surface flooring without orthophthalate plasticizers		
4-19	1	Do not install insulation or carpet padding that contains brominated flame retardant (BFR)		
4-20	10	No carpet in units		
4-21		When installing carpet reduce indoor air pollutants		
	2	Limit use of carpet to one-third of unit's square footage		
	1	Specify and use CRI Green Label Plus or Greenguard certified products for carpet, pad, and adhesive	1	
	5	Specify and use carpet, pad or adhesive that does not contain fly ash filler in backing		
	1	Install by dry method		
	1	Install low pile or less allergen-attracting carpet and pad		
	2	Install untreated natural fiber carpet		
	1	Avoid installing carpet in environments where it can get wet (kitchen, bathroom, near entries)	1	
4-22	30	Select materials such that the building is free from all of the materials and chemicals listed in the handbook. Please discuss with Program Manager before claiming this point		
4-23	1-5	Use products with a Health Product Declaration (HPD)	1	Glass/glazing
		Subtotal	**25**	
MOISTURE CONTROL				
Overall				
4-24	5	Use Building Envelope Consultant during design	5	
4-25	5	Envelope inspection at various stages of envelope installation by a qualified professional	5	
4-26	1	Grade to drain away from buildings	1	
		Subtotal	**11**	
Roof				
4-27	6 or 10	Provide 2:12 (9.5 degree) pitch sloped roof surface -for at least 50% of roof (6 pts), or 100% (10 pts)		
		Subtotal	**0**	
Walls - Above Grade				

4-28	3	Provide continuous air- and weather resistive barrier installed to manufacturer's requirements	3	
4-29	3	Use prefabricated, liquid applied, or self-adhering flashing at siding transitions and penetrations	3	
4-30	6	Install rainscreen siding	6	
4-31	3	In wood-framed structures, use low-toxic mold-inhibitor product		
		Subtotal	**12**	
Below Grade				
4-32	3	For slab on grade, use 10 mil polyethylene vapor barrier or equivalent performance, directly under slab	3	
4-33	2	Perform moisture test for any slab on grade prior to installing any finish to manufacturer's specifications		
4-34	2	Install mechanical ventilation system to control moisture in crawl space		
4-35	1	Install a rigid perforated footing drain at foundation perimeter, not connected to roof drain system	1	
4-36	3	Install moisture management system for below grade walls beyond code, i.e., drainage mat	1	
		Subtotal	**5**	
Openings				
4-37	1	Properly seal building openings and penetrations against moisture and air leaks	1	
4-38		Install additional moisture control measures:		
	5	Sill pans with back dams or slope at windows	5	
	3	Door pans with back dams at doors	3	
	5	Sill flashing extending up sides of windows	5	
	3	Threshold protection at doors	3	
	1	Metal head flashing at windows	1	
	1	Metal head flashing at doors	1	
	1	Min. 18" overhangs at entryways	1	
4-39	3	Provide hose testing or negative pressurization testing to pre-installed sample of each window type to test assembly for moisture control protection - ASTM E1105 or equal		
		Subtotal	**20**	
AIR DISTRIBUTION AND FILTRATION				
4-40	2	No stud or joist cavities used for air conveyance	2	
4-41	2	Do not install electronic, metal mesh, horse hair, or non-pleated fiberglass filters	2	
4-42	1	Make sure air intakes are placed to avoid intake from air pollutant sources (beyond code)		
4-43	1	No parking within 40 feet of building air intakes		
4-44	2 or 5	Use effective media air filter, ensuring the HVAC system is designed for the static pressure drop of the filter: MERV 8 (2 pts) or MERV 12+ (5 pts)		
4-45	2	Install operable windows in all occupied spaces, minimum 4% of floor area		
4-46	2	Install CO_2 detectors in community rooms	2	
4-47	2	Demand controlled ventilation in all rooms designed for high occupancy		
4-48	10	Utilize a balanced ventilation approach (supply + exhaust/return) in residential units		
		Subtotal	**6**	
HVAC EQUIPMENT				
4-49	1	Design to ensure accessibility of all system components	1	
4-50	1	Design to prevent standing water in ducted HVAC systems	1	
4-51	3	Commission all spot ventilation fans in all units	3	
4-52	1	Use heating system controls that are free of mercury	1	
4-53	1	Range exhaust hoods shall be ENERGY STAR or HVI certified and have a maximum flow rate no less than 100 and no more than 300 cfm	1	
4-54	2	Install an automatic fan control with 20-minute delay timer, motion sensor, or humidistat for bath exhaust fans	2	
4-55	2	Install quiet bath exhaust fan with smooth ducting, minimum 4 inch, with a fan sone rating of .3 or less at or above the design CFM	2	
4-56	1	No sound insulation or other fibrous materials installed inside ducting		
4-57	3	Install sealed combustion heating and hot water equipment		
4-58	3 or 5	Compartmentalization testing of sampling of units (see handbook for point tiers)		
		Subtotal	**11**	
HEALTH AND INDOOR AIR QUALITY				
4-59	1	Install biodegradable carbon filter at sink		
4-60	1	Install showerhead filter in all units, include information in the tenant handbook		
4-61	3	Provide track-off mats, carpets, and/or shoe grates at principal entryways to building	3	
4-62	2	Provide a shoe removal and storage area at the entrance to each unit		
4-63	10	Do not install gas-burning appliances inside unit or building (direct-vent fireplaces excluded)	10	4-star requirement
4-64	1	Install floor drain or catch basin with drain under washing machines (and condensing/heat pump dryers if applicable)		
4-65	1-2	Use radon resistant construction using EPA standards (passive) (1 pt) or test for radon and install active system after building is complete (2 pts)		
		Subtotal	**13**	
EXTRA CREDIT / INNOVATION for Health and Indoor Air Quality				
4-66	1-10	Extra credit for innovation in Indoor Air Quality, subject to approval by Built Green Program Manager		
		Subtotal	**0**	
		HEALTH & INDOOR AIR QUALITY TOTAL	**138**	

SECTION 5: MATERIALS EFFICIENCY				
OVERALL				
5-1	10 or 15 or 20	Design and build for deconstruction concept - 50% (10 pts), 75% (15 pts), or 90% (20 pts)		
5-2	1-5	Eliminate materials and systems that require finishes or finish materials on a minimum of 100 square feet in common areas (1 pt per 100 sqft)		
		Subtotal	**0**	
JOBSITE OPERATIONS				
5-3	1	Provide weather protection for stored and installed materials		
5-4	1-3	Use suppliers who offer reusable or recyclable packaging with recyclable/ biodegradable fillers or plastic and Styrofoam free packaging		
		Subtotal	**0**	

REDUCE				
5-5	5	Implement comprehensive construction waste reduction and management plan	5	
5-6	2	Create detailed take-off and provide as cut list to framer	2	
5-7	2	Use central cutting area or cut packs	2	
5-8	5	Use prefabricated or modular construction elements		
5-9	5-20	Reduce total waste generated on site (see handbook for point tiers)		
		Subtotal	**9**	
REUSE				
5-10	15-30	Use deconstruction to dismantle existing building and salvage materials for reuse (see handbook for point tiers)		
5-11	3	Engage a salvage professional to conduct a salvage assessment of buildings planned for removal		
5-12	1	Donate, sell, or give away reusable finish items, wood scraps, lumber and land clearing debris		
5-13	1-10	Reuse salvaged materials (1 pt per material, examples listed in handbook)		
5-14	15	Reuse existing buildings onsite or relocate buildings for reuse		
		Subtotal	**0**	
CONSTRUCTION AND DEMOLITION MATERIALS MANAGEMENT				
5-15	5	Use a three bin waste separation system: one for landfill, one for comingle recycling, one for phase-appropriate source-separated recycling	5	
5-16	8-15	Send at least 90% of jobsite waste (by weight, excluding concrete, brick and asphalt) to a commingle recycling facility with a minimum of 50% diversion rate (see Built Green Recycling Guidelines); 50% diversion rate (8pts), 75% (12pts), 90% (15pts)	8	Meet 4-star requirement. Regionally, possible to achieve 75% (12pt target)
5-17		Bonus: Source separated recycling, 90% minimum rate for all material generated during construction		
	1	Recycle cardboard by source separation	1	3-star requirement (1-11)
	2	Recycle metal scraps by source separation	2	3-star requirement (1-11)
	5	Recycle clean scrap wood and broken pallets by source separation		
	2	Recycle plastic film, package wrap, and pallet wrap by source separation		
	3	Recycle drywall by source separation		
	2	Recycle concrete/asphalt rubble, masonry materials, or porcelain by source separation	2	3-star requirement (1-11)
	1	Recycle paint by source separation		
	4	Recycle asphalt roofing by source separation		
	4	Recycle Styrofoam by source separation		
	2	Recycle carpet and carpet padding by source separation		
	1	Recycle glass by source separation		
	3	Recycle land clearing and yard waste, food waste, soil and sod by source separation		
	3	Recycle light blubs, electronics and batteries by source separation		
5-18	1	Provide designated area in building where residents can give away reusable items for use by other residents		
		Subtotal	**18**	
DESIGN AND MATERIAL SELECTION				
Overall				
5-19	1	Use standard dimensions in design of structure		
5-20	10	Design and install recycling stations on each floor, including a maintenance service plan	10	
5-21	8	Design and install food waste management system on each floor, including a maintenance service plan		
5-22	1-3	Install materials with longer life cycles		
5-23	1-10	Install locally/regionally produced materials (1 pt per material)	2	Wood and Concerte is feasible in region.
5-24	1-8	Use building-salvaged lumber, minimum 200 board feet		
5-25	2-6	Use rapidly renewable building materials and products made from plants harvested within a ten-year cycle or shorter (2 pts per material)		
5-26	3	Use no endangered species or old growth wood	3	
5-27	3	Use no PVC, CPVC, or ABS piping for plumbing or sprinklers within the building envelope		
5-28	1-3	Use Red List Free, DECLARE, Living Product, or Cradle-to-Cradle labelled products (1 pt per material)		
		Subtotal	**15**	
Framing				
5-29	7-10	Use salvaged framing lumber in structural applications, 30% minimum		
5-30		Use third-party certified, sustainably harvested wood that meets Tier 1 or Tier 2 of the Built Green Wood Certification Guidelines; 50% minimum per application		
	2 or 6	Dimensional lumber Tier 1 (10pts) or Tier 2 (6pts)		
	3 or 5	Sheathing Tier 1 (7 pts) or Tier 2 (4 pts)		
	3 or 6	Beams Tier 1 (5 pts) or Tier 2 (3 pts)		
5-31	6-8	Use factory-framed wall panels (panelized wall construction), e.g. SIPs, ICFs, CLT		
5-32	4	Use ICFs with concrete using at least 20% supplementary cementitious materials (by weight)		
5-33	2	Use advanced wall framing - 24-inch OC, with double top plate		
5-34	3	Use engineered structural products and use no 2xs larger than 2x8, and no 4xs larger than 4x8		
5-35	1	Use finger-jointed framing material (e.g. studs)		
5-36	8	Use Cross Laminated Timber in place of steel or concrete beams or framing		
		Subtotal	**0**	
Foundation				
5-37	3-6	For all foundations, retaining and structural walls, use supplementary cementitious materials for 25-50% by weight of cementitious materials for all concrete; 25% (3 pts) and 50% (6 pts) (pavement excluded)		
5-38	2	Use recycled concrete, asphalt, or glass cullet for base or fill	2	
		Subtotal	**2**	
Sub-Floor				
5-39	1	Use recycled content sub-floor		
		Subtotal	**0**	

Finish Floor				
5-40	2-7	Use salvaged flooring (5pts) or flooring with wear layer made from salvaged lumber, minimum 3mm wear layer (3pts)		
5-41	3	Use rapidly renewable flooring products with a ten-year harvest cycle or shorter (excluding carpet)		
5-42	3	Install natural fiber carpet (e.g. jute, sisal, wool)		
5-43	2	If using vinyl flooring, use product with recycled content		
5-44	4	No vinyl flooring		
5-45	1	Use recycled content carpet pad	1	
5-46	2	Use recycled content carpet	2	
5-47	2 or 4	Use replaceable carpet tile for 50% of carpeted area (2 pts) or 100% of carpeted area (4 pts) (minimum of 50 sqft)		
5-48	5	If using tile, use hard surface tile that is 40% recycled content		
5-49	5	Use natural linoleum		
5-50	4 or 5	Use flooring that is third-party certified, sustainably harvested wood that meets Tier 1 (5pts) or Tier 2 (4pts) of the Built Green Wood Certification Guidelines; 50% minimum		
5-51	1	Use spot repairable floor finish		
		Subtotal	**3**	
Interior Walls				
5-52	2	Use drywall with a minimum of 95% recycled content synthetic gypsum or 30% if non-synthetic gypsum		
5-53	2	Use natural interior wall finishes, e.g. lime paint, clay, wood		
5-54	2 or 3	Use recycled or “reworked” paint and finishes on main surfaces or all surfaces		
5-55	1	If installing acoustical tiles or paneling, select a recycled content product		
		Subtotal	**0**	
Windows				
5-56	8	Use all wood, composite, or fiberglass windows		
		Subtotal	**0**	
Trim				
5-57	2 or 4	Use trim that is third-party certified, sustainably harvested wood that meets Tier 1 (4pts) or Tier 2 (2pts) of the Built Green Wood Certification Guidelines, 90% minimum		
5-58	3	Use finger-jointed or MDF trim with no added urea formaldehyde, 90% minimum		
5-59	2	Use wood veneers made of rapidly renewable product		
5-60	2 or 4	Use wood veneers that are third-party certified, sustainably harvested wood that meets Tier 1 (4pts) or Tier 2 (2pts) of the Built Green Wood Certification Guidelines, 90% minimum		
		Subtotal	**0**	
Cabinetry and Counters				
		For cabinets:		
5-61	2 or 4	Use salvaged cabinets		
5-62	2	Use salvaged hardware		
5-63	2 or 4	Use wood that is third-party certified, sustainably harvested wood that meets Tier 1 (4pts) or Tier 2 (2pts) of the Built Green Wood Certification Guidelines, 90% minimum		
5-64	3	Use recycled-content cabinet casework for at least 75% of all casework		
5-65	1	Use cabinet casework and shelving made with agricultural fiber that is NAUF, NAF, or ULEF for at least 75% of all cabinetry	1	
		For Countertops:		
5-66	4 or 6	Use salvaged countertops: common areas (4pts) or in all units (6pts)		
5-67	2 or 4	Use countertops that are third-party certified, sustainably harvested wood that meets Tier 1 (4pts) or Tier 2 (2pts) of the Built Green Wood Certification Guidelines		
5-68	4	Use domestic stone or 90%+ quartz content in all units		
5-69	1 or 4	Use recycled-content material in lobby/reception areas (1 pt) or in all units (4 pts)		
		Subtotal	**1**	
Roof				
5-70	2	Use recycled content roofing material	2	
5-71	2	Use a modified bitumen built-up roof		
5-72	5	Protect at least 90% of built-up and membrane roofing with ballast, pavers, or vegetated roof systems		
		Subtotal	**2**	
Insulation				
5-73	4	All cavity insulation to have a minimum of 40% post-consumer recycled content		
5-74	5	Use environmentally friendly foam building products (CFC-, HFC-, HCFC-free)	5	
		Subtotal	**5**	
Exterior Walls				
5-75	2	Use recycled content sheathing (OSB does not apply)		
5-76	3	Use exterior cladding with reclaimed or recycled material on at least 20% of solid wall surface		
5-77	4	No vinyl siding or exterior trim	4	
5-78	3	Use 50-year siding product (minimum 20% of solid wall surface)		
5-79	4	Use thermally-modified, bio-based liquid impregnated wood siding that does not require wood sealer		
5-80	3 or 5	Wood siding that is third-party certified, sustainably harvested wood that meets Tier 1 (5pts) or Tier 2 (3pts) of the Built Green Wood Certification Guidelines; at least 20% of solid wall surface		
5-81	4	Use salvaged siding		
		Subtotal	**4**	
Other Exterior				
5-82	2 or 4	Use lumber that is third-party certified, sustainably harvested wood that meets Tier 1 (4pts) or Tier 2 (3pts) of the Built Green Wood Certification Guidelines (excluding siding)		
5-83	1	Use 95% recycled-content plastic or wood/bamboo polymer lumber for decks and porches		
5-84	5	If lumber is used, use no pressure treated lumber		
5-85	2	Use thermally-modified lumber that does not require wood sealer for decking and exterior millwork (excludes siding)		
5-86	3-6	For all concrete pavements, use supplementary cementitious materials for 25-50% by weight of cementitious materials for all concrete; 25% and 50%		
		Subtotal	**0**	
BENCHMARKING				
5-87	5	Commit to annual tracking of building trash using ENERGY STAR Portfolio Manager and to sharing with Built Green	5	
		Subtotal	**5**	

EMBODIED CARBON				
5-88	1-10	Use materials with Environmental Product Declaration (EPD) (1 pt per EPD)	5	
5-89	1-5	Request product-specific EPDs from vendors or manufacturers for materials that do not have one (1 pt per letter sent). See handbook for sample letter. (Builder is limited to claiming one letter per product across multiple units and checklists)		
5-90	20 or 30	Calculate the embodied carbon of the new building OR calculate an embodied carbon baseline and show at least a 10% reduction		
5-91	10	Use a minimum of 15% of project's material budget on carbon-neutral, carbon-negative, or climate-positive materials		
5-92	15	Purchase a one-time carbon offset to account for carbon footprint of materials, minimum of 50% of project footprint		
		Subtotal	**5**	
EXTRA CREDIT / INNOVATION for Materials Efficiency				
5-93	1-10	Extra credit for innovation in Materials Efficiency, subject to approval by Built Green Program Manager		
		Subtotal	**0**	
		MATERIALS EFFICIENCY TOTAL	**69**	

SECTION 6: EQUITY AND SOCIAL JUSTICE				
PROJECT TEAM				
6-1	1-10	Use Built Green® member subcontractors, vendors, service providers, and real estate agents that are committed to equity and inclusion (see credit 6-4) (Project Builder and BG Verifier not applicable)		
6-2	5-15	Expand stakeholder involvement to create diverse teams to guide equitable development and culturally enriched spaces while expanding interest and capacity-building among priority populations, consultants and in-house staff		
6-3	5	Offer equity-focused trainings and workshops to staff, sub-contractors, and other building partners		
6-4	5	Develop a racial equity vision, mission and values statement and proximately display and share with staff, building partners, clients and general public		
6-5	5	Develop an annual racial equity workplan to focus internal and external equity efforts		
6-6	1-3	Use Just-labelled, or certified B-Corporations or SEED firms (1pt per firm)		
		Subtotal	**0**	
OVERALL DESIGN				
6-7	15	Certify the social, economic, and environmental outcomes through SEED Certification		
6-8	15-25	Project includes at least 10% affordable, work-force or attainable housing units (see handbook for point table)		
6-9	3	Develop a project-specific ESJ plan clearly indicating equity objectives and actions; identifying priority actions	3	Required for 4-Star
6-10	7-12	Implementing priority elements of project's ESJ plan (7pts); implement all elements or calculate local economic and equity impact of implemented actions (12pts)		
6-11	2	Conduct internal review of ESJ plan implementation		
6-12	15	Site, design, and construct to counter known disparities identified through engagement with community stakeholders		
6-13	1	Submit a Code Innovation case study on this project and be selected by the Building Innovations Database		
		Subtotal	**3**	
UNIVERSAL DESIGN				
Designed for Inclusivity				
6-14	1-2	Stepless front entry (2pts), Stepless other entry (1pt); max threshold height of 1/2"		
6-15	1	Hard-surface stepless grade changes to allow access to essential maintenance areas (e.g., garbage cans, shared laundry)		
6-16	1	Install exterior accessible hard-surface gathering area (requires stepless grade changes to access area)		
6-17	3	Provide community common areas accessible to all building occupants		
6-18	2	Provide accessible guest bathroom near common areas for those with mobility impairments		
6-19	1-3	Install cabinets with removable or slide-away lower doors for roll-up access to kitchen sink, upper cabinets that lower to counter top height for access, etc. (1pt per feature)		
6-20	1	Install in-unit fire and CO alarms that include visual alarm features		
6-21	3	Minimum door width 2'-10" for all rooms requiring entry (small closets excepted)		
6-22	1	Install touchless or motion sensor plumbing fixtures		
6-23	1-3	Install smart technology (e.g. electronic blinds, programmed environmental controls, etc.) (1pt per installed item)		
6-24	10	Design to ensure accessibility of all building features that provide essential occupant services (requires a stepless entry)		
6-25	10-20	Minimum 10% of units are Accessible Dwelling Units (requires a stepless entry)		
		Subtotal	**0**	
Community Connectivity				
6-26	15	Create a Transit-Oriented Development		
6-27	3	Build on a lot that is within 1/2 mile of at least six essential services, (e.g., grocery store, post office, place of worship, community center, daycare center, bank, school, restaurant, medical/dental office, laundromat/dry cleaner, etc)		
6-28	4	Build within ¼ mile of a transit stop or Park and Ride (not combinable with 6-25)		
6-29	10	Create a mixed-use building	10	
6-30	6-10	Provide subsidized bus passes (25% or 50% subsidized)		
6-31	2	Provide bicycle lockers or bicycle storage beyond code	2	
6-32	2	Provide bike service station available to tenants	2	
6-33	2	Provide bus shelters		
6-34	6-12	Provide dedicated parking spots for carpool or car-share vehicles (6 pts for first stall above code, 2 pts for each additional)		
6-35	2	Provide a link to community trails		
6-36	5-20	Provide EV charging station (5 pts for one station, 3 pts for each additional)	20	
6-37	1-2	Provide community garden space for community interactions		
6-38	1-5	Design to promote and encourage pedestrian-friendly and safe neighborhoods (see handbook)		
		Subtotal	**34**	

STAKEHOLDER ENGAGEMENT				
6-39	5	Use Integrated Design Process	5	
6-40	8	Engage with local community groups to assess community needs to inform the project-specific ESJ plan, Built Green checklist and project goals, or developer's overall equity workplan		
6-41	5	Engage community to directly contribute to design element onsite		
6-42	5	Conduct post-occupancy evaluation with community stakeholders to evaluate the process and outcomes of their involvement of the project		
		Subtotal	**5**	
PRO-EQUITY SOURCING				
6-43	1-10	Use suppliers, vendors, or subcontractors that are WMBE or MBE firms (1pt per firm)		
6-44	5-15	Hire temporary employees or apprentices through Weld Works or ANEW (or equivalent mission-driven employment program); minimum 25% of temporary work hours		
6-45	2	Permanently hire employees from Weld Works or ANEW (or equivalent mission-driven employment program) used during demolition or construction		
6-46	5-10	Hire workers and apprentices who reside in one of the 43 Priority Hire ZIP codes (or equivalent economically distressed Washington ZIP codes); minimum 25% of work hours		
		Subtotal	**0**	
ADVANCE ECONOMIC JUSTICE				
6-47	8	Offer vacant properties to Weld Seattle (or similar organization) for use as temporary housing prior to demolition		
6-48	3	Offer mentorship program to employees, interns, and apprentices		
6-49	1	Participate in recruitment or career development events in underserved communities		
6-50	1	Offer job training, job assistance, or job retention programs to underserved community members		
6-51	8	Partner with organizations and/or financial institutions to create pathways to investment and homeownership, especially for individuals and families facing the most pressing disparities		
6-52	5	Annually provide pro bono or substantially reduced rate services, resources, or trainings to nonprofit or historically marginalized community organizations		
6-53	8	Use alternative development and ownership models (e.g., land trust, co-ownership) to create additional pathways to homeownership		
		Subtotal	**0**	
EXTRA CREDIT				
6-54	1-10	Extra credit for innovation in Equity and Social Justice, subject to approval by Built Green Program Manager		
		Subtotal	**0**	
		BUILT GREEN TEAM SECTION TOTALS	**42**	

SECTION 7: OPERATION, MAINTENANCE & TENANT EDUCATION				
7-1	7	Provide educational materials designed for the public that highlight the green building features and their performance that are included in the project	7	
7-2	5	Prepare an environmentally friendly operations and maintenance plan for common area facilities		
7-3	5	Prepare an environmentally friendly landscape operations and maintenance plan		
7-4	6	Develop and provide a building-wide food waste disposal strategy		
7-5	7	Require tenants to sign an energy consumption data release form (if separately metered)	7	
7-6	5	Require tenants to sign a water consumption data release form (if separately metered)	5	
7-7	7	Conduct training sessions for maintenance staff and/or residents		
7-8	5	Give individual feedback to all tenants about their energy consumption in comparison to others and/or building average		
		Provide tenants with materials including information on:		
7-9	1	Where to dispose of food waste (compost)		
7-10	1	Where to dispose of recyclables		
7-11	1	General practices to conserve water and energy		
7-12	1	Transportation options and resources		
7-13	3	EVs, their benefits, and where to charge them		
7-14	2	Green features and benefits of the buildings		
7-15	3	Maintenance checklists for their unit		
7-16	1-5	Extra credit for innovation in Operation, Maintenance and Tenant Education, subject to approval by Built Green		
		OPERATION, MAINTENANCE & TENANT EDUCATION TOTAL	**19**	

SECTION 8: BUILT GREEN BRAND PROMOTION				
8-1	5	Verifier provides case study write-up highlighting project's deep green features and performance with professional project photos for use on Built Green's blog (requires minimum of 450 points to be earned, project provides affordable housing, or is innovative). Subject to approval and discretion of the Built Green Program Manager.		
8-2	1	Posted a Built Green yard sign during construction		
8-3	1	Built Green logo or hyperlink prominently listed on Builder's or project's website		
8-4	1-5	Extra credit for innovation in Built Green Brand Promotion, subject to approval by Built Green		
		SECTION 7 TOTAL	**0**	

PROJECT SUMMARIES	
SECTION 1: BUILT GREEN TEAM	**42**
SECTION 2: SITE & WATER	**106**
SECTION 3: ENERGY	**92**
SECTION 4: HEATH & INDOOR AIR QUALITY	**138**
SECTION 5: MATERIALS EFFICIENCY	**69**
SECTION 6: OPERATION, MAINTENANCE & TENANT EDUCATION	**19**
SECTION 7: BUILT GREEN BRAND PROMOTION	**0**
GRAND TOTAL	**466**

Appendix F LEED New Construction v4, Platinum Checklist

Comparative Analysis of Living Building Challenge, LEED, Built Green, Passive House, & Salmon Safe

SAMPLE BUILDING

LEED New Construction v4 Project Preliminary Checklist | 04.04.2022 | Project Goal: Platinum

RUSHING

Yes	Likely	Unlikely	No	
84	13	15	1	**PROJECT TOTALS | pre-certification estimates** — **Certification Thresholds:** Certified 40 points Silver 50 points Gold 60 points Platinum 80+

Yes	Likely	Unlikely	No			Max. Points
1	0	0	0	**Integrated Design**		1
1				Credit 1	**Integrative Process**	1

Yes	Likely	Unlikely	No			Max. Points
12	4	0	0	**Location and Transportation**		16
			-	Credit 1	**LEED for Neighborhood Development Locations**	16
1				Credit 2	**Sensitive Land Protection**	1
	2			Credit 3	**High Priority Site**	2
4	1			Credit 4	**Surrounding Density and Diverse Uses**	5
4	1			Credit 5	**Access to Quality Transit**	5
1				Credit 6	**Bicycle Facilities**	1
1				Credit 7	**Reduced Parking Footprint**	1
1				Credit 8	**Green Vehicles**	1

Yes	Likely	Unlikely	No			Max. Points
7	1	1	1	**Sustainable Sites**		10
Y				Prereq 1	**Construction Activity Pollution Prevention**	Req'd
1				Credit 1	**Site Assessment**	1
2				Credit 2	**Site Development - Protect or Restore Habitat - v4.1**	2
1				Credit 3	**Open Space**	1
	1	1	1	Credit 4	**Rainwater Management**	3
2				Credit 5	**Heat Island Reduction**	2
1				Credit 6	**Light Pollution Reduction**	1

Yes	Likely	Unlikely	No			Max. Points
9	1	2	0	**Water Efficiency**		11
Y				Prereq 1	**Outdoor Water Use Reduction**	Req'd
Y				Prereq 2	**Indoor Water Use**	Req'd
Y				Prereq 3	**Building-Level Water Metering**	Req'd
2	1			Credit 1	**Outdoor Water Use Reduction - v4.1**	2
6				Credit 2	**Indoor Water Use Reduction - v4.1**	6
		2		Credit 3	**Cooling Tower Water Use**	2
1				Credit 4	**Water Metering**	1

Yes	Likely	Unlikely	No			Max. Points
24	4	5	0	**Energy and Atmosphere**		33
Y				Prereq 1	**Fundamental Commissioning and Verification**	Req'd
Y				Prereq 2	**Minimum Energy Performance**	Req'd
Y				Prereq 3	**Building-Level Energy Metering**	Req'd
Y				Prereq 4	**Fundamental Refrigerant Management**	Req'd
6				Credit 1	**Enhanced Commissioning**	6
14	2	2		Credit 2	**Optimize Energy Performance** (35% energy cost savings)	18
1				Credit 3	**Advanced Energy Metering**	1
		2		Credit 4	**Demand Response**	2
1	2			Credit 5	**Renewable Energy Production**	3
		1		Credit 6	**Enhanced Refrigerant Management**	1
2				Credit 7	**Green Power and Carbon Offsets**	2

Yes	Likely	Unlikely	No			Max. Points
10	3	0	0	**Materials and Resources**		13
Y				Prereq 1	**Storage and Collection of Recyclables**	Req'd
Y				Prereq 2	**Construction & Demo Waste Management Planning**	Req'd
2	3			Credit 1	**Building Life-Cycle Impact Reduction**	5
2				Credit 2	**Bldg Product Disclosure & Opt,** Envir Product Declaration **- v4.1**	2
2				Credit 3	**Bldg Product Disclosure & Opt,** Sourcing of Raw Materials **- v4.1**	2
2				Credit 4	**Bldg Product Disclosure & Opt,** Material Ingredients **- v4.1**	2
2				Credit 5	**Construction & Demo Waste Management**	2

Yes	Likely	Unlikely	No			Max. Points
12	0	4	0	**Indoor Environmental Quality**		16
Y				Prereq 1	**Minimum Indoor Air Quality Performance**	Req'd
Y				Prereq 2	**Environmental Tobacco Smoke Control**	Req'd
2				Credit 1	**Enhanced Indoor Air Quality Strategies**	2
3				Credit 2	**Low-Emitting Materials - v4.1**	3
1				Credit 3	**Construction Indoor Air Quality Management Plan**	1
2				Credit 4	**Indoor Air Quality Assessment**	2
1				Credit 5	**Thermal Comfort**	1
2				Credit 6	**Interior Lighting - v4.1**	2
		3		Credit 7	**Daylight**	3
1				Credit 8	**Quality Views - v4.1**	1
		1		Credit 9	**Acoustic Performance**	1

Yes	Likely	Unlikely	No			Max. Points
6	0	0	0	**Innovation**		6
1				Credit 1	**Verified Construction & Demolition Recycling Rates (pilot)**	1
1				Credit 1	**Occupant Comfort Survey (innovation)**	1
1				Credit 1	**O&M Starter Kit (innovation + pilot)**	1
1				Credit 1	**Green Education Plan (innovation)**	1
1				Credit 1	**Low Mercury Lighting (innovation)**	1
1				Credit 2	**LEED Accredited Professional**	1

Yes	Likely	Unlikely	No			Max. Points
3	0	3	0	**Regional Priority**		4
		1		Credit 1	**SSc4 Rainwater Management,** 3 pt threshold	1
1				Credit 2	**WEc2 Indoor Water Use,** 4 pt threshold	1
		1		Credit 3	**EAc4 Demand Response,** 1 pt threshold	1
		1		Credit 4	**EAc5 Renewable Energy Production,** 2 pt threshold	1
1				Credit 5	**MRc2 Environmental Product Declaration,** 1 pt threshold	1
1				Credit 6	**MRc3 Sourcing of Raw Materials,** 1 pt threshold	1

Appendix G Salmon Safe Additional Information

Comparative Analysis of Living Building Challenge, LEED, Built Green, Passive House, & Salmon Safe

Salmon Safe

Salmon Safe certification is adaptable to the needs of a site, and several strategies that Salmon Safe may require of a project could exceed Washington Stormwater code.

- **Sub-Area Strategies:** within sub-area stormwater code, allow developers to contribute to funds that
  - **Reduce Phosphorus:** Exceed DOE's 50% reduction requirement through treatment and remediation.
  - **Support Salmon through Street Run-off Remediation:** Address 6PPD Quinine from tires through Green Infrastructure treatment methods.
  - **Comprehensive Approach to Enhanced Treatment:** Apply "enhanced treatment" methods throughout sub-area to mitigate metals, exceeding the minimum for arterial streets.
  - **Steam daylighting:** Specific to Moss Bay watershed, create opportunities for developers to daylight, or contribute to daylighting, a local stream.
- **Project-specific Strategies specific**
  - **Water Quality** and **Water Quantity:** Within the sub-area, create a higher set of infeasibility criteria so it is difficult to avoid strategies that improve the quality/quantity measures on a site. Specific strategies include the following:
    - Green Roof
    - Water Harvesting
  - **No potable water for non-potable uses:** A clear rule to require project teams to achieve water use reduction goals. Drives multiple strategies/investments.

Appendix H Green Factor

Landscape Elements, High and Low ROM costs, and Assumptions

Landscape Elements	Cost low	Cost High	Assumptions & Reference
Bioretention facilities and/or soil cells: 1. Construction 2. Design	1. **$2**/sqft 2. **$1**/sqft	1. **$90**/sqft 2. **$60**/sqft	Reference: King County, WRIA 9 Stormwater Retrofit BMP Cost Assumptions
Structural soil systems	**$2**/sqft	**$4**/sqft	Reference: Ecological Landscape Alliance (2017)
Landscaped areas with a soil depth of less than 24"	**$2/**sqft	**$130**/sqft	Considerations: cost of new soil, cost to install. Soil prices are referenced from Dirt Exchange.
Landscaped areas with a soil depth of 24" or more	**$2**/sqft	**$350**/sqft	These will depend very much on how much new soil is brought in, how existing soil is used, and how much needs to be done to landscape structurally.
Preservation of existing trees: - Calculated at 20 sq ft per inch dbh (Trees must have a minimum diameter of 6" at dbh.)	**$1**/sqft	**$100**/sqft	Operational cost. Dependent on the project site and general contractor. - No direct hard costs however this will impact construction and incur soft costs depending upon the number of trees & location
Preservation of Landmark Trees bonus: - Calculated at 20 sq ft per inch dbh (Trees must meet City of Kirkland's definition of Landmark Trees)	**$1**/sqft	**$100**/sqft	Operational cost. Dependent on the project site and general contractor. - No direct hard costs however this will impact construction and incur soft costs depending upon the number of trees & location
Preservation of existing evergreen trees bonus: - Calculated at 20 sq ft per inch dbh (Preserved evergreen trees must have a minimum diameter of 6" at dbh)	**$1**/sqft	**$100**/sqft	Operational cost. Dependent on the project site and general contractor. - No direct hard costs however this will impact construction and incur soft costs depending upon the number of trees & location
Ground covers or other low plants - Calculated at 6 - 4” plants per sqft (less than or equal to 2' tall at maturity)	**$12**/sqft	**$30**/sqft	4" groundcovers ranging from 2-5$. - Pricing referenced from T&L wholesale nursery
Medium Shrubs or perennials - Calculated at 9 sq ft per plant (2'-4' tall at maturity)	**$6**/plant	**$22**/plant	Added category for medium shrubs (matches Seattle) - Pricing referenced from T&L wholesale nursery
Large Shrubs or perennials - calculated at 36 sq ft per plant greater than 4' tall at maturity)	**$6/**plant	**$30**/plant	Added category for large shrubs (matches Seattle) - Pricing referenced from T&L wholesale nursery
Small Trees or equivalent with calculated soil volume that meets or exceeds 500ft3 per tree. - Calculated at 90 sq ft per tree (canopy spread 10' to 15' at maturity)	**$50**/plant	**$1000**/plant	Prices range due to species & maturity of the tree at purchase: young tree = lower cost, mature tree = higher cost. - Added Soil volume requirement
Medium Trees or equivalent with calculated soil volume that meets or exceeds 1000 ft3 per tree. - Calculated at 230 sq ft per tree (canopy spread 16' to 24' at maturity)	**$50**/plant	**$2,000**/plant	Prices range due to species & maturity of the tree at purchase: young tree = lower cost, mature tree = higher cost. - Added Soil volume requirement, increased weighting from .3
Large Trees with calculated soil volume that meets or exceeds 1500 ft3 per tree - Calculated at 350 sq ft per tree (canopy spread 25' and greater at maturity)	**$50**/plant	**$5000**/plant	Prices range due to species & maturity of the tree at purchase: young tree = lower cost, mature tree = higher cost. - Price may also increase depending on species, plus larger trees may need heavy machinery to move

Green Roofs	Cost low	Cost High	Assumptions & Reference
Area planted with at least 2" of growth medium but less than 4" of soil	**$15**/sqft	**$20**/sqft	References: The Costs and Benefits of Green Roofs | DeepRoot Blog GSA, cost-benefit analysis
Area planted with at least 4" but less than 8" of soil	**$20**/sqft	**$45**/sqft	- Added criteria for 4-12"
Area planted with at least 8" of but less than 30" of soil	**$45**/sqft	**$75**/sqft	- Added criteria for 12-30"
Area planted with tree(s) and at least 30" of soil within 42" of the tree(s)	**$75**/sqft	**$300**/sqft	- Added criteria for 30-42"
Green Walls			
Façade or wall surface obstructed with vines - (calculate at 3 years of growth)	**$10**/sqft	**$30**/sqft	References: Cost concerns for increasingly popular green walls
Façade or wall surface planted with a green wall system - must have year-round irrigation and maintenance plan	**$70**/sqft	**$150**/sqft	
Landscape Quality Benefits			
Landscaped areas in food cultivation	**$20**/sqft	**$100**/sqft	Depends on the level of structure required - i.e. at grade with cedar boxes or on the roof
Landscaped areas planted with native or drought-tolerant plants	**$10**/sqft	**$50**/sqft	sample base project: using existing landscape, topdressing with compost, and installing plant)
Landscape areas at sidewalk grade	**$5**/sqft	**$50**/sqft	
Landscaped areas where at least 50% of annual irrigation needs are met using harvested rainwater	**$10**/sqft	**$500**/sqft	updated language to match Seattle
Planting that provides food, forage, and refuge for a diversity of species - native insects, pollinators, birds, and urban wildlife	**$10**/sqft	**$50**/sqft	
Permeable Paving			
Permeable paving over a minimum 6" and less than 24" of soil or gravel	**$7**/sqft	**$40**/sqft	Lid-stormwater Design: Permeable Pavers - dependent on the depth of base and site accessibility
Permeable paving over at least 24" of soil or gravel	**$10**/sqft	**$60**/sqft	
Innovation			
Contributes to district sustainability goals including habitat connectivity, tree canopy, or stormwater goals beyond the site boundary. - i.e. Treating stormwater from public ROW on project site, enhancing and maintaining landscaping in ROW - Scoring to be awarded at the discretion of the City of Kirkland	**$10**/sqft	**$500**/sqft	Added criteria

11.10

Appendix — Supplemental Transportation Memo

Representative Infrastructure Studies

(Published October 2021)

Appendix 1. Supplemental Transportation Study

This Study is an Appendix to the **NE 85th Street Station Area Plan project** **Fiscal Impacts and Community Benefits Analysis Study Technical Memo (Technical Memo)**. The Station Area Fiscal Impacts and Community Benefits Analysis was scoped to answer this question: If the City were to implement its vision of the Station Area as a thriving, walkable urban center with plentiful affordable housing, jobs, sustainable development, and shops and restaurants linked by transit, can the City afford the investments necessary to address increased demand on public services, especially schools, parks/open spaces, transportation, and utilities, and avoid a reduction in service for existing community members and businesses?

Study Purpose

To support the Technical Memo's assumptions, planning level **Representative Infrastructure Studies** were conducted to determine a set of representative infrastructure investments needed to maintain service levels in transportation, water and sewer, and stormwater, in alignment with the full 23-year buildout scenarios described for the two key development alternatives analyzed in the Technical Memo – June Alternatives A and B. The purpose of the Infrastructure Studies was to inform an understanding of area-wide representative infrastructure and service needs and costs and for incorporation as assumptions in the fiscal analysis. Note that as "representative infrastructure," these identified investments are ones that are likely to be similar in scale and type to those needed to support future Station Area development, but are likely to differ somewhat from the specific infrastructure investments that will ultimately be adopted for the Station Area. Information about the Representative Infrastructure Studies is presented in Section 3 of the Fiscal Impacts and Community Benefits Technical Memo. The Fiscal Impact model assigns all representative infrastructure investments either to development projects or to the City, roughly following City policy. Any assumptions about parcel- and quadrant-level development and phasing included in the studies are hypothetical and not meant to presuppose decision- making by private landowners or the actions of the market. The representative investments identified in the Infrastructure Studies are distinct from and should not be construed as preferred plan recommendations or final project configurations, which will be developed in later stages of planning and are subject to City Council approval.

Key Contacts

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Fiscal Impacts and Community Benefits Supplemental Study Technical Memo

Lead Author: BERK; Contributors: EcoNorthwest, Fehr and Peers, Mithun

Representative Infrastructure Studies

Appendix 1. Supplemental Transportation Study Lead Author: Fehr and Peers

Appendix 2. Supplemental Water and Sewer Study Lead Author: RH2

Appendix 3. Supplemental Stormwater Memo Lead Author: RKI

FEHR PEERS

Memorandum

Date: October 12, 2021

To: Allison Zike, Jeremy McMahan, Joel Pfundt, and Thang Nguyen, City of Kirkland

CC: Erin Christensen Ishizaki, Brad Barnett, and Becca Book, Mithun

From: Kendra Breiland and Team, Fehr & Peers

Subject: Kirkland 85th Station Area Plan – Supplemental Transportation Summary

SE20-0719.01

As part of the Mithun project team, Fehr & Peers is supporting the City of Kirkland in providing supplemental information to understand the community benefits, tradeoffs, and fiscal impacts of different alternatives for the I-405/NE 85th Street Station Area Plan (SAP) from the perspective of transportation. This memo and attached exhibits present the findings of our analysis, spanning the following topics:

- Travel modeling for the two new future year alternatives: June Alternatives A and B
- Traffic operations analysis for June Alternatives A and B within the study area, including interchange operations
- Transit analysis for June Alternatives A and B
- Analysis of the comfort of facilities for people walking and biking in the study area with existing and committed[1] transportation investments and how that could change with recommended investments for the SAP
- Analysis of how far people can comfortably walk or bike within 5, 10, and 15-minutes of the proposed station with existing and committed transportation investments and how that could change with recommended investments for the SAP
- Potential package of investment strategies to support full implementation of June Alternatives A and B:
    - Roadway geometric & operational changes
    - Implementation of a robust transportation demand management strategy
    - Transit access & speed and reliability considerations

[1] Committed projects are transportation infrastructure, such as sidewalks, trails, and bike lanes that are likely to move forward independent of the 85th Street Station Area Plan.

- System improvements to improve conditions for walking and biking

This memo has been revised based on feedback from City staff and the Transportation Commission on the merits of the proposed package of investment strategies in meeting the City's vision for the SAP.

Land Use Discussion

Based on public comment and community feedback, a charrette held with City staff in May, and guidance from the City Council and Planning Commission, two alternatives were developed (known as the June Alternatives). These June Alternatives narrow the range of alternatives studied in the DSEIS in the following ways:

- Remove the level of growth shown in DSEIS Alternative 3 from further consideration
- Use a revised version of DSEIS Alternative 1 as the lower limit of growth to be studied (June Alternative A: Current Trends)
- Use a reduced version of DSEIS Alternative 2 as the upper limit of growth to be studied (June Alternative B: Transit Connected Growth)

These scenarios represent a range of possibilities to be studied for the Station Area, defined by the total potential growth in employment and residential housing units that the City of Kirkland could plan for over the next two decades.

June Alternative A: Current Trends

This alternative maintains existing zoning heights throughout the district 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 (**Exhibit 1**). The additional jobs were studied in portions of the study area currently zoned for more intensive development.

Exhibit 1: June Alternative A "Current Trends" (Growth through 2044)

Quadrant	Households	Employment
NW	515	1,164
NE	1,104	3,918
SW	710	3,787
SE	600	3,449
Totals	**2,929**	**12,317**

Source: Mithun/EcoNW, 2021

June Alternative B: Transit Connected Growth

This alternative is aligned with the overall SAP growth framework in the Initial Concepts and incorporates elements shown in the commercial corridors of DSEIS Alternative 3 into the overall land use pattern established in DSEIS Alternative 2. The intent of this strategy is to:

- Optimize for workforce and affordable housing, in particular the number of units provided through linkage fees and/or inclusionary zoning.
- Attract new jobs to foster economic activity and meet Citywide targets.
- Balance the distribution of commercial-focused development across the study area.
- Foster an environmentally-sound land use pattern that helps achieve the City's sustainability goals.

June Alternative B responds to the public comment heard during the DSEIS comment period and the May 26, 2021 Council Listening Session. Although a wide range of comments were shared, many participants reiterated a desire to maintain existing residential character, and concerns regarding the maximum allowable zoning heights proposed in DSEIS Alternative 3. June Alternative B only studies increased allowable heights in areas that provide clear benefits to the community and take advantage of regional transit connections. To that end, several areas where height increases had been proposed as part of DSEIS Alternative 2 and 3 have been removed from consideration in this alternative. These include areas that are unlikely to redevelop due to market forces, are limited by development feasibility, or are constrained by other considerations.

This alternative results in similar household growth to DSEIS Alternative 2, but lower overall employment, showing a better jobs-housing balance (**Exhibit 2**). The Southwest Quadrant has lower growth numbers, closer to what was proposed for DSEIS Alternative 1.

Exhibit 2: June Alternative B "Transit Connected Growth" (Growth through 2044)

Quadrant	Households	Employment
NW	568	1,561
NE	2,670	8,660
SW	916	3,356
SE	3,998	9,174
Totals	**8,152**	**22,751**

Source: Mithun/EcoNW, 2021

Overall Objectives for Both Alternatives

For both June Alternatives, the project team has been charged with identifying necessary infrastructure and policies that support achieving the following objectives related to transportation:

- Preserve the functionality of NE 85th Street, while enhancing and expanding its role as an urban, multimodal street.
- Incorporate transportation improvements that preserve community character, including minimizing significant changes such as road widening in areas outside of where proposed growth is occurring.
- Accommodate transit effectively along NE 85th Street and other streets in the study area.
- Establish a low-street priority bike and pedestrian network that serves the full study area

The remainder of this memo describes the travel modeling and mobility analysis conducted to identify a transportation system that would achieve these objectives.

Travel Demand Modeling and Forecasting

Fehr & Peers incorporated land use assumptions for future alternatives in the Bellevue-Kirkland-Redmond (BKR) travel demand model to fully capture the resulting impact on traffic operations in the station area. The alternatives considered in the travel modeling include:

- 2035 No Action Alternative from the DSEIS
- 2044 Alternative 2 from the DSEIS
- 2044 June Alternative A (identified by Kirkland City Council in June 2021)
- 2044 June Alternative B (identified by Kirkland City Council in June 2021)

As discussed in the prior section, June Alternative A represents 2044 conditions with similar development patterns to the 2035 No Action Alternative. Similarly, June Alternative B represents 2044 conditions but with greatly increased office employment and housing in the study area relative to the No Action Alternative. June Alternative B represents a refinement to Alternative 2, which was evaluated in the DSEIS.

The BKR travel demand model was used to develop traffic volume forecasts for future alternatives based on the transportation infrastructure envisioned in the 2035 Comprehensive Plan and respective land use forecasts. Prior to the modeling process, MXD+, a trip generation tool that accounts for the variation in land use type and density, provided estimates of new vehicle trips for the future alternatives. **Exhibit 3** 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 BKR travel model for each scenario. Of note, while the mode share estimates are relatively similar among future year alternatives (due to consistent assumptions about transit

services and parking charges in the BKR travel model), the number of vehicle and transit trips vary greatly due to the differences in development intensity assumed under each alternative.

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

Quadrants	2035 No Action	2044 Alternative A	2044 Alternative B	2044 Alternative 2
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 Estimates (SOV/Carpool/Transit)	70%/23%/7%	70%/22%/8%	71%/21%/8%	72%/21%/7%

Source: Fehr & Peers, 2021

Consistent with land use trends, Alternative A includes modest growth in vehicle trips in the NE and SE quadrants. The total vehicle trips generated by Alternative B and Alternative 2 are similar; however, there is a substantial shift in which quadrants the land use growth is located (from NE to SE). These results were used to calibrate the BKR travel demand model to reflect similar growth in trips. Additional adjustments were also made to the BKR travel demand model for adequate distribution of trips, particularly trips accessing the Lee Johnson site. **Exhibits 4 and 5** show the modeled increase in roadway volumes that would occur under Alternative 2 and Alternative B relative to the No Action Alternative. As the exhibits show, Alternative B features a more even distribution of trips than Alternative 2.

Exhibit 4: Traffic Volume Increase (2035 No Action vs. 2044 Alternative 2)

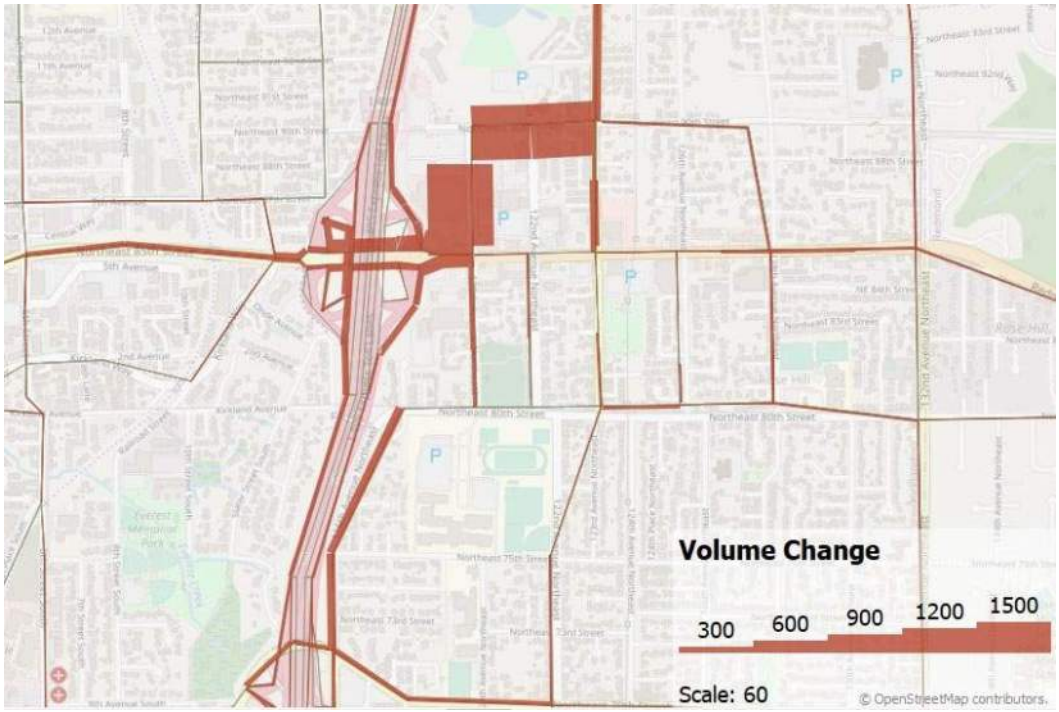
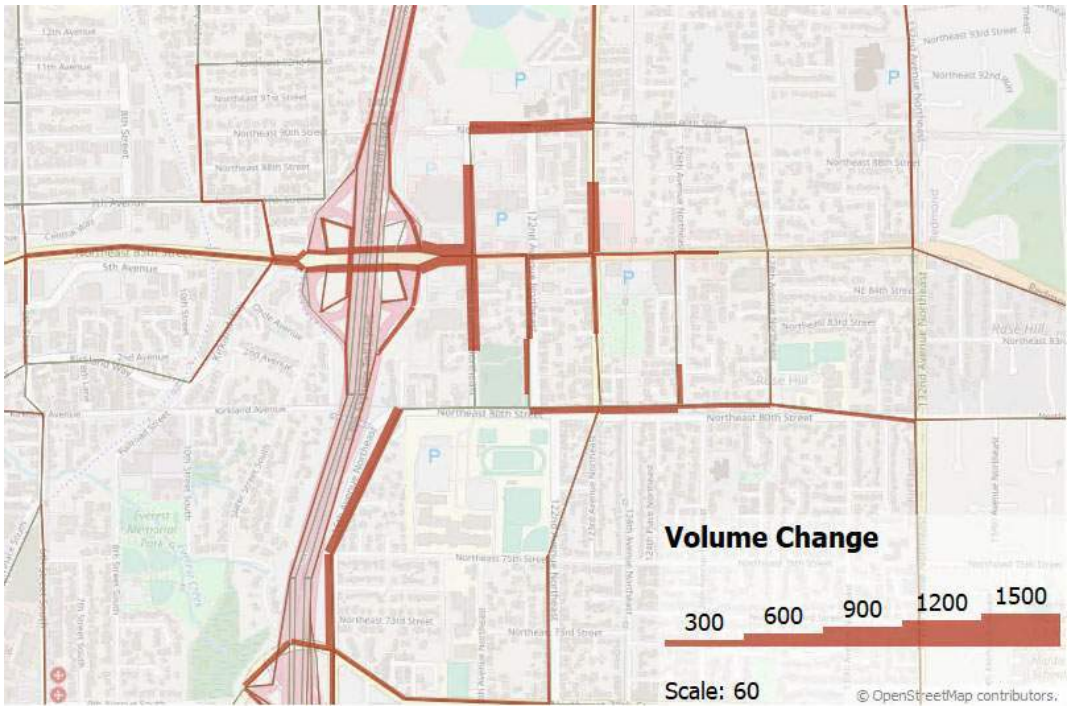


Exhibit 5: Traffic Volume Increase (2035 No Action vs. 2044 Alternative B)



Traffic volume forecasts from the refined versions of the BKR model were then used to evaluate traffic operations at the following intersections (**Exhibit 6a**):

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

Exhibit 6b shows the original list of intersections evaluated in the DSEIS.

Exhibit 6a: Supplemental Study Intersections

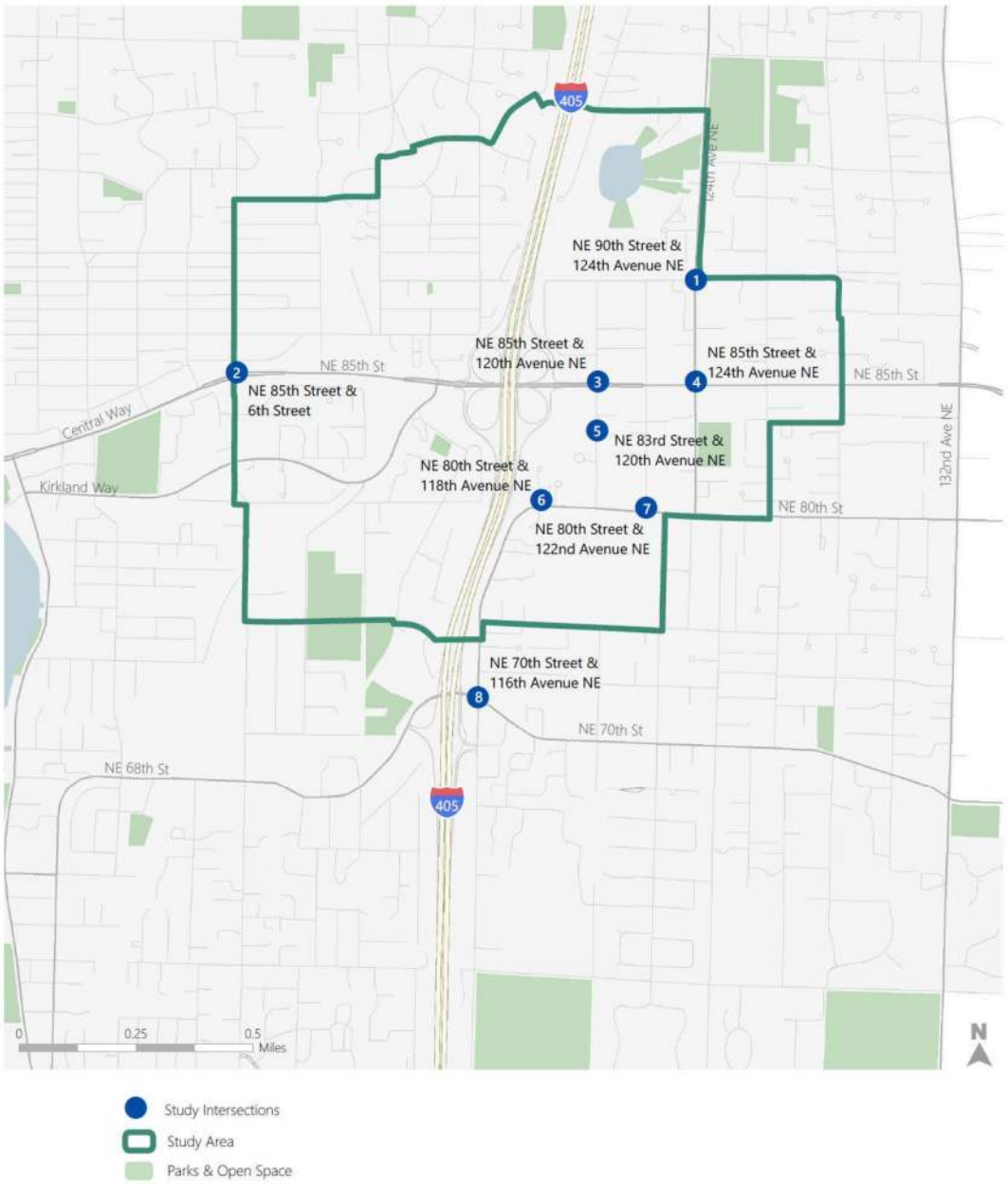
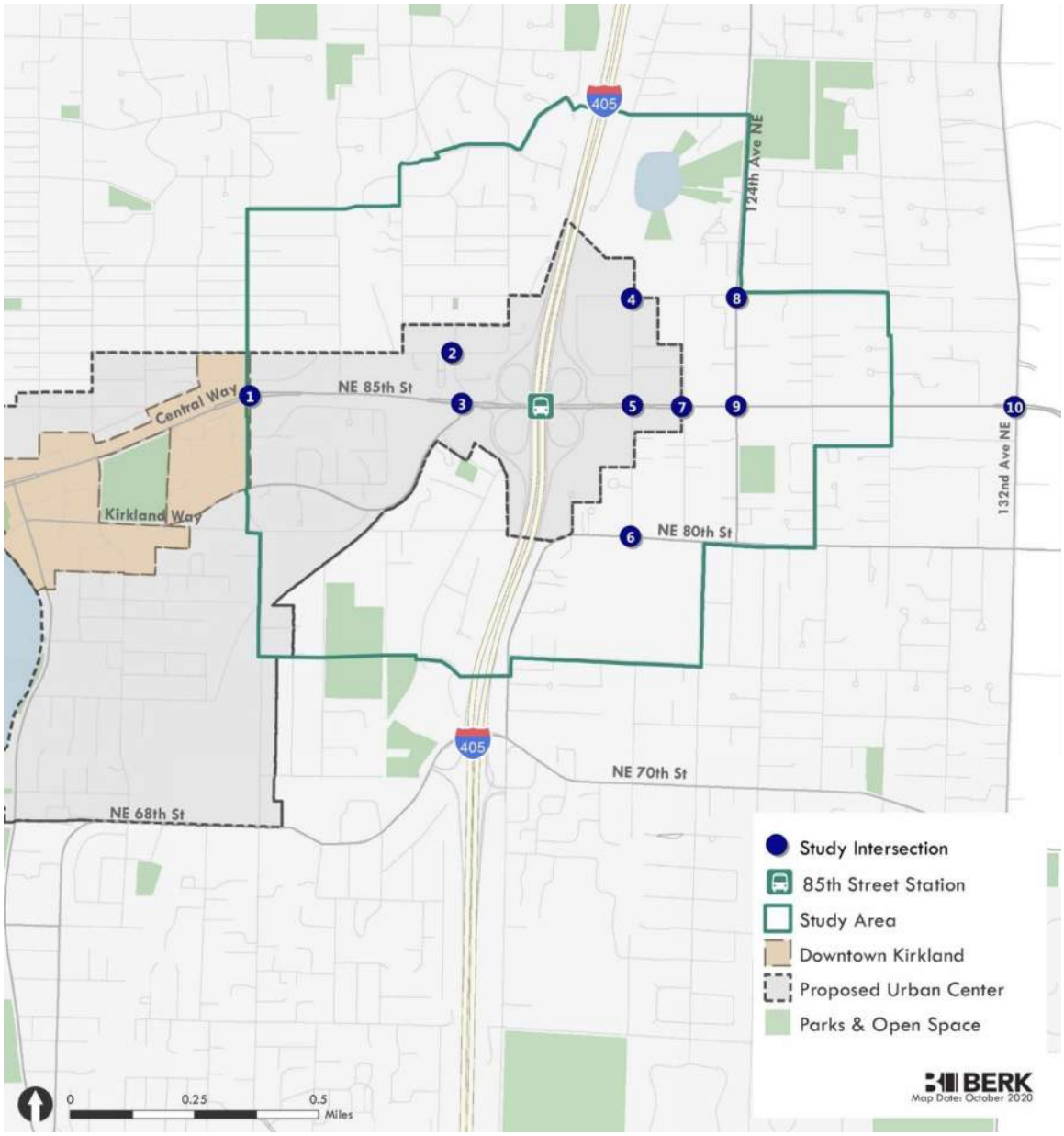


Exhibit 6b: Study Intersections Originally Considered in the DSEIS



Intersection Level of Service

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. We performed PM peak hour analysis for all intersections shown in **Exhibit 6a**, and AM peak hour analysis was exclusive to two intersections (NE 85th Street & 120th Avenue NE and

NE 85th Street & 124th Avenue NE). The project team modeled the existing (2019) conditions and each of the future alternatives bulleted below.

- 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 7** summarizes the LOS and delay thresholds specified in the Highway Capacity Manual, which is a standard methodology for measuring intersection performance.

Exhibit 7: 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.

Findings

Exhibit 8 reports the findings of the intersection analysis conducted by the methodologies described above. Key findings include:

- All study intersections are currently operating within the City's or WSDOT's standards.
- 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 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 Alternative A/No Action scenario) 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.
  - **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 Avenue & 120th Avenue NE:** under the scenario in which this intersection 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 along NE 83rd Avenue, 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 would be warranted to address the side street delay.

[2] Assumes the Lee Johnson site's direct access to NE 85th Street would be limited to a controlled access point for select trip or vehicle-types.

Exhibit 8: 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

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

Proposed Geometric Mitigation Strategies

Exhibit 9 summarizes the results of mitigations tested to address impacted intersections. The following summarizes modifications to the roadway network that would be necessitated by traffic impacts measured for Alternatives A or B.

- **NE 90th Street & 124th Avenue NE:** This intersection is impacted under both Alternatives A and B. Identified mitigation for this intersection includes adding northbound and southbound through lanes and restriping the eastbound through lane to be an eastbound through/left/right lane with east/west split phasing. The additional northbound lane would need to be carried through to north of NE 90th Street. With these improvements in place, the intersection would meet the City's LOS standard under both Alternatives A and B.
- **NE 85th Street & 120th Avenue NE:** Given high delays measured at this intersection under Alternative B during both the AM and PM peak hours, we tested several potential mitigation scenarios to address capacity needs. Based on a site visit, as well as feedback from City staff and the Transportation Commission, two potential geometric mitigation options were identified:
    - Option 1 (See **Exhibit 10a**):
        - 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 movement[3]
        - Revising the signal to provide northbound/southbound split phasing to allow for left turn movements out of either lane from the south approach
    - Option 2 (See **Exhibit 10b**):
        - 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."

[3] In designing this improvement it would be important to consider weaving interactions between traffic making the southbound free right and westbound traffic accessing northbound I-405. The viability of installing a pork chop should also be evaluated in final intersection design.

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
- **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. There are various ways that this intersection could be configured. For the purposes of this modeling, it was assumed that the west leg would include a left-turn pocket, plus a shared left/through/right lane with all other approaches served by one lane. This would require that the northbound left turn lane at the 85th Street intersection be extended to provide a second northbound receiving lane. These improvements are illustrated in **Exhibits 10c**.
- **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. This is due to additional traffic passing through the intersection along 80th Avenue. It should be noted that this intersection is located on a curve and may require additional treatments to ensure safe sight distance. Before constructing a signal, it would also be important to conduct a signal warrant analysis.
- **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. This improvement, illustrated in **Exhibit 10d**, could be a standalone improvement, as it would better serve areawide circulation.

No additional geometric modifications have been identified to address impacts at NE 85th Street & 6th Street.

Exhibit 9: 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.
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

Exhibit 10a: Potential Geometric Modifications to NE 85th Street/120th Avenue NE

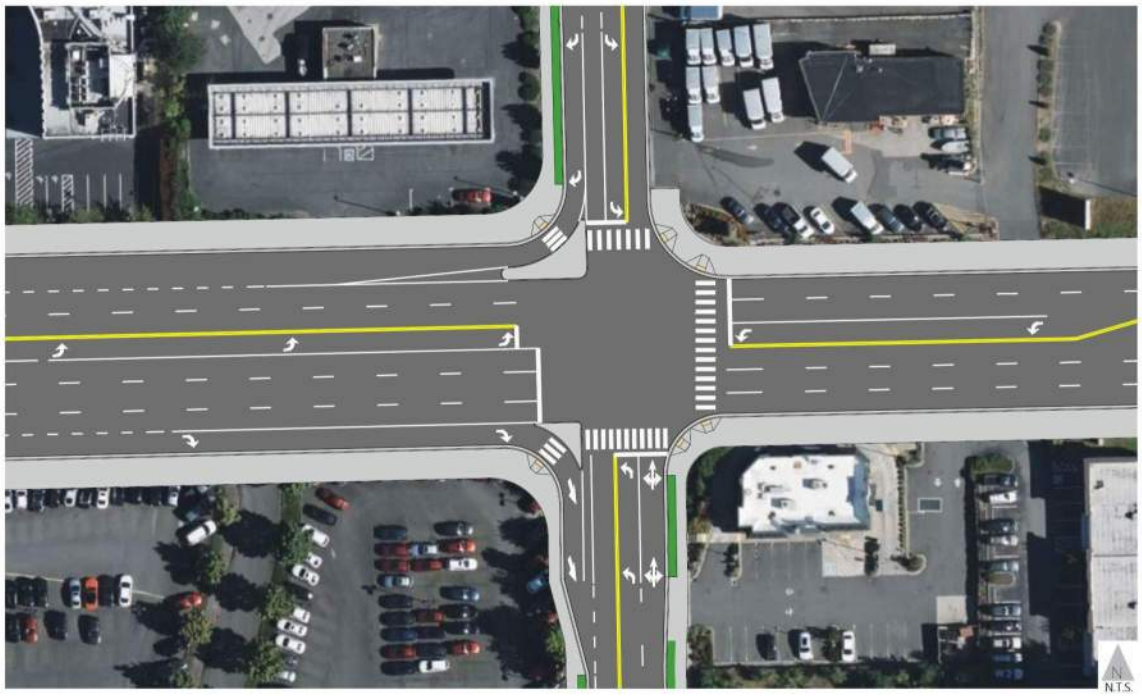


Exhibit 10b: Potential Geometric Modifications to NE 85th Street/120th Avenue NE

Exhibit 10c: Potential Geometric Modifications to NE 83rd Street/120th Avenue NE

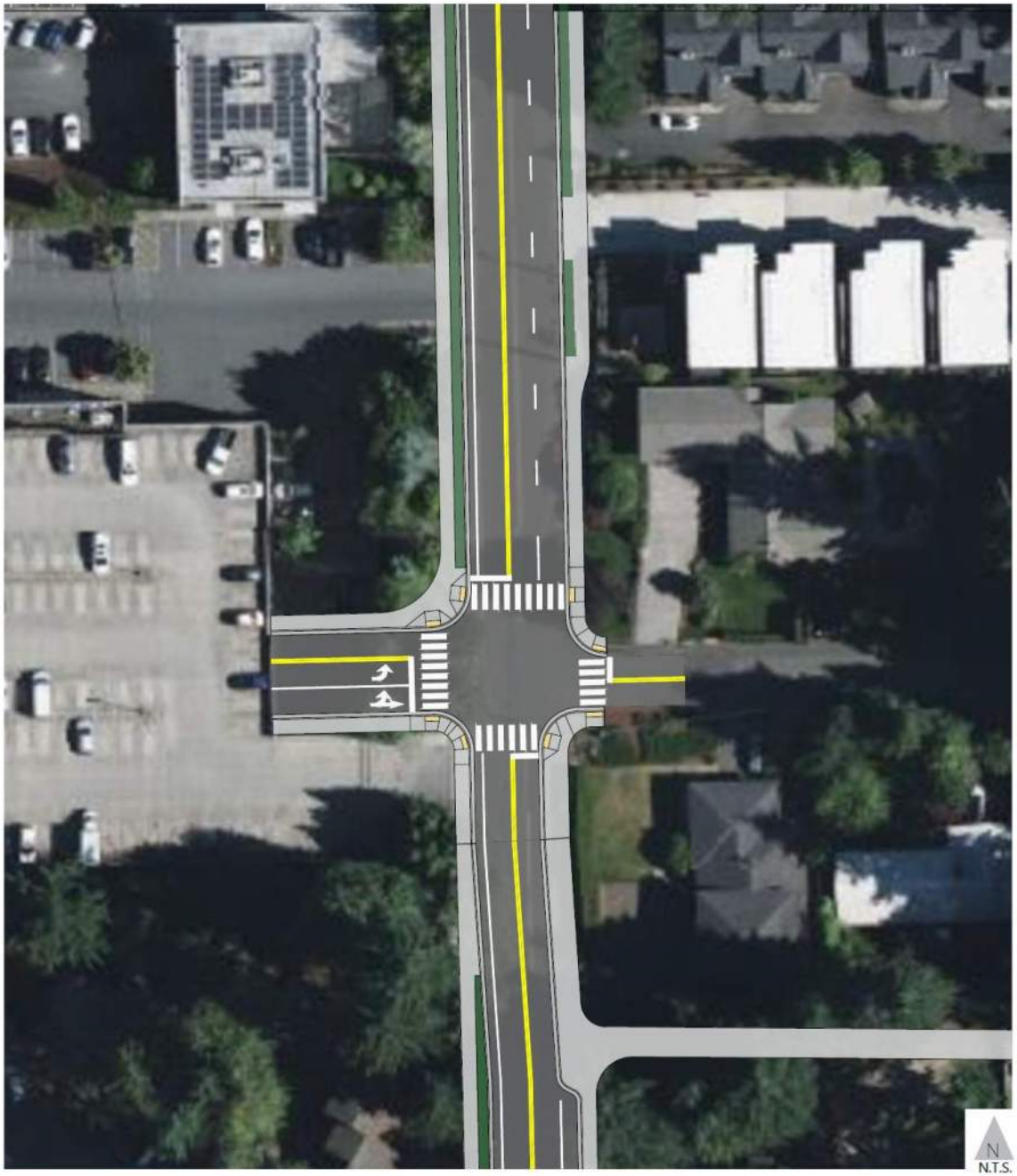
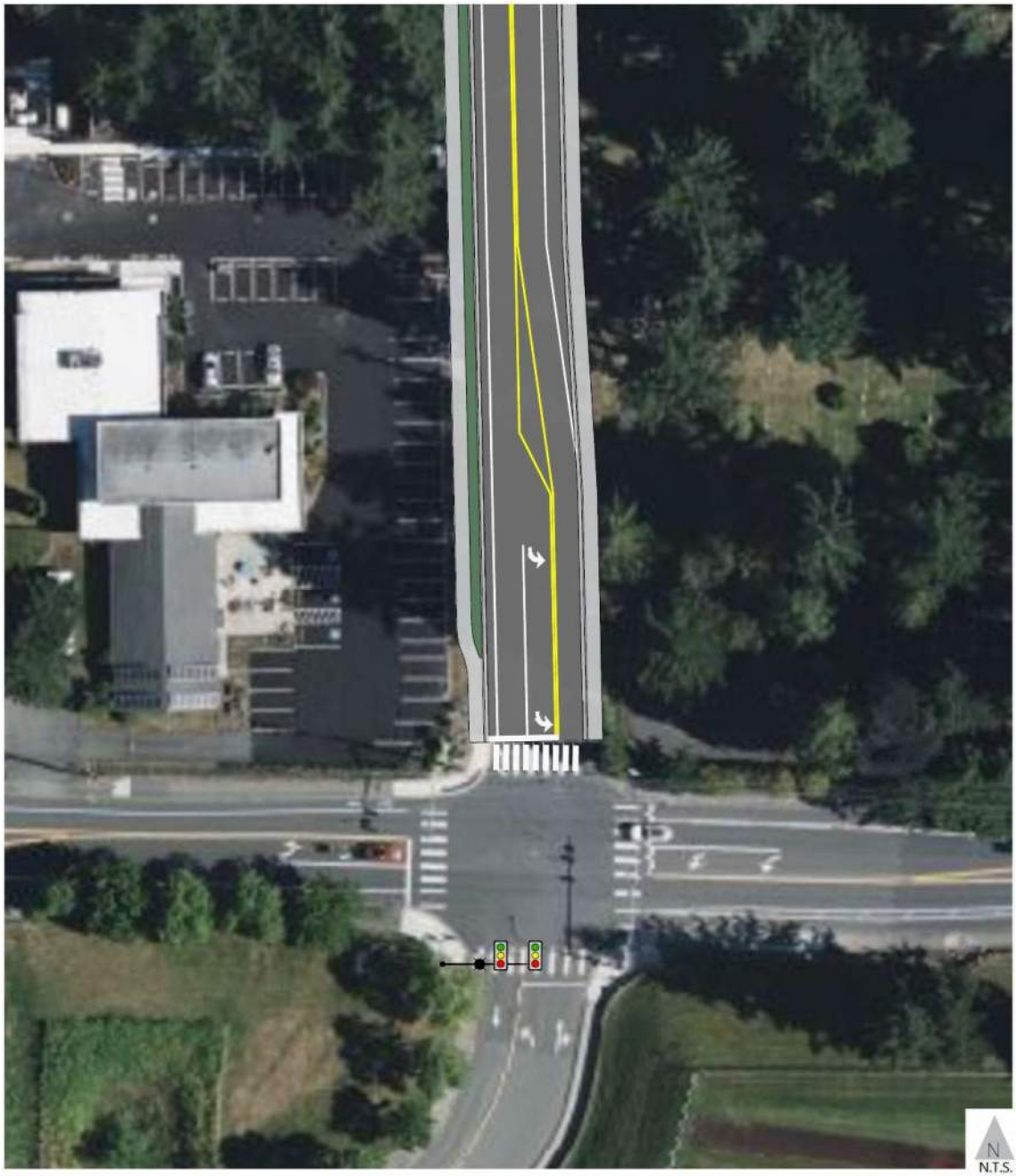


Exhibit 10d: Potential Geometric Modifications to NE 80th Street/120th Avenue NE



NE 85th Street Interchange Analysis

The operations at the I-405/NE 85th Street interchange were evaluated using the microsimulation traffic models developed by WSDOT for their interchange study. This sensitivity test was conducted to determine whether the additional land use growth allowed under the 85th Station Area Plan would affect the operations at the redesigned interchange. The Vissim model provided by WSDOT simulates NE 85th Street between 6th Street and 124th Avenue NE, including the freeway ramps to and from I-405 as well as the BRT station and access points.

Details about our analysis and overall findings are included in **Appendix A**. Overall, the Station Area Plan will result in slightly higher delays and queuing along NE 85th Street in the future than estimated by WSDOT in their interchange analysis. However, the increases do not significantly affect the operations of the interchange or the freeway mainline.

Transportation Demand Management Strategies

The trip generation estimates produced from the BKR model and MXD trip generation tool predict mode share based primarily on land use and demographic information but do not take additional TDM measures into account. This approach provides a conservative estimate of the transportation conditions for each alternative in the absence of robust TDM measures. However, additional mitigation measures could be considered to modify and expand current TDM strategies. These strategies would not only help to reduce driving, which in turn lessens traffic congestion and greenhouse gas impacts, but fundamentally align with the City's values and vision for the station area.

Potential TDM Strategies

A comprehensive set of strategies were considered by City staff to select those that 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 are listed as Tier 1 strategies below. While these actions are within the City's control, many would require investment of additional City staff time or code revisions to implement. An additional set of strategies, listed below as Tier 2, could also be pursued but would either be led by developers or would require additional partnerships beyond sole City control.

Tier 1 TDM Strategies

- Unbundle parking to separate parking costs from total property cost, allowing buyers or tenants to forgo buying or leasing parking spaces if they do not park a car.
- Revise parking code to reduce the amount of parking new developments must provide or implement parking maximums to further reduce the amount of parking supply in the

Study Area beyond what is assumed under Alternatives 2 and 3. This would limit the number of parking spaces which can be built with new development.

- Implement managed on-street parking strategies (e.g., designate special use zone for activities such as loading/unloading or emergencies, implement time restricted parking, and charge for parking).
- Require new development to charge for parking off-street.
- Implement requirements for robust monitoring and management of parking and the TDM measures in the Study Area to ensure that people are not parking in the surrounding neighborhood to avoid these parking management measures.
- Encourage or require transit pass subsidies from developers/property owners.
- Expand upon Kirkland's Green Trip program to utilize commute marketing programs to advertise different commuting options and encourage walking, biking, transit use, carpooling, vanpooling, or other means of travel.
- Utilize an Emergency Ride Home program to provide a taxi voucher or other way for employees to travel home if an emergency or unexpected late work makes them miss their normal transit, carpool, or bike ride home.
- Accommodate bicyclists by requiring development to provide secure, covered, and convenient bicycle parking at office and residential buildings; showers and lockers at offices; and public repair stations.
- Utilize a Ridematch Program to assist potential carpoolers in finding other individuals with similar travel routes. These may be open or closed systems, but generally a larger population will have more potential matches.

Tier 2 TDM Strategies

- 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, and to provide an attractive transportation alternative for locations that are less served by fixed-route transit. Two shuttle routes should be explored – one to Downtown Kirkland and Kirkland Urban using NE 87th Street/7th Avenue and 5th Street, and one that goes to the 6th Street Google Campus and Houghton/Everest Neighborhood Center at 108th Avenue NE & NE 68th Street using the Cross Kirkland Corridor. This could start as a pilot program in partnership with Uber or Lyft to provide subsidized rides to gauge demand for a shuttle. Ultimately, Gondola service routes should be further explored connecting the station area to Downtown Kirkland using the NE 85th Street/Central Way corridor with three stations - the first station would be in the vicinity of the NE 85th Street/I-405 In-line Station and Interchange, the second station could be located in the northeast corner of the 6th Street

and NE 85th Street Intersection and the third station would be in the vicinity of the downtown Kirkland Transit Center.

- Encourage or require transit pass provision programs for residents— King County Metro has a Passport program for multifamily housing that is similar to its employer-based Passport program. The program discounts transit passes purchased in bulk for residences of multifamily properties.
- Partner with Transportation Network Companies (TNCs) such as Uber or Lyft to provide pooled ridesharing options, ideally as a last-mile connection to transit or as an aspect of an Emergency Ride Home program.
- Launch a bikeshare or other micromobility system in Kirkland.

Efficacy of TDM Strategies

Because the Tier 1 strategies are most likely to be implemented, the quantitative efficacy of those strategies was estimated and the resulting trip reductions were incorporated into the traffic operations analysis to understand how the strategies would affect operations at the intersection level. Tier 2 strategies could still be pursued but have not been quantified in terms of their effects on traffic operations because they are more speculative at this time.

To evaluate the potential efficacy of the proposed TDM measures, Fehr & Peers used its TDM+ tool. TDM+ is a tool that allows the user to estimate how a set of TDM strategies will affect vehicle trip generation. The tool uses a realistic, evidence-based assessment of how similar strategies have worked in similar locations. By incorporating nuances such as the urban form and limiting the measures included to those with well-documented research, the TDM+ approach allows for a high level of technical rigor and defensibility when quantifying a program's potential to reduce vehicle trips or vehicle miles.

This quantitative approach emerged from a 2010 partnership with the California Air Pollution Control Officers Association (CAPCOA) to develop a comprehensive set of guidelines for assessing and quantifying reductions in vehicle miles traveled and greenhouse gas emissions associated with more than 50 TDM strategies, both individually and in combination.[4] The CAPCOA report is a resource for local agencies to quantify the benefit, in terms of reduced travel demand, of implementing various TDM strategies. Working with the Bay Area Air Quality Management District, the evaluation methods were validated by comparing the strategies to the San Francisco Bay Area. Fehr & Peers has continued to update TDM+ since the initial CAPCOA report, with the most recent iteration incorporating information from new studies published through 2018.

Exhibit 11 summarizes the range of estimated efficacy for each of the Tier 1 strategies. Combined these strategies have an estimated overall efficacy of 9 to 38 percent, with 13 percent

[4] California Air Pollution Control Officers Association, Quantifying Greenhouse Gas Mitigation Measures. August 2010.

recommended for typical planning applications.[5] In **Exhibit 12**, we apply these strategies to our traffic operations analysis to see the combined efficacy of geometric and TDM strategies in mitigating transportation impacts. As the exhibit shows, 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.

[5] Full implementation of Tier 2 strategies could result in vehicle trip reductions that range from 10-40%, with 16% recommended for typical planning applications. It is worthwhile to note that some of the measures in the Tier 2 list, including shared off-street parking and implementation of a gondola, could not be quantified.

Exhibit 11: Tier 1 Transportation Demand Management Strategies

TDM Reduction Summary Report: Kirkland 85th Station Area Plan				
Parking	VMT % Reduction by Land Use			
	Office	Residential	Retail	Other
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	**Office**	**Residential**	**Retail**	**Other**
Subsidies	up to 2%	–	–	
Transit Frequency				
Transit Coverage				
Private Point-to-Point Shuttles				
Last Mile Shuttle				
Commute Programs	**Office**	**Residential**	**Retail**	**Other**
Commuter Incentives				
Commute Marketing Program	2% to 16%	3% to 21%	up to 3%	
Emergency Ride Home	up to 1%	–	–	
TNC Partnerships				
Bike and Walk	**Office**	**Residential**	**Retail**	**Other**
Secure Parking	–	up to 1%	–	
Showers & Lockers	–	–	–	
End of Trip Repair Stations	–	up to 1%	–	
Pedestrian-Oriented Design				
Bikeshare System & Subsidies				
Ride	**Office**	**Residential**	**Retail**	**Other**
Carpool/Vanpool Incentives				
Ridematch Program	up to 6%	up to 6%	up to 6%	up to 6%
Carshare				
Carshare Subsidy				
Total of All Measures	9% to 38%	13% to 40%	7% to 22%	-

Exhibit 12: 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.
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
^^ Assumes Option 1 geometric mitigations

TDM Strategy Implementation

As noted above, implementation of TDM strategies would require investments by the City in several forms, including:

- City staff time to develop code revisions and manage compliance, for example requiring developers to provide a transit subsidy to tenants.
- Creation of new staff positions to implement and operate new programs, for example on-street parking policing and management and off-street parking program implementation.
- Capital investments, for example micromobility charging stations.

These costs, both for initial start-up and ongoing program management, should be considered within the financial evaluation of the plan.

Transit Analysis

As of 2021, the Station Area is served by 14 transit routes, as summarized in **Exhibit 13.**

Exhibit 13: Transit Routes in the Station Area Plan (2021)

Route Number	Agency	Route Description	PM Headway (min)
230	King County Metro	North Creek - Bothell - Juanita - Kirkland TC	30 - 32
231	King County Metro	Woodinville - Brickyard - Juanita - Kirkland TC	30 - 33
237	King County Metro	Woodinville P&R - Bellevue TC	47
239	King County Metro	UW/Cascadia Coll - Totem Lake TC - Kirkland TC	27 - 36
245	King County Metro	Kirkland Transit Center - Crossroads - Factoria	14 - 16
250	King County Metro	Avondale - Redmond TC - Kirkland TC - Bellevue TC	15 - 16
255	King County Metro	Totem Lake TC-Kirkand TC-UW Link Sta-Univ Dist	7 - 15
257	King County Metro	Brickyard P&R - Downtown Seattle	22 - 36
311	King County Metro	Woodinville - Downtown Seattle	20 - 25
342	King County Metro	Shoreline P&R - Renton TC	28 - 71
424	Community Transit	Snohomish - Seattle	94
532	Sound Transit	Everett - Bellevue	15 - 30
535	Sound Transit	Lynnwood - Bellevue	30
230	King County Metro	North Creek - Bothell - Juanita - Kirkland TC	30 - 32

Source: Fehr & Peers, 2021

Fehr & Peers 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. We briefly describe how the growth anticipated by Alternatives A and B influences these transit elements and then present our analysis of the relative impact of each land use alternative on these elements of the transit environment.

- **Passenger load analysis** provides an understanding into how land use growth may generate additional transit ridership and potentially cause overcrowding on routes that access the area.
- The additional vehicles trips land use growth generated within the subarea may cause challenges with **transit speed and reliability**.
- Land use growth also brings new transit riders and a need for enhanced **access-to-transit** solutions

Ridership and Passenger Loads

To evaluate the impact of the future year action alternatives on the transit passenger loads in the study area, Fehr & Peers utilized the 2042 Sound Transit (ST) Model[6] and bus crowding threshold guidance from King County (KC) Metro[7]. The 2042 ST Model provided PM peak period transit boardings and alightings at stops within a block of NE 85th Street, which were used to determine transit ridership distribution and average transit trips along various routes in the station area. The data was extracted directly from an 'Off-the-shelf ST Model run'; therefore, no new transit ridership modeling was performed for this effort. KC Metro ridership data offered guidance on bus crowding based on available seats on a bus and route frequency to determine if a route can accommodate anticipated passenger loads. However, it should be noted that KC Metro's bus crowding thresholds do not guarantee a seat for every rider on the bus. The thresholds account for an acceptable number of both seated and standing riders.

Consistent with the 85th Station Area Plan DSEIS, an impact was identified based on the following criteria:

- The forecast passenger loads exceed the KC Metro/ST overcrowding threshold on any route in the study area that have passenger loads below the crowding threshold under the No Action Alternative
- The forecast ridership increases the passenger load by at least 5% on a route that already exceeds the guidelines under the No Action Alternative

[6] The 2042 ST Model closely represents projected 2035 land use, as identified by PSRC LUV.2 forecasts, which are consistent with the Kirkland 2035 Comprehensive Plan reflected in No Action Alternative.
[7] Bus seat capacity and crowding thresholds from Fall 2018 KCM Ridership Data.

Out of all the routes that run through the study area, only the I-405 BRT has a passenger load factor that exceeds 1.0 in the No Action Alternative. **Exhibit 14** indicates that all the reviewed action alternatives further impact the I-405 BRT due to the new PM peak hour transit trips; transit ridership growth for these alternatives exceeds 15 percent. There is an additional impact on Route 250 for Alternative 2 as a result of substantial (248%) growth in transit ridership and forecast passenger loads above the King County Metro crowding threshold. Alternative B also sees substantial growth, but does not exceed Metro's crowding threshold.

Exhibit 14: 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	38	1.06	285%
		I-405 BRT North	20	1.28	26%

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

To address the projected overcrowding of buses along the impacted routes in **Exhibit 14**, some riders may slightly shift their commute time to avoid the peak period or access their destination via different routes. Transit agencies also regularly monitor the passenger load factor and adjust scheduling to best accommodate ridership demand. An expanded safe bicycle network to additional areas within the city and region would also help alleviate transit overcrowding by providing alternatives to riding transit.

Transit Speed and Reliability

As shown in the previous traffic operations section, several intersections along NE 85th Street that transit serves will operate at LOS E or worse with the future land use alternatives, including at the intersections with 6th Street and 120th Avenue NE. Additional delay at these intersections may slow down transit and degrade the reliability of service. A queue jump is currently being planned at NE 85th Street and 6th Street to improve transit operations through that intersection. The project stemmed from an initial project identified in ST3 to fund bus-only lanes along NE 85th Street between the I-405 BRT station and Downtown Kirkland. The Kirkland Transit Implementation Plan (KTIP), adopted in early 2019, identified the 6th Street queue jump along with other transit-supportive projects across the city. Several alternatives were reviewed during the KTIP development to identify optimal transit priority solutions along NE 85th Street, including side and

center-running transit lanes between I-405 and 6th Street. However, the transit lane options were removed for further consideration because the transit lanes would provide limited speed and reliability benefits for the substantial cost while potentially constraining pedestrian access and limiting bus station location options. In addition, the KTIP identified the NE 85th Station as a top priority to provide non-motorized access improvements. The KTIP also evaluated a potential queue jump at NE 85th Street and 124th Avenue NE, but the project was not advanced to the final project list in the plan.

Transit Access

The next section of the memo focuses on infrastructure for people walking and bicycling. Many of the improvements have been identified for the purpose of enhancing transit access. Key improvements include:

- Construction of shared use trail connections to transit stops along 85th Street and the BRT station
- Complete street and greenway improvements on key routes accessing transit stops along 85th Street and the BRT station, including 5th Avenue, 7th Avenue/87th Street, 116th Avenue, and 90th Street
- Widened sidewalks along 85th Street throughout the SAP

To create a seamless system of transit access for all users, these investments could be paired with first/last mile rideshare services and enhanced stop amenities along NE 85th Street, recognizing the waiting conditions along a busy corridor (at Kirkland Way, 120th Ave NE, etc.)

Comfort for People Walking and Biking

Fehr & Peers evaluated how well the study area can accommodate people walking and biking under two scenarios:

- **Existing Plus Committed Project Conditions:** This scenario considers transportation infrastructure on the ground today, as well as transportation infrastructure that is likely to be constructed independent of the SAP. Infrastructure assumed under this scenario is mapped in **Exhibit 15**.
- **Recommended Station Area Investments:** This scenario considers all of transportation infrastructure from the prior scenario plus capital investments recommended as part of the SAP to accommodate trip growth anticipated with development, better connect to the BRT station, and/or provide a more complete and low-stress active transportation network. Infrastructure assumed under this scenario is listed below and mapped in **Exhibit 16** and more fully described in the Factsheets, which are **Appendix B** to this memo.

Project Number	*Recommended Station Area Investment*
1	Lee Johnson East Access (Including 120th Corridor from NE 83rd to NE 85th Street)
2	Lee Johnson South Access
3	NE 80th Street/120th Avenue NE Signal Improvement (Including 120th Corridor from NE 80th to NE 83rd Street)
4	124th Avenue NE Widening
5	NE 85th Street/120th Avenue NE Improvements
6	5th Avenue to Kirkland Way Shared Use Trail
7	5th Avenue Greenway
8	6th Street Widened Sidewalks
9	Kirkland Way Complete Street
10	7th Avenue/NE 87th Street Complete Street
11	NE 87th Street/116th Avenue NE Complete Street
12	116th Avenue NE Greenway
13A	405 Interchange Path (SW)
13B	405 Interchange Path (NE)
13C	405 Interchange Path (SE)
14	NE 90th Street Complete Street
15	NE 90th Street Greenway
16	122nd Avenue NE Bike Route
17	120th Avenue NE to 122nd Avenue NE Ped-Bike Connection
18A	NE 85th Street Enhanced Sidewalks
18B	NE 85th Street Enhanced Sidewalks
18C	NE 85th Street Enhanced Sidewalks
18D	NE 85th Street Enhanced Sidewalks
18E	NE 85th Street Enhanced Sidewalks
19	116th Avenue NE Pedestrian/Bike Access to Overcrossing
20	120th Avenue NE improvements (NE 85th Street to NE 90th Street)
P1	6th Street/7th Avenue Intersection Treatment
P2	NE 85th Street / 122nd Avenue NE Bicycle Signal Improvements
P3	NE 87th Street/116th Avenue NE Enhanced Intersection
P4	122nd Avenue NE and NE 80th Street Intersection Treatment

Exhibit 15: Existing Plus Committed Projects

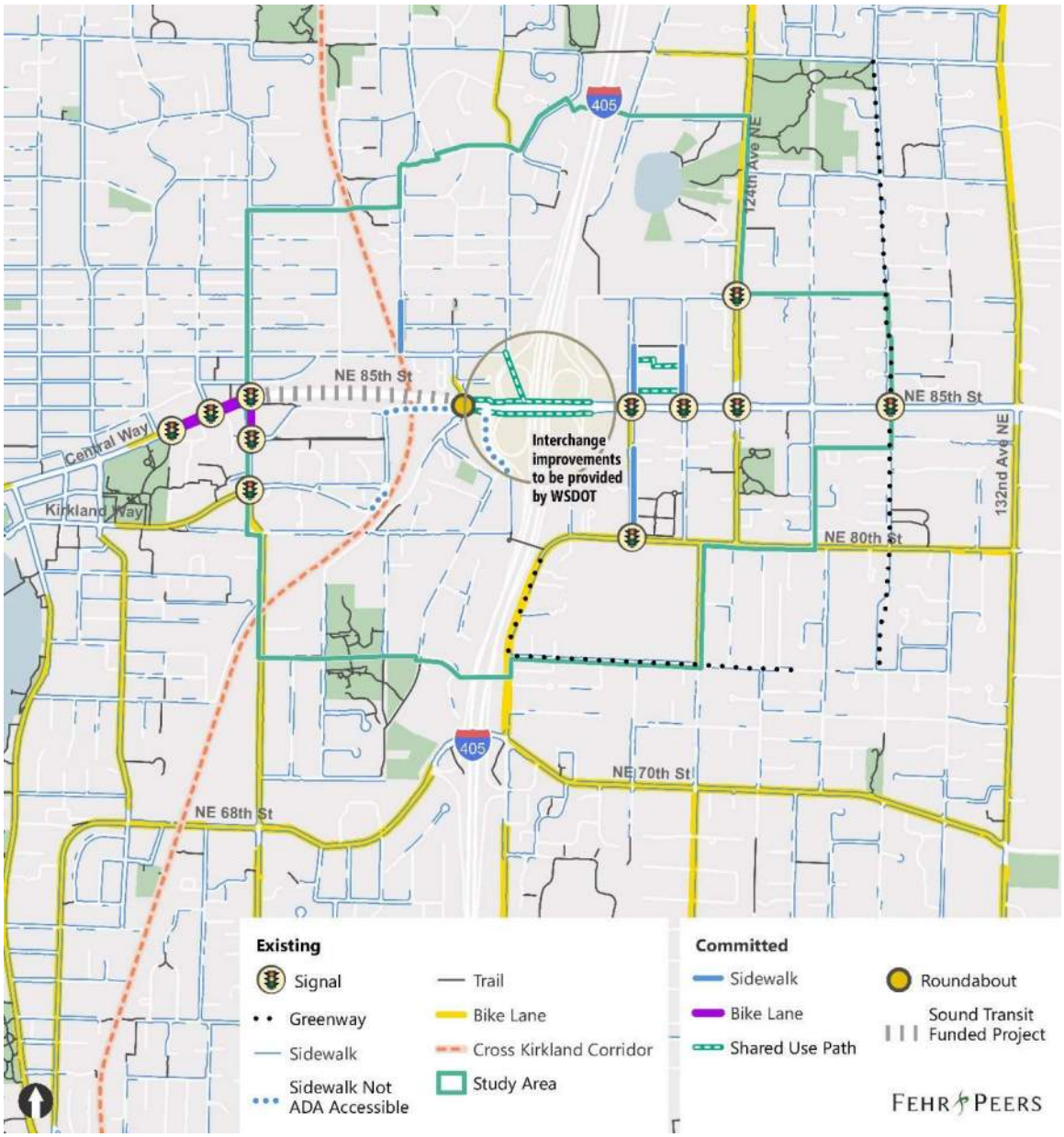
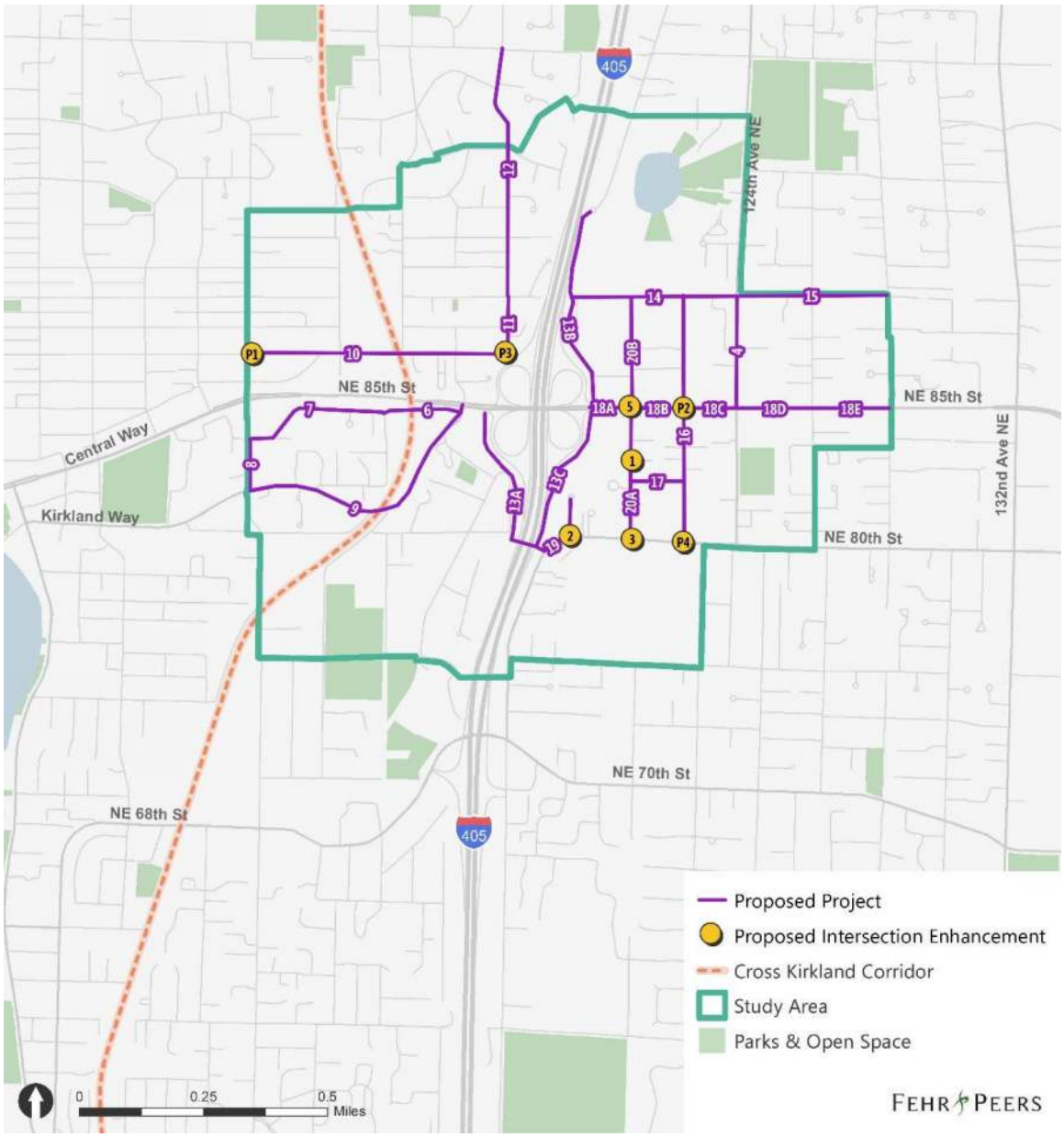
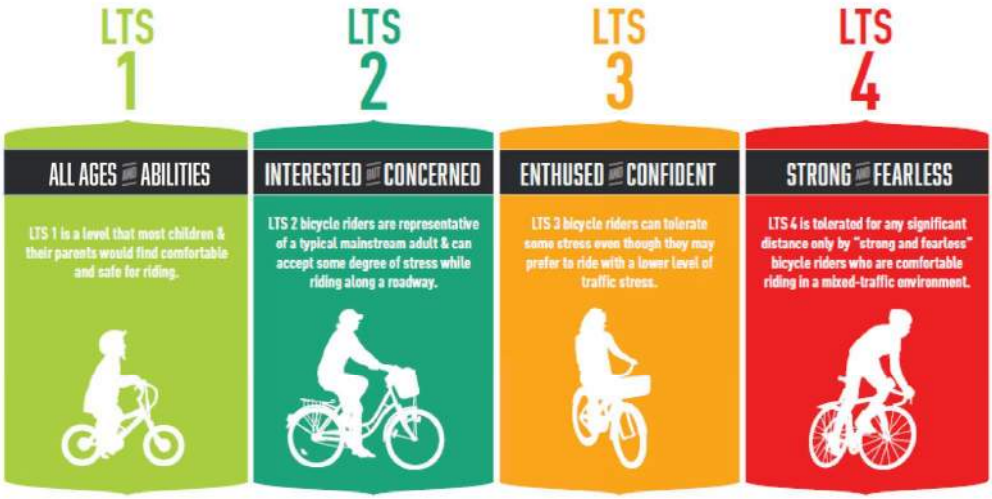


Exhibit 16: Recommended Station Area Investments



The comfort of facilities for people walking and biking is measured quantitatively using a metric called "level of traffic stress." This metric describes conditions for on a scale of 1-4, with level 1 representing conditions that are comfortable for people of all ages and all abilities and level 4 representing conditions that are stressful for almost everyone (see **Exhibit 17**). To increase the number of people who choose to walk or bike, communities should strive to provide the most comfortable facilities possible within given constraints such as right of way, slope, environmental feasibility, modal conflicts, and cost.

Exhibit 17: Level of Traffic Stress Concept



Exhibits 18-**19** present the criteria that was used to screen level of traffic stress for people walking under the Existing Plus Committed Infrastructure scenario. These criteria recognize that increases in the number of travel lanes and posted speeds lead to a more stressful network, as does a narrower sidewalk environment.

It should be noted that this screening methodology identifies areas of potential high stress for people walking, but is not an algorithm intended to be employed once a low-stress intervention, such as wider, physically separated sidewalks buffered from vehicle traffic are in place. It is assumed that the treatments recommended for the station area, which include wider sidewalks and buffering from vehicle traffic by bike facilities, landscaping, and on-street parking would provide a low-stress environment that fits the context of the overall station area plan vision. The measured comfort levels of transportation facilities in the study area under the Existing Plus Committed Conditions and with Recommended Station Area Investments scenarios are shown in **Appendix C** of this memo.

Exhibit 18: Pedestrian LTS – Detached[1] Sidewalk Screening Criteria

Criteria	LTS 1	LTS 2	LTS 3	LTS 4
# of Travel Lanes	2-3 lanes	4-5 lanes	6+ lanes	(no effect)
Usable Sidewalk Width	>= 10 feet	9 to 8 feet	6 to 7 feet	< 6 feet
Posted Speed Limit	<= 25 MPH	26-30 MPH	31-35 MPH	>=36 MPH

Source: Fehr & Peers, 2021
Notes:
1 Detached sidewalks have a buffer between the sidewalk and the adjacent curb, which could include on-street or off-street bicycle facilities, on-street parking, landscaping, or an amenity zone.

Exhibit 19: Pedestrian LTS – Attached[1] Sidewalk Screening Criteria

Criteria	LTS 1	LTS 2	LTS 3	LTS 4
# of Travel Lanes	2-3 lanes	(no effect)	4-5 lanes	6+ lanes
Usable Sidewalk Width	>= 10 feet	9 to 8 feet	6 to 7 feet	< 6 feet
Posted Speed Limit	<= 20 MPH	21-25 MPH	26 - 30 MPH	31 – 35 MPH

Source: Fehr & Peers, 2021
Notes:
1 Attached sidewalks are directly adjacent to the travel-way and separated by only a curb.

Exhibit 20 presents the criteria used to evaluate level of traffic stress for biking. These criteria were applied to evaluate comfort levels of cyclists under both the Existing Plus Committed Infrastructure and Recommended Station Area Improvements scenarios. The measured comfort levels of transportation facilities in the study area under the Existing Plus Committed Conditions and with Recommended Station Area Investments scenarios are shown in **Appendix C** of this memo.

Exhibit 20: Bicycle LTS and Roadway Characteristics

Speed Limit (mph)	Arterial Traffic Volume	No Marking	Sharrow Lane Marking	Striped Bike Lane	Buffered Bike Lane	Protected Bike Lane	Physically Separated Bikeway
≤25	<3k	1	1	1	1	1	1
	3-7k	3	2	2	2	1	1
	≥7k	3	3	2	2	1	1
30	<15k	4	3	2	2	1	1
	15-25k	4	4	3	3	3	1
	≥25k	4	4	3	3	3	1
35	<25k	4	4	3	3	3	1
	≥25k	4	4	4	3	3	1
40	Any volume	4	4	4	4	3	1

Source: Fehr & Peers, 2021

Accessibility Analysis

Fehr & Peers evaluated how accessible the study area will be under from the perspective of people walking and biking. To make this determination, we considered how far someone could get traveling to or from the proposed station (assumed to be at the I-405/NE 85th Street interchange) on foot or by bike under the Existing Plus Committed Conditions and with Recommended Station Area Investments Scenarios. Our specific study parameters for each analysis are documented below and the results are mapped in **Appendix D**.

Pedestrian Walkshed Assumptions

Pedestrians are assumed to use sidewalks, trails, and/or low volume/speed residential roads (with or without sidewalks). Arterials without sidewalks were not included in the network. Existing sidewalks, trails, and committed projects were included to create walksheds based on the actual walking path of a pedestrian both to and from the station. Walk time (in minutes) along each segment in the network is calculated by dividing the length of each sidewalk by an assumed walking speed of 3 mph (265 feet per minute). Walksheds were created for the full network, and a network that excludes ADA non-compliant facilities.

Bicycle Walkshed Assumptions

To plan for the broader cycling population, cyclists are assumed to only use low stress networks (LTS 1 and LTS 2). It is assumed that cyclists will walk their bike on the sidewalk of any LTS 3 or LTS 4 portion of a network. Existing bicycle infrastructure and committed projects were included to create bikesheds based on the actual biking path of a cyclist to and from the station. Bicycle travel time (in minutes) along each segment in the network is calculated by dividing the length of each segment by an assumed cycling speed of 10 mph. On LTS 3 or LTS 4 portions of the network, cyclists are assumed to walk their bike on a sidewalk at a walking speed of 3 mph (265 feet per minute.

It was assumed that the baseline speed of bicyclists on flat terrain is 10 MPH. Bicycle impedances were introduced if a slope was encountered in the direction of travel. The impedance (minutes of travel time) was inflated along the segment based on the change in energy requirements to bicycle uphill relative to the energy requirement to bicycle up a 2% slope. Slopes less than 2% are assumed to be at a speed that is the same as the baseline speed of 10 MPH. The equations used to compute changes in energy requirements are based on literature from sports science[8] looking at changes in energy requirements in response to slopes. In our equation, we only accounted for changes in rolling resistance and gravitation potential energy based on the following equation:

$$Watts = k^r * M * s + g * i * M * s$$

[8] Cycling Uphill and Downhill. David Swan. Wellness Institute & Research Center. Sports Science, 1998.

- K^r – is the coefficient of rolling resistance, in our case for bitumen we used 0.005
- M – is the mass of the cyclist and the bike, in our case 90 kg.
- s – is the speed of the cyclists going uphill, we used 5.5 mph
- g – is the gravitation acceleration of earth at 9.8 m/s^2 at sea level
- i – is the incline or grade of the slope, this is an approximation since the sine of the road angle should be technically used

Based on a comparison of a segment slope to the energy required for a 2% incline, a ratio is derived that is used to inflate the impedance values for the uphill slope of the segment. All downhill slopes were assumed to have no significant change in impedances.

Proposed Package of Investment Strategies

In this section, we describe the full package of improvements recommended to provide safe and comfortable mobility for all within the SAP should the City move to selected growth aligned with June Alternative B.

Roadway and Geometric Changes

The following modifications are recommended to provide capacity to lessen or fully mitigate impacts on the roadway system:

- **NE 90th Street & 124th Avenue NE (Alternatives A and B):** Identified mitigation for this intersection includes adding northbound and southbound through lanes and restriping the eastbound through lane to be an eastbound through/left/right lane with east/west split phasing. The additional northbound lane would need to be carried through to north of NE 90th Street. With these improvements in place, the intersection would meet the City's LOS standard under both Alternatives A and B.
- **NE 85th Street & 120th Avenue NE (Alternative B):** Based on a site visit, as well as feedback from City staff and the Transportation Commission, two potential geometric mitigation options were identified:
    - 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 movement[9]
        - Revising the signal to provide northbound/southbound split phasing to allow for left turn movements out of either lane from the south approach
    - 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
- **NE 83rd Street & 120th Avenue NE (Alternative B):** With the intensive allowed development of 250 feet of maximum height allowed in the southeast quadrant, 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. There are various ways that this intersection could be configured. For the purposes of this modeling, it was assumed that the west leg would include a left-turn pocket, plus a shared left/through/right lane with all other approaches served by one lane. This would require that the northbound left turn lane at the 85th Street intersection be extended to provide a second northbound receiving lane.
- **NE 80th Street & 118th Avenue NE (Alternative B):** Based on delay analysis, this intersection would require mitigation regardless of whether 118th Avenue NE serves as a primary access point. This is due to additional traffic passing through the intersection along 80th Avenue. It should be noted that this intersection is located on a curve and may require additional treatments to ensure safe sight distance. Before constructing a signal, it would also be important to conduct a signal warrant analysis.
- **NE 80th Street & 120th Avenue NE (Alternative B):** 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. It should be noted that this improvement, while necessary to mitigate impacts of the intensive allowed development contemplated by Alternative B, could be a standalone improvement, as it would better serve areawide circulation.

[9] In designing this improvement it would be important to consider weaving interactions between traffic making the southbound free right and westbound traffic accessing northbound I-405. The viability of installing a pork chop should also be evaluated in final intersection design.

Transportation Demand Management

This report identifies a suite of TDM strategies that could be implemented by the City or required of development over time within the SAP. Implementation of these strategies would not only help to reduce driving, which in turn lessens traffic congestion and greenhouse gas impacts, but fundamentally align with the City's values and vision for the station area. It is recommended that these strategies be implemented as part of **Alternative B**.

Implementation of TDM strategies would require investments by the City in several forms, including:

- City staff time to develop code revisions and manage compliance, for example requiring developers to provide a transit subsidy to tenants.
- Creation of new staff positions to implement and operate new programs, for example on-street parking policing and management and off-street parking program implementation.
- Capital investments, for example micromobility charging stations.

These costs, both for initial start-up and ongoing program management, should be considered within the financial evaluation of the plan.

Transit Access & Speed and Reliability Improvements

This report considers evolution of a Station Area Plan, thus consideration of high-quality transit service, speed and reliability, and stop and station access should always be front of mind. The following recommendations apply to either **Alternative A or Alternative B**:

- Continue to support King County Metro in moving forward with implementation of the Metro K-Line Rapid Ride.
- Consider incorporation of transit priority infrastructure such as queue jumps and signal priority at NE 85th Street and 120th Avenue NE, NE 85th Street and 124th Avenue NE, and signal priority along the full extent of the NE 85th Street corridor within Kirkland
- Transit access strategies, such as first-last mile rideshare connections, bikeshare support, and specific pedestrian and bicycle infrastructure projects (perhaps identified in the walking/biking section)
- Coordination with King County Metro and Sound Transit to plan for and implement a pilot first/last mile shuttle connection for residents, visitors, and employees within the subarea to access the NE 85th Street BRT station
- Enhanced amenities at stops along NE 85th Street such as real-time arrival signage, expanded shelters, and bike parking and re-balanced stop locations to better align with safe signalized crossing locations.

Building a Robust System for Walking and Biking

Exhibit 16 summarizes the transportation capital investments recommended as part of the SAP to accommodate trip growth anticipated with development, better connect to the BRT station, and/or provide a more complete and low-stress active transportation network. These investments are more fully described in the Factsheets, which are **Appendix B** to this memo.

Appendix A

Kirkland 85th Interchange Analysis

The operations at the I-405/NE 85th St interchange were evaluated using the microsimulation traffic models developed by WSDOT for their interchange study. This sensitivity test was conducted to determine whether the additional land use growth allowed under the 85th Station Area Plan would affect the operations at the redesigned interchange. The Vissim model provided by WSDOT simulates NE 85th St between 6th St and 124th Ave NE, including the freeway ramps to and from I-405 as well as the BRT station and access points.

The sensitivity analysis started with the 2045 PM peak hour model for the proposed interchange project. The input volumes were then adjusted to reflect the anticipated demand and travel patterns forecasted for the 2044 June Alternative B. These adjustments increased the total demand within the model by approximately 400 PM peak hour trips or about 4% higher than the initial assumptions in WSDOT's model. A second scenario was evaluated that assumed that TDM implementation would reduce the growth associated with the Station Area Plan. For this scenario, the forecasted growth between 2018 and 2044 was reduced by 20%, which resulted in 500 less peak hour trips in the network. These two demand scenarios provide high and low bookends for the anticipated operations along NE 85th St and at the interchange. No other adjustments to the WSDOT models were made beyond updating the demand volumes.

Using the microsimulation models, the LOS was calculated at 5 intersections along NE 85th St. The LOS grade and average control delay are shown in the table below for each of the scenarios. The results show increased delay west of the interchange along NE 85th St. The 2044 SAP scenario has higher eastbound demand than the 2045 WSDOT scenario heading towards and through the I-405 interchange. This results in queuing along NE 85th St between the interchange and 6th St affecting operations are these locations. The volume reductions associated with the implementation of some TDM measures mitigates these concerns and reduces the delay and queuing. The average delay at the roundabout at Kirkland Way is still higher than was assumed in the WSDOT scenario and there is some eastbound queuing at this location, though it does extend to the intersection at 6th St.

Level of Service and Average Control Delay

Intersection	Control	2045 WSDOT	2044 85th SAP	2044 85th SAP w/ TDM
6th St / NE 85th St	Signal	E / 68 sec	F / 128 sec	D / 52 sec
Kirkland Way / NE 85th St	Roundabout	C / 18 sec	F / 75 sec	E / 37 sec
120th Ave NE / NE 85th St	Signal	D / 39 sec	D / 54 sec	D / 52 sec
122nd Ave NE / NE 85th St	Signal	C / 28 sec	C / 33 sec	C / 27 sec
124th Ave NE / NE 85th St	Signal	F / 93 sec	F / 94 sec	E / 63 sec

The average and maximum queue lengths, estimated using the microsimulation models, are shown in the following table for several locations. The first two locations show the eastbound queues at the Kirkland Way and 120th Ave NE intersections. The anticipated queue lengths are longer than in the

WSDOT scenario for both of the Station Area Plan scenarios. The scenario with TDM reductions does significantly reduce the average queue eastbound at Kirkland Way.

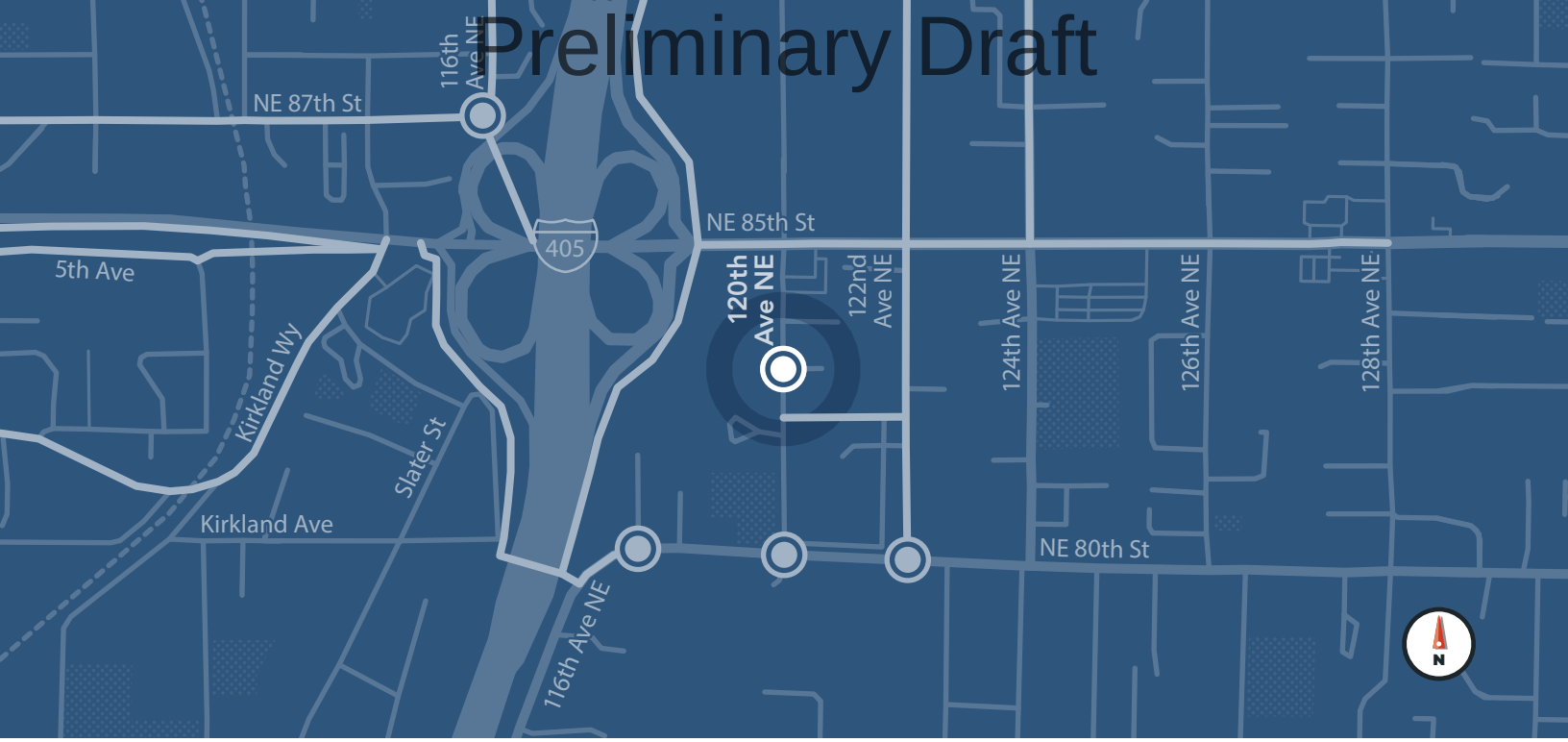
The last two locations show the queue lengths on the northbound and southbound off-ramps from I-405. There is over 1,500 feet of available storage on both ramps and the maximum queues do not spill back onto the freeway mainline in any of the scenarios.

Average and Maximum Queue Lengths

Location	2045 WSDOT	2044 85th SAP	2044 85th SAP w/ TDM
EB at Kirkland Way / NE 85th St	175ft / 625ft	1,275ft / 2,150ft	340ft / 1,150ft
EB at 120th Ave NE / NE 85th St	175ft / 675ft	475ft / 1,250ft	325ft / 1,100ft
I-405 NB off-ramp	50ft / 250ft	125ft / 350ft	125ft / 375ft
I-405 SB off-ramp	50ft / 275ft	375ft / 1,025ft	110 ft / 400ft

Overall, the Station Area Plan will result in slightly higher delays and queuing along NE 85th St in the future than estimated by WSDOT in their interchange analysis. However, the increases do not significantly affect the operations of the interchange or the freeway mainline.

Appendix B: Potential Station Area Investments Factsheets



Project #1

LEE JOHNSON EAST ACCESS (INCLUDING 120TH CORRIDOR FROM NE 83RD TO NE 85TH STREET)

PROJECT DESCRIPTION

New complete street and signalized connection to 120th Avenue NE, as well as a new northbound lane on 120th Avenue NE connecting to NE 85th Street.

Project Catalyst

Station Access

Complete Network

Capacity for Growth

Implementation Considerations

- Cost
- Right-of-way

Planning-level Cost

Low
$1,140,000

High
1,650,000

Project #2

LEE JOHNSON SOUTH ACCESS

PROJECT DESCRIPTION

New complete street and signalized connection to NE 80th Street via 118th Avenue NE

Project Catalyst

Station Access

Complete Network

Capacity for Growth

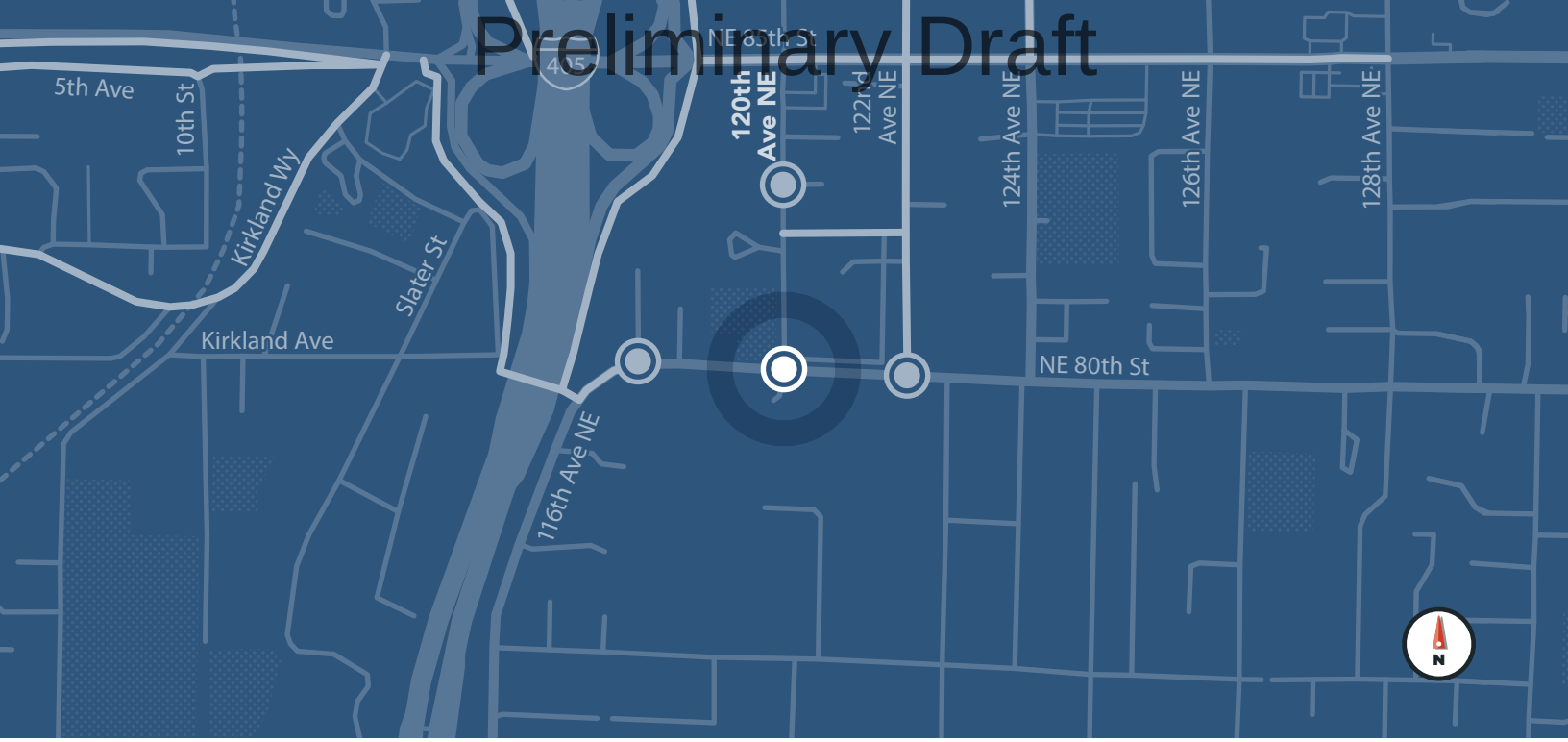
Implementation Considerations

- Cost
- Right-of-way
- Neighborhood impacts
- Sight distance at NE 80th Street intersection

Planning-level Cost

Low
$1,500,000

High
$2,160,000



Project #3

NE 80TH STREET/120TH AVENUE NE SIGNAL IMPROVEMENT

(INCLUDING 120TH CORRIDOR FROM NE 80TH TO NE 83RD STREET)

PROJECT DESCRIPTION

Improve 120th Avenue between NE 80th Street and NE 83rd Street and improve intersection with NE 80th Street to add southbound left turn pocket to separate left and right turning movements.

Project Catalyst

Station Access

Complete Network

Capacity for Growth

Implementation Considerations

- Cost
- Right-of-way

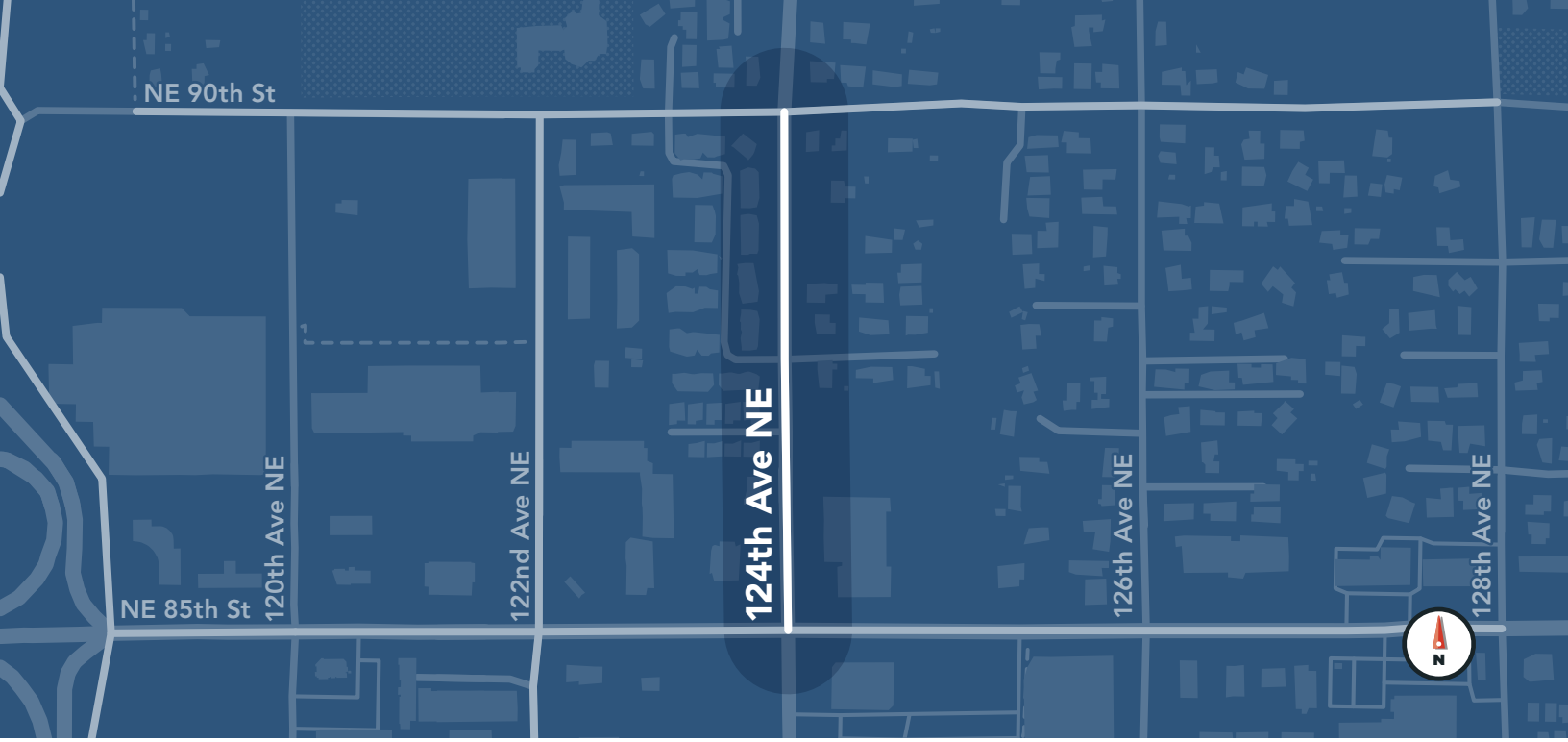
Planning-level Cost

Low

$970,000

High

$1,400,000



Project #4

124TH AVENUE NE WIDENING

PROJECT DESCRIPTION

Widen 124th Avenue NE to five lanes plus physically-separated bike lanes from NE 85th Street through the NE 90th Street intersection.

Project Catalyst

Station Access

Complete Network

Capacity for Growth

Implementation Considerations

- Right-of-way constraints
- Cost

Planning-level Cost

Low

$8,300,000

High

$11,980,000

Project #5

NE 85TH STREET/120th (OPTION 1)

PROJECT DESCRIPTION

New eastbound right turn lane on NE 85th Street from I-405 off ramp to 120th Avenue NE provides additional access to Lee Johnson site

Project Catalyst

Station Access

Complete Network

Capacity for Growth

Implementation Considerations

- Right-of-way constraints
- Cost
- Impact on pedestrian environment (longer crossings)

Planning-level Cost

Low
$1,550,000

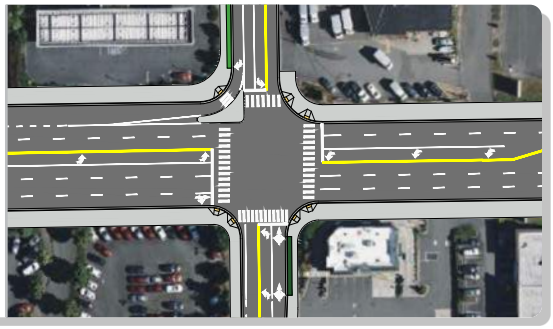
High
$2,240,000

Project #5

NE 85TH STREET/120th (OPTION 2)

PROJECT DESCRIPTION

Modifications to NE 85th Street and 120th Avenue NE intersection to provide additional access to Lee Johnson site.



Project Catalyst

- Station Access
- Complete Network
- **Capacity for Growth**

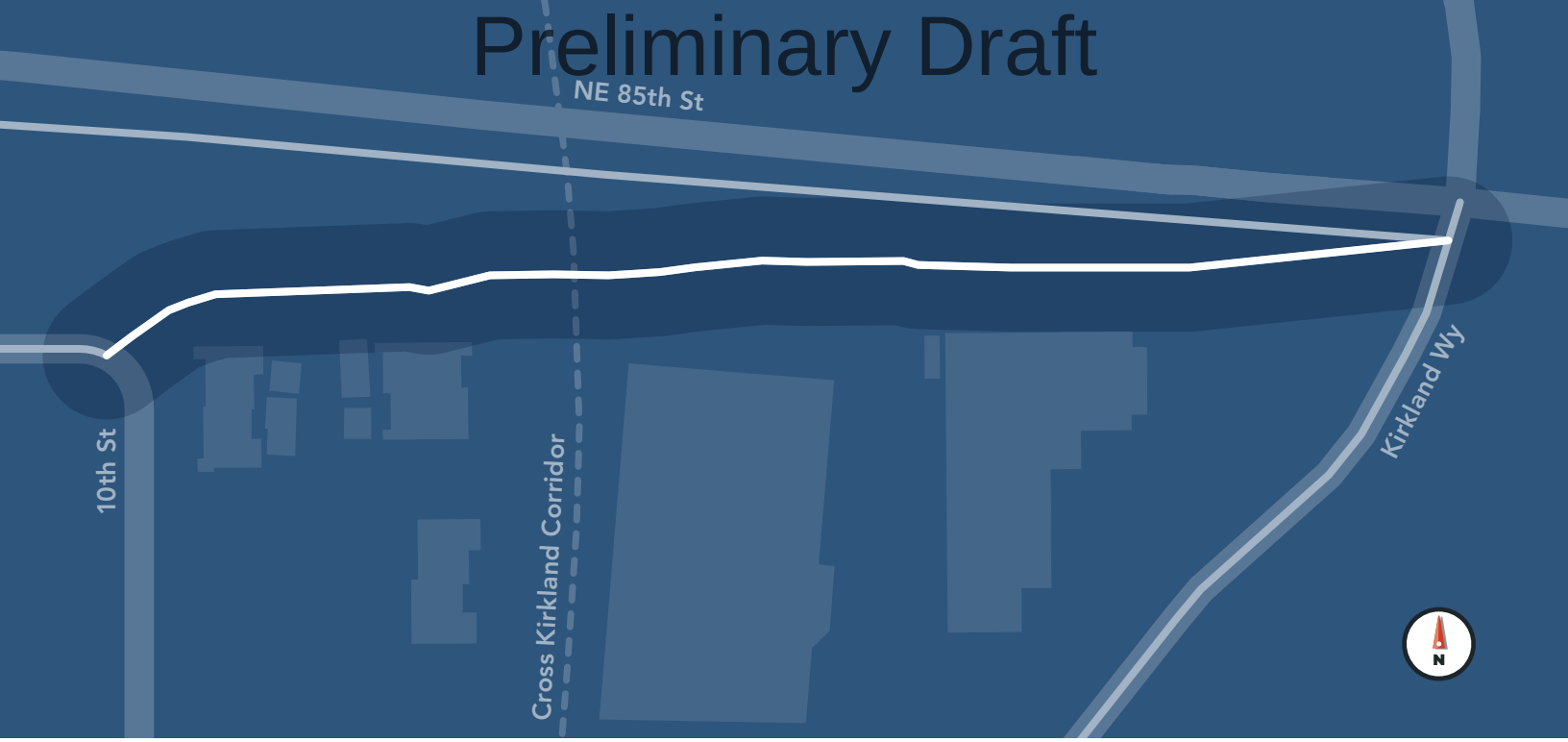
Implementation Considerations

- Right-of-way constraints
- Cost
- Additional intersection delay

Planning-level Cost

Low
$1,550,000

High
$2,240,000



Project #6

5TH AVENUE TO KIRKLAND WAY SHARED USE TRAIL

PROJECT DESCRIPTION

Improve shared use trail from 5th Avenue to Kirkland Way by widening to 12 feet, minimizing grade, and adding lighting

Project Catalyst

- Station Access
- Complete Network
- Capacity for Growth

Implementation Considerations

- Right-of-way constraints
- Cost
- Grade

Planning-level Cost

Low
$4,010,000

High
$5,790,000

Project #7

5TH AVENUE GREENWAY

PROJECT DESCRIPTION

Add sharrows and signage to make these quiet streets serve as a greenway

Project Catalyst

- Station Access
- Complete Network
- Capacity for Growth

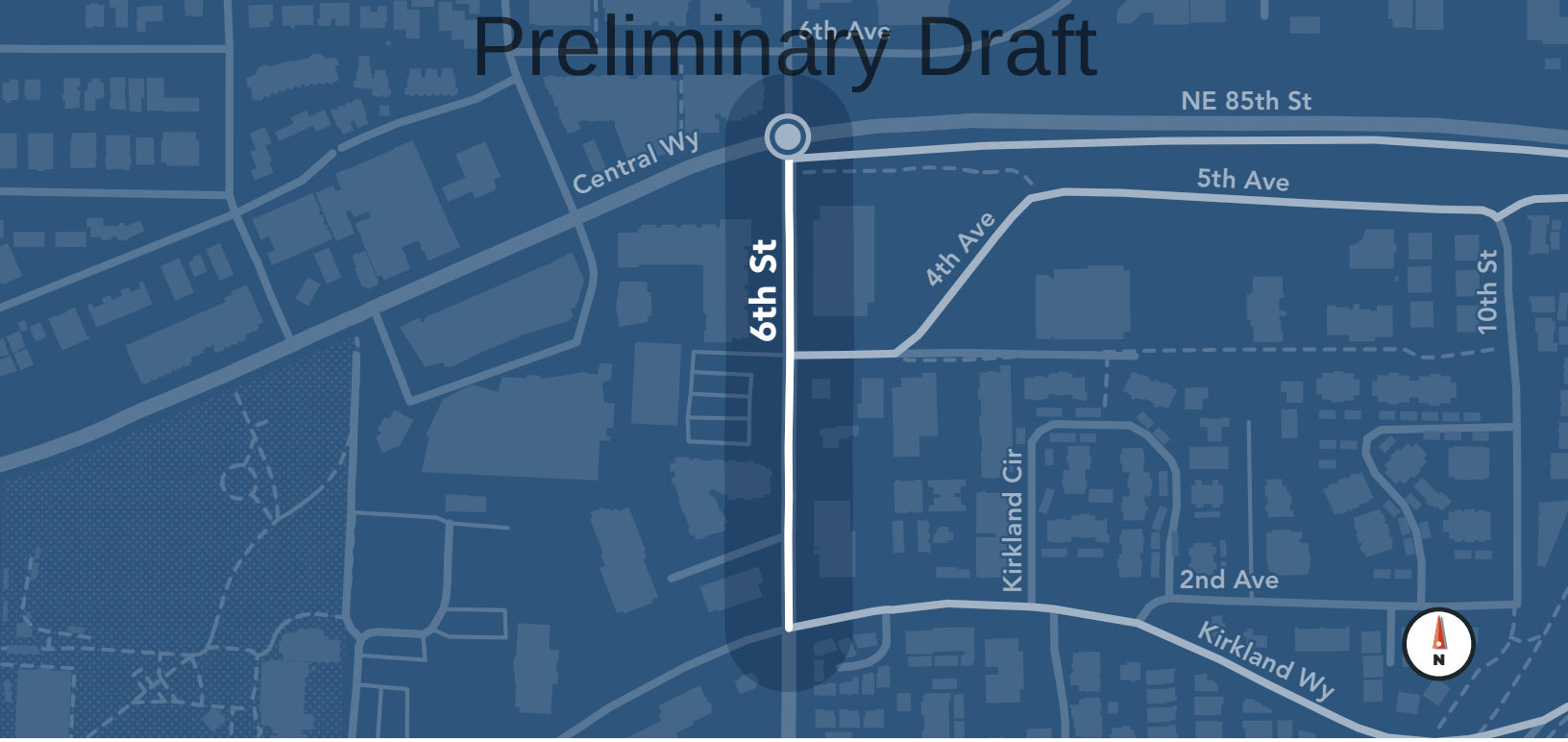
Implementation Considerations

- May require enhanced treatment on west end of corridor

Planning-level Cost

Low
$10,000

High
$15,000



Project #8

6TH STREET WIDENED SIDEWALKS

PROJECT DESCRIPTION

Add widened sidewalk on the east side of 6th Street between Kirkland Way and Central Avenue so that northbound bicyclists can share the facility with pedestrians

Project Catalyst

- Station Access
- **Complete Network**
- Capacity for Growth

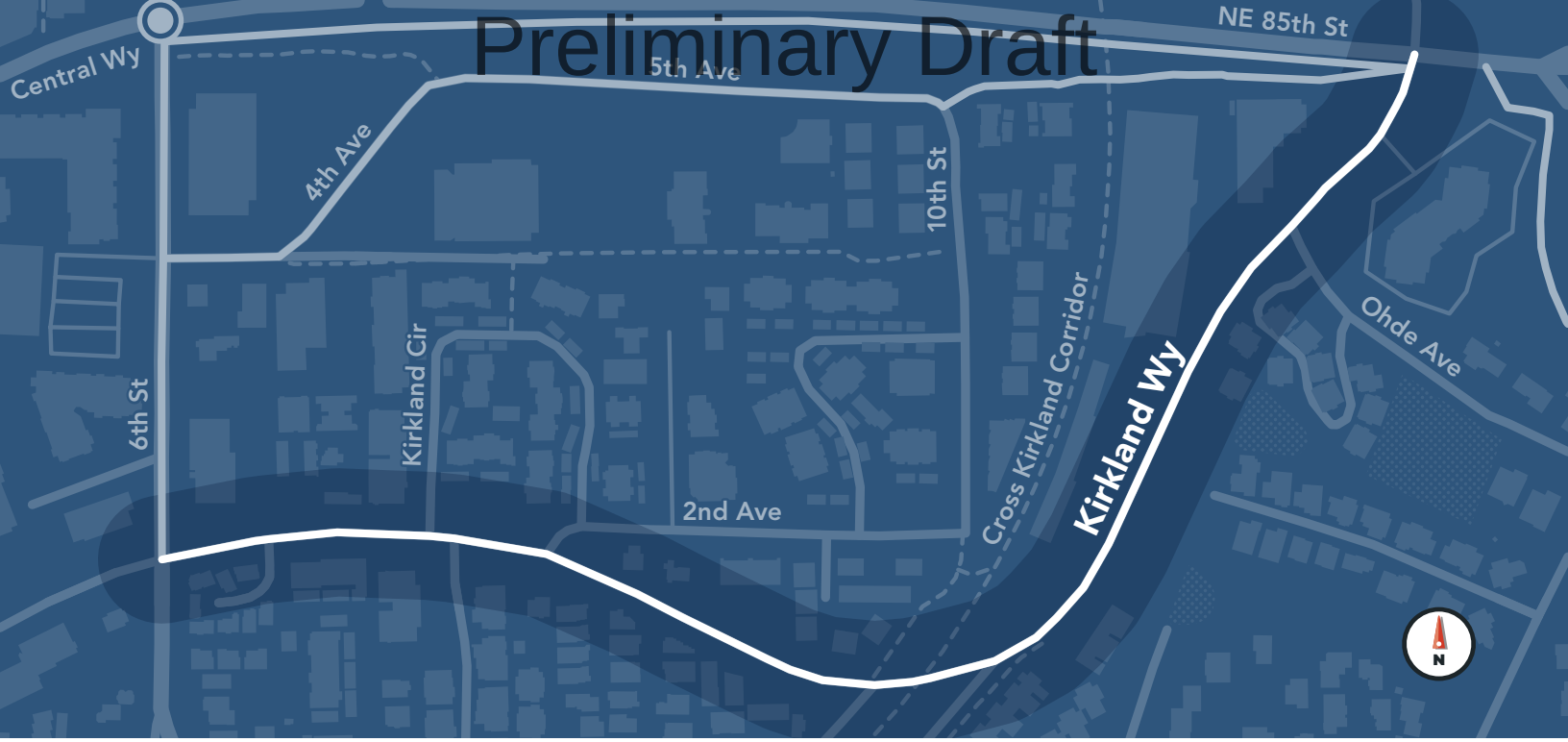
Implementation Considerations

- Right-of-way constraints
- Cost
- Phasing with planned developments

Planning-level Cost

Low
$1,870,000

High
$2,700,000

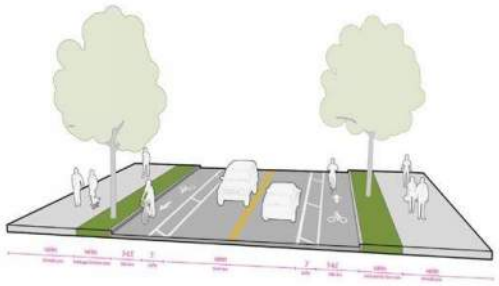


Project #9

KIRKLAND WAY COMPLETE STREET

PROJECT DESCRIPTION

Provide buffered bike lanes and standard sidewalks (both sides of street) between 6th Avenue NE and NE 85th Street



Project Catalyst

~~Station Access~~

Complete Network

~~Capacity for Growth~~

Implementation Considerations

- Right-of-way constraints
- Cost
- Need to replace the CKC bridge

Planning-level Cost

Low
$14,200,000

High
$20,500,000

Project #10

7TH AVENUE/NE 87TH STREET COMPLETE STREET

PROJECT DESCRIPTION

Reconfigure street to provide parking-protected bike lanes and sidewalks between 6th Street and 116th Avenue NE.

Project Catalyst

- Station Access
- Complete Network
- Capacity for Growth

Implementation Considerations

- Cost
- Grade
- Treatments at intersections

Planning-level Cost

Low
$2,290,000

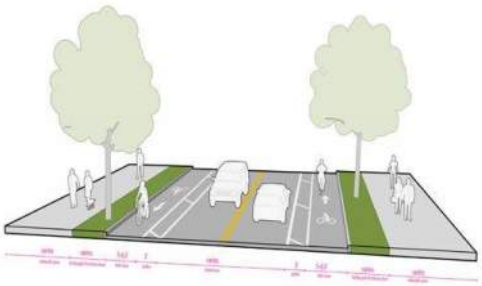
High
$3,310,000

Project #11

NE 87TH STREET/116TH AVENUE NE COMPLETE STREET

PROJECT DESCRIPTION

Provide buffered bike lanes and standard sidewalks (both sides of street) north of the station access to NE 90th Street



Project Catalyst

- Station Access
- Complete Network
- Capacity for Growth

Implementation Considerations

- Right-of-way constraints

Planning-level Cost

Low
$450,000

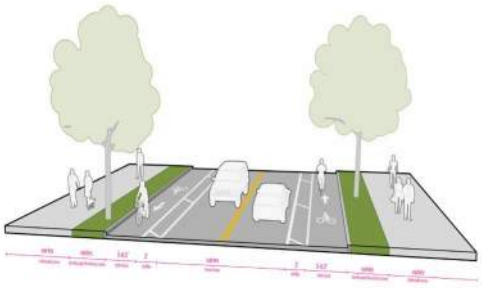
High
$650,000

Project #12

116TH AVENUE NE GREENWAY

PROJECT DESCRIPTION

Provide buffered bike lanes and standard sidewalks (both sides of street) north of NE 90th Street



Project Catalyst

Station Access

Complete Network

Capacity for Growth

Implementation Considerations

- Right-of-way constraints

Planning-level Cost

Low
$1,990,000

High
$2,880,000

Project #13A

405 INTERCHANGE PATH (SW)

PROJECT DESCRIPTION

Shared-use trail connecting BRT station to 116th Avenue NE

Project Catalyst

- Station Access
- Complete Network
- Capacity for Growth

Implementation Considerations

- Right-of-way
- Cost

Planning-level Cost

Low

$1,530,000

High

$2,210,000

Project #13B

405 INTERCHANGE PATH (NE)

PROJECT DESCRIPTION

Shared-use trail connecting BRT station to Slater Avenue

Project Catalyst

- Station Access
- Complete Network
- Capacity for Growth

Implementation Considerations

- Right-of-way
- Cost

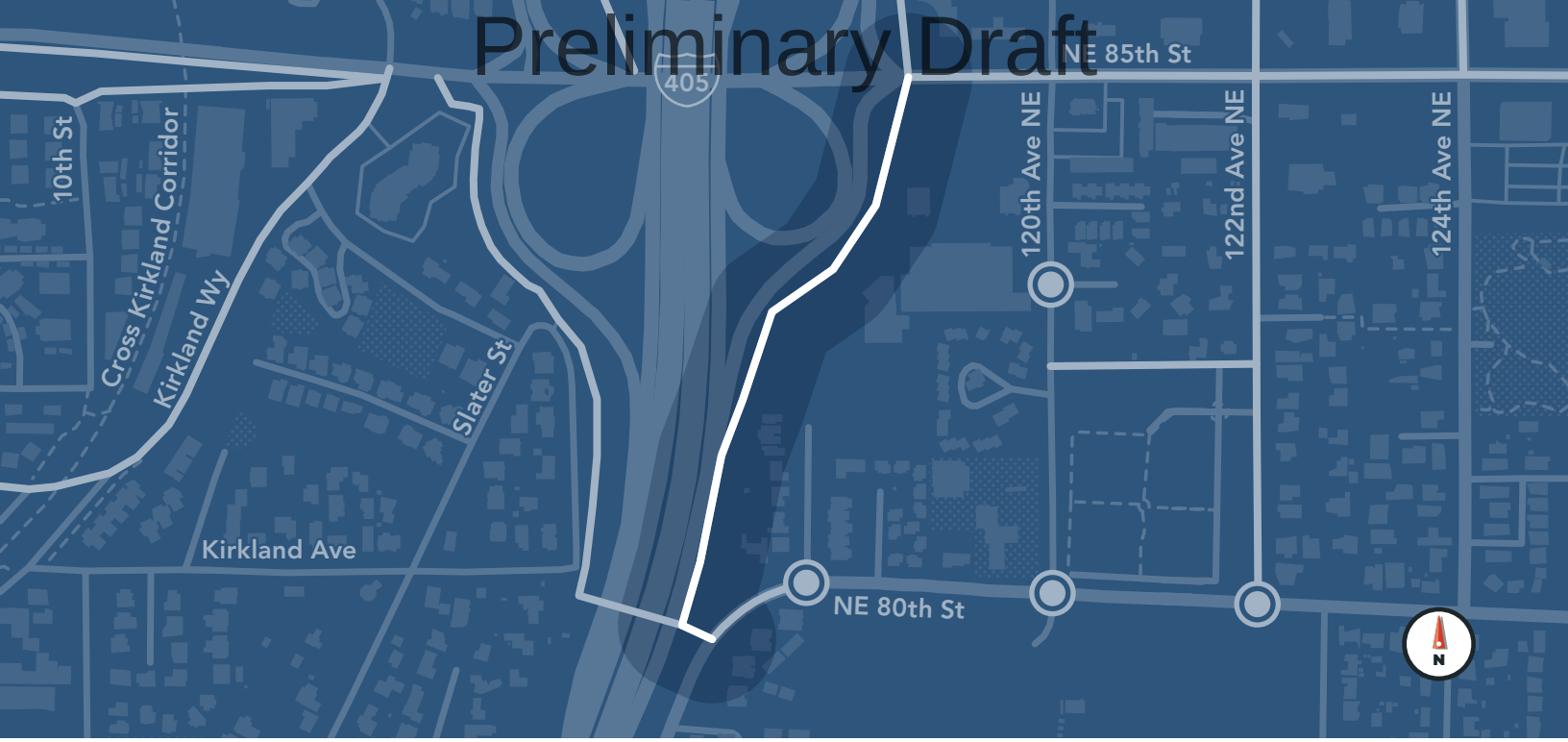
Planning-level Cost

Low

$1,910,000

High

$2,750,000



Project #13C

405 INTERCHANGE PATH (SE)

PROJECT DESCRIPTION

Shared-use trail connecting BRT station to NE 80th Street

Project Catalyst

- Station Access
- Complete Network
- Capacity for Growth

Implementation Considerations

- Right-of-way
- Cost

Planning-level Cost

Low

$1,500,000

High

$2,160,000

Project #14

NE 90TH STREET COMPLETE STREET

PROJECT DESCRIPTION

Reconfigure street to provide parking-protected bike lanes and sidewalks between the planned 405 Interchange Path and124th Avenue NE

Project Catalyst

- Station Access
- Complete Network
- Capacity for Growth

Implementation Considerations

- Right-of-way
- Cost
- Treatments at intersections

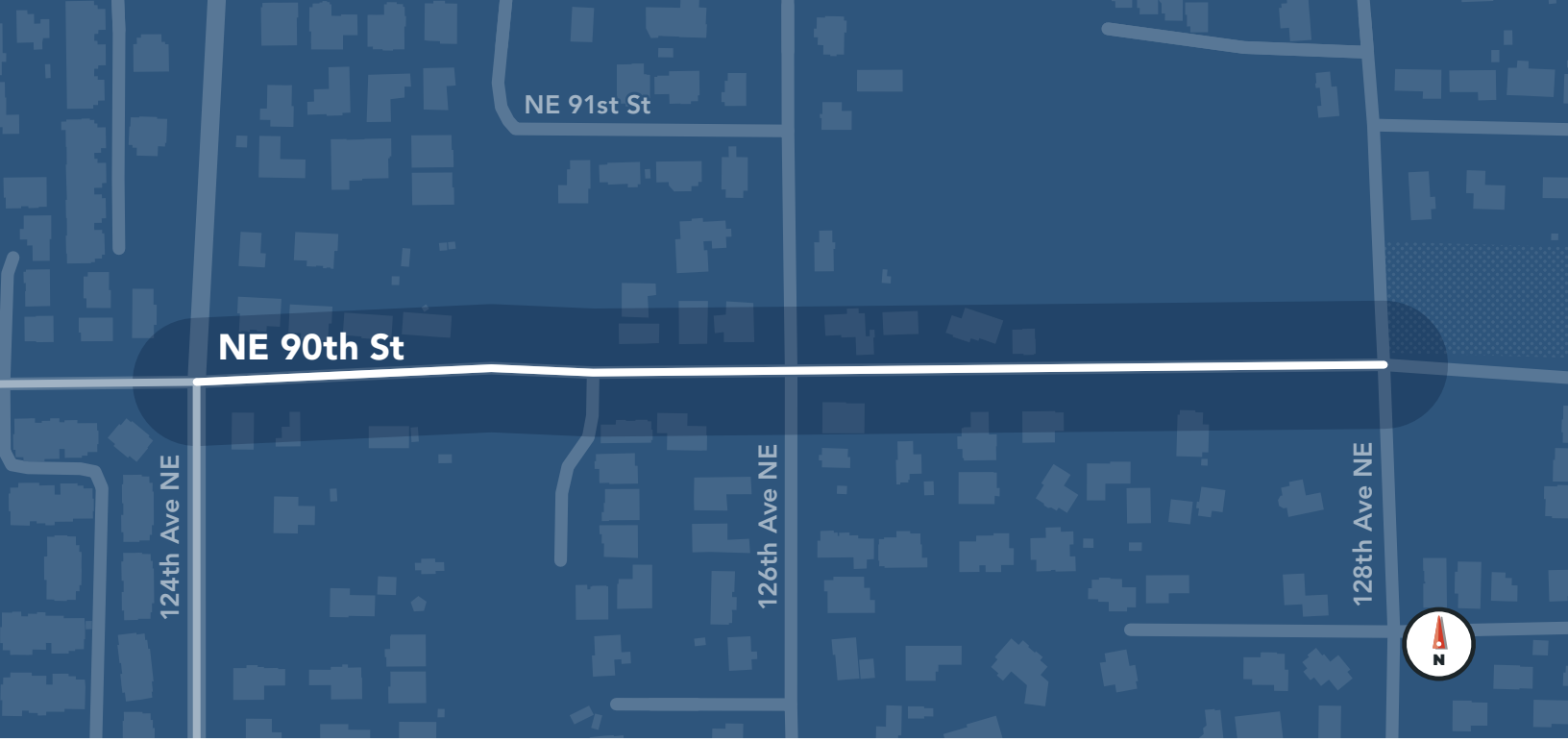
Planning-level Cost

Low

$4,270,000

High

$6,170,000

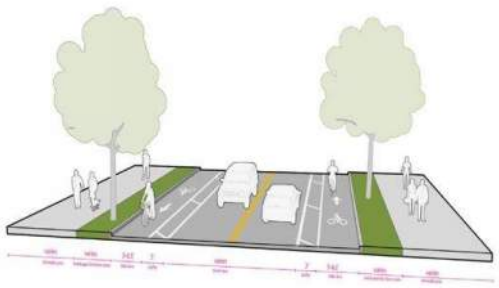


Project #15

NE 90TH STREET GREENWAY

PROJECT DESCRIPTION

Provide buffered bike lanes and standard sidewalks (at least one side of the street) between 124th Avenue NE and 128th Avenue NE



Project Catalyst

Station Access

Complete Network

Capacity for Growth

Implementation Considerations

- Right-of-way
- Cost
- Treatments through wetlands

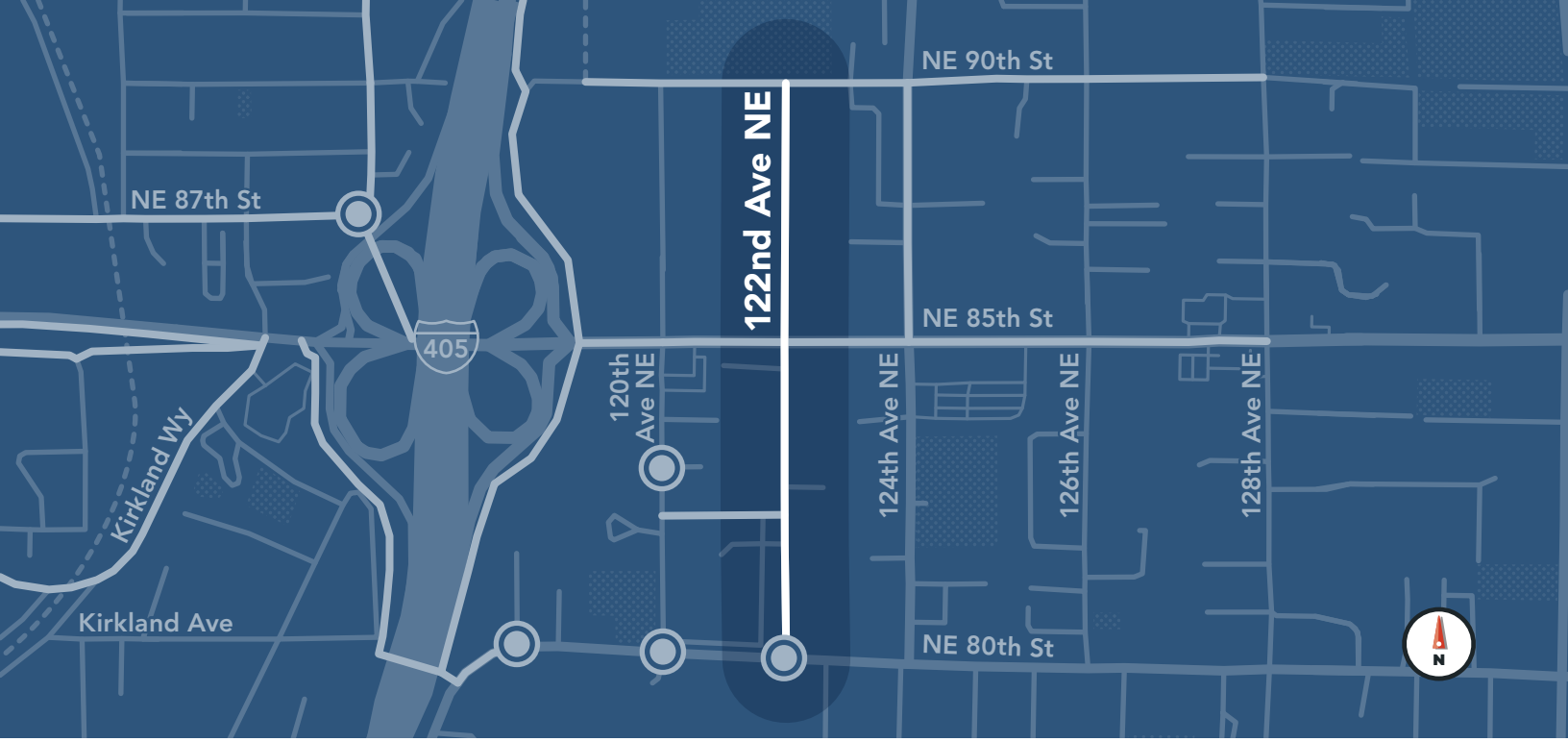
Planning-level Cost

Low

$4,780,000

High

$6,900,000

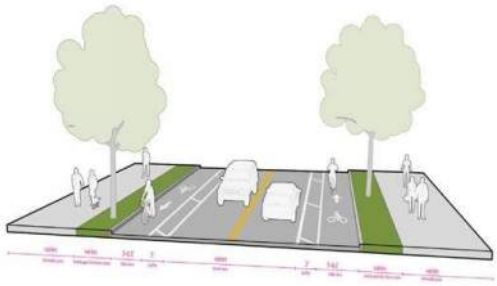


Project #16

122ND AVENUE NE BIKE ROUTE

PROJECT DESCRIPTION

Provide buffered bike lanes and standard sidewalks (both sides of street) between NE 80th Street and NE 90th Street



Project Catalyst

Station Access

Complete Network

Capacity for Growth

Implementation Considerations

- Right-of-way
- Cost
- Grade

Planning-level Cost

Low

$2,890,000

High

$4,180,000

Project #17

120TH AVENUE NE TO 122ND AVENUE NE PED-BIKE CONNECTION

PROJECT DESCRIPTION

Provide a 12-foot path for walking and biking in the vicinity of NE 82nd Street.

Project Catalyst

Station Access

Complete Network

Capacity for Growth

Implementation Considerations

- Cost

Planning-level Cost

Low

$660,000

High

$1,000,000

Project #18A

NE 85TH STREET ENHANCED SIDEWALKS

PROJECT DESCRIPTION

Provide 15-20 foot sidewalks (including amenity zones) on both sides of NE 85th Street to provide a high-quality experience for walking and opportunity for last-mile bike connections between I-405 and 120th Avenue NE.

Project Catalyst

- Station Access
- Complete Network
- Capacity for Growth

Implementation Considerations

- Cost
- Right-of-way

Planning-level Cost

Low

$1,460,000

High

$2,120,000

Project #18B

NE 85TH STREET ENHANCED SIDEWALKS

PROJECT DESCRIPTION

Provide 15-20 foot sidewalks (including amenity zones) on both sides of NE 85th Street to provide a high-quality experience for walking and opportunity for last-mile bike connections between 120th Avenue NE and 122nd Avenue NE.

Project Catalyst

- Station Access
- Complete Network
- Capacity for Growth

Implementation Considerations

- Cost
- Right-of-way

Planning-level Cost

Low

$1,290,000

High

$1,870,000

Project #18C

NE 85TH STREET ENHANCED SIDEWALKS

PROJECT DESCRIPTION

Provide 15-20 foot sidewalks (including amenity zones) on both sides of NE 85th Street to provide a high-quality experience for walking and opportunity for last-mile bike connections between 122nd Avenue NE and 124th Avenue NE.

Project Catalyst

- **Station Access**
- Complete Network
- Capacity for Growth

Implementation Considerations

- Cost
- Right-of-way

Planning-level Cost

Low

$1,120,000

High

$1,610,000

Project #18D

NE 85TH STREET ENHANCED SIDEWALKS

PROJECT DESCRIPTION

Provide 15-20 foot sidewalks (including amenity zones) on both sides of NE 85th Street to provide a high-quality experience for walking and opportunity for last-mile bike connections between 124th Avene NE and 126th Avenue NE.

Project Catalyst

- Station Access
- Complete Network
- Capacity for Growth

Implementation Considerations

- Cost
- Right-of-way

Planning-level Cost

Low

$2,680,000

High

$3,871,000

Project #18E

NE 85TH STREET ENHANCED SIDEWALKS

PROJECT DESCRIPTION

Provide 15-20 foot sidewalks (including amenity zones) on both sides of NE 85th Street to provide a high-quality experience for walking and opportunity for last-mile bike connections between 126th Avenue NE and 128th Avenue NE.

Project Catalyst

- Station Access
- Complete Network
- Capacity for Growth

Implementation Considerations

- Cost
- Right-of-way

Planning-level Cost

Low

$2,740,000

High

$3,960,000

Project #19

116TH AVENUE NE PEDESTRIAN/BIKE ACCESS TO OVERCROSSING

PROJECT DESCRIPTION

Improve space allocated for bikes and pedestrians on west side of NE 116th to provide a more comfortable connection, including provision of an enhanced crossing of NE 116th Avenue to the south.

Project Catalyst

Station Access

Complete Network

Capacity for Growth

Implementation Considerations

- Right-of-way
- Cost

Planning-level Cost

Low

$190,000

High

$280,000

Project #20

120TH AVENUE NE IMPROVEMENTS (NE 85TH STREET TO NE 90TH STREET)

PROJECT DESCRIPTION

Overlay and sidewalk infill between along 120th Avenue NE between NE 85th Street and NE 90th Street

Project Catalyst

Station Access

Complete Network

Capacity for Growth

Implementation Considerations

- Right-of-way
- Cost

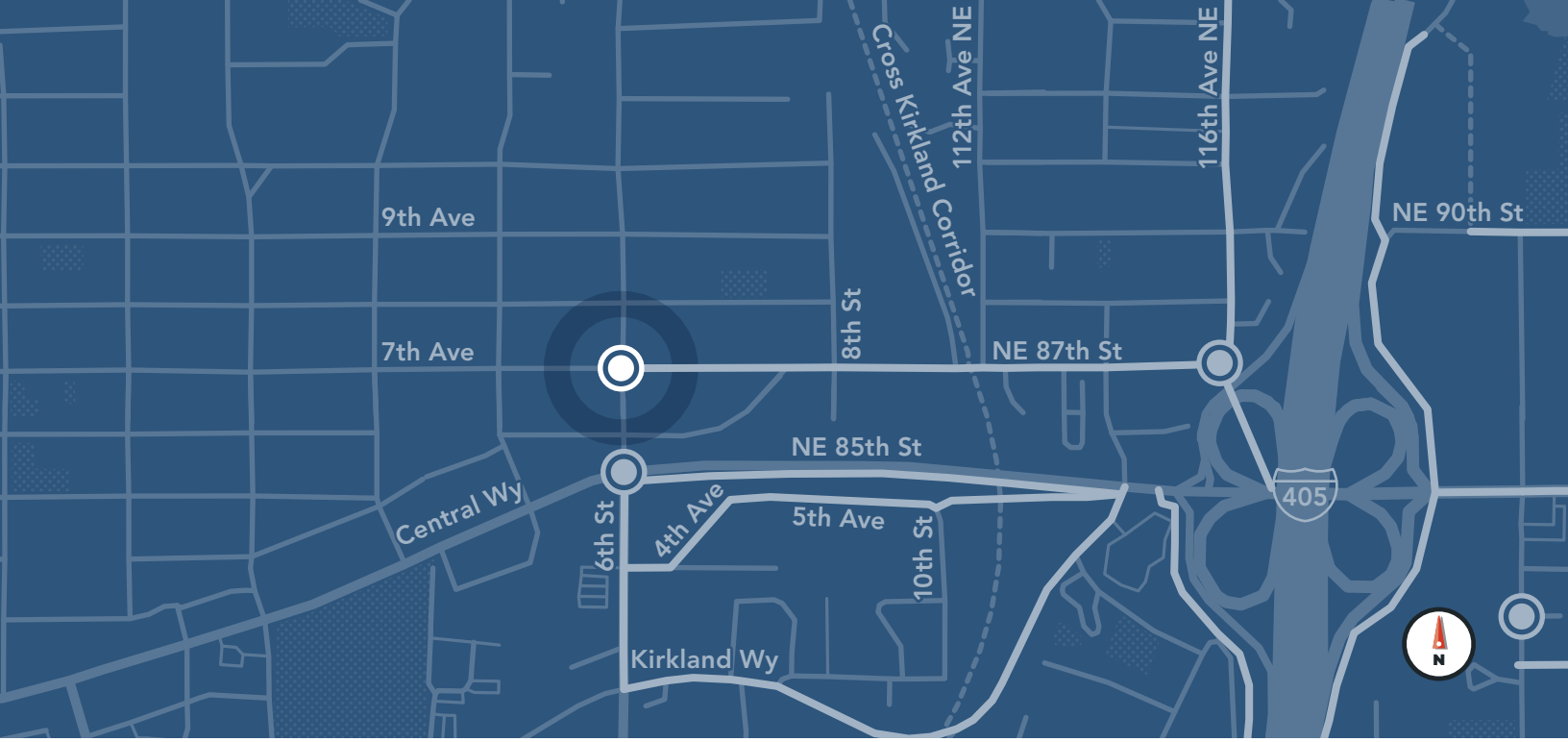
Planning-level Cost

Low

$500,000

High

$720,000



Project #P1

6TH STREET/7TH AVENUE INTERSECTION TREATMENT

PROJECT DESCRIPTION

Improve treatments for people walking and biking

Project Catalyst

Station Access

Complete Network

Capacity for Growth

Implementation Considerations

- Right-of-way

Planning-level Cost

Low

$610,000

High

$880,000

Project #P2

NE 85TH STREET / 122ND AVENUE NE BICYCLE SIGNAL IMPROVEMENTS

PROJECT DESCRIPTION

Improve intersection and signal to better accommodate bikes along 122nd Avenue NE and in crossing NE 85th Street

Project Catalyst

Station Access

Complete Network

Capacity for Growth

Implementation Considerations

- Right-of-way
- Cost
- Treatments at intersections

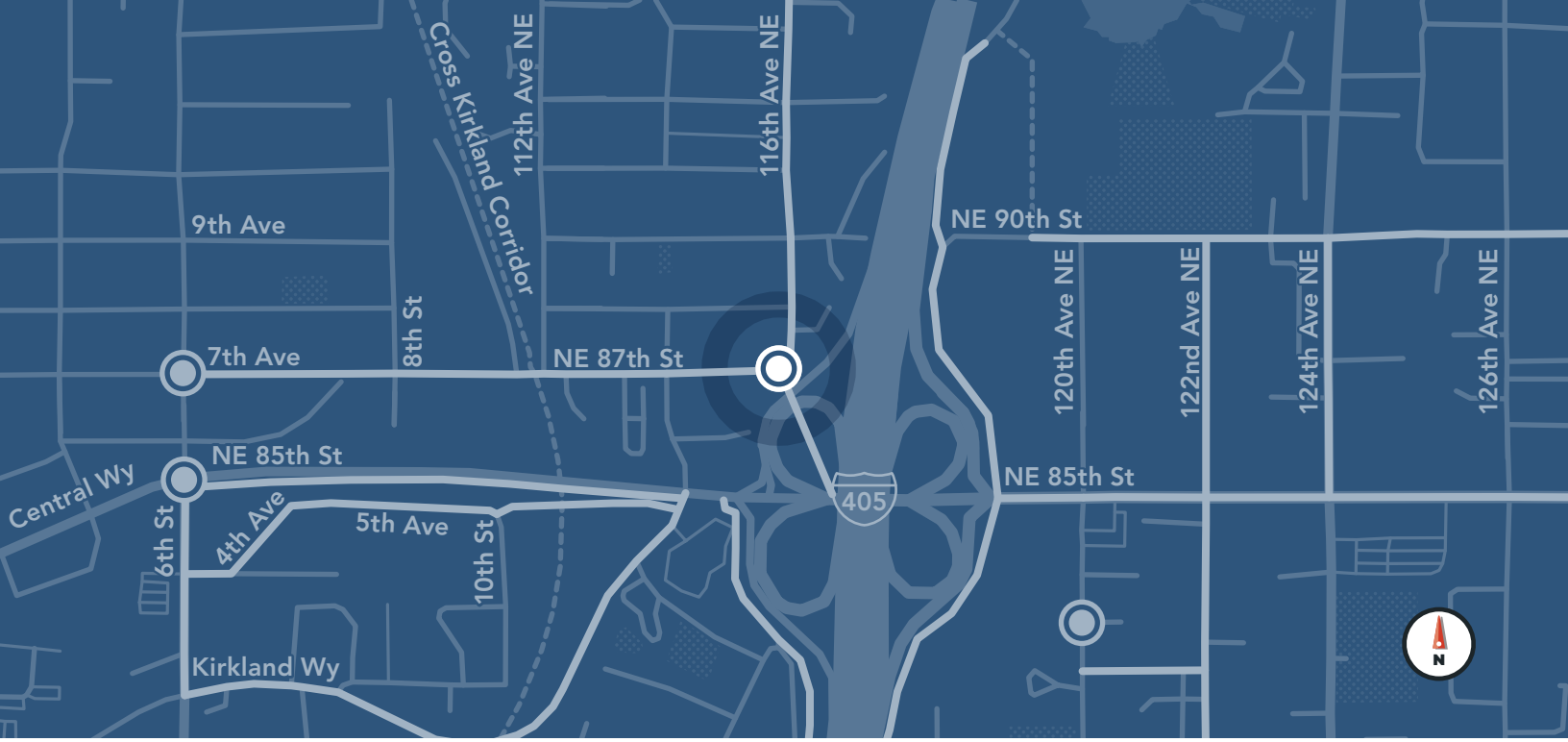
Planning-level Cost

Low

$320,000

High

$470,000



Project #P3

NE 87TH STREET/116TH AVENUE NE ENHANCED INTERSECTION

PROJECT DESCRIPTION

Improve treatments for people walking and biking at this challenging intersection in front of the BRT station. Treatments may include a raised intersection with all-way stop or a mini-roundabout.

Project Catalyst

- Station Access
- Complete Network
- Capacity for Growth

Implementation Considerations

- Right-of-way
- Sight distance
- Cost

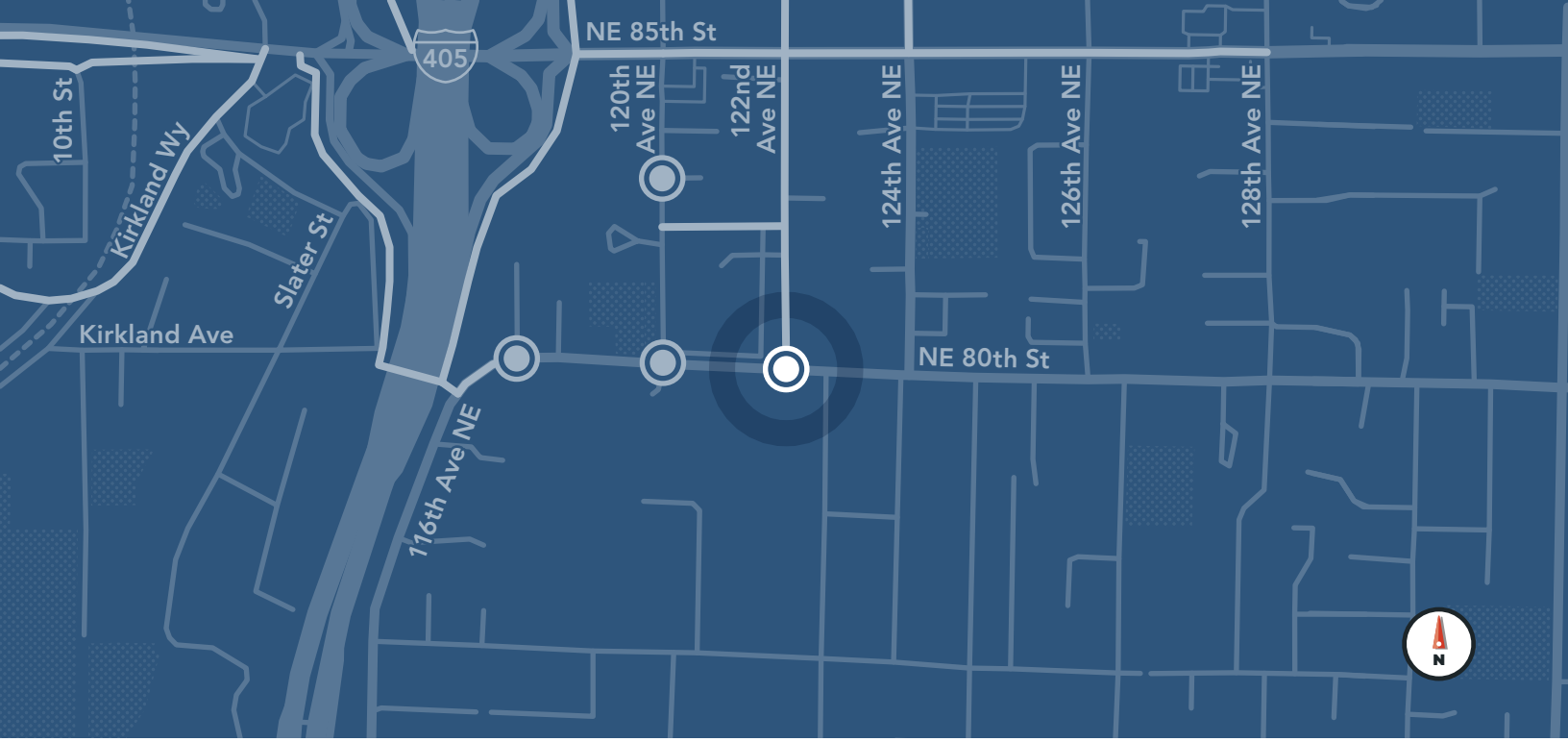
Planning-level Cost

Low

$840,000

High

$1,210,000



Project #P4

122ND AVENUE NE AND NE 80TH STREET INTERSECTION TREATMENT

PROJECT DESCRIPTION

Add treatments, including a RRFB, to improve crossing comfort for people walking and biking

Project Catalyst

Station Access

Complete Network

Capacity for Growth

Implementation Considerations

- Right-of-way

Planning-level Cost

Low

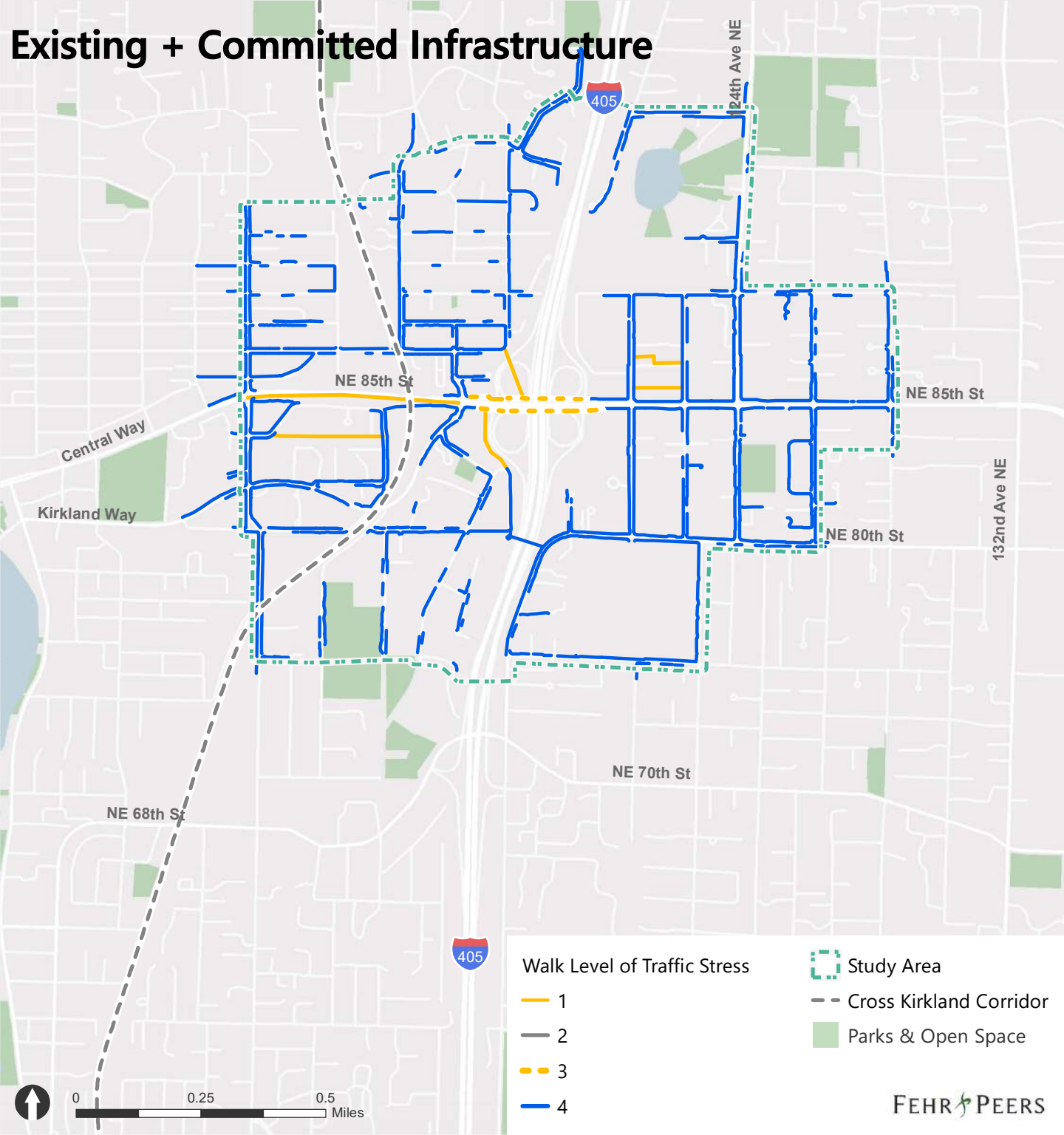
$330,000

High

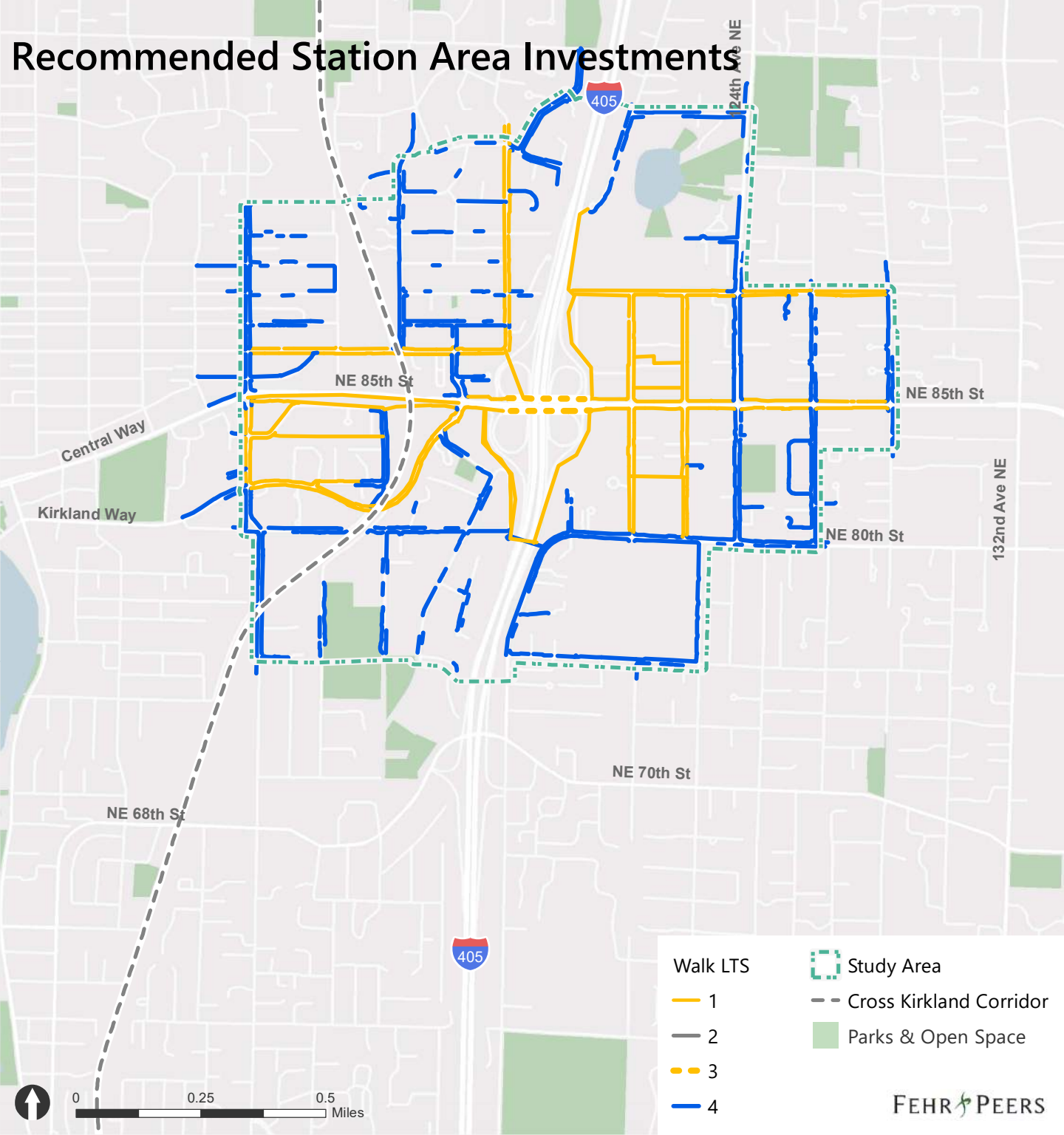
$480,000

Appendix C: Level of Traffic Stress Analysis for Walking and Biking

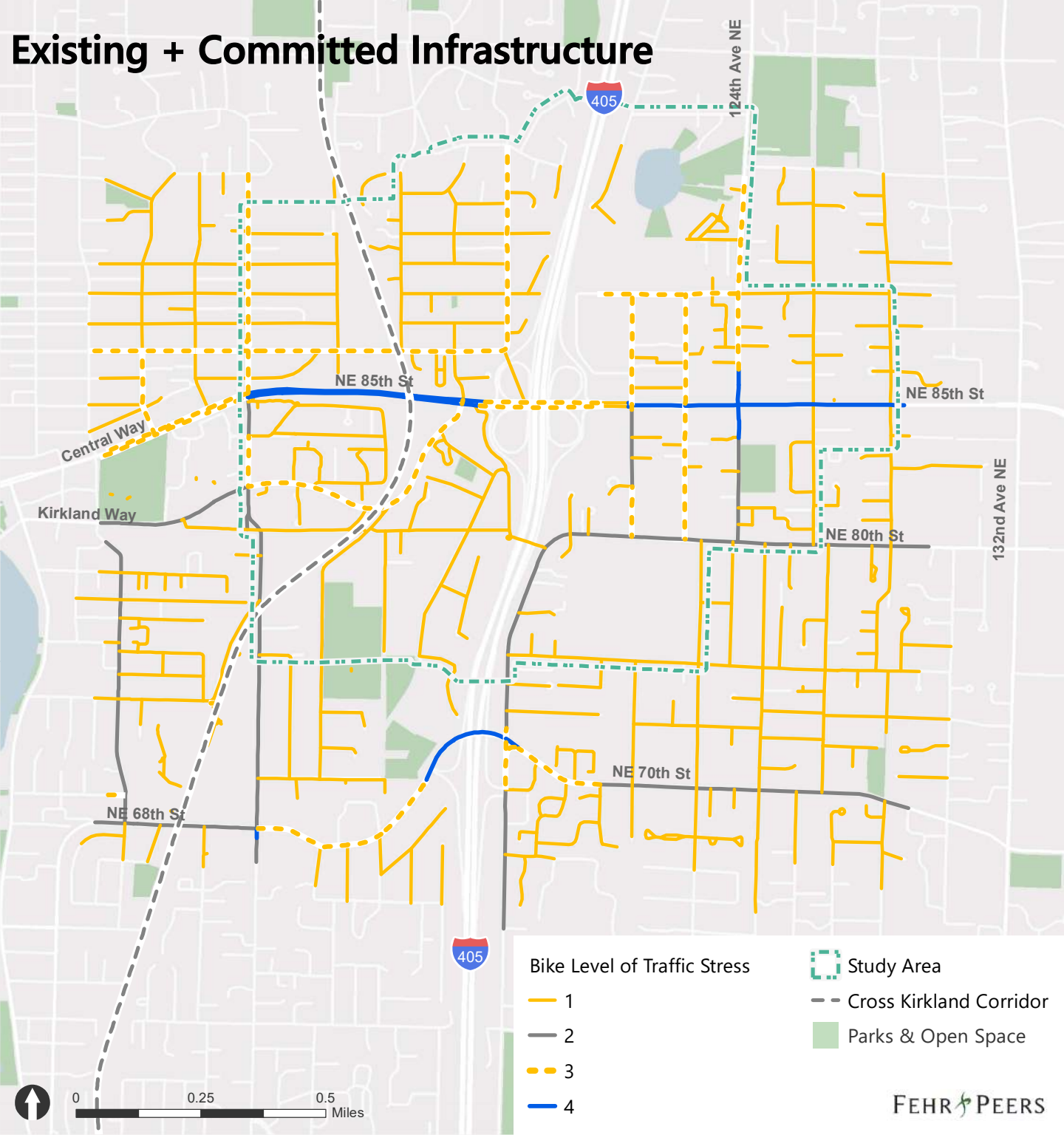
Existing + Committed Infrastructure



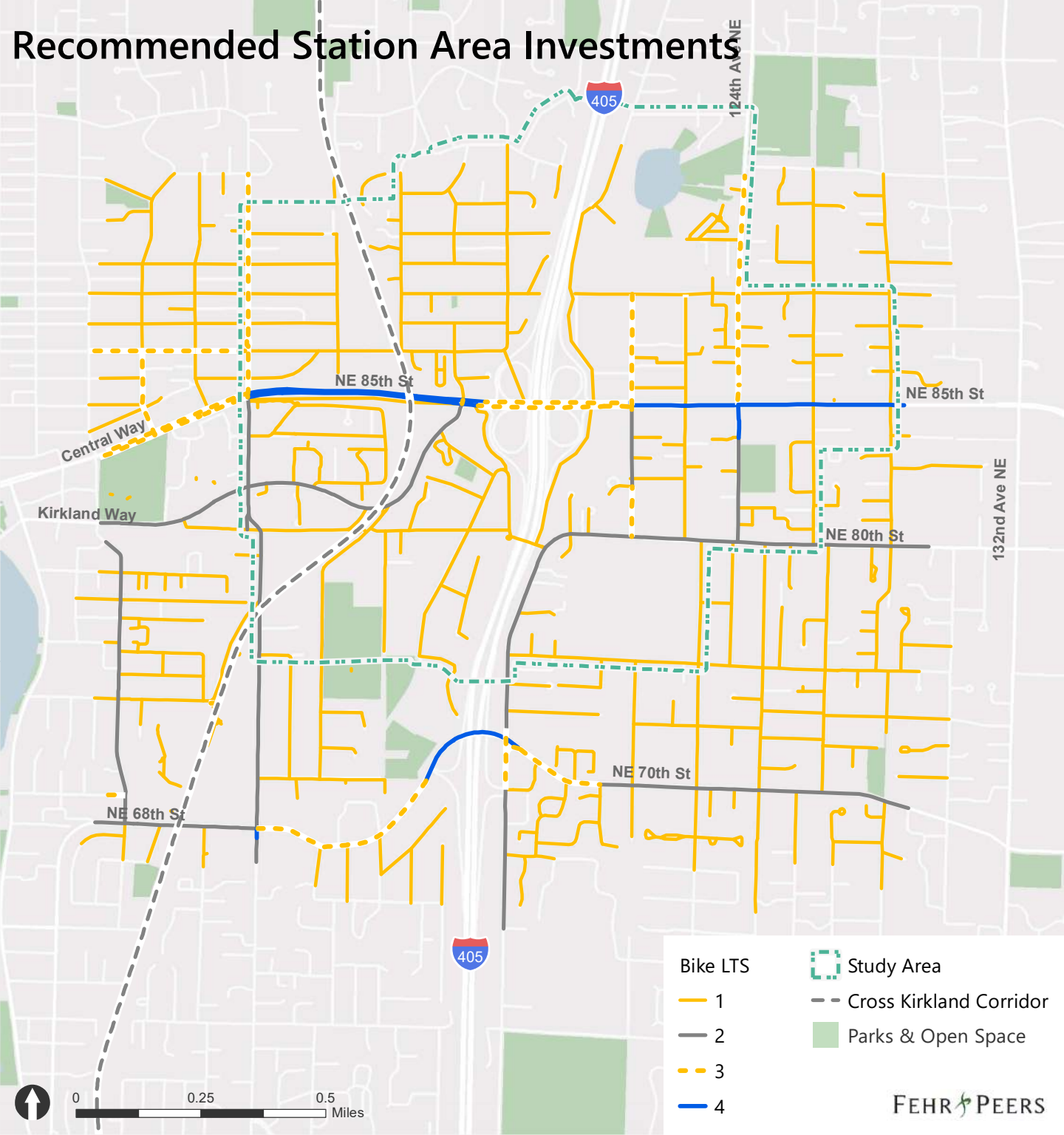
Recommended Station Area Investments



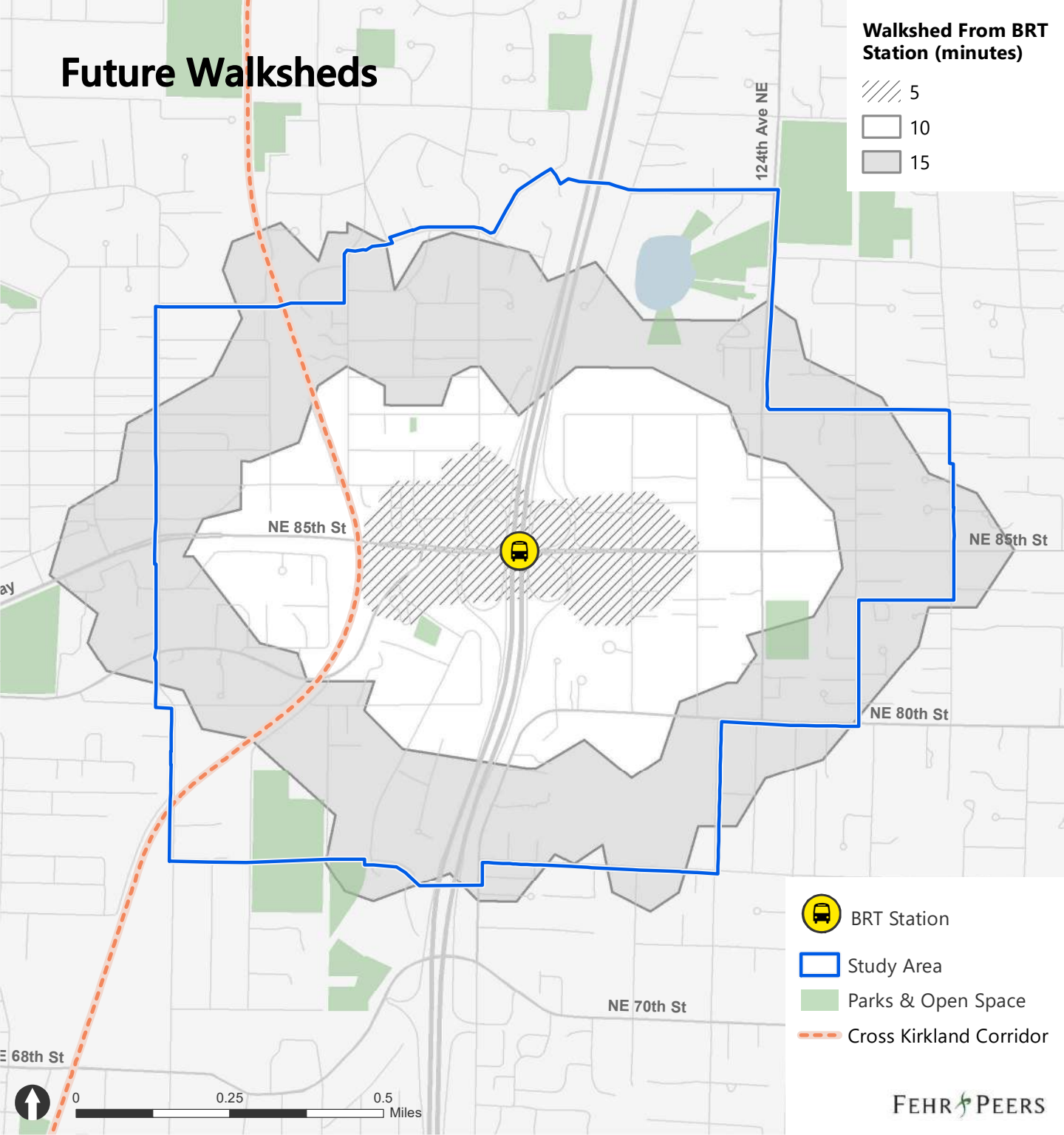
Existing + Committed Infrastructure



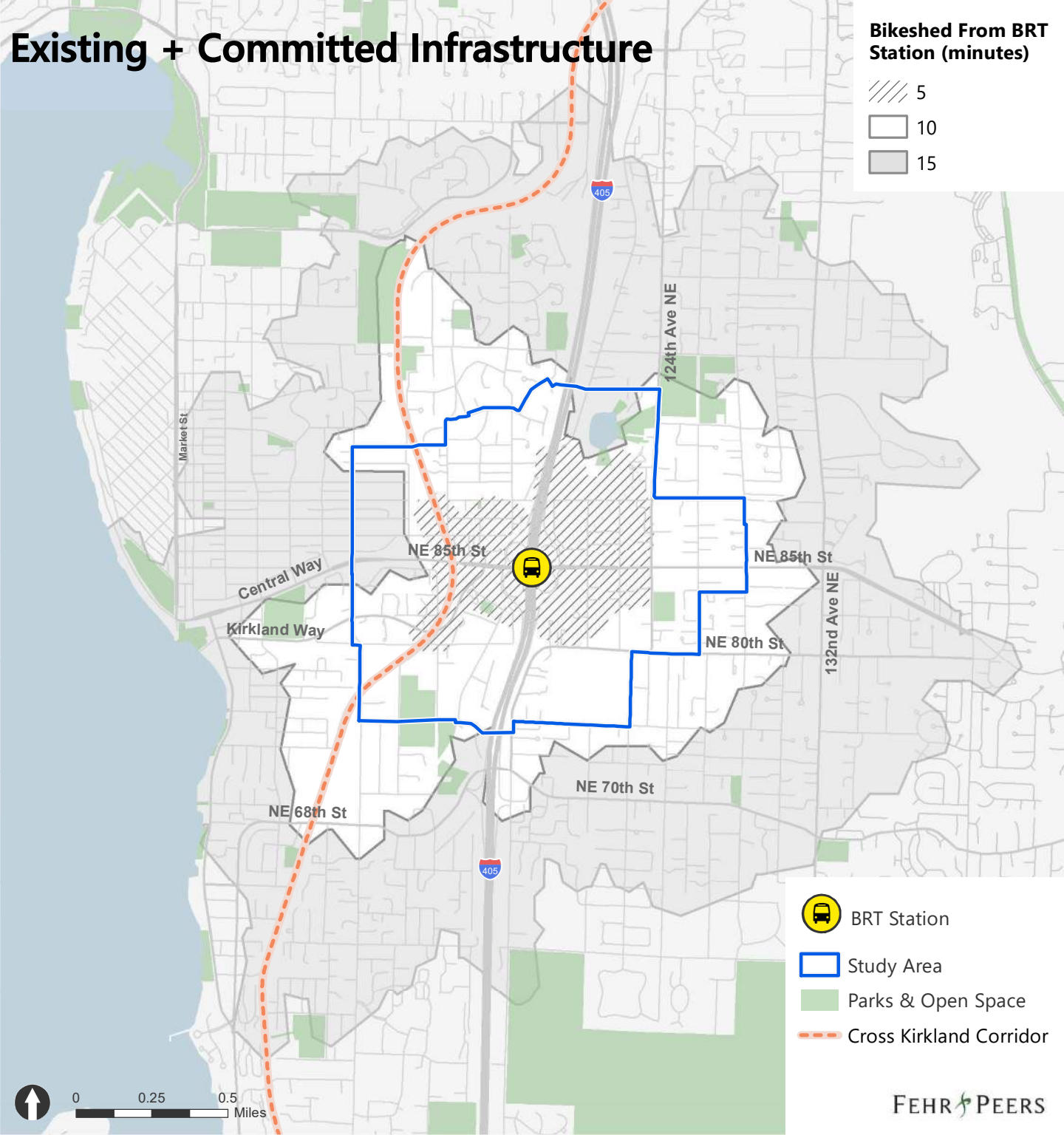
Recommended Station Area Investments



Appendix D: Travelshed Analysis for Walking and Biking


Future Walksheds
Walkshed From BRT Station (minutes)
5
10
15
124th Ave NE
NE 85th St
NE 85th St
NE 80th St
NE 70th St
E 68th St
BRT Station
Study Area
Parks & Open Space
Cross Kirkland Corridor
0
0.25
0.5
Miles
FEHR PEERS

Existing + Committed Infrastructure



Recommended Station Area Investment