

DRAFT

City of Kirkland

2015 COMPREHENSIVE PLAN UPDATE & TOTEM LAKE PLANNED ACTION - DRAFT ENVIRONMENTAL IMPACT STATEMENT

June 2015





June 24, 2015

Subject: City of Kirkland 2015 Comprehensive Plan Update and Totem Lake Planned Action Environmental Impact Statement (EIS)

Dear Reader:

The City of Kirkland is updating its Comprehensive Plan to comply with Growth Management Act (GMA) requirements (RCW 36.70A.130(5)). The update will extend the Comprehensive Plan to a new horizon year of 2035 and accommodate new housing and employment growth targets, consistent with King County Countywide Planning Policies. In addition, the update reflects the area annexed to the City in 2011. A new Kingsgate Neighborhood Plan and revision to the Juanita Neighborhood Plan to integrate the new annexation area are part of the Comprehensive Plan Update. The Finn Hill Neighborhood Plan will be prepared later in a separate process. The update will also incorporate new functional plans including: Transportation Master Plan (TMP), Cross Kirkland Corridor Master Plan, Surface Water Master Plan, and Parks, Recreation, and Open Space (PROS) Plan. To maintain consistency, some changes to development regulations and the zoning map may also be necessary as a result of these updates to the Comprehensive Plan.

The update also entails revisions to the following elements of the Comprehensive Plan: General, Land Use, Community Character, Housing, Economic Development, Capital Facilities, Transportation, Environment, Human Services, Parks and Recreation, Public Services, Utilities, Implementation, the Future Land Use Map, and each of the Neighborhood Plan chapters. The update will also make revisions to the plan Introduction, Vision and Framework Goals, Definitions, and Appendices. The Shoreline Element is not included in this update, as it was adopted in 2010 as part of the City's latest Shoreline Master Program (SMP) update.

Finally, the update will revise the neighborhood plan for the Totem Lake area which is within the Urban Center. The City is considering adoption of a Planned Action in this area, which would include the entire Totem Lake Business District and those areas outside the business district that are within the Urban Center. The Planned Action would provide a means to streamline future development review, encourage additional development, and establish a comprehensive and coordinated approach to mitigation.

The City of Kirkland (City) has determined that the proposal requires study in a programmatic Environmental Impact Statement (EIS) pursuant to the State Environmental Policy Act (SEPA). The City issued a combined determination of significance and scoping notice on April 24, 2014.

The scope of the Draft EIS includes the following topics:

- Land Use Patterns
- Plans and Policies
- Population and Housing
- Employment and Economic Development
- Natural Environment
- Transportation
- Public Services
- Utilities and Capital Facilities

The Draft EIS evaluates the proposal and alternatives for each topic area, both at a citywide scale and with a focus on the Totem Lake area to provide sufficient environmental analysis for the proposed Planned Action.

The City has developed three alternatives for study in this Draft EIS that include different distributions of housing and employment growth around Kirkland:

- Alternative 1 – Existing Plan (No Action): Continuation of existing plans and trends.
- Alternative 2 – Totem Lake/Downtown Focus: Focused housing and employment growth in Totem Lake and the Central Business District (CBD).
- Alternative 3 – Distributed Growth: Increased growth in neighborhood centers and Light Industrial Technology zones.

The City has established a 30-day comment period for this Draft EIS, and is requesting comments on the Draft EIS from citizens, agencies, tribes, and all other interested parties by **5:00pm, July 24, 2015**. All written comments should be directed to:

Teresa Swan, Senior Planner
Department of Planning and Community Development
City of Kirkland
123 Fifth Avenue
Kirkland, WA 98033
tswan@kirklandwa.gov

In addition, the City will hold a public hearing to obtain comments on the Draft EIS as follows:

Planning Commission Public Hearing
Thursday, July 9, 2015
7:00 p.m.
City Council Chambers
123 5th Avenue
Kirkland, WA 98033

The Planning Commission will conduct deliberations after the EIS hearing concerning items from their June 25, 2015 hearings on the Comprehensive Plan Update. Please see the City website for the Planning Commission schedule and any updates:

http://www.kirklandwa.gov/depart/planning/Boards_and_Commissions/Planning_Commission.htm

The EIS is available electronically at <http://kirklandwa.gov/Kirkland2035EIS>.

To review project information or sign up to be notified by email of public meetings and other notices, please see the Comprehensive Plan Update website: <http://www.kirklandwa.gov/Residents/Community/Kirkland2035>.

Should you have questions, please contact Teresa Swan at the address above or by phone at (425) 587-3258.

Sincerely,



Eric Shields, AICP, Director
Department of Planning and Community Development
SEPA Responsible Official

FACT SHEET

Project Title

City of Kirkland 2015 Comprehensive Plan Update and Totem Lake Planned Action Environmental Impact Statement (EIS)

Proposed Action and Alternatives

The EIS evaluates three Alternatives that span a range of policy choices regarding the amount, location and type of future growth in Kirkland. All three alternatives considered in this Draft EIS (DEIS) test the same level of overall growth, consistent with the City's adopted 2035 growth targets: 8,361 housing units and 22,435 jobs between 2015 and 2035. While the overall level of citywide growth is constant among alternatives, each alternative tests a different distribution of this growth within Kirkland to highlight a spectrum of policy choices. The range of growth options includes concentrating development in the City's two major centers (Alternative 2: Totem Lake/Downtown Focus); distributing growth to major centers and to neighborhood commercial nodes (Alternative 3: Distributed Growth); and continued development under existing plans and policies (Alternative 1: Existing Plan - No Action).

The update will establish a new 2015-2035 planning period and will accommodate new housing and employment growth targets, consistent with the King County Countywide Planning Policies (CPPs). The update also entails revisions to the following elements of the Comprehensive Plan: General, Land Use, Community Character, Housing, Economic Development, Capital Facilities, Transportation, Environment, Human Services, Parks and Recreation, Public Services, Utilities, Implementation, the Future Land Use Map, and each of the Neighborhood Plan chapters. The update will also make revisions to the plan Introduction, Vision and Framework Goals, Definitions, and Appendices. The Shoreline Element is not included in this update, as it was adopted in 2009 as part of the City's latest Shoreline Master Program (SMP) update.

Changes include a combination of policy revisions, data updates, and minor editorial changes. In addition, the update reflects the area annexed to the City in 2011. A new Kingsgate Neighborhood Plan and revision to the Juanita Neighborhood Plan to integrate the new annexation area are part of the Comprehensive Plan Update. The Finn Hill Neighborhood Plan will be prepared later in a separate process. The update will also incorporate new functional plans including: Transportation Master Plan (TMP), Cross Kirkland Corridor Master Plan, Surface Water Master Plan, and Parks, Recreation, and Open Space (PROS) Plan. Some changes to development regulations and the zoning map may also be necessary as a result of these updates to the comprehensive plan.

The plan update will also revise the neighborhood plan for the Totem Lake Urban Center. As part of the environmental review process, the City is considering adopting a Planned Action in this area. The Totem Lake Planned Action Area would include the Totem Lake Business District, as well as properties outside the business district that fall within the designated Urban Center. The Planned Action would provide a means to streamline future development review, encourage additional development, and establish a comprehensive and coordinated approach to mitigation.

Proponent and Lead Agency

The City of Kirkland is both the proponent and lead agency for SEPA review.

Tentative Date of Implementation

December 2015

Responsible Official

Eric Shields, AICP, Director
Department of Planning & Community Development
City of Kirkland
123 Fifth Avenue
Kirkland, Washington 98033
425-587-3226

Contact Person

Teresa Swan, Senior Planner
Department of Planning and Community Development
City of Kirkland, 123 5th Avenue, Kirkland, WA 98033
tswan@kirlandwa.gov
425-587-3258

Licenses or Permits Required

Comprehensive Plans must be considered and approved by the City Council after Planning Commission recommendations are made. Also, the Houghton Community Council has jurisdictional approval authority over Comprehensive Plan Elements. The Washington Department of Commerce coordinates state agency review during a required 60-day review period. The Puget Sound Regional Council certifies Transportation Elements of Comprehensive Plans.

Authors and Principal Contributors to the EIS

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(SEPA Compliance, Alternatives, Planned Action Ordinance)

DEIS Date of Issuance

June 24, 2015

DEIS Comment Due Date

July 24, 2015

Public Comment Opportunities

Public comments of the DEIS may be offered in writing or in person.

Written comments can be mailed to the Project Contact, Teresa Swan, at the address below. Written comments may also be submitted by email to Teresa Swan at tswan@kirklandwa.gov.

Teresa Swan, Senior Planner

Department of Planning and Community Development

City of Kirkland, 123 5th Avenue, Kirkland, WA 98033

Comments submitted by email must be received by 5:00 pm on the deadline date, July 24, 2015. Comments submitted by postal mail must be postmarked by the deadline date, July 24, 2015.

The Kirkland Planning Commission is also holding a public hearing on the Draft EIS, where public comment will be accepted, as noted below:

Planning Commission Hearing and Open House

Thursday, July 9, 2015

Open House: 5:00 - 7:00 p.m.

Hearing: 7:00 p.m.

City Council Chambers

123 5th Avenue

Kirkland WA, 98033

In addition to this hearing, several public meetings on other aspects of the Comprehensive Plan Update are scheduled during the DEIS comment period. Comments on the DEIS will be accepted at these meetings, provided that they are submitted prior to the close of the comment period at 5:00 pm on July 24, 2015. A complete schedule of City public meetings can be found on the City's website here:

http://www.kirklandwa.gov/depart/planning/Boards_and_Commissions/Planning_Public_Meeting_Calendar.htm

Date of Final Action

December 15, 2015

Type and Timing of Subsequent Environmental Review

Future development that is subject to SEPA would be required to undergo SEPA review and determinations. In the Totem Lake Planned Action Areas, proposed planned actions would submit a specific checklist and document compliance with the Planned Action Ordinance (PAO); further threshold determinations would not be required.

Prior Environmental Review

This Draft EIS has been prepared with the consideration of the following previously prepared environmental documents and analyses:

- Jones & Stokes. 2004. Final Environmental Impact Statement. Comprehensive Plan Update. Prepared for City of Kirkland. Draft EIS: July 2004. Final EIS: October 2004.
- ICF Jones & Stokes. 2008. Final Environmental Impact Statement. Downtown Area Planned Action Ordinance. October. (J&S 00935.07.) Seattle, WA. Prepared for City of Kirkland. Draft EIS: April 2008. Final EIS: October 2008.
- ICF International. 2010. Comprehensive Plan Land Use, Capital Facility, and Transportation Amendments and Zoning and Municipal Code Amendments Final Supplemental Downtown Area Planned Action Environmental Impact Statement. August. (ICF 00182.10.) Seattle, WA. Prepared for City of Kirkland, WA. Draft EIS: May 2010. Final EIS: August 2010.
- City of Kirkland. 2014. Final Supplemental Environmental Impact Statement. MRM Private Amendment Request. Prepared by Weinman Consulting et al. Draft SEIS: October 2013. Final SEIS: February 2014.
- BERK et al. 2015. Revised Kirkland Parkplace Redevelopment Proposal SEPA Addendum. Prepared for City of Kirkland.

Addenda to the 2004 Comprehensive Plan EIS and checklists relevant to redevelopment of the Totem Lake Mall in the Totem Center area include:

- Zoning Code, Zoning Map and Municipal Code Amendments, EIS Addendum, for TL 4-TL 11 Zones (not including TL 9), issued on October 24, 2004, File ZON04-00020,
- Hart Private Amendment Request issued on January 17, 2008, File ZON06-00019,
- TL 9 Zoning Implementation issued on January 17, 2008, File ZON07-00023,
- Zoning Code amendments to the TL 6A zone for affordable housing, issued on May 13, 2009, File ZON09-00006, and
- Amendments to the Zoning Code and Municipal Code for affordable housing incentives and requirements, issued on November 18, 2009, File ZON09-00005.

Location of Background Data

City of Kirkland, Planning and Community Development Department.

See Lead Agency and Responsible Official Address listed above.

DEIS Availability

The document is posted on the City's website at:

<http://www.kirklandwa.gov/2035EIS>

Compact disks are available at no charge at Kirkland City Hall. Copies of the document may be purchased at Kirkland City Hall. A reference copy is available for review at City Hall, Department of Planning and Community Development:

Department of Planning & Community Development
City of Kirkland
123 Fifth Avenue
Kirkland, Washington 98033

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1.0 EXECUTIVE SUMMARY

1.1 Purpose of the Proposed Action

What is the Proposal?

The City is updating its Comprehensive Plan. The update will extend the planning period through 2035 and will establish new housing and employment growth targets. Revisions to the plan will update the following elements:

- General
- Land Use
- Community Character
- Housing
- Economic Development
- Capital Facilities
- Transportation
- Environment
- Human Services
- Parks and Recreation
- Public Services
- Utilities
- Implementation

The update also includes revisions to Comprehensive Plan's Introduction, Vision, and Definitions, as well as the City's Future Land Use Map and each of the Neighborhood Plan chapters. The City is also updating the plan's Framework Goals, replacing them with a set of Guiding Principles that describe the values that Kirkland most desires to embody in the future: a Livable, Sustainable, Connected community.

The Comprehensive Plan Update will also revise the plan for the Totem Lake Business District, including the Totem Lake Urban Center. As part of the environmental review process, the City is considering adopting a Planned Action for the Totem Lake area. The Planned Action Area would include the entire Totem Lake Business District, as well as properties outside the business district that fall within the designated Urban Center. The Planned Action will provide a means to streamline future development review, encourage additional development, and establish a comprehensive and coordinated approach to mitigation.

Why is the City updating its Comprehensive Plan?

The City is required to periodically update its Comprehensive Plan under the Growth Management Act (GMA). This periodic update helps the City plan for anticipated population and employment growth over the next 20 years and ensures that the plan document includes up-to-date information about Kirkland. Revisions to the Comprehensive Plan elements add updated information on current conditions, as well as new policies from functional plans, including an updated Parks, Recreation, and Open Space (PROS) Plan, a new Transportation Master Plan (TMP), an updated Surface Water Master Plan, an updated Comprehensive Water System Plan, the new Cross Kirkland Corridor master plan, and the City's recent 10-Minute Neighborhood Analysis.

1.2 The State Environmental Policy Act Process

What is a Programmatic EIS?

The State Environmental Policy Act (SEPA) requires government officials to consider the environmental consequences of actions they are about to take and whether there are better or less damaging ways to accomplish those proposed actions. The adoption of comprehensive plans, or other long range planning activities, are classified by SEPA as non-project (i.e., programmatic) actions. A non-project action is defined as an action that is broader than a single site-specific project, and involves decisions on policies, plans, or programs. The

Because the Comprehensive Plan Update covers the entire City of Kirkland, this Environmental Impact Statement (EIS) discusses the proposal and alternatives at a broader level and does not include site-specific analysis. The specific requirements for a programmatic EIS are established in Chapter 197-11-442 of the Washington Administrative Code (WAC). Because a Planned Action is proposed for the Totem Lake Business District, this area is analyzed in more detail. Citizen Amendment Requests (CARs) are also addressed, typically including an areawide analysis based on Planning Commission direction regarding study areas.

What is a Planned Action?

A Planned Action is a SEPA mechanism that allows for environmental analysis during the early planning stages of land use proposals, rather than project-level permit review. A Planned Action EIS identifies anticipated impacts and specifies appropriate mitigation measures. Future development proposals that are consistent with a Planned Action Ordinance (PAO), including the designated planned action boundary, development thresholds, and identified mitigation, do not have to undergo a separate SEPA process. This provides certainty about mitigation measures for property owners, as well as a streamlined permitting process.

1.3 Public Involvement

The City issued a combined determination of significance and scoping notice for the Comprehensive Plan Update on April 24, 2014 and accepted comments on the topics to be addressed in the EIS until June 20, 2014. A scoping summary report that documents the comments received and the City's responses is included in Appendix A to this Draft EIS (DEIS).

The public is invited to provide comments on the Draft EIS between **June 24 and July 24, 2015**. Written comments can be submitted by email to Teresa Swan at tswan@kirklandwa.gov and must be received by 5:00 pm on the deadline date, **July 24, 2015**. Written comments can also be submitted by postal mail to the address below and must be postmarked by the deadline date, **July 24, 2015**.

Teresa Swan, Senior Planner
Department of Planning and Community Development
City of Kirkland, 123 5th Avenue, Kirkland, WA 98033

The Kirkland Planning Commission is also holding an open house and public hearing on the Draft EIS, where oral and written public comment will be accepted, as noted below:

Planning Commission Hearing and Open House

Thursday, July 9, 2015

Open House: 5:00 - 7:00 p.m.

Hearing: 7:00 p.m.

City Council Chambers

123 5th Avenue

Kirkland WA, 98033

1.4 Summary Description of Alternatives

Objectives

The City of Kirkland is updating its Comprehensive Plan to comply with the requirements of GMA. This periodic update addresses projected population, housing, and employment growth to the new planning horizon year of 2035. The plan update will also integrate newly annexed areas, update neighborhood plans, create a new neighborhood plan, incorporate new and updated city master plans, and amend all elements of the Comprehensive Plan to reflect changes in values, current conditions, and/or legal requirements.

Comprehensive Plan Update Objectives

The City's primary objective for its Comprehensive Plan is to fulfill its vision:

"Kirkland is one of the most livable cities in America. 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."

The following additional objectives apply to the alternatives analyzed in this EIS:

- Ensure compliance with the provisions of GMA, King County Countywide Planning Policies, and VISION 2040.
- Update and refine the policies of the City's GMA Comprehensive Plan to implement the plan's Vision and accommodate the future needs of the community.
- Update and refine the policies of the city's individual Neighborhood Plans and the Totem Lake Business District Plan and ensure proper integration with the citywide Comprehensive Plan.
- Reflect the Finn Hill, Juanita and Kingsgate annexed areas in the plan, prepare a neighborhood plan for Kingsgate, and incorporate the Juanita annexation area into the updated Juanita Neighborhood Plan.
- Integrate new functional plans for the Cross-Kirkland Corridor, Totem Lake Park, and the City's Surface Water Master Plan, as well as the new Transportation Master Plan (TMP) and Parks, Recreation and Open Space (PROS) Plan.
- Support a mix of employment types, including retail, commercial services, office, medical services, and industrial uses.
- Provide for multimodal transportation improvements and infrastructure to support the City's Vision, land use plan and the concept of 10-minute neighborhoods.

System and Functional Plans

As part of the Comprehensive Plan Update, the City will integrate several new and updated component plans, including an updated Parks, Recreation and Open Space (PROS) Plan, Transportation Master Plan (TMP), Surface Water Master Plan, Comprehensive Water System Plan, and Cross Kirkland Corridor Master Plan. In addition, aspects of the City's study of neighborhood accessibility and connectivity, known as the 10-Minute Neighborhoods concept, are reflected in the alternatives. Each of these component plans is summarized in Chapter 2.

Alternatives

The EIS evaluates three Alternatives that span a range of policy choices regarding the amount, location and type of future growth in Kirkland. No individual EIS alternative is proposed for adoption or preferred at this time. Each alternative is organized around a basic land use theme, which distinguishes it from the other alternatives and helps to emphasize specific or unique aspects of its approach. In this sense, each alternative represents a type of “book-end.” In actuality, elements of one alternative could be combined with elements of other alternatives to create an option which meets the City’s goals. The Final EIS is anticipated to identify a Preferred Alternative based on review and discussion of the conclusions of the DEIS by City staff, elected officials, and members of the public. The Preferred Alternative would represent the City’s preferred policy direction for the comprehensive plan and will help guide portions of the plan update.

All three alternatives considered in this DEIS test the same level of overall growth, consistent with the City’s adopted 2035 growth targets: 8,361 housing units and 22,435 jobs between 2015 and 2035. While the overall level of citywide growth is constant among alternatives, each alternative tests a different distribution of this growth within Kirkland to highlight a spectrum of policy choices. The range of growth options includes concentrating development in the City’s two major centers (Totem Lake and Downtown, Alternative 2); distributing growth to major centers and to neighborhood commercial nodes (Alternative 3); and continued development under existing plans and policies (Alternative 1/No Action).

See Chapter 2 for greater detail on each alternative.

1.5 Effects of the Proposal

One of the most important functions of an EIS is to identify potential impacts associated with the proposal and identify appropriate mitigation measures. The following sections describe how the EIS analyzed each of the addressed topics, what impacts have been identified, how the alternatives differ from one another, and what measures are proposed to mitigate impacts. The analysis contained in the EIS will be used to guide City decision makers in selecting the appropriate 2035 growth alternative, or combination of alternatives.

Land Use Patterns

How did we analyze land use?

For current land use patterns, 2015 King County Assessor parcel data (Tax Year 2014) was used as a baseline. The housing and employment allocations for each alternative were used to identify areas of the city likely to experience high levels of growth during the planning period. The projected levels of future growth were compared with existing land use conditions to identify areas where growth would potentially affect the character of existing neighborhoods, create compatibility issues, or change development capacity.

What impacts did we identify?

All alternatives are based on the same citywide growth targets for housing and employment, but differ in where the growth occurs. Increased development will result in development of vacant land, demolition and redevelopment of existing buildings, potential displacement or replacement of existing housing and employment, and increasing urbanization particularly in the most intense areas of growth, which vary by alternative. Increased urban development will result in greater economic and pedestrian activity, particularly in centers (Totem Lake, CBD, neighborhood centers, and LIT areas). The increased activity will likely increase the demand for transit use. Outside centers, additional growth will occur, but it will be distributed across a large area and will occur primarily as infill or redevelopment consistent with existing development patterns.

What does it mean? What is different between the alternatives?

Additional development would result in the development and redevelopment as described above, but also increased pedestrian and economic activity particularly in the centers where focused growth is planned.

- **Alternative 1 (Existing Plan – No Action)** would continue current development patterns and trends and would anticipate significant employment increases in Totem Lake and the CBD.
- **Alternative 2 (Totem Lake/Downtown Focus)** results in greater development density and intensity in Totem Lake as a result of increases in allowable building heights and in limited cases the Floor Area Ratio (FAR). Increased building heights will result in the potential for greater shadow impacts, but also increase pedestrian and economic activity in Totem Lake.
- **Alternative 3 (Distributed Growth)** results in a greater distribution of growth amongst the neighborhood centers and Light Industrial Technology areas outside of the Central Business District (CBD) and Totem Lake. Zoning would be revised in the neighborhood centers to add housing and employment capacity that result in greater development density and intensity.

What are some solutions or mitigation for the impacts?

Mitigation for increased development density and intensity would be addressed through the City's design and development standards to mitigate potential impacts focusing on areas where transitions between higher and lower intensity development would occur. Requiring buffers, upper-story setbacks, or a site-specific review of height, bulk, and shading impacts to adjacent properties during the development review or design review process will be necessary.

With mitigation, what is the ultimate anticipated outcome?

All alternatives would result in new construction that accommodates housing and employment growth. New construction will result in changes of use and the characteristics of parcels of land, including potential demolition and displacement. While these impacts could be partially mitigated by the application of development regulations including design regulations and design standards, some changes in use and character are unavoidable aspects of growth.

Plans and Policies

How did we analyze plans and policies?

This EIS identifies pertinent plans, policies and regulations that guide or inform the proposal. These include the Growth Management Act (GMA), PSRC Vision 2040, the King County Countywide Planning Policies (CPPs), the City's current Comprehensive Plan, and the Totem Lake Business District Plan, which is adopted as part of the Comprehensive Plan. The EIS reviews the alternatives for consistency with each of these.

What impacts did we identify?

The alternatives are generally consistent with plans and policies, however there are two impacts that the City should address:

- The Eastern Industrial District of the Totem Lake Planned Action Area adjoins designated rural and agricultural lands in the Sammamish Valley in unincorporated King County. Proposed policies in the draft Totem Lake plan would target additional growth in the Eastern Industrial District. The area is characterized by a sharp topographic change that helps buffer rural lands from urban development, but the City should consider other measures to address design and setbacks to strengthen the plan's consistency with the guidance provided by the GMA, Vision 2040 and CWPPs to protect rural and agricultural areas.
- The draft Totem Lake Plan does not include explicit policy guidance for parking management nor does it include a discussion of capital facilities that are planned for the Totem Lake Planned Action Area and how they will be financed. Consistency with Vision 2040's policies for centers would be stronger if these issues were addressed such as through reference to the TMP and Capital Facilities Plan as well as through the future PAO.

What does it mean? What is different between the alternatives?

The impacts are common to all alternatives. All alternatives provide the same overarching policy direction to accommodate growth in existing centers and to strengthen Totem Lake's role as a designated regional center. All alternatives direct growth to the Eastern Industrial District, and there is no difference between the alternatives regarding the parking policies and capital facilities discussion in the draft Totem Lake plan.

While the proposed Comprehensive Plan is generally consistent with the guidance and requirements of the GMA, PSRC Vision 2040 and CWPPs, it could be strengthened by more directly addressing the parking policies and capital facilities issues identified in the impact analysis.

What are some solutions or mitigation for the impacts?

Recommended mitigation measures are listed below.

- Where the city boundary adjoins designated rural and agricultural lands in the Sammamish Valley in unincorporated King County, city policies should include provisions for transitions, design standards, or buffers between the City's Eastern Industrial District and the rural agricultural area.
- To ensure consistency with PSRC expectations for regional growth center plans, the updated Totem Lake plan should consider the requirements of the Regional Growth Center Plan Checklist. The plan could make reference to applicable policies and improvements in the TMP and Capital Facilities Plan as well as through the future PAO.

With mitigation, what is the ultimate outcome?

With mitigation, the Comprehensive Plan would be consistent with state and regional policy guidance and requirements. No significant adverse unavoidable impacts related to plans and policies have been found.

Population and Housing

How did we analyze population and housing?

Sources used to analyze population and housing include data from the City of Kirkland, Washington State Office of Financial Management, and the United States Census Bureau. Using the City's adopted 2035 growth targets for housing units, population was estimated based on household size data.

What impacts did we identify?

Citywide population and housing growth targets are the same across all three alternatives. For all alternatives, housing growth would result in 8,361 net additional units by 2035. Since existing capacity for additional units is 9,516, all three alternatives would accommodate anticipated growth without the need for additional capacity. Housing growth by 2035 would result in approximately 17,000 new residents during the planning period, with an estimated 2035 total population of 99,632.

Changes in land use designations or zoning assumptions, depending on the alternative, would create increased development capacity in targeted areas of the City and could attract growth to these areas from elsewhere in the city. In general, Kirkland would experience a concentration of housing and residential population growth in Totem Lake in all three alternatives, as well as varying concentrations of growth by alternative in the CBD and other Neighborhood Centers. In all three alternatives, areas outside Totem Lake, the CBD, and Neighborhood Centers, would receive approximately 41% of housing unit growth, spread throughout the city's residential neighborhoods.

What does it mean? What is different between the alternatives?

The most notable differences among alternatives are where the housing units and the residential population will concentrate and where the City will target interventions such as land use and zoning changes and infrastructure investment to prioritize growth.

Alternative 1 reflects the currently adopted land use plans, policies, and regulations. Kirkland would continue to develop with Totem Lake as the primary targeted growth center with single and multifamily housing growth in the neighborhoods according to current development standards. Alternative 2 focuses more growth in the major mixed-use centers of Totem Lake and the CBD, with minimal population and housing growth in the neighborhood centers. In Alternative 3, growth is still focused primarily in major mixed-use centers, but there would be a greater distribution of growth in Neighborhood Centers, LIT areas, followed by the CBD and Totem Lake.

What are some solutions or mitigation for the impacts?

The Kirkland Comprehensive Plan Housing Element addresses the diversity of housing types as well as the preservation of Kirkland's neighborhood quality. These guiding policies for housing will aid the City in guiding future housing development as Kirkland gains 8,361 new households and an additional estimated 17,042 residents by 2035. Zoning changes throughout the city will help mitigate growth impacts by allowing development to concentrate in targeted areas. Policies in the updated Housing Element of the comprehensive plan that address housing issues include establishing proportionate shares of housing affordable to diverse income categories, addressing homelessness, supporting fair housing, and ensuring housing is available to special needs groups such as aging populations.

With mitigation, what is the ultimate outcome?

Under all alternatives, as Kirkland's population grows, there will be a need for infrastructure investment in roads, transit, utilities, parks and other public facilities to maintain existing levels of service to residents and places of employment. As population continues to grow in the greater Puget Sound region, economic forces will place additional pressure on housing markets, increasing demand for affordable housing. This is true regardless of which of the three alternatives is realized. There will be an unavoidable need to increase incentives for providing units affordable to diverse income groups and to investment in affordable housing development.

Employment and Economic Development

How did we analyze employment and economic development?

Current and historical employment data was analyzed to discern trends in job and business sectors. Trends show a declining proportion of industrial and retail jobs and increasing proportion of service jobs over the past 13 years. In addition, each alternative was evaluated with regard to whether it included enough jobs to meet the city's employment growth target.

What impacts did we identify?

Employment growth capacity: All alternatives would provide enough capacity to meet Kirkland's 2035 employment growth target of 22,435 new jobs. While Alternatives 2 and 3 include enough land capacity citywide to meet the target, these alternatives focus more job growth in Totem Lake and the neighborhood centers, respectively, and zoning changes will be needed to provide enough localized capacity in these specific areas.

Employment mix and effects on existing businesses: Under all alternatives, Kirkland employment would grow by approximately 50% by 2035, mostly through development on vacant or underdeveloped lands and conversion of low-density uses to higher density uses. Kirkland's job mix would vary under each alternative due to the different zoning and land use policies in place in Totem Lake, the CBD, and the neighborhood centers. As future development occurs, some businesses may be displaced through redevelopment or priced out as land prices and rents increase.

Transit and the planned transportation network: The distribution of jobs under each alternative was analyzed for proximity to transit hubs and bicycle/pedestrian infrastructure. Alternative 1 would likely place the largest number of jobs in proximity to the strongest transit hub, in downtown Kirkland. Alternative 2 would place a high number of jobs in Totem Lake, which, if located near or well connected to the transit center, could provide good transit access. Alternative 3 would disperse jobs to areas with lower levels of transit service. All alternatives would locate some jobs in proximity to the Cross Kirkland Corridor (CKC), which provides pedestrian and bicycle access and is planned for future transit.

What does it mean? What is different between the alternatives?

Alternative 1 (Existing Plan – No Action) emphasizes more employment growth in the CBD, which would mean more regional professional service jobs and more employees having lower levels of transit access.

Alternative 2 (Totem Lake/Downtown Focus) could coincide with more regional retail and regional professional services in Totem Lake, with potential for a decline in industrial uses in that area, with transit use partly dependent on proximity to frequent service.

Alternative 3 (Distributed Growth) could coincide with a larger amount of local-serving retail and professional services, depending on the market and local customers.

What are some solutions or mitigation for the impacts?

The Comprehensive Plan update includes new economic development policies, which would encourage economic growth, target recruitment of jobs with living wages, and generally partner with business to create a prosperous economy.

Additional mitigation measures could include working with the local Chamber of Commerce to assist businesses vulnerable to displacement. If the City desires to preserve industrial land and businesses, zoning changes could be enacted to strengthen protection of those uses.

With mitigation, what is the ultimate outcome?

With mitigation, employment growth in Kirkland could still lead to some displacement of existing businesses and would require investments in infrastructure in areas where future employment is concentrated.

Natural Environment

How did we analyze the natural environment?

Potential impacts to the natural environment were analyzed by reviewing existing conditions within the City and projected land uses and growth distribution relative to each alternative. Sources reviewed to determine existing site conditions include City and State GIS data, City maps, Washington Department of Fish and Wildlife Priority Habitat and Species maps, Natural Resource Conservation Service soil maps, and the City's Surface Water Master Plan. The natural environment was evaluated by the following sub-categories: earth, water resources, and plants and animals.

What impacts did we identify?

Most potential impacts identified are common to all alternatives. Common impacts include increased building density in geologically hazardous areas, increased impervious surfaces, decreased forest cover, and reduction in overall habitat connectivity and quality. Geologic and seismic hazards are relatively consistent across the three alternatives; existing critical area regulations provide some protection against those hazards. Water resources, including surface and groundwater, will be impacted by increased density within the City.

What does it mean? What is different between the alternatives?

Concentrated growth under Alternative 2 is presumed to require the most stormwater improvements. This new infrastructure will comply with newer industry standards and will thereby actually have the lowest impact to water resources. Vegetation and habitat loss and further fragmentation are expected to be highest under Alternative 3, though this effect is likely to be most pronounced in areas outside centers, where development density is low. Concentrating new development in areas that are already urbanized limits habitat loss within the City.

What are some solutions or mitigation for the impacts?

Potential impacts to the natural environment are limited by existing critical area protections, tree protection, the shoreline master program, surface water master plan, and other applicable regulatory standards at the federal, State and local levels. Additionally, future updates to critical area regulations to align with best available science as required under the GMA, and city-based incentives to apply Low Impact Development standards will maintain critical area protections and minimize development impacts.

With mitigation, what is the ultimate outcome?

Site-specific impacts will be mitigated on a project-by-project basis under all three alternatives. Planning alternatives that concentrate development within areas already impacted by urbanization are projected to have the least impact on the natural environment. Generally, concentrated development is expected to require more extensive stormwater improvements and reduce development pressure on vegetated sites. On that basis, Alternative 2 is expected to result in more effective and comprehensive mitigation relative to Alternatives 1 and 3.

Transportation

How did we analyze transportation?

This Comprehensive Plan EIS Transportation Analysis assumes implementation of Kirkland's first ever Transportation Master Plan (TMP). The schedule for adoption of the TMP is concurrent with the Comprehensive Plan, and like the Comprehensive Plan Update process, the TMP has been developed through a multiyear process that included input from City staff, planning bodies (Transportation Commission, Planning Commission, and City Council), as well as hundreds of Kirkland residents and modal interests. The TMP represents the City's long range strategy for providing transportation infrastructure and programs through 2035.

TRANSPORTATION GOALS

The TMP establishes the following goals, which provide the basis for how transportation projects and programs were selected for inclusion in the 20-year program:

Goal T-0: Safety – By 2035 eliminate all transportation-related fatal and serious injury crashes in Kirkland.

Goal T-1: Walking - Form a safe network of sidewalks, trails and crosswalks where walking is comfortable and the first choice for many trips.

Goal T-2: Biking – Interconnect bicycle facilities that are safe, nearby, easy to use and popular for people of all ages and abilities.

Goal T-3: Public Transportation - Support and promote a transit system that is viable and realistic for many trips.

Goal T-4: Motor Vehicles - Efficiently and safely provide for vehicular circulation recognizing congestion is present during parts of most days.

Goal T-5: Link to Land Use - Create a transportation system that supports Kirkland's land use plan.

Goal T-6: Be Sustainable – As the transportation system is planned, built and maintained, provide mobility for all using reasonably assured revenue sources while minimizing environmental impacts.

Goal T-7: Be an Active Partner - Coordinate with a broad range of groups to help meet Kirkland's transportation goals.

Goal T-8: Transportation Measurement - Measure and report on progress toward achieving goals and actions.

These goals guided the development of transportation projects and programs that fit within the City's reasonably anticipated financial resources over the next two decades. These transportation projects and programs do not vary between land use alternatives since the TMP network was developed to provide safe and connected facilities for all modes, and many of these connections would not change regardless of how future development occurs.

TRANSPORTATION LEVEL OF SERVICE

Central to achieving these nine goals was changing the way that transportation system performance is measured. Specifically, the TMP proposes replacing the City's existing level of service (LOS) policy that is focused on vehicle trips with a new approach that recognizes the importance of providing multimodal facilities over time.

Under the new approach, LOS standards for each travel mode will primarily address completeness of various aspects of the transportation network. In essence, the new LOS measure compares expenditures for various transportation infrastructure categories (pedestrian, bicycle, transit, and auto) with the amount of time that has elapsed in the 20 year planning horizon. This new approach offers the advantages of complementing the City's concurrency tracking and measuring something that the City has direct control over (annual construction of transportation facilities). Basing LOS on system completeness, instead of measures like volume-to-capacity ratio or

intersection delay, avoids requiring undesirable roadway improvements with unknown costs, feasibility, and impacts on non-auto modes.

TOTEM LAKE BUSINESS DISTRICT

This Transportation Analysis takes a specific look at the need for connectivity, mobility, and safety within the Totem Lake Business District. The plan analyzed potential multimodal connections that would help create a more complete transportation system in Totem Lake.

What impacts did we identify?

This analysis measured transportation impacts based on the TMP's proposed LOS policy, which is based on progress completing the City's 20-year transportation vision. Because specifics of the growth Alternatives would not significantly impact progress towards completing the transportation system, none of the Alternatives are expected to result in transportation-related environmental impacts.

Given the change in how LOS is measured, this analysis also considered whether implementation of the new LOS policy affected the identification of impacts compared to how LOS was measured in the past. 2035 Alternative 1 (Existing Plans – No Action) was evaluated using both measures. Based on this analysis, it was found that Alternative 1 would also not result in any new transportation impacts under the previous LOS policy.

While no transportation impacts were identified, each of the Alternatives would result in slightly different transportation operating conditions. This analysis describes how transportation conditions would differ among the three Alternatives for each travel mode.

What does it mean? What is different between the alternatives?

The TMP seeks to provide a more complete and multimodal transportation system throughout Kirkland by placing significant investments in infrastructure related to walking and bicycle, supporting transit, and in making targeted investments in auto-oriented infrastructure to support safety, congestion reduction, and economic development. The Alternatives differ in how they interact with the future transportation network.

- 2035 Alternative 1 (Existing Plan – No Action)** – By continuing to develop according to the currently adopted Comprehensive Plan, this Alternative sees continued housing growth in the City's residential neighborhoods and mixed use districts, but makes Totem Lake the city's primary employment and housing growth center, with the Central Business District (CBD) secondary growth center. Future growth would benefit from the multimodal projects provided by the TMP, but vehicular congestion would continue to grow. Several corridors would see substantial increases in vehicular delay, including 124th Street west of 1-405, Central Way in Downtown, and 132nd Avenue NE. This Alternative served as the baseline for determining how transportation conditions would change.
- 2035 Alternative 2 (Totem Lake/Downtown Focus)** – This alternative would further focus future development into the city's two major growth centers: Totem Lake and the CBD. Compared to Alternative 1, the Parkplace site in downtown Kirkland would redevelop with more households but less employment; Totem Lake would receive additional employment and household growth; and household growth would be less in the City's more suburban neighborhoods. The focus of development within Totem Lake and Downtown in this alternative means that future growth would have increased access to high quality walking, bicycling, and transit infrastructure. The additional growth in Totem Lake would result in more vehicle trips to and from the neighborhood compared to Alternative 1, but the mixed-use nature of this land use growth would also create more opportunities for non-motorized travel and trips by transit. Overall, vehicle delays along congested city corridors stay the same or decrease compared to Alternative 1.

- **2035 Alternative 3 (Distributed Growth)** – This alternative would distribute future growth to a larger number of neighborhoods in Kirkland compared to Alternatives 1 or 2. Totem Lake would remain the city’s largest employment and residential center but would receive fewer jobs and households than under Alternative 1 or 2. Growth would instead be distributed to other business districts and neighborhood centers, such as Rose Hill, Bridle Trails, and Juanita. This more distributed growth pattern means that future residents and employees will be farther from the highest quality facilities for walking, bicycling and taking transit. Consistent with the Alternative’s reduced opportunities for non-motorized travel, vehicle delays along congested city corridors would remain the same or increase compared to Alternative 1. The most notable increased in congestion under this Alternative would be experience along NE 70th Street, 124th Avenue NE, and 132nd Avenue NE.

What are some solutions or mitigation for the impacts?

At a citywide level, the Transportation Analysis identifies additional transportation enhancements that could be made to address operational differences among the Alternatives. These enhancements are generally focused on roadway improvements, such as signal upgrades and additional turn lanes that could reduce vehicle and transit delays under each of the alternatives.

Within the Totem Lake Business District, the solutions relate to enhanced infrastructure to improve connectivity, safety, and mobility within the district. These improvements include new multimodal connections, construction of the Cross Kirkland Corridor (CKC) through the district, as well as coordinating with the Washington State Department of Transportation to rebuild the interchange at NE 124th Street to reduce conflict with the compact, multimodal goals for the district.

With mitigation, what is the ultimate outcome?

The ultimate outcome would be for Kirkland to have a transportation system that achieves the nine goals stated in the TMP. Future growth should be positioned in a way that leverages the transportation system effectively.

Within the Totem Lake Business District, the ultimate outcome is to provide a complete transportation system that provides safe connections and multimodal opportunities for the travelling public. Because specifics of the growth Alternatives would not significantly impact progress towards transportation system completeness, none of the Alternatives are expected to result in significant unavoidable adverse impact.

Public Services

How did we analyze public services?

The public service analysis compared existing conditions with projected growth to identify future needs for public services (police, fire protection, parks, and schools) associated with each of the three proposed alternatives.

Current levels of service for police and fire protection services were used to project future need for additional police officers and firefighters as a result of growth, both citywide and in the Totem Lake Planned Action Area. The analysis also considered proximity of police and fire facilities to areas of concentrated growth.

Demand for parks and recreation facilities were analyzed at the citywide level, as well as in terms of proximity to areas of high projected growth. Future demand was calculated based on the City's new per-capita system capital value level of service. School services were analyzed in terms of which schools would be affected by high areas of projected growth. For the Totem Lake Planned Action area, the analysis looked at parks in or in close proximity to the area and schools that would receive additional school age children generated by growth in the Totem Lake Planned Action area.

What impacts did we identify?

Under all alternatives, additional population growth would generate a need for more fire, police, park, and school services. The Kirkland Police Department (KPD) and the Kirkland Fire Department (KFD) would have more calls for service; therefore, the KPD would need to hire approximately 20 more police officers and the KFD would need to hire approximately 21 more firefighters over the 20-year planning period to respond to those calls and maintain current staffing levels relative to the number of Kirkland residents.

As part of the Comprehensive Plan update, the City is transitioning to a parks level of service (LOS) standard based on capital value per person. To adequately serve future growth, the City would need to invest approximately \$68.2 million (approximately \$4,000 per new resident) by 2035. Residential growth in the Totem Lake Planned Action Area would be responsible for \$9.1 - \$25.2 million of this demand for park investments, depending on the alternative.

Based on the Lake Washington School District's adopted student generation rates for single-family and multifamily housing units, the projected residential growth would include approximately 1,214 school age children, who would increase district enrollment by 6.7% by 2035. Of these, the Totem Lake Planned Action Area could potentially generate between 105 and 289 school age children, depending on the alternative.

What does it mean? What is different between the alternatives?

All three alternatives generate the same citywide employment and housing units but, each alternative differs on how that growth is distributed. Demand for public services would increase in areas where more growth is expected. Alternatives 1 and 2 would increase demands on parks in the CBD and Totem Lake, while Alternative 3 would create demand for a larger number of smaller parks distributed around the city near neighborhood centers.

What are some solutions or mitigation for the impacts?

Planning for future growth is a way to mitigate the impacts generated by the projected population growth. The KPD and KFD would hire new staff to prepare for the additional population growth. The 2014 Park PROS Plan identifies potential park acquisition areas, which would increase the overall distribution and equity of neighborhood parks. The PROS Plan also identifies neighborhood-based recommendations for the Totem Lake neighborhood. The City collects school impact fees on new residential development to offset impacts to schools, though additional capacity projects may be necessary to keep pace with growth.

With mitigation, what is the ultimate outcome?

With long-term planning, acquisition, and investment, the KPD, the KFD, the Kirkland Parks and Recreation Department, and the Lake Washington School District can be better prepared to serve the City of Kirkland and the Totem Lake Planned Action Area.

Utilities and Capital Facilities

How did we analyze utilities and capital facilities?

Impacts on utility systems were evaluated by applying historical data on system demand to projected growth under each of the alternatives. The analysis drew from water, sewer, and stormwater plans developed for both the City of Kirkland's utility systems, as well as non-city providers operating within city limits. Estimated future utility demand was compared to established levels of service for each provider to determine if any system improvements would be necessary to accommodate growth.

What impacts did we identify?

Under all alternatives, additional development would likely increase demand for utility services, as well as the total amount of impervious surface in the city, creating additional stormwater runoff that would require management and treatment. To meet the demands of future growth – under all alternatives – water and sewer system improvements and upgrades identified in each service provider's comprehensive plan must be implemented.

Under all alternatives, the Totem Lake Planned Action Area would receive a large percentage of growth. Since the Totem Lake Planned Action Area is already developed, focusing additional concentrated growth into this area is effective for making stormwater collection and provision of utility infrastructure more efficient. In addition, high-density residential development often uses less water and generates less sewer flow on a per-unit basis than lower-density development. However, because the Totem Lake area also has the highest number of flooding problems in the city, it would be important to continue to prioritize this area for stormwater management capital improvements and flood control projects to effectively manage stormwater and reduce threats to property from flood events.

What does it mean? What is different between the alternatives?

While all alternatives anticipate the same levels of employment and housing growth citywide, they differ in how that employment and housing is distributed throughout the city. Provision of stormwater infrastructure would be most efficient under Alternative 2, which focuses growth in Totem Lake and the CBD, two of the most densely developed centers.

Alternatives 1 and 3 place the most employment growth in the City's water service area, while Alternative 2 allocates the most housing growth. Alternative 2 would direct the most combined growth to the City's water service area.

Alternatives 1 and 3 place the greatest amount of employment growth in the City's sewer service area, while Alternative 2 allocates the most housing growth. Alternative 3 would direct the most combined growth to the City's sewer service area.

What are some solutions or mitigation for the impacts?

Redevelopment at higher densities may actually result in a net improvement in stormwater drainage conditions and new development is required to be comply with updated Low-Impact Development (LID) stormwater management techniques and practices.

Coordinated, long-term planning for all utility providers serving the City of Kirkland is a critical mitigation for the impact of increased water and sewer system demands. Coordinated planning is necessary to meet growth planned for the Totem Lake Planned Action Area.

Continued implementation of water conservation measures will help water providers serve future growth and minimize the need for new sources of supply.

With mitigation, what is the ultimate outcome?

With implementation of mitigation measures and planned capital improvement projects, the Kirkland's utilities will be able to manage future projected growth.

1.6 Citizen Amendment Requests and Other Site-Specific Amendments

What are Citizen Amendment Requests?

In addition to the Comprehensive Plan revisions included in the various alternatives, the City has solicited feedback from the public about desired changes to the plans, policies, zoning, or development regulations for specific properties. The EIS studies twelve Citizen Amendment Requests (CARs). These amendment requests are not part of any particular alternative, and the EIS analysis provides a planning-level, qualitative discussion of the consistency of each CAR with EIS alternatives and the policies of the comprehensive plan update.

Exhibit 1.6-1. Summary of Site-Specific Amendments

Name	Description	Location of Study Area
Citizen Amendment Requests		
1. Newland	Rezone 4 parcels from Single family Residential (RSX7.2) to Multifamily.	12625 100 th Ave NE and three lots to the north (Juanita Neighborhood)
2. Norkirk LIT	7 requests in the Norkirk industrial area to study the following: <ul style="list-style-type: none"> Rezone 642 and 648 9th Ave from Low Density Residential (RS 7.2 zone) to Light Industrial Park/IND (Light Industrial Technology/LIT zone) which would extend LIT zone boundary to the west. Allow live/work lofts in Light Industrial Park/IND (LIT zone). Consider uses and buffer transitions between Industrial (LIT zone) and Residential area (RS zones). 	Norkirk LIT and two lots to the west (Norkirk Neighborhood)
3. Waddell	Remove requirement for common recreational open space for multifamily development in the Office/Multifamily (Planned Area 5/PLA5C) zone, consistent with Central Business District (CBD) zones to the west.	220 6th St and remaining portion of PLA5C zone (Everest Neighborhood)
4. Nelson/Cruikshank	Rezone all parcels in Low Density Residential (Planned Area /PLA 6C) to Multifamily.	202 & 208 2 nd St. S 207 & 211 3 rd St. S and remaining portion of PLA 6C (Moss Bay Neighborhood)
5. Basra	Increase height and change zoning and land use designation for all parcels in the North Rose Hill Light Industrial Manufacturing Park (Light Industrial Technology/LIT zone) to Commercial-Mixed Use (Rose Hill Business District 3/RH3 zone).	8626 122 nd Ave NE and remaining portion LMP/LIT area (North Rose Hill Neighborhood)
6. Griffis	Change zoning and land use designation on 6 parcels from Low Density Residential (RSX 7.2 zone) to Office (Rose Hill Business District/RH8).	8520 131 st Ave NE 8519 132 nd Ave NE and 4 lots to the west and north (North Rose Hill Neighborhood)
7. Walen	Allow for limited commercial uses in Office and Multifamily area (North Rose Hill/ NRH 5 & 6 zones and RM 1.8).	11680 Slater Ave NE and several surrounding lots (North Rose Hill Neighborhood)

Name	Description	Location of Study Area
8. Evergreen Healthcare	Rezone 1 parcel from Multifamily (Totem Lake/TL1B zone) to Institutional (Totem Lake/TL 3D zone) for inclusion in Evergreen Healthcare Master Plan.	13014 120 th Ave NE only (Totem Lake Business District)
9. Totem Commercial Center	Increase height and range of permitted uses within Industrial area (Totem Lake/TL 7 zone).	12700 – 12704 NE 124 th St and remaining portion of TL7 north of NE 124 th Street, south of Cross Kirkland Corridor and west of 135 th Ave NE (Totem Lake Business District)
10. Rairdon	Rezone 2 parcels from Industrial (Totem Lake/TL9A) and Multifamily (Totem Lake/TL9B) to Industrial/Commercial (Totem Lake/TL 7.	130XX 132 nd PI NE (Vacant) and 12601 132 nd PI NE (Totem Lake Business District)
11. Morris	Rezone parcels from Industrial (Totem Lake/TL7) to Multifamily (Residential Medium Annexation/RMA 3.6 or greater density and increase maximum allowed height.	13250 NE 126 th PI and remaining portion of TL7 north of NE 126 th Place (Totem Lake Business District)
12. Astronics Corp.	Increase allowed height within Totem Lake/TL 7 zone.	Vacant property north of 12950 Willows Rd NE and remaining portion of TL7 east of Cross Kirkland Corridor (Totem Lake Business District)
Other Property Amendments		
MRM	Additional residential as a permitted use and increased height on the MRM site.	434 Kirkland Way (CBD/Moss Bay Neighborhood)

What Other Amendments are under Consideration?

In addition to the citizen-initiated CARs, the EIS considers a proposed amendment for the MRM property in downtown Kirkland (434 Kirkland Way). The proposal would allow increased building heights and change the permitted mix of uses on the site to allow more multifamily residential. This proposal was studied in a Supplemental EIS in 2013, but the City elected to defer a decision on the amendment to the comprehensive plan update process.

How do these Amendment Requests Relate to the Comprehensive Plan?

Informed by the analysis included in this DEIS, the Kirkland Planning Commission may recommend that some or all of the CARs be included in the Preferred Alternative, which will be studied in the FEIS before adoption of the final updated Comprehensive Plan in December 2015.

1.7 Significant Areas of Controversy and Uncertainty, and Issues to be Resolved

Key environmental issues and options facing decision makers include:

- Alternative land use patterns in relation to 20-year growth estimates and community vision,
- Relationship of land use patterns to the natural environment and land use compatibility, and
- Effect of growth on demand for public services, utilities, and parks and transportation capital improvements.

All Alternatives would allow for new population, housing and employment growth and increased urbanization, particularly within the Totem Center and CBD and also to neighborhood centers.

Prior to preparation of the FEIS, the following issues are anticipated to be resolved:

- Selection and refinement of future land use and zoning features studied in the range of alternatives;
- Refinement of goals, objectives, and policies;
- Refinements of proposed code changes; and
- Deliberations on a planned action or infill exemption for the CBD.

Issues yet to be resolved include amendments to the development regulations for specific zones to accommodate the changes proposed in the alternatives. The precise nature of these necessary amendments will be described in the Final EIS, after a Preferred Alternative has been identified.

2.0 ALTERNATIVES

2.1 Introduction

The City of Kirkland is updating its Comprehensive Plan per the requirements of the Growth Management Act (GMA) (Chapter 36.70A.130(5) RCW). The update will establish a new 2015-2035 planning period and will accommodate new housing and employment growth targets, consistent with the King County Countywide Planning Policies (CPPs). The update also entails revisions to the following elements of the Comprehensive Plan: General, Land Use, Community Character, Housing, Economic Development, Capital Facilities, Transportation, Environment, Human Services, Parks and Recreation, Public Services, Utilities, Implementation, the Future Land Use Map, and each of the Neighborhood Plan chapters. The update will also make revisions to the plan Introduction, Vision and Framework Goals, Definitions, and Appendices. The Shoreline Element is not included in this update, as it was adopted in 2009 as part of the City's latest Shoreline Master Program (SMP) update.

Changes to the Comprehensive Plan include a combination of policy revisions, data updates, and minor editorial changes. In addition, the update reflects the area annexed to the City in 2011. A new Kingsgate Neighborhood Plan and revision to the Juanita Neighborhood Plan to integrate the new annexation area are part of the Comprehensive Plan Update. The Finn Hill Neighborhood Plan will be prepared later in a separate process. The update will also incorporate new functional plans including: Transportation Master Plan (TMP), Cross Kirkland Corridor Master Plan, Surface Water Master Plan, and Parks, Recreation, and Open Space (PROS) Plan. To maintain consistency, some changes to development regulations and the zoning map may also be necessary as a result of these updates to the Comprehensive Plan.

The Comprehensive Plan Update will also revise the neighborhood plan for the Totem Lake Business District and Urban Center. As part of the environmental review process, the City is considering adopting a Planned Action in this area. The Totem Lake Planned Action Area would include the Totem Lake Business District, as well as properties outside the business district that fall within the designated Urban Center. The Planned Action would provide a means to streamline future development review, encourage additional development, and establish a comprehensive and coordinated approach to mitigation. Additional information on the Planned Action is provided in Section 2.4.

2.2 Study Area

The City's focus for the Comprehensive Plan Update is the Kirkland city limits. The Finn Hill, Juanita and Kingsgate neighborhoods have been annexed to the City since the last major plan update, and a major goal of the current update is to more fully integrate these areas into the citywide Comprehensive Plan.

2.3 State and Regional Planning Requirements

Growth Management Act (GMA)

GMA contains 13 planning goals (Revised Code of Washington [RCW] 36.70A.020) that must be balanced by the City in developing its comprehensive plan and development regulations:

- **Urban growth.** Encourage development in urban areas where adequate public facilities and services exist or can be provided in an efficient manner.
- **Reduce sprawl.** Reduce the inappropriate conversion of undeveloped land into sprawling, low-density development.
- **Transportation.** Encourage efficient multimodal transportation systems that are based on regional priorities and coordinated with county and city comprehensive plans.

- **Housing.** Encourage the availability of affordable housing to all economic segments of the population of this state, promote a variety of residential densities and housing types, and encourage preservation of existing housing stock.
- **Economic development.** Encourage economic development throughout the state that is consistent with adopted comprehensive plans, promote economic opportunity for all citizens of this state, especially for unemployed and for disadvantaged persons, promote the retention and expansion of existing businesses and recruitment of new businesses, recognize regional differences impacting economic development opportunities, and encourage growth in areas experiencing insufficient economic growth, all within the capacities of the state's natural resources, public services, and public facilities.
- **Property rights.** Private property shall not be taken for public use without just compensation having been made. The property rights of landowners shall be protected from arbitrary and discriminatory actions.
- **Permits.** Applications for both state and local government permits should be processed in a timely and fair manner to ensure predictability.
- **Natural resource industries.** Maintain and enhance natural resource-based industries, including productive timber, agricultural, and fisheries industries. Encourage the conservation of productive forest lands and productive agricultural lands, and discourage incompatible uses.
- **Open space and recreation.** Retain open space, enhance recreational opportunities, conserve fish and wildlife habitat, increase access to natural resource lands and water, and develop parks and recreation facilities.
- **Environment.** Protect the environment and enhance the state's high quality of life, including air and water quality, and the availability of water.
- **Citizen participation and coordination.** Encourage the involvement of citizens in the planning process and ensure coordination between communities and jurisdictions to reconcile conflicts.
- **Public facilities and services.** Ensure that those public facilities and services necessary to support development shall be adequate to serve the development at the time the development is available for occupancy and use without decreasing current service levels below locally established minimum standards.
- **Historic preservation.** Identify and encourage the preservation of lands, sites, and structures that have historical or archaeological significance.

A fourteenth goal of GMA consists of the goals and policies of the Shoreline Management Act as set forth in RCW 90.58.020.

GMA requires Comprehensive Plans, once adopted, be evaluated and updated periodically to ensure continuing relevance. The plan must be an internally consistent document, and its contents must satisfy specific requirements. Development regulations, such as zoning, must also be consistent with the plan. GMA also requires that critical areas regulations be consistent with Best Available Science. The critical areas regulations included in the City's 2010 Shoreline Master Program (KZC Chapter 83) are consistent with Best Available Science and were approved by the Department of Ecology. KZC Chapter 90, which governs critical areas outside SMP jurisdiction is being updated under a separate process from the Comprehensive Plan update and is scheduled to be complete in mid-2016.

Regional Plans

Two regional plans influence and guide planning efforts in the City of Kirkland – the Puget Sound Regional Council's (PSRC's) VISION 2040 and the Countywide Planning Policies for King County.

VISION 2040

VISION 2040 was developed by PSRC and its member governments located in King, Kitsap, Pierce, and Snohomish Counties. It provides a regional growth strategy and contains multi-county planning policies required by GMA. VISION 2040 is based on a centers concept, which encourages growth to locate within identified regional growth centers, and focuses economic development and transportation infrastructure investments in and serving those centers. In addition to the Centers concept, VISION 2040 classifies different cities according to the roles they play in accommodating regional growth and provides guidance on distributing that growth across the four-county region. The majority of the region's employment and housing growth is guided to five Metropolitan Cities (Seattle, Tacoma, Bellevue, Bremerton, and Everett) and 13 Core Cities, which include Kirkland. Similar to Metropolitan Cities, Core Cities contain regional growth centers and are anticipated to accommodate significant shares of future regional growth. Kirkland's Totem Lake Urban Center is a PSRC-designated regional growth center.

Other Regional Growth Strategy categories include Larger Cities, Small Cities, Unincorporated Urban Growth Areas, Rural Areas, and Natural Resource Lands. VISION 2040 is implemented through PSRC's policy and plan review of each county and city comprehensive plan and their amendments.

Countywide Planning Policies

Comprehensive Plans for all jurisdictions in King County are guided by Countywide Planning Policies (CPPs), which are required by the GMA. The CPPs, which were updated and ratified in 2012, establish housing and job targets for cities and unincorporated King County. Growth is directed into urban growth areas (UGAs). CPPs also are focused around a centers concept similar to VISION 2040. The Totem Lake Urban Center was designated by the Growth Management Planning Council in 2003.

2.4 Environmental Review**SEPA Scoping Process**

The City issued a combined Determination of Significance and Scoping Notice on April 24, 2014 soliciting comments on the scope of the environmental impact statement (EIS). The scoping period ended June 20, 2014. During the scoping period, the City held an open house and four neighborhood meetings. These meetings described the overall comprehensive plan update and associated SEPA review process, and provided opportunities for the public to submit comments on the environmental issues and alternatives that should be addressed in the EIS.

Six written scoping comments were received during the scoping period from a mix of public agencies and private citizens. The City's scoping notice and scoping summary memo are attached as Appendix A. Scoping comments requested that the EIS address the following:

- Planning efforts for newly annexed neighborhoods;
- Overall pace of development and the replacement of trees and vegetation with impervious surfaces;
- Capacity of public facilities and services to accommodate future growth, including schools, fire, and emergency services;
- Impacts associated with energy consumption and the effects of climate change on City infrastructure;
- Evaluation of an enhanced transit alternative and the potential impacts of growth on Kirkland's transportation network; and
- Ecological function of water resources and potential impacts of development on fish passage and fish habitat.

Non-Project EIS

The State Environmental Policy Act (“SEPA”; Revised Code of Washington [RCW] 43.21C) requires government officials to consider the environmental consequences of actions they are about to take and whether there are better or less damaging ways to accomplish those proposed actions. They must consider whether the proposed action will have a probable significant adverse environmental impact on elements of the natural and built environment.

The adoption of comprehensive plans, or other long range planning activities , and legislative actions such as adoption of development regulations are classified by SEPA as non-project (i.e., programmatic) actions. A non-project action is defined as an action that is broader than a single site-specific project, and involves decisions on policies, plans, or programs. An EIS for a non-project proposal does not require site-specific analysis; instead, the EIS discusses impacts and alternatives appropriate to the scope of the non-project proposal and to the level of planning for the proposal (WAC 197-11-442).

Planned Action

This EIS provides additional subarea-specific analysis for the Totem Lake Urban Center to support a Planned Action. A planned action provides environmental analysis during the early planning stages of land use proposals, rather than during the project-level permit review, to help identify and mitigate the impacts of anticipated development. Future development proposals that are consistent with the planned action, and the analysis of impacts and mitigation measures in the EIS, do not have to undergo an environmental threshold determination. Projects that occur under a planned action are still required to meet applicable federal, state and City development regulations and to obtain all necessary permits.

According to the SEPA statute and rules (WAC 197-11-164), a planned action project must meet the following conditions:

- Is designated as a planned action by county/city ordinance;
- Has had significant environmental impacts addressed in an EIS, though some analysis may be deferred to project level review pursuant to criteria specified in the law;
- Has been prepared in conjunction with a comprehensive plan, subarea plan, a fully contained community, a master planned resort, master planned development, a phased project, or in conjunction with subsequent/implementing projects;
- Is located within an urban growth area (UGA);
- Is not an essential public facility, as defined in RCW 12.36.70A.200, unless an essential public facility is accessory to or part of a residential, office, school, commercial, recreational, service or industrial development that is designated a planned action; and
- Is consistent with a comprehensive plan or subarea plan adopted under GMA.

A planned action is designated by ordinance. The planned action ordinance (PAO) must define the Planned Action Area boundaries, and the types and amount of development that will be considered planned actions. A time period during which the planned action will be effective may also be specified. A draft framework of the ordinance is provided in Appendix B.

Review of planned action projects is intended to be more streamlined and focused than for other projects. If a PAO is adopted, the City would follow procedures contained in the ordinance to determine if a proposed project’s impacts have been identified and addressed in the EIS, incorporate applicable mitigation measures, and are consistent with the Comprehensive Plan and adopted regulations.

2.5 Proposal and Objectives

The City of Kirkland is updating its Comprehensive Plan to comply with the requirements of GMA. This periodic update addresses projected population, housing, and employment growth to the new planning horizon year of 2035. The plan update will also integrate newly annexed areas, update neighborhood plans, create new neighborhood plans, incorporate new and updated city master plans, and amend most elements of the Comprehensive Plan to reflect changes in values, current conditions, and/or legal requirements.

Comprehensive Plan Update Objectives

The City's primary objective for its Comprehensive Plan is to fulfill its vision:

"Kirkland is one of the most livable cities in America. 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."

The following additional objectives apply to the alternatives analyzed in this EIS:

- Ensure compliance with the provisions of GMA, King County Countywide Planning Policies, and VISION 2040.
- Update and refine the policies of the City's GMA Comprehensive Plan to implement the plan's Vision and accommodate the future needs of the community.
- Update and refine the policies of the city's individual Neighborhood Plans and the Totem Lake Business District Plan and ensure proper integration with the citywide Comprehensive Plan.
- Reflect the Finn Hill, Juanita and Kingsgate annexed areas in the plan, prepare a neighborhood plan for Kingsgate, and incorporate the Juanita annexation area into the updated Juanita Neighborhood Plan.
- Integrate new functional plans for the Cross-Kirkland Corridor, Totem Lake Park, and the City's Surface Water Master Plan, as well as the new Transportation Master Plan (TMP) and Parks, Recreation and Open Space (PROS) Plan.
- Support a mix of employment types, including retail, commercial services, office, medical services, and industrial uses.
- Provide for multimodal transportation improvements and infrastructure to support the City's Vision, land use plan and the concept of 10-minute neighborhoods.

System and Functional Plans

As part of the Comprehensive Plan Update, the City will integrate several new and updated component plans, including an updated Parks, Recreation and Open Space (PROS) Plan, Transportation Master Plan (TMP), Surface Water Master Plan, Comprehensive Water System Plan, and Cross Kirkland Corridor Master Plan. In addition, aspects of the City's study of neighborhood accessibility and connectivity, known as the 10-Minute Neighborhoods concept, are reflected in the alternatives. Each of these component plans is summarized below:

Parks, Recreation, and Open Space (PROS) Plan

The City's updated PROS plan reflects the changes that have occurred in the city since the last update in 2010. Since that time, Kirkland has annexed the Finn Hill, North Juanita, and Kingsgate neighborhoods, significantly increasing its geographic size and population. The new PROS Plan will guide the City's efforts to provide high-

quality parks, open spaces, and recreation facilities to all its citizens and will include policies and objectives, as well as implementation strategies and a capital improvement program for recreation projects.

Transportation Master Plan (TMP)

Kirkland's updated TMP sets transportation priorities for the city and prioritizes future transportation system investments through the year 2035. The City has established a goal of reducing the use of single-occupancy vehicles, and the TMP plans for multi-modal connectivity and a variety of transportation choices to achieve that goal. A more detailed discussion of the TMP and future transportation conditions in Kirkland is included in Section 3.6 – Transportation.

Surface Water Master Plan

Kirkland's new Surface Water Master Plan, adopted in November 2014, establishes policies and implementation strategies for managing stormwater and flooding in the city. A major component of the plan update was the inclusion of the newly annexed Finn Hill, North Juanita, and Kingsgate neighborhoods. The goals of the updated plan are to reduce flooding, improve water quality and aquatic habitat, and protect and maintain stormwater infrastructure. The master plan also establishes a list of recommended capital projects necessary to adequately manage stormwater and prevent flooding. The updated Utilities Element of the Comprehensive Plan includes policies directing the implementation of the Surface Water Master Plan, and the master plan identifies facility improvements for the surface water management system that guide capital facility planning.

Comprehensive Water System Plan

The purpose of Kirkland's Comprehensive Water System Plan, updated in March 2015, is to plan water system improvements and ensure safe and adequate water supply to customers. The plan describes the existing system and service area and provides a forecast of future water needs. The plan also evaluates the condition of the system and lists necessary improvements to meet service requirements, including a financial plan to fund improvements over the life of the plan. The Comprehensive Water System Plan guides the policy directives of the updated Utilities Element of the Comprehensive Plan and forms the basis of the City's capital facility planning process for water system improvements.

Cross Kirkland Corridor Master Plan

The Cross Kirkland Corridor (CKC) is a bicycle, pedestrian, and future transit corridor that traverses Kirkland from the South Kirkland Park and Ride to the city's northern boundary in Totem Lake. The corridor formerly comprised a portion of the decommissioned Eastside Rail Corridor; the City purchased 5.75 miles of the railroad line in 2012 and has been planning the conversion to bicycle and pedestrian use since that time. The CKC Master Plan, which serves as a guidance document for development of the trail, was adopted in June 2014. The master plan establishes the vision and goals for the project, as well as design elements, such as the location of access points, signage, intersection treatments, ecological protection features, and user safety.

The Cross Kirkland Corridor Master Plan envisions the CKC as an integrated element of Kirkland's future development pattern. The corridor forms the backbone of the land use concepts studied in the alternatives analysis of this EIS, described in Section 2.6. The CKC Master Plan is being integrated with the Comprehensive Plan through policies in the Land Use and Parks and Recreation Elements.

10-Minute Neighborhood Analysis

The 10-Minute Neighborhood Analysis identifies the elements of a neighborhood that contribute to the creation of vibrant places that are livable, walkable, sustainable, connected, and transit-oriented. A "10-Minute Neighborhood" refers to a place where residents can meet their daily needs within a short walk of their home. Such neighborhoods need a combination of attractive local destinations, as well as accessibility and connectivity that allows people to access these destinations quickly and conveniently. Access to transit that allows residents to conveniently reach destinations beyond their neighborhood is also an important factor.

The analysis included an assessment of these factors for neighborhoods across Kirkland. Those neighborhood centers that scored the highest could potentially be suitable for future mixed-use, transit-oriented development. This concept was integrated into the EIS alternatives, as described in the following section.

2.6 Alternatives Description

Overview

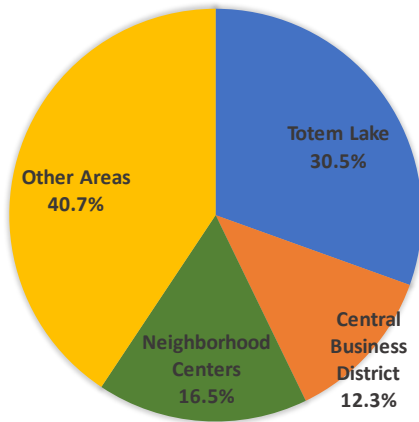
Citywide

The EIS evaluates three Alternatives that span a range of policy choices regarding the amount, location and type of future growth in Kirkland. No individual EIS alternative is proposed for adoption or preferred at this time. Each alternative is organized around a basic land use theme, which distinguishes it from the other alternatives and helps to emphasize specific or unique aspects of its approach. In this sense, each alternative represents a type of “book-end.” In actuality, elements of one alternative could be combined with elements of other alternatives to create an option which meets the City’s goals. The Final EIS is anticipated to identify a Preferred Alternative based on review and discussion of the conclusions of the DEIS by City staff, elected officials, and members of the public. The Preferred Alternative would represent the City’s preferred policy direction for the comprehensive plan and will help guide portions of the plan update.

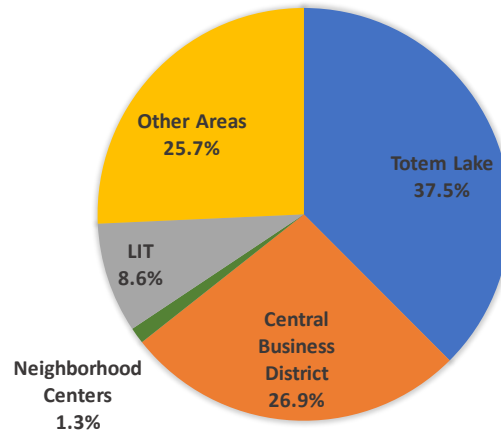
All three alternatives considered in this DEIS test the same level of overall growth, consistent with the City’s adopted 2035 growth targets: 8,361 housing units and 22,435 jobs between 2015 and 2035. While the overall level of citywide growth is constant among alternatives, each alternative tests a different distribution of this growth within Kirkland to highlight a spectrum of policy choices. The range of growth options includes concentrating development in the City’s two major centers (Totem Lake and Downtown, Alternative 2); distributing growth to major centers and to neighborhood commercial nodes (Alternative 3); and continued development under existing plans and policies (Alternative 1/No Action). Exhibit 2.6-1 shows the relative distribution of housing and employment growth across the study area under each alternative. Under all three alternatives, areas outside Totem Lake, the CBD, and the neighborhood centers would receive approximately 40.7% of future housing growth and 34.4% of employment growth. These “Other Areas” comprise most of the city, and future growth would be distributed throughout these areas, where they are allowed by zoning, as shown in Exhibit 2.6-2.

Exhibit 2.6-1. Citywide Growth Distribution by Alternative

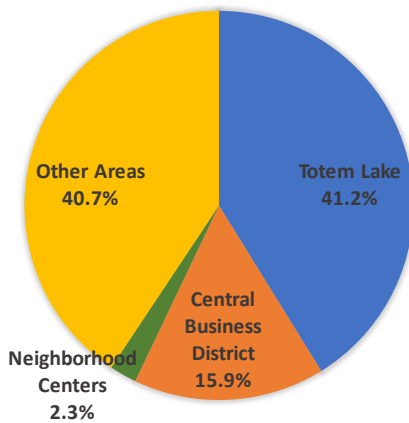
ALTERNATIVE 1 (NO ACTION) - HOUSING



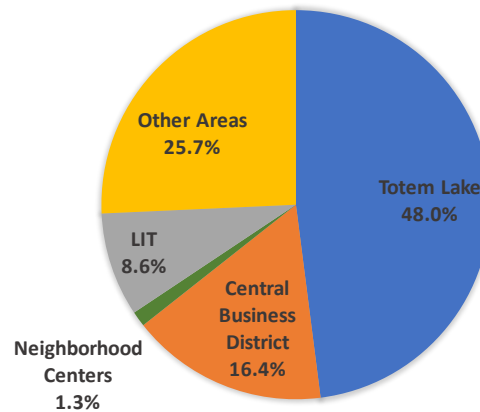
ALTERNATIVE 1 (NO ACTION) - EMPLOYMENT



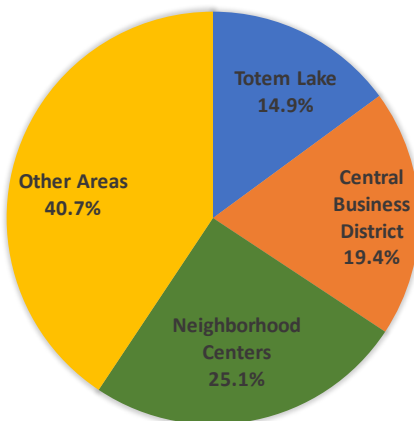
ALTERNATIVE 2 (TOTEM LAKE/DOWNTOWN) - HOUSING



ALTERNATIVE 2 (TOTEM LAKE/DOWNTOWN) - EMPLOYMENT



ALTERNATIVE 3 (DISTRIBUTED GROWTH) - HOUSING



ALTERNATIVE 3 (DISTRIBUTED GROWTH) - EMPLOYMENT

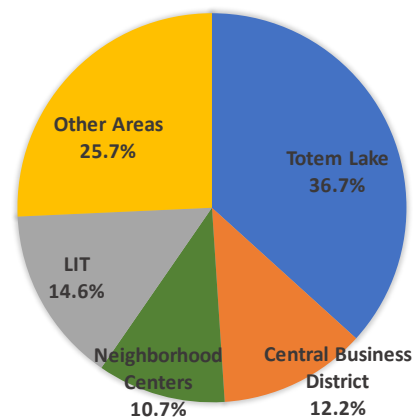
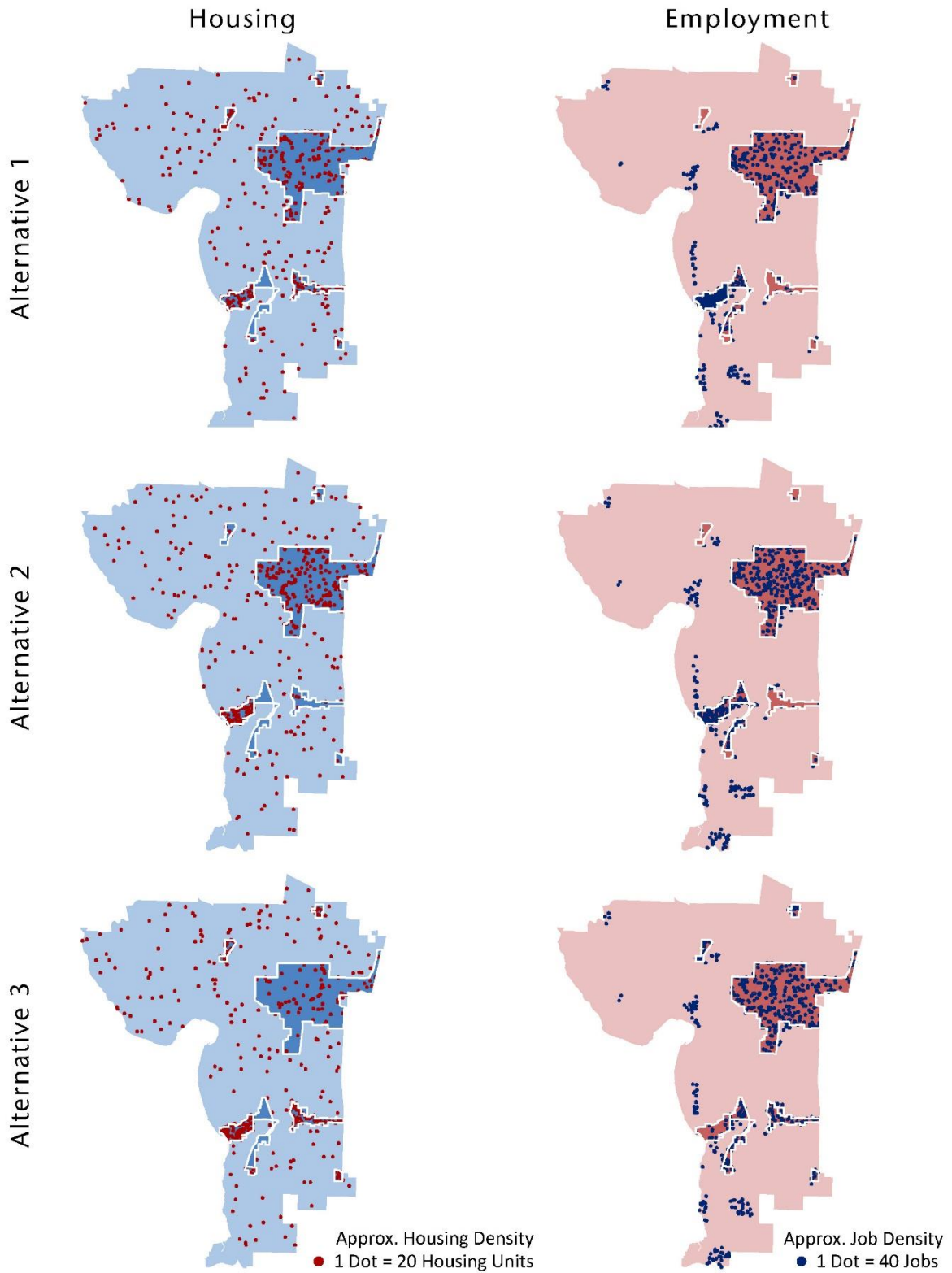


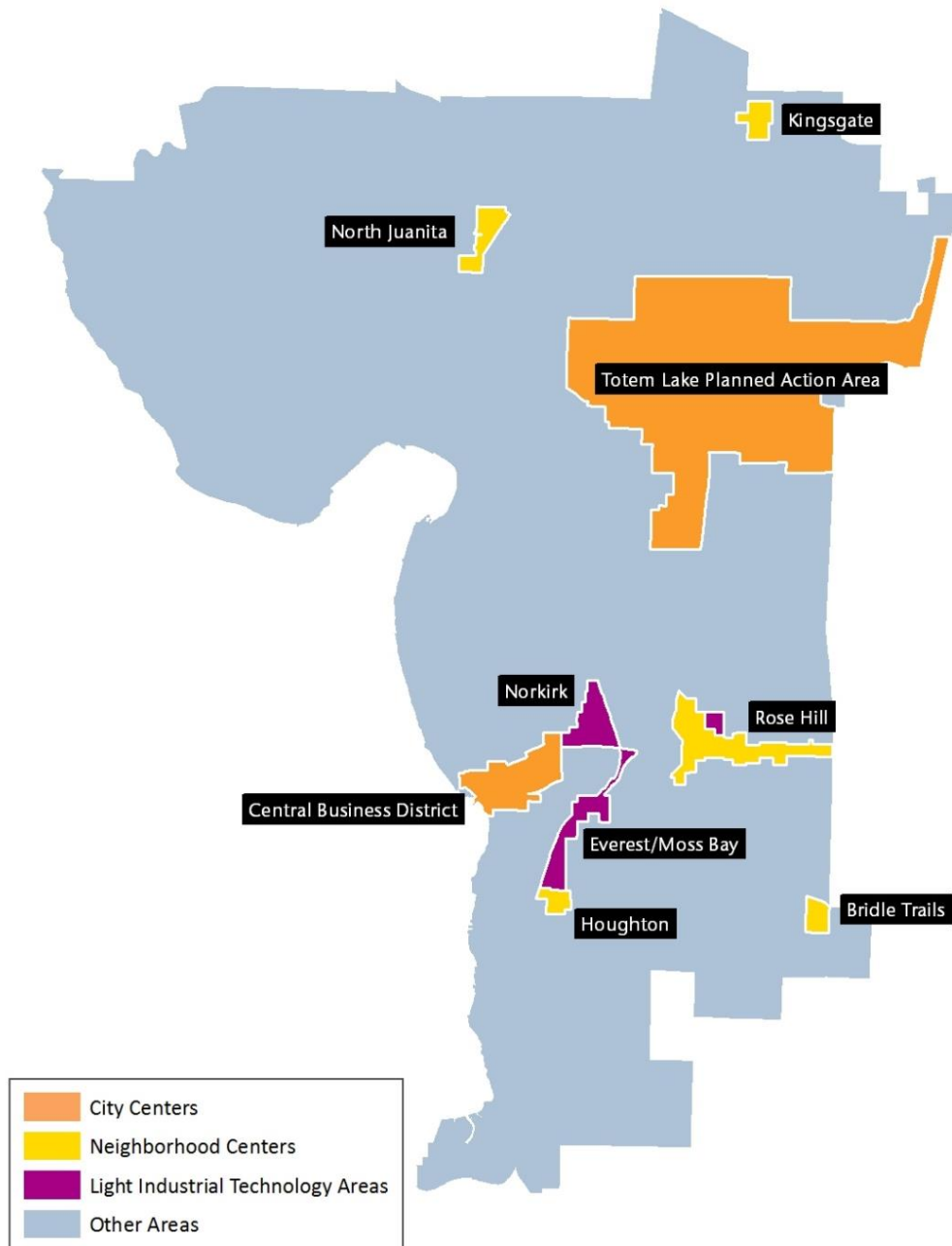
Exhibit 2.6-2. Housing and Job Growth Density by Alternative



Totem Lake Planned Action Area

Under all three of the studied alternatives, Totem Lake is planned to be Kirkland's largest growth center, absorbing a substantial portion of both housing and employment growth over the next 20 years. As such, the City is considering the adoption of a Planned Action Ordinance (PAO) for this area, as described in Section 2.4 – Environmental Review. For purposes of the PAO, the Planned Action Area would include the entire Totem Lake Business District, as well as the entire designated Totem Lake Urban Center and would consider use the range of growth estimates shown in Exhibit 2.6-3 above. A planned action would be adopted under Alternatives 2 and 3, but not for the No Action alternative. The extent of the Planned Action Area is shown in Exhibit 2.6-3.

Exhibit 2.6-3. Kirkland Planning Areas



Alternative 1: Existing Plan (No Action)

Alternative 1 would continue the City's current Comprehensive Plan policies as of 2014 with no modifications to adopted land use designations or zoning. The No Action Alternative tests the effects of maintaining current land use policies with no changes beyond the minimum necessary to comply with GMA, including adopting updated 2035 growth targets. Kirkland's current comprehensive plan land use map is shown in Exhibit 2.6-4.

Under the No Action Alternative, Totem Lake would be the City's primary employment and housing growth center, and the Central Business District (CBD) would be a secondary growth center, consistent with current plans and zoning. In keeping with recent development trends, employment in the City's Light Industrial Technology (LIT) areas would gradually convert from industrial to office uses. In neighborhoods outside Totem Lake and the CBD, housing growth would continue through infill and short-platting, and mixed-use housing and retail development would occur at low intensities in neighborhood business centers (up to 3 stories). A planned action would not be designated for Totem Lake under the No Action alternative. A summary of growth assumptions by subarea is included in Exhibit 2.6-5.

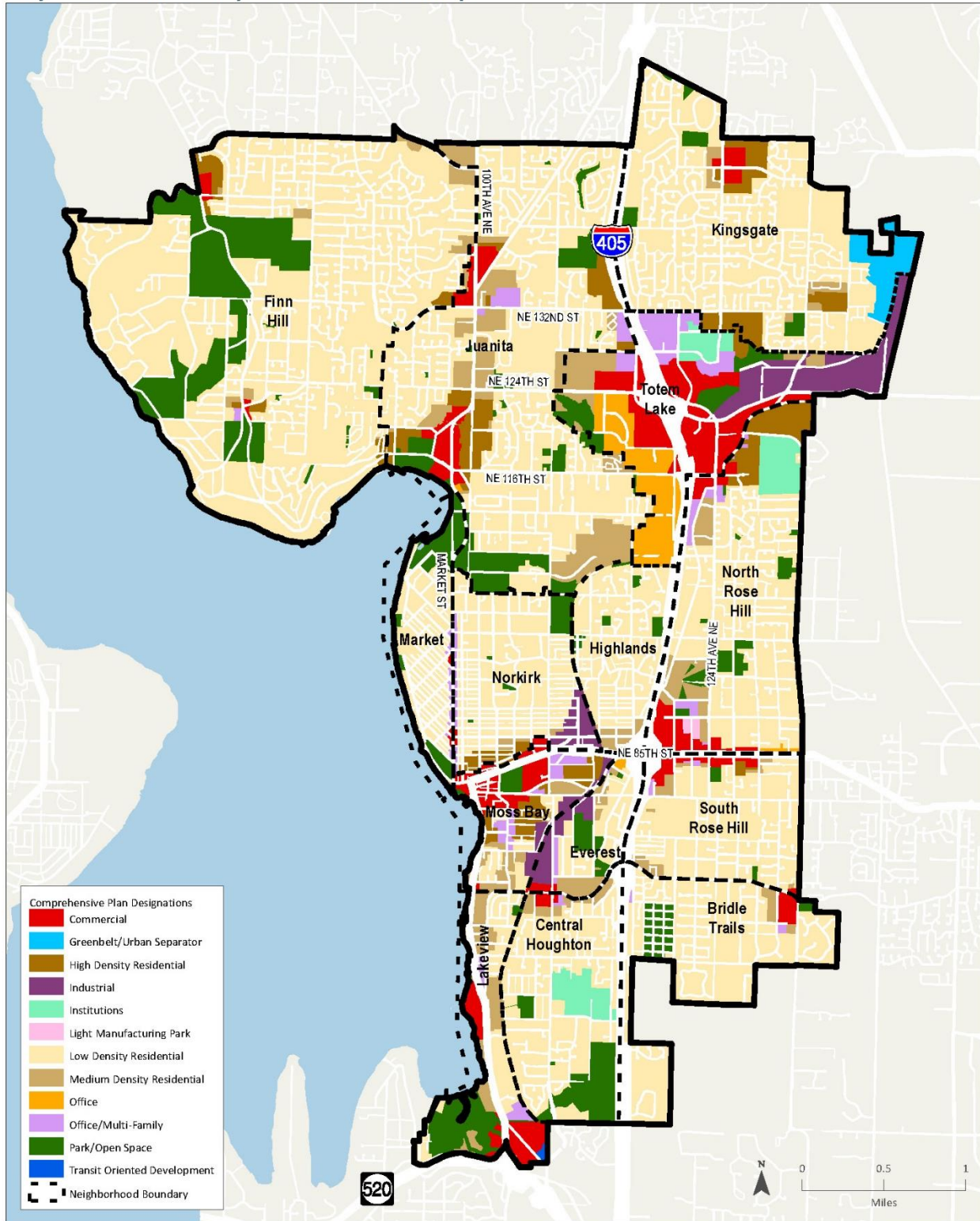
The No Action Alternative reflects adopted plans as of the end of 2014. Since that time, requests for modifications to adopted master plans for two major developments have been received: Parkplace in the CBD and Totem Lake Mall in the Totem Lake Planned Action Area. The Parkplace Master Plan and SEPA Planned Action were approved in late 2008, including associated comprehensive plan and zoning code amendments. The original proposal called for 1.8 million square feet of office, retail, and hotel uses. While the project received approval from the Design Review Board, redevelopment of the site has not yet occurred. In 2014, a new redevelopment concept was proposed for the site at a reduced intensity of development of approximately 1.2 million square feet of commercial and residential development.

The City prepared a SEPA addendum for the Parkplace site in February 2015 and amended the Parkplace PAO and applicable zoning code, and the revised redevelopment concept is scheduled to begin the design review process in June 2015. While the revised development concept has been approved by the City, the design review process is still pending, and no construction permits have been issued. Therefore, the No Action Alternative assumes development of the original master plan in effect at the end of 2014; and the amended master plan is assumed for Alternatives 2 and 3. While future development on the Parkplace site may not exactly conform to the original Parkplace master plan, a supplemental EIS issued in 2010 studied distribution of Parkplace growth to other nearby properties. As such, the difference in growth between the original and revised master plans could conceivably be accommodated elsewhere in the CBD.

In addition to Parkplace, the City has also received a request to amend the adopted conceptual master plan for the Totem Lake Mall. The proposal would reduce the amount of commercial and office space in the development and increase the level of multifamily residential. Because the proposal has yet to go through design review or be issued any development permits, the No Action Alternative assumes development of the adopted plan, as does Alternative 2. Alternative 3 assumes development of the revised master plan, and more details are included in the description of that alternative.

Exhibit 2.6-4. Comprehensive Plan Map

City of Kirkland Comprehensive Plan Map



BERK Date: April, 2015
Source: BERK, City of Kirkland

Exhibit 2.6-5. Summary of Alternatives

Feature	Alternative 1 (No Action) Existing Plan	Alternative 2 Totem Lake/Downtown Focus	Alternative 3 Distributed Growth
General Level and Distribution of Growth and Land Use Patterns	<u>Citywide Growth Targets Under All Alternatives</u>		
	Housing: 8,361		Housing: 8,361
	<ul style="list-style-type: none"> Totem Lake as major employment and housing growth center. CBD 5 as secondary employment (office/retail) growth center. Conversion of more employment in Light Industrial areas (industrial to office) follows existing trends. Housing growth in neighborhood business with retail on ground floor at 3 stories. Continued infill and short platting in neighborhoods. 	<ul style="list-style-type: none"> Overall growth allocated primarily to Totem Lake and secondarily to CBD 5. Slightly higher level of housing and employment growth in Totem Lake than No Action, including Mixed Use (residential with office/retail) in TL 10. Higher employment growth in CBD 5 relative to Alternative 3. Minimal housing growth in neighborhood centers (ground floor retail only) relative to No Action. Transition of Light Industrial to office continues in Norkirk and North Rose Hill LIT zones. Remaining growth allocated proportionally to rest of the city. 	<ul style="list-style-type: none"> Lower increment of housing and employment growth in Totem Lake than No Action. Increased higher-density housing in CBD 5 relative to No Action. Increased housing in neighborhood centers relative to No Action. Transition of Light Industrial to Mixed Use (residential/office/retail in Norkirk and retail/hotel/office in North Rose Hill). Remaining growth allocated proportionally to rest of the city.
Totem Lake Zones			
<i>TL 1A Zone: Professional Office</i>	Office development per adopted plans and zoning.	Additional office employment relative to No Action, including rezoning one property from TL 2 to TL 1A.	Same as No Action.
<i>TL 2 Zone: Totem Lake Mall</i>	Approved Master Plan redevelopment: <ul style="list-style-type: none"> 622,000 sq ft commercial 144,000 sq ft office 226 residential units 	Same as No Action	Reduced intensity of development per revised mall master plan: <ul style="list-style-type: none"> 540,000 sq ft commercial 130,000 sq ft office 400 residential units
<i>TL 7 Zone: Eastern Industrial Area A (south of CKC)</i>	Industrial and office development per adopted plans and zoning.	Increased office relative to No Action.	Increased residential uses and decreased office share relative to No Action.
<i>TL 7 and 9A Zones: Eastern Industrial Area B (north and east of CKC)</i>	Industrial and office development per adopted plans and zoning.	Increased office and retail development relative to No Action.	Similar to No Action.
<i>TL 10D and 10E Zones: Parmac</i>	Office development per adopted plans and zoning.	Mixed use development, including residential and limited retail relative to No Action.	Increased industrial and reduced office development, relative to No Action.

Feature	Alternative 1 (No Action) Existing Plan	Alternative 2 Totem Lake/Downtown Focus	Alternative 3 Distributed Growth
Central Business District (CBD) Zones			
<i>CBD 5A – Parkplace</i>	1.8 million sq ft of office and retail, per approved 2008 plan.	Reduced office (1.2 million sq ft) and moderate increase in housing (300 units) relative to No Action, per 2015 addendum.	Reduced office (1.2 million sq ft) and moderate increase in housing (300 units) relative to No Action, per 2015 addendum.
<i>CBD 5 – MRM</i>	Low rise office with retail on ground floor per current plan and zoning.	Increased office development with increased building heights.	Increased housing development with increased building heights.
Neighborhood Centers and Light Industrial Technology (LIT) Zones			
Neighborhood Centers: Kingsgate Juanita Bridle Trails Houghton Rose Hill	Assumes redevelopment with increase in housing at 1-2 stories along with 1 story retail.	No new growth. Existing 1-story retail.	<ul style="list-style-type: none"> More growth to neighborhood centers relative to No Action. Growth weighted toward mixed-use development: Kingsgate, Bridle Trails, Houghton, and Juanita growth would focus on multifamily housing. Rose Hill growth would focus on employment.
Light Industrial Technology Zones: Norkirk North Rose Hill Everest	Office development per adopted plans and zoning. No new industrial or residential uses.	Same as No Action.	<ul style="list-style-type: none"> Mix of office, retail and residential development in Norkirk. Mix of retail, hotel and office in North Rose Hill. Conversion of industrial to office in Everest.
Implementation Measures			
	<ul style="list-style-type: none"> No change; no rezones. 	<ul style="list-style-type: none"> Planned Action adopted for Totem Lake to encourage desired development. Incremental changes to zoning in the Totem Lake, CBD 5, neighborhood centers and multifamily areas. Height and FAR increases in the following zones: <ul style="list-style-type: none"> TL 4A, TL 4B, TL 4C, TL 6A, TL 6B, TL 7, and TL 8 – Increase max height to 80 feet. Remove FAR cap in TL 1A, TL 1B, and TL 5 zones. 	<ul style="list-style-type: none"> Planned Action adopted for Totem Lake to encourage desired development. Incremental changes to zoning in the Totem Lake, CBD 5, neighborhood centers multifamily and Light Industrial zones. Potential changes to height and/or density in existing neighborhood centers, multifamily and industrial areas.

Exhibit 2.6-6. Summary of Development Capacity Changes by Alternative

	Alternative 1 (No Action) Capacity		Alternative 2 (Totem Lake/Downtown) Net Change Relative to No Action		Alternative 3 (Distributed Growth) Net Change Relative to No Action	
	Households	Jobs	Households	Jobs	Households	Jobs
Citywide	9,516	22,944	10,175	25,111	12,910	23,359
CBD						
Parkplace (CBD 5A)	-	-	300	(2,935)	300	(2,935)
MRM (CBD 5)	-	-	-	907	289	(19)
Totem Lake						
TL 4A	-	-	12	234		
TL 4B			25	199		
TL 4C			9	77		
TL 5	-	-	-	126		
TL 6A	-	-	218	633		
TL 6B			82	-		
TL 7	-	-	-	2,852		
TL 8	-	-	12	73		
TL 2 (Totem Lake Mall)	-	-	-	-	174	(220)
Neighborhood Centers						
Kingsgate	-	-	-	-	552	-
North Juanita	-	-	-	-	426	-
Bridle Trails	-	-	-	-	901	-
Rose Hill	-	-	-	-	600	2,210
Houghton	-	-	-	-	152	1,379
Total Net Change	-	-	659	2,167	3,394	415

Alternative 2: Totem Lake/Downtown Focus

Alternative 2 would focus future development into the City's two major growth centers: Totem Lake and the CBD. Similar to the No Action Alternative, Totem Lake would receive the largest share of future growth, including both employment and multifamily residential growth. Future growth in the CBD would include employment uses but would also include multifamily residential development, in keeping with recent trends and current market demand.

Similar to the No Action Alternative, some conversion of industrial uses to office would occur in the LIT areas, primarily in Norkirk and North Rose Hill. Unlike the No Action Alternative, however, little additional growth would occur in neighborhood business centers; these areas would remain primarily low-intensity retail nodes with minimal multifamily residential development. A summary of growth assumptions by subarea is included in Exhibit 2.6-5.

Growth Assumptions:

- The Parkplace site in downtown Kirkland would redevelop at an overall lower intensity than assumed under the No Action alternative (1.2 million square feet of office and retail and 300 housing units). Future development would result in a larger amount of housing, but less employment on this site than under No Action Alternative.
- The MRM site adjacent to Parkplace would redevelop as mixed-use with ground floor retail and upper story office, resulting in a greater amount of employment growth in this area than under No Action. Totem Lake would receive additional employment growth relative to the No Action Alternative, primarily in the TL 1, TL 5, TL 6A, and TL 7 zones. Additional employment growth in these areas would consist of office and limited retail in mixed use developments, as well as office/technology uses in the TL7 zone.
- Several zones in Totem Lake would be amended to allow increased maximum building height:
 - TL 4A, 4B, and 4C – Maximum building height increased from 65 feet to 80 feet;
 - TL 6A and 6B – Maximum building height increased from 65 feet to 80 feet.
 - TL 7 – Maximum building height increased from 45 feet to 80 feet; and
 - TL 8 – Maximum building height increased from 65 feet to 80 feet.
- TL 5 – Maximum FAR limit removed. Current zoning does not establish a maximum height for master planned development. Other uses are currently limited to 35 feet in height.
- TL 1A and 1B – Maximum FAR limit removed, and maximum building height would remain unchanged. Current zoning allows heights up to 160 feet if public infrastructure or pedestrian improvements are dedicated as part of development.
- Neighborhood centers such as Bridle Trails, Houghton, Kingsgate, Rose Hill and Juanita would experience no new multifamily residential development, relative to the No Action Alternative; multifamily uses in these areas would remain at single-story intensities, even though existing zoning allows maximum heights ranging from 30-67 feet. New housing growth would instead occur in the CBD or in Totem Lake.

Alternative 3: Distributed Growth

Alternative 3 would distribute future growth to a larger number of centers in Kirkland compared to Alternative 2 or the No Action Alternative. While Totem Lake would continue to be the City's largest growth center, focusing primarily on employment, a large share of future residential growth would occur in the CBD and in neighborhood centers, such as Houghton/Everest, Bridle Trails, North Juanita, and Kingsgate. Under Alternative 3, these neighborhood centers would redevelop as mixed-use nodes with retail and multifamily residential redevelopment up to 4-5 stories.

Alternative 3 would also result in the gradual conversion of some of the City's LIT areas to include a different mix of uses. The Norkirk and North Rose Hill LIT areas would convert over time to include office and limited retail uses, resulting in a higher level of employment in these areas than under Alternative 2 or the No Action Alternative. A summary of growth assumptions by subarea is included in Exhibit 2.6-5.

Growth Assumptions:

- The Parkplace site in downtown Kirkland would redevelop at a lower intensity than assumed under the No Action Alternative. Future development would result in a larger amount of housing on this site and less employment than under the No Action Alternative.
- The MRM site adjacent to Parkplace would redevelop as mixed-use with ground floor retail and upper story multifamily residential, resulting in a greater amount of housing growth in this area than under No Action.
- Totem Lake would remain the City's largest employment center, but would receive slightly fewer jobs than under No Action. This employment growth would instead be distributed to other business districts and neighborhood centers.
 - The Rose Hill Business District would experience reduced residential growth and increased employment growth relative to No Action.
 - The Everest and Norkirk LIT areas would experience greater employment growth relative to No Action; residential growth in these areas would be similar to the No Action Alternative.
 - The Houghton neighborhood center would experience increased growth in housing relative to the No Action Alternative.
 - The Bridle Trails, Kingsgate, and Juanita neighborhood centers would receive increased mixed-use multifamily residential development relative to the No Action Alternative.
- Zoning districts in the neighborhood centers and business districts listed above would be amended to allow for increased height and FAR limits, thereby increasing development capacity to accommodate growth projected to occur under this alternative. Exhibit 2.6-6 summarizes the changes in housing and employment capacity included in Alternative 3.
 - Zoning in the Bridle Trails neighborhood center would be revised to allow for greater residential growth.
 - Zoning in the Houghton neighborhood center and Everest LIT areas would be amended to accommodate additional capacity for both employment and residences.
 - Zoning in the Kingsgate and North Juanita neighborhood centers would be amended to allow a greater proportion of future growth to be residential.
 - Zoning in the Rose Hill business district would be amended to accommodate additional capacity for both employment and residences.
- Alternative 3 also assumes redevelopment of the Totem Lake Mall site under a new proposed master site plan. The new plan assumes approximately 540,000 square feet of commercial space, 130,000 square feet of office space, and 400 multifamily residential units. Compared with the currently adopted redevelopment plan for this site, the new plan would result in a reduction in employment capacity of approximately 220 jobs, but an increase in residential capacity of 174 units.

2.7 Citizen Amendment Requests and Other Site Specific Amendments

In addition to Comprehensive Plan revisions described under each of the three Alternatives, the City has solicited feedback from the public regarding desired location-specific changes to plans, policies, zoning designations, or development regulations. Applications for Citizen Amendment Requests (CARs) were accepted as part of the SEPA scoping period for this EIS, from April 24 – June 20, 2014. The City received more than 30 applications for CARs during that period. The Kirkland Planning Commission reviewed the applications received and made recommendations to the City Council regarding which CARs warranted further study. In September, the City Council approved a list of 20 CARs for additional study in the EIS. Following the selection process, the Planning Commission expanded the study areas of all of the requests, except for Evergreen Healthcare request, to include some of the surrounding properties.

Exhibit 2.7-1 below summarizes the CARs studied in this EIS, and Exhibit 2.7-2 shows the CAR locations.

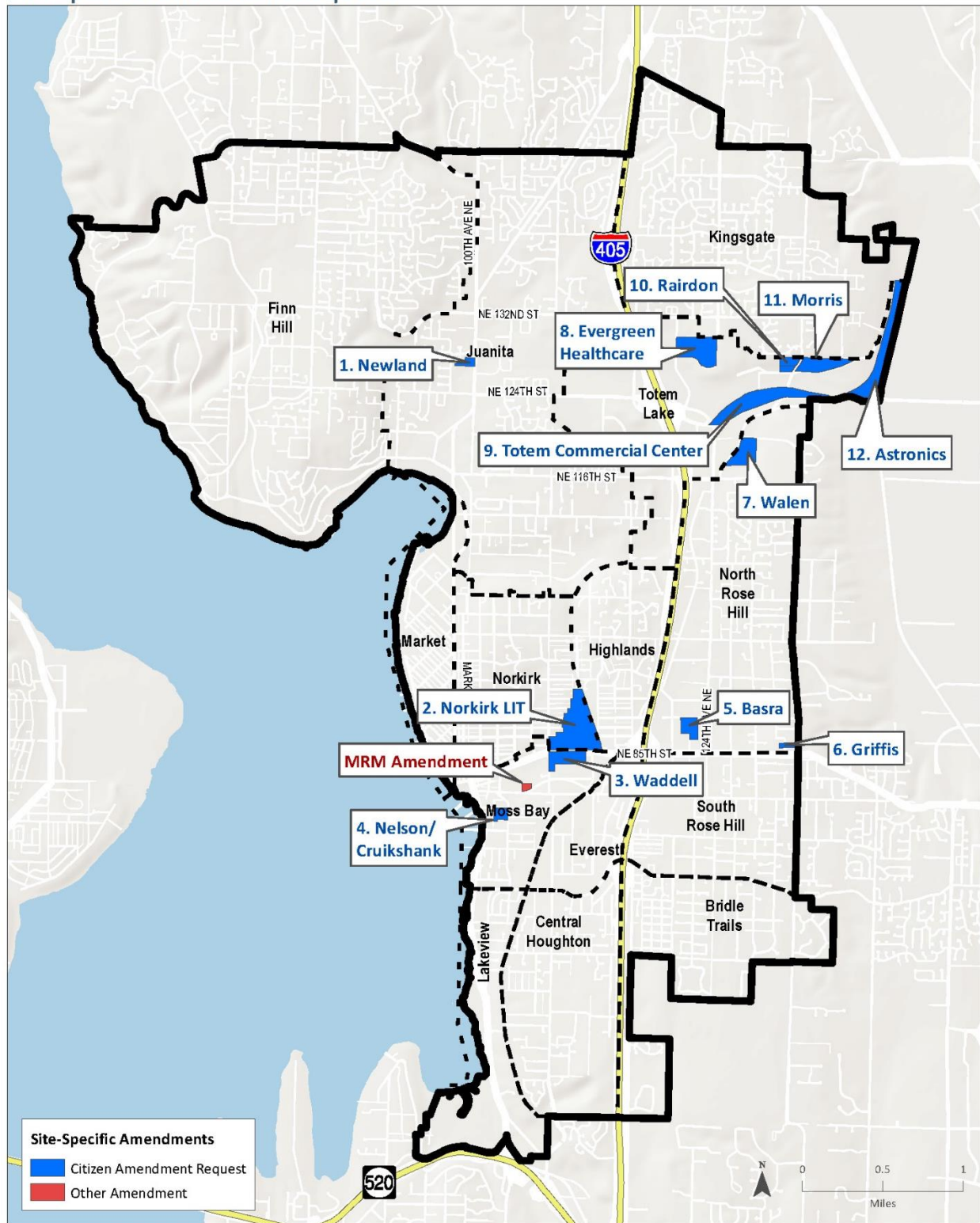
Exhibit 2.7-1. Summary of Site-Specific Amendments

Name	Description	Location of Study Area
Citizen Amendment Requests		
1. Newland	Rezone 4 parcels from Single family Residential (RSX7.2) to Multifamily.	12625 100 th Ave NE and three lots to the north (Juanita Neighborhood)
2. Norkirk LIT	7 requests in the Norkirk industrial area to study the following: <ul style="list-style-type: none"> Rezone 642 and 648 9th Ave from Low Density Residential (RS 7.2 zone) to Light Industrial Park/IND (Light Industrial Technology/LIT zone) which would extend LIT zone boundary to the west. Allow live/work lofts in Light Industrial Park/IND (LIT zone). Consider uses and buffer transitions between Industrial (LIT zone) and Residential area (RS zones). 	Norkirk LIT and two lots to the west (Norkirk Neighborhood)
3. Waddell	Remove requirement for common recreational open space for multifamily development in the Office/Multifamily (Planned Area 5/PLA5C) zone, consistent with Central Business District (CBD) zones to the west.	220 6th St and remaining portion of PLA5C zone (Everest Neighborhood)
4. Nelson/Cruikshank	Rezone all parcels in Low Density Residential (Planned Area /PLA 6C) to Multifamily.	202 & 208 2 nd St. S 207 & 211 3 rd St. S and remaining portion of PLA 6C (Moss Bay Neighborhood)
5. Basra	Increase height and change zoning and land use designation for all parcels in the North Rose Hill Light Industrial Manufacturing Park (Light Industrial Technology/LIT zone) to Commercial-Mixed Use (Rose Hill Business District 3/RH3 zone).	8626 122 nd Ave NE and remaining portion LMP/LIT area (North Rose Hill Neighborhood)
6. Griffis	Change zoning and land use designation on 6 parcels from Low Density Residential (RSX 7.2 zone) to Office (Rose Hill Business District/RH8).	8520 131 st Ave NE 8519 132 nd Ave NE and 4 lots to the west and north (North Rose Hill Neighborhood)

Name	Description	Location of Study Area
7. Walen	Allow for limited commercial uses in Office and Multifamily area (North Rose Hill/ NRH 5 & 6 zones and RM 1.8).	11680 Slater Ave NE and several surrounding lots (North Rose Hill Neighborhood)
8. Evergreen Healthcare	Rezone 1 parcel from Multifamily (Totem Lake/TL1B zone) to Institutional (Totem Lake/TL 3D zone) for inclusion in Evergreen Healthcare Master Plan.	13014 120 th Ave NE only (Totem Lake Business District)
9. Totem Commercial Center	Increase height and range of permitted uses within Industrial area (Totem Lake/TL 7 zone).	12700 – 12704 NE 124 th St and remaining portion of TL7 north of NE 124 th Street, south of Cross Kirkland Corridor and west of 135 th Ave NE (Totem Lake Business District)
10. Rairdon	Rezone 2 parcels from Industrial (Totem Lake/TL9A) and Multifamily (Totem Lake/TL9B) to Industrial/Commercial (Totem Lake/TL 7.	130XX 132 nd PI NE (Vacant) and 12601 132 nd PI NE (Totem Lake Business District)
11. Morris	Rezone parcels from Industrial (Totem Lake/TL7) to Multifamily (Residential Medium Annexation/RMA 3.6 or greater density and increase maximum allowed height to 40 feet.	13250 NE 126 th PI and remaining portion of TL7 north of NE 126 th Place (Totem Lake Business District)
12. Astronics Corp.	Increase allowed height to 65 feet within Totem Lake/TL 7 zone.	Vacant property north of 12950 Willows Rd NE and remaining portion of TL7 east of Cross Kirkland Corridor (Totem Lake Business District)
Other Property Amendments		
MRM	Additional residential as a permitted use and increased height on the MRM site.	434 Kirkland Way (CBD/Moss Bay Neighborhood)

Exhibit 2.7-2. Site-Specific Amendment Request Locations

Site-Specific Amendment Requests



These CARs and the MRM amendment are not included as part of any specific Alternative analyzed in this DEIS. Rather, each CAR and the MRM amendment is evaluated based on its compatibility relative to each Alternative, as well as with regard to any significant environmental impacts that could potentially occur as a result of adoption of the CAR. A detailed description and analysis of each CAR proposal is included in Chapter 4.

2.8 Benefits and Disadvantages of Delaying Implementation of the Proposal

SEPA requires a discussion of the benefits and disadvantages of reserving for some future time, the implementation of a proposal as compared with possible approval at this time. The benefits of adopting a comprehensive plan and municipal code update include:

- Planning for housing and employment growth in a coordinated manner.
- Updated and corrected information.
- Policies that better reflect current conditions, address new issues since the 2004 Update and City roles and responsibilities.
- Updated capital plans that respond to future growth.

Delaying implementation would still allow growth to occur on the basis of the current Comprehensive Plan. However, the current plan does not fully reflect recent annexations, changed circumstances, and new legal requirements, updated growth forecasts, and economic development opportunities. Delaying implementation would not result in the coordination of land use and capital facility planning which is required by GMA. Additionally, delaying implementation of the Proposal would not comply with the update requirements of the GMA, which could have adverse legal and financial consequences for the City.

3.0 AFFECTED ENVIRONMENT, SIGNIFICANT IMPACTS, AND MITIGATION MEASURES

3.1 Land Use Patterns

This section evaluates the proposed amount, types, scale and pattern of uses under each alternative in comparison with the existing land use pattern. For a review of land use policies, please see Section 3.2 - Plans and Policies.

Affected Environment and Methodology

KIRKLAND PLANNING AREA

This section addresses land use patterns and development character in the City of Kirkland (City). This review is on a citywide scale including major commercial and neighborhood centers. This analysis provides a baseline for analyzing the impacts of land use and development of the three alternative growth scenarios. Exhibit 3.1-3 illustrates land use patterns across the City.

CURRENT LAND USE

As shown in Exhibit 3.1-1 and Exhibit 3.1-2, based upon King County Assessor parcel information the predominant land use in Kirkland as a whole is single family residential which accounts for 55% of land use. At the neighborhood level, single family land use ranges from as high as 79% and 76% in the Highlands and Bridle Trails neighborhoods to as low as 28% and 20 % in the Lakeview and Moss Bay neighborhoods respectively. The Totem Lake neighborhood represents the lowest concentration of single family land use with only 1%. Of Kirkland's 14 designated neighborhoods, 8 neighborhoods have 60% or more of their land use designated for to single family use.

Parks and open space comprise 11% of land use across Kirkland. With 389 acres of parks and open space, the Finn Hill neighborhood alone accounts for 38% of total park space in the City and includes Big Finn Hill Park, O.O. Denny Park, and Juanita Woodlands Park. Numerous parks also provide access to Lake Washington and dot the shoreline in the Juanita, Market, Moss Bay, and Lakeview neighborhoods. Additional neighborhood and community parks are located within each neighborhood throughout the City. The amount of current land use dedicated to park and open space is likely to increase go up as the Cross Kirkland Corridor, a 5.75 mile trail with associated recreational amenities, becomes more fully developed.

Multi-family residential land use accounts for 10% of total land use in Kirkland and is generally located along primary arterials. Concentrations of multi-family development can vary greatly across the City, with higher concentrations located in the Moss Bay (33%), Juanita (19%), Lakeview (17%), and Totem Lake (14%) neighborhoods. Alternatively, low concentrations of multi-family land use are found in the Central Houghton (4%), South Rose Hill (4%), Bridle Trails (3%), Finn Hill (3%), and Market (1%) neighborhoods.

Commercial, office, and industrial land uses collectively represent 8% of land use in the City. By itself, commercial land use comprises 2% of citywide land uses. Reflecting their role as city centers, both Moss Bay – which contains the Central Business District - and the Totem Lake neighborhoods have concentrations of commercial space, at 23% and 11% respectively. The Moss Bay neighborhood, which contains portions of the Everest/Moss Bay Light Industrial Technology (LIT) area, also has a relatively high concentration of commercial use at 11%. Pockets of commercial land use exist in other neighborhoods throughout the City at different levels of development ranging from 1%-6%. The exception is the Highlands neighborhood, which has no identified parcels dedicated to commercial use.

Office land uses comprise 2% of the citywide total and are concentrated in only a few of the City's neighborhoods. The Lakeview neighborhood contains the highest percentage of office use of any in the city at 17%. This includes high concentrations of office use in both the Carillon Point and Yarrow Bay districts. The Moss Bay, Everest, and Totem Lake neighborhoods, respectively, contain 11%, 9%, and 8% of office land use. The remaining city neighborhoods each contain 2% or less of office space, with Bridle Trails, Finn Hill, Kingsgate, and Juanita neighborhoods all containing 1% or less. Similar to commercial use, The Highlands neighborhood has no identified parcels dedicated to office use.

Similar to the pattern of office use, industrial land use is 2% citywide and is concentrated within a handful of neighborhoods. The Totem Lake neighborhood has the largest amount of industrial land use dedicated to industrial at 24%. The Everest neighborhood represents the next highest concentration of industrial land use at 10%. The Moss Bay, Norkirk, and North Rose Hill neighborhoods respectively have 4%, 3%, and 1% of their parcel area dedicated to industrial uses. The remaining neighborhoods in Kirkland effectively have no identifiable amounts of industrial land use.

Institutions and public facilities (e.g. schools, churches, and government buildings) comprise 5% of the total land use within Kirkland. South Rose Hill and Central Houghton contain the highest amounts of institution and public facility use at 16% and 12% respectively. The Everest, Highlands, Lakeview, and Market neighborhoods contain no parcels dedicated to institutional or public facility use. The remaining neighborhoods range from 2%-10% of industrial land use.

Vacant land use constitutes 7% of citywide land uses overall. The Totem Lake neighborhood has the highest proportion of vacant land of any neighborhood in the city at 15%. The Bridle Trails, Juanita, Central Houghton, and Market neighborhoods have the lowest concentrations of vacant lands at 4%, 4%, 3%, and 2%, respectively. The remaining neighborhoods range between 5-10% of vacant land use. Mixed-use and utilities account for less than 1% of land use in the city combined.

Exhibit 3.1-1. Current Land Use: Citywide and Neighborhood (Acres*)

Land Use Category	Citywide	Bridle Trails	Central Houghton	Everest	Finn Hill	Highlands	Juanita	Kingsgate	Lakeview	Market	Moss Bay	Norkirk	North Rose Hill	South Rose Hill	Totem Lake
Commercial	404	27	16	5	16	-	45	15	13	1	27	11	46	20	161
Industrial	214	-	-	17	-	0	0	0	-	-	10	11	6	-	170
Institution/Public Facility	499	11	62	-	60	-	91	47	-	-	17	33	79	63	38
Mixed-Use	19	-	-	0	-	-	9	0	2	0	6	0	0	-	-
Multi-Family	902	13	21	23	62	15	292	109	53	3	80	19	99	14	98
Office	195	2	4	15	3	-	10	1	55	4	27	4	13	3	56
Parks/Open Space	1,022	32	86	26	389	14	153	42	79	58	17	22	48	13	45
Single Family	5,109	351	289	64	1,428	207	867	654	88	147	49	261	439	253	10
Utilities	16	2	1	0	0	-	1	2	1	-	0	1	2	-	5
Vacant	645	17	17	13	191	19	48	103	18	4	11	18	53	28	105
Undefined	223	5	3	1	60	9	34	71	9	0	1	1	13	5	9
Total	9,247	460	499	165	2,210	264	1,551	1,045	316	218	245	381	797	399	697

*Excludes ROW

Source: King County Assessor, 2014

Exhibit 3.1-2. Current Land Use: Citywide and Neighborhood (Percent*)

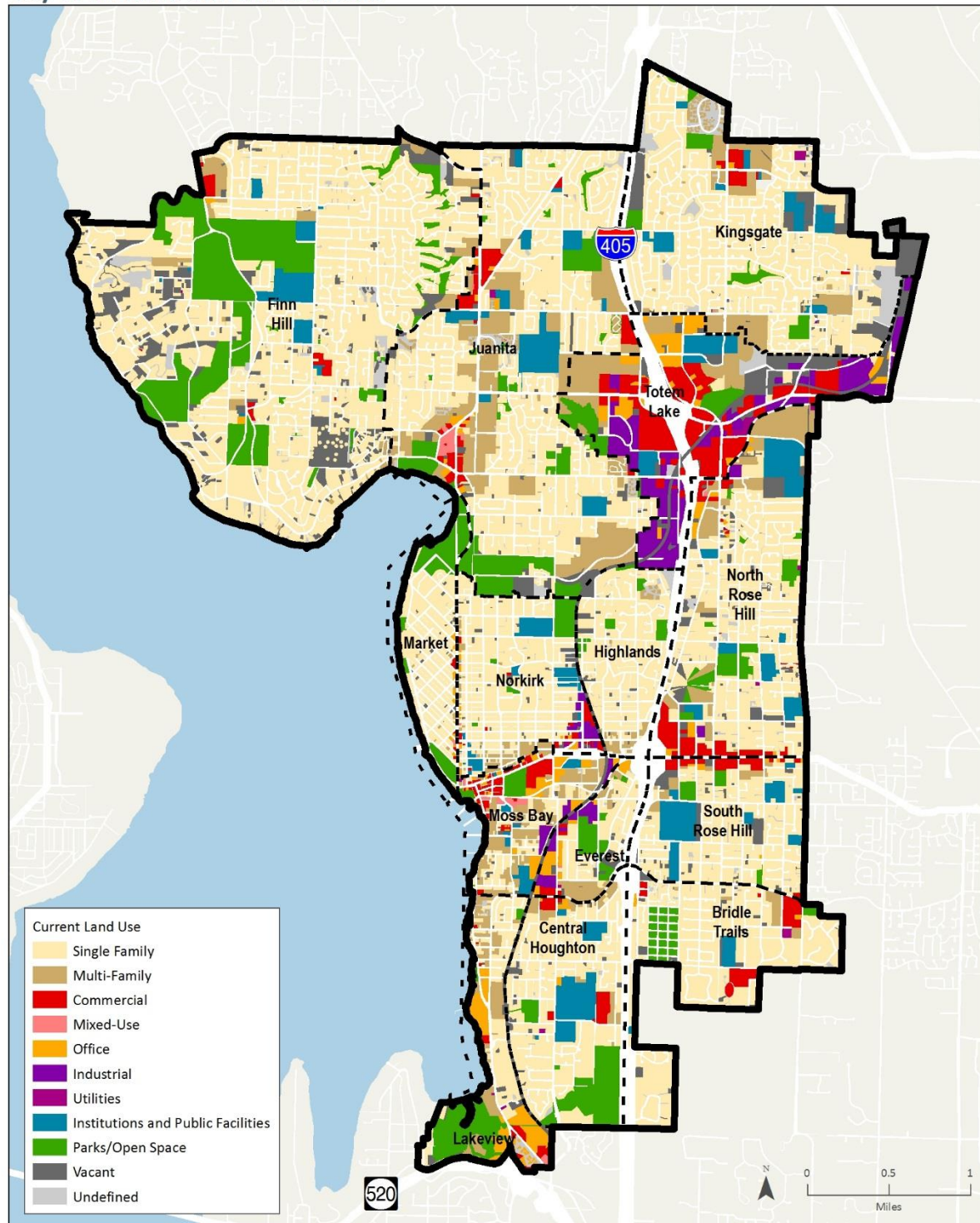
Land Use Category	Citywide	Bridle Trails	Central Houghton	Everest	Finn Hill	Highlands	Juanita	Kingsgate	Lakeview	Market	Moss Bay	Norkirk	North Rose Hill	South Rose Hill	Totem Lake
Commercial	4%	6%	3%	3%	1%	-	3%	1%	4%	1%	11%	3%	6%	5%	23%
Industrial	2%	-	-	10%	-	0%	0%	0%	-	-	4%	3%	1%	-	24%
Institution/Public Facility	5%	2%	12%	-	3%	-	6%	4%	-	-	7%	9%	10%	16%	5%
Mixed-Use	0%	-	-	0%	-	-	1%	0%	1%	0%	2%	0%	0%	-	-
Multi-Family	10%	3%	4%	14%	3%	6%	19%	10%	17%	1%	33%	5%	12%	4%	14%
Office	2%	0%	1%	9%	0%	-	1%	0%	17%	2%	11%	1%	2%	1%	8%
Parks/Open Space	11%	7%	17%	16%	18%	5%	10%	4%	25%	27%	7%	6%	6%	3%	6%
Single Family	55%	76%	58%	39%	65%	79%	56%	63%	28%	68%	20%	68%	55%	63%	1%
Utilities	0%	0%	0%	0%	0%	-	0%	0%	0%	-	0%	0%	0%	-	1%
Vacant	7%	4%	3%	8%	9%	7%	3%	10%	6%	2%	5%	5%	7%	7%	15%
Undefined	2%	1%	1%	1%	3%	3%	2%	7%	3%	0%	0%	0%	2%	1%	1%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

*Excludes ROW

Source: King County Assessor, 2014

Exhibit 3.1-3. Current Land Use Map

City of Kirkland Current Land Use



BERK Date: April, 2015
Source: BERK, King County

FUTURE LAND USE DESIGNATIONS AND ZONING

The Kirkland Comprehensive Plan's Future Land Use Map (FLUM) establishes future land use designations to guide development within the city. Adopted Comprehensive Plan designations are mapped in Exhibit 3.1-6. These designations are implemented by a corresponding range of zoning districts, which are established in the Kirkland Zoning Code (KZC). Adopted Kirkland zoning designations are mapped in Exhibit 3.1-9.

Similar to existing land use, the largest future citywide land use designation category is Low Density Residential, accounting for 66% of the city's future land use base (Exhibit 3.1-10). Medium density and high density residential designations add another 7% and 4% respectively resulting in a combined total of 77% of future land use targeted for residential use. The amount of land zoned for low density residential varies from neighborhood to neighborhood. There are six neighborhoods that have 80% or more of their land zoned for low intensity residential including Bridle Trails, Finn Hill, Highlands, Juanita, Kingsgate, and South Rose Hill. The neighborhoods containing the two commercial centers of the City – Moss Bay and Totem Lake – represent the lowest amount of zoned low density residential lands at 14% and <1% respectively.

Parks and open space represent 10% of future land use and with a commensurate amount of lands zoned for park and open space use. Commercial land accounts for approximately 5% of future designated land use. Apart from Totem Lake and the Central Business District in Moss Bay and Totem Lake, which are each zoned 25% commercial, commercially-zoned lands are located in other city neighborhoods primarily in the form of smaller, neighborhood commercial districts. The exception is the Lakeview neighborhood, which contains 19% commercially zoned lands.

Industrial designated and zoned lands account for 3% of city lands. They are predominantly located in the following four neighborhoods and comprise between 7% - 21% of each neighborhood's land area: Totem Lake (21%), Everest (20%), Moss Bay (9%), and Norkirk (7%). A sub-category included in the larger industrial zone is the Light Industrial Technology (LIT) designation. This zoning sub-designation can be found in the Everest, Moss Bay, Norkirk, and North Rose Hill neighborhoods and has recently been the location of conversion from light industrial to office use with Google's Kirkland offices in Everest as a prime example.

The designations of office/multi-family and office account for 2% each of future land use designations. Of the 310 citywide acres zoned for office, Totem Lake accounts for 185 acres or approximately 60% of the total citywide area zoned for office. Smaller pockets of zoned office space are located in the Moss Bay, Lakeview, and Everest neighborhoods.

The future land use designation of institutions account for 2% of citywide comprehensive plan designations. Zoning for institutions is not distributed citywide and can be found in only the Central Houghton, North Rose Hill, and Totem Lake neighborhoods. The designation of transit oriented development account for 1% of future land use and is located in the Lakeview neighborhood and is centered around the South Kirkland Park & Ride station.

A comprehensive plan designation of Greenbelt/Urban Separator exists within the Kingsgate neighborhood accounting for 8% of its designated future land use. Per the published glossary of the current Kirkland Comprehensive Plan, Greenbelt/Urban Separator refers to "areas planned for permanent low density residential within the Urban Growth Area that protect adjacent resource land, environmentally sensitive areas, or rural areas, and create open space corridors within and between the urban areas which provide environmental, visual, and recreational and wildlife benefits. The King County Countywide Planning Policies have designated the RSA 1 zone (in the Kingsgate Neighborhood) as an urban separator." Reflecting the defined use, the zoning for this designation is RSA 1 (low density residential) and the majority of land within the designated Greenbelt/Urban Separator is undeveloped, vacant land with a small number of developed detached single family residential lots.

Exhibit 3.1-4. Comprehensive Plan Designations: Citywide and Neighborhood (Acres*)

Comp Plan Designation	Citywide	Bridle Trails	Central Houghton	Everest	Finn Hill	Highlands	Juanita	Kingsgate	Lakeview	Market	Moss Bay	Norkirk	North Rose Hill	South Rose Hill	Totem Lake
Commercial	497	13	6	5	10		64	18	61	2	60	1	55	26	176
Greenbelt/Urban Separator	80						-	79							2
High Density Residential	367				35		101	82			49	17	70	5	9
Industrial	233			32		2	-	0			23	28			147
Institutions	143		54				-						56		33
Light Manufacturing Park	7						-						7		
Low Density Residential	6,010	402	327	67	1,789	230	1,008	811	85	151	34	296	478	333	1
Medium Density Residential	602	11	23	28	34	16	203	23	73	1	41	7	60	22	60
Office	157			3			1						4	4	145
Office/Multi-Family	177	3	3	5	2		23		16	6	23	9	20	3	64
Park/Open Space	967	30	87	24	340	15	151	32	79	58	15	23	47	6	59
Transit Oriented Development	4						-		4						
Undefined	3	0	0		0	0	0	0	0				2	0	1
Total	9,247	460	499	165	2,210	264	1,551	1,045	316	218	245	381	797	399	697

*Excludes ROW

Source: City of Kirkland, 2015

Exhibit 3.1-5. Comprehensive Plan Designations: Citywide and Neighborhood (Percent*)

Comp Plan Designation	Citywide	Bridle Trails	Central Houghton	Everest	Finn Hill	Highlands	Juanita	Kingsgate	Lakeview	Market	Moss Bay	Norkirk	North Rose Hill	South Rose Hill	Totem Lake
Commercial	5%	3%	1%	3%	0%	-	4%	2%	19%	1%	25%	0%	7%	6%	25%
Greenbelt/Urban Separator	1%	-	-	-	-	-	-	8%	-	-	-	-	-	-	0%
High Density Residential	4%	-	-	-	2%	-	7%	8%	-	-	20%	5%	9%	1%	1%
Industrial	3%	-	-	20%	-	1%	-	0%	-	-	9%	7%	-	-	21%
Institutions	2%	-	11%	-	-	-	-	-	-	-	-	-	7%	-	5%
Light Manufacturing Park	0%	-	-	-	-	-	-	-	-	-	-	-	1%	-	-
Low Density Residential	65%	87%	66%	41%	81%	87%	65%	78%	27%	69%	14%	78%	60%	83%	0%
Medium Density Residential	7%	2%	5%	17%	2%	6%	13%	2%	23%	1%	17%	2%	7%	6%	9%
Office	2%	-	-	2%	-	-	0%	-	-	-	-	-	1%	1%	21%
Office/Multi-Family	2%	1%	1%	3%	0%	-	1%	-	5%	3%	9%	2%	2%	1%	9%
Park/Open Space	10%	7%	17%	15%	15%	6%	10%	3%	25%	27%	6%	6%	6%	2%	8%
Transit Oriented Development	0%	-	-	-	-	-	-	-	1%	-	-	-	-	-	-
Undefined	0%	0%	0%	-	0%	0%	0%	0%	0%	-	-	-	0%	0%	0%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

*Excludes ROW

Source: City of Kirkland, 2015

Exhibit 3.1-6. Comprehensive Plan Map

City of Kirkland Comprehensive Plan Map

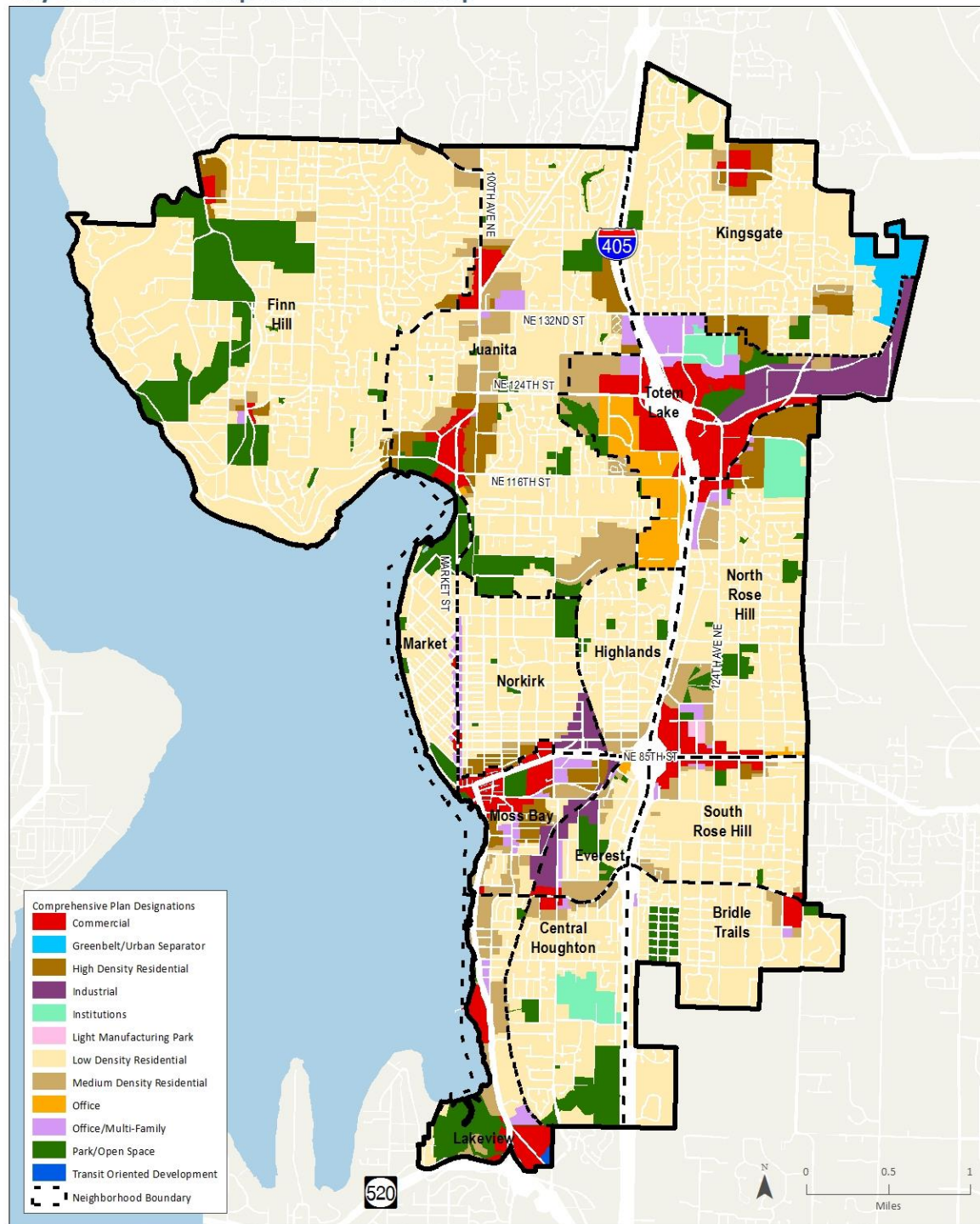


Exhibit 3.1-7. Current Zoning: Citywide and Neighborhood (Acres*)

Zoning Designation	Citywide	Bridle Trails	Central Houghton	Everest	Finn Hill	Highlands	Juanita	Kingsgate	Lakeview	Market	Moss Bay	Norkirk	North Rose Hill	South Rose Hill	Totem Lake
Commercial	497	13	6	5	10	-	64	18	61	2	60	1	55	26	176
High Density Residential	390	-	-	-	35	-	101	80	-	-	49	17	70	5	32
Industrial	240	-	-	32	-	2	-	0	-	-	23	28	7	-	147
Institutions	143	-	54	-	-	-	-	-	-	-	-	-	56	-	33
Low Density Residential	6,091	402	327	67	1,789	230	1,008	890	85	151	33	296	478	334	2
Medium Density Residential	602	11	23	28	34	16	203	25	73	1	41	7	60	21	60
Office	310	3	3	8	2	-	24	-	16	6	23	9	24	7	185
Park/Open Space	967	30	87	24	340	15	151	32	79	58	15	23	47	6	59
Transit Oriented Development	4	-	-	-	-	-	-	-	4	-	-	-	-	-	-
Undefined	3	0	0	0	0	0	0	0	0	-	-	-	2	0	1
Total	9,247	460	499	165	2,210	264	1,551	1,045	316	218	245	381	797	399	697

*Excludes ROW

Source: City of Kirkland, 2015

Exhibit 3.1-8. Current Zoning: Citywide and Neighborhood (Percent*)

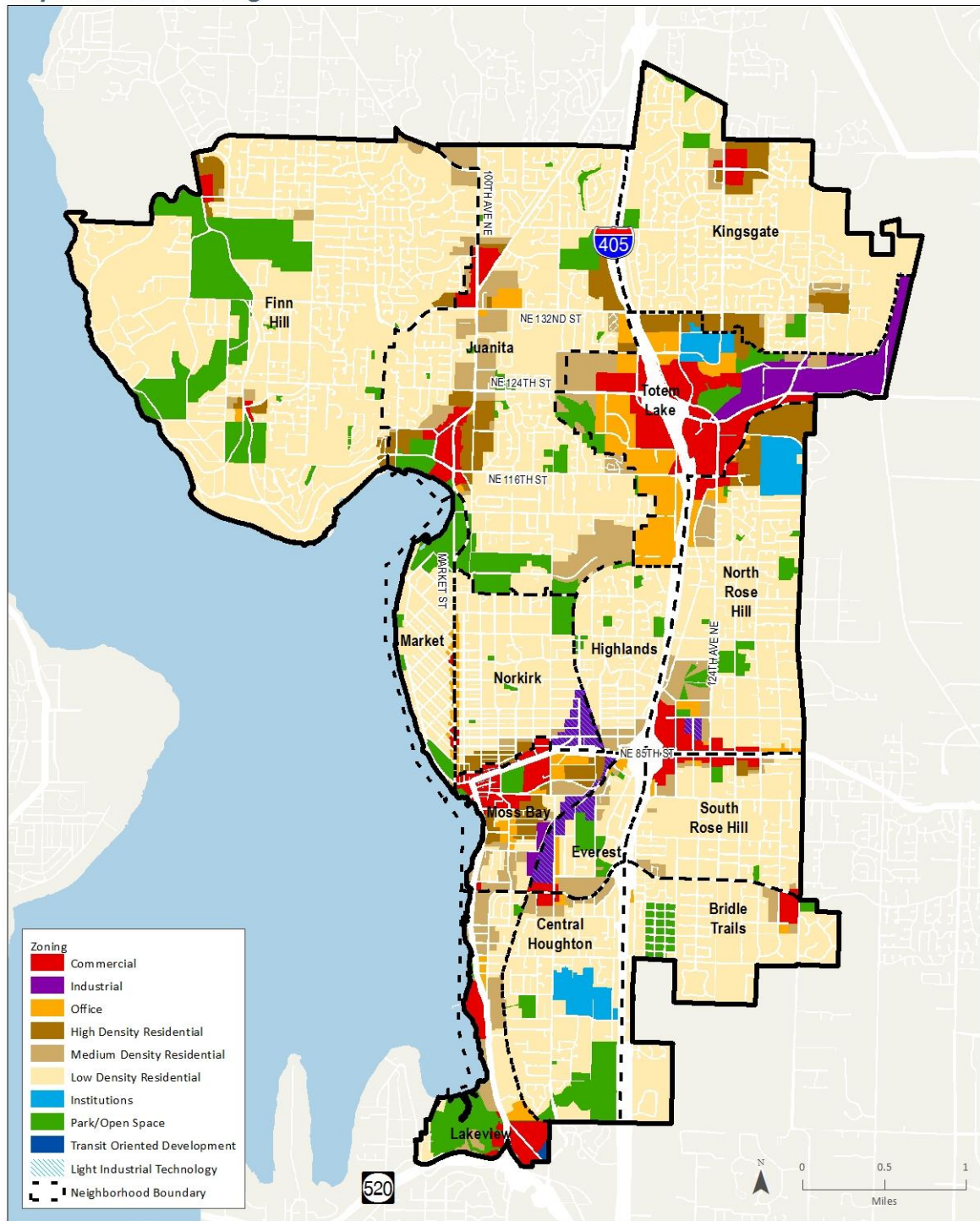
Zoning Designation	Citywide	Bridle Trails	Central Houghton	Everest	Finn Hill	Highlands	Juanita	Kingsgate	Lakeview	Market	Moss Bay	Norkirk	North Rose Hill	South Rose Hill	Totem Lake
Commercial	5%	3%	1%	3%	0%	-	4%	2%	19%	1%	25%	0%	7%	6%	25%
High Density Residential	4%	-	-	-	2%	-	7%	8%	-	-	20%	5%	9%	1%	5%
Industrial	3%	-	-	20%	-	1%	-	0%	-	-	9%	7%	1%	-	21%
Institutions	2%	-	11%	-	-	-	-	-	-	-	-	-	7%	-	5%
Low Density Residential	66%	87%	66%	41%	81%	87%	65%	85%	27%	69%	14%	78%	60%	84%	0%
Medium Density Residential	7%	2%	5%	17%	2%	6%	13%	2%	23%	1%	17%	2%	7%	5%	9%
Office	3%	1%	1%	5%	0%	-	2%	-	5%	3%	9%	2%	3%	2%	27%
Park/Open Space	10%	7%	17%	15%	15%	6%	10%	3%	25%	27%	6%	6%	6%	2%	8%
Transit Oriented Development	0%	-	-	-	-	-	-	-	1%	-	-	-	-	-	-
Undefined	0%	0%	0%	0%	0%	0%	0%	0%	0%	-	-	-	0%	0%	0%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

*Excludes ROW

Source: City of Kirkland, 2015

Exhibit 3.1-9. Current Zoning Map

City of Kirkland Zoning



BERK Date: April, 2015
Source: BERK, City of Kirkland

Totem Lake Planned Action Area

This section addresses land use patterns and development character in the Totem Lake Planned Action Area, which is designated as - one of two major centers in Kirkland and considered an Urban Center and Regional Growth Center; the second key center though smaller is the Downtown Activity Area. This analysis provides a baseline for analyzing the impacts of land use and development in each of the three alternative growth scenarios. As shown in Exhibit 3.1-11 the Planned Action Area boundaries include the entirety of the Totem Lake neighborhood plus small portions of adjacent neighborhoods including Kingsgate, North Juanita, and North Rose Hill, which are included within the boundaries of the Totem Lake Urban Center. The Planned Action Area, inclusive of rights- of- way, is approximately 1,052 acres and represents 9% of the total land area for Kirkland. Exhibit 3.1-11 illustrates land use patterns in the Totem Lake Planned Action Area.

CURRENT LAND USE

As shown in Exhibit 3.1-10, based upon King County Assessor information there is no single predominant land use within the Totem Lake Planned Action Area; multi-family, commercial, and industrial land uses account for roughly equal amounts of land use, with 21%, 20%, and 20% respectively.

Exhibit 3.1-10. Totem Lake Current Land Use

Land Use Category	Acres*	Percent
Multi-Family	187	21%
Industrial	173	20%
Commercial	172	20%
Vacant	119	14%
Institution/Public Facility	82	9%
Office	58	7%
Parks/Open Space	45	5%
Single Family	21	2%
Utilities	5	1%
Undefined	9	1%
Total	870	100%

*Excludes ROW

Source: King County Assessor, 2014

Multi-family housing is located throughout the planned action area, with higher concentrations north of NE 124th Street west of I-405 and north, east, and south of the Evergreen Health Medical Center. An additional pocket of multi-family exists east of Slater Ave NE and north of NE 116th Street.

Commercial properties are generally clustered near the interchange of I-405 and NE 124th Street and along NE 124th Street and Slater AVE NE east of I-405. Numerous strip mall type retail developments exist in the Planned Action Area including Totem Lake Mall, Totem Square, and Totem Lake West. The grocery stores of Fred Meyer and QFC are also located in this area as well as a number of fast food and chain restaurants including Olive Garden, Denny's, Azteca, Pizza Hut, McDonald's, Kentucky Fried Chicken, Jack in the Box, and Wendy's. Three hotel/motels are located here including Courtyard by Marriott, Comfort Inn, and Motel 6. Stand-alone retailers in the area include Value Village, Dunn Lumber, Dania Furniture, Office Max, and Rite-Aid.

A distinguishing feature of commercial development in the Totem Lake Planned Action Area is the high number of auto dealers and auto related retail services. Major auto dealers include Buick, Subaru, Hyundai, Infiniti, Toyota, Chrysler, and Ford. Auto retail service providers include Discount Tires, Northwest Auto and Glass, Big O Tires, Minute Lube, Showcase Auto Rebuild and five gas stations.

Industrial land uses are located primarily south and west of the I-405 and NE 124th Street interchange, south of NE 116th Street, west of I-405, and along the NE 124 Street corridor east of I-405. Composition of the industrial uses in these areas include industrial parks with office space, light industrial, and warehouses.

Vacant lands comprise 14% of the Planned Action Area, the majority of which are located east of I-405 and north of NE 124th Street. Included in the vacant lands category is the designated area for the planned Cross Kirkland Corridor. The majority of vacant lands contain improvements with the exception of a cluster of undeveloped parcels between the southern border of the Kingsgate Neighborhood and NE 126th Place.

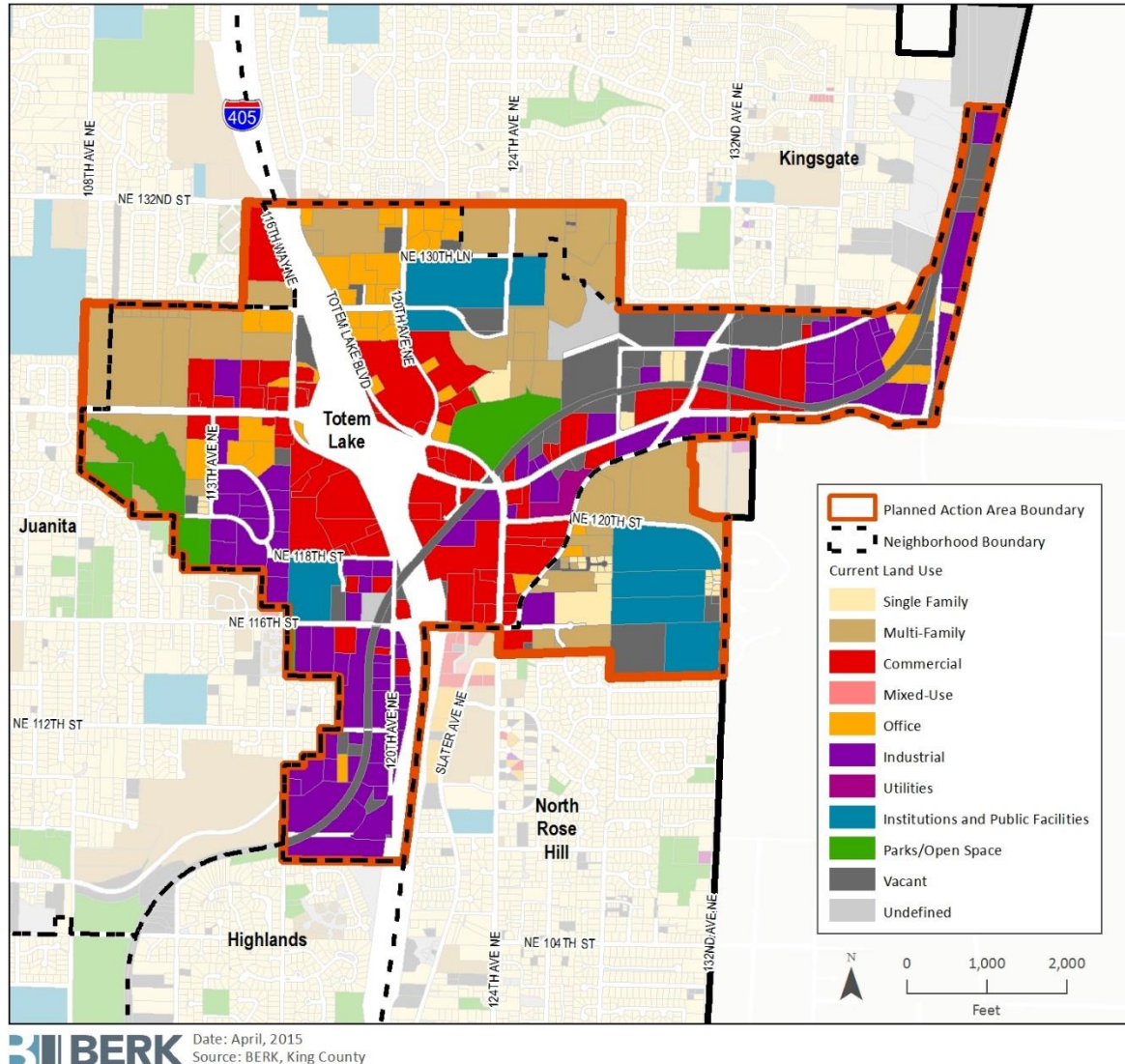
Institutions and public facilities account for 9% of land use in the Totem Lake Planned Action Area. These parcels are comprised of three main landholders: Evergreen Medical Center, Lake Washington Technical College, and the Christ Church of Kirkland.

Office use comprise 7% of land use. A large concentration of office space is located west immediately west and north of the Evergreen Medical Center. An additional smaller concentration of office space is located west of I-405 and south of NE 124th Street between 112th Way NE and 116th Avenue NE. Individual parcels of office use are further dispersed throughout the remainder of the Totem Lake Planned Action Area.

Parks and open space account 5% of land use within the Totem Lake area and include Totem Lake Park and Heronfield wetlands. Utilities account for 1% of land use and is comprised of the single Verizon telephone operations parcel located at the northwest corner of the NE 120th Street and Slater Avenue NE intersection.

Exhibit 3.1-11. Totem Lake Current Land Use Map

Totem Lake Planned Action Area Current Land Use



FUTURE LAND USE DESIGNATIONS AND ZONING

The City of Kirkland Comprehensive Plan's Future Land Use Map (FLUM) establishes future land use designations to guide development within the city. Adopted comprehensive plan designations for the Totem Lake Planned Action Area are mapped in Exhibit 3.1-14 with respective acreages and percentages shown in Exhibit 3.1-12. These designations are implemented by a corresponding range of zoning districts, which are established in the Kirkland Zoning Code (KZC). Adopted zoning designations in the Planned Action Area are mapped in Exhibit 3.1-15 with corresponding acreages and percentages categorized by zoning designation in Exhibit 3.1-13.

Exhibit 3.1-12. Totem Lake Comprehensive Plan Designations*

Comp Plan Designation	Acres*	Percent
Commercial	183	21%
Industrial	147	17%
Office	145	17%
High Density Residential	99	11%
Institutions	89	10%
Office/Multi-Family	74	8%
Medium Density Residential	70	8%
Park/Open Space	59	7%
Greenbelt/Urban Separator	2	0%
Low Density Residential	2	0%
Undefined	1	0%
Grand Total	870	100%

*Excludes ROW

Source: City of Kirkland, 2015

Exhibit 3.1-13. Totem Lake Zoning Designations*

Zoning Designation	Acres*	Percent
Office	195	22%
Commercial	183	21%
Industrial	147	17%
High Density Residential	121	14%
Institutions	89	10%
Medium Density Residential	71	8%
Park/Open Space	59	7%
Low Density Residential	4	0%
Undefined	1	0%
Total	870	100%

*Excludes ROW

Source: City of Kirkland, 2015

Note: Due to the presence of the “hybrid” Office/Multi-Family comprehensive plan designation, as well as the Greenbelt/Urban Separator designation, there is not a one-to-one relationship between comprehensive plan land use designations and zoning.

The largest future land use designation is commercial with 21% and is centered within the Planned Action Area at the I-405 and NE 124th Street interchange with an additional large area of commercial extending east between NE 124th Street and Slater Avenue NE. Zoning matches future land use with 21% of the Totem Lake Planned Action Area zoned commercial.

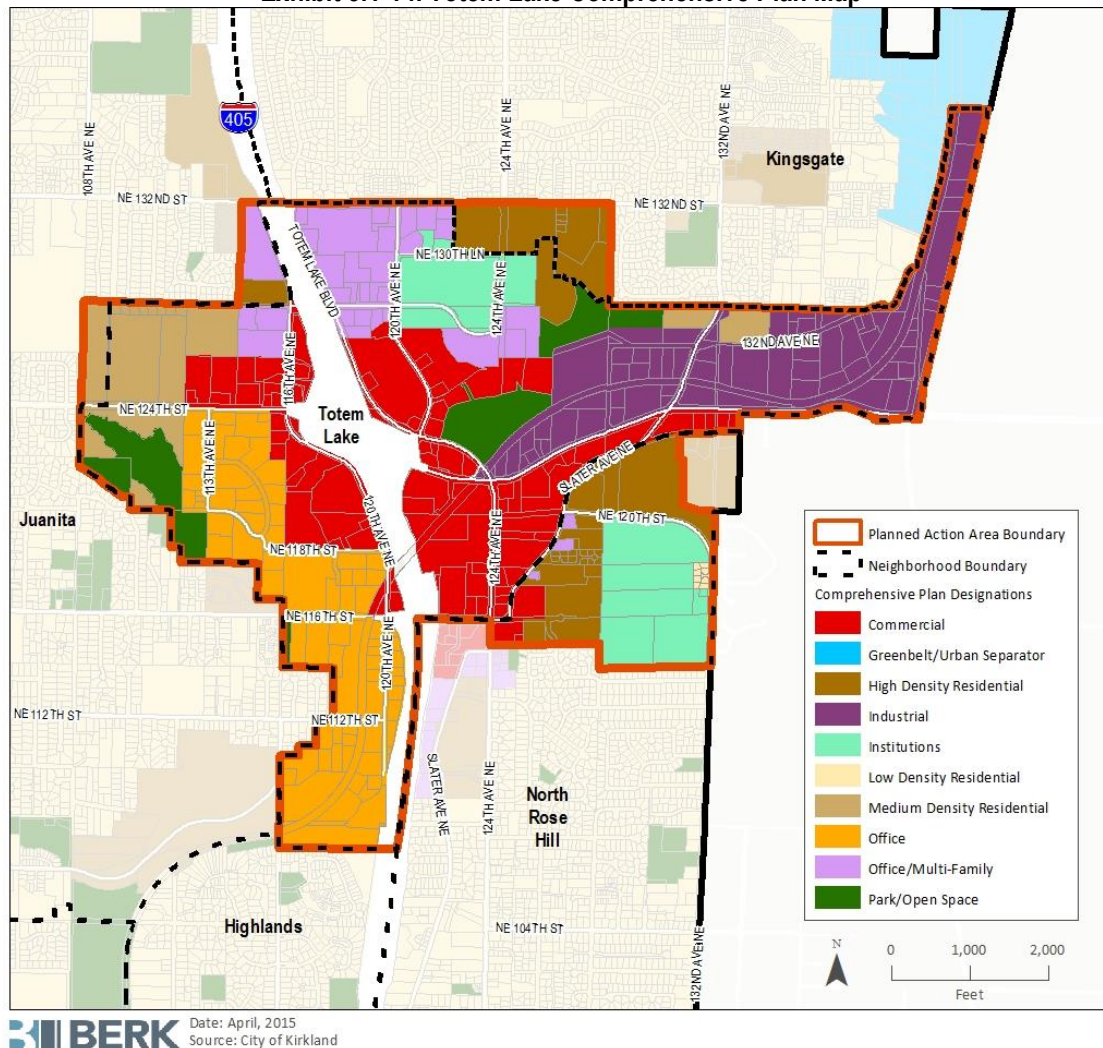
Industrial future land is located exclusively east of I-405 and north of NE 124th Street to the eastern border of the Planned Action Area and accounts for 17% of future land use. Zoning matches the future land use map with 17% of lands zoned industrial.

Office and mixed-use office comprise 25% of future land use. Future office land use is located west and south of the I-405 and NE 124th Street commercial core with office mixed-use located north of the commercial core both east and west of I-405 with additional pockets located south of the NE 120th Street and Slater Avenue NE intersection. Zoning for future office land use is designated office while the office mixed-use future land use is split between both office and high density residential zoning designations.

High density and medium residential future land use account for 11% and 8% of future land use respectively. High density residential is located primarily northeast of the Evergreen Medical Center and east of Slater Avenue NE and medium density future land use is located at the western corner of the Planned Action Area with additional smaller areas located east and west of 132nd Street NE along the neighborhood border with Kingsgate. High density residential zoning comprises 14% of the Planned Action Area reflecting its dual use both for future high density residential land use and portions of future office mixed-use. Medium density zoning accounts for 8% of the planned action area.

Parks and open space account for both 7% of future land use and zoning within the Totem Lake Planned Action Area. This is expected to change in the near term as the Cross Kirkland Corridor Trail plan is put into place. Low density residential accounts for less than 1% of both future land use and zoning.

Exhibit 3.1-14. Totem Lake Comprehensive Plan Map



3-18



Impacts

Impacts Common to All Alternatives

However, the distribution of growth between neighborhood centers, including the CBD and the Totem Lake Planned Action Area, and the allowable density and intensity of development in these areas, differ among alternatives. The amount of growth anticipated in other areas outside of the designated centers is consistent for all alternatives. As development occurs over time, existing land uses will convert to land uses and intensities consistent with the Comprehensive Plan and implementing zoning under all alternatives.

All alternatives provide for significant additional growth and development in the City. Increased development will result in demolition of existing buildings, potential displacement of existing housing and employment, and increasing urbanization, particularly in the identified centers (Totem Lake, CBD, Neighborhood Centers, and LIT areas). Increased urban development will result in greater economic and pedestrian activity, particularly in centers. The increased activity will likely increase the demand for transit use. Outside of these centers, additional growth will occur, but it will be distributed across a much larger area and will be generally consistent with existing development patterns, including the density and intensity of existing development.

Alternative 1 (Existing Plans - No Action)

Kirkland Planning Area

Impacts associated with Alternative 1 are generally consistent with the impacts identified under the impacts common to all alternatives. Alternative 1 has sufficient capacity within each land use district to accommodate the housing and employment allocations at the subarea or neighborhood planning level.

Totem Lake Planned Action Area

Impacts associated with Alternative 1 are generally consistent with the impacts identified under the impacts common to all alternatives. Alternative 1 has sufficient capacity to accommodate the growth allocations for housing and employment in Totem Lake.

Alternative 2 (Totem Lake/Downtown Focus)

Kirkland Planning Area

Alternative 2 would result in greater development intensity in Totem Lake and the CBD for both housing and employment compared to the No Action alternative. The increased development intensity would be accommodated through increases in permitted building heights and maximum Floor to Area Ratio (FAR).

Approximately 894 additional housing units would be developed in Totem Lake and 300 units in the Central Business District under Alternative 2 compared to the No Action alternative. Totem Lake would grow by an additional 2,347 jobs, relative to the No Action Alternative, and employment growth the CBD would be reduced by that same amount. As a result, growth in the CBD would be more evenly split between housing and jobs than under the No Action Alternative, and growth in Totem Lake would place more emphasis on employment. Overall, significantly less growth in housing and employment, and less change in development style, would occur in the neighborhood centers under Alternative 2 compared to the No Action Alternative. The gradual transition of light industrial to office uses would continue in the Norkirk LIT and North Rose Hill LIT.

The taller building heights proposed as part of Alternative 2 in Totem Lake would result in changes to the streetscape including the potential for greater shadowing, but increased pedestrian activity would also be likely to occur as a result of the greater development intensity. Higher density development also makes transit service more viable and may result in opportunities to reduce vehicle trips to accommodate new development.

Alternative 2 adds capacity for an additional 300 units in the CBD at Parkplace. Increased capacity in Totem Lake to accommodate the housing and employment allocation would be needed under this Alternative and would result from building height and FAR increases with certain zoning districts.

Totem Lake Planned Action Area

Future land use and zoning designations under Alternative 2 are generally consistent with those identified under Alternatives 1 and 3. However, additional housing and employment growth has been allocated to Totem Lake under this alternative. A total of 3,444 housing units have been allocated to Totem Lake, which represents an increase of 894 units over Alternative 1 and 2,196 above Alternative 3. For employment growth, 10,763 jobs have been allocated to Totem Lake, which is an increase of 2,347 jobs over the Alternative 1 and an increase of 2,527 over Alternative 3. To accommodate the necessary development capacity under this alternative, increased development intensity in the form of increases in building heights and modified floor area ratio (FAR) limits are proposed in several zoning districts. A significant portion of future development in Totem Lake will be mixed-use with an emphasis on continuity and consistency in urban design and the built form as opposed to areas with single land uses. The additional development intensity proposed in Totem Lake will require design and development standards to ensure an appropriate transition to outlying areas to minimize any potential impacts. Standards that address buffers and landscaping, shadowing and noise impacts should be addressed where high intensity development transitions to lower intensity development. While height, bulk, and shading effects of individual developments cannot be accurately predicted at the planning level, Exhibit 3.1-16 shows some example building typologies that could develop under the increased height limits.

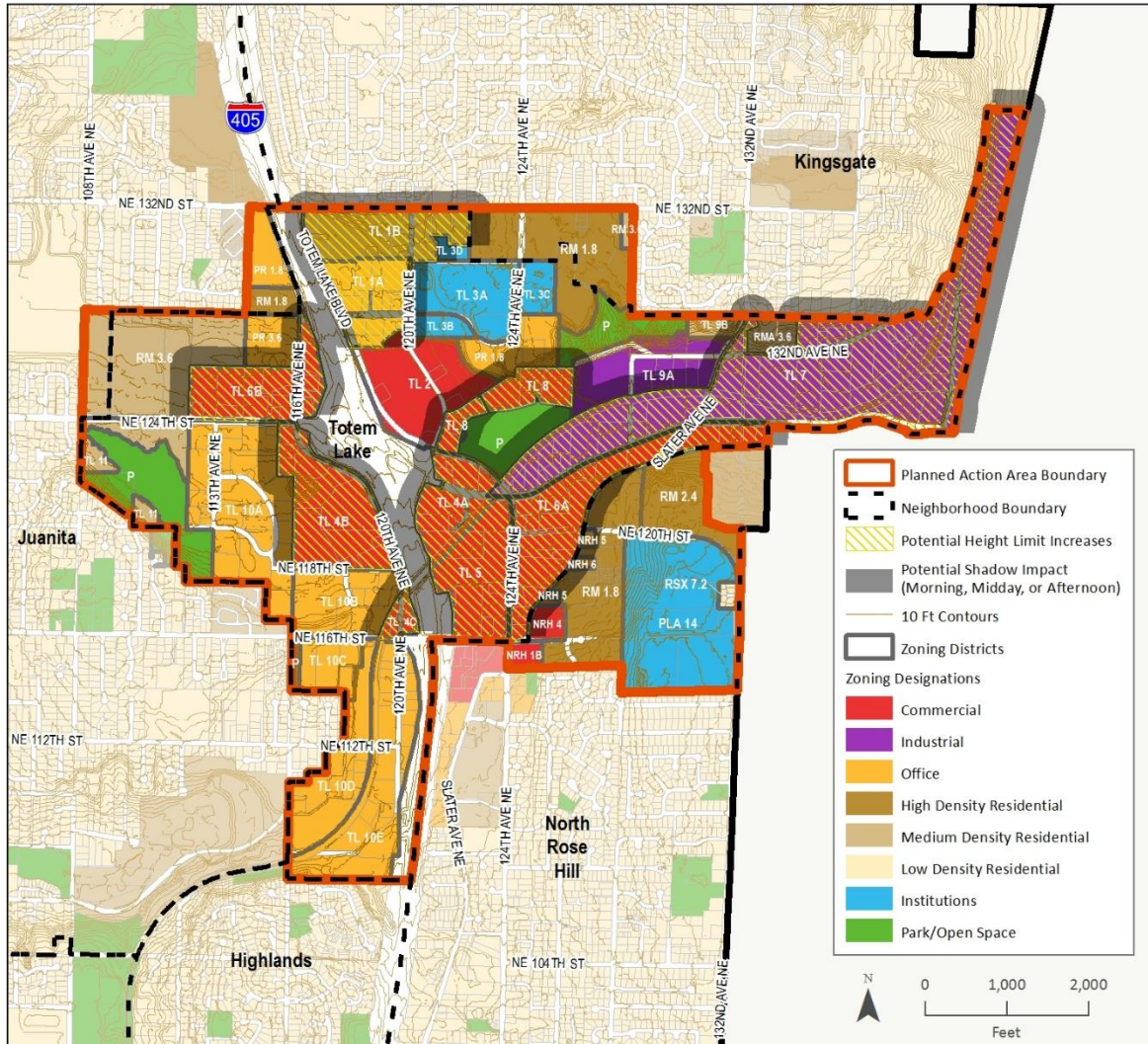
Exhibit 3.1-16. Potential Building Types

Multifamily	
	
Commercial and Office	
	
	

Increased building heights have a potential to produce height/bulk and shading impacts on nearby development. Exhibit 3.1-17 identifies locations where the proposed height increased could create such impacts, based on the heights proposed and prevailing sun angles for the Puget Sound region. Lower density residential development

located in close proximity to area experiencing height increases would be especially susceptible to height, bulk, and shading impacts, which could potentially occur in the identified areas unless mitigated through development and design standards applied during the design review process.

Exhibit 3.1-17. Totem Lake Shadow Impact Analysis



Alternative 3 (Distributed Growth)

Kirkland Planning Area

Alternative 3 results in a greater distribution of growth between Totem Lake, the CBD, LIT areas, and neighborhood centers compared to Alternatives 1 and 2. The amount of housing growth in the neighborhood centers would be increased by 712 units and 1,906 units compared to Alternatives 1 and 2 respectively. Housing growth in the CBD is highest under this alternative resulting in an increase of 590 and 290 units compared to Alternatives 1 and 2 respectively.

For employment, Alternative 3 results in Totem Lake taking a similar amount of new growth compared to Alternative 1 and a decrease of 2,572 jobs compared to Alternative 2. In Alternative 3 the CBD has the lowest employment growth of the three alternatives, with a reduction of 5,625 and 931 jobs compared to Alternatives 1 and 2 respectively. The neighborhood centers are also allocated significantly more employment growth under Alternative 3 with an allocation 2,394 jobs, compared to 286 jobs for both Alternatives 1 and 2. The increased employment growth in the neighborhood centers and LIT areas may result in compatibility impacts on adjacent residential neighborhoods if not mitigated through design standards. However, the increased employment growth in these areas may allow for better housing and employment integration to reduce commute distances and increase transit use.

Alternative 3 does not have sufficient zoned capacity in the CBD to accommodate the housing allocation. Zoning changes to accommodate an additional 590 units are needed to provide sufficient capacity for housing. For employment Alternative 3 does not have sufficient zoned capacity to accommodate employment allocations to the neighborhood centers. Capacity for an additional 2,101 jobs is needed in the neighborhood centers. Capacity increases may be accommodated by land use designation changes, increased FAR, increased building heights, or other measures.

The LIT zones are allocated additional employment growth under this alternative. A total of 3,287 jobs are allocated to the LIT zones resulting in an additional 1,306 jobs compared to both Alternatives 1 and 2 and the existing employment capacity. Employment capacity increases would be required to accommodate the increased employment allocation. The increased capacity may occur in the form of building height or FAR increases. Increases in jobs and the overall daytime population in the LIT zones may increase support for other types of commercial uses such as restaurants and entertainment, cultural and recreational facilities.

Totem Lake Planned Action Area

Future land use and zoning designations under Alternative 3 are generally consistent with those identified under Impacts Common to All Alternatives as Alternative 3 allocates the least housing and employment growth to Totem Lake of all the alternatives. Totem Lake currently has sufficient development capacity to accommodate the housing allocation of 1,248 dwelling units and the employment allocation of 8,236 jobs under this alternative.

Mitigation Measures

Incorporated Plan Features

KIRKLAND PLANNING AREA / TOTEM LAKE PLANNED ACTION AREA

Proposed Comprehensive Plan Policies

- Support land use patterns that promote public health.
- Factor availability of transit into decisions about future growth.
- Encourage land uses that are complementary with the Cross Kirkland Corridor (CKC).
- Update and clarify definitions & guidance for commercial and mixed use areas.
- Emphasize importance of streets and CKC as parts of Kirkland's open space network.

Applicable Regulations and Commitments

KIRKLAND PLANNING AREA

- Kirkland Zoning Ordinance
 - Chapter 92, Design Regulations, Kirkland Zoning Ordinance

- Chapter 112 Affordable Housing Incentives
- Special regulations that require developments to be designed to limit impacts on adjacent residential neighborhoods (Example: Section 52.12 Juanita Business District)
- Neighborhood Plans for Totem Lake, the CBD, and other neighborhood centers

TOTEM LAKE PLANNED ACTION AREA

Totem Lake Neighborhood Plan (Comprehensive Plan XV.H) Goals and Policies

- Goal TL-8: Ensure that public and private development contribute to a lively and inviting character in Totem Center.
- Policy TL-8.1: Implement design principles in the Totem Center.
- Policy TL-10.2: Emphasize high quality urban and architectural design in redevelopment of the Totem Lake Mall
- Goal TL-11: Acquire and develop community facilities, such as a neighborhood park and community center.

Kirkland Zoning Ordinance

- Chapter 55, Totem Lake (TL) Zones
 - Section 55.09 – Use Zone Chart and Special Regulations
- Chapter 142 – Design Review
- Chapter 92 – Design Regulations
 - Section 92.05.7 – Design Districts in the Totem Lake Neighborhood

Other Potential Mitigation Measures

KIRKLAND PLANNING AREA

- Refine the Design Guidelines applicable to centers (Totem Lake, CBD, neighborhood centers, LIT areas) to address the increased scale and intensity of development resulting from increased FAR and building heights under Alternative 2 and increased neighborhood center development intensity under Alternative 3.

TOTEM LAKE PLANNED ACTION AREA

- Refine the Design Guidelines for Totem Lake to address the increased scale and intensity of development resulting from increased FAR and building heights.
- Require a review of potential height, bulk, and shadow impacts during the design review process for development in zones where additional building height is proposed adjacent to lower density residential zones. For areas where shading analysis has already been conducted as part of another study, the City may defer such analysis (e.g., 2004 Comprehensive Plan EIS shading analysis of zone TL 1B along NE 132nd Street).

Significant Unavoidable Adverse Impacts

Indirectly, all alternatives result in new construction to accommodate population and employment growth. New construction will result in changes of use and the characteristics of parcels of land, including potential demolition and displacement. While these impacts could be partially mitigated by the application of development regulations including design regulations and design standards, some level of change in use and character is an unavoidable aspect of growth.

3.2 Plans and Policies

Affected Environment and Methodology

This section of the DEIS describes pertinent plans, policies and regulations that guide or inform the proposal. Plans and policies evaluated in this section include the Growth Management Act, Vision 2040, and the King County Countywide Planning Policies, each establishing a regulatory or policy framework with which comprehensive plans must be consistent. In addition, policy guidance established by the City's current Comprehensive Plan provides a basis for evaluating change and potential impacts associated with the proposal.

For the purpose of this analysis, the general direction of anticipated policy changes to the City's Comprehensive Plan are noted. The Final EIS will further evaluate any specific policy or regulatory proposals that emerge from the City's planning process, after a draft of the 2035 Comprehensive Plan is published. For this Draft EIS analysis, the most significant components of the proposal and alternatives identified at this time include:

- Distribution of updated population/housing and employment forecasts, consistent with the King County Countywide Planning Policies ;
- Integration of the Finn Hill, Juanita, and Kingsgate annexed areas into the Comprehensive Plan;
- Incorporation of new and updated neighborhood plans, including those for the annexed areas;
- Incorporation of long-range and master plans, including the Cross Kirkland Corridor, Totem Lake Park, Surface Water, Transportation Master Plan and the Parks, Recreation and Open Space Plan;
- Incorporation of the 10 Minute Neighborhood Analysis conducted as part of the Comprehensive Plan update process.

Washington State Growth Management Act

The Washington State Growth Management Act (GMA) was adopted in 1990 in response to concerns over uncoordinated growth and its impacts on communities and the environment. The GMA includes 13 planning goals to help guide its implementation. These goals address the following: 1) encouraging growth in urban areas, 2) reducing sprawl, 3) encouraging multimodal transportation systems, 4) encouraging a variety of housing types, including affordable housing, 5) encouraging economic development, 6) recognizing property rights, 7) ensuring timely and fair permitting processes, 8) protecting agricultural, forest and mineral lands, 9) retaining and enhancing open space and supporting recreation opportunities, 10) protecting the environment, 11) encouraging citizen involvement in planning processes, 12) ensuring adequate public facilities and services, and 13) encouraging historic preservation. A fourteenth goal was added to the GMA to reference the use preferences of the Shoreline Management Act.

Comprehensive plans are mandated by the GMA to include specific chapters, referred to as elements. Required elements include land use, housing, capital facilities, utilities, transportation, economic development and parks and recreation. Cities are also allowed to include optional elements in their comprehensive plans. The GMA and other state and regional policies provide specific guidance for the contents of these elements.

The GMA also requires that plans address internal consistency, external consistency, provision of sufficient land capacity to meet growth targets, establishment of level of service (LOS) standards, and public participation. Internal consistency means that all elements of a plan are consistent with the future land use map contained in the land use element, and that the different elements are mutually supportive. For instance, the transportation projects outlined in the transportation element must support the land use patterns called for in the land use element. The requirement for external consistency means that the comprehensive plan must be coordinated with adjacent jurisdictions. A city must designate adequate land to accommodate twenty-year growth forecasts from the Office of Financial Management, based on the requirement to provide sufficient capacity to meet growth targets. A comprehensive plan must include LOS standards for transportation facilities and may include LOS

standards for other types of public facilities as well. The comprehensive planning process must include a public participation program providing for early and continuous opportunities to share input and ideas for the plan and its implementation.

Implementation of comprehensive plans is accomplished largely through development regulations and capital budget decisions. The GMA states that jurisdictions' development regulations and budget decisions must conform to comprehensive plans.

Vision 2040

Vision 2040, developed by the Puget Sound Regional Council (PSRC) and its member governments in King, Kitsap, Pierce and Snohomish Counties, is the regional plan for where and how growth will occur in the four-county region. Vision 2040 includes a regional growth strategy, an environmental framework, policies to guide growth and development, implementation actions, and measures to track progress. The growth strategy is based on a centers concept, in which the majority of the region's growth is directed to centers within five Metropolitan Cities and 13 Core Cities. Kirkland is a Core City, and Totem Lake is a designated regional growth center. As a regional growth center, the Totem Lake neighborhood is required to establish residential and employment growth targets that accommodate a significant share of the City's growth. The Totem Lake regional growth center also receives priority when applying for federal funding for infrastructure, such as transportation facilities, due to its regional growth center designation.

Under Vision 2040, new regional growth centers are required to meet the following standards:

- The center must have a minimum activity level (population + employment) of 18 activity units per gross acre.
- Local land use plans and regulations for the center must establish a target activity level (population + employment) of at least 45 activity units per gross acre, including both residential and employment growth targets. In addition, the center must have sufficient zoned development capacity to accommodate the target levels of growth.

Vision 2040 includes multi-county planning policies with which all jurisdictions in the four-county area are required by the GMA to comply. Vision 2040 divides the multi-county planning policies into three categories: 1) general, 2) environment, and 3) development patterns. The general policies call for coordinated planning, monitoring Vision 2040's implementation and performance, and overcoming fiscal challenges to find the revenues necessary to maintain and operate services and facilities and to fund and develop new facilities to serve growth. The environmental policies call for greater environmental sustainability through improved coordination and increased commitment to protecting habitat, restoring natural systems, conserving resources and developing green technologies. The development pattern policies call for concentrating growth and future development into existing urbanized areas, in order to create more vibrant communities, reduce reliance on the automobile, minimize growth in the region's rural areas, protect resource lands and ensure that resources are available to meet the needs of future generations.

King County Countywide Planning Policies

The King Countywide Planning Policies (CPPs) were developed by the King County Growth Management Council in collaboration with cities in the county, and adopted and ratified in 2013. The CPPs address growth management issues, provide a countywide vision for the future and support Vision 2040 and the GMA. The GMA requires that local comprehensive plans be consistent with the CPPs.

The vision set forth in the CPPs calls for King County to be characterized by four types of land uses: 1) protected critical areas, such as wetlands and fish and wildlife conservation areas; 2) viable rural areas permanently protected with a clear boundary separating urban growth areas from rural areas; 3) bountiful resource lands including farms and forests; and 4) vibrant, compact, diverse urban communities. The vision further describes a

centers strategy that is consistent with and supports the Vision 2040 regional growth strategy. The strategy aims to concentrate housing and employment growth in designated centers, providing urban and industrial places with higher intensity development and concentrations of services and amenities to support growth. The Totem Lake neighborhood is designated as an urban center in the CPPs.

Growth target policies in the CPPs set local growth targets for all cities within King County. These targets are based on 20-year growth forecasts prepared by the Washington Office of Financial Management (OFM) and are allocated to all jurisdictions in King County through a collaborative planning process between the cities and the County. Kirkland's growth targets for the 2015-2035 planning period are 8,361 new housing units and 22,435 new jobs.

City of Kirkland Comprehensive Plan

The City of Kirkland's current Comprehensive Plan was adopted in 1995 and has been regularly amended through 2013 to meet the requirements of the GMA. The City of Kirkland's current Comprehensive Plan includes the following elements: General; Community Character; Natural Environment; Land Use; Housing; Economic Development; Transportation; Parks, Recreation and Open Space; Utilities, Public Services and Human Services, Capital Facilities; and Implementation Strategies. It also includes 13 neighborhood plans, subarea plans for two street corridors, and the City's shoreline area plan. The overall policy framework for these elements and other pieces is established by a vision statement and 17 framework goals, which are mutually supportive.

The current vision statement incorporated into the Comprehensive Plan describes the vision for Kirkland as being a place that is attractive to live and work, is safe and well maintained, and has a strong and diverse economy, a vibrant downtown and an employment center at Totem Lake Urban Center, an efficient multi-modal transportation system, and excellent public services and facilities. The vision describes Kirkland as connected to Lake Washington, able to accommodate growth and change while maintaining linkages to the past, and able to protect natural systems. The vision also describes Kirkland as a city where people are friendly and engaged in decision making.

The 17 existing framework goals can be summarized as:

- Maintaining and enhancing City character;
- Supporting a strong sense of community;
- Maintaining neighborhoods that are desirable to live in;
- Promoting a strong and diverse economy;
- Protecting the environment;
- Protecting historic resources;
- Encouraging sustainability;
- Supporting linkages to Lake Washington;
- Providing access for pedestrians and bicyclists;
- Creating a multi-modal transportation system;
- Supporting parks and recreation;
- Ensuring public safety;
- Providing public facilities and services that meet standards;
- Planning for a fair share of regional growth;
- Collaborating to solve regional problems;

- Promoting active citizen engagement; and
- Establishing fair and predictable development regulations.

The Comprehensive Plan Amendment would replace the adopted Framework Goals with a set of guiding principles that describe the values that Kirkland most desires to embody in the future:

Livable:

- Quality of Life – Safe and well-maintained neighborhoods with convenient access to parks, recreational facilities, the waterfront, community gathering places, excellent schools, and nearby services.
- Diverse and Affordable – Neighborhoods containing homes and businesses for a variety of incomes, ages, and lifestyles.
- Community Design – High quality and attractive architectural design and landscaping, and preservation of historic buildings and sites.

Sustainable:

- Ecological – Natural systems and built structures that protect and enhance habitats, create a healthy environment, address climate change, and promote energy efficiency.
- Economic – A vibrant economy offering choices in living wage jobs, businesses, services, and entertainment throughout the community.
- Social – Health and human services that fulfill the basic needs of all people without regard to income, age, race, gender, or ability.

Connected:

- Sense of Community – Community involvement in government, schools, civic events, and volunteer activities creating a sense of belonging through shared values.
- Accessible – Safe, well-maintained, and extensive systems of roads, bicycle routes, pedestrian paths, and transit corridors for all users that interconnect neighborhoods and connect the region.
- Technology – Reliable, efficient, and complete systems for residents and businesses to be connected, informed, and involved.

The land use element describes the pattern of land uses and intensities envisioned for the City. The fundamental goal of the land use element is to maintain a balanced and complete community by retaining the community's character and quality of life, while accommodating growth and minimizing traffic congestion and service delivery costs. Policies in the element support this goal, as does the future land use map. The future land use map establishes a long-range land use pattern for the city that is primarily residential, but is balanced with neighborhood centers, commercial districts, and Light Industrial Technology (LIT) areas distributed along transportation routes. The largest of these are Totem Lake and the Central Business District. Others include Bridle Trails, Houghton, Kingsgate, Rose Hill, Juanita and Yarrow Bay, as well as the Everest and Norkirk LIT areas. The remaining elements of the Comprehensive Plan are consistent with and support the land use element.

Totem Lake Neighborhood Plan

The Totem Lake Neighborhood Plan was adopted in 2002 and is part of the current Comprehensive Plan. Totem Lake is home to many city residents and some of the city's largest employers. The neighborhood plan includes policy direction to shape growth and development in Totem Lake, strengthen its role as an economic engine and a hub of commercial and health care services for the city, and to support diverse residential areas.

The plan envisions the most intense development in the Totem Lake Business District, focused around the Interstate 405 and NE 124th St interchange and including the Evergreen Healthcare campus, surrounding medical offices, Totem Lake Mall, Totem Lake Park, a regional transit facility, and a mix of other uses. The plan calls for the transformation of the district into a walkable, high-density community that provides greater housing and employment opportunities. Specific objectives for the business district include expansion of the hospital campus, enhancing amenities at the park, continued growth of light industrial uses, redevelopment of the PARMAC office center, and redevelopment of a number of properties around Interstate 405 to create a dense, mixed-use, pedestrian-friendly urban form. The Totem Lake neighborhood plan is being updated as part of the Comprehensive Plan update. The draft Totem Lake plan is consistent with the general direction of the current plan.

Impacts

Impacts Common to All Alternatives

GROWTH MANAGEMENT ACT

Kirkland Planning Area

The alternatives examine three different approaches for accommodating the City's adopted 2035 housing and employment growth targets. While the three alternatives distribute growth differently, all accommodate the 2035 growth targets and emphasize locating the majority of growth in designated centers. Focusing growth in this way is consistent with GMA policies that seek to encourage urban growth in urban areas and to prevent sprawl.

The City's current Comprehensive Plan is GMA-compliant, and proposed plan policies would carry forward existing plan direction consistent with the major goals of the GMA that seek to focus growth in urban areas with adequate services, provide for environmental protection, encourage economic development, support efficient transportation systems, protect private property rights and require that adequate public services are available concurrent with new development. One potential compatibility issue with the GMA goals is the proposal to target additional growth in the Eastern Industrial District of the Totem Lake Planned Action Area, which is adjacent to lands designated for agricultural use in the Sammamish Valley. Without consideration of measures to address design and setbacks, these policies would be inconsistent with guidance provided by the GMA, Vision 2040 and CWPPs to protect rural and agricultural areas. Please see Exhibit 3.2-1 below for a summary assessment of consistency of the alternatives with GMA goals.

Exhibit 3.2-1. Consistency with Growth Management Act Goals

GMA Goal	Discussion
Encourage growth in urban areas	All alternatives meet the 2035 housing and employment targets and focus growth within the City's existing city limits, with a specific focus in the downtown and Totem Lake Urban Center.
Reduce sprawl	
Protect rural character	The northeast boundary of the Kirkland Planning Area adjoins designated rural and agricultural lands in the Sammamish Valley in unincorporated King County. City land use designations in this area are greenbelt/urban separator and light industrial uses. The lands designated for greenbelt/urban separator uses provide a buffer that helps protect the adjoining rural agricultural use, and the area is also characterized by a sharp topography change that helps buffer rural lands. The lands designated for light industrial uses are located within the Eastern Industrial District of the Totem Lake Planned Action Area. Proposed plan policies would target additional growth in this area. The City

GMA Goal	Discussion
	should consider amendments to these policies to include provisions for transitions or buffers between the Eastern Industrial District and the adjoining rural area.
Encourage an efficient multimodal transportation system	The City is preparing an updated Transportation Master Plan that will inform the transportation element of the updated Comprehensive Plan. All action alternatives are consistent with the preliminary draft Transportation Master Plan, which states that a main principle of the Master Plan is the need for the transportation system to be multimodal.
Encourage a variety of housing types, including affordable housing	All alternatives could accommodate a variety of residential densities and housing types. Consistent with the existing Plan vision and policy guidance, diverse and affordable housing would be available throughout the City as identified as part of the updated vision statement (see Section 2.5 of this Draft EIS).
Promote economic development	All alternatives can accommodate 2035 forecast employment targets. Consistent with the existing plan policy guidance, proposed draft guiding principles address a vibrant economy offering choices in living wage jobs, businesses, services and entertainment throughout the community. ¹
Recognize property rights	All alternatives provide for a reasonable use of property.
Ensure timely and fair permit procedures	The proposal does not include any changes to permit procedures and it is anticipated that the City will continue to process permits consistent with its adopted code.
Protect agricultural, forest and mineral lands	The Kirkland Planning Area does not contain any designated agricultural, forest or mineral lands. However it is adjacent to designated agricultural lands in the Sammamish Valley in unincorporated King County. City lands adjacent to these agricultural lands are designated for greenbelt/urban separator and light industrial uses. The lands designated for greenbelt/urban separator uses provide a buffer that helps protect the agricultural lands. The lands designated for light industrial uses are located within the Eastern Industrial District of the Totem Lake Planned Action Area. Proposed plan policies would target additional growth in this area. The City should consider amendments to these policies to include provisions for transitions or buffers between the Eastern Industrial District and the Sammamish Valley.
Retain and enhance open space and support recreation opportunities	All alternatives would incorporate the policy guidance from the City's draft Parks, Recreation and Open Space Plan, which seeks to retain and enhance open space and support parks and recreation.

¹ City of Kirkland. *Draft Vision Statement and Guiding Principles*. March 18, 2014.

GMA Goal	Discussion
Protect the environment	Under all alternatives, the updated Comprehensive Plan would carry forward an updated environment element from the current Comprehensive Plan. Consistent with the existing plan policy guidance, the draft vision statement describes Kirkland’s vision of a model sustainable city that values preserving and enhancing the natural environment for current and future generations (see Section 2.5 of this Draft EIS). No changes to the City’s critical areas ordinance or Shoreline Master Program are proposed as part of the Comprehensive Plan update. However, the City has identified a need to update the critical areas ordinance, and work is underway to do so.
Ensure adequate public facilities and services	As required by GMA, all alternatives would include policies that assure public services and utilities at the time of development and would include an update to the capital facilities element and capital improvement program.
Foster citizen participation	An extensive public participation program has supported, and will continue to support, development of the City’s draft Comprehensive Plan. The program began with community visioning events in the fall of 2013 that engaged hundreds of people. Public engagement continued in 2014 and 2015 with open houses, community events, Planning Commission meetings and public hearings. The City has offered a variety of opportunities for community members to engage remotely in the planning process, such as a signing up for the “Kirkland 2035” email update list, communicating ideas and questions via a project email and phone number, and visiting an online “Learning Center” that includes resources such as monthly bulletins on the Comprehensive Plan update process, draft Comprehensive Plan materials and educational publications and videos. The public will continue to be given opportunities to provide comments and guide revisions to the draft plan until it is adopted later in 2015.
Encourage historic preservation	Under all alternatives, historic preservation would continue to be encouraged. Historic preservation is discussed in the existing Comprehensive Plan Community Character element, which is being carried forward to the updated Comprehensive Plan with no substantive amendments.

Source: 3 Square Blocks, 2015

As required by the GMA, the City has conducted a comprehensive public involvement program for this plan update, described in the Public Participation section below. The proposal would extend the Comprehensive Plan planning horizon to 2035, consistent with GMA requirements. The proposal would also amend Comprehensive Plan policies to incorporate a number of changes that are recommended and/or required by GMA.

Evaluation of internal consistency of proposed new or updated Comprehensive Plan goals and policies and newly incorporated elements, including the new neighborhood plans; Cross-Kirkland Corridor Plan; Totem Lake Park Plan; Surface Water Master Plan; Transportation Master Plan; Parks, Recreation and Open Space Plan; and Comprehensive Water Plan, will be evaluated in the Final EIS following the issuance of the draft Comprehensive Plan.

Totem Lake Planned Action Area

As described in Chapter 2, the Totem Lake Planned Action Area consists mostly of areas within the boundary of the Totem Lake regional growth center. Consistent with the role of a regional growth center, the Totem Lake Planned Action Area is intended to absorb job and housing growth and support the GMA goal of encouraging new development in urban areas. The draft Transportation Master Plan also includes policies and projects to increase transportation connectivity and opportunities for housing and mixed use development in the Totem Lake Planned Action Area. These changes would support GMA goals for efficient multimodal transportation systems and housing access.

VISION 2040

Kirkland Planning Area

All alternatives are consistent with Vision 2040's regional growth strategy. Planning for the 2015 – 2035 time period is being guided by the citywide housing and employment targets that are embodied in the CPPs and that have been adopted by the City. Under all three alternatives, a majority of forecast growth would be accommodated in centers including the Totem Lake regional growth center, the Central Business District, Neighborhood Centers, and LIT areas. While only Totem Lake is a designated regional growth center, it would receive a large share of the city's population and employment growth under all alternatives, and this fundamental approach is consistent with Vision 2040's regional growth strategy.

Other applicable topics addressed in Vision 2040 include coordinated planning, monitoring Vision 2040's implementation and performance, greater environmental sustainability, and reduced reliance on the automobile. The draft vision statement and guiding principles for the updated Comprehensive Plan are broadly consistent with the overall direction established in Vision 2040. Additionally, the updated Comprehensive Plan includes a regional planning statement demonstrating consistency with Vision 2040.

Totem Lake Planned Action Area

The current long-range plan for the Totem Lake Planned Action Area is contained in the Totem Lake Neighborhood Plan. The neighborhood plan is generally consistent with Vision 2040, recognizing Kirkland's commitment to maintaining and enhancing Totem Lake's role as a regional growth center and supporting reduced automobile dependency by planning for mixed-use, walkable redevelopment.

In 2013, PSRC conducted an assessment of the Totem Lake Neighborhood Plan as part of its Regional Centers Monitoring Report. The assessment states that many aspects of the Regional Growth Center Plan Checklist are addressed in the plan element, including the economic role of the center, measures to address housing affordability and diversity, design of a transit- and pedestrian-friendly environment and the relationship of the natural and built environment. The assessment also states that elements of the plan that are only partially or not addressed include discussion of the regional context, growth targets, mode split goals, parking and public services.² The City is revising the Totem Lake neighborhood plan as part of the Comprehensive Plan update. The draft plan includes a discussion of the regional context, a goal for residential and employment growth targets, and a goal for mode split. The draft plan could be strengthened by adding explicit policy guidance for parking management and a discussion of the capital facilities that are planned for the Totem Lake neighborhood and how they will be financed. General consistency of the alternatives with the topics contained in the Regional Growth Center Plan Checklist is summarized in Exhibit 3.2-2.

² Puget Sound Regional Council. 2013 *Regional Centers Monitoring Report*.

Exhibit 3.2-2. Puget Sound Regional Council Vision 2040 – Center Policy Evaluation

Vision 2040, Summary of Centers Policies	Discussion
1. Center Plan Concept (or "Vision"): Include a vision including commitment to human scale urban form, show the relationship of the plan to the City's comprehensive plan, Vision 2040, and Countywide Planning Policies (CPPs).	Under all of the alternatives, the proposed focus and concentration of growth in the Totem Lake Center is consistent with the overall concept for a regional growth center. The vision for the Totem Lake neighborhood in the City's draft Totem Lake plan includes a commitment to human scale, stating that people are drawn to the neighborhood due in part to its quality public spaces and pedestrian amenities. The role of the neighborhood as a center for the City and the region is clearly discussed.
2. Environment: Protect critical areas, address parks and open space including public and civic spaces, provide for innovative treatment of stormwater and drainage, reduce air pollution and greenhouse gases.	Under all alternatives, critical areas would continue to be protected. Low-impact development techniques would be promoted.
3. Land Use: Demonstrate compact and walkable boundaries, accommodate a significant share of jurisdiction's growth, and provide appropriate capacity in residential densities and building intensities, provide a mix of uses, include design standards for pedestrian friendly, transit oriented development.	All alternatives plan for a walkable urban center that accommodates a significant share of the City's growth. Capacity for planned residential and employment growth is provided, with a mix of uses and a multi-modal transportation system.
4. Housing: State existing and projected housing units, provide for a variety of housing types addressing density standards, affordable housing and special housing needs, include implementation strategies and monitoring program.	All alternatives guide a significant amount of additional housing growth to the Totem Lake neighborhood, with the greatest concentration proposed under Alternative 2 (approximately 41% of projected growth) and the least under Alternative 3 (approximately 15% of project growth).
5. Economy: Describe the economic and residential role of the center in the city and region, describe key sectors and industry clusters in the center.	Under all alternatives a significant amount of employment growth would be guided toward the Totem Lake Urban Center. Alternatives 2 and 3 would guide 48% and 37%, respectively, of the citywide employment growth toward the Totem Lake Urban Center. Under Alternative 1 (No Action) 37.5% of citywide employment growth would be expected to occur in Totem Lake.
6. Public Services: Describe existing and planned capital facilities as well as their financing (e.g. sewer, water, gas, electric, and telecommunications). Explain strategies to ensure facilities are provided consistent with targeted growth.	All alternatives would apply City level of service standards and ensure facilities consistent with targeted growth. The draft Totem Lake plan provides policy guidance to prioritize available infrastructure funding to projects within Totem Lake to support its development at Urban Center densities. The draft plan does not include a description of planned capital facilities and their financing; it directs readers to the Comprehensive Plan for this information. Once an alternative is chosen, the City should consider adding a description to the Totem Lake plan of anticipated capital facility improvements and financing strategies.

Vision 2040, Summary of Centers Policies	Discussion
<p>7. Transportation: Provide a mix of complementary land uses, provide connectivity, design for pedestrians and bicyclists, provide usable open spaces, manage parking, promote on-street parking, develop an integrated multimodal transportation network, address transit, develop complete streets, develop context sensitive and environmentally friendly streets, develop mode split goals.</p>	<p>Consistent with the City's citywide vision and the updated Transportation Master Plan, the proposed transportation system in the Totem Lake Urban Center emphasizes a multimodal transportation system under all alternatives. All alternatives would provide the residential and employment density to support transit. PSRC's feedback on the current Totem Lake neighborhood plan found that mode split goals and parking management should be addressed. Goal TL-12 of the draft Totem Lake plan establishes a mode split goal. The draft plan could be strengthened by adding explicit policy guidance regarding parking management.</p>

Source: PSRC 2012; 3 Square Blocks, 2015

KING COUNTY COUNTYWIDE PLANNING POLICIES

Kirkland Planning Area

All of the proposed alternatives provide capacity for urban levels of growth and meet the growth targets established in the CPPs. The draft vision statement and guiding principles for the updated Comprehensive Plan are broadly consistent with the overall direction established in the CPPs. Exhibit 3.2-3 provides an evaluation of the alternatives in comparison to the overarching goals of the CPPs.

Exhibit 3.2-3. Evaluation of Countywide Planning Policies and EIS Alternatives

Countywide Planning Policy Goals	Comments
<p>1. Environment Overarching Goal: The quality of the natural environment in King County is restored and protected for future generations.</p>	<p>Under all alternatives, the environment would continue to be protected through the City's critical areas ordinance and related development regulations. Updated policy guidance in the environment element would continue to focus on protection and restoration of the natural environment, consistent with the draft guiding principle that emphasizes creating a healthy environment, addressing climate change and protecting and enhancing habitat.</p>
<p>2. Development Pattern Overarching Goal: Growth in King County occurs in a compact, centers-focused pattern that uses land and infrastructure efficiently and that protects Rural and Resource Lands.</p>	<p>All alternatives propose to continue the City's center-focused growth pattern, with the majority of growth guided to two centers; the Totem Lake Urban Center, a designated Regional Growth Center, and the Downtown. In particular, Alternative 2 would concentrate the highest levels of both housing and employment growth in these two centers.</p>
<p>3. Urban Growth Area Goal Statement: The Urban Growth Area accommodates growth consistent with the Regional Growth Strategy and growth targets through land use patterns and practices that create vibrant, healthy, and sustainable communities.</p>	<p>All alternatives would meet the 2035 growth targets, consistent with the regional growth strategy. The City's draft guiding principles and updated plan elements propose land use patterns and practices to create vibrant, healthy and sustainable communities.</p>
<p>4. Urban Design and Historic Preservation Goal statement: The built environment in both urban and rural settings achieves a high degree of high quality design that recognizes and enhances, where appropriate, existing natural and urban settings.</p>	<p>The alternatives would carry forward and update existing policy direction with respect to urban design and historic preservation. Updated comprehensive plan policies would be consistent with the draft guiding principle that promotes high quality and attractive architectural design and landscaping and preservation of historic buildings and sites.</p>

Countywide Planning Policy Goals	Comments
<p>5. Centers Goal Statement: King County grows in a manner that reinforces and expands upon a system of existing and planned central places within which concentrated residential communities and economic activities can flourish.</p>	<p>All alternatives would continue the City's center-focused growth pattern, with the majority of growth guided to two centers; the Totem Lake Urban Center, a designated Regional Growth Center, and the Downtown. Alternative 3 would allocate the least growth to these two major centers, but would instead distribute growth to smaller, mixed-use neighborhood centers located around the city.</p>
<p>6. Rural Area Goal Statement: The Rural Area provides a variety of landscapes, maintains diverse low density communities, and supports rural economic activities based on sustainable stewardship of the land.</p>	<p>The northeast boundary of the Kirkland Planning Area adjoins designated rural and agricultural lands in the Sammamish Valley in unincorporated King County. City land use designations in this area are greenbelt/urban separator and light industrial uses. The lands designated for greenbelt/urban separator uses provide a buffer that helps to buffer and protect the adjoining rural agricultural use, and the area is also characterized by a sharp topography change that helps buffer rural lands. The lands designated for light industrial uses are located within the Eastern Industrial District of the Totem Lake Planned Action Area. Proposed plan policies would target additional growth in this area. The City should consider amendments to these policies to include provisions for transitions or buffers between the Eastern Industrial District and the adjoining rural area.</p>
<p>7. Resource Lands Goal Statement: Resource Lands are valuable assets of King County and are renowned for their productivity and sustainable management.</p>	<p>Although there are no designated resource lands in the City, the northeast city boundary is adjacent to designated agricultural lands in the Sammamish Valley in unincorporated King County. City lands adjacent to these agricultural lands are designated for greenbelt/urban separator and light industrial uses. The lands designated for greenbelt/urban separator uses provide a buffer that helps to protect the agricultural lands, and the area is also characterized by a sharp topography change that helps buffer rural lands. The lands designated for light industrial uses are located within the Eastern Industrial District of the Totem Lake Planned Action Area. Proposed plan policies would target additional growth in this area. The City should consider amendments to these policies to include provisions for transitions or buffers between the Eastern Industrial District and the Sammamish Valley.</p>
<p>8. Housing Overarching Goal: The housing needs of all economic and demographic groups are met within all jurisdictions.</p>	<p>Consistent with the draft guiding principle that supports neighborhoods containing homes for a variety of incomes, ages and life styles, all alternatives support housing to meet diverse needs. Most future housing growth is allocated to mixed-use centers, which support multifamily housing types, but under all alternatives, approximately 41% of future housing growth is anticipated to occur in other areas, including single-family residential neighborhoods.</p>
<p>9. Economy Overarching Goal: People throughout King County have opportunities to prosper and enjoy a high quality of life through economic growth and job creation.</p>	<p>Consistent with the draft guiding principle that supports a vibrant economy and living wage jobs, all alternatives support economic growth. A more detailed discussion of employment and economic factors is included in Section 3.4 – Employment and Economic Development.</p>

Countywide Planning Policy Goals	Comments
<p>10. Transportation Overarching Goal: The region is well served by an integrated, multi-modal transportation system that supports the regional vision for growth, efficiently moves people and goods, and is environmentally and functionally sustainable over the long term.</p>	<p>All alternatives are consistent with the draft Transportation Master Plan, which will be incorporated into the updated Comprehensive Plan and is based on an integrated multi-modal system that connects people and places. A detailed discussion of transportation impacts of the alternatives and consistency with the Transportation Master Plan is included in Section 3.6 – Transportation.</p>
<p>11. Mobility Goal Statement: A well-integrated, multi-modal transportation system transports people and goods effectively and efficiently to destinations within the region and beyond.</p>	<p>All alternatives are consistent with the draft Transportation Master Plan, which will be incorporated into the updated Comprehensive Plan and is based on an integrated multi-modal system that connects people and places.</p>
<p>12. Systems Operations Goal Statement: The regional transportation system is well-designed and managed to protect public investments, promote public health and safety, and achieve optimum efficiency.</p>	<p>All alternatives are consistent with the draft Transportation Master Plan, which will be incorporated into the updated Comprehensive Plan and is intended to protect public investments, support health and safety and achieve an efficient mobility network.</p>
<p>13. Public Facilities and Services: Overarching Goal: County residents in both Urban and Rural Areas have access to the public services needed in order to advance public health and safety, protect the environment, and carry out the Regional Growth Strategy.</p>	<p>All alternatives would apply City level of service standards and ensure facilities consistent with targeted growth. A detailed discussion of the impacts of the alternatives on public services and facilities is included in Section 3.7 – Public Services and Section 3.8 – Utilities and Capital Facilities.</p>

Totem Lake Planned Action Area

The City's current Totem Lake neighborhood plan supports the centers strategy and meets the density and intensity requirements for Urban Centers established in the CPPs. Please see Exhibit 3.2-3 for discussion of the alternatives, including the Totem Lake Planned Action area, related to CPP overarching goals.

KIRKLAND COMPREHENSIVE PLAN

Kirkland Planning Area

The draft vision statement proposed as part of the Comprehensive Plan update is consistent with and carries forward concepts from the existing vision statement and framework goals. Compared to the existing vision statement, the updated vision statement is shorter, more concise and reader-friendly. Similarly, the existing Comprehensive Plan framework goals are proposed to be replaced by a set of guiding principles that update and carry forward the broad policy intent of the existing Comprehensive Plan for a city that is livable, sustainable and connected. Exhibit 3.2-4 shows a comparison between the adopted Framework Goals and draft guiding principles. As shown in Exhibit 3.2-4, the proposed guiding principles would generally carry forward, update and broaden the direction of the adopted Framework Goals, but do not explicitly carry forward framework goals 12, 14, 15 and 17. This change may be a consequence of a re-focus of the priorities for the Comprehensive Plan, or recognition that these goals are adequately addressed in the plan. The draft guiding principles include a new focus on technology, call for reliable, efficient and complete systems for residents and businesses to be connected, informed and involved.

Exhibit 3.2-4. Comparison of Adopted Framework Goals and Proposed Guiding Principles

Current Comprehensive Plan Framework Goals	Corresponding Proposed Guiding Principles
Maintain and enhance Kirkland’s unique character.	<p>Quality of life: safe and well-maintained neighborhoods with convenient access to parks, recreational facilities, the waterfront, community gathering places, excellent schools, and nearby services.</p> <p>Community Design: High quality and attractive architectural design and landscaping, and preservation of historic buildings and sites.</p>
Support a strong sense of community.	<p>Sense of community: community involvement in government, schools, civic events and volunteer activities creating a sense of belonging through shared values.</p>
Maintain vibrant and stable residential neighborhoods and mixed use development, with housing for diverse income groups, age groups and lifestyles.	<p>Diverse and affordable: neighborhoods containing homes and businesses for a variety of incomes, ages and lifestyles.</p>
Promote a strong and diverse economy.	<p>Economic: a vibrant economy offering choices in living wage jobs, businesses, services and entertainment throughout the community</p>
Protect and preserve environmental resources and reduce greenhouse gas emissions to ensure a healthy environment.	<p>Ecological: natural systems and built structures that protect and enhance habitats, create a healthy environment, address climate change and promote energy efficiency.</p>
Identify, protect and preserve the City’s historic resources, and enhance the identity of those areas and neighborhoods in which they exist.	<p>Community Design: High quality and attractive architectural design and landscaping, and preservation of historic buildings and sites.</p>
Encourage a sustainable community.	<p>Ecological: natural systems and built structures that protect and enhance habitats, create a healthy environment, address climate change and promote energy efficiency.</p> <p>Economic: a vibrant economy offering choices in living wage jobs, businesses, services and entertainment throughout the community.</p> <p>Social: health and human services that fulfill the basic needs of all people without regard to income, age, race, gender or ability.</p>
Maintain and enhance Kirkland’s strong physical, visual, and perceptual linkages to Lake Washington.	<p>Quality of life: safe and well-maintained neighborhoods with convenient access to parks, recreational facilities, the waterfront, community gathering places, excellent schools, and nearby services.</p>
Provide safety and accessibility for those who use alternative modes of transportation within and between neighborhoods, public spaces, and business districts and to regional facilities.	<p>Accessible: safe, well maintained and extensive systems of roads, bicycle routes, pedestrian paths, and transit corridors for all users that interconnect neighborhoods and connect to the region.</p>
Create a transportation system which allows the mobility of people and goods by providing a variety of transportation options.	<p>Accessible: safe, well maintained and extensive systems of roads, bicycle routes, pedestrian paths, and transit corridors for all users that interconnect neighborhoods and connect to the region.</p>
Maintain existing park facilities, while seeking opportunities to expand and enhance the current range of facilities and recreational programs.	<p>Quality of life: safe and well-maintained neighborhoods with convenient access to parks, recreational facilities, the waterfront, community gathering places, excellent schools, and nearby services.</p>

KIRKLAND COMPREHENSIVE PLAN UPDATE & TOTEM LAKE PLANNED ACTION DEIS | AFFECTED ENVIRONMENT, SIGNIFICANT IMPACTS, AND MITIGATION MEASURES

Current Comprehensive Plan Framework Goals	Corresponding Proposed Guiding Principles
Ensure public safety.	The adopted framework goal is focused specifically on police and fire protection and emergency preparedness. This goal is not directly addressed in the proposed guiding principles, although safe neighborhoods and safe transportation networks are addressed, under Quality of life and Accessible guiding principles, respectively.
Maintain existing adopted levels of service for important public facilities.	Quality of life: safe and well-maintained neighborhoods with convenient access to parks, recreational facilities, the waterfront, community gathering places, excellent schools, and nearby services.
Plan for a fair share of regional growth, consistent with State and regional goals to minimize low-density sprawl and direct growth to urban areas.	Not explicitly addressed. However, all alternatives plan for Kirkland's adopted growth targets, and planning for a fair share of growth is implicit through all elements of the plan.
Solve regional problems that affect Kirkland through regional coordination and partnerships.	Not explicitly addressed, but addressed in the existing goals and policies.
Promote active citizen involvement and outreach education in development decisions and planning for Kirkland's future.	Sense of community: community involvement in government, schools, civic events and volunteer activities creating a sense of belonging through shared values.
Establish development regulations that are fair and predictable	Not explicitly addressed, but addressed in the existing goals and policies.

All of the current Comprehensive Plan elements and neighborhood plans will be updated as part of the 2035 planning process. Depending on the selected preferred alternative, the land use element may be revised to describe an updated land use pattern and revisions to other elements and neighborhood plans would be made as needed for consistency with the chosen alternative. Alternative 1 would continue to guide growth to maintain existing land use patterns. Alternative 2 would guide the majority of future employment and housing growth toward the Totem Lake neighborhood and the Central Business District. Alternative 3 would distribute the majority of housing and employment growth among Totem Lake, the Central Business District and other neighborhood centers. All alternatives would continue and maintain the City's established direction for accommodating growth, with each alternative providing a different relative amount of growth in the City's established centers.

As part of the Comprehensive Plan update, the City is updating policy guidance on climate change. This includes integration of the Kirkland Climate Protection Action Plan, which was adopted in 2009. It also includes new strategies for addressing climate change and promoting energy efficiency, as called for in the draft vision statement. The draft environment element contains the policies on climate change. Goal E-5 targets carbon neutrality by 2050 and is supported by policies that call for greenhouse gas emission reductions, maintenance and implementation of the Climate Protection Action Plan, regional collaboration on climate change, advocacy for state and federal support of greenhouse gas emissions, and community outreach efforts. This policy language is consistent with the direction of the current Comprehensive Plan, which calls for reducing greenhouse gas emissions. The environment element also includes a description of the work the City has done over the past 15 years related to addressing the impacts of climate change.

As needed, the Final EIS will further assess specific proposed Comprehensive Plan policy changes, following issuance of the draft Comprehensive Plan. However, based on the proposed alternatives, draft vision statement and draft guiding principles, it is anticipated that draft plan policy guidance will not result in significant impacts with respect to internal or external plan and policy consistency.

Totem Lake Planned Action Area

The current Totem Lake neighborhood plan is consistent with and supports other elements of the current Comprehensive Plan. The draft Totem Lake plan is intended to ensure continued consistency with the updated

Plan. For example, policies in the draft Totem Lake plan direct the Totem Lake neighborhood to provide jobs and services for residents, employees and visitors; and to provide opportunities for higher-density and transit-supported housing in the city.

TOTEM LAKE NEIGHBORHOOD PLAN

Kirkland Planning Area

The three alternatives being considered for the Comprehensive Plan update all envision Totem Lake as the City's major growth center, absorbing a substantial portion of the housing and employment growth targeted for 2015-2035. This is consistent with the overall direction provided by the current Totem Lake Neighborhood Plan, and with county and regional policies that identify Totem Lake as a regional growth center. Depending upon the selected preferred alternative, specific policy guidance about the types and locations of development and the infrastructure needed to support it may be revised. Alternative 1 would result in no significant changes to current policies in the neighborhood plan. Compared to Alternative 1, Alternative 2 would guide additional housing and employment growth toward the Totem Lake neighborhood. Alternative 3 would guide slightly fewer jobs and housing to Totem Lake compared to Alternative 1, with growth being distributed among other business and neighborhood centers.

Totem Lake Planned Action Area

The changes being considered for the Totem Lake Planned Action Area as part of the Comprehensive Plan update are consistent with the current neighborhood plan's overarching vision for the area as the city's major growth center and a high-density, walkable mixed use neighborhood with urban amenities. Some of the specifics of the long-range land use pattern may change, depending on the selected Preferred Alternative. For instance, both Alternatives 2 and 3 would increase the mix of uses in the light industrial area relative to Alternative 1. Alternative 2 would increase the amount of residential uses in the PARMAC area, whereas Alternative 3 would increase the amount of industrial uses.

Mitigation Measures

Incorporated Plan Features

- All alternatives provide capacity to meet the 2035 King County growth targets for housing and employment.
- All alternatives would carry forward the City's existing plan guidance for accommodating growth in existing centers, including the Totem Lake regional growth center, Central Business District and neighborhood centers.
- Under all alternatives, the role of the Totem Lake business district as a designated regional growth center would be maintained and reinforced through the plan vision for a high-density, walkable mixed use neighborhood with urban amenities

Applicable Regulations and Commitments

- As required by GMA, the draft Comprehensive Plan will be submitted to the Washington Department of Commerce for review and comment prior to final adoption and to the Puget Sound Regional Council for review and certification.

Other Potential Mitigation Measures

- Goals and policies in the draft Comprehensive Plan should be designed to reflect the community's vision for the future and to achieve consistency with the GMA, Vision 2040 and the CWPPs.

- To ensure consistency with PSRC expectations for regional growth center plans, the updated Totem Lake Neighborhood Plan should consider the requirements of the Regional Growth Center Plan Checklist. The plan could make reference to applicable policies and improvements in the TMP and Capital Facilities Plan as well as through the future PAO.
- Where the city boundary adjoins designated rural and agricultural lands in the Sammamish Valley in unincorporated King County, city policies should include provisions for transitions, design standards, or buffers between the City's Eastern Industrial District and the rural agricultural area.

Significant Unavoidable Adverse Impacts

With implementation of mitigation measures, no significant unavoidable adverse impacts are anticipated with respect to future plan consistency under any of the alternatives.

3.3 Population and Housing

As part of its comprehensive plan update under the Growth Management Act, the City of Kirkland is required to demonstrate it can accommodate growth targets for housing allocated in the Countywide Planning Policies for King County. These targets guide the City's planning efforts to ensure that Kirkland is able to accommodate its share of growth in King County over the next 20 years. Kirkland's overall housing growth target is 8,361 additional households in the period between 2013 and 2035, resulting in approximately 17,042 additional residents, for a total 2035 I population of approximately 99,632 in the City of Kirkland (City of Kirkland, 2015; BERK, 2015). The 2035 population estimate is calculated based on 2015 average household sizes of 2.73 persons per household in single family units and 1.83 persons per household in multifamily units (City of Kirkland, 2015; OFM, 2015). Single-family units account for approximately 23% of Kirkland's residential development capacity, while multifamily units account for the remaining 76%. The 2035 population estimate therefore assumes 23% of future housing growth will consist of single-family dwellings, and 76% will consist of multifamily units.

This section addresses population and housing within the City of Kirkland study area. It identifies how changes contemplated under each alternative could impact the nature of population and housing. The analysis also includes an evaluation of citywide development targets and capacity relative to each alternative.

Affected Environment and Methodology

Kirkland Planning Area

POPULATION

Residents: In 2014, the total population of the Kirkland study area was 82,590 (OFM, 2014). In the decade between 2000 and 2010, Kirkland's population increased 8.3% from 45,054 to 48,787. Between 2010 and 2014, Kirkland's population increased 69%, largely as a result of a 4,659-acre annexation in 2012, however, resulted in a 69% increase in population from 2010 through 2014. Kirkland's population is almost evenly distributed between genders, with around 49% male and 51% female residents (City of Kirkland; 2013 3-Year ACS, S0601). With 2013 citywide acreage of 11,680, Kirkland had an average population density of 7.0 persons per acre.

Age: Median age in Kirkland is just over 37 years. In 2013, 33% of residents were between 25 and 44 years old, with another 7% between 18 and 24 years old (2013 3-Year ACS, S0601). 11% of residents were 65 or older in 2013 (2013 3-Year ACS, S0601). Although the changes have been gradual, there has been an increase in older residents and a decrease in younger and workforce aged residents since 1990 (City of Kirkland, Community Profile).

Race and Ethnicity: In 2013, Kirkland's population was 77.4% white, with 13.8% Asian residents and 1.4% black. 1.7% of Kirkland's residents were some other race and 5.1% were two or more races. 7.3% of residents identified themselves as being of Hispanic or Latino origin (2013 3-year ACS, S0601).

The population of white residents in Kirkland decreased from around 92.8% to 79.3% in the decades between 1990 and 2010. At the same time, Asian and Pacific Islanders increased from 4.3% to 11.5%. Black and American Indian groups did not see significant increases. Those identifying as Hispanic increased from 2.4% to 6.3% from 1990 to 2010. These numbers follow similar trends to those seen in King County as a whole. (City of Kirkland, Community Profile)

Income: The Census Bureau's 2012 5-Year American Community Survey (ACS) estimated a median household income of \$88,756 for Kirkland. 43% of households had an income of \$100,000 or more (City of Kirkland, Community Profile). This is comparable to similar communities in the region, such as Redmond, Bothell, Kenmore, and Woodinville, but higher than Seattle or King County as a whole, which had estimated 2012 median household incomes of \$61,856 and \$70,567, respectively (City of Kirkland, Community Profile).

Kirkland's median household income increased 47% in the decade between 2000 and 2010, which was a greater increase than comparable communities, as well as Seattle and the county (City of Kirkland, Community Profile; OFM).

In 2010, Kirkland had 1,262 households living in poverty, which was 5.6% of the total citywide households. 457 of those households in poverty were family households, while 805 of them were other households. (City of Kirkland, Community Profile; OFM) The percent of households living in poverty in Kirkland in 2010 (5.6%) was comparable to similar communities in the region, and significantly less than the percent of households living in poverty in Seattle (12.5%) in 2010 (City of Kirkland, Community Profile; OFM). The City of Kirkland, however, experienced a less pronounced increase in the number of households living in poverty between 2000 and 2010 than similar communities, the City of Seattle, and King County overall. The number of households in poverty in Kirkland increased 17% during that time, while communities such as Redmond, Bothell, Kenmore, Woodinville, Bellevue, Seattle, and the County experienced increases ranging from 28% to 161% (City of Kirkland, Community Profile; OFM).

HOUSING

Housing units: In 2013, Kirkland had an estimated 36,413 housing units (2013 3-year ACS DP04). Kirkland saw a 34.8% increase in units between 1990 and 2010, which is comparable to the County's 31.5% increase over the same time period. Much of this increase can be attributed to annexations between 1990 and 2013, although, notably, development within Kirkland contributed to some of the gain in residential units, see Exhibit 3.3-1.

The 2013 average citywide residential density was an estimated 3.1 units per acre, which is a decrease in density from the 2010 residential density of 3.4 units per acre (City of Kirkland Community Profile, 2013; U.S. Census, DP-1, 2010). The decrease is a result of the annexation of 4,659 acres of primarily low-density residential land between 2010 and 2013.

Housing occupancy: 34,592, or 92%, of housing units in Kirkland were occupied in 2013, with an 8% vacancy rate (2013 3-year ACS DP04). Kirkland's average household size in 2013 was 2.39 persons per unit (2013 3-Year ACS B25010).

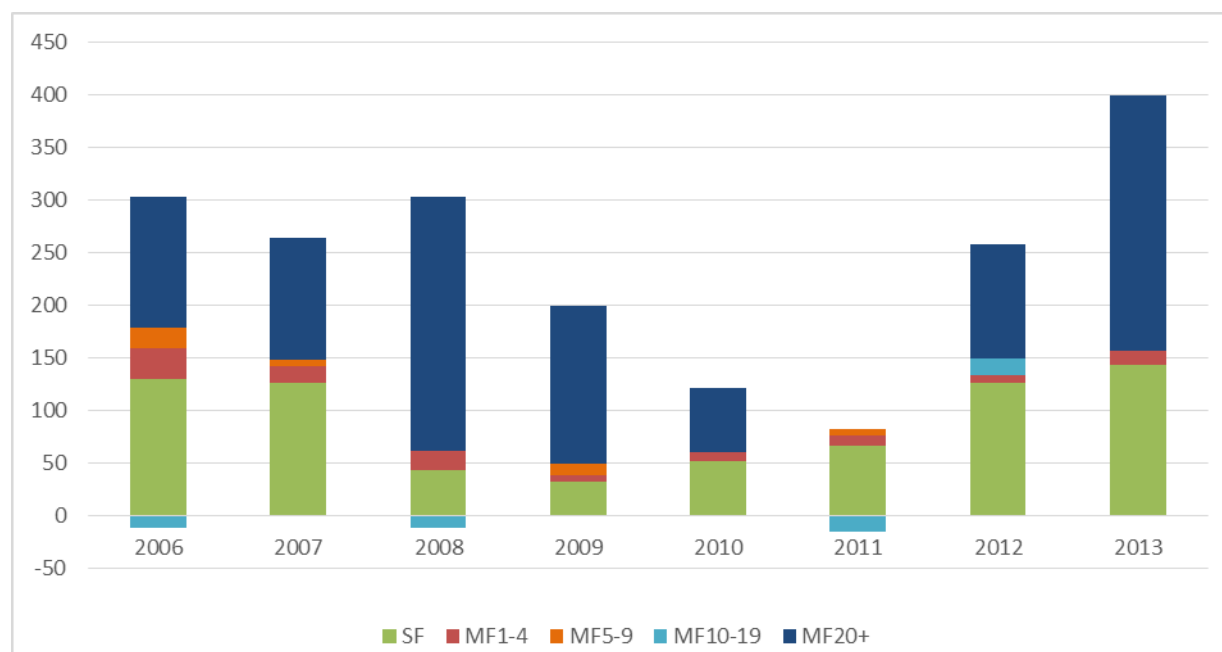
Housing Tenure: Occupied housing units were 64% owner-occupied and 36% renter-occupied (2013 3-year ACS DP04).

Housing Mix: In 2013, around 54.7% of Kirkland's housing stock consisted of single family detached units, 6.0% single family attached units, and 39.0% multifamily units. Approximately 0.3%, or 115 units, were in the categories of mobile home, boat, RV, Van, and other. Kirkland has a similar proportion of single family detached units as King County as a whole (54.7%), and slightly more than neighboring Bellevue (50.0%). Kirkland, Bellevue, and King County have similar concentrations of multifamily structures of 20 or more units despite Kirkland's predominance of single-family homes. (2013 3-Year ACS DP04)

Construction: Puget Sound Regional Council's annual building permit summaries indicate that from 2006 to 2013, 2,373 residential units were completed, and 480 residential units were lost, resulting in a net gain of 1,893 units (PSRC, 2006-2013). 62% of net new units (1,893) built between 2006 and 2013 were multifamily units, while 38% (720) net new units built between 2006 and 2013 were single family (PSRC, 2006-2013). 55% of net new units over this time period were in structures with 50 or more units (PSRC, 2006-2013).

Exhibit 3.3-1 shows the breakdown of gains and losses of residential units by structure type during the 2006-2013 period. Single family and larger multifamily structures (20 or more units) have dominated recent construction, though few large multifamily projects were permitted in 2010 and 2011, presumably as a result of the national downturn in the housing market that began in 2008. During this period, multifamily structures of 10-19 units experienced the most prevalent net losses.

Exhibit 3.3-1. Net New Residential Units, 2006-2013



Legend: SF = Single Family MF = Multi Family

Source: Puget Sound Regional Council, 2006-2013; BERK Consulting, 2015.

Rents and Home Prices: Median rent in Kirkland was approximately \$1,325 in 2013, which is greater than King County’s median rent of \$1,139 and less than neighboring Bellevue’s median rent of \$1,425. According to Trulia, the average listing price for a home in Kirkland in April 2015 was \$833,298, with a median sales price of \$454,000 for the period from January through April of 2015 (Trulia, 2015). Median sales price was up 2.9% year-over-year, with average price per square foot up 10.6% year over year (Trulia, 2015). Additionally, the number of sales was up 4.3% year-over-year as of April 2015 (Trulia, 2015).

Popular neighborhoods for home sales in early 2015 include South Rose Hill, Central Houghton, and North Juanita (Trulia, 2015).

Housing Affordability: Housing affordability is typically expressed in relation to household income, sometimes referred to as a rent-to-income ratio. According to the U.S. Department of Housing and Urban Development (HUD), housing that costs 30% or less of a household’s gross income is considered affordable. Households that pay more than 30% of their gross income for housing costs (rent and basic utilities; or mortgage, including principal, interest, taxes and insurance, homeowners dues, and other costs directly related to ownership of a unit) are “cost-burdened” with respect to housing. Those households that pay more than 50% of their gross income for housing costs are “severely cost-burdened.”

In 2013, an estimated 40% of Kirkland’s renters were burdened, while 37% of owners were burdened. Of those owners with a housing burden, the majority are owners with a housing unit with a mortgage (2013 3-Year ACS DP04).

According to Puget Sound Regional Council data, as of 2013 there were 33 housing projects with subsidized units in Kirkland of which there were at least 5 projects with subsidized ownership units (PSRC, Subsidized Housing Database, 2013). There were 422 units available to those earning less than 30% AMI, 203 affordable to those earning between 31% and 50% AMI, and 210 affordable to those earning between 51% and 80% AMI (PSRC,

Subsidized Housing Database, 2013). An additional 12 units were affordable to those households earning between 81% and 100% AMI (PSRC, Subsidized Housing Database, 2013). Exhibit 3.3-2 shows the number of subsidized units available in Kirkland broken down by household earnings as a percentage of Area Median Income (AMI). Only one project will see its affordability restrictions expire by 2020 (PSRC, Subsidized Housing Database, 2013).

Exhibit 3.3-2. Subsidized Housing in Kirkland

HH Earnings	< 30% AMI	35% - 50% AMI	50% - 85% AMI	85% -100% AMI
Number of Subsidized Units	422	203	210	12

Source: Puget Sound Regional Council, Subsidized Housing Database, 2011-2013.

Totem Lake Planned Action Area

The affected environment analysis for the Totem Lake Planned Action Area is based on 2010 information. The reason that more current data is not used for the analysis is a result of the specific geography of this study area. The most recent detailed Census counts available at the block level are from the 2010 Decennial Census.

POPULATION

Residents: The Totem Lake Planned Action Area had a 2010 population of 5,671 (2010, U.S. Census Bureau, P2), which was 11.6% of Kirkland’s citywide population in 2010; 49% of the 2010 residents in Totem Lake were male, and 51% were female. With 5,671 residents and a study area of 1,052.3 acres, the 2010 population density in Totem Lake was 5.4 persons per acre (2010, U.S. Census, P12; BERK, 2015).

Age: The 2010 median age in the Totem Lake Planned Action Area was 34.9 years old (2010, U.S. Census Bureau, P13). Median age for males was 34.2 and median age for females was 35.2 (2010, U.S. Census Bureau, P13). The Totem Lake study area’s median age was slightly younger than Kirkland’s 2010 citywide median age of 37.5.

Race and Ethnicity: Of the 5,671 residents of the Totem Lake Planned Action Area, 65% were white, 3% were black or African American, and 13% were Asian (2010, U.S. Census, P2).; 5% were two or more races (2010, U.S. Census, P2). The Totem Lake Planned Action Area is more diverse than Kirkland. In 2010, Kirkland’s white population was 80.3% of residents, which is notably higher than Totem Lake’s 65% white residents. 12% of residents were Hispanic or Latino, while only 6.7% of Kirkland’s overall 2010 population identified as being of Hispanic or Latin origin (2010, U.S. Census, P2; 2010, City of Kirkland Community Profile).

Income: Review of income data for the Census tracts that contain the Planned Action Area indicate that, compared to the city as a whole, this portion of Kirkland exhibits lower median incomes and a higher incidence of poverty. Residents in the vicinity had a 2010 median household income of \$66,753 and a median family income of \$75,989 (2010, U.S. Census, DP04). For the same geography in 2010, 6.5% of families had an income below the poverty level for the past year (2010, U.S. Census, DP04).

HOUSING

Housing Units: In 2010, the Totem Lake Planned Action Area had 3,216 housing units (2010, U.S. Census, H1). With a 2010 Totem Lake population of 5,671 residents and 2,975 occupied housing units, the average household size was 1.9 persons per unit. 40.6% of households were family households (2010, U.S. Census, P35; BERK, 2015). With 3,216 units and a study area of 1,052.3 acres, the 2010 residential density in Totem Lake was 3.1 units per acre (2010, U.S. Census, H1; BERK, 2015).

Housing Occupancy: In 2010, Totem Lake's housing occupancy rate was 92.5%, with 7.5% of units vacant. 3,053 of the 3,216 units were occupied, with 164 units vacant (2010, U.S. Census, H1). Average household size in Totem

Lake was 1.9 persons per household in 2010, which is slightly lower than the citywide 2010 average of 2.15 persons per household (2010, U.S. Census QT-P11; 2010, U.S. Census, P12; BERK, 2015).

Housing Tenure: In 2010, the Totem Lake Planned Action Area's 2,975 occupied units were 30.9% owner-occupied and 69.1% renter-occupied (2010, U.S. Census, H14). Tenure in Totem Lake's Planned Action Area was significantly different from the citywide results where 57% of units were owner-occupied in 2010 (2010, U.S. Census, DP-1).

Impacts

Population and Housing

IMPACTS COMMON TO ALL ALTERNATIVES

Kirkland Planning Area

Citywide population and housing growth targets are the same across all three alternatives. In all three alternatives, housing growth would result in 8,361 additional units between 2013 and 2035. Existing capacity for additional units is 9,516, taking into account developable land and market potential. The City's current capacity for growth under the No Action Alternative would exceed the housing targets for 2035 by 1,155 units. Housing growth of 8,361 units between 2013 and 2035 would result in approximately 17,042 new residents during the planning period. This population growth number is calculated assuming the 2013 average household size of 2.73 persons per household for single-family units and 1.83 persons per household for multi-family units. The estimated 2035 total population of Kirkland is 99,632.

Although the action alternatives (Alternative 2 and 3) assume different distributions of growth than the No Action Alternative, all three alternatives currently have sufficient capacity to accommodate the 2035 growth forecasts. As a result of different alternatives, changes in land use designations or zoning assumptions would create increased development capacity in targeted areas of the City and could attract growth to these areas from elsewhere in the city.

In general, Kirkland would experience a large concentration of housing and residential population growth in Totem Lake in all three alternatives, as well as varying concentrations of growth by alternative in the CBD and other Neighborhood Centers. In all three alternatives, areas outside Totem Lake, the CBD, and Neighborhood Centers, would receive approximately 41% of housing unit growth, primarily in the form of infill spread throughout the city's residential neighborhoods..

Totem Lake Planned Action Area

In all three alternatives, Totem Lake would experience a large share of Kirkland's projected growth and development. The types of structures and uses vary by alternative, so there is no specific population and housing growth impact that is common to all three alternatives for the Totem Lake Planned Action Area.

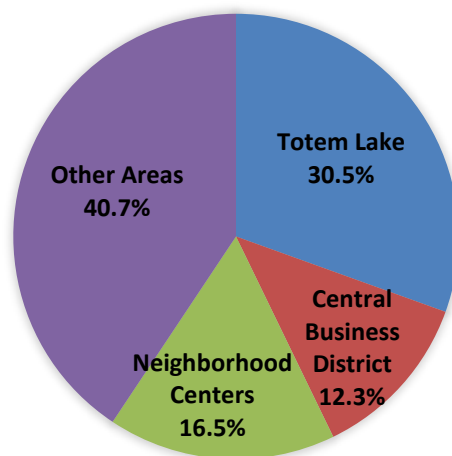
In 2014, existing land capacity provides for 2,768 additional housing units. Using the 2013 average household size of multifamily units (1.83) the Totem Lake Planned Action Area has land capacity for an estimated 5,069 additional residents by the end of the planning period.

ALTERNATIVE 1 (EXISTING PLANS - NO ACTION)

Kirkland Planning Area

Under Alternative 1, the No Action Alternative, an estimated 8,361 additional housing units would be developed in Kirkland by 2035. These units would be distributed throughout the city, with 12.3% in the CBD, 16.5% in Neighborhood Centers, 30.5% in Totem Lake, and 40.7% in other areas of the city (See Exhibit 3.3-3).

Exhibit 3.3-3. Alternative 1 Housing Unit Distribution



Source: City of Kirkland, 2015; BERK, 2015

Alternative 1, the No Action Alternative, reflects the currently adopted land use plans, policies, and regulations. Totem Lake will continue to develop as Kirkland’s primary targeted growth center, with increased housing. Housing growth in neighborhoods will include both single and multifamily development, with 23% of unit growth capacity in single family development and 77% in multifamily development.

Totem Lake would experience the greatest increase in residential units of the individual centers. This includes the Totem Lake Mall, which has an approved Master Plan, including 226 residential units. The CBD, in the Moss Bay neighborhood is second to Totem Lake for the greatest amount of residential unit development, followed by the smaller neighborhood centers. These Centers (Kingsgate, North Juanita, Bridle Trails, Houghton, and Inglewood) are likely to have redevelopment activity with an overall increase in housing units developed at one to two stories high. The neighborhood centers will see an increase in mixed-use housing in buildings up to around 3 stories high, as well as infill and short platting throughout the neighborhoods.

There would be no new residential uses in the Light Industrial zones of Norkirk and North Rose Hill.

The remaining 40.7%, approximately 3,399 units, would be distributed throughout other residential areas of the city.

Totem Lake Planned Action Area

Alternative 1 would reinforce Totem Lake’s role as the City’s major employment center and an emerging housing growth center. The area would receive around 30.5% of Kirkland’s household growth over the 20-year planning period, which would result in around 2,550 new residential units and 4,670 new residents. This would increase Totem Lake’s 2010 population of 5,671 by more than 80%.

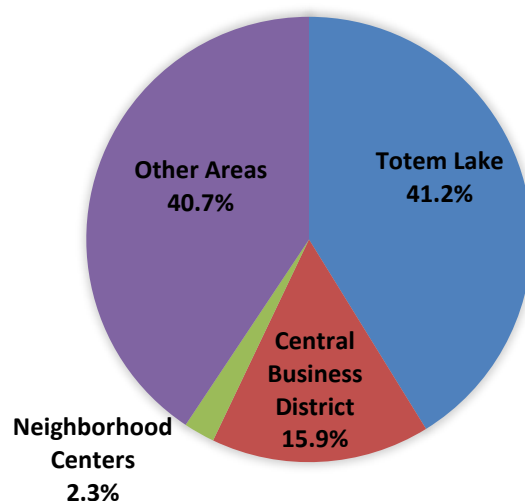
Current zoning supports multifamily development. Since there is a focus on Totem Lake as a commercial and office employment center, residential growth is expected to be in the form of densely developed mixed-use structures and apartment buildings.

ALTERNATIVE 2 (TOTEM LAKE/DOWNTOWN FOCUS)

Kirkland Planning Area

Under Alternative 2, the Totem Lake/Downtown Focus Alternative, an estimated 8,361 additional housing units would be developed. These units would be distributed throughout the city, with 15.9% in the CBD, 2.3% in Neighborhood Centers, 41.2% in Totem Lake, and 40.7% in other areas of the city (See Exhibit 3.3-4). As described in Chapter 2, Alternative 2 would include changes to height limits in some zones in the Totem Lake area, which would create additional housing capacity. As a result, citywide housing development capacity in Kirkland would increase from 9,907 units to 10,207 units under Alternative 2, a net increase of 300 units compared to the No Action Alternative.

Exhibit 3.3-4. Alternative 2 Housing Unit Distribution



Source: City of Kirkland, 2015; BERK, 2015

Under Alternative 2, the Totem Lake/Downtown Focus Alternative, focuses growth in the major mixed-use centers of Totem Lake and the CBD. The Totem Lake Planned Action Area would accommodate the largest share of future residential growth, followed by the CBD, which would experience an increase in its share of citywide housing growth relative to the No Action Alternative. Alternative 2 includes the adoption of an amended master plan for the Parkplace site in the CBD, which would increase housing capacity in this area by 300 additional housing units, relative to the No Action Alternative.

Housing growth in Neighborhood Centers would be minimal, with only 2.3% or 189 units, of residential growth in these areas. The existing low density character of the centers would be maintained. The amount of growth is substantially less than either Alternative 1 or Alternative 3, where the centers would be likely to receive 1,383 and 901 housing units, respectively. Neighborhood Centers would have very little residential population growth under Alternative 2, and the existing low density character would be maintained.

There would be little to no new residential uses in the Light Industrial zones of Norkirk and North Rose Hill.

The remaining 40.7%, approximately 3,399 units, would be distributed throughout other residential areas of the city.

Totem Lake Planned Action Area

Under Alternative 2, Totem Lake would be targeted to receive a substantial proportion of housing growth (41.2%) over the planning period. Between 2013 and 2035, Totem Lake's Planned Action Area could see 3,444 new residential units and approximately 6,307 new residents under this scenario, which more than doubles the 2010 population of 5,487.

Of the three alternatives, Totem Lake would experience the greatest amount of housing growth under Alternative 2. This housing growth would occur primarily in multifamily or mixed-use development. Incremental changes to zoning in the neighborhood to allow for increased height and density in targeted areas is likely, which would increase development capacity and attract growth to those areas from other parts of the Totem Lake Planned Action Area.

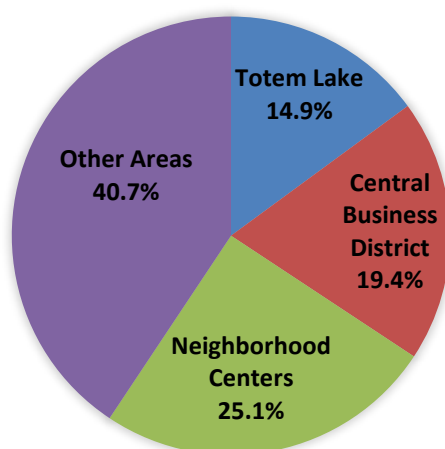
As described in Chapter 2, Alternative 2 would increase heights up to 80 feet in portions of Totem Lake. Zones TL 1A and TL 1B will have no height increase, but will have the FAR cap removed. These changes would provide additional housing and population capacity in Totem Lake for added housing units and will accommodate growth in residential population. The Parmac area of Totem Lake, in particular, would see residential growth in the form of mixed-use development at higher levels than in Alternative 1 and 3.

ALTERNATIVE 3 (DISTRIBUTED GROWTH)

Kirkland Planning Area

Under Alternative 3, future housing units would be distributed throughout the city, with 19.4% in the CBD, 25.1% in Neighborhood Centers, 14.9% in Totem Lake, and 40.7% in other areas of the city. As a result of zoning changes to accommodate additional development in the neighborhood centers, overall development capacity in Kirkland would increase from 9,907 units to 13,301 units under Alternative 3, compared to the No Action Alternative.

Exhibit 3.3-5. Alternative 3 Housing Unit Distribution



Source: City of Kirkland, 2015; BERK, 2015

Alternative 3, similar to Alternative 2, would focus growth in major mixed-use centers, mostly in neighborhood centers and the CBD. Of the three alternatives, Alternative 3 represents the greatest level of housing growth in neighborhood centers, as well as in the CBD. Compared to the other alternatives, Alternative 3 would distribute the least housing to the Totem Lake Planned Action Area.

The Parkplace site in the CBD would experience a moderate increase in housing by 300 units. The MRM property in the CBD would experience an increase in housing development compared to the No Action Alternative and Alternative 2, with more intense development achieved through increased building heights. As a result of these changes to development regulations, residential capacity on the MRM site would increase by 289 units.

Neighborhood Centers could experience more growth relative to Alternatives 1 and 2, with growth focused in on mixed-use developments. Kingsgate and Juanita would see increases in multifamily housing development, which may come as a result in zoning changes to height and density. Houghton and Rose Hill would see less residential growth than the other Neighborhood Centers. The Norkirk LIT area would experience a slight increase in housing in the form of office/retail/residential mixed-use development or live-work units. There would be little to no new residential uses in the North Rose Hill Light Industrial Zone.

The remaining growth, 40.7% or 3,399 units, would be distributed throughout other residential areas of the city.

Totem Lake Planned Action Area

Alternative 3 would result in less housing growth and lower residential population in Totem Lake than under the No Action Alternative or Alternative 2. The area would gain around 2,142 new residential units and approximately 3,923 new residents under this scenario, which is substantially less than the approximately 4,670 and 6,307 new residents that would be gained under Alternatives 1 and 2, respectively.

The eastern industrial area (zones TL 7 and TL 9A) would see an increase in residential use, along with a decrease in office relative to the No Action Alternative. The Evergreen Health Care area would experience similar housing growth as under the No Action Alternative. The development mix in the Totem Lake Mall area would also experience a shift away from employment and toward housing, relative to the No Action Alternative. As a result of these zoning changes, the mall area would have added capacity of 174 housing units.

Mitigation Measures

Incorporated Plan Features

KIRKLAND PLANNING AREA

The Kirkland Comprehensive Plan Housing Element addresses the diversity of housing types as well as the preservation of Kirkland's neighborhood quality. These guiding policies for housing will aid the City in guiding future housing development as Kirkland gains 8,361 new households and an additional estimated 17,042 residents over the 2013 to 2035 planning period. Zoning changes throughout the city will help mitigate growth impacts by allowing development to concentrate in targeted areas, and policies in the updated Housing Element of the comprehensive plan that address housing issues include:

- Establishing proportionate share of housing needs of very low, low, and moderate income households;
- Addressing homelessness; and
- Supporting senior housing needs and fair housing.

TOTEM LAKE PLANNED ACTION AREA

The Kirkland Comprehensive Plan Housing Element addresses the diversity of housing types. These guiding policies for housing will aid the City in managing future housing development as Totem Lake gains between 2,142 and 3,444 new households (and between 3,923 and 6,307 new residents) over the 2013 to 2035 planning period.

In addition, updated policies specific to Totem Lake are included in the update of the Totem Lake Business District Plan. These targeted changes to housing policy in Totem Lake include:

- Implementation of a Transferable Development Rights program;

- Expansion of development incentives, requirements and other measures to encourage development of affordable housing;
- Encouraging diversity in housing style, size and services; and
- Changes to the Housing Incentive Area policies for the Totem Lake Business District, as well as the five Housing Incentive Areas' geographic boundaries. Incentives include reduced parking requirements, increased floor area allowances where appropriate, mixed-use housing incentives,

Applicable Regulations and Commitments

KIRKLAND PLANNING AREA

Affordability issues may occur as the City grows. The City of Kirkland's affordable housing incentives for multifamily development provides flexibility in dimensional and density standards to encourage construction of affordable units, particularly in commercial zones, high density residential zones, medium density zones and office zones (Kirkland Zoning Code, Chapter 112). Applicable regulations that provide mitigation for potential affordability issues include:

- Minimum requirements for at least ten percent affordable units for developments creating four or more new units in commercial, high density, residential, medium density and office zones.
- Height bonuses in RH, PLA5C and TL zones for provision of affordable housing where there is no minimum lot size per dwelling unit.
- Development capacity bonus in the CBD 5A zone for provision of affordable housing where there is no minimum lot size per dwelling unit.
- In zones with density limits, 2 bonus units are allowed for each affordable unit provided, up to a maximum unit bonus of 25% of the number of units allowed by the underlying zone.
- Rose Hill and Totem Lake business districts have a specified definition for affordable housing to encourage "pioneer developments."
- Dimensional standards are flexible for provision of affordable housing.
- Impact fee and property tax exemptions may be given for projects that provide affordable units.

TOTEM LAKE PLANNED ACTION AREA

Zoning changes in Totem Lake will help mitigate growth impacts by allowing development to concentrate in targeted areas.

Affordability issues may surface as the neighborhood grows throughout the planning period. In Totem Lake, affordable housing incentives for multifamily development provide flexibility in dimensional and density standards through added height bonuses to encourage construction of affordable units, particularly in commercial zones, high density residential zones, medium density zones and office zones (Kirkland Zoning Code, Chapter 112). These regulations provide the following mitigating measures:

- Minimum requirements for at least ten percent affordable units for developments creating four or more new units in commercial, high density, residential, medium density and office zones, with more specific minimum requirements in the TL zones.
- Height bonuses in TL zones for provision of affordable housing where there is no minimum lot size per dwelling unit.
- The Totem Lake Business District has a specified definition for affordable housing to encourage "pioneer developments."

- Impact fee and property tax exemptions may be giving for projects that provide affordable units.

Other Potential Mitigation Measures

KIRKLAND PLANNING AREA

All of the alternatives would achieve sufficient capacity to absorb the City's growth targets for housing. No significant impacts to population and housing were identified. No additional mitigation is proposed.

TOTEM LAKE PLANNED ACTION AREA

All of the alternatives would achieve sufficient capacity to absorb the neighborhood's growth targets for housing. No significant impacts to population and housing were identified. No additional mitigation is proposed.

Significant Unavoidable Adverse Impacts

Under all alternatives, as Kirkland's population grows, there will be a need for infrastructure investment in roads, transit, utilities, parks and other public facilities to maintain existing levels of service to residents and places of employment.

As population continues to grow in the greater Puget Sound region, economic forces will place additional pressure on housing markets, increasing demand for affordable housing. This is true regardless of which of the three alternatives is realized. There will be an unavoidable need to increase incentives for providing units affordable to diverse income groups and to investment in affordable housing development.

3.4 Employment and Economic Development

This section summarizes current employment conditions in Kirkland and land capacity for employment growth under the EIS alternatives. This section also describes how the alternatives would affect employment and the City's ability to meet adopted job growth targets.

Affected Environment and Methodology

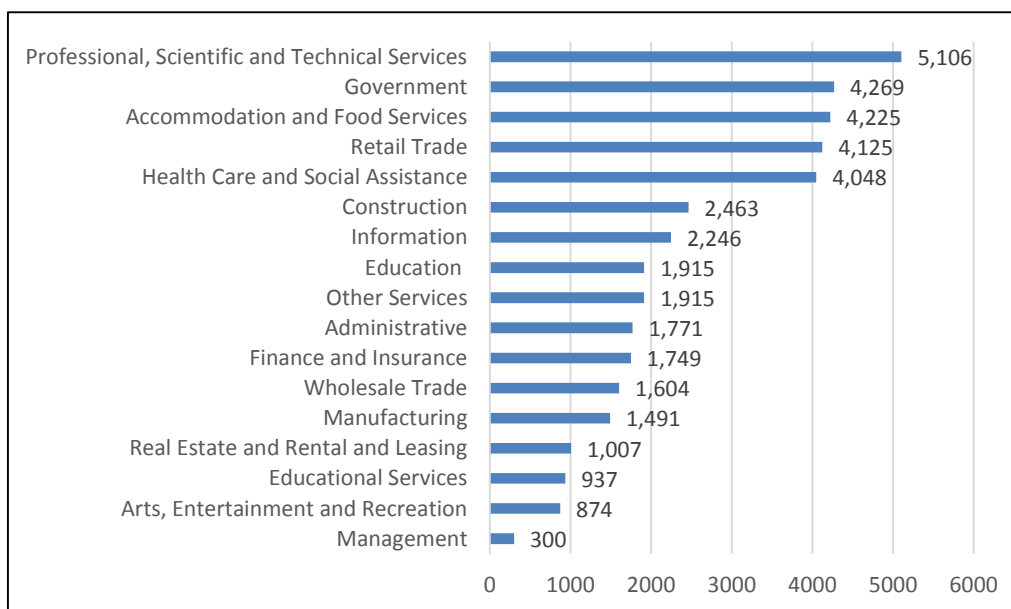
Kirkland Planning Area

In its early years, Kirkland's industries included wool milling and ship building, as well as serving cross-lake ferries to Seattle. Today, Kirkland has more service, high-tech, communication, and information technology industries, while traditional industrial sectors have declined. (Puget Sound Regional Council 2013b) In 2013, there were 4,688 business licenses in Kirkland, of which 1,972 or 42%, were home-business licenses. (City of Kirkland 2013a)

EMPLOYMENT BY SECTOR

In 2013 the City of Kirkland had an estimated 40,514 "covered" jobs (Puget Sound Regional Council, 2013a). Covered employment refers to positions covered by the Washington State Unemployment Insurance Act, which exempts self-employed persons; given the large number of home-business licenses recorded by the City, total employment is likely to be higher. As shown in Exhibit 3.4-1 the largest employment sectors in 2013 were Professional Scientific and Technical Services, Government, Accommodation and Food Services, Retail Trade, and Health Care and Social Assistance.

Exhibit 3.4-1. Kirkland Covered Employment by Sector, 2013



Source: Puget Sound Regional Council 2013a

MAJOR EMPLOYERS

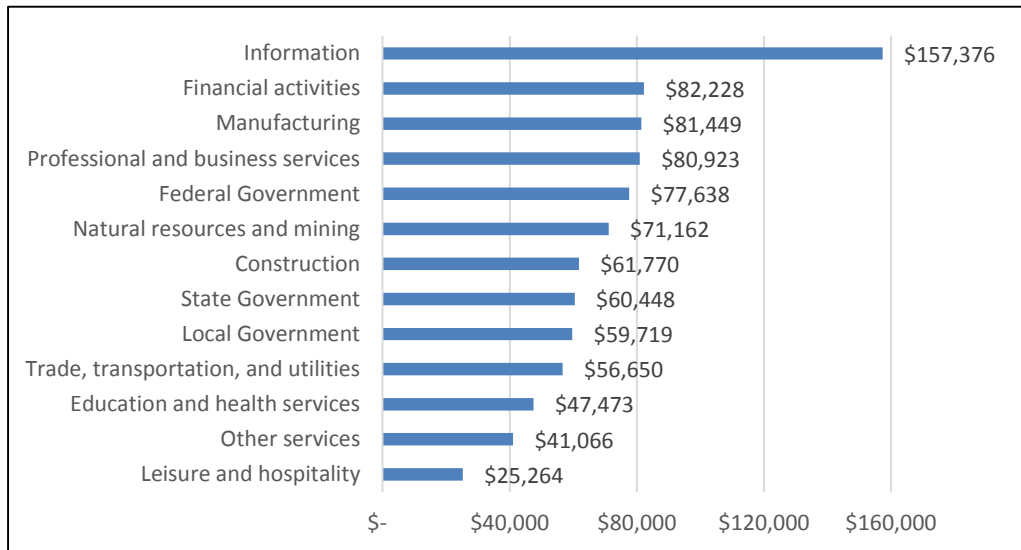
Kirkland's largest employers include technology firms and service providers in real estate, health care, and retail trade. Top employers as of 2013 included Evergreen Healthcare (2,603 employees), Google, Inc. (658 employees), the City of Kirkland (575 employees), Kenworth Truck Company (439 employees), and Costco Wholesale (302 employees). (City of Kirkland 2013a)

INCOME AND WAGES

Based on 2012 American Community Survey 5-Year estimates, the median household income in Kirkland was \$88,756 between 2008 and 2012. This is significantly higher than median household income in King County (\$70,567), Seattle (\$61,856), and Bothell (\$70,935), slightly higher than in Kenmore (\$81,097) and Bellevue (\$84,503), and lower than Redmond (\$92,851) and Woodinville (\$91,049) (ARCH, 2013).

Average wages differ substantially by sector. As shown in Exhibit 3.4-2, average wages in King County ranged from just over \$25,000 in the leisure and hospitality sector to over \$157,000 in the Information sector.

Exhibit 3.4-2. King County Annual Wages by Industry, 2013

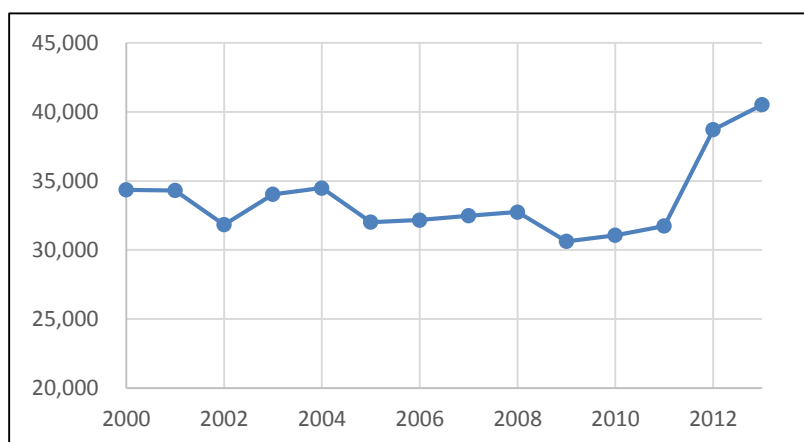


Source: Bureau of Labor Statistics 2013

TRENDS IN KIRKLAND'S EMPLOYMENT AND ECONOMY

Covered employment in Kirkland has ebbed and flowed over the past 13 years, declining in 2005 and again in 2009, then rising dramatically in 2012, as shown in Exhibit 3.4-3. Between 2011 and 2012, Kirkland added 6,967 jobs, an increase of 22%. This sharp increase is likely due in part to a continuation of the national recovery from the recent recession, as well as the 2011 annexation of the Kingsgate, North Juanita, and Finn Hill neighborhoods, which contain several small commercial areas and employment centers.

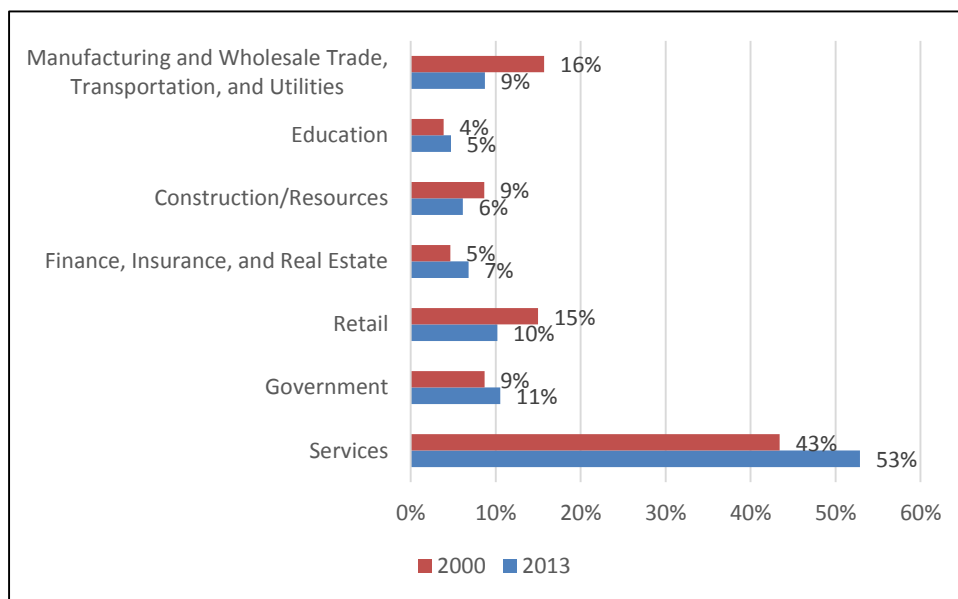
Exhibit 3.4-3. Covered Employment in Kirkland, 2000-2013



Source: Puget Sound Regional Council 2013a

Kirkland's economy and job base have also changed over time. The proportion of the Kirkland workforce employed in industrial and retail sectors has declined, while the proportion employed in Services has increased, as shown in Exhibit 3.4-4.

Exhibit 3.4-4. Kirkland Employment by Sector as Proportion of Total Employment, 2000 and 2013



Source: PSRC 2013a, BERK 2015

INDUSTRIAL BUSINESSES & LANDS

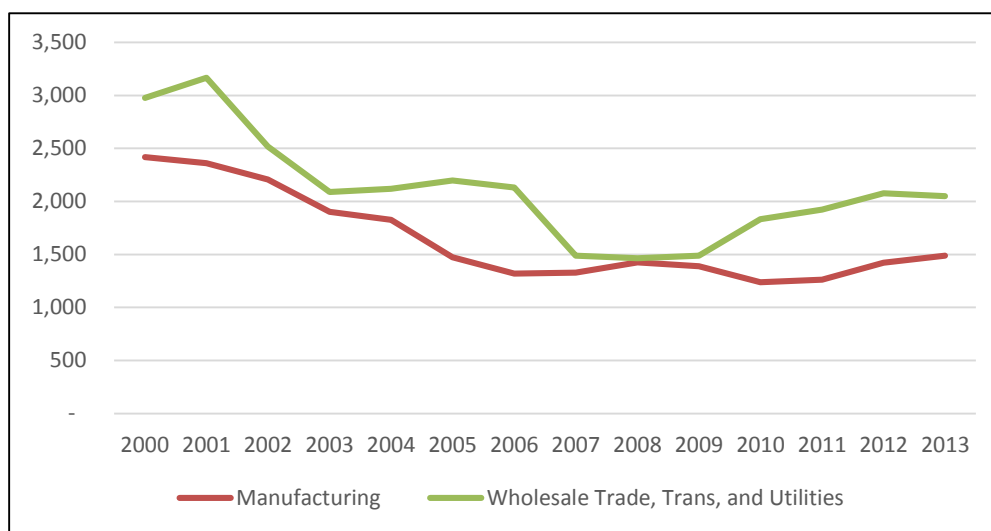
Kirkland has several historic industrial and manufacturing corridors, most located adjacent to the Cross Kirkland Corridor, formerly a BNSF railroad line. These areas, which are generally zoned "Light Industrial Technology," are located in the Norkirk and Everest neighborhoods. The Totem Lake Business District also includes extensive industrially-zoned lands in the eastern portion of the district, along NE 124th Street. Businesses located in Kirkland industrial buildings include both regional firms such as aerospace suppliers and medical supply manufacturing, as well as smaller businesses such as auto repair, plumbers, and analytical labs. (Heartland 2014)

Industrial space in Kirkland accounts for twenty percent of the eastside industrial market (approximately 2.7 million square feet out of a total of 13.2 million square feet), and with a lack of new industrial land in eastside communities, industrial vacancy rates are below five percent. (Heartland 2014)

Industrial businesses can have several benefits to a community, including paying high wages, providing job opportunities with fewer credentials and barriers to entry, adding diversity to the economy, supporting a skilled workforce, and supporting other jobs in the community. (Puget Sound Regional Council 2015)

Jobs in the industrial sector, defined as manufacturing, transportation, warehousing, and related fields, have declined in Kirkland over the past fifteen years, as shown in Exhibit 3.4-5. Manufacturing jobs declined from over 2,400 in 2000 to a recession low of 1,262 in 2011 and then rebounded back to 1,490 in 2013. Jobs in the wholesale trade, transportation, and utilities sector have declined from nearly 3,166 in 2001 to a low of 1,463 in 2008 and rebounded to 2,049 in 2013.

Exhibit 3.4-5. Trends in Industrial Employment in Kirkland, 2000-2013



Source: PSRC 2013, BERK 2015

An Industrial Lands Analysis completed for the Puget Sound Regional Council in 2015 found that there is pressure in some industrial areas to remove land from industrial zoning or permit a wider range of uses. In addition, some cities in the region are rezoning industrial lands to provide more space for residential and office uses, particularly in areas with weak demand for industrial use. (Puget Sound Regional Council 2015) However, a 2014 analysis by Heartland concluded that Kirkland industrial lands are unlikely to convert to traditional office uses in the near future, due to market rents, development costs, and competition from other eastside markets.

BUSINESS AND EMPLOYMENT CONDITIONS IN DOWNTOWN, NEIGHBORHOOD BUSINESS CENTERS, AND LITs

Central Business District

The CBD, located within the Moss Bay Neighborhood, stretches from 6th Street on the east to the lake shore on the west, and from 3rd and 4th Avenues on the north to 2nd Ave S and Kirkland Way on the south. The CBD serves as a center for professional and government services, specialty retail, tourism, arts and entertainment, neighborhood services, and housing. (City of Kirkland, 2009) The CBD had 2,933 jobs in 2015 (City of Kirkland 2015c), while the Moss Bay neighborhood, which contains the CBD, had 3,989 employees and 625 business licenses as of 2013. (City of Kirkland 2013b)

The CBD is zoned primarily for commercial mixed-use and includes the Parkplace mall site. In 2008 a redevelopment plan was proposed at the Parkplace site, which would have included 1.2 million square feet of

office and approximately 600,000 square feet of commercial space and added nearly 6,000 new jobs. A Planned Action Ordinance was adopted for the property in late 2008, but the property owner delayed development as a result of the national economic downturn. In 2014, a new, lower-intensity proposal to redevelop the Parkplace site was submitted, which would add approximately 2,380 new jobs and 300 new units of housing. In 2015 the Kirkland City Council approved a Planned Action Ordinance, zoning text for CBD 5A, municipal code, master plan, and design guidelines for the Parkplace site. Design review for the project is expected to begin in June 2015. As described in Chapter 2, this updated proposal is reflected in Alternatives 2 and 3 of this DEIS.

Everest Light Industrial Technology Zone

The Everest Light Industrial Technology (LIT) area, located southeast of the Central Business District and just east of the Cross Kirkland Corridor, provides opportunities for businesses in high technology, office, wholesale, manufacturing, and light industrial. As of 2013, the Everest LIT had 1,374 employees. Google, Inc. occupies three buildings in the LIT, at 747 6th St South, and had 658 employees at this location as of 2013. Google is building its “Phase II” campus at 451 7th Ave S, just west of its current campus and across the Cross Kirkland Corridor. The Phase II campus is located on five acres of a former brownfield site and will include approximately 180,000 square feet of office space. At common office space usage rates of 250 square feet per employee, this would provide capacity for up to 720 employees. Western Pneumatic Tube, a producer of welded tubing, is located just south of Google’s current campus and had 120 employees in Kirkland as of 2013.

Houghton/Everest Neighborhood Center

The Houghton/Everest Neighborhood Center is located on the north and south sides of NE 68th Street in the Central Houghton and Everest neighborhoods. The Central Houghton Chapter of the Kirkland Comprehensive Plan (amended 2012) includes Goal CH-5, “Promote a strong and vibrant Neighborhood Center with a mix of commercial and residential uses.” Policies include developing a plan for the Houghton/Everest Neighborhood Center and encouraging a mix of uses in the Neighborhood Center, such as neighborhood-oriented shops, services, and offices.

Rose Hill Business District

The Rose Hill Business District, located on the NE 85th Street corridor between I-405 and the city border at 132nd Ave NE, provides regional and neighborhood services in general retail, automobile sales, high technology, and small office parks. The district had 1,624 jobs as of 2015. (City of Kirkland, 2015c) The western portion of the business district includes major retail stores including Costco and several car dealerships, while the eastern portion includes retail stores, offices, and business parks, with some multifamily and single-family homes. There are also a number of car-oriented stores and services, such as gas stations, car washes, and tire stores.

The district is split between North and South Rose Hill neighborhoods, but the City has planned for this district in the NE 85th Street Subarea Plan. The Plan’s vision is for an attractive and economically healthy commercial area combining regional, community, and local retailers. The Plan’s goals and policies for commercial uses include enhancing the commercial viability of the Subarea while minimizing impacts on adjacent residential neighborhoods; designating areas with site-specific development standards; and assuring an effective transition between residential and commercial areas by establishing architectural and site design standards for new and remodeled development.

North Rose Hill Light Industrial Technology Zone

The North Rose Hill LIT zone, located just south of NE 90th Street and west of 124th Ave NE, had 156 jobs in 2015. (City of Kirkland, 2015c) The area is approximately 6.8 acres and includes six parcels, including a two-story office building, the Jonesco business park, and four parcels with single family homes. (City of Kirkland 2014)

Norkirk Light Industrial Technology Zone

The Norkirk LIT is located in the southeast corner of the Norkirk neighborhood, just north of NE 85th Street and west of the Cross Kirkland Corridor. As of 2015, there were 373 jobs in the Norkirk LIT, with 53% in industrial businesses, 30% in office, 13% in auto repair, and others in retail storage, recreation, restaurant, and retail. (City of Kirkland 2015c) Of the building square footage, 42% is industrial and 52% is service related retail. (Heartland 2014) Most of the businesses have fewer than ten employees, with an average business size of six people. The largest employer, Paint Sundries Solutions, has 45 employees. (Heartland 2014) The City's Maintenance Center is located in the northern portion of the LIT.

Other Business Districts and Neighborhood Centers

Carillon Point is a mixed use commercial center located west of Lake Washington Boulevard and south of Houghton Beach Park, on the shore of Lake Washington. The area is an employment center and tourist attract with a mix of offices, retail, hotel, restaurants, and housing, with the Yarrow Bay Marina to the south. The Kingsgate neighborhood has a small neighborhood center on 124th Ave NE between NE 142nd Place and NE 145th Street, with a variety of shops and services including a grocery store, banking services, restaurants, retail shops, entertainment, and recreation facilities. The Juanita business district, centered on 97th and 98th Avenues NE and east of Juanita Beach Park, includes local commercial services.

Totem Lake Planned Action Area

The Puget Sound Regional Council (PSRC) designated the Totem Lake area a “regional growth center” in 2003, which identifies the area as a center for housing and employment growth and regional funding. As described in Chapter 2, the Totem Lake Planned Action Area includes the PSRC regional growth center, as well as adjacent areas. Totem Lake has several clusters of employment, including a health-care sector centered around Evergreen Health Medical Center, a commercial center near I-405 which includes destination retail and automobile sales, and a high technology and light industrial sector, centered on the NE 124th Street Corridor. There are currently an estimated 13,152 employees in Totem Lake. (City of Kirkland 2015c)

The Evergreen Health Medical Center is the largest employer in Kirkland, with over 2,600 employees. (City of Kirkland 2013a) The campus includes a 318-bed medical center and four medical specialty buildings. (Evergreen Health 2015)

Totem Lake Mall, consisting of 290,000 square feet of retail space on a 26-acre site near I-405, was originally built in 1973 as a two-story enclosed regional mall. (City of Kirkland 2015) Today the Mall is considered to be an under-performing property, and attempts at redevelopment have been ongoing for several years. In 2002 the City adopted the Totem Lake Neighborhood Plan, which envisions the area as a dense, compact community with a mix of business, commercial, and residential uses. A Conceptual Master Plan for Totem Lake Mall was approved in 2005, and in 2006 the City entered into a redevelopment agreement with a development company. Redevelopment did not occur, and in 2015 the agreement was amended to facilitate sale of the property. The Totem Lake Mall Conceptual Master Plan was amended in 2015, and a SEPA addendum was prepared for that action. The revised master plan envisions demolition of existing buildings, construction of new buildings and parking structures, a redesigned public plaza, and changes to street connections. In addition to typical retail uses, office and residential use are contemplated within the mall. The completed Mall is expected to include up to 1,000,000 square feet. (City of Kirkland 2015)

The NE 124th Street Corridor is an industrial area located east of I-405 and Totem Lake on the north side of NE 124th Street. The corridor contains a growing number of high-tech and aerospace businesses as well as an array of auto dealerships and several small industrial businesses. (Heartland 2014) Many of the buildings in this area are owner-occupied, which could make conversion to other uses unlikely.

The eastern portion of the Totem Lake Planned Action Area, zoned TL 7 and extending east from Slater Avenue along NE 124th Street and then north adjacent to the Redmond border, is highly industrial, with 80% of employees,

38% of businesses, and 79% of floor area in industrial use. (City of Kirkland 2015b) The largest businesses are aerospace firms Astronics and Nabtesco. Astronics, which employs 350 people in administration, research, design, and manufacturing, moved its operations from Redmond to Totem Lake in 2012. (City of Kirkland, 2013c)

The western portion of the Totem Lake neighborhood includes several sub-centers. North of NE 124th Street is the Totem Lake West shopping center, a potential site for redevelopment, and north of NE 128th Street is the Kingsgate Park and Ride lot, envisioned as a location for transit-oriented development in the Totem Lake Neighborhood Plan. South of 124th Street is the 405 Corporate Center, with a mix of office and flex industrial space, and the new Kirkland Justice Center, which houses the Police Department and Municipal Court.

In the southwest portion of the Totem Lake Planned Action Area is the Parmac area, south of NE 116th Street and west of I-405, straddling the Cross Kirkland Corridor. Parmac is composed primarily of light industrial businesses, with 90% of the buildings in industrial use (Heartland 2014). Parmac has approximately 95 businesses with 820 employees, with the largest employer, medical equipment manufacturer MedRad, with over 100 employees (Heartland 2014). The average building age in Parmac over 40 years, and many buildings are considered to be functionally obsolete for industrial uses. (Heartland 2014) The ParMac area has been rebranded as the “Active Zone” in the Cross Kirkland Corridor Master Plan, to honor the recreation-related activities in the area and set the tone for a corridor that fosters activity.

TRANSIT PROXIMITY AND USE

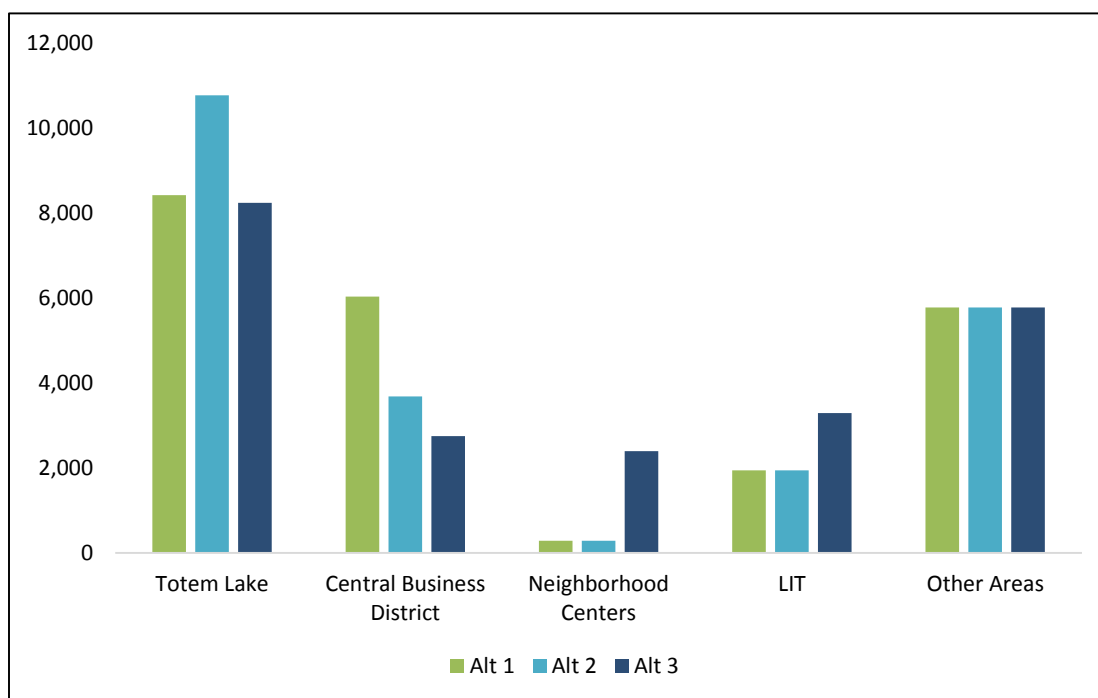
The Totem Lake Planned Action Area is home to King County Metro’s Totem Lake Transit Center, located across NE 128th Street from the Evergreen Health Medical Center. According to the Puget Sound Regional Council, 74% of employees in the Totem Lake Regional Growth Center work within a quarter-mile of a transit stop, and 94% work within a half-mile. (PSRC 2013b) Despite the proximity to transit, only 7% of Totem Lake employees took transit to work in 2010. (PSRC 2014)

Impacts

Employment Growth Capacity

All alternatives in this DEIS would provide the capacity to meet the growth target of 22,435 new jobs in Kirkland between 2015 and 2035. However, each alternative would distribute the growth differently throughout the city, as shown in Exhibit 3.4-6.

Exhibit 3.4-6. New Jobs in Kirkland in 2035, by Area and Alternative



Legend: Alt = Alternative LIT= Light Industrial Technology Area

Source: BERK 2015

ALTERNATIVE 1 (EXISTING PLANS - NO ACTION)

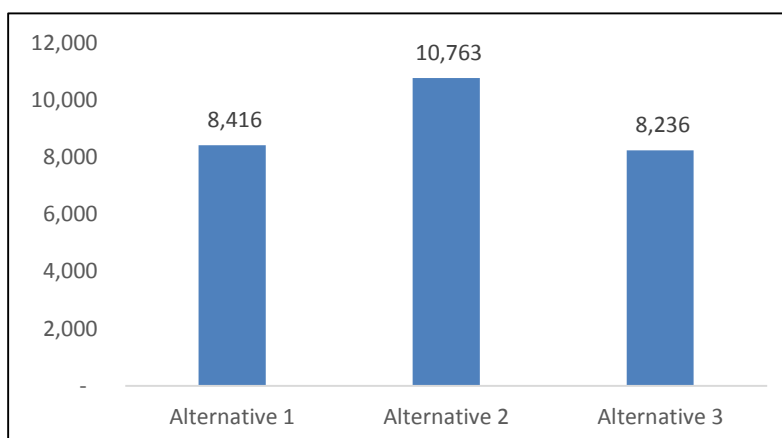
Kirkland Planning Area

Under currently adopted land use plans, policies and regulations assumed in Alternative 1 (No Action), the City has capacity to add 22,905 new jobs, 470 jobs above the 2035 target. Relative to the other alternatives, this alternative allocates more jobs to the CBD; 2,347 more jobs than Alternative 2 and 3,278 more jobs than Alternative 3. This alternative assumes a high level of jobs at the Parkplace site in the CBD. Under this alternative, downtown would be a focal center of jobs in Kirkland, likely including many office jobs and a smaller number of commercial jobs.

Totem Lake Planned Action Area

As described in Chapter 2, under this alternative, 8,416 new jobs, equivalent to 37.5% of city job growth, would be allocated to Totem Lake, a smaller amount than under Alternative 2 (10,763) and slightly more than under Alternative 3 (8,236), as shown in Exhibit 3.4-7. The No Action Alternative does not include a Planned Action Ordinance (PAO) for Totem Lake; as such, the area would not benefit from the streamlined environmental review and permitting process provided by a planned action, and growth in Totem Lake could occur more slowly or in a less coordinated manner.

Exhibit 3.4-7. Totem Lake 2035 Job Growth by Alternative



Source: City of Kirkland; BERK Consulting, 2015

ALTERNATIVE 2 (TOTEM LAKE/DOWNTOWN FOCUS)

Kirkland Planning Area

Under this alternative, which focuses employment growth in the CBD and Totem Lake Planned Action areas, the City has enough capacity to meet citywide employment growth targets, with capacity for 399 more jobs than the No Action Alternative. However, Alternative 2 would reduce employment capacity in the CBD by 2,028 jobs relative to the No Action alternative. This reflects adoption of the 2014 revised Parkplace redevelopment zoning amendment and master plan, which would add 2,935 fewer new jobs than the original Parkplace redevelopment. As described in Chapter 2, Alternative 2 would also include additional height allowances at the MRM site in the CBD, allowing an increase in employment capacity of 907 jobs at this location.

Totem Lake Planned Action Area

Under this alternative, 10,763 new jobs would be allocated to Totem Lake during the planning period, the most of any alternative. While sufficient land capacity exists to meet citywide employment growth targets under Alternative 2, current zoning in Totem Lake does not provide enough localized capacity to accommodate this level of employment growth. Alternative 2 therefore includes amendments to zoning in the Totem Lake Planned Action area. As described in Chapter 2, Alternative 2 assumes increased building height in zoning districts 4A, 4B, 4C, 5, 6A, 6B, 7, and 8. By raising height limits and Floor Area Ratios, the capacity for new jobs in Totem Lake would increase by 2,427 relative to the No Action Alternative.

ALTERNATIVE 3 (DISTRIBUTED GROWTH)

Kirkland Planning Area

Under this alternative, which allocates 2,394 new jobs to neighborhood centers and 3,287 new jobs to LITs, the City has enough capacity to meet citywide employment growth targets, with capacity for 415 more jobs than the No Action Alternative. While sufficient land capacity exists citywide to meet citywide employment targets, current zoning in Rose Hill and Houghton does not provide enough localized capacity to accommodate the alternative's level of employment growth in neighborhood centers. Alternative 3 therefore includes amendments to zoning in Rose Hill and Houghton, including increased building height and Floor Area Ratio limits. By raising height limits and Floor Area Ratios, the capacity for new jobs in neighborhood centers would increase by 2,631 relative to the No Action Alternative.

This alternative would reduce employment capacity in the Central Business District by 3,278 jobs relative to the No Action alternative. Similar to Alternative 2, this reflects adoption of the 2014 revised Parkplace redevelopment

zoning amendment and master plan, which would have 2,935 fewer new jobs than the original Parkplace redevelopment agreement. As described in Chapter 2, this alternative would include redevelopment at the MRM site in the CBD with increased housing development, resulting in a reduction in employment capacity at this location of 19 jobs compared to the No Action Alternative.

Totem Lake Planned Action Area

Under this alternative, 8,236 new jobs would be allocated to Totem Lake during the planning period, slightly fewer than under Alternative 1 and substantially lower than under Alternative 2. Alternative 3 assumes reduced intensity of development in zoning district TL 2, as described in the revised master plan for Totem Lake Mall.

Employment Mix and Effects on Existing Businesses

IMPACTS COMMON TO ALL ALTERNATIVES

Under all Alternatives, employment in Kirkland would grow by approximately 50% by 2035, from approximately 40,500 jobs in 2013 to approximately 63,000 in 2035. Job growth would likely occur primarily by development on vacant or underdeveloped lands and by conversion of low-density uses to higher density uses. The Alternatives differ by where the jobs would be located, as shown above in Exhibit 3.4-6, which can affect existing businesses in different ways and affect what types of new businesses locate in Kirkland.

Market Feasibility

Providing capacity for new jobs in a given location does not assure that future businesses will locate in those places. Decisions to locate or expand businesses and employment in Kirkland depend on market conditions and the decisions of private individuals and organizations. The availability of space in other locations may be a primary determinant of whether and what type of employment growth occurs in Kirkland. Long-term demand for various uses over the coming 20 years may be substantially different than current conditions, as absorption in neighboring eastside markets could make future development in Kirkland possible that is not feasible today. While land use policies should be set with long-term future possibilities in mind, the descriptions below describe current market demand for office, industrial, and retail uses, giving some indication for the timeline that may be required to see development that will utilize the full zoned capacity.

Office. A 2014 report by Heartland found that Kirkland's share of the regional office development pipeline is about six percent. While this is more than Kirkland's one percent share of the regional office market since 2005, this increase is attributed to Google Phase II, with the majority of new office development slated for Bellevue. The report states that new office development is unlikely to occur in many of the city's commercial areas in the near future, due to market rents, development costs, and competition from other eastside markets. The exception would be where an owner or user finds a location that is uniquely suited to its business needs.

Industrial. The 2014 Heartland report notes that Kirkland holds approximately 20% of the eastside's industrial lands. Industrial lands are limited and more likely to shrink than grow. Current vacancy rates are below five percent, though industrial employment declined in Kirkland between 2000 and 2013. The Heartland report notes that "industrial uses tend to seek low cost space, which is not conducive to more high cost, vertical development in urbanizing areas like the urban centers on the eastside" before stating that existing industrial space in Kirkland "will continue to be behave as an industrial 'workbench' until the market supports higher and better uses (e.g. office and in some areas multifamily) that are permitted under the current land use code."

Retail. The 2009 *Downtown Kirkland Retail Strategy* by E.D. Hovee & Company examined the potential for retail growth in downtown Kirkland from both local residents and the larger eastside market. As of 2008, Kirkland had approximately 3.46 million square feet of retail space, with downtown Kirkland accounting for 26% of this total. Retail vacancies in May 2008 (before the economic recession) were higher in Kirkland citywide (6.3%) than the metro region (4.1%), and lowest in downtown Kirkland (2.5%), while retail property rental rates were higher

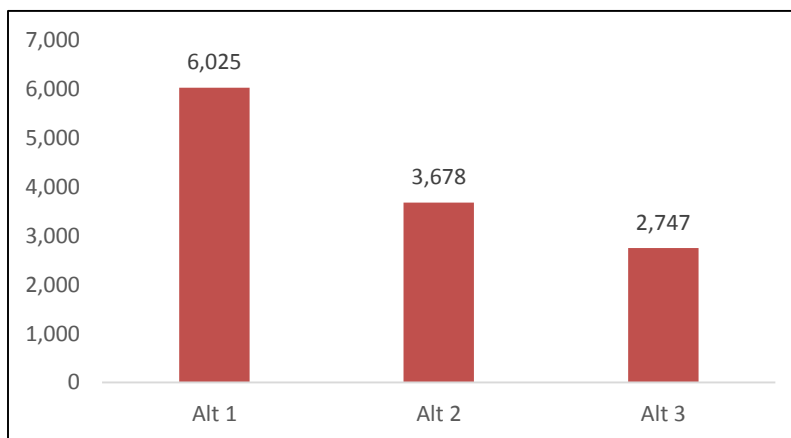
citywide than in the metro region (\$27.50/square foot vs \$21.50/square foot), but highest in downtown Kirkland (\$36/square foot). The study found a growing potential for more local in-city retail clientele due to several factors: a growing population of younger adults in Kirkland, increasing ethnic diversity, educational levels, growing population, and preferences for less driving and more shopping close to home. Prior to the economic recession, Kirkland retail stores supplied a sales volume approximately \$40 million in excess of demand generated by Kirkland residents – indicating an inflow of sales revenue from non-Kirkland residents. However, there was sales leakage for some retail categories. The *Strategy* estimated that additional commercial retail space could be absorbed by Kirkland residents if sales leakage was recaptured and anticipated population growth occurred. The ability to capture this retail growth would be affected by several factors, including the status of new development proposals with retail components, such as Parkplace; the status of major developments elsewhere in the market area; and the ability to secure sites for retail infill at a cost supportable by area lease rates.

ALTERNATIVE 1 (EXISTING PLANS - NO ACTION)

Kirkland Planning Area

This alternative allocates 6,025 new jobs to the Central Business District, far more than the other alternatives, as shown in Exhibit 3.4-8, emphasizing the CBD's potential role as a center of business and employment in Kirkland. These new jobs represent growth of over 200% from the 2,933 jobs present in the CBD in 2015.

Exhibit 3.4-8. New Jobs in Kirkland CBD in 2035, by Alternative



Source: BERK 2015

The CBD is zoned primarily for commercial mixed-use and serves as a center for professional and government services, specialty retail, tourism, arts and entertainment, neighborhood services, and housing. Job growth potential in the CBD under Alternative 1 would likely consist of increases in these sectors. New businesses under this alternative are likely to contain a higher proportion of professional businesses and a smaller proportion of regional and local-serving retail businesses, relative to Alternatives 2 and 3, which concentrate jobs in Totem Lake and neighborhood centers and LITs, respectively.

Market conditions may make it difficult to achieve the full 6,025 new jobs in the CBD under Alternative 1. Alternative 1 assumes a 2008 redevelopment proposal for the Parkplace site which would have included 1.2 million square feet of office and approximately 600,000 square feet of commercial space and added nearly 6,000 new jobs. However, the proposal to redevelop Parkplace approved in early 2015 would add housing and significantly reduce the office space, adding approximately 2,380 new jobs, roughly 3,600 fewer than the previous proposal. The amended Parkplace proposal also calls into question the market demand for new office space in the CBD, particularly relative to demand for new housing, which competes with office for space in the mixed-use area.

Job growth in the Central Business District could displace some existing commercial businesses as land prices rise, rents increase, and new office buildings are developed. In industrial zones, a shift to professional and high tech services could displace existing industrial businesses; however, displacement of industrial businesses in LITs would likely be lower than under Alternative 3, which allocates more jobs to LITs.

Totem Lake Planned Action Area

Under this alternative, 8,416 new jobs would be allocated to Totem Lake, a smaller amount than Alternative 2 (10,763) and slightly more than Alternative 3 (8,236). Because many of Kirkland's health care and industrial businesses are concentrated in Totem Lake, allocating fewer new jobs to this area (relative to Alternative 2) could result in fewer overall jobs in these sectors (relative to Alternative 2).

Under this alternative, job growth in Totem Lake could displace some existing businesses, as sectors like professional and high tech services grow in multistory office buildings where auto-oriented commercial or industrial businesses are currently located.

ALTERNATIVE 2 (TOTEM LAKE/DOWNTOWN FOCUS)

Kirkland Planning Area

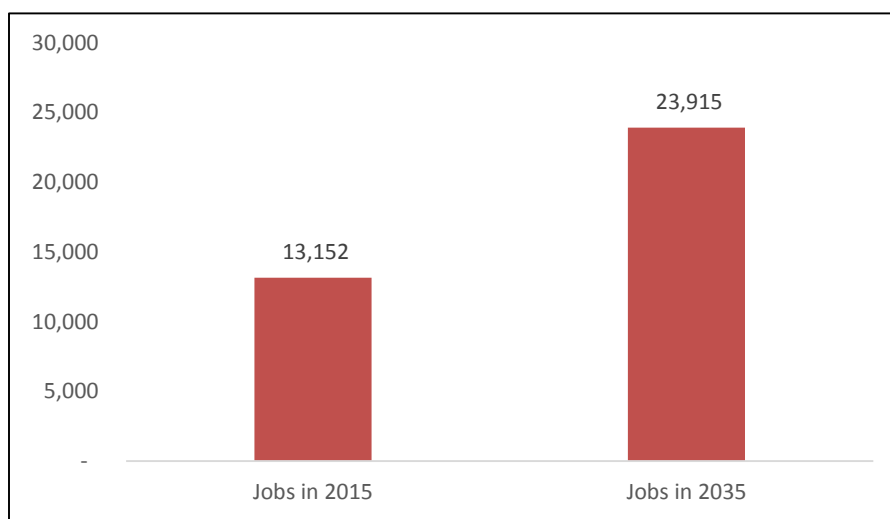
Under this alternative, which would focus employment growth in the Central Business District and Totem Lake Planned Action areas, employment capacity in the CBD would be reduced by 2,028 jobs from the No Action Alternative. Fewer new jobs in the Central Business District and more new jobs in Totem Lake, relative to the No Action Alternative, could increase the proportion of health-care related, high-tech, aerospace, and commercial jobs, strong sectors in Totem Lake. Job growth in other professional services and office jobs under this alternative could be similar to the No Action alternative, with the jobs located in Totem Lake rather than in the CBD, assuming sufficient market demand for office in Totem Lake.

This alternative also allocates a larger proportion of new housing units to the CBD than the No Action Alternative, which could lead to limited instances of displacement of existing commercial and other businesses in the CBD. The Parkplace site, while allocated less employment under this alternative than under the No Action Alternative, would experience increased employment growth over existing conditions and serve as an employment anchor for the area. In nearby mixed-use zones, some lower-intensity commercial uses may be displaced as properties are redeveloped for housing, but the adjacent CBD-5 zone places a limit on the amount of a development that may be dedicated to residences, ensuring that most of the building space would be reserved for office or commercial uses. Even with requirements for ground-floor retail, it's possible that higher land prices and rents generated by new development and redevelopment could displace existing retail businesses.

Totem Lake Planned Action Area

Under this alternative, capacity for 10,763 new jobs would be located in Totem Lake, a higher proportion than under the other alternatives, and equal to 82% growth over the 13,152 existing jobs in Totem Lake in 2015, as shown in Exhibit 3.4-9.

Exhibit 3.4-9. Totem Lake Jobs Today and 2035, Under Alternative 2



City of Kirkland 2015, BERK 2015

Today Totem Lake has several distinct employment clusters, including:

- A health-care cluster centered around Evergreen Medical Center;
- A commercial center near I-405 including regional retail, car sales, and the Totem Lake Mall site, contemplated for redevelopment to include retail, office, and residential; and
- The NE 124th Street Corridor, which includes a growing number of high-tech and aerospace businesses, as well as traditional industrial businesses and car dealerships.

Potential job growth in Totem Lake would likely mirror existing employment clusters, including high-tech, aerospace, industrial, regional retail, and health care.

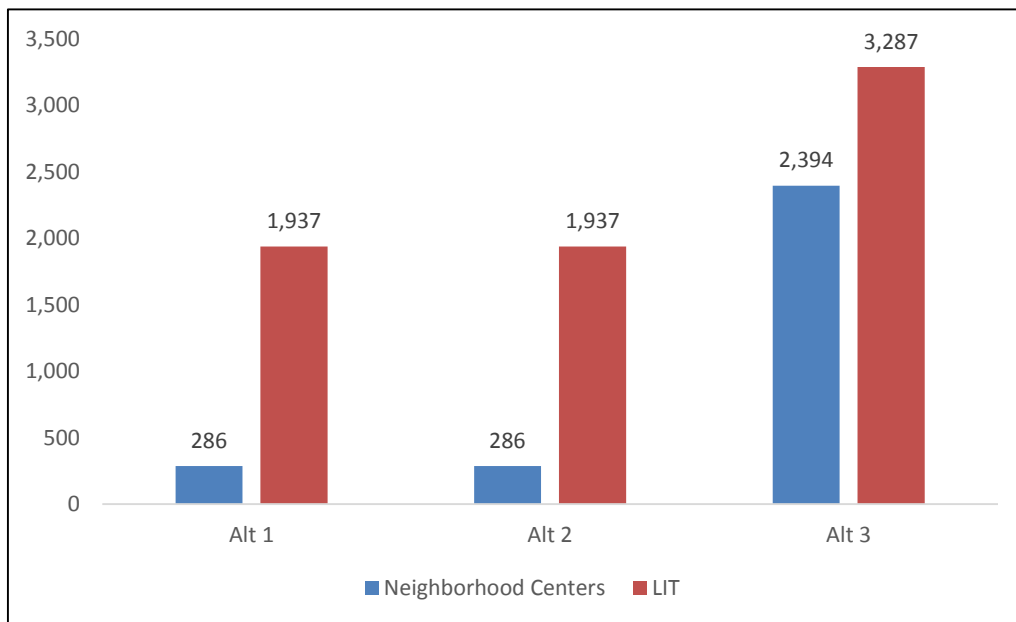
Existing businesses in Totem Lake, including commercial and industrial businesses, could be displaced as new development causes land prices to rise. However, as noted in the 2014 Industrial Lands study, much of the industrial land in Totem Lake is owner-occupied, shielding current businesses from rising rents and reducing displacement of existing businesses. Ongoing development and rising land prices may serve as an incentive for some industrial land owners to sell or redevelop their property, leading to some conversion of uses in this area.

ALTERNATIVE 3 (DISTRIBUTED GROWTH)

Kirkland Planning Area

Under this alternative, job growth in the Central Business District would be lower than under Alternatives 1 and 2, while job growth in Neighborhood Centers and LITs would be higher, with 2,394 new jobs allocated to Neighborhood Centers and 3,287 new jobs allocated to LITs, as shown in Exhibit 3.4-10

Exhibit 3.4-10. New Jobs in Neighborhood Centers and LITs by Alternative

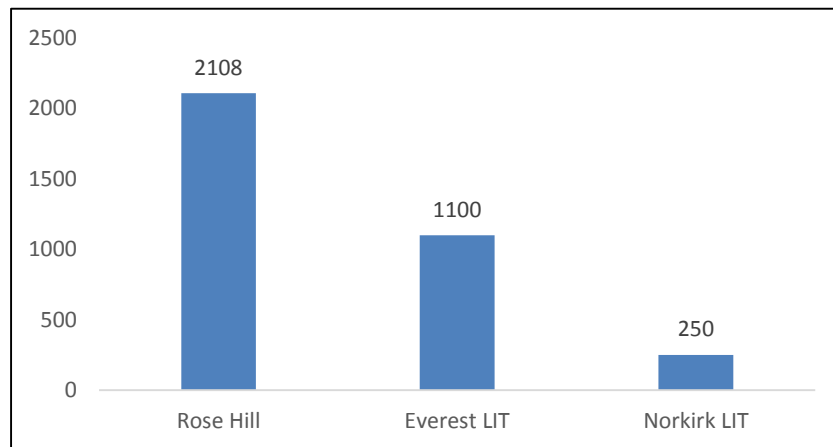


LIT= Light Industrial Technology Area

Source: BERK 2015

The new jobs allocated to Neighborhood Centers under Alternative 3 would primarily go to the Rose Hill Business District (2,108 additional new jobs), while new jobs allocated to LITs would primarily go to Everest LIT (1,100) and Norkirk LIT (250), as shown in Exhibit 3.4-11.

Exhibit 3.4-11. Additional Job Allocation in Neighborhood Centers and LITs in Alternative 3



LIT= Light Industrial Technology Area

Source: BERK 2015

Future growth in the neighborhood centers is likely to consist of moderate-intensity, mixed-use development that would include a mix of commercial, office, and residential uses. New jobs in the neighborhood centers would likely consist mostly of retail and services, as well as small-scale office. In other areas of the city, future jobs growth would likely follow existing land use trends.

Potential employment changes and impacts in the key Neighborhood Centers are described below.

Rose Hill Business District: Under Alternative 3, the Rose Hill Business District is slated for the most employment growth of any neighborhood center, more than doubling its current employment of 1,624 jobs to 3,732 jobs. Today the district is zoned primarily for commercial and office uses and has a mix of regional retail stores, such as Costco, car dealerships, smaller retail stores, offices, and business parks. New jobs in this district could include local-serving retail and professional services, regional retail, and regional professional services. It is questionable whether the market would deliver the 2,100 new jobs envisioned in this alternative. While some new and expanded local-serving retail and professional services would likely increase to serve population growth in nearby neighborhoods, other job growth is less certain, and local-serving retail is unlikely to generate 2,100 new jobs on its own. The location near I-405 could improve the chances for growing regional retail, but there is competition from Totem Lake and other regional retail centers. Growth in professional services and other office jobs in this district is hard to predict. The 2014 Heartland report found that Kirkland is unlikely to get substantial new office development in the near-term, as developers prefer sites in downtown Bellevue. Of the new office space that does come to Kirkland, it may be more likely in concentrated centers of the CBD or Totem Lake.

Everest LIT: Under this alternative, the Everest LIT would grow by 1100 jobs, an increase of 80% over the 1,374 jobs in the area in 2013. The LIT today includes businesses in high technology, office, wholesale, manufacturing, and light industrial. Google, Inc. is a large presence with 658 employees as of 2013 and a new 180,000 square foot campus under construction, which could provide capacity for 720 new employees. Zoning in the LIT is flexible, allowing for both high-tech uses and traditional industrial. Based on previous trends such as the growth of Google, Inc., the addition of 650 new jobs could mean more high-tech jobs and fewer industrial jobs in the LIT.

Norkirk LIT: Under Alternative 3, the Norkirk LIT would see 67% growth in jobs, from the 373 in 2015 to 623 in 2035. Current jobs in the LIT are 53% in industrial businesses, 30% in office, 13% in auto repair, and others in retail storage, recreation, restaurant when accessory to another use allowed in the zone, and limited retail. Zoning in the LIT is flexible, allowing for high-tech and industrial uses. To see the level of growth contemplated under this alternative may require increased employment density in the LIT, likely leading to transitions from existing industrial businesses to commercial and office uses.

In all the LITs slated for job growth under this alternative, high job growth would likely require increased employment density, likely leading to transitions from existing industrial businesses to commercial and office uses. Higher land values may price industrial businesses out of the LITs and out of Kirkland, forcing them to relocate elsewhere in the region.

Totem Lake Planned Action Area

Under this alternative, 8,236 new jobs would be allocated to Totem Lake, slightly fewer than under Alternative 1 and substantially less than under Alternative 2. A large proportion of new jobs in Totem Lake are likely to be similar to existing clusters, including health care, professional services, and commercial.

SUMMARY OF POTENTIAL IMPACTS ON EMPLOYMENT MIX AND EXISTING BUSINESSES

A summary of potential impacts on employment mix and existing businesses is shown in Exhibit 3.4-12. As described under each alternative, areas with job growth could see displacement of existing businesses as market forces lead to higher land prices and rents, forcing some existing businesses out of their current locations.

Exhibit 3.4-12. Potential Impacts on Employment Mix and Existing Businesses Under Each Alternative

Job Type	Alternative 1	Alternative 2	Alternative 3
Industrial	Less potential for displacement of industrial jobs relative to other alternatives, due to fewer new non-industrial jobs allocated to LITs.	Potential for displacement of industrial jobs in Totem Lake, due to job growth and redevelopment in other sectors.	Potential for decline in industrial jobs due to possible displacement of industrial businesses from Everest and Norkirk LITs.
Regional Retail	Less potential for growth because fewer jobs allocated to areas with regional retail focus: fewer jobs in Totem Lake than under Alternative 2 and fewer in Rose Hill Business District than under Alternative 3.	More potential for growth in regional retail sector because of higher job growth in Totem Lake, a current focal point of regional retail.	Some potential for growth in regional retail because of higher job growth in the Rose Hill Business District, which currently contains some regional retail, although lower job growth in Totem Lake than Alternative 2.
Regional-Serving Office & Professional Services	Higher growth potential than Alternative 3 because of higher job growth in the CBD, depending on the market.	Higher growth potential than under Alternative 3 because of higher job growth in Totem Lake, depending on the market.	Less potential for growth because of lower job allocations to the CBD and Totem Lake. Higher growth in this sector may result if these businesses decide to locate in LITs and the Rose Hill Business District, areas that are not currently a hub for these activities.
Local-Serving Retail	Less growth potential because fewer jobs are allocated to neighborhood centers and LITs than under Alternative 3. As larger-scale retail and office development occurs in the CBD, limited displacement of local-serving retail may occur as land prices and rents rise.	Less growth potential because fewer jobs are allocated to Neighborhood Centers and LITs than under Alternative 3.	More growth potential than under other alternatives due to a greater focus on employment in neighborhood centers. However, because this type of retail is focused on local customers, the growth potential in each neighborhood center would be limited by the capacity of the local market.
Local-Serving Professional Services	Less growth potential than under Alternative 3 because fewer jobs allocated to neighborhood centers, which would be likely to attract professional businesses serving local residents than the CBD or Totem Lake.	Less growth potential than under Alternative 3 because fewer jobs allocated to neighborhood centers, which would be more likely to attract professional businesses serving local residents than the CBD or Totem Lake.	More growth potential because of higher job growth in neighborhood centers and LITs, which would be more likely to attract businesses serving local residents than the CBD or Totem Lake.

Source: BERK 2015

Transit and the Planned Transportation Network

Each alternative would distribute new jobs differently throughout the city, as shown above in Exhibit 3.4-6, with some jobs located closer to transit hubs and pedestrian/bicycle infrastructure which can benefit employees, businesses, and further the City's transportation goals.

ALTERNATIVE 1 (EXISTING PLANS - NO ACTION)

Kirkland Planning Area

Relative to the other alternatives, this alternative allocates more jobs to the Central Business District (CBD), an area well-served by transit, and fewer jobs to Totem Lake (than Alternative 2) or neighborhood centers and LITs (than Alternative 3). This alternative could lead to higher transit use than the other alternatives, as employees in the CBD have more bus routes to choose from, coming from more locations. In addition, the Cross Kirkland Corridor, just east of the CBD, provides pedestrian and bicycle access to employment in the CBD, allowing more employees to walk or bicycle to work. The Rose Hill Business District and Everest and Norkirk LITs have less robust transit service than the CBD or Totem Lake, and under this alternative these areas would see less employment growth than under Alternative 3.

Totem Lake Planned Action Area

Under this alternative, 8,416 new jobs, equivalent to 37.5% of city job growth, would go to Totem Lake, a smaller amount than under Alternative 2 (10,763) and a larger amount than under Alternative 3 (8,236). By adding fewer jobs to Totem Lake than Alternative 2, this alternative would reduce the number of employees with access to transit and the Cross Kirkland Corridor in Totem Lake. However, the specific location of new jobs within Totem Lake would have the largest impact on transit ridership and the number of employees walking and bicycling. Jobs added near the Totem Lake Transit Center will be more likely to attract transit riders than jobs added in parts of Totem Lake less well served by transit and with lower density. Jobs located closer to the Cross Kirkland Corridor will provide greater pedestrian and bicycle access to employees.

ALTERNATIVE 2 (TOTEM LAKE/DOWNTOWN FOCUS)

Kirkland Planning Area

Under this alternative, which reduces employment allocated to the CBD and increases jobs allocated to Totem Lake relative to the No Action Alternative, fewer employees and businesses may have access to frequent transit than under the No Action Alternative. Because the CBD is concentrated with jobs and residents in a compact area well-served by transit, it is likely to generate higher employee transit ridership than Totem Lake, where jobs and housing are more spread out. Access to jobs by walking and bicycling via the Cross Kirkland Corridor may be relatively similar in the CBD and Totem Lake, which are both adjacent to the Corridor, and so the distribution of jobs between these two areas may not impact the number of employees who can walk or bicycle to work.

Totem Lake Planned Action Area

Under this alternative, 10,763 new jobs would be located in Totem Lake, a higher proportion than the other alternatives. By adding more jobs to Totem Lake, this alternative could increase the number of employees with access to transit and the Cross Kirkland Corridor in Totem Lake. However, the concentration and specific location of employment within Totem Lake will affect transit ridership and walking and bicycling to work.

ALTERNATIVE 3 (DISTRIBUTED GROWTH)

Kirkland Planning Area

Under Alternative 3, a large number of new jobs would be located in Neighborhood Centers (2,394) and Light Industrial Technology zones (3,287), particularly in the Rose Hill Business District and the Everest and Norkirk LITs. With more jobs located in dispersed areas, demands on the transit system would also be dispersed across a larger portion of the system, rather than concentrated at a few large transit nodes. Providing adequate transit facilities and services over a larger areas could be challenging, and this alternative could potentially result in fewer employees taking transit to work than Alternatives 1 or 2, which concentrate job growth in the downtown and Totem Lake areas. Some Neighborhood Centers, such as Everest, have good access to the Cross Kirkland Corridor and thus job growth in these areas could increase walking and bicycling to work.

Totem Lake Planned Action Area

Under this alternative, 8,236 new jobs would be allocated to Totem Lake, slightly fewer than under Alternative 1 and substantially lower than under Alternative 2. By adding fewer jobs to Totem Lake than Alternative 2, this alternative would reduce the number of employees with access to transit and the Cross Kirkland Corridor in Totem Lake. However, the specific location of new jobs within Totem Lake would have the largest impact on transit ridership and the number of employees walking and bicycling. Jobs added near the Totem Lake Transit Center will be more likely to attract transit riders than jobs added in parts of Totem Lake less well served by transit and with lower density. Jobs located closer to the Cross Kirkland Corridor will provide greater pedestrian and bicycle access to employees.

Mitigation Measures

Incorporated Plan Features

KIRKLAND PLANNING AREA

All plan alternatives would allow the City to meet employment growth targets for 2035.

Alternatives 2 and 3 would update goals and policies in the Comprehensive Plan Economic Development Element. Specific goals and policies in the draft revised Element include:

Goal ED-1: Promote a strong and diverse economy that provides a sustainable tax base and jobs.

Policy ED-1.1: Support activities that retain and expand existing businesses. Target recruitment activities toward new businesses that provide living wage jobs.

Policy ED-1.2: Encourage a broad range of businesses that provide goods and services to the community.

Goal ED-2: Promote a positive business climate.

Policy ED-2.3: Make land use decisions that take into consideration the effects on businesses and the economic benefit to the community.

Policy ED-2.5: Support tools that encourage economic development.

Goal ED-3: Strengthen commercial areas to provide local good, services, and vibrant community gathering places to live, work, shop and play.

Policy ED-3.1: Encourage businesses to develop and operate in a manner that enhances the character of the community, minimizes, impacts on surrounding development, and respects the natural environment.

Policy ED-3.2: Encourage infill and redevelopment of commercial and industrial areas.

Goal ED-4: Provide infrastructure and public facilities to support economic activity and growth.

Policy ED-4.2: Create strong multimodal circulation linkages to and within commercial areas.

Goal ED-6: Foster collaborative partnerships among community groups and regional organizations to create a prosperous Kirkland economy.

Policy ED-6.1: Partner with businesses and community organizations to create a prosperous Kirkland economy.

TOTEM LAKE PLANNED ACTION AREA

Alternative 2 would include amendments to zoning in the Totem Lake Planned Action Area to allow the City to meet localized job targets in the Totem Lake area.

Alternatives 2 and 3 would update the goals and policies of the Totem Lake Neighborhood Plan. Economic development goals and policies in the draft revised Plan include:

Goal TL-2: Plan for a land use pattern that promotes a dense urban core in the business district and healthy commercial and residential areas in other parts of the Urban Center.

Goal TL-3: Strengthen the role of the Totem Lake Business District as a community and regional center for retail, health care, vehicle sales, light industrial and office employment.

Goal TL-4: Establish and support incentives to encourage automobile and other vehicle dealerships within appropriate areas of the business district.

Applicable Regulations and Commitments

KIRKLAND PLANNING AREA

The City of Kirkland has also established a Business Roundtable composed of local business leaders to provide input on current economic challenges in the community. The City will continue this program under all alternatives.

TOTEM LAKE PLANNED ACTION AREA

The adopted Totem Lake Neighborhood Plan envisions Totem Lake as an attractive urban village, welcoming to visitors and residents, with the Totem Lake business district serving a vital role in the Kirkland economy as a focus for jobs and economic activity. Economic development goals in the Plan include:

Goal TL-1: Nurture and strengthen the role of the Totem Lake Neighborhood as a community and regional center for retail, health care, vehicle sales, light industrial and office employment.

Goal TL-2: Focus intensive growth within Totem Center (Districts TL 1, TL 2, and TL 3).

Goal TL-3: Preserve and intensify commercial areas outside of Totem Center.

Goal TL-5: Monitor economic and employment needs in light of changing technology and make adjustments to land use where necessary.

Other Potential Mitigation Measures

If the City desires to prevent displacement of existing businesses as new development occurs, it could consider policies and programs such as:

- Work with the Kirkland Chamber of Commerce to create a business assistance program targeted to vulnerable businesses in areas with high growth offering services such as marketing or low-interest loans.
- Develop incentives or requirements for new development to preserve affordable commercial space for existing tenants.

If the City desires to preserve existing industrial businesses, it could consider policies such as zoning controls to prevent encroachment of residential or other non-industrial uses into Light Industrial Technology zones.

Significant Unavoidable Adverse Impacts

Kirkland's employment base will grow under all three of the alternatives; employment growth per se is not an adverse impact. As more businesses and employees locate in Kirkland and existing businesses grow, however, there will be a need for infrastructure investment in roads, transit, utilities, parks and other public facilities to maintain existing levels of service. In addition, some displacement of existing businesses is likely as new development occurs.

3.5 Natural Environment

This section describes the existing condition of the natural environment in Kirkland, including earth, water resources, and plants and animals. It also compares the potential effects of the various alternatives on each natural environment resource and provides mitigation measures.

Affected Environment and Methodology

Earth

KIRKLAND PLANNING AREA

According to RCW 36.70A.030, geologically hazardous areas are “those areas that are susceptible to erosion, sliding, earthquake, or other geological events and are not suited to the siting of commercial, residential, or industrial development consistent with public health and safety concerns.” The main types of geologically hazardous areas recognized in the GMA are 1) erosion hazard areas; 2) landslide hazard areas; 3) seismic hazard areas; and 4) areas subject to other geologic events such as coal mine hazards and volcanic hazards. In contrast to most other GMA-mandated critical areas, where the goal is to protect a valued resource, the purpose of regulating activities in geologically hazardous areas is not to protect the area, but to protect the public from the hazard represented by the area.

Kirkland Zoning Code (Chapter 85, Geologically Hazardous Areas) designates erosion hazard areas, landslide hazard areas, and seismic hazard areas as geologically hazardous areas within the City of Kirkland. Erosion hazards include soil (surface) erosion and shoreland (streambank and lakeshore) erosion. Surface erosion hazard areas contain soils which may experience severe to very severe erosion hazard when they occur on slopes of 15 percent or greater. Within the City, these include well-drained soils formed by glacial till, outwash, and lakebed deposits, including Alderwood gravelly sandy loams, Everett gravelly sandy loams, and Kitsap silt loams (NRCS 2015). In general, till is typically present at the higher elevations in the City. Lakebed deposits are present in the City’s low-lying valleys, including the Totem Lake and Juanita Creek areas (Kirkland 2014). Juanita Creek stream network particularly is an unstable system, prone to bank erosion (NHC, 2010) and bank instability is a problem throughout the watershed, due in part to increased flows and increased impervious areas on I-405.

Outwash soils consist of erodible sand and gravel which can move down hillsides as a result of gravity, falling trees, or failures associated with toe erosion and saturated conditions. Outwash is present in the steep ravines around the City’s streams, and hill slope failures have been observed in these areas (Kirkland 2014). The steep ravines and slopes flanking Denny and Holmes Point Creeks are designated as areas of high landside hazard. These areas are in the western half of the Finn Hill neighborhood and are primarily zoned for low-density residential development or park/open space. The residential Goat Hill area that runs along the western side of Juanita Creek is also designated as a high landslide hazard area. The area suffered a landslide in 2010, forcing several residents to evacuate their homes (Martinell 2014). The steep slopes flanking the Forbes Creek valley west of the I-405 highway and in the vicinity of the Cross Kirkland Corridor trail feature high landslide hazard areas which cross areas of medium or high density residential and some commercial development. Along the northern portion of the Cross Kirkland Corridor east of Totem Lake, an area of high landslide hazard is present within an area primarily zoned for low intensity industry as well as some commercial development. Other landslide hazards are present in the City, and are generally associated with steep terrain and/or erosive geologic conditions. Overall, approximately 13 percent of the City’s land area is designated as a high or moderate landslide hazard area (Kirkland 2015).

Seismic hazard areas are subject to risk of earthquake damage as a result of ground shaking, slope failure, settlement, surface rupture, or soil liquefaction. Areas of moderate to high soil liquefaction risk are present along most of the City’s shoreline, stretching from Yarrow Bay wetlands north around Juanita Bay, with less consistent risk along the Finn Hill shoreline. These areas include primarily low-density residential development or park/open

space, as well as portions of the Central Business District and Juanita Business District. Areas of low to moderate soil liquefaction risk are present along the Juanita Bay Creek and Forbes Creek valleys, as well as within the Totem Lake basin. Additional seismic hazard areas are designated around Forbes Lake and North Rose Hill Woodlands Park east of the I-405 highway. These areas support varied land uses, including the Totem Lake and the Juanita Bay Business District.

Coal mine and volcanic hazards are unlikely in the Kirkland study areas, given the lack of exposed rock for mining and location of Kirkland relative to the Cascade volcanoes. There are no active earth resource permit locations based on Washington State Department of Natural Resources mapping.

The City's critical area regulations require additional analysis for development in geologically hazardous areas. The City may require developers to mitigate identified impacts to slope stability or drainage patterns from the proposed development, or otherwise limit development that will increase risk associated with on-site or nearby geologically hazardous areas.

TOTEM LAKE PLANNED ACTION AREA

An area of high landslide hazard is designated along the northeast border of the Totem Lake Mall and extends east between Evergreen Hospital and Totem Lake Park. With the exception of a multi-family residential building, this area is free of development due to steep slopes. Totem Lake Mall, Totem Lake Park, and the commercial and industrial zoned areas east of I-405 and north of NE 124th Street are all within a designated seismic hazard area.

Water Resources

KIRKLAND PLANNING AREA

Streams and Lakes

There are 15 drainage basins within the City of Kirkland, listed according to size in Exhibit 3.5-1. This basin analysis is from the City's Surface Water Master Plan (Kirkland 2014).

Exhibit 3.5-1. Summary of Drainage Basin Features in the City of Kirkland

Basin	Area (Acres)	Total Stream Length (Miles)	Open Stream Channel (Miles)	Floodplain/ Floodway Area (Acres)	Existing impervious % of basin
Primary Basins					
Juanita Creek (Including South Juanita Slope)	3,910	20.5	14.6	12.8	43
Forbes Creek	1,837	14.2	11.2	15.9 / 8.3	37
Denny Creek	804	3.9	3.2		24
Champagne Creek	625	2.0	1.7		30
Yarrow Creek	573	7.7	6.8	62.7	21
Carillon Creek	106	0.5	0.2		38

Secondary Basins					
Moss Bay	1,487	9.3	4.8	2.5	46
Holmes Point	457	2.9	2.4		22
Kingsgate Slope	564	2.5	2.4		30
Houghton Slope A	376	2.75	0.8		46
To Redmond	303	0.1	0.0		38
Kirkland Slope	208	0.0	0.0		39
Houghton Slope B	134	1.2	0.3		41
Lower Sammamish River Valley	24	0.0	0.0		41

Source: Kirkland 2014

JUANITA CREEK

The largest basin in Kirkland, Juanita Creek originates east of I-405, and flows approximately five miles west and south entering Lake Washington on the west side of Juanita Beach Park. The lower reaches of Juanita Creek are confined to a narrow corridor, where bank armoring limits channel connectivity and complexity (King County 2002). There are three main tributaries flowing into Juanita Creek: an upper west (Simonds Tributary), a lower west, and a lower east (Totem Lake Tributary). The lower reach of the lower west tributary to Juanita Creek is confined to a pipe. The Totem Lake Tributary is also piped in places. Riparian corridors are highly altered, and erosion and instability of the stream bank is common (Kirkland 2014). The creek experiences rapid spikes in flow volumes immediately following rain events stemming from a high level of surrounding impervious surfaces (Kirkland 2014).

Water quality in Juanita Creek is listed as impaired for water temperature, fecal coliform bacteria, and dissolved oxygen by the 2012 Washington Department of Ecology's 303(d) list. King County maintained a 25-year record (1979-2004) of water quality conditions in Juanita Creek at two sampling locations, one located near the mouth, and the other located near NE 132nd St. Over that period, water quality degradation has been observed through increased water temperatures and conductivity at both locations and increased fecal coliform bacteria at the mouth; however, improvements through decreased total suspended solids and decreased nutrient concentrations have been noted over the same time period (King County 2015).

FORBES CREEK

Forbes Creek drains from Forbes Lake and areas east of I-405 into the south side of Juanita Bay. Extensive riparian wetlands are present along the lower portion of Forbes Creek. The upper portion of the creek is surrounded by residential and industrial development, including the South Rose Hill area. Several small tributaries feed into Forbes Creek upstream of I-405. The mainstem originates at Forbes Lake, and other tributaries originate from extensive wetlands north and east of Forbes Lake. Culverts under I-405 limit hydrologic and habitat connectivity between the upper and lower portions of Forbes Creek (The Watershed Company 1998).

Higher and more frequent flows, due to increased development and reduced stormwater infiltration, have led to active channel downcutting and bank erosion in many reaches of the creek (Kirkland 2014). A stream survey in 2004 found that large woody debris recruitment was limited in the lower reaches because most of the surrounding

wetland vegetation consists of smaller deciduous trees and shrubs (Parametrix 2004). Large wood recruitment potential is variable in the upper watershed, reflecting the mix of forested and developed land uses there (Parametrix 2004). Pool frequency is low throughout the drainage (Parametrix 2004). Substrate composition is generally good, with low riffle embeddedness throughout most of the basin, although Benthic Index of Biotic Integrity scores are rated as poor throughout the basin (Parametrix 2004).

Water quality in the lower reach of Forbes Creek is listed as impaired for water temperature, fecal coliform bacteria, and dissolved oxygen by the 2012 Washington Department of Ecology's 303(d) list. King County has monitored water quality near the mouth of Forbes Creek since 1979 (monitoring was discontinued from 2008-2012). Over the period from 1979 to 2007, nutrient loads and fecal coliform bacteria have decreased; however, stream temperatures and conductivity have increased, and dissolved oxygen concentrations have decreased (King County 2015).

DENNY CREEK

Denny Creek drains from north to south. The majority of the stream corridor is protected under public ownership, including Big Finn Hill Park and Denny Park. Within Denny Park, the riparian corridor is narrow, and there is evidence of previous channel stabilization efforts (Kirkland 2014). Upstream from Denny Park, mature forests provide a broad buffer from immediate land use impacts. However, drainage from surrounding developed residential areas may contribute to flashy flows and significant erosion along the channel banks (The Watershed Company 1998). Plentiful large wood and boulders create hydraulic and aquatic habitat diversity within the channel (Kirkland 2014). Juanita Drive culvert is a complete barrier to fish movement (Kirkland 2014).

CHAMPAGNE CREEK

Champagne Creek is an independent drainage that enters Lake Washington at Champagne Point, north of Juanita Bay. It passes closely between several houses through their landscaped yards near its mouth. The stream channel shows signs of active erosion downstream of Juanita Drive and sediment deposition near the mouth (The Watershed Company 1998, Kirkland 2014). Upstream of the houses, it flows out of a fairly deep and steep-sided ravine, with ditch-like conditions in the upper reach (Kirkland 2014). In an analysis of sites likely to develop or redevelop, this basin was identified as having high potential for development and, the second largest potential for an increase in built-out impervious coverage over the next twenty years (Kirkland 2014).

YARROW CREEK

The Yarrow Creek drainage includes both Yarrow Creek and Cochran Springs Creek. The two creeks meet in the low gradient, 70+ acre, city-owned Yarrow Bay wetlands downstream from Lake Washington Boulevard, just prior to reaching Lake Washington. Sediment in the lower basin area is predominantly silts and sands, and past aggradation of sands and silts have resulted in flooding issues in the lower basin. The City conducted a project in 2013 to address flooding issues and enhance instream habitat downstream from Lake Washington Boulevard.

Both Yarrow Creek and Cochran Springs Creek are impacted by fish passage barriers, proximity to State Route 520, and proximity to developed areas. Cochran Springs Creek originates from springs in Watershed Park, and the upper portion of the watershed is protected from development within the park.

CARILLON CREEK

Carillon Creek flows from east to west, originating in Carillon Woods and entering Lake Washington just north of Carillon Point. There is a significant elevation change between the upstream and downstream portion of the creek. An open space area corridor in the upper basin in Carillon Woods buffers the upper creek from impacts from surrounding suburban land uses. Like Cochran Springs Creek, springs in the Carillon Creek Basin provide fairly steady year-round flows (The Watershed Company 1998). As a part of King County Water District 1, Carillon Creek served as the water supply to the Town of Yarrow Point until approximately 2003. Anadromous and resident

salmonids are present in the lower reach, but have not been documented above the railroad grade embankment (The Watershed Company 1998).

SECONDARY URBAN DRAINAGES

With the exception of the Holmes Point Basin, secondary basins consist of small urban drainages. These drainages consist of small spring-fed creeks, the lower reaches of which are predominantly piped. Notable areas of open channels in these small urban drainages occur in and upslope of Everest Park; near Peter Kirk Elementary; and through steep ravines along the Houghton Slope (The Watershed Company 1998). No fish have been detected in these secondary urban drainages during previous stream inventory efforts (The Watershed Company 1998).

In contrast to the small urban drainages described above, Holmes Point, located in the far northeastern portion of the City, is characterized by high forest coverage, relatively low impervious surface coverage, and drainages are predominantly conveyed through open stream channels. Despite these characteristics, most of the lower section of Holmes Point Creek is armored and has limited buffer areas from adjacent development (Kirkland 2014). The stream is also impacted by channel instability, fish passage barriers, and large man-made debris (Kirkland 2014). A unique zoning designation, the Holmes Point Overlay Zone, requires significant trees and native vegetation retention and restricted lot coverage.

Lake Washington

All the streams and drainage basins in the City drain to Lake Washington. The Lake Washington watershed (Water Resource Inventory Area 08 [WRIA 08]) encompasses 692 square miles, collecting water from two major rivers (Cedar and Sammamish Rivers) before flowing through Lake Union and ultimately into Puget Sound via the Lake Washington Ship Canal and Hiram Chittenden locks. The construction of the Lake Washington Ship Canal and Hiram Chittenden locks (completed in 1916) lowered the lake level by approximately 9 feet. Within Kirkland, this change greatly altered the shallow water deltas, most notably the Yarrow Bay and Forbes Creek wetlands. Additionally, since the construction of the locks, the Corps of Engineers manages the lake level to maintain a high water volume throughout the summer and low levels during the winter, reversing the natural lake hydrograph.

Shorelines and aquatic areas of Lake Washington, as well as associated wetlands, are regulated under the City's Shoreline Master Program (SMP).

Water quality conditions in Juanita Bay and adjacent to the Central Business District are identified as impaired by fecal coliform bacteria (Washington State Department of Ecology 2012).

Wetlands including Totem Lake and Forbes Lake

Kirkland has more than 400 acres of mapped wetlands, with over 120 individual wetland areas and 9 wetlands that are larger than 8 acres (Kirkland 2014). Wetlands are an important component of the surface water system, providing ecological values in the form of water quality filtering, flow attenuation, and refuge for wildlife.

Per KZC 90.75, "The majority, if not the entirety, of the perimeters of Totem Lake and Forbes Lake meet the definition of wetlands."

Forbes Lake is approximately 6.6 acres in total area. Volunteers have monitored water quality in Forbes Lake since 2006. Data indicate that the lake has medium to high primary productivity (threshold eutrophic) with fair water quality (Kirkland 2014).

The open water area in Totem Lake is just over three acres, but the combined area of emergent wetlands and open water is closer to 19 acres. Urban runoff and flooding has increased sediment transport to Totem Lake. Sediment accretion has reduced the area of open water by approximately 50% in the last 70-80 years (Kirkland 2013a).

A discussion of the habitat functions of wetlands and their buffers is provided below in the Plants & Animals subsection.

Critical Aquifer Recharge Areas (CARAs)

An aquifer is a geologic formation that readily transmits water to wells or springs. Where the surficial geology consists of glacial deposits, aquifers are typically the sand and gravel-dominated deposits where there is ample pore space for infiltrated water to be stored and discharged.

The City of Kirkland includes “areas with a critical recharging effect on aquifers used for potable water” in their definition of critical areas (KZC 90.30(7)). Yet, due to a lack of these areas within the City, the code does not include critical area provisions specific to aquifer recharge areas. The City of Kirkland’s potable water supply is provided by Seattle Public Utilities via the Cascade Water Alliance, Northshore Utility District, and Woodinville Water District. All of the water originates from the Tolt and Cedar River watersheds, far upstream of Kirkland. Since 2003, when the Carillon Creek water supply for Yarrow Point was abandoned, the City does not rely on local aquifers for potable water.

The City’s aquifers contribute significantly to stream flow in the many small spring-fed creeks, as described above. Approximately 59% of Kirkland (prior to 2011 annexation) has high or medium potential for infiltration (Kirkland 2014). As a result, the City’s aquifers may be susceptible to potential groundwater contamination.

Frequently Flooded Areas

Frequently flooded areas (FFA) are regulated to manage potential risks to public safety. Such areas also provide valuable instream habitat benefits, such as recruitment of large woody debris. The City of Kirkland defines frequently flooded areas as areas within the 100-year floodplain.

Most floodplains within the City of Kirkland are associated with large wetland complexes such as at Yarrow Bay, Totem Lake, and Forbes Creek near the mouth at Juanita Bay. However, the Moss Bay floodplain is located in a depression within the Peter Kirk ball fields; the adjacent stream is currently piped. These floodplain areas are predominantly, but not entirely, undeveloped and in public ownership.

Flooding within the City, with its small to mid-sized streams, is most often triggered by heavy rains, and exacerbated by runoff from impervious surfaces related to development.

TOTEM LAKE PLANNED ACTION AREA

Streams

The Totem Lake Planned Action Area extends across portions of the Juanita and Forbes Creek basins. Within the Juanita Creek Basin, the Planned Action Area encompasses a piped portion of the Totem Lake Tributary east of I-405, an open-stream channel portion of the Totem Lake Tributary west of I-405, a portion of an eastern tributary to Juanita Creek, and small tributaries to Totem Lake. The southern extent of the Planned Action Area includes a portion of Forbes Creek in the vicinity of the Cross Kirkland Corridor.

The Planned Action Area is largely developed with commercial uses and existing impervious surface coverage is high. The riparian corridor west of I-405 along the Totem Lake Tributary is well-vegetated with forested vegetation, and similarly, the undeveloped slope that surrounds the tributaries draining into Totem Lake from the northeast are well forested.

Wetlands

The 1,052-acre Totem Lake Planned Action Area contains approximately 70 acres of mapped wetland. As noted above, given its size and depth, Totem Lake is classified as a wetland. The open water area is just over three acres, but the combined wetland area is closer to 19 acres. Urban runoff and flooding has increased sediment transport to Totem Lake. Sediment accretion has reduced the area of open water by approximately 50% in the last 70-80 years (Kirkland 2013a).

In addition to the Totem Lake wetlands, other mapped wetland areas in the Planned Action Area include the Heronfield wetlands and riverine wetlands along the Totem Lake Tributary to the west; small, linear wetlands adjacent to the Cross Kirkland Corridor; and slope wetlands to the east of Totem Lake. These wetlands help to moderate surface flows; however, their buffering functions are likely to be frequently overwhelmed by the effects of the high level of surrounding development and impervious surfaces. Wetlands are described further in the Plants & Animals section below.

Critical Aquifer Recharge Areas

No Critical Aquifer Recharge Areas are identified in the City. Soil infiltration rates are generally rated as moderate over the northern portion of the Planned Action Area. In the southern portion of the Planned Action Area (Forbes Creek Basin), soil infiltration rates are generally low. The City's aquifers may be susceptible to groundwater contamination due to their inherent high or medium potential for infiltration (Kirkland 2014).

Frequently Flooded Areas

The 100-year floodplain as mapped includes the western portion of the Totem Lake wetland complex and a portion of three surrounding private parcels, and reaches the road prism of Totem Lake Boulevard in the southwestern edge of the mapped area. Flooding in the streets and privately developed areas surrounding Totem Lake occurs on a regular basis, and the City is engaged in several flood control projects to limit the frequency and severity of these floods (Kirkland 2014).

Plants & Animals

This section describes the plants and animals that occur, or are likely to occur, within the study area. It also describes critical areas; water resources are discussed in previous section. Potential impacts of the three alternatives are analyzed at a programmatic level. All regulations and mitigation requirements pertaining to the management of biota would apply to specific development projects under all alternatives.

KIRKLAND PLANNING AREA

Streams

The City's streams provide habitat for fish species of regional, State, and Federal significance. In some cases, non-fish bearing watercourses and water bodies are critical to supporting productive downstream habitat conditions. Exhibit 3.5-2 identifies the priority fish species occurring within the City's water bodies as reported in the City of Kirkland's Stream, Wetlands, and Wildlife Study (The Watershed Company 1998) and in Washington Department of Fish and Wildlife (WDFW) Priority Habitat Species (PHS) data. A description of the existing conditions of the City's watercourses and water bodies follows.

Exhibit 3.5-2. Priority Fish Species Occurrence in the City of Kirkland

Common Name	Scientific Name	State Status	Federal Status	Occurrence in Basins in City of Kirkland
Puget Sound Chinook Salmon	<i>Oncorhynchus tshawytscha</i>	Candidate	Threatened	Juanita Creek Denny Creek (modeled presence) Forbes Creek (modeled presence) Yarrow Creek (modeled presence)
Puget Sound Steelhead	<i>O. mykiss</i>	Candidate	Threatened	Juanita Creek Denny Creek (modeled presence) Forbes Creek (modeled presence) Yarrow Creek (modeled presence)

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Common Name	Scientific Name	State Status	Federal Status	Occurrence in Basins in City of Kirkland
Puget Sound-Strait of Georgia Coho Salmon	<i>O. kisutch</i>		Species of Concern	Denny Creek Forbes Creek Juanita Creek Yarrow Creek Carillon Creek
Sockeye/ Kokanee Salmon	<i>O. nerka</i>	Candidate		Forbes Creek Juanita Creek Denny Creek (modeled presence) Yarrow Creek (modeled presence)
Cutthroat Trout ¹	<i>O. clarkii</i>			Denny Creek Forbes Creek Juanita Creek Yarrow Creek Champagne Creek Carillon Creek

Source: The Watershed Company 1998, WDFW 2015.

¹ Cutthroat trout is on the WDFW Priority Habitat and Species List. Any occurrence of this species is documented as a Priority Area. The term applies to a priority species with limiting habitat that is not known or to a species that is so rare that any occurrence is important in a land use decision (WDFW 2008).

The City of Kirkland designates stream basins as primary or secondary. The following basins are identified as primary basins: Juanita Creek, Forbes Creek, South Juanita Slope, Yarrow Creek, Carillon Creek, Denny Creek, and Champagne Creek. Primary basins contain anadromous fish or resident salmonids. Secondary basins in the city are Moss Bay, Houghton Slope A, Houghton Slope B, Kirkland Slope, Holmes Point, and Kingsgate Slope. Salmonids are not documented within the secondary basins.

JUANITA CREEK

The main stem of Juanita Creek supports anadromous salmonids, including coho salmon and cutthroat trout, downstream from I-405. Effective buffer widths in the upper basin of Juanita Creek vary from 0 to 50 feet, although a wider buffer is present within Edith Moulton Park (The Watershed Company 1998). Residential development predominates throughout the upper Juanita Creek Basin. The lower reach of the western tributary just north of NE 124th Street is piped, and its confluence with the main stem presents a fish passage barrier. Several other complete fish passage barriers occur along the eastern tributaries of Juanita Creek.

As noted in the discussion of Water Resources, water quality conditions in Juanita Creek are identified as impaired for water temperature, fecal coliform bacteria, and dissolved oxygen (Washington State Department of Ecology 2012).

FORBES CREEK

The lower mile of Forbes Creek is surrounded by a large emergent and scrub-shrub wetland complex. Anadromous fish occur from the mouth, upstream to I-405. Although not documented in the 1998 survey, resident cutthroat trout may occur east of the Interstate.

As noted in the discussion of Water Resources, water quality conditions in the lower reaches of Forbes Creek are identified as impaired for water temperature, fecal coliform bacteria, and dissolved oxygen (Washington State Department of Ecology 2012).

DENNY CREEK

The majority of the Denny Creek corridor is protected under public ownership, including Big Finn Hill Park and Denny Park. Within Denny Park, the riparian corridor is narrow, and there is evidence of previous channel stabilization efforts (Kirkland 2014). Upstream from Denny Park, mature forests provide significant wildlife habitat. Large wood and boulders create hydraulic and aquatic habitat diversity within the channel (Kirkland 2014). Juanita Drive culvert is a complete barrier to fish movement, limiting anadromous salmon use in the basin (Kirkland 2014).

CARILLON CREEK

Carillon Creek flows from east to west, originating in Carillon Woods and entering Lake Washington just north of Carillon Point. Coho salmon and cutthroat are present below Lake Washington Boulevard, but have not been documented in the upper watershed (The Watershed Company 1998).

YARROW CREEK

The Yarrow Creek drainage includes both Yarrow Creek and Cochran Springs Creek. The two creeks meet in the low-gradient, 70+-acre, city-owned Yarrow Bay wetlands downstream from Lake Washington Boulevard. This large wetland complex was submerged by Lake Washington prior to the construction of the Chittenden Locks in the early 1900s; following construction of the Locks, the area was ditched and drained for agriculture. Today, the wetland complex is dominated by reed canarygrass and supports a beaver population.

Anadromous fish passage is blocked at several locations along Yarrow Creek and Cochran Springs Creek.

Cochran Springs Creek originates from springs in Watershed Park, and the upper portion of the watershed is protected from development within the park. A fairly continuous corridor connects Cochran Springs Creek and Watershed Park.

SECONDARY DRAINAGES

Anadromous and resident salmonids have not been documented in any of the secondary drainages in the City of Kirkland.

The most significant block of wildlife habitat among the urban secondary drainages is in Everest Park and the surrounding wetlands and wooded areas. The area encompasses wetland, stream, and upland habitats with a variety of plant communities. A 1998 study also noted habitat features such as snags and cavities in this area (The Watershed Company 1998). Other open space patches occur along the Houghton Slope, including a riparian greenbelt along Northwest College Creek from the railroad tracks to Lakeview Drive NE and a riparian greenbelt along Houghton Creek downstream of Lakeview Elementary.

As noted in the discussion of Water Resources, Holmes Point, in the far northeastern portion of the City, is characterized by high forest coverage and relatively low impervious surface coverage throughout the basin. Despite these characteristics, most of the lower section of Holmes Point Creek is armored and has limited buffer areas from adjacent development (Kirkland 2014). A unique zoning designation, the Holmes Point Overlay Zone, requires significant trees and native vegetation retention and restricted lot coverage.

Lake Washington

All of the salmonid species listed in Exhibit 3.5-2 occur within the waters of Lake Washington. Sockeye spawn along the lakeshore, although recent surveys of spawning areas and intensity have not been conducted.

The artificially managed reverse hydroperiod of Lake Washington limits the growth of many species of native terrestrial and emergent vegetation. The combination of the reverse hydroperiod and extensive residential development surrounding the lake substantially limits the density and quality of shoreline vegetation and available shallow water habitat.

As noted in the discussion of Water Resources, water quality conditions in Juanita Bay and adjacent to the Central Business District are identified as impaired by fecal coliform bacteria (Washington State Department of Ecology 2012).

Shorelines and aquatic areas of Lake Washington, as well as associated wetlands, are regulated under the City's SMP.

Stream Classifications

The City of Kirkland's stream classification system and associated buffer widths that apply to most of the city under the City's current zoning code (KZC 90.90) are presented in Exhibit 3.5-3 below. Class A streams are used by salmonids and generally correlate with Type 3 streams as defined in the Washington State Hydraulic Code. Class B and C streams are not used by salmonids and generally correlate with Type 4 and Type 5 streams, respectively, as defined in the Washington State Hydraulic Code. Buffer widths vary depending on whether the stream is located in a primary or secondary basin, as defined in KZC 90.30 Definitions. Stream buffers may be reduced through buffer averaging or through reduction with enhancement, but may not be reduced at any point by more than one-third of the standard buffer width. The City's stream regulations also prohibit armoring and culverts in streams unless they are proven necessary to protect against erosion or provide access, respectively.

Exhibit 3.5-3. Stream class and buffer widths under current City code.

Stream Class	Buffer width for streams in primary basin (ft)	Buffer width for streams in secondary basin (ft)
A	75	N/A
B	60	50
C	35	25

Source: Kirkland Zoning Code, Chapter 90 – Drainage Basins.

In the City's shoreline jurisdiction within the RSA and RMA zones and O.O. Denny Park, a different stream classification and buffer management system applies (KZC 83.510), with buffers ranging from 115 to 25 feet.

Wetlands

Wetlands provide habitat for a unique and dense assemblage of plants and animals. As described in the discussion of Water Resources, the City of Kirkland contains more than 400 acres of mapped wetlands. Several wetlands within the city are relatively large and exceed 8 acres in size (Kirkland 2014). Large wetlands in the city that provide complex habitat structure include, Big Finn Hill wetland, Heronfield wetland, Juanita Creek wetlands, and Yarrow Bay wetlands. Forbes Lake and Totem Lake are also regulatory wetlands. Both of these small lakes are part of larger wetland complexes that span the surrounding landscape. Numerous small wetlands are also mapped throughout the city (Kirkland 2013).

FUNCTIONS & VALUES

Wetland functions are affected by physical, chemical, and biological processes that occur within a wetland and the surrounding landscape (Sheldon et al 2005). Wetlands in the landscape provide essential conditions for growth of obligate and facultative-wetland plant species. Wetlands also provide habitat for herptiles, birds, and mammals. Wetland scientists generally acknowledge that wetlands perform the following eight functions: 1) flood/storm water control, 2) base stream flow/groundwater support, 3) erosion/shoreline protection, 4) water quality improvement, 5) natural biological support, 6) general habitat functions, 7) specific habitat functions, and 8) cultural and socioeconomic values (Cooke Scientific Services 2000). Wetland functions for flood and stormwater control, erosion protection, and water quality improvement are particularly valuable to protect infrastructure and

limit the effects of development on water quality in the area’s streams and rivers. Habitat functions are limited by surrounding development, landscape-scale fragmentation, and proximity to Interstate-405.

The City of Kirkland currently ranks individual wetland functions and values using the Kirkland Wetland Field Data Form (Kirkland Zoning Code, Chapter 180, Plate 26). This form was developed in the 1990s at the same time that the Washington State Department of Ecology Wetland Rating System was being drafted and it contains many similar elements. The Kirkland Wetland Field Data Form classifies wetlands as one of three types based on specific site characteristics and landscape setting. Wetlands that are contiguous with Lake Washington are highly valued (Type 1) under the city’s current wetland classification system.

WETLAND BUFFERS

Upland vegetated buffer areas are an important factor in protecting wetland functions from effects of surrounding land uses. The factors that influence the performance of a buffer include vegetative structure, percent slope, soils, and buffer width and length (Sheldon et al 2005). Wetland buffer conditions in the City of Kirkland are frequently narrower than what would be necessary to fully protect wetland water quality and habitat functions. Buffers in the city limits are most frequently interrupted by roads and adjacent residential development. Standard wetland buffer widths that apply outside of shoreline jurisdiction per the Kirkland Zoning Code (90.45) are listed in Exhibit 3.5-4 below.

Exhibit 3.5-4. Wetland buffer widths under current City code.

Wetland type	Buffer width for wetlands in primary basin (ft)	Buffer width for wetlands in secondary basin (ft)
1	100	75
2	75	50
3	50	25

Source: Kirkland Zoning Code, Chapter 90 – Drainage Basins.

In shoreline jurisdiction, the City has adopted the latest version of Ecology’s Washington State Wetland Rating System for Western Washington, which is a four-tier system (I-IV) (KZC 83.500). The buffers range from 50 to 225 feet, depending on the wetland type and the habitat value.

Under current City code, no land surface modification or tree removal, with the exception of water quality facilities and minor improvements, is permitted within a wetland buffer. Impacts to wetlands and wetland buffers must be mitigated. Invasive species, such as Himalayan blackberry, commonly occur within wetland buffers. Enhancement of the density and diversity of native vegetation in wetland buffers may provide an opportunity to improve wetland conditions within the city.

Terrestrial Habitat and Corridors

Kirkland contains several natural parks and open space areas, including Big Finn Hill Park, O.O. Denny Park, Juanita Bay Park, Everest Park, Carillon Woods, Yarrow Bay wetlands, Forbes Creek wetlands, and Watershed Park. The City parks provide terrestrial habitat patches and corridors to aquatic habitats within or adjacent to those parks. Watershed Park in the Yarrow Creek basin provides forested slopes, seeps, and riparian habitat. Habitat corridors between the Carillon Creek corridor and other open space corridors in the city are lacking. However, the riparian and upland communities within Carillon Woods provide a functional patch of forested and riparian habitat. Upstream from Denny Park, mature forests provide significant wildlife habitat. Beaver populations occur at several locations within the city, including Forbes Lake, the Forbes Creek wetlands, and the Yarrow Bay wetlands, as well as near the mouth of Juanita Creek. The lower Forbes valley is the longest connected open space in Kirkland, forming a nearly continuous corridor for wildlife movement (Kirkland 2014).

ENDANGERED, THREATENED, OR SENSITIVE SPECIES AND SPECIES OF LOCAL IMPORTANCE

The City of Kirkland includes habitat types that are known to be used or could potentially be used by species of interest (excluding fish), including those species with State or federal status and WDFW priority species. These habitats include forested upland, wetlands, riparian areas, scrub-shrub, and open habitat such as rights-of-way. Species of local interest likely to use habitat within the city are listed in Exhibit 3.5-5.

Exhibit 3.5-5. Mapped Priority Species in the City of Kirkland.

Common Name	Scientific Name	State Status	Federal Status	PHS?
Birds				
Great blue heron	<i>Ardea herodias</i>	M		Y
Pileated woodpecker	<i>Dryocopus pileatus</i>	S	Co	Y
Osprey	<i>Pandion haliaetus</i>	M		Y
Bald eagle	<i>Haliaeetus leucocephalus</i>	S	Co	Y
Purple martin	<i>Progne subis</i>	C		Y
Trumpeter swan	<i>Cygnus buccinator</i>	None	None	Y

Source: WDFW. PHS on the Web.

Legend: PHS=Priority Habitat Species; C=Candidate species; Co=Species of Concern; M=Monitor species; S=Sensitive species

TOTEM LAKE PLANNED ACTION AREA

Streams

The Totem Lake Planned Action Area extends across portions of the Juanita and Forbes Creek basins. Streams within the Planned Action Area include piped and open-channel portions of the Totem Lake Tributary to Juanita Creek, as well as a portion of an eastern tributary (Tributary #238) to Juanita Creek. The southern extent of the Planned Action Area includes a portion of Forbes Creek in the vicinity of the Cross Kirkland Corridor.

West (downstream) of the Planned Action Area, the Totem Lake Tributary is piped, and previous sampling did not capture any salmonids upstream from the piped section (The Watershed Company 1998). Similarly, no fish were captured during previous sampling upstream and downstream from I-405 in the eastern tributary (Tributary #238) (The Watershed Company 1998). Given the presence of downstream barriers on both tributaries, neither is expected to support anadromous salmonids within the Planned Action Area; however, it is possible that resident salmonids could occur in these tributaries within the Planned Action Area.

Cutthroat trout have been documented to use the Forbes Creek channel extending east to I-405 (including areas within the Totem Lake Planned Action Area) (The Watershed Company 1998). Coho salmon have been documented farther downstream (The Watershed Company 1998). Within the Totem Lake Planned Action Area, the condition of the Juanita Creek corridor varies from relatively undisturbed forest to an area highly constrained by surrounding development (The Watershed Company 1998).

Terrestrial Habitat and Corridors

The Totem Lake Planned Action Area is largely developed with commercial uses. Remaining forested and riparian areas are limited to the area northeast of Totem Lake, the riparian corridor west of I-405, the forested wetland area on the far western edge of the Planned Action Area, and the forested hillside northeast of Totem Lake. These areas provide wildlife habitat, particularly for birds and mammals utilizing habitat-niches within the Totem Lake wetland. The majority of remaining natural habitat patches are comprised of wetlands or streams. Habitat patches are fragmented by I-405, arterial roads, and surrounding commercial and residential development.

ENDANGERED, THREATENED, OR SENSITIVE SPECIES AND SPECIES OF LOCAL IMPORTANCE- BIRDS AND MAMMALS

No priority species are mapped within the Totem Lake Planned Action Area (Kirkland 2014, WDFW). However, wetlands and open space within that area are likely to provide forage and perch habitat refuge for the bird species listed in Exhibit 3.5-5 above.

Wetlands

Wetlands comprise approximately 6.7 percent of the Totem Lake Planned Action Area. Three large wetland areas and several small wetland features are mapped within the Totem Lake Planned Action Area. Totem Lake and Heronfield wetlands are both within City parks. The Juanita Creek wetland area spans several private parcels, which contain residential developments.

FUNCTIONS & VALUES

Totem Lake provides approximately three acres of open water surrounded by palustrine scrub-shrub and emergent wetland. Urban runoff and flooding transports sediment into Totem Lake, which is reducing open water area over time (Kirkland 2013a). The Totem Lake wetland filters urban runoff, provides seasonal and permanent water storage, and supports a diversity of habitat niches for wildlife. The Heronfield wetland and Juanita Creek wetland within the Totem Lake Planned Action Area also provide water quality functions by filtering urban pollutants; hydrologic functions including flood storage and water flow attenuation; and habitat niches for birds, mammals and herptiles. All wetlands provide water quality, hydrologic, and habitat functions to some degree (Hruby 2014).

WETLAND BUFFERS

Functioning wetland buffer widths in the City of Kirkland are frequently narrower than what would be necessary to fully protect wetland water quality and habitat functions. Buffers in the Totem Lake Planned Action Area are most frequently interrupted by roads and adjacent commercial or residential development. Standard wetland buffer widths per the Kirkland Zoning Code are listed in Exhibit 3.5-4 above. Based on a review of the City's ortho-photo map, existing wetland buffers appear to be 50 feet or less on average. Wetland buffers adjacent to development commonly contain locally dominant patches of invasive vegetation. The City's wetland buffer regulations apply to all new development applications.

Impacts

Earth

This section addresses potential impacts of the alternatives due to geologic hazard areas occurring in the study area. Impacts include increased landslide and erosion hazards associated with urban development, as well as increased risk of damage from seismic activity within seismic hazard areas.

IMPACTS COMMON TO ALL ALTERNATIVES

Kirkland Planning Area

All alternatives would result in an increase in population and employment density in the city limits, with a corresponding increase in residential and commercial development. Differences in the effects of the proposed alternatives on geologic hazards in the city limits will depend on where population growth and development is directed. In general, existing geologic hazard areas are regulated by the City's Critical Areas Regulations, which require that development within these areas meet certain standards. These standards are intended to minimize risk of damage to property and human safety caused by building within geologically hazardous areas. However, increased development itself will have impacts on existing erosion and landslide hazard conditions.

Activities associated with urban development, including vegetation removal and increased impervious surfaces, can increase erosion and landslide hazards in susceptible areas. Urban development, such as parking lots, roads, and buildings, prevents rain from infiltrating into the soil, generating more rapid runoff from the land into nearby

lakes and streams. This results in an increase in peak flow volumes in the streams, which in turn produces higher energy and increases the potential for streambank erosion (Booth, 1990, 1991; Nelson & Booth, 2002). Vegetation also plays a significant role in erosion and landslide potential by intercepting a substantial amount of rainfall, preventing it from infiltrating into the soil where it can cause erosion. Roots from vegetation also take up and transpire some of the water that does reach the soil (Watson & Burnett, 1993). A dense root matrix can also lend considerable strength to the soil, physically binding the soil together and, on slopes, decreasing the likelihood of slope failure and landslides (Booth, Hartley, & Jackson, 2002; Schmidt et al., 2001).

In addition to damage to property and human life, erosion and landslides may have an adverse effect on plants and animals in the vicinity. For example, excessive erosion and landslides can both produce abundant fine sediment, which can deposit in gravels that many fish species use to spawn, causing eggs to suffocate and die (Nelson & Booth, 2002).

Urban development does not increase risk of seismic activity; however, building within seismic hazard areas increases risk of damage to property and human life in the event of seismic activities. All alternatives include some level of new and re-development within existing areas of high-intensity uses that have mapped seismic hazard areas. The neighborhoods with the highest percent area of mapped seismic hazards are Lakeview, Totem Lake, South and North Juanita, and Market (Exhibit 3.5-6). Liquefaction can occur in certain conditions during a seismic event. Liquefaction occurs most often in areas with fine grained soils and saturated conditions. The entire city has been designated as a liquefaction hazard, but only a few areas have a significant percentage of Low to Moderate or Moderate to High risk level. City-wide, 83.1 percent of the city is designated very low (VL) liquefaction hazard. Moderate to High (MH) liquefaction hazards cover just 2.6 percent of the city; those areas span five neighborhoods: Finn Hill, Lakeview, Market, Moss Bay, and South Juanita. Increasing development in seismic hazard areas, including areas at risk for liquefaction if unmitigated, may increase damage to property and human life in the case of an earthquake.

Exhibit 3.5-6. City-wide Distribution of Geologic Hazard Areas by Neighborhood

Neighborhood	Seismic		Landslide ¹		Liquefaction ²	
	% of Area	Acres	% of Area	Acres	% of Area	Acres
Bridle Trails	3.7	22.3	H - 0.6 M - 2.0	H - 3.5 M - 12.4	VL - 100	VL - 610.5
Central Houghton	<0.1	0.2	H - 7.9 M - 10.1	H - 1.7 M - 4.3	VL - 94.2 LM - 5.8	VL - 575.3 LM - 35.2
Everest	5.7	12.6	H - 2.8 M - 18.5	H - 1.5 M - 0.5	VL - 100	VL - 219.8
Finn Hill	-	-	H - 21.3	H - 558.8	VL - 97.6 LM - 0.1 MH - 2.0	VL - 2,556.4 LM - 2.8 MH - 51.5
Highlands	0.6	2.4	H - 15.1 M - 11.6	H - 54.8 M - 42.2	VL - 46.0 LM - 54.0	VL - 167.3 LM - 196.4
Kingsgate	1.8	23.3	H - 7.8	H - 100.4	VL - 98.9 LM - 1.1	VL - 1,265.4 LM - 14.7
Lakeview	35.0	146.2	H - 4.2 M - 16.4	H - 17.7 M - 68.5	VL - 51.0 LM - 2.4 MH - 33.6	VL - 213.1 LM - 10.1 MH - 140.1

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SIGNIFICANT IMPACTS, AND MITIGATION MEASURES

Neighborhood	Seismic		Landslide ¹		Liquefaction ²	
	% of Area	Acres	% of Area	Acres	% of Area	Acres
Market	19.3	72.4	H - 4.7 M - 2.7	H - 17.6 M - 10.0	VL - 61.0 MH - 16.7	VL - 229.2 MH - 62.6
Moss Bay	1.3	4.5	H - 2.9 M - 5.1	H - 10.2 M - 17.9	VL - 84.5 MH - 6.2	VL - 294.5 MH - 21.5
Norkirk	0.3	1.6	H - 6.5 M - 4.0	H - 33.0 M - 20.4	VL - 58.7 LM - 41.3	VL - 300.3 LM - 211.3
North Juanita	19.8	198.8	H - 1.1 M - 3.0	H - 10.7 M - 30.1	VL - 47.7 LM - 52.3	VL - 478.5 LM - 525.3
North Rose Hill	9.9	97.5	H - 1.2 M - 4.9	H - 11.7 M - 48.8	VL - 99.4	VL - 981.3
South Juanita	23.0	205.4	H - 6.7 M - 11.3	H - 59.6 M - 101.1	VL - 62.5 LM - 33.1 MH - 3.0	VL - 557.5 LM - 295.8 MH - 27.0
South Rose Hill	0.4	1.8	M - 0.7	M - 3.8	VL - 100.0	VL - 508.2
Totem Lake	26.1	225.4	H - 7.9 M - 4.4	H - 68.2 M - 38.4	VL - 80.2 LM - 19.4	VL - 692.9 LM - 168.1
Citywide	8.7	1,014.5	H - 8.6 M - 4.3	H - 1,000.7 M - 495.9	VL - 83.1 LM - 12.6 MH - 2.6	VL - 9,650.2 LM - 1,459.9 MH - 302.7

¹ H = High, M = Moderate

² VL = Very Low, LM = Low to Moderate, MH = Moderate to High

Source: Kirkland GIS Data, analysis by The Watershed Company 2015.

Exhibit 3.5-7. Distribution of Geologic Hazard Areas in Neighborhood Centers and Business Centers

Area	Seismic		Landslide ¹		Liquefaction ²	
	% of Area	Acres	% of Area	Acres	% of Area	Acres
Bridle Trails Neighborhood Center	-	-	-	-	VL - 100	VL - 15.4
Central Business District	2.7	2.6	H - 1.8 M - 4.6	H - 1.7 M - 4.3	MH - 8.6 VL - 91.3	MH - 8.2 VL - 86.7
Everest LIT	-	-	H - 2.9 M - 0.9	H - 1.5 M - 0.5	VL - 100	VL - 52.2
Houghton Neighborhood Center	-	-	M - 0.5	M - 0.1	VL - 100	VL - 13.7
Kingsgate Neighborhood Center	-	-	-	-	VL - 100	VL - 21.1
Norkirk LIT	-	-	H - 5.7 M - 5.8	H - 2.6 M - 2.6	LM - 15.2 VL - 84.8	LM - 16.8 VL - 37.8
North Juanita Neighborhood Center	-	-	-	-	LM - 75.3 VL - 24.7	LM - 22.7 VL - 7.5
North Rose Hill LIT	2.1	0.2	M - 15.5	M - 1.2	VL - 100	VL - 8.0
Rose Hill Business District	10.1	9.2	M - 0.5	M - 0.1	VL - 100	VL - 91.6
Totem Lake Planned Action Area	21.8	229.3	H - 6.7 M - 6.5	H - 70.5 M - 68.5	LM - 16.1 VL - 83.6	LM - 168.9 VL - 880.0

¹ H = High, M = Moderate

² VL = Very Low, LM – Low to Moderate, MH = Moderate to High

Source: Kirkland GIS Data, analysis by The Watershed Company 2015.

Additionally, under all alternatives, development will increase at varying levels within or adjacent to mapped landslide hazard areas. City-wide, the neighborhoods with the greatest high landslide risk by area are Finn Hill and the Highlands, as indicated in

Exhibit 3.5-10. While development within designated landslide hazard areas will be regulated to minimize risk, increased development in general could lead to an increase in impervious surfaces and reduction in vegetation. These land cover changes may lead to increased erosion and associated landslide hazards in this area.

In addition to the protection of these specific hazard areas by the City's geologic hazard areas regulations, the overlapping presence in some locations of other critical areas, such as wetlands, streams and their buffers, will limit alteration.

Totem Lake Planned Action Area

As indicated in Exhibit 3.5-6 and

Exhibit 3.5-7 above, the Totem Lake Planned Action Area has a higher percentage and total acres of geologically hazardous areas than the other key planning areas. However, the Totem Lake Planned Action Area contains fewer geologically hazardous areas by percentage than other parts of the city, including Finn Hill and Lakeview (Exhibit 3.5-6). Similar to the Kirkland Planning Area, the City's regulations protecting geologic hazards and other critical areas will limit impacts to geologic hazards in the Totem Lake Planned Action Area.

ALTERNATIVE 1 (EXISTING PLANS - NO ACTION)

Kirkland Planning Area

This alternative continues the currently adopted land use policies and would likely result in development patterns similar to recent trends. The CBD would accommodate low-rise office and retail growth, and neighborhood centers would accommodate new and redevelopment of low-rise housing and retail. In general, when development is lower density, it tends to spread out, potentially increasing impervious surface area in the process. As discussed above, an increase in impervious surface and reduction in vegetation can lead to an increase in erosion and associated landslide hazards in the area.

Totem Lake Planned Action Area

This alternative includes an approved master plan redevelopment for the Totem Lake Mall, which is located within a designated seismic hazard area. While increased development, particularly residential development, will increase the number of people and buildings at risk, redevelopment offers an opportunity to enhance building resilience to seismic activity.

ALTERNATIVE 2 (TOTEM LAKE/DOWNTOWN FOCUS)

Kirkland Planning Area

This alternative concentrates more combined residential and commercial growth in the Totem Lake area and CBD relative to the other alternatives. Because this alternative concentrates growth in areas with the most significant existing impervious surface coverage, this alternative likely represents the least amount of new impervious surface, as well as the least amount of vegetation clearing associated with development, both of which can potentially increase erosion and landslide hazards.

This alternative includes increased office development with increased building heights in the CBD. Compared to the other key planning areas, the CBD has the highest designated liquefaction risk, with 8.6 percent of its area identified as a moderate to high liquefaction hazard area. However, other neighborhoods have a greater risk of liquefaction, including Lakeview and Market. New development and redevelopment will provide an opportunity to evaluate site-specific liquefaction risk and enhance building resilience to seismic activity.

Totem Lake Planned Action Area

In general, this alternative would include the most growth in the Totem Lake Planned Action Area, with an emphasis on mixed use. As discussed, the Totem Lake Planned Action Area contains more geologically hazardous areas, including both seismic hazard areas and landslide hazard areas, than the other key planning areas. However, the Totem Lake Planned Action Area contains fewer geologically hazardous areas by percentage than other parts of the city, including Finn Hill and Lakeview (Exhibit 3.5-6).

ALTERNATIVE 3 (DISTRIBUTED GROWTH)

Kirkland Planning Area

This alternative includes increased residential development with increased building heights in the CBD. It also includes the most growth to neighborhood centers relative to the other alternatives, with an emphasis on mixed-use development. Ten percent of the South Rose Hill Business District is designated as a seismic hazard area. This area is targeted for a mix of retail, hotel and office development. As with other alternatives, new development and redevelopment will provide an opportunity to enhance building resilience to seismic activity. Norkirk is targeted for a mix of office, retail, and residential development. This area is constrained by narrow areas of high landslide hazard at the northeast corner of the neighborhood and on either side of NE 85th Street.

Totem Lake Planned Action Area

This alternative includes a revised master plan for the Totem Lake Mall which would lead to a reduced intensity of development relative to the other alternatives. However, this alternative would concentrate more residential development in existing industrial zones, which are partially collocated with seismic hazard areas.

Water Resources

This section addresses potential impacts to surface and groundwater quantity and quality.

IMPACTS COMMON TO ALL ALTERNATIVES

Development affects surface and groundwater quality and quantity as a result of soil compaction, draining, and ditching across the landscape, increased impervious surface cover, and decreased forest cover (Booth et al., 2002; Booth & Jackson, 1997; Moore & Wondzell, 2005). Urban land cover is correlated with increased high flows, increased variability in daily streamflow, reduced groundwater recharge, and reduced summer low flow conditions (Burgess, Wigmosta, & Meena, 1998; Cuo, Lettenmaier, Alberti, & Richey, 2009; Jones, 2000; Konrad & Booth, 2005). However, the effects of redevelopment can result in an improvement of water quality and increased infiltration as areas come into compliance with applicable stormwater quality standards. Differences in the effects of the proposed alternatives on water resources will depend on where population growth is directed within the city limits.

Under all of the alternatives, Totem Lake and the CBD would accommodate the majority of new housing and employment development. Totem Lake and the CBD are already highly urbanized with extensive areas of impervious surface. Remaining vegetation in these areas is generally isolated in public parks, commercial and street landscaping, other public rights-of-way, wetlands, and steep slopes. As redevelopment in these commercial centers comes into compliance with new stormwater standards, infiltration and treatment of stormwater runoff is expected to improve, with limited to no conversion of vegetated areas to development. This change could reduce the rate of sedimentation of Totem Lake that is associated with existing stormwater sediment loads.

Stormwater management associated with redevelopment in the Totem Lake area could also help improve or maintain water quality conditions in Juanita Creek. Redevelopment in the CBD will also affect water flow and quality in the smaller urban drainages in the Rose Hill Basin; however, these drainages are highly altered and predominantly in piped conveyance structures around and downstream from the CBD. Redevelopment in the CBD could slightly improve water quality in Lake Washington; however, given the size of the lake in comparison to the incremental change in water quality that could be anticipated, the physical and biological effects of such changes are expected to be minor.

The area immediately surrounding Totem Lake is within the mapped 100-year floodplain, and moderately large storm events (over the two-year recurrence interval) have resulted in flooding of streets. Under all scenarios, intensification of uses within the Totem Lake area can be expected. Stormwater detention requirements associated with redevelopment could help extend the hydrograph and limit flooding from moderate storm events. However, concentrating development in an area prone to flooding could also expose more people to flood risks and could place additional demand on flood hazard management and response by the City. Consistent with the 2008 Biological Opinion on the National Flood Insurance Program, the City's floodplain standards require that proposals for development or redevelopment within the floodplain would not adversely affect water quality, flood volumes, flood velocities, spawning substrate, or floodplain refugia for listed salmonids.

Under each alternative, continued growth throughout the city is anticipated to increase impervious surface coverage and reduce vegetation. Because relatively little land remains undeveloped in Totem Lake, the CBD, the neighborhood centers, and the LIT areas, impervious surface coverage in these locations is already high. As a result, the increase in impervious surface coverage and reduction of vegetation would be most pronounced in other areas of the city, where growth would consist mostly of residential infill and short-platting. These changes

are expected to contribute to rapid spikes in flow volumes immediately following rain events in streams throughout the city. As the population grows, particularly in dispersed areas throughout the city, pollutant loads from vehicles will tend to increase proportionately. Untreated runoff in areas of high road densities contains metals and polycyclic aromatic hydrocarbons (PAHs), which has been shown to adversely affect salmon, particularly Coho salmon (Feist, B. et al 2011; McIntyre, J. et al. 2012).

ALTERNATIVE 1 (EXISTING PLANS - NO ACTION)

Kirkland Planning Area

As described above, impervious surface area is expected to increase under all three proposed alternatives. However, new growth and redevelopment in Totem Lake, the CBD, neighborhood centers, and LIT areas is expected to result in improvements in stormwater management from the installation of newer, improved infrastructure. The area surrounding Totem Lake is subject to periodic flooding. Stormwater detention improvements associated with redevelopment could remediate some flooding immediately following storm events.

Totem Lake Planned Action Area

The No Action Alternative does not include adoption of a Planned Action Ordinance. However, growth in the Totem Lake area is expected to prompt stormwater improvements. Those improvements could reduce flooding following rain events in the Totem Lake area. However, stormwater management facilities are typically designed to management a 50-year flood event, so flooding may still occur.

ALTERNATIVE 2 (TOTEM LAKE/DOWNTOWN FOCUS)

Kirkland Planning Area

This alternative concentrates more combined residential and commercial growth in the Totem Lake area and CBD relative to the other alternatives. Because this alternative concentrates growth in areas with the most significant existing impervious surface coverage, this alternative likely represents the smallest increase in total impervious surface citywide. The redevelopment implicit in a strategy of focused growth in the Totem Lake area and CBD would entail stormwater upgrades focused on those areas. These stormwater upgrades could help alleviate flooding and restore a more natural hydrograph to Totem Lake and Juanita Creek.

Concentrated growth may also accommodate more centralized transportation facilities. Additionally, combined residential and commercial development may help minimize the use of single-occupant vehicles. This could help mitigate the effects of a growing population on water quality conditions relative to road pollutants throughout the city.

Totem Lake Planned Action Area

As noted above, concentrating growth in the Totem Lake area and CBD may improve water flow and water quality conditions in Totem Lake and Juanita Creek by facilitating redevelopment. Stormwater detention requirements associated with redevelopment may also help to address localized flooding that affects areas surrounding Totem Lake. However, intensifying development around the floodplain could also potentially expose more people to flood risks associated with flooded roads.

ALTERNATIVE 3 (DISTRIBUTED GROWTH)

Kirkland Planning Area

The effects of Alternative 3 on water resources in the city would be similar to the No Action Alternative, except that multi-use development patterns in the Neighborhood Centers would result in less expansion of impervious surfaces. New residential and commercial growth in the Totem Lake, CBD, and neighborhood centers would occur through redevelopment of existing developed lands, and stormwater treatment outcomes could be expected to improve. Because residential and commercial growth areas will be more separated than under Alternative 2, water quality improvements related to transportation improvements are not expected to apply to the same degree under Alternative 3.

Totem Lake Planned Action Area

As under Alternative 2, concentrating growth in the Totem Lake area and CBD may improve water flow and water quality conditions in Totem Lake and Juanita Creek by facilitating redevelopment. Stormwater detention requirements associated with redevelopment may also help to address localized flooding that affects areas surrounding Totem Lake.

Plants & Animals

This section addresses potential impacts of the alternatives on plants and animals occurring in the study area. Potential impacts include modification of open spaces that provide habitat, reduction in overall habitat connectivity and quality, and disturbances caused by urban activity.

IMPACTS COMMON TO ALL ALTERNATIVES

Kirkland Planning Area

Differences in the effects of the proposed alternatives on plants and animals will depend on where population growth and development is directed within the city. In general, existing Fish and Wildlife Habitat Conservation Areas (FWHCA) and wetlands are regulated by the City's Critical Areas Regulations or the SMP, which require mitigation for impacts to these areas with the intent of maintaining ecological functions. Potential impacts of development not addressed by these regulations include overall loss and fragmentation of habitat and landscape-scale habitat corridor connections, and associated reduction of habitat quality.

In addition to removing habitat for species present in the area, development in vegetated areas causes fragmentation of habitat. Many studies address the importance of habitat connectivity, particularly in developed areas (Gilbert-Norton, Wilson, Stevens, & Beard, 2010; Gillies & St Clair, 2008; Knopf, Johnson, Rich, Samson, & Szaro, 1988). Vegetated corridors facilitate movement or dispersal through fragmented landscapes by invertebrates, plants, and non-avian wildlife (Gilbert-Norton et al., 2010). Riparian corridors also play a role in maintaining microhabitat and suitable microclimates for species associated with streams (Kluber, Olson, & Puettmann, 2008). Fragmentation may exert a greater influence on wildlife than habitat loss alone, with declines in populations a primary impact (Bender, Contheran, & Fahrig, 1998). Less mobile species, such as invertebrates and small mammals, often exhibit more profound response to fragmentation than more mobile species (Hansen, Knight, Marzluff, Ude, & Ones, 2005), and might be expected to be more greatly impacted by development.

Proximity of development, in addition to habitat loss, has been demonstrated to impact some taxa, such as native grassland rodents, when it disrupts habitat (Bock, Vierling, Haire, Boone, & Merkle, 2002). Infestation by invasive and non-native species can be a consequence of development (McKinney, 2002; Southerland, 1993; Zedler & Kercher, 2004), and riparian quality has been shown to be inversely proportional to the level of urbanization (May, Horner, Karr, Mat, & Welch, 1997). Light from buildings, streetlamps, and vehicles; traffic noise; and other disturbances associated with urban activity can cause avoidance behavior in birds and other wildlife.

Potential impacts to aquatic species are related to effects to water flow and water quality, which are discussed in detail in the Water Resources section above, as well as local riparian disturbance. Redevelopment is expected under all three alternatives and would need to comply with current stormwater requirements and other applicable critical area regulations.

Under all of the alternatives, Totem Lake and the CBD would accommodate the majority of the new housing and employment development. Totem Lake and the CBD are already highly urbanized with vegetation in these areas generally isolated in public parks, commercial and street landscaping, other public rights-of-way, wetlands, and steep slopes. Of these areas, the wetlands (including Totem Lake) and steep slopes provide the largest blocks of habitat, and would be preserved under all alternatives. Wetland area within city neighborhoods is summarized in Exhibit 3.5-8. Wetland area within the key planning subareas is summarized in Exhibit 3.5-9.

Exhibit 3.5-8. Wetland Areas within Neighborhoods

Subarea	Total Subarea Acreage	Wetland Acres within Subarea	Wetland Area as a percentage of the total Subarea
Bridle Trails	610.5	9.9	1.6%
Central Houghton	610.6	1.8	0.3%
Everest	219.8	12.1	5.5%
Finn Hill	2,618.2	32.9	1.3%
Highlands	363.8	6.2	1.7%
Kingsgate	1,280.1	2.7	0.2%
Lakeview	417.7	75.9	18.2%
Market	375.7	41.5	11.1%
Moss Bay	348.6	0.1	0.0%
Norkirk	511.6	3.1	0.6%
North Juanita	1,003.9	12.4	1.2%
North Rose Hill	987.4	67.2	6.8%
South Juanita	892.6	43.8	4.9%
South Rose Hill	508.2	3.4	0.7%
Totem Lake	864.3	67.6	7.8%
Citywide	11,612.7	380.5	3.3%

Source: Kirkland GIS Data, analysis by The Watershed Company 2015.

Exhibit 3.5-9. Wetland Areas within Neighborhood Centers and Business Centers

Subarea	Total Subarea Acreage	Wetland Acres within Subarea	Wetland Area as a percentage of the total Subarea
Rose Hill	91.6	1.6	1.78%
Totem Lake Planned Action Area	1052.3	70.9	6.74%
North Rose Hill LIT	8.0	0.4	4.44%
Norkirk LIT	44.5	0.2	0.51%

Source: Kirkland GIS analysis (Kirkland 2015).

¹ Centers not listed do not contain mapped wetlands (Kirkland 2014).

Totem Lake Planned Action Area

The Totem Lake Planned Action Area is highly urbanized. As noted above, vegetation is limited to protected critical areas (wetlands, streams, steep slopes), residential landscapes, and streetscapes. The existing development of this area has already concentrated vegetation and associated wildlife habitat in protected critical areas. All future development must maintain critical area functions and values in compliance with the City's critical area regulations.

ALTERNATIVE 1 (EXISTING PLANS - NO ACTION)

Kirkland Planning Area

Continued growth allowed under current City zoning is expected to increase loss of habitat and landscape-scale habitat connections. This would increase habitat fragmentation and reduce habitat quality. Further vegetation loss and habitat fragmentation is expected under all three alternatives. Relative to Alternative 2, the No Action Alternative would distribute growth to more locations within the city, directing more growth to neighborhood centers. The No Action growth pattern would be slightly less dispersed than Alternative 3, which would direct a larger share of growth into neighborhood centers and LIT areas. This could result in greater habitat loss and fragmentation relative to Alternatives 2 and 3. However, because these centers are already developed, habitat fragmentation and loss is likely to be most pronounced in areas outside the CBD, Totem Lake, neighborhood centers, or LIT areas; these areas outside centers would receive the same level of growth under each alternative.

Totem Lake Planned Action Area

This alternative includes an approved master plan redevelopment for the Totem Lake Mall. The Totem Lake area is highly urbanized outside of protected wetlands, streams, and steep slopes. Increased building density is expected to result in further loss of vegetated patches.

ALTERNATIVE 2 (TOTEM LAKE/DOWNTOWN FOCUS)

Kirkland Planning Area

This alternative concentrates more combined residential and commercial growth in the Totem Lake area and CBD relative to the other alternatives. Concentrating development is expected to reduce further fragmentation of habitat patches across the city. This alternative allows the City to accommodate projected growth within designated centers, while limiting development pressures and presumably vegetation/habitat losses, on the surrounding landscape.

Totem Lake Planned Action Area

Potential impacts to native vegetation and wildlife habitat in the Totem Lake area are limited by the presence of protected wetlands, streams, and steep slopes. Habitat patches within the Totem Lake area are already fragmented by development. Development density in the Totem Lake area would increase under all three alternatives.

ALTERNATIVE 3 (DISTRIBUTED GROWTH)

Kirkland Planning Area

The effects of Alternative 3 on plants and animals in the city would be similar to the No Action Alternative, except that multi-use zoning in the Neighborhood Centers may result in less vegetation loss in surrounding lower-density areas of the city. However, this distributed growth alternative would spread development over a wider area in-all, increasing the potential for habitat fragmentation relative to Alternative 2. As stated under the No Action Alternative, Alternative 3 could potentially result in a more dispersed development pattern, leading to slightly greater habitat fragmentation and loss relative to the other alternatives. However, the effect will be most pronounced in areas outside the CBD, Totem Lake, the neighborhood centers, and the LIT areas; these areas outside centers would receive the same level of growth under each alternative.

Totem Lake Planned Action Area

As under Alternatives 1 and 2 above, potential impacts to native vegetation and wildlife habitat in the Totem Lake area are limited by the presence of protected wetlands, streams, and steep slopes. Habitat patches within the Totem Lake area are already fragmented by development. Development density in the Totem Lake area would increase under all three alternatives.

Mitigation Measures

Incorporated Plan Features

Under all three alternatives, the natural environment, including critical areas and shorelines, would be managed to maintain ecological functions and values. This would be accomplished through Critical Area Regulations and SMP regulations that require mitigation for adverse impacts, and through stormwater management standards that avoid and minimize introduction of pollutants and adverse modifications to surface water hydrology.

Applicable Regulations and Commitments

Under all three alternatives, new and existing development must comply with the City's critical area regulations, stormwater design specifications, and other applicable regulatory standards. Current local, state, and federal regulations protecting the natural environment include the following:

Critical Areas Regulations. Within city boundaries, applicable regulations include Kirkland Zoning Code (KZC) Chapter 85, Geologically Hazardous Areas; Chapter 90, Drainage Basins; Chapter 83 Shoreline Management; and and Kirkland Municipal Code (KMC) Chapter 21.56, Flood Damage Prevention (

- Exhibit 3.5-10).

Exhibit 3.5-10. Critical Areas Regulations

Regulation	Key Provisions
Ch 85 KZC, Geologically Hazardous Areas	Alterations to landslide or seismic hazard areas require a geotechnical report to evaluate the existing conditions, and provide recommendations to manage or prevent effects on changes in land stability on the site and on adjacent properties. The City can limit or restrict any development activity that may: a) Significantly impact slope stability or drainage patterns on the subject property or adjacent properties; b) cause serious erosion hazards, sedimentation problems or landslide hazards on the subject property or adjacent properties; or c) cause property damage or injury to persons on or off the subject property. The City can also require the retention of any and all trees, shrubs, and groundcover, and implementation of a re-vegetation plan including immediate planting of additional vegetation, among other measures.
Ch 90.35 – 90.70 KZC, Wetlands	The City’s wetland regulations outside of shoreline jurisdiction require buffers of 25 to 100 feet, depending on the wetland category (based on Kirkland’s three-tier system) and the location in a primary or secondary drainage basin. Modifications to wetlands are allowed to a limited degree in limited circumstances, provide the applicant can demonstrate practical or feasible alternatives are not available and that impacts are mitigated, among other things.
Ch 83.500 KZC, Wetlands	The City’s wetland regulations inside of shoreline jurisdiction require buffers of 50 to 225 feet, depending on the wetland category (based on Ecology’s four-tier system) and habitat value. Modifications to wetlands are allowed to a limited degree in limited circumstances, provide the applicant can demonstrate practical or feasible alternatives are not available and that impacts are mitigated, among other things.
Ch 90.75 KZC, Totem Lake and Forbes Lake	This section generally refers to the wetlands regulations, as wetlands fringe both lakes. Otherwise, the section identifies when and how moorage structures may be allowed, and limits bulkheads.
Ch 90.80 – 90.120 KZC, Streams	The City’s stream regulations for most of the city require buffers of 25 to 75 feet, depending on the stream type (based on Kirkland’s three-tier system) and the location in a primary or secondary drainage basin. The buffers may be modified through buffer averaging or buffer reduction with enhancement, in neither case by more than one-third of the standard width. Stormwater outfalls, water quality facilities, and other minor improvements may be allowed in buffers if certain conditions are demonstrated.
Ch 83.510 KZC, Streams	The City’s stream regulations in the RSA and RMA zones and in O.O. Denny Creek within shoreline jurisdiction require buffers of 25 to 115 feet, depending on the stream type. The buffers may be modified through buffer averaging or buffer reduction with enhancement, in neither case by more than one-fourth of the standard width. Stormwater outfalls, water quality facilities, and other minor improvements may be allowed in buffers if certain conditions are demonstrated.
Ch 90.125 KZC, Frequently Flooded Areas	References Ch 21.56 KMC.
Ch 21.56 KMC, Flood Damage Prevention	Regulations for special flood hazard areas establish safety and design standards within the floodplain, and limit any development within the floodway that would result in a rise of flood levels.

Source: Kirkland Municipal Code and Kirkland Zoning Code.

- **Tree Management and Required Landscaping.** Chapter 95 KZC has requirements for tree protection and removal intended to result in maintenance of a 40 percent tree cover standard for the city. The code recognizes the role of trees for providing or enhancing fish and wildlife habitat, air quality, and slope and streambank stabilization. Tree management and vegetative buffer requirements are also part of the City's Shoreline Master Program (Chapter 83 KZC).
- **Shoreline Master Program.** Within city boundaries, Lake Washington and its associated shorelands are regulated as shorelines of the state under the City's 2011 SMP (Chapter 83 KZC). Regulations require no net loss of shoreline ecological functions. The City's SMP includes a modified version of the City's critical areas regulations. The wetland regulations in the SMP were updated to include Washington Department of Ecology's wetland rating system, buffers (50 to 225 feet), and mitigation ratios, along with other improvements based on the most recent science. The stream typing and buffer requirements that apply in the RSA and RMA zones and O.O. Denny Park were also updated to reflect the standards in King County's regulations in effect prior to annexation. However, outside of that annexation area, the stream regulations are essentially the same. The SMP also includes variable Lake Washington setback widths based on shoreline environment designations and existing development patterns, ranging from a minimum of 15 feet to a maximum of 80 feet.
- **Surface Water Master Plan.** In 2014, the City of Kirkland adopted an updated master plan, the objectives of which are to manage surface water and stormwater so that: flooding is reduced, water quality is improved, stormwater infrastructure is protected and maintained, and aquatic habitat conditions are improved. The Plan recommends priorities and projects for the next 10 years.
- **Surface Water Runoff Standards.** The City's code requires developments to comply with Appendix I of the Western Washington Phase II Municipal Stormwater Permit, the 2009 King County Surface Water Design Manual, and the City of Kirkland Addendum to the 2009 King County Surface Water Design Manual as presently written or hereafter amended. Developments must also apply source control best management practices as described in Volume IV of the 2005 Stormwater Management Manual for Western Washington.
- **Water Quality Standards.** The City's code adopts by reference the water quality standards established under the authority of Chapter 90.48 RCW and contained within Chapter 173-201A WAC as presently written or hereafter amended.
- **National Pollutant Discharge Elimination System (NPDES) Phase II Municipal Stormwater Permit.** The City's current Phase II Permit became effective on August 1, 2013. The permit requires the City to reduce the discharge of pollutants to the maximum extent practicable (MEP); meet all known, available, and reasonable methods of prevention, control and treatment (AKART) requirements; and protect water quality. The City implements the following in compliance with its current Phase II Permit.
 - A program designed to prevent, detect, characterize, trace and eliminate illicit connections and illicit discharges into the municipal stormwater system.
 - A program to reduce pollutants in stormwater runoff that enters the storm sewer system from new development, redevelopment, and construction site activities.
 - By December 31, 2016, adopt 2012 Ecology Stormwater Management Manual for Western WA (per Appendix 1 of the current Permit) or an equivalent manual.
 - Implements the City-adopted 2009 King County Surface Water Design Manual effective January 1, 2010. These stormwater design standards are equivalent to the minimum technical requirements in Appendix 1 of the previous Permit.

- Requires stormwater Low Impact Development (LID) construction techniques for a portion of runoff on development projects as feasible, as required under the 2009 King County Surface Water Design Manual.
- Implements permitting process to review plans, inspect sites during construction, and take enforcement action against those failing to follow approved guidelines or to provide facilities as required during plan review.
- Provides copies of the “Notice of Intent for Construction Activity” and “Notice of Intent for Industrial Activity” to the applicants as part of the development permit process.
- Staff continues to increase their knowledge by remaining current with new/revised stormwater regulations, along with attending trainings on erosion control, LID techniques, stormwater design models, standards, and practices.
- Tracks all inspections, maintenance and enforcement actions to ensure long-term operation and maintenance of permanent stormwater control facilities, and for inclusion in the Annual Report.
- Inspects, cleans and repairs municipally owned and operated water quality treatment and flow control facilities and catch-basins at the frequency required in the Permit.
- Implements practices, policies and procedures to reduce stormwater impacts associated with runoff from land owned or maintained by Kirkland and road maintenance activities. In addition, both Parks and Public Works Departments use Integrated Pest Management and other techniques to minimize pollutant discharge from landscaped areas on City property.
- The City’s 2014 Annual Report indicates the City will implement code revisions using recommendations from Integrating LID into Local Codes to reduce impervious surface, protect vegetation, and minimize stormwater.
- **Endangered Species Act.** Consultation with the U.S. Fish and Wildlife Service and/or the National Marine Fisheries Service may be required for federally permitted or funded actions that could affect threatened or endangered species (e.g. Chinook salmon, steelhead or bull trout).
- **The U.S. Army Corps of Engineers (Corps)** regulates wetlands, streams and lakes under Section 404 of the Clean Water Act, and also regulates Lake Washington under Section 10 of the Rivers and Harbors Appropriation Act of 1899.
- **The Washington State Department of Ecology** may require an individual 401 Water Quality Certification and Coastal Zone Management Consistency determination for Corps permits.

Other Potential Mitigation Measures

- Update Critical Area regulations for wetlands and streams to improve consistency with latest scientific recommendations for classification and buffers (planned for 2016)
- Update geologically hazardous areas to provide some minimum setbacks, particularly above and below landslide hazard areas
- Update critical area regulations to include specific wildlife/habitat regulations. Currently wildlife habitat is only indirectly covered by the existing regulations to the extent that wildlife/habitat is located in wetlands, wetland buffers, stream buffers, or undevelopable geologically hazardous areas. Upland habitats outside of buffers/critical areas are not addressed under current regulations.
- Update development regulations to require or encourage new projects to incorporate native plants and habitat features into their landscape plans to attract wildlife.
- Encourage applicants to follow the voluntary provisions in Chapter 114 KZC – Low Impact Development.

Significant Unavoidable Adverse Impacts

Earth

All alternatives would result in increased urban development in the city, with a corresponding increase in impervious surfaces and reduction in vegetative cover. Residential development outside of the Neighborhood Centers is likely to contribute most to these changes. Increased impervious surfaces and reduced vegetation coverage tends to increase in erosion and sedimentation. This would be mitigated to some degree by development standards and restrictions under the City's Critical Areas Regulations. To the extent that population growth occurs in geologically hazardous areas, a larger population would be at risk from the adverse impacts from a geologically hazardous occurrence (i.e. earthquake or landslide).

All alternatives include some level of new and re-development within existing areas of high-intensity uses that have mapped geologically hazardous areas. Development regulations are expected to minimize potential threats under all alternatives. In general, alternatives that focus new development away from existing geologic hazards and/or in areas that already support high-intensity urban uses minimize these impacts. City-wide, the neighborhoods most impacted by seismic hazards are Lakeview, Totem Lake, South Juanita, North Juanita, and Market. Landslide hazards in the city are greatest in the Finn Hill and Highlands neighborhoods. Liquefaction hazards are greatest in Lakeview and Market neighborhoods.

The key planning areas most impacted by seismic hazards are the Totem Lake Planned Action Area and the Rose Hill Business District. The key planning areas most impacted by high- and moderate-risk landslide hazards are the North Rose Hill LIT and the Totem Lake Planned Action Area. Alternative 2 and, to a lesser extent, Alternative 3 will focus more growth in the Totem Lake Planned Action Area compared to the No Action Alternative. Relative to Alternative 3, more people could be exposed to potential seismic and landslide hazards under Alternative 2. However, as the city-wide summary notes, both Alternatives 2 and 3 direct high-intensity development away from other greater geologically hazardous areas within the city.

Water Resources

As noted above, all alternatives would result in increased urban development in the city, with a corresponding increase in impervious surfaces, reduction in vegetative cover, and resulting changes in hydrology. Also, as noted above, residential development outside of the Neighborhood Centers is likely to contribute most to these changes.

Stormwater treatment and detention may improve water quality and flow conditions in areas where redevelopment of existing infrastructure is anticipated and current code requirements are applicable, such as the Totem Lake Planned Action Area, the CBD, and the Neighborhood Centers, though some development projects in these areas are already vested under older standards and may not provide as much benefit as current codes. Compared to Alternative 2, Alternatives 1 (No Action) and 3 (Distributed Growth) represent a more dispersed growth pattern throughout the city.. Alternative 2 would concentrate development in areas that already have a high percentage of impervious surface area. Therefore, Alternatives 1 and 3 are expected to have the greatest impacts associated with expanded impervious surfaces and decentralized transportation impacts to water quality.

Plants and Animals

All three alternatives would cause some cumulative and unavoidable impacts to plants and animals. These include increased human activity associated with more dense development, which could result in long-term disturbance to sensitive wildlife species within existing riparian and wildlife corridors. Cumulative impacts such as habitat fragmentation and disturbance generally occur as a watershed is developed. While these impacts cannot be wholly avoided, they can be minimized and mitigated. All alternatives would maintain critical area buffer requirements as redevelopment occurs; these regulations require new development to avoid, minimize, and mitigate for impacts. Despite regulations, some loss of existing vegetated areas would occur, particularly in areas that do not abut critical areas such as wetlands or streams.

In general, alternatives that allow for the greatest amount of new development on vacant and partially developed lands have the greatest potential for adverse impacts on plants and animals; in areas of redevelopment improved water quality and enhanced buffer conditions could improve conditions. Alternatives 1 (No Action) and 3 (Distributed Growth) would be expected to have the greatest impact to plants and animals by adding development growth over a greater portion of the city. In contrast, Alternative 2, which concentrates growth in the Totem Lake Planned Action Area and CBD, would be expected to have the least impact on existing intact habitats.

3.6 Transportation

This section presents an inventory of transportation facilities and services, impact assessment for the three Alternatives (Existing Plan, Totem Lake/Downtown Focus, Distributed Growth), long-range transportation improvements, and programmatic improvement measures.

Description of Methodologies

The analysis for the Transportation Element of the Comprehensive Plan and this DEIS included evaluation of future transportation conditions under three Alternatives. An important methodological note is that the same future transportation network is assumed for all three Alternatives. The future transportation network was defined in the Transportation Master Plan (TMP), a separate effort that identified future transportation projects, programs, and priorities over the next two decades. While the schedule for adoption of the TMP is concurrent with the Comprehensive Plan, the TMP has been developed through a multiyear process that included input from City staff, planning bodies (Transportation Commission, Planning Commission, and City Council), as well as hundreds of Kirkland residents and modal interests. The TMP represents the City's long range strategy for transportation through 2035.

Thus, the Alternatives assessed in this analysis vary in terms of their land use assumptions, but not their underlying transportation network. This assumption for the transportation network is appropriate since the TMP network was developed to provide safe and connected facilities for all modes, and many of these connections would not change regardless of how future development occurs.

The following subsections describe the transportation network assumptions developed in the TMP, the travel demand forecasting model that was applied to evaluate future transportation system performance, and the level of service (LOS) policies defined in the TMP, which will be used to determine the overall operating conditions of Kirkland's transportation facilities.

Transportation Master Plan

In mid-2013, the City of Kirkland began development of a Transportation Master Plan. The TMP has two functions. One is to serve as the Transportation Element of the Comprehensive Plan. This means that it contains certain components that are required to be in the City's Comprehensive Plan and is presented in a Goals and Policies format. The other purpose is to expand upon the Comprehensive Plan and give more detail, context and background to the goals and policies.

The TMP contains a set of projects that will improve the transportation network across several modes of travel. Programming of these projects for funding in future years is accomplished through the Capital Improvement Program. The TMP also includes guidance for prioritizing the order in which projects are funded.

The TMP established the following goals, which provided the basis for how projects and programs were selected for inclusion in the 20-year program:

Goal T-0 Safety – By 2035 eliminate all transportation-related fatal and serious injury crashes in Kirkland.

Goal T-1 Walking - Form a safe network of sidewalks, trails and crosswalks where walking is comfortable and the first choice for many trips.

Goal T-2 Biking – Interconnect bicycle facilities that are safe, nearby, easy to use and popular for people of all ages and abilities.

Goal T-3 Public Transportation - Support and promote a transit system that is viable and realistic for many trips.

Goal T-4 Motor Vehicles - Efficiently and safely provide for vehicular circulation recognizing congestion is present during parts of most days.

Goal T-5 Link to Land Use - Create a transportation system that supports Kirkland’s land use plan.

Goal T-6 Be Sustainable – As the transportation system is planned, built and maintained, provide mobility for all using reasonably assured revenue sources while minimizing environmental impacts.

Goal T-7 Be an Active Partner - Coordinate with a broad range of groups to help meet Kirkland’s transportation goals.

Goal T-8 Transportation Measurement - Measure and report on progress toward achieving goals and actions.

Building from these goals, the TMP identified facilities to provide safe and comfortable travel conditions for four modes: walking, bicycling, transit, and vehicular travel, which are assumed under all alternatives for this transportation analysis. These investment priorities are summarized in the 20-year transportation project list (Exhibit 3.6-1). Maps illustrating the planned improvements for key investment categories are also provided, with corresponding Exhibit numbers noted in the project list.

Exhibit 3.6-1. 20-Year Transportation Project List

MODE	CATEGORY	BASIS FOR 20yr FUNDING	20 YR FUNDING	EARLY PRIORITIES	KEY UNFUNDED ELEMENTS	UNFUNDED COST	TRANSPORTATION MASTER PLAN POLICY SUPPORT
Safety	Vision Zero Safety	Opportunity fund for projects that result from Vision Zero process.	\$1.0	Develop a vision zero program.	Unsure until Vision zero gets started.		Develop a vision zero safety plan that is multi-disciplinary and focuses on innovative approaches to safety.
	New signals, driveway management, flashing yellow arrow Exhibit 3.6-2	Opportunity fund. Estimate of need.	\$3.0	Flashing yellow candidate intersections	May need more or different new signal locations, driveway mitigation areas etc.	New signals at around \$0.75 m each.	Reduce crash rates for motor vehicles, mitigate impacts of motor vehicles on neighborhood streets.
	Neighborhood Traffic Control Program.	Opportunity fund. Same funding level as when program was previously funded.	\$1.0	Previously identified locations; Slater Ave.	This level of funding should be adequate to meet the currently anticipated need.		
Maintenance	Pavement	Pavement Condition Index, meeting 20 year targets of 70 for arterials and collectors and 74 for other streets.	\$85.0	Based on existing condition.	Should be adequate to achieve PCI target.		Previous policy decision.
	Signals Exhibit 3.6-2	Basic replacement schedule.	\$7.5	Oldest signals/equipment.	Some items will be obsolete before they are replaced.	\$13.5	Place high priority on maintenance, Use ITS.

MODE	CATEGORY	BASIS FOR 20yr FUNDING	20 YR FUNDING	EARLY PRIORITIES	KEY UNFUNDED ELEMENTS	UNFUNDED COST	TRANSPORTATION MASTER PLAN POLICY SUPPORT
Walk	Markings	Estimate of need.	\$12.0	Annual inspection.	Funding level should be adequate; reevaluate in the future.		Place high priority on maintenance, increase safety, improve facilities, and build networks for bikes.
	Priority Sidewalks Completeness: Exhibit 3.6-3	Opportunity fund. Same funding level as past years.	\$4.0	Base on inventory of sidewalk conditions. Expected to be completed in 2015.	Reassess after inventory is completed.		Place high priority on maintenance, remove barriers to walking improve safety of walking, integrate transit with ped/bike networks.
	School Walk Routes <i>subset of</i> Exhibit 3.6-3	Complete sidewalk on one side of arterials and collectors.	\$4.5	Places where these 3 categories overlap. Also Revised Active Transportation Plan.	Local streets.		Walking: remove barriers, increase safety, improve walk to school.
	10 min Neighborhoods <i>subset of</i> Exhibit 3.6-3	Top 2 groups on arterials and collectors.	\$6.0		Other categories of 10 minute walkability, other street classifications.	\$9	Improve pedestrian connections to transit Improve walkable neighborhoods, connect to commercial areas. Promote energy efficient modes, reduce pollution, and provide mobility for all users.
	Arterials and Collectors <i>subset of</i> Exhibit 3.6-3	Missing sidewalks on arterials and collectors.	\$3.0		Complete sidewalk on other streets.	Has not been estimated.	
	New crosswalks, poor lighting, fewer improvements, at signals Exhibit 3.6-4.	Improving lighting at candidate locations on all streets, locations with few improvements on arterials, new crosswalks, improvements at signals.	\$9.5	Groups of crosswalks on arterials, NE 124/113 NE signal.	Crosswalks on local streets.	Has not been estimated.	All policies for sidewalks (above) plus, improve crossings for pedestrians

MODE	CATEGORY	BASIS FOR 20yr FUNDING	20 YR FUNDING	EARLY PRIORITIES	KEY UNFUNDED ELEMENTS	UNFUNDED COST	TRANSPORTATION MASTER PLAN POLICY SUPPORT
	Cross Kirkland Corridor Exhibit 3.6-5.	Opportunity fund. Some design and some construction of the CKC to master plan vision and completion of some connections to the corridor.	\$15.0	Design of NE 124 th /124 th NE bridge, South Kirkland Park and ride to 6 th Section. Connections to Park Place, Forbes Creek drive.	Complete design and construction of corridor and connections.	Design and construction of complete corridor is estimated at \$70 to \$80 m. Full connection costs have not been estimated.	Develop CKC for walking and biking, integrate pedestrian and bike networks with transit, promote energy efficient modes, reduce pollution, implement transit on CKC, Provide mobility for all users.
	Other trails Early priorities in Finn Hill and Juanita Beach, Exhibit 3.6-6	Opportunity Fund. Need plan from revised Active Transportation Plan.	\$2.0	Connections between Finn Hill and Juanita Beach area.	Reassess after Plan is completed.		
	Accessibility	Opportunity fund, placeholder funding amount.	\$7.0	Complete ADA Transition plan.	Reassess after Plan is completed.		
Bike	On-Street / Protected Exhibit 3.6-6	Juanita Drive, Protected lane placeholder, other restriping.	\$18.0	Juanita Drive and Lakefront grants.	Need to define after revised Active Transportation Plan.		Improve safety, create and improve on-street bikeways, bicycle connections to transit, connect to commercial areas.
	Greenways Exhibit 3.6-6	Complete network.	\$6.0	NE 75 th /Kirkland Way, NE 140 th ,	Bridges over I-405 at NE 90 th and NE 140 th Streets.	\$9	Improve safety, build a network of greenways, bicycle connections to

MODE	CATEGORY	BASIS FOR 20yr FUNDING	20 YR FUNDING	EARLY PRIORITIES	KEY UNFUNDED ELEMENTS	UNFUNDED COST	TRANSPORTATION MASTER PLAN POLICY SUPPORT
				NE 100th 128 th Ave	Redefine after revised Active Transportation Plan.		transit, connect to commercial areas.
Transit	Speed and Reliability Exhibit 3.6-7	Placeholder until transit plan developed.	\$6.5	Complete transit plan.	Transit on CKC.	Has not been estimated.	Create environment to support transit service, partner to provide transit projects in exchange for service.
	Passenger environment Exhibit 3.6-18	Improvements at 30 high ridership stops -need transit plan.	\$4.0	Complete transit plan.	Kingsgate P&R TOD.	\$30 (placeholder estimate)	Support safe and comfortable passenger facilities.
Auto	Efficiency Exhibit 3.6-8	Placeholder amounts for connecting additional signals, updating control methods, better traveler information.	\$5.5	Complete existing ITS projects, Revise ITS plan.	Need to define after revised ITS Plan.		Use ITS to support optimization of roadway networks.
	Respond to Support Development Exhibit 3.6-9	Opportunity fund for downtown, Totem Lake and parking.	\$13.0	Totem Lake Mall improvements (funded separately) downtown parking solutions.	Connections in Totem Lake have not been estimated.		Make investments in capacity to support proposed land use, support economic development goals, tailor improvements to commercial land use districts.
	Other Auto projects Exhibit 3.6-10	NE 132nd, Juanita Drive, 100th Avenue, interchange development funds.	\$35.0	100 th Avenue design and construction.	Many other projects are on the current unfunded CIP list.		Make strategic investments in intersection and street capacity, Work with WSDOT on interchange improvements.

Exhibit 3.6-2. New Signal and Flashing Yellow Arrow Candidates

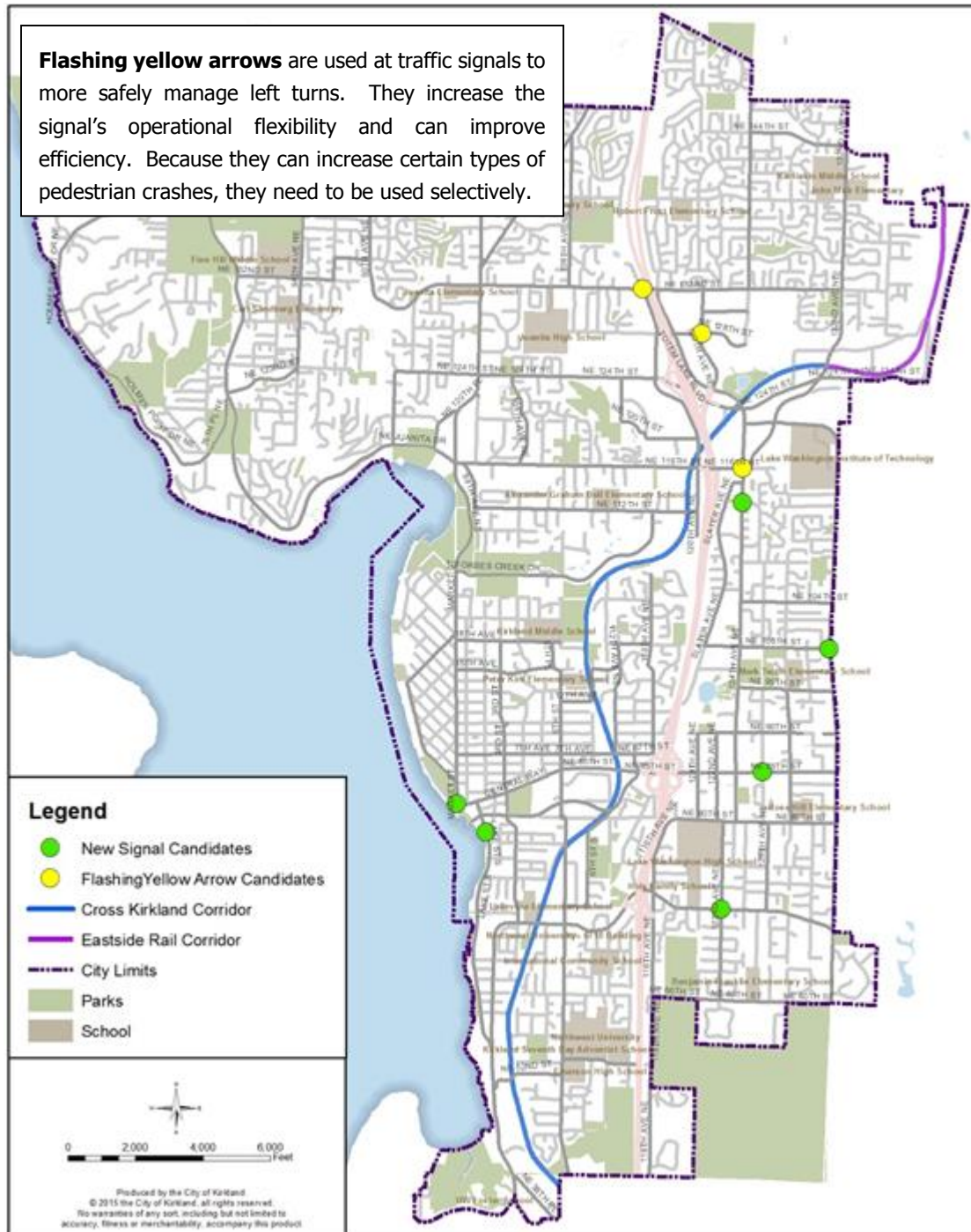


Exhibit 3.6-3. Sidewalk Additions from 20-Year Funding

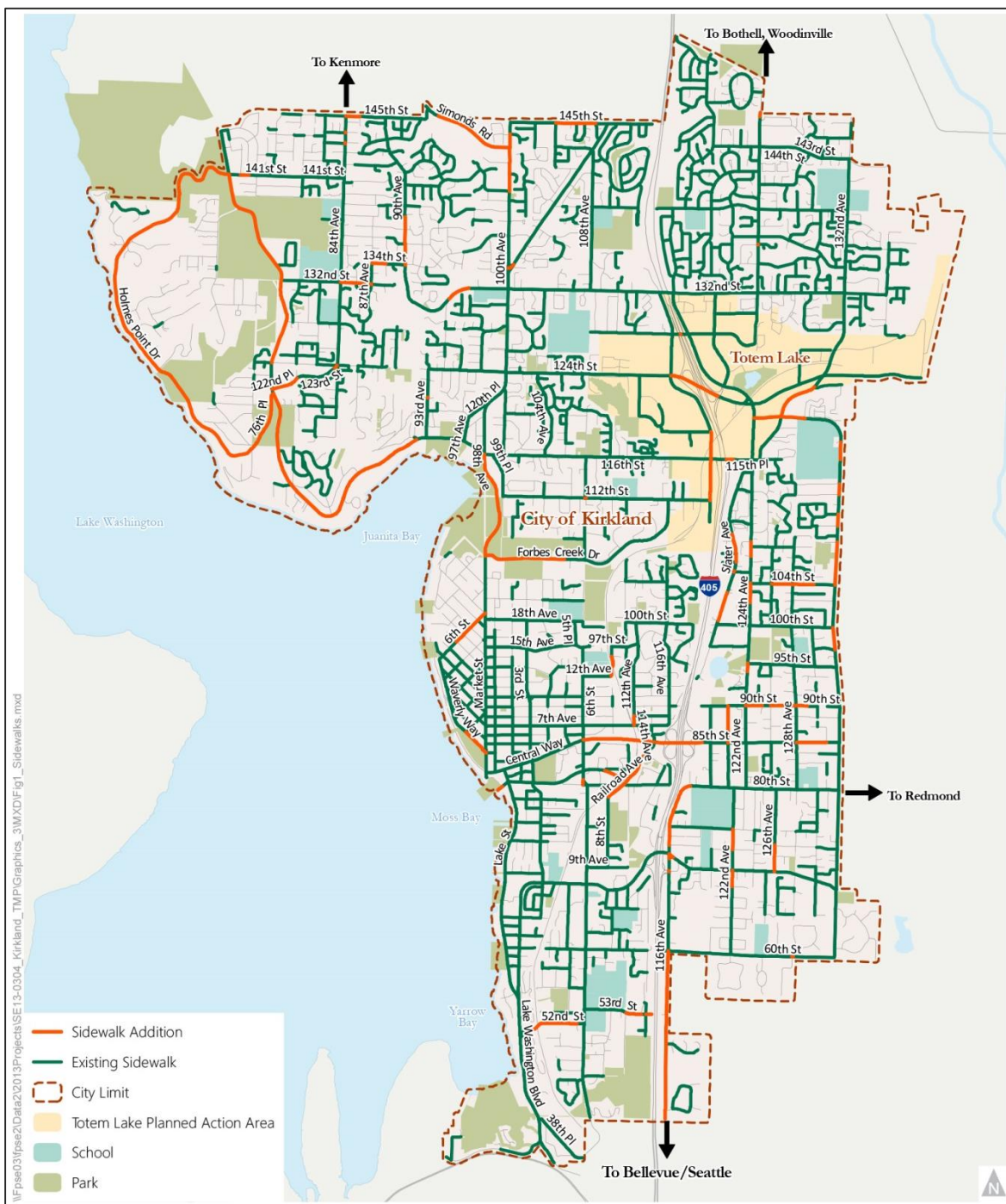


Exhibit 3.6-4. Crosswalk Improvement Candidates

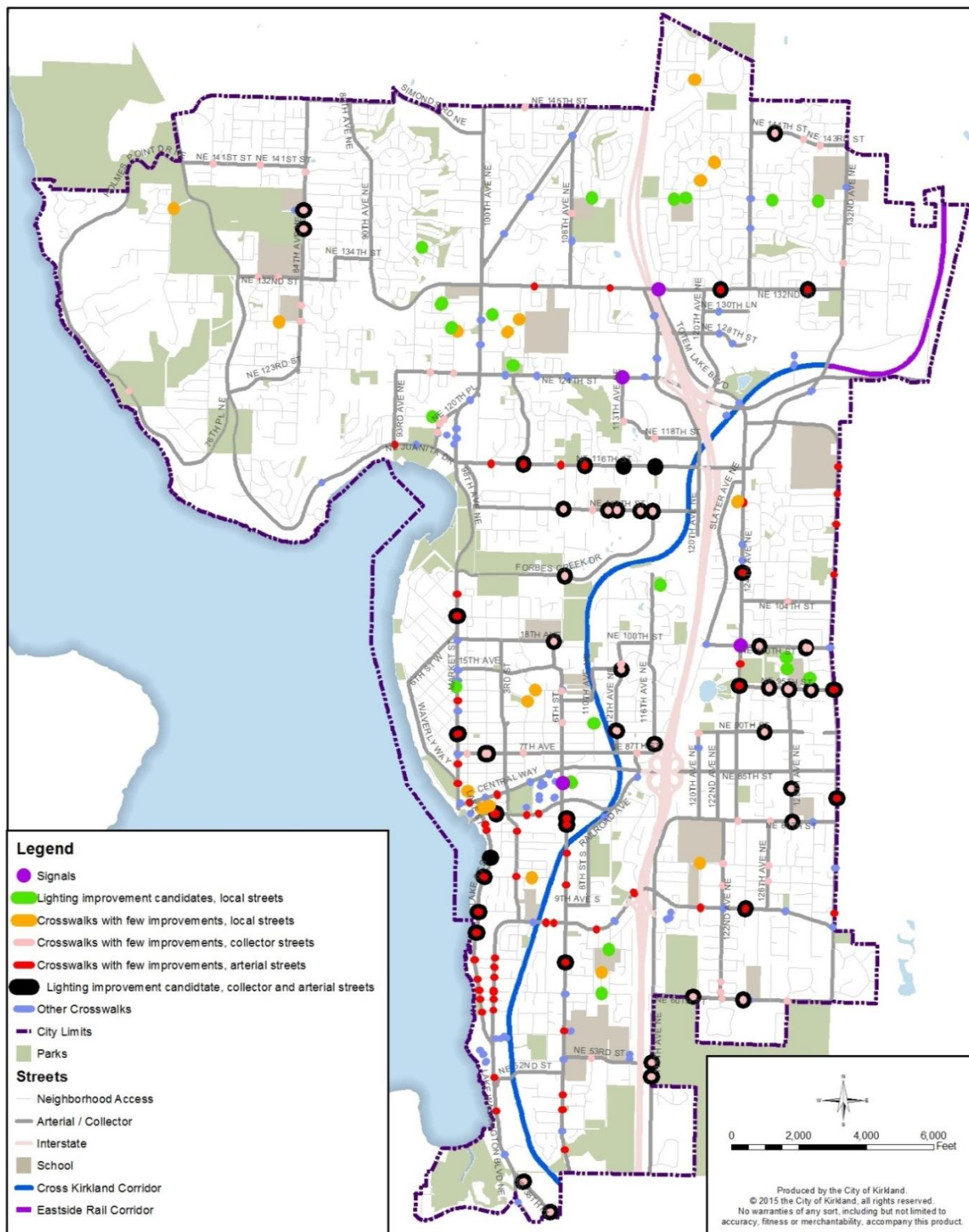


Exhibit 3.6-5. Cross Kirkland Corridor and Connections

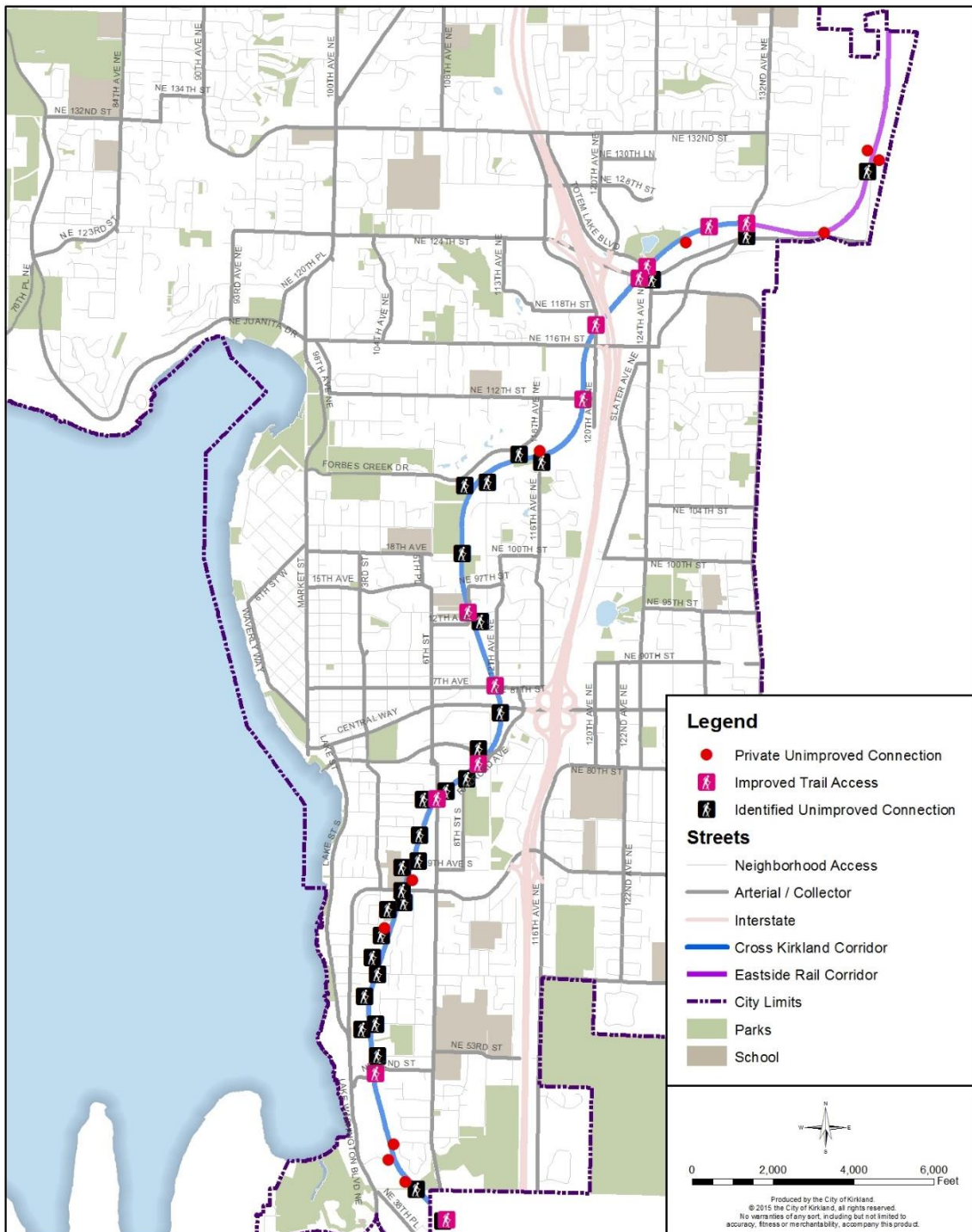


Exhibit 3.6-6. Bicycle Network

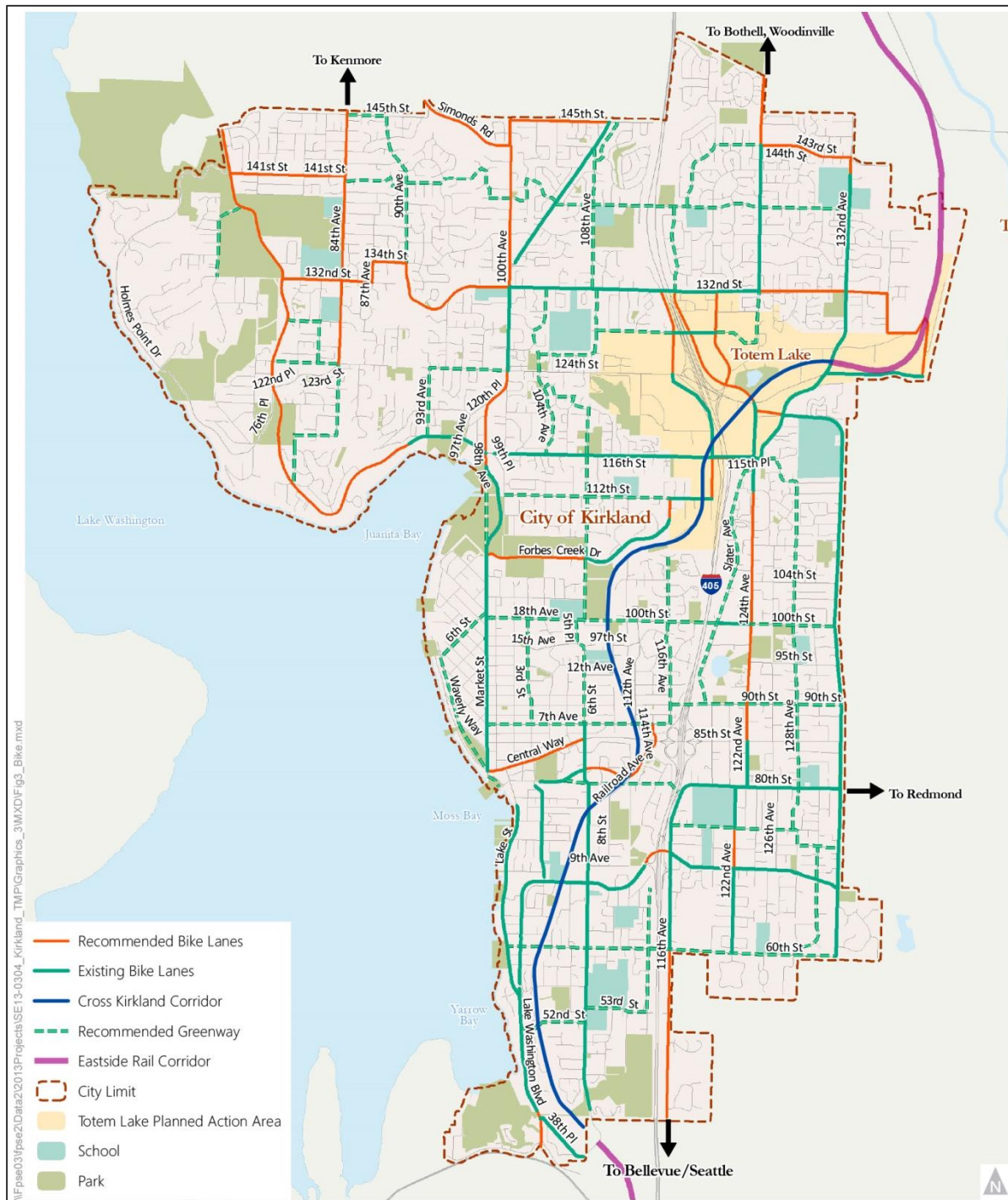


Exhibit 3.6-7. Future Transit Network

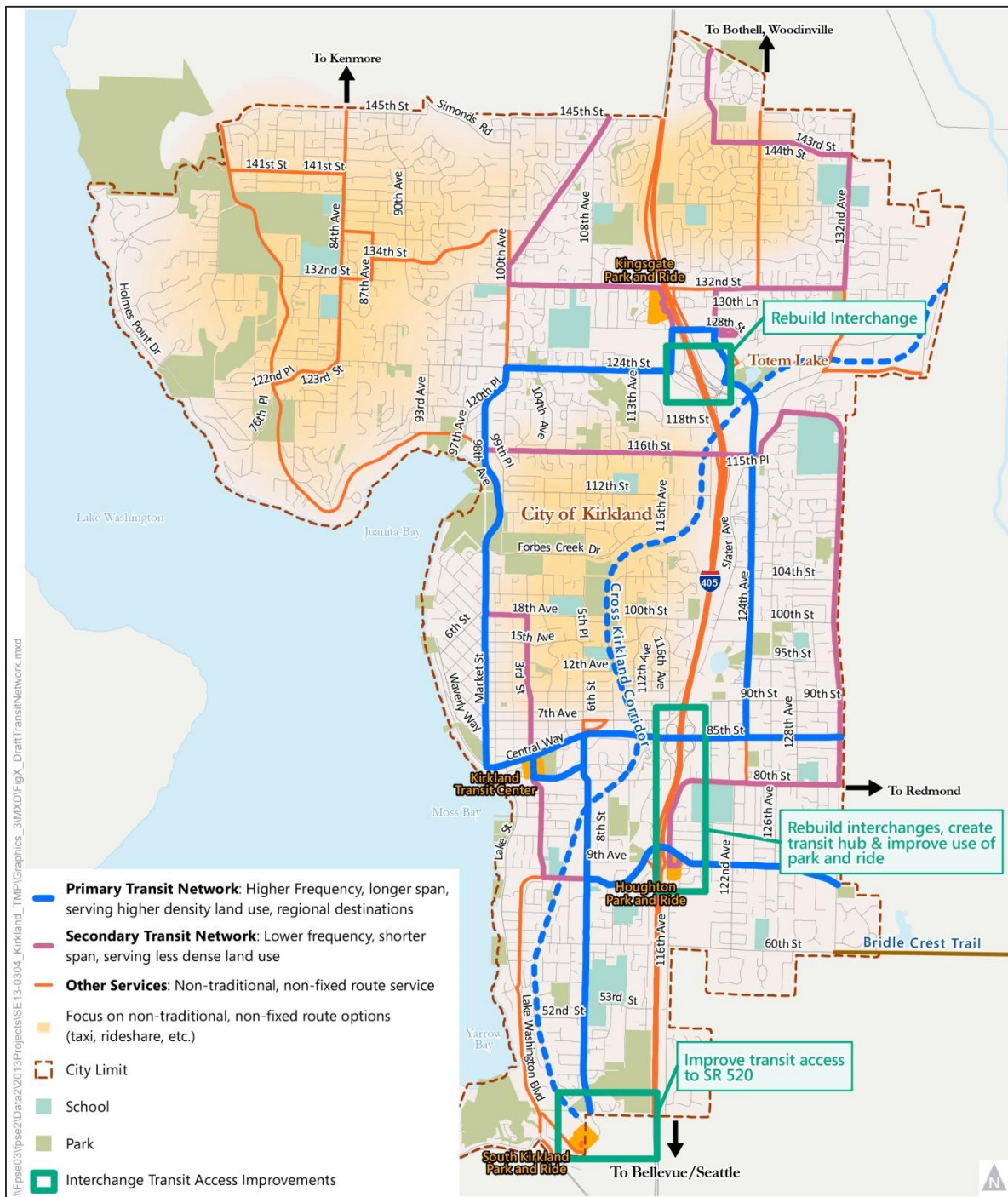


Exhibit 3.6-8. Intelligent Traffic System Deployment

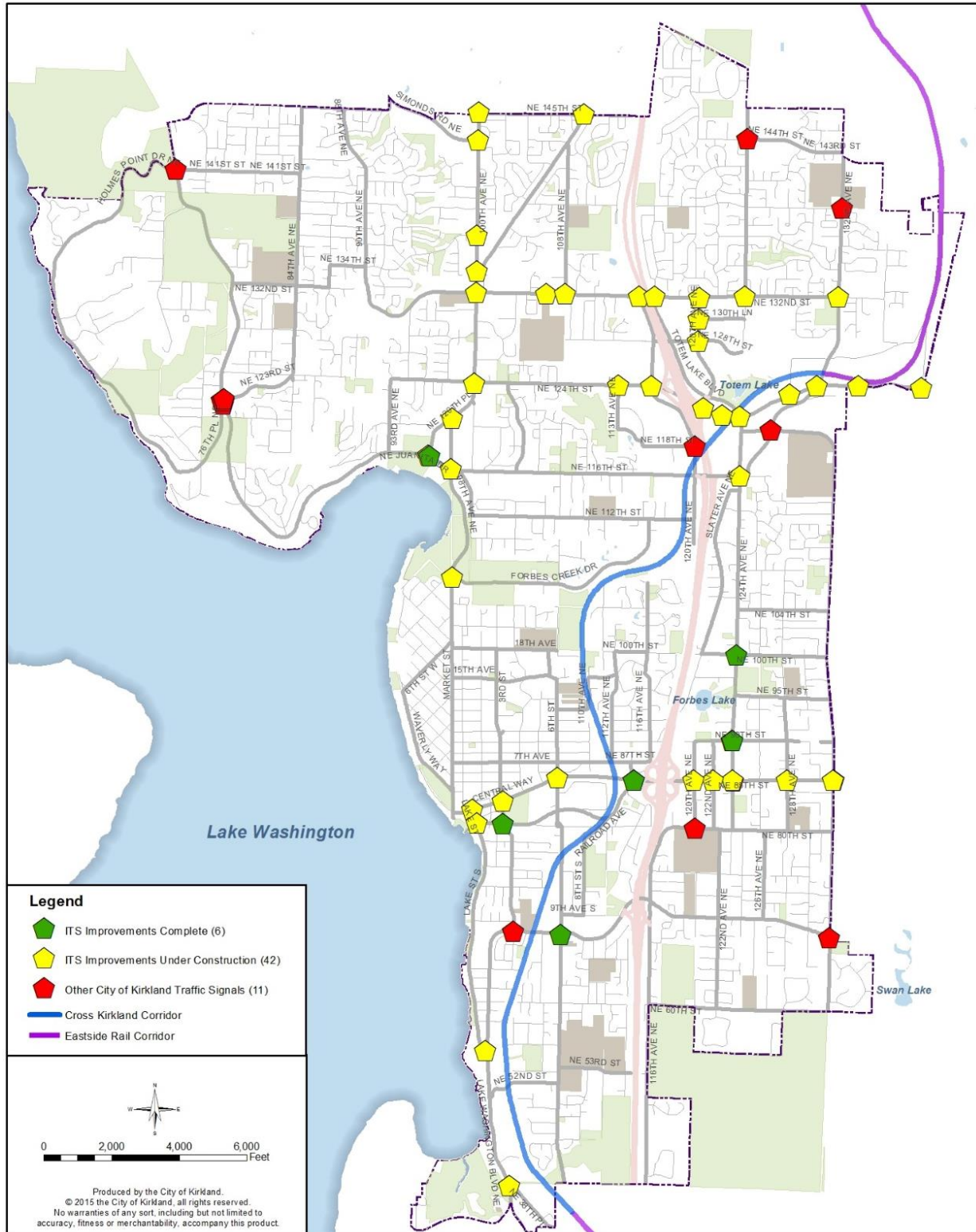


Exhibit 3.6-9. Possible New Road Connections in the Totem Lake Neighborhood

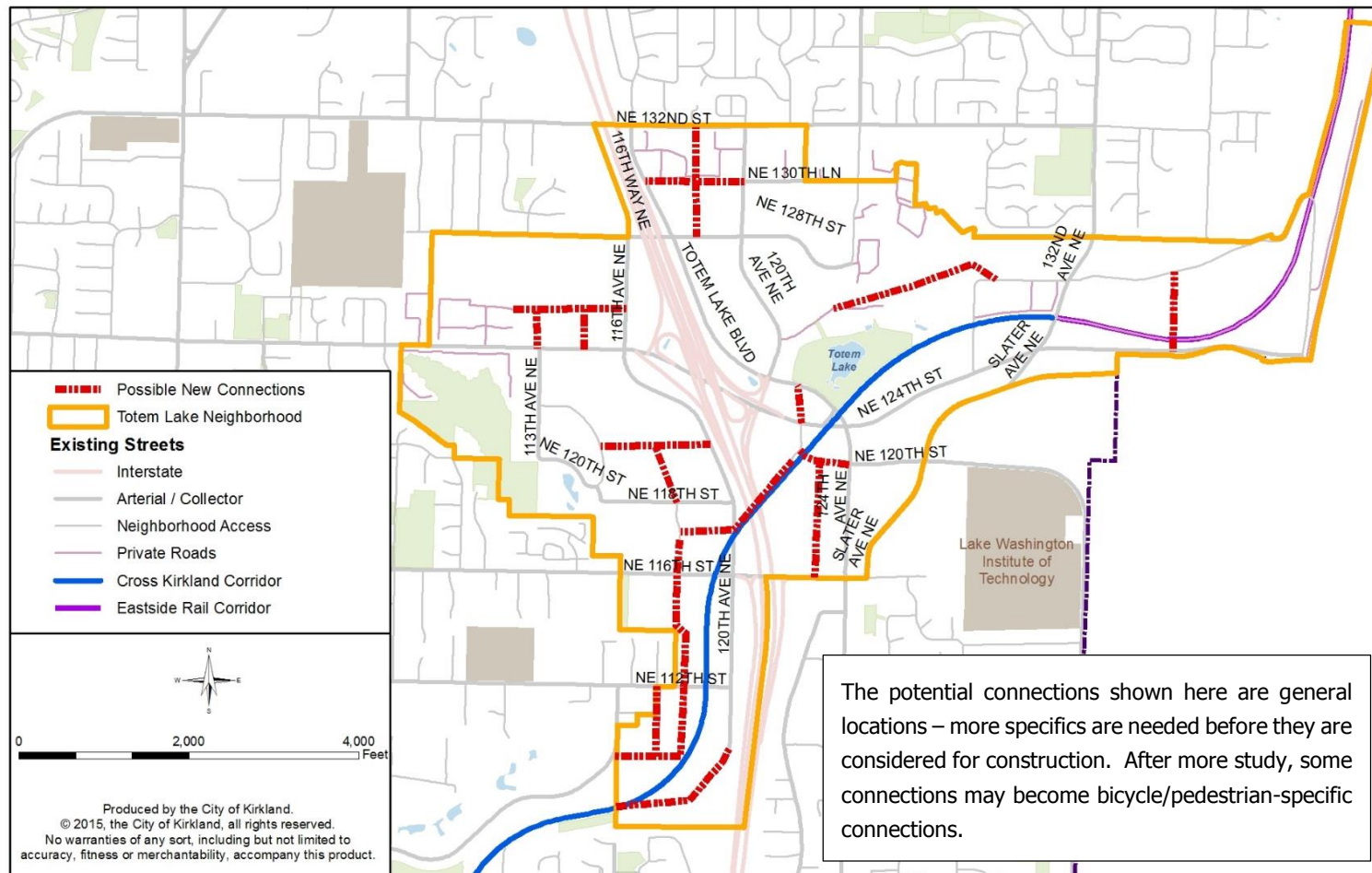
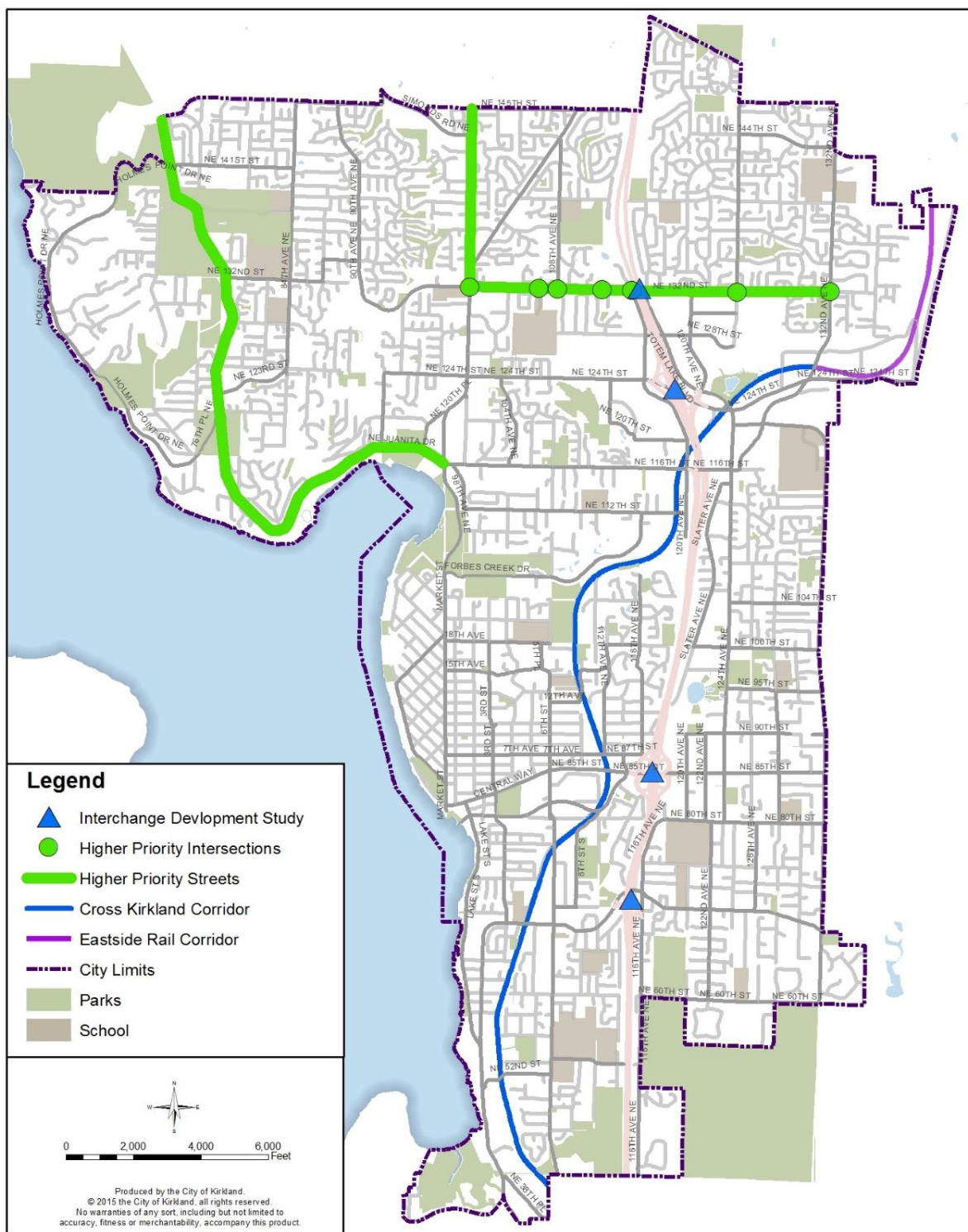


Exhibit 3.6-10. Vehicular Projects



Meaningful progress towards completion of these networks is assumed over the next 20 years. The TMP assumes \$250 million in transportation expenditures over this time period, including maintenance of the existing system, transportation programs, and capital improvements consistent with the above transportation networks.

Travel Demand Forecasting Model

The Bellevue-Kirkland-Redmond (BKR) travel demand forecasting model is a traffic analysis tool used to estimate future traffic volumes based on existing traffic patterns and planned land use growth. It provides future traffic volumes for development review and comprehensive planning. For short-range traffic impact analysis related to development review, it forecasts the traffic distribution of proposed future development.

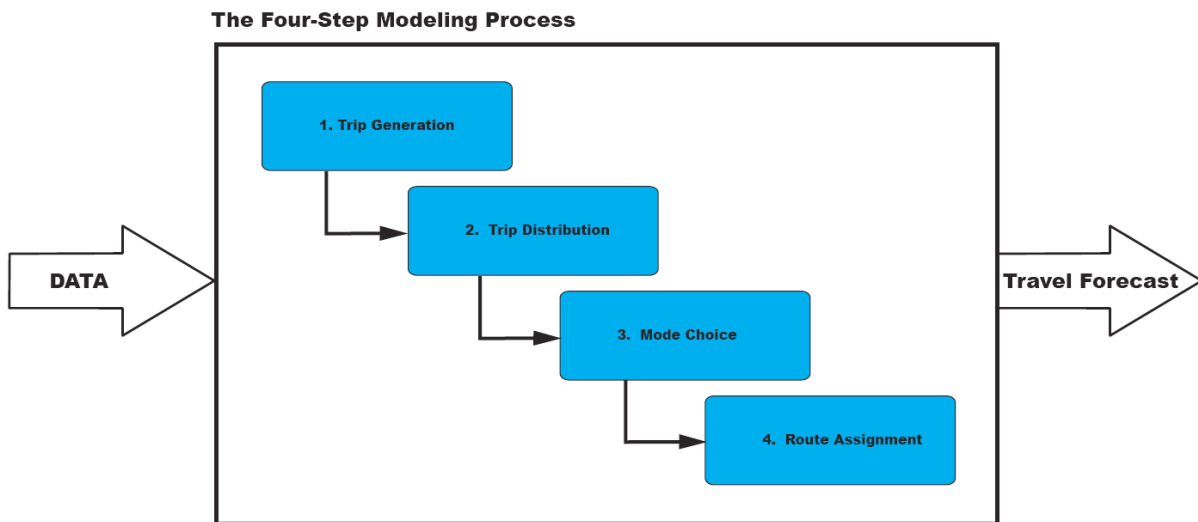
The BKR model is directly tied to each jurisdiction's land use within the planning area; and land use information is carefully managed and routinely updated to support transportation planning activities. The BKR model integrates elements of the regional model developed by the PSRC.

The general process for the BKR model is shown in Exhibit 3.6-11. It employs the traditional travel demand forecast modeling process, which includes the following key components:

- **Current Land Use Assessment** – provides the basis for determining travel demand. The entire study area is divided into Transportation Analysis Zones (TAZs) that have similar land use characteristics, and land use is quantified within each TAZ.
- **Trip Generation** – computes the number of trips that travel into and out of each TAZ, based upon land use characteristics and trip generation rates.
- **Trip Distribution** – distributes trips from each TAZ to every other TAZ, based on the relative accessibility and attractiveness between each TAZ pair.
- **Mode Split** – splits the total TAZ-to-TAZ trips by mode of travel, based on the relative attractiveness of all mode alternatives.
- **Time of Day Factors** – breaks down daily trip tables into different time periods, such as AM peak hour, midday off-peak hour, and PM peak hour.
- **Multi-class Auto Traffic Assignment** – loads traffic on the roadway network, employing user equilibrium principles.
- **Multi-path Transit Assignments** – loads transit person trips on the transit routes, utilizing a least weighted multi-path travel time algorithm.

The BKR model is built to project future travel demand for the Puget Sound region with primary focus on the metropolitan area east of Lake Washington. The base-year modeling platform is updated annually to reflect changes in land use and roadway network, and validated annually according to new observed data such as traffic counts and household travel surveys.

Exhibit 3.6-11. Four-Step Modeling Process



A separate BKR travel model run was developed for each of the three alternatives to reflect how their land use assumptions would influence travel behavior in the future. As stated earlier, the model assumed the same future transportation network for all three alternatives, consistent with what was recommended in the TMP.

It should be noted that, in its current state, the BKR model does not fully recognize the reduction in vehicle trips that occurs in and around mixed-use developments, like Downtown Kirkland today and what is envisioned for the Totem Lake neighborhood by 2035. To better reflect the kind of travel that would occur in a more walkable, mixed-use environment, the TMP used an innovative trip generation method that recognizes the relationship between travel and the built environment. This method supplements the BKR model by recognizing how built environment variables including density, diversity of land uses, destinations (accessibility), development scale, pedestrian and bicycle design, distance to transit services, and demographics affect travel. In short, places with higher densities, a rich variety of land uses close to one another, and high quality pedestrian, bicycle, and transit environments have lower vehicle trip generation rates. People have more choices in terms of both the travel mode as well as how far they must travel to reach various destinations.

The level of vehicle trip reduction applied in the Downtown and Totem Lake districts varied among the three alternatives, based on the land uses assumed. This approach is consistent with best practices in transportation analysis, as documented by the National Cooperative Highway Research Program (Report 684).

Level of Service Approach

The State Growth Management Act requires that cities set level of service standards for the transportation system in the Comprehensive Plan. Level of service serves as a useful evaluation tool to predict and monitor the performance of the transportation system.

The previous Comprehensive Plan included LOS goals for all four modes of transportation. Those standards are summarized in the table below.

Exhibit 3.6-12. Level of service in the previous Transportation Element of the Comprehensive Plan for various modes

Mode	Existing Level of Service Standard
Walking	By 2022, 155 miles of pedestrian facilities; six east-west and four north-south completed corridors
Biking	By 2022, 59 miles of bicycle facilities; four east-west and 2 north-south completed corridors
Transit	by 2022 35% transit/bike/ped modes split for peak-hour trips between work and home
Auto	Volume-to-capacity (V/C) ratio at signalized intersections in four City subareas (Southwest, Northwest, Northeast, and East), and no intersection with V/C ratio greater than 1.4.

A major change in this Comprehensive Plan Update is the revision of the way the City measures LOS for transportation. Under this new approach, LOS standards for each mode will primarily address completeness of various aspects of the transportation network. In essence, the measure compares expenditures for various transportation infrastructure categories with the amount of time that has elapsed in the 20 year planning horizon and tracks the rate of progress towards plan implementation. For example, it could be expected that half of the pedestrian network (in terms of dollar value) is constructed at the 10 year mark of the plan. This new approach offers the advantages of complementing the City's concurrency tracking and measuring something that the City has direct control over (annual construction of transportation facilities). Basing LOS on system completeness, instead of measures like volume-to-capacity ratio or intersection delay, also helps avoid potentially requiring undesirable roadway improvements (with unknown costs, feasibility, and impacts on non-auto modes) in support of an established LOS goal.

To more accurately reflect the way that LOS will be measured, the term 'level of completion' is used in place of level of service when referring to the actual measure. Each level of completion standard has three values, which compare the pace of constructing transportation infrastructure with the amount of time that has elapsed in the planning period. As described below, the pace of transportation infrastructure completion can be behind schedule, on schedule, or ahead of schedule. Targets are defined by the amount of time that has elapsed (thus, at the 10 year mark of the 20 year plan, it would be expected that half of the project list would be constructed):

- Behind schedule – completion is 90% or less of target
- On schedule – completion is between 90% and 110% of target
- Ahead of schedule – completion is more than 110% of target

The exhibit below shows the transportation infrastructure categories that will be tracked in terms of level of completion. Again, for each of these categories, the new LOS policy would compare percentage of planned expenditures made to date against the percentage of time in the planning horizon that has elapsed.

Exhibit 3.6-13. Level of Completion

Item	What is to be completed with the 20 year plan
Maintenance: Pavement condition	Collector and arterial streets with new surface.
Walking: School Walk Routes	Collector and arterial streets with complete walkway on one side.
Walking: 10 minute neighborhoods	Collector and arterial streets with complete walkway on one side within the highest scoring 10 minute neighborhoods.
Walking: Crosswalks	Upgrade 85 crosswalks on arterials that have limited improvements and 71 crosswalks with poor lighting.
Biking: On-street bike lanes	Improve the bike lane system to better than five feet wide, non-buffered lanes.
Biking: Greenway network	Completion of the greenway network.
Transit: Passenger environment	Improve lighting, shelters, etc., at 30 highest ridership locations.
Transit: Speed and reliability	Transit signal priority at 45 intersections on high priority transit routes.
Auto: ITS	Improvements to ITS system including connecting signals, parking technology, advance control methods and improved traveler information.
Auto: Capacity projects	NE 132 nd Street intersection and street projects 100 th Avenue auto improvements I-5 Interchange design/development Juanita Drive auto improvements

KIRKLAND COMPREHENSIVE PLAN UPDATE & TOTEM LAKE PLANNED ACTION DEIS | AFFECTED ENVIRONMENT, SIGNIFICANT IMPACTS, AND MITIGATION MEASURES

The exhibit below illustrates how the level of completion would be reported using a hypothetical example in year 5 of 20. The third column from the left shows a hypothetical amount of completion in the 5th year. The rightmost column shows a level of completion based on the scoring levels described above.

Exhibit 3.6-14. Hypothetical Level of Completion Report. Year 5 of 20 (25%)

Item	What is to be completed with the 20 year plan	Percent of 20 year list complete	Level of Completion
Maintenance: Pavement condition	Collector and arterial streets with new surface.	25%	On Schedule
Walking: School Walk Routes	Collector and arterial streets with complete walkway on one side.	50%	Ahead of Schedule
Walking: 10 minute neighborhoods	Collector and arterial streets with complete walkway on one side, (highest scoring 10 minute neighborhoods).	10%	Behind Schedule
Walking: Crosswalks	Upgrade 85 crosswalks on arterials that have limited improvements and 71 crosswalks with poor lighting.	23%	On Schedule
Biking: On-street bike lanes	Improve the bike system to better than 5' wide buffered lanes.	30%	Ahead of Schedule
Biking: Greenway network	Complete the greenway network.	45%	Ahead of Schedule
Transit: Passenger environment	Improve lighting, shelters, etc at 30 highest ridership locations.	27%	On Schedule
Transit: Speed and reliability	Transit signal priority at 45 intersections On high priority transit routes.	0%	Behind Schedule
Auto: ITS	Improvements to ITS system including connecting signals, parking technology, advance control methods and improved traveler information.	0%	Behind Schedule
Auto: Capacity projects	Completion of roadway projects that support plan goals such as NE 132 nd Street intersection and street projects 100 th Avenue design and construction I-405 Interchange design/development Juanita Drive Auto improvements	15%	Behind Schedule

Other measures of effectiveness can be reported in “report cards” and annual reports such as crashes, vehicle delays, and progress toward support related measures. This sort of monitoring is the intention based on the direction in the Plan’s goals and policies. The measures chosen for level of completion standards were selected based their relative ease of measurement and their importance for their respective mode.

Mode Split Goals

For its Totem Lake regional growth center (RGC), the City is required to develop mode share targets that align with the policy goals of planning the area to be more compact and accessible for walking, biking, and transit modes with the overall goal of reducing mode share by single occupant vehicles (SOVs). Exhibit 3.6-15 provides existing and envisioned future mode split goals for PM peak hour trips within Kirkland's Totem Lake RGC.

The reduction in SOV mode share shown between 2012 and the 2035 aspirational target reflect the City's goal of reducing VMT by 40 percent, accommodating travel by all modes and prioritizing multimodal transportation investments citywide, as well as within the RGC. This aspirational target highlights the City's commitment to providing a high quality walking, bicycling, and transit facilities, as well as investments in transportation demand management programs. While the non-SOV mode share goal shown here exceeds what the BKR model might predict, this TMP includes a number of multimodal investments, programs, and strategies that are not well captured in a travel model.

Exhibit 3.6-15. Totem Lake Mode Split – PM Peak Hour

Mode	2012 from BKR Model	2035 Aspirational Target
Single Occupancy Vehicle (SOV)	55%	33%
Non-SOV (includes trips by carpool, transit, walk, and bike)	45%	67%

Affected Environment

Kirkland Planning Area

This section addresses current transportation conditions of the Kirkland Planning Area. A comprehensive inventory of all transportation facilities provides a sound basis for effective planning. Consistent with the requirements of the GMA, the City maintains inventories of transportation facilities, which include:

- Walkways and Bikeways
- Transit
- Roadways
- Freight transportation
- Parking
- Traffic control
- Transportation Demand Management

These elements of the City's transportation system are described in the following sections.

Walkways and Bikeways

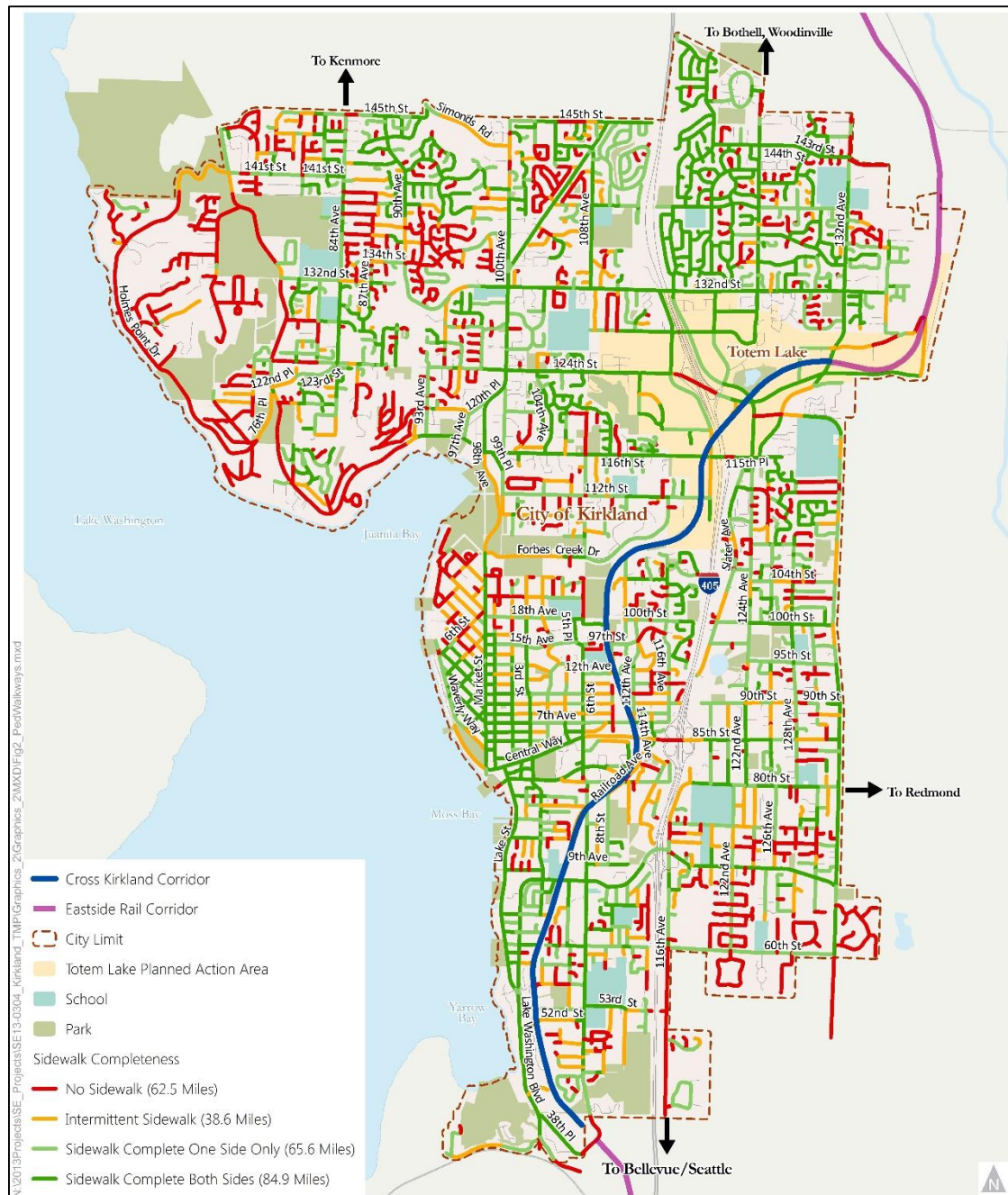
PEDESTRIAN WALKWAYS

The City of Kirkland recognizes pedestrian safety and walkability as key components in the livability of the City. Sidewalks exist in many areas of Kirkland, with concrete curb separations and walkable shoulders provided in others. Some roadways lack pedestrian infrastructure of any kind due to low traffic volumes and slow vehicle speeds. Exhibit 3.6-16 shows the location of sidewalks and crosswalk around the City, as well as the Cross Kirkland Corridor and the Eastside Rail Corridor trails.

The City has installed special crosswalk treatments and additional pedestrian amenities in many locations, including pedestrian flags and rapid rectangular flashing beacons for increased visibility of pedestrians. Traffic signals citywide include countdown pedestrian heads that indicate the amount of time a pedestrian has to cross the street. Kirkland has also installed pedestrian flags and rapid rectangular flashing beacons to increase the visibility of pedestrians along key corridors.

All major new roadway construction includes sidewalks and planter strips to support a pedestrian-friendly environment. In addition, new development must provide pedestrian connections to certain adjacent uses and to the adjacent right-of-way.

Exhibit 3.6-16. Existing Pedestrian Walkways



BIKEWAYS

Kirkland has a robust network of bicycle facilities. Approximately 27.3 miles of bike lane facilities, demarcated by striped lanes located along vehicle lanes on a street, are located within the City. The former vehicle bridge in Juanita Bay Park and the Cross Kirkland Corridor are the only shared use path facilities (routes for the exclusive use of non-motorized transportation) in Kirkland. The City's network also includes shared roadway facilities, which are designated bicycle routes without signs or striping on residential streets and non-motorized paths for bicycles, pedestrians and other users. All new major roadway construction within the City includes appropriate bicycle facilities. Exhibit 3.6-17 displays Kirkland's existing bicycle facilities.

On-street bike lanes comprise the majority of Kirkland's bicycle network with almost continuous coverage on key corridors from the southern end of the City up to NE 116th Street. The Lake Washington Boulevard NE / Lake Street S / Market Street / 98th Avenue NE corridor serves bicyclists on the west side of I-405 while the 116th Avenue NE / NE 80th Street / 130th Avenue NE corridor offers a north-south route of bike lanes on the east side of I-405. Traversing the City from west to east, NE 68th Street and NE 116th Street connect to the north-south bike lanes on either side of I-405. Most of Kirkland's on-street bike lanes are five feet in width with some running alongside the curb while others abut vehicle parking lanes.

The TMP recommends that existing roadways that are safe for bicycling (i.e. possessing relatively low vehicle volumes and speeds) be designated as "greenways." These greenway routes tend not to include specific roadway treatments but serve as guidelines for where to ride. Traffic calming elements, such as landscaped traffic circles, are common where these streets pass through neighborhoods. NE 60th Street, 18th Avenue NE, and 84th Avenue NE are examples of these recommended safe bicycle routes. On certain roadways where the right of way is too narrow for separate bicycle facilities, Kirkland also uses "sharrows" to demarcate sections of a corridor where drivers and bicyclists are meant to share a traffic lane.

I-405 acts as a barrier between neighborhoods. In addition to vehicle overcrossings, bicycles may use the grade separated crossings of I-405 at NE 60th Street, NE 80th Street, and NE 100th Street. These exclusive bicycle and pedestrian overpasses³ provide safe connections between the west and east sides of Kirkland and are integral to supporting bicycling in the City.

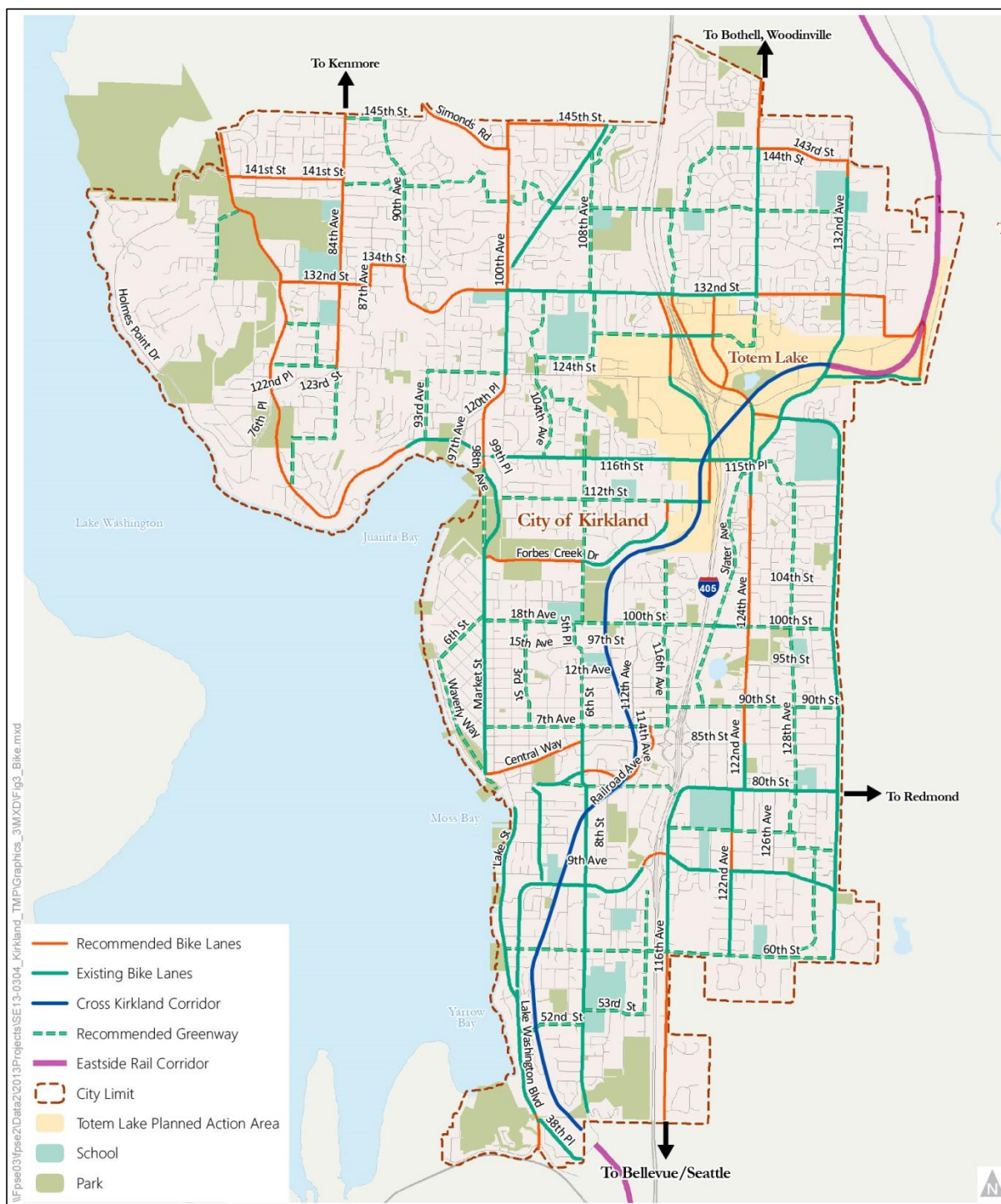
TRANSIT

King County Metro, Sound Transit, and Community Transit provide transit service in the City of Kirkland. A total of 24 routes serve Kirkland's nearly 200 bus stops, carrying almost 25,000 daily passengers. This includes fixed route service running either all day or during peak periods only as well as one dial-a-ride transit (DART) paratransit route, which provides a shared-ride service to residents who are unable to use fixed route service due to a disability.

Exhibit 3.6.19 shows the routes serving Kirkland as well as daily transit boardings at each stop. Exhibit 3.6-19 summarizes key characteristics of each route including destinations, service type, peak headway, and boardings.

³ Emergency vehicles are also permitted on NE 100th Street overpass.

Exhibit 3.6-17. Existing Bikeways



3-130



Exhibit 3.6-19. Existing Transit Service

Route	Destination	Service	Peak Headway	Daily Boardings
234	Kenmore to Kirkland TC to Bellevue TC	All Day	30	1,390
235	Kingsgate P&R to Kirkland TC to Bellevue TC	All Day	30	1,090
236	Woodinville P&R to Kirkland TC	All Day	30	480
238	UW/CCC Campus to Bothell to Totem Lake TC to Kirkland TC	All Day	31	920
245	Kirkland TC to Crossroads to Factoria	All Day	17	3,780
248	Avondale to Redmond TC to Kirkland TC	All Day	31	1,070
249	Overlake TC to South Bellevue P&R	All Day	32	1,220
255	Brickyard P&R to Kirkland TC to Downtown Seattle	All Day	12	6,120
532	Everett to Bellevue	All Day	18	1,640
535	Lynnwood to Bellevue	All Day	30	1,310
540	Kirkland to University District	All Day	20	660
237	Woodinville P&R to Bellevue TC	Peak-Only	44	120
244	Kenmore P&R to Overlake TC	Peak-Only	30	250
252	Kingsgate to Downtown Seattle	Peak-Only	20	640
257	Brickyard P&R to Downtown Seattle	Peak-Only	34	530
277	Juanita to University District	Peak-Only	30	260
311	Woodinville to Downtown Seattle	Peak-Only	17	1,100
342	Shoreline P&R to Renton TC	Peak-Only	31	310
424	Downtown Seattle to Snohomish	Peak-Only	86	-
952	Auburn P&R to Kenndale to Boeing Everett	Peak-Only	33	310
930	Kingsgate P&R to Redmond Town Center	DART	30	-

Source: King County Metro, Sound Transit, and Community Transit.

The Kirkland Transit Center is located in downtown at the intersection of 3rd Street and Park Lane. The transit center serves seven bus routes. A second transit center at the intersection of 120th Avenue NE and NE 128th Street in Totem Lake serves four bus routes as well as local DART service.

King County Metro operates nine Park & Ride lots of varying sizes throughout the city. In total, these lots provide almost 2,000 vehicle parking spaces, 20 bicycle lockers, and seven electric vehicle charging stations with bus connections.

ROADWAYS

Functional Classifications

The City of Kirkland has adopted a system of street classifications based on intended street function. The purpose of these classifications is to allow appropriate design and maintenance standards to be applied; and they are also used for state and federal funding purposes. The City applies one of four functional classifications to each of its roadways: principal arterial, minor arterial, collector, and local streets. Principal arterials connect Kirkland with other regional locations such as Bellevue and Redmond. Minor arterials provide connections between principal arterials and serve as key circulation routes within Kirkland. Collectors distribute traffic between arterials and local streets. Local streets provide access to individual properties and connect to collectors.

Exhibit 3.6-20 displays the existing classified street system in Kirkland. There are approximately 250 miles of streets in the City, which include:

- Local streets (70%)
- Collectors (15%)
- Minor arterials (8%)
- Principal arterials (7%)

Total street miles are about 60 percent higher than reported in the last Comprehensive Plan Update, primarily due to annexation.

Traffic Volumes

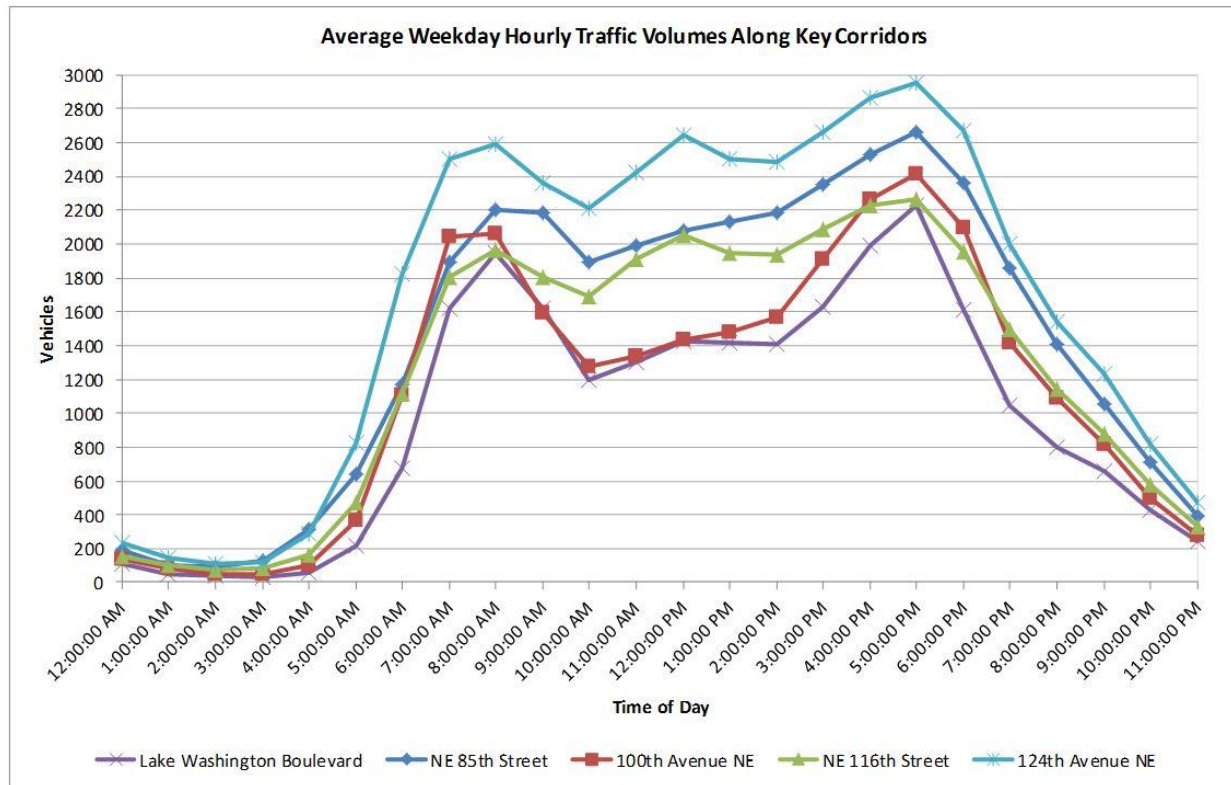
The City of Kirkland regularly conducts traffic counts at key locations throughout the City to determine the Average Daily Traffic (ADT) on the City's roadways. Exhibit 3.6-21 shows the average weekday hourly traffic volumes along the City's busiest corridors, which include:

- 124th Avenue NE (2,950 vph in PM peak)
- NE 85th Street (2,660 vph in PM peak)
- 100th Avenue NE (2,414 vph in PM peak)
- NE 116th Street (2,260 vph in PM peak)
- Lake Washington Boulevard (2,660 vph in PM peak)

These average volumes are based on three days of data collected during different seasons to account for potential seasonal variation in the data.⁴ Weekday traffic volumes along all of the corridors peak between 5:00 and 6:00 p.m. The morning peak along all corridors is between 8:00 and 9:00 a.m.; however, the AM peak traffic volumes are approximately 10 to 15 percent lower than the weekday PM peak hour.

⁴ The seasonal data representing February, May, and August 2013 for these corridors show that the general shape of the curve or trend in traffic volumes is consistent from one season to the next. There is very limited seasonal variation along NE 85th Street while 100th Avenue NE experiences the most seasonable variation with summer vehicular volumes 15 to 20 percent greater than those during the winter and spring during the weekday midday periods. These higher traffic volumes likely reflect increases in recreational uses in the Juanita neighborhood during the summer.

Exhibit 3.6-21. Existing Average Weekday Traffic Volume



Corridor Performance

While the City's new LOS standard does not explicitly measure vehicle delay, this analysis considers how vehicle delay varies between current and future conditions, as well as among alternatives. Instead of measuring average Vehicle/Capacity (V/C) ratio by subarea, as is currently the practice, this analysis considers average intersection delay along corridors. This approach recognizes that corridor operations more reasonably measure the performance of Kirkland's street system for cars, trucks, and transit than individual intersections.

Average intersection delay experienced along a corridor serves as a proxy for corridor travel time. This approach takes a volume-weighted average of the delay experienced at several intersections along a corridor to measure that corridor's performance. The corridor delay values reported in the remainder of this chapter were calculated using the Synchro software package, which takes into account methodologies prescribed in the 2010 Highway Capacity Manual (HCM 2010). Exhibit 3.6-22 below provides the HCM 2010 descriptions of operational delay ranges for signalized intersections and the corresponding level of service grades.

Exhibit 3.6-22. Grade and Delay Thresholds for Signalized Intersections from Highway Capacity Manual 2010

Level of Service Grade	Delay Range (seconds)	Description
A	≤10	Free-flowing conditions.
B	>10 –20	Stable operating conditions.
C	>20 –35	Stable operating conditions, but individual motorists are affected by the interaction with other motorists.
D	>35 –55	High density of motorists, but stable flow.
E	>55 –80	Near-capacity operations, with speeds reduced to a low but uniform speed.
F	>80	Over capacity, with delays.

Existing Corridor and Subarea Traffic Operations

Exhibit 3.6-23 and Exhibit 3.6-24 summarize the existing vehicle delay and corridor operation grades for key City roadway corridors and subareas. The table shows that all corridors and subareas currently operate at grade E or better.

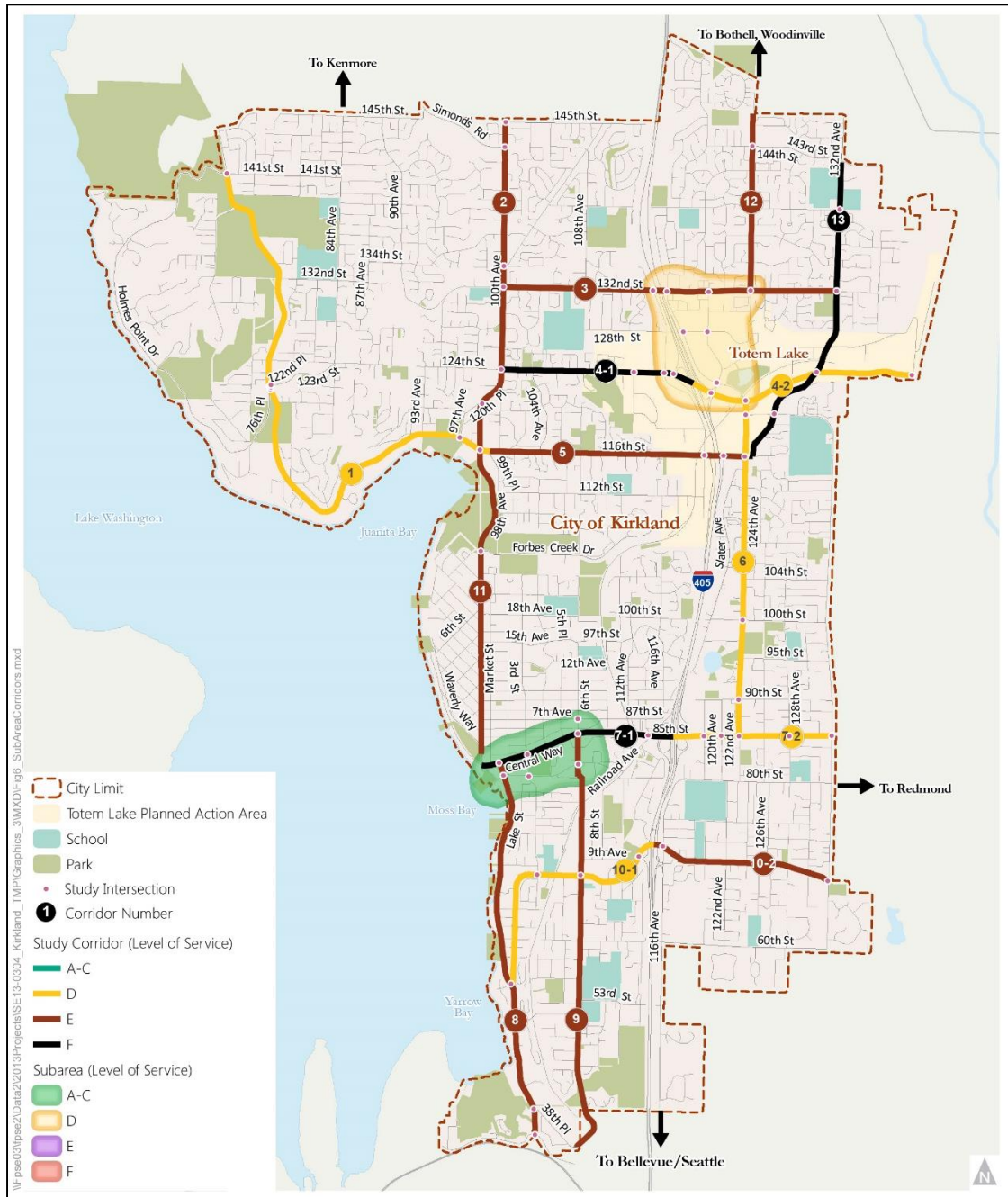
Exhibit 3.6-23. Table of Existing (2014) PM Peak Hour Traffic Operations for Corridors and Subareas

Map ID	Corridor or Subarea	Existing	
		Ops Grade ^a	Delay ^b
1	Juanita Drive	C	33
2	100th Avenue NE	D	52
3	NE 132nd Street	E	62
4-1	NE 124th Street west of I-405	E	65
4-2	NE 124th Street east of I-405	D	54
5	NE 116th Street	D	46
6	124th Avenue NE	D	36
7-1	Central Way	D	50
7-2	NE 85th Street	C	33
8	Lake Washington Boulevard-Lake Street	E	58
9	108th Avenue NE-6th Street	D	41
10-1	Lake View Drive-NE 68th Street	D	38
10-2	NE 70th Street	D	42
11	Market Street	D	39
12	124th Avenue NE	D	52
13	132nd Avenue NE	D	55
TL	Totem Lake	D	46
DT	Downtown	C	31

^a Traffic operations level of service grade

^b Measured in average seconds of delay per vehicle along corridor intersections

Exhibit 3.6-24. Map of Existing (2014) PM Peak Hour Traffic Operations for Corridors and Subareas



Collision Trends

Traffic safety issues were reviewed along the 100th Avenue NE/98th Avenue NE, NE 85th Street, NE 124th Street, and 120th Avenue NE corridors, and at signalized intersections and uncontrolled marked pedestrian crossings. A five-year history of records of reported collisions was reviewed for 2009 to 2013 for each corridor, signalized intersection, and uncontrolled marked pedestrian crossing.

The majority of collisions along the highest volume corridors were rear-end or related to driveways and unsignalized intersections. Rear-end collisions are common with stop-and-go traffic conditions. This is consistent with the operational analysis, which indicates congestion along the major corridors in the City. Driveway related collisions are also common along congested corridors where entering and exiting a driveway location may be difficult due to high traffic volumes.

Approximately 1,000 collisions were reported each year with about one-third of these occurring at signalized intersections. The City identifies safety issues at signalized intersections by calculating a collision rate (collisions per millions of entering vehicles) and comparing this to the average collision rate for all signalized intersections in the City. At signalized intersections that may have potential safety issues, the location is further reviewed to determine if there is an identifiable and consistent pattern and potential improvements. Left-turn and rear-end collisions were the most common type at the signalized intersections along the primary corridors and other locations. Left-turn collisions are common at signalized intersections that do not have protected left-turn phases for turning traffic, which is the case for many of the City's signalized intersections. Rear-end collisions are common at congested locations where there is frequent stop-and-go traffic such as at signals.

The signalized intersections were further reviewed to understand pedestrian-related collisions. Pedestrian collisions generally occurred at driveways near the intersections or were related to right-turns or permissive left-turns.

Additional pedestrian and bicycle related collisions were evaluated including at uncontrolled marked crossings in the City. These resulted in three fatalities from 2009 to 2013 along Juanita Drive. Collisions at these locations are generally identified as being due to driver inattention and often occur in areas with lower lighting levels.

Freight Movement

Movement of goods and services is important to the economic vitality of the City and the region. Kirkland's roadways are utilized by freight traffic to serve local commercial and industrial areas. Goods movement in Kirkland runs predominantly along the City's principal arterials of NE 85th Street, NE 116th Street, and NE 124th Street, which provide regional access via interchanges at I-405. The majority of freight activity occurs on weekdays with the highest levels midweek and during the morning periods. Average weekday traffic volumes along these corridors range from approximately 33,000 vehicles per day (vpd) along the five lane NE 85th Street and NE 124th Street to 20,000 vpd along the three lane NE 116th Street. Freight vehicles along these corridors represent approximately four to five percent of the average weekday traffic volumes. Beyond these primary routes, delivery vehicles use many other streets to reach their final destination.

Parking

On-street parking is provided along many streets in Kirkland, including principal arterials such as Lake Street and Central Way. On-street parking is free throughout the City, but there are time limits in downtown. In some areas, commercial parking is provided via off-street private parking lots or garages. In addition, multi-family residential developments also provide off-street parking.

Unique to downtown Kirkland, the City provides several off-street public parking facilities. The Peter Kirk Municipal Garage located on the northwest corner of Kirkland Avenue and State Street provides free parking with a four-hour

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time limit. Closer to the waterfront east and west of Lake Street, there are two surface lots (Lake Street lot and Lakeshore Plaza lot) that each provide free parking with a three-hour time limit from 9:00 a.m. to 5:00 p.m. and paid parking 5:00 p.m. to 9:00 p.m. with a four-hour time limit. South of Park Lane and west of 3rd Street, the Park and Main Lot is provided, which has paid parking from 9:00 a.m. to 9:00 p.m. Time limits and paid parking are all Monday through Saturday with no restrictions on Sundays.

Parking in downtown and around Lake Street is desirable given its proximity to local businesses, and vehicles often circulate throughout the area searching for parking, which contributes to area congestion. Parking at the Peter Kirk Garage is typically available, but is less desirable because it is located farther from the core commercial area. Parking associated with parks in the City sometimes spills onto the street system, especially in the summer when there are events such as farmers markets. Exhibit 3.6-25 summarizes the public parking facilities that currently exist in downtown Kirkland. It should be noted that the City is currently considering multiple near-term revisions to downtown parking policies.

Exhibit 3.6-25. Public Parking in Downtown Kirkland

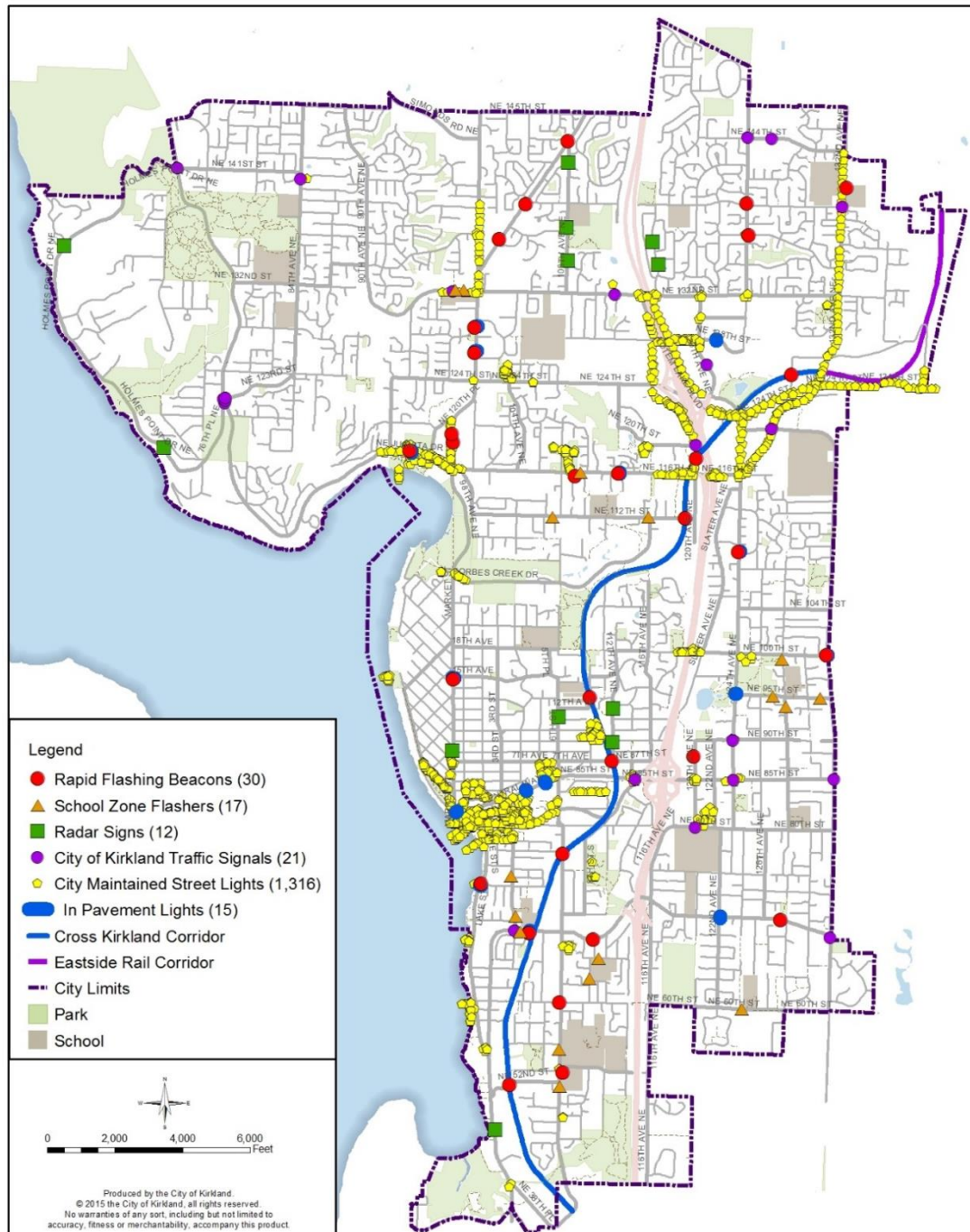
Parking Type	Location
Free Two-Hour Parking	- On street parking in the Downtown Core (unless otherwise noted)
Free Three-Hour Parking	- Lakeshore Plaza Lot (9AM – 5PM) - Lake Street Lot (9AM – 5PM)
Free Four-Hour Parking	- The Peter Kirk Municipal Parking Garage located under the Kirkland Library at the intersection of Third Street and Kirkland Avenue - On-street along 1st Street, 3rd Avenue, 2nd Avenue S, and State Street
Pay Parking	- All day parking, \$1 per hour 9AM – 9PM - Park & Main Lot - Up to 4 hour parking, \$1 per hour 5PM – 9PM - Lakeshore Plaza - Lake Street Lot - Private parking lots are available for customer parking in the Downtown Core

Source: http://www.kirklandwa.gov/depart/Public_Works/Transportation_and_Traffic/Parking.htm

TRAFFIC CONTROL

Exhibit 3.6-26 shows the locations and types of signalized intersections in the City of Kirkland.

Exhibit 3.6-26. Traffic Control



Vehicles, and single-occupant vehicles (SOV) in particular, currently dominate travel within Kirkland. According to the 2010 Census, most Kirkland residents (75%) travel to work by SOVs. The remaining 25 percent of workers commute via the following modes: 7 percent use transit, 8 percent use carpools, 1 percent bike, 1 percent walk, and 8 percent work from home. This existing pattern of travel reflects a dependence on individual vehicles for most mobility needs.

TDM programs seek to modify travel behavior and encourage economical alternatives to the SOV. TDM may include incentives, programs, or regulations to reduce the number of SOV trips. TDM strategies are aimed at influencing behavior in a way that keeps expansion of the transportation system to a minimum. The greater the success of TDM strategies, the more successful the City will be at achieving the mode split goals described above.

TDM strategies may include: (1) working cooperatively with employers to implement programs that encourage employees not to drive alone; (2) requiring certain new developments to implement programs to reduce SOV use;; and (3) supporting paid parking or other parking policy measures.

Kirkland has a number of employers that fall under the requirements of Washington's Commute Trip Reduction (CTR) Law. For CTR employers, Kirkland has established goals for several travel demand measures such as vehicle miles of travel and percentage of drive alone trips. These goals, follow the City's CTR Plan and the framework established by the CTR Law.

Exhibit 3.6-27. Performance Goals for Individual Commute Trip Reduction (CTR) Employers

Measure	2020 Goal for Change from Baseline*
Non Single-Occupant Vehicle Trips	+18.0%
Vehicle Miles of Travel	- 18.0%
Greenhouse Gas Emissions	- 18.0%

*2008 or first year of CTR survey, whichever comes later.

In 2010, the City of Kirkland formed the grant-funded Kirkland Green Trip program for the Totem Lake area and expanded it citywide in 2014. The program includes a ride matching system to help form carpools, subsidized transit passes (ORCA cards) for first time bus riders in the Totem Lake area, and information and maps to encourage walking and bicycling. Participants can earn rewards for reducing their drive-alone trips. Kirkland Green Trip also provides resources for employers to help encourage their employees to reduce SOV trips to and from work.

Totem Lake Planned Action Area

This section addresses current transportation conditions within the Totem Lake Planned Action Area (PAO), the primary regional growth center within the City of Kirkland. The affected transportation environment for the Totem Lake PAO includes the following:

- Walkways and Bikeways
- Transit
- Roadways
- Traffic control
- Transportation Demand Management

These elements of the City's transportation system are described in the following sections.

WALKWAYS AND BIKEWAYS

Walkways

As shown in Exhibit 3.6-16, most streets within the Totem Lake PAO study area have continuous sidewalks on at least one side of the roadway. A notable gap in network occurs along NE 124th Street at the I-405 overpass, where both sides of the street lack a continuous sidewalk between 116th Avenue NE and the I-405 Northbound off-ramp. Intermittent gaps also occur in the sidewalk along the west side of 120th Avenue NE between NE 118th Street and NE 112th Street. In general, the typical block length within the Totem Lake PAO is not conducive to walking, and there are few marked crosswalks or off-street pedestrian connections offered between intersections.

Bikeways

As shown in Exhibit 3.6-18, bike accommodations are provided on multiple streets within the Totem Lake PAO. Existing bike facilities include the following:

- **Bike Lanes**
 - **NE 132nd Street**
 - **NE 128th Street** (near the I-405 direct access interchange),
 - **116th Avenue NE / 120th Avenue NE** between NE 124th Street and NE 116th Street
 - **NE 116th Street**
 - **NE 112th Street** between 116th Avenue NE and 124th Avenue NE
 - **Slater Avenue NE**
 - **NE 124th Street** west of Slater Avenue
- **Cross Kirkland Corridor (CKC)** – The CKC is a 5.75 mile segment of the 42-mile Eastside Rail Corridor, which will eventually connect multiple Eastside communities between Renton and Snohomish. A 1.6 mile segment of the CKC bisects the Totem Lake PAO, running from the southwest to the northeast corner of the study area (at Slater Avenue). This segment opened as an interim gravel trail design in January 2015 and provides improved roadway crossings at the following locations:
 - **128th Lane NE** (cross-walk, lighting, rapid-flashing pedestrian beacons)
 - **120th Avenue NE** (cross-walk, lighting, rapid-flashing pedestrian beacons)

- **NE 112th Street** (cross-walk, lighting, rapid-flashing pedestrian beacons)

TRANSIT

As described in the Citywide discussion, King County Metro, Sound Transit, and Community Transit provide transit service in the City of Kirkland. Within the Totem Lake Planning Area, this includes fixed route service running either all day or during peak periods only as well as dial-a-ride transit (DART) paratransit, which provides a shared-ride service to residents who are unable to use fixed route service due to a disability.

Existing transit service within the Planned Action Area was summarized in Exhibit 3.6-18.

In addition to the transit service described above, Totem Lake has various capital facilities intended to improve service and encourage transit ridership. The Kingsgate Park-and-Ride provides 502 free parking stalls for Metro and Sound Transit riders. King County Metro buses pick-up and drop-off passengers within the lot as well as at the nearby I-405 overpass on NE 128th Street. Sound Transit routes also serve the 128th Street overpass via the I-405 HOV and transit direct access ramp. In addition to the Park-and-Ride, the Totem Lake Transit Center at the intersection of 120th Avenue NE and NE 128th Street serves four King County Metro bus routes and local DART service.

ROADWAYS

Functional Classifications and Street System

The City of Kirkland roadway functional classification system is described above. Existing classified streets within the Totem Lake PAO (shown in Exhibit 3.6-20) include:

- Interstates
 - **I-405** bisects the Totem Lake PAO and is the primary north-south movement corridor in Kirkland. I-405 currently has three interchanges within the Totem Lake PAO including an HOV/transit direct access ramp at NE 128th Street, a partial cloverleaf interchange at NE 124th Street, and a half single-point urban interchange (SPUI) at NE 116th Street with northbound off-ramps and southbound on-ramps. I-405 is operated and maintained by WSDOT.
- Principal Arterials
 - **NE 132nd Street** is an east/west roadway at the northern boundary of the Totem Lake PAO. NE 132nd Street has three travel lanes between 100th Ave NE and I-405 but narrows to two lanes east of I-405.
 - **NE 124th Street** is a five-lane roadway that serves as the primary east/west route between north Kirkland and the Sammamish River Valley. Additionally, the partial cloverleaf interchange I-405 provides the main point of access for regional trips into and out of the Totem Lake PAO.
 - **NE 116th Street** connects the southern portion of the Totem Lake PAO with Juanita Village and 98th / 100th Avenue NE, the main north/south arterial in west Kirkland. NE 116th Street is a five-lane roadway within the Totem Lake PAO (in the vicinity of the half SPUI with I-405) but narrows to three lanes west of 120th Avenue NE.
 - **Totem Lake Boulevard / 124th Avenue NE** is the primary north/south corridor within the Totem Lake PAO, connecting the Rose Hill neighborhood to NE 132nd Street near I-405 and the Kingsgate Park & Ride. This arterial has four-to-five travel lane between NE 132nd Street and NE 124th Street (signed as Totem Lake Boulevard). South of NE 124th Street, the roadway (signed as 124th Avenue NE) narrows to three travel lanes.

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- Minor Arterials – the roadways listed below provide connections between principal arterials and serve as key circulation routes within Kirkland. Except where noted, minor arterial roadways have two-to-three travel lanes.
 - **116th Avenue NE / 120th Avenue NE** (four-to-five lanes between NE 132nd Street and NE 124th Street)
 - **NE 128th Street**, west of 120th Avenue NE (six lanes at direct access ramp between 116th Avenue NE and Totem Lake Boulevard; four lanes between Totem Lake Boulevard and 120th Avenue NE)
 - **Slater Avenue NE**, between 124th Avenue NE and NE 124th Street
- Collectors - the roadways listed below distribute traffic between arterials and local streets within Totem Lake.
 - 120th Avenue NE
 - NE 130th Lane
 - NE 128th Street (east of 120th Avenue NE)
 - Slater Avenue NE, north of NE 124th Street (Five lanes between NE 124th Street and NE 126th Place)
 - 113th Avenue NE / NE 120th Street / NE 118th Street
 - NE 112th Street

Existing Intersection Traffic Operations

For the Totem Lake PAO, traffic operations were evaluated at 18 signalized intersections. In total, 15 of the study intersections are located along one or more of the City's roadway corridors described in the Kirkland Planning Area Affected Environment analysis and shown in Exhibit 3.6-24. Exhibit 3.6-28 summarizes the existing vehicle delay and intersection operation grades for the Totem Lake PAO study area intersections. The table shows that two intersections currently operate at grade F, 116th Avenue NE/NE 132nd and Slater Avenue NE (132nd Avenue NE)/NE 124th Street.

TRAFFIC CONTROL

Exhibit 3.6-26 showed the locations, types, and jurisdictions of signalized intersections in and adjacent to the Totem Lake Planning Area.

TRANSPORTATION DEMAND MANAGEMENT

As described in earlier in this document, the City has a goal of reducing SOV mode share of commute trips in the Totem Lake regional growth center by 17 percentage points. This represents a long-term goal for the City to achieve by providing improved transit accessibility, Transportation Demand Management (TDM) programs, efficient non-motorized systems, locating shops and services close to residences, and implementing other strategies to encourage citizens to travel by modes other than SOV.

The City of Kirkland formed the grant-funded Kirkland Green Trip program for the Totem Lake area in 2010 and expanded it citywide in 2014. The program includes a ride matching system to help form carpools, subsidized ORCA cards for first time bus riders in the Totem Lake area, and information and maps to encourage walking and bicycling. Participants can earn rewards for reducing their drive-alone trips. Kirkland Green Trip also provides resources for employers to help encourage their employees to reduce SOV trips to and from work.

Exhibit 3.6-28. Existing (2014) PM Peak Hour Traffic Operations for Totem Lake PAO Intersections

#	Intersection	Corridor	Existing	
			Ops grade ^a	Delay ^b
1	116th Avenue NE/NE 132nd	3	F	146
2	Totem Lake Boulevard/NE 132nd Street	3	C	24
3	120th Avenue NE/NE 132nd Street	3	B	15
4	124th Avenue NE/NE 132nd Street	3	E	67
5	113th Avenue NE/NE 124th Street	4-1	B	19
6	116th Avenue NE/NE 124th Street ⁵	4-1	D	45
7	405 SB off Ramps/NE 124th Street ⁵	4-1	E	78
8	405 NB on/off Ramp/NE 124th Street	4-2	C	20
9	Totem Lake Boulevard (124th Avenue NE)/NE 124th Street	4-2 and 6	D	53
10	Slater Avenue NE (132nd Avenue NE)/NE 124th Street	4-2 and 13	F	99
11	120th Avenue NE/NE 116th Street ⁵	5	D	49
12	405 NB off Ramp/NE 116th Street ⁵	5	D	36
13	124th Avenue NE/NE 116th Street	5 and 6	D	36
14	124th Avenue NE/NE 120th Street (future intersection)	6	NA	NA
15	NE 120th St/Slater Ave NE	13	D	48
16	Totem Lake Boulevard /NE 128th Street	NA	C	28
17	120th Avenue NE/NE 128th Street	NA	B	11
18	120th Avenue NE/Totem Lake Boulevard	NA	D	41

^a Traffic operations level of service grade

^b Measured in average seconds of delay per vehicle along corridor intersections

Impacts

One of the primary purposes of an EIS is to identify significant adverse environmental impacts under each Alternative. The following bullets provide an overview of the growth assumptions for each alternative and potential changes to transportation conditions compared to Alternative 1.

- **2035 Alternative 1 (Existing Plans – No Action)** – This alternative models the land use projected for the currently adopted Comprehensive Plan, and the adopted transportation system plan for the year 2035. Totem Lake would be the city’s primary employment and housing growth center, and the Central Business District would be a secondary growth center.
- **2035 Alternative 2 (Totem Lake/Downtown Focus)** – This alternative would focus future development into the city’s two major growth centers: Totem Lake and the Central Business District. Compared to Alternative 1, the Parkplace site in downtown Kirkland would redevelop with more households but less employment; Totem Lake would receive additional employment and household growth; and household growth would be less in the Kingsgate and Juanita neighborhoods. The additional growth in Totem Lake would result in more vehicle trips to and from the neighborhood compared to Alternative 1, but the mixed-use nature of this land use growth would also create more opportunities for non-motorized travel and trips by transit.
- **2035 Alternative 3 (Distributed Growth)** – This alternative would distribute future growth to a larger number of neighborhoods in Kirkland compared to Alternative 1 or 2. Totem Lake would remain the city’s largest employment center but would receive fewer jobs and households than under Alternative 1 or 2. This growth would instead be distributed to other business districts and neighborhood centers, such as Rose Hill, Bridle Trails, and Juanita. Compared to Alternative 1, vehicle traffic along key corridors in these neighborhoods would increase. Additionally, this alternative would scale back mixed-use development within Totem Lake and concentrate more growth in areas that are less conducive to walking and biking (such as Rose Hill and Bridle Trails), creating fewer opportunities for non-motorized travel.

The threshold for a transportation impact is defined by the City’s level of service (LOS) policy, which is measured in terms of system completeness compared to the City’s 20-year transportation vision⁵. Because specifics of the growth Alternatives would not significantly impact progress towards transportation system completeness, none of the Alternatives are expected to result in transportation-related environmental impacts.

As mentioned earlier, the City’s previous LOS standard was a two-part policy based on the ratio of traffic volume to intersection capacity (V/C) for signalized system intersection – (1) Maximum allowable average V/C ratios were set for signalized intersections within four City subareas (Southwest, Northwest, Northeast, and East); (2) The maximum allowable V/C ratio for an individual intersection was set at 1.4. To determine if implementation of the new (system completion-based) LOS policy would affect the identification of impacts compared to the previous LOS policy, 2035 Alternative 1 (Existing Plans – No Action) was evaluated using both measures. Based on this analysis, it was found that Alternative 1 would also not result in any new transportation impacts under the previous LOS policy.

Though no transportation impacts were identified per the City’s new LOS policy, Alternatives 2 and 3 would result in slightly different transportation operating conditions relative to Alternative 1 (Existing Plans – No Action). The following sections further describe how transportation conditions would differ among the three alternatives for each relevant travel mode.

⁵ In-depth descriptions of 20-year vision items pertinent to each mode are provided in Section 3.6.1.1

Walking and Biking Demand Differences

KIRKLAND PLANNING AREA

While the TMP pedestrian and bicycle networks are assumed as constants among the three alternatives, Exhibit 3.6-29 and Exhibit 3.6-30 show how the three alternatives differ in terms of the proximity of future land use growth to elements of the pedestrian and bicycle networks.

Alternative 2 (Totem Lake/Downtown Focus) places substantially more households in Totem Lake and Downtown compared to Alternative 1 (No Action). Since all of the alternatives have the same overall number of households added to Kirkland, this means that there are fewer homes placed in Kirkland's more suburban neighborhoods, including Inglewood/North Juanita, Kingsgate, Houghton/Everest, and Bridle Trails. On the employment side, Alternative 2 concentrates more jobs in the Totem Lake area, jobs that were assumed in Downtown under the No Action Alternative.

In terms of the pedestrian network, the TMP shows Downtown and Kingsgate as fairly sidewalk rich areas. The TMP also anticipates completion of several new roadway connections within Totem Lake, which would include pedestrian facilities, as well as progress towards completion of the CKC Master Plan, which would be a major pedestrian amenity. Thus, by focusing housing in Downtown and Totem Lake, the Totem Lake/Downtown Focus Alternative provides more options for walking by future Kirkland residents. Alternative 2 does assume fewer jobs within Downtown, which is currently a very walkable area, and instead focuses the jobs within Totem Lake. Assuming implementation of the 20-year TMP connections, Totem Lake in the future could have a similar level of walkability to Downtown today.

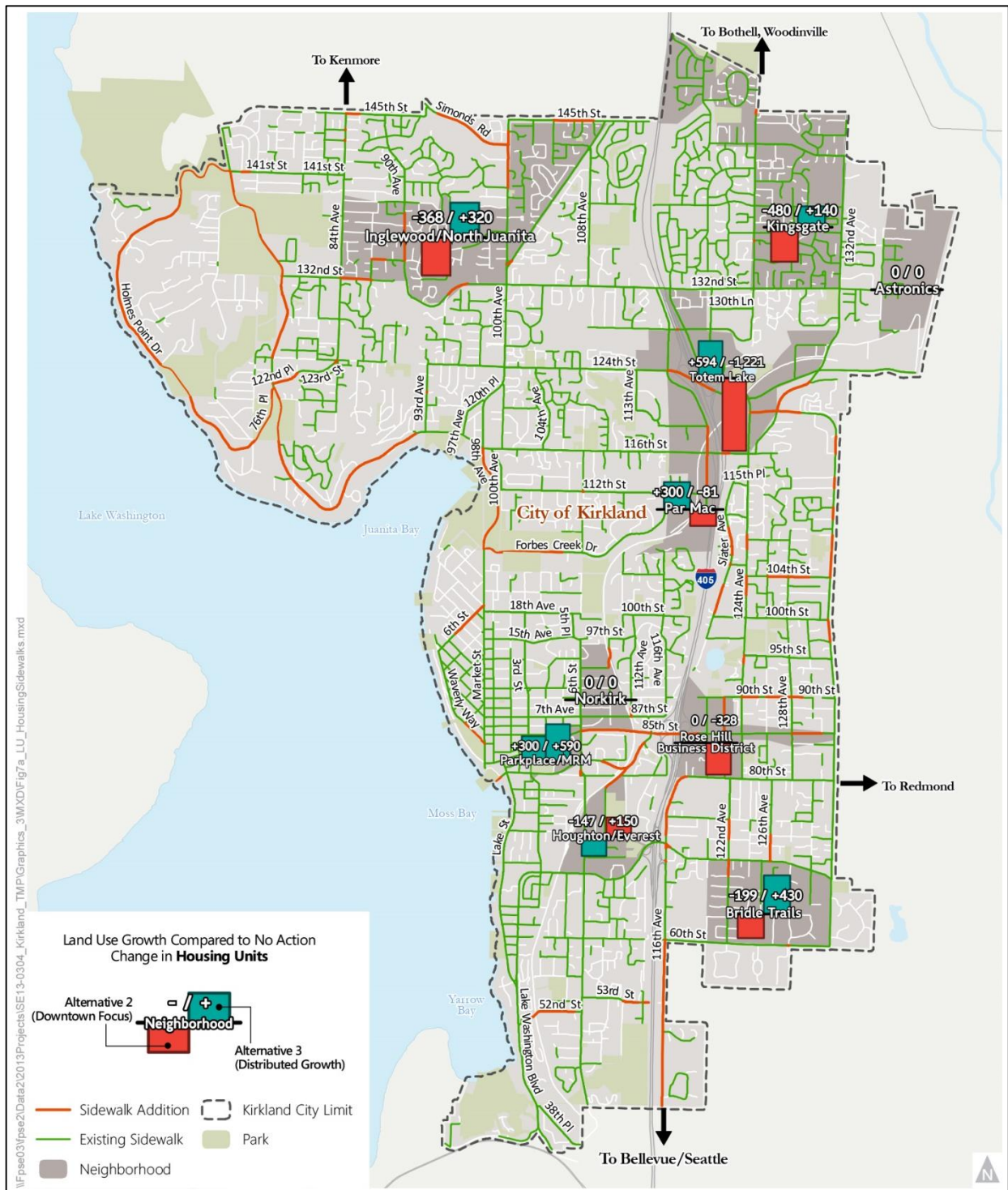
With regards to the bicycle network, the TMP proposes building a bicycling network that provides relatively even coverage across the City, with the exception of the Finn Hill/Juanita neighborhoods, where topography makes even coverage infeasible. Thus, by placing fewer jobs and employment within the Inglewood/Juanita neighborhood, the Totem Lake/Downtown Focus Alternative provides more options for biking than the No Action Alternative.

Alternative 3 (Distributed Growth) spreads development more evenly citywide compared to the No Action Alternative. In terms of households, the Distributed Growth Alternative assumes more homes in Inglewood/Juanita, Kingsgate, Parkplace/MRM, Houghton, and Bridle Trails. On the employment side, Alternative 3 concentrates more jobs in Norkirk, Rose Hill, and Houghton/Everest than were assumed under the No Action Alternative. Overall, the Distributed Growth Alternative places considerably less residential development in Totem Lake and less employment within Downtown.

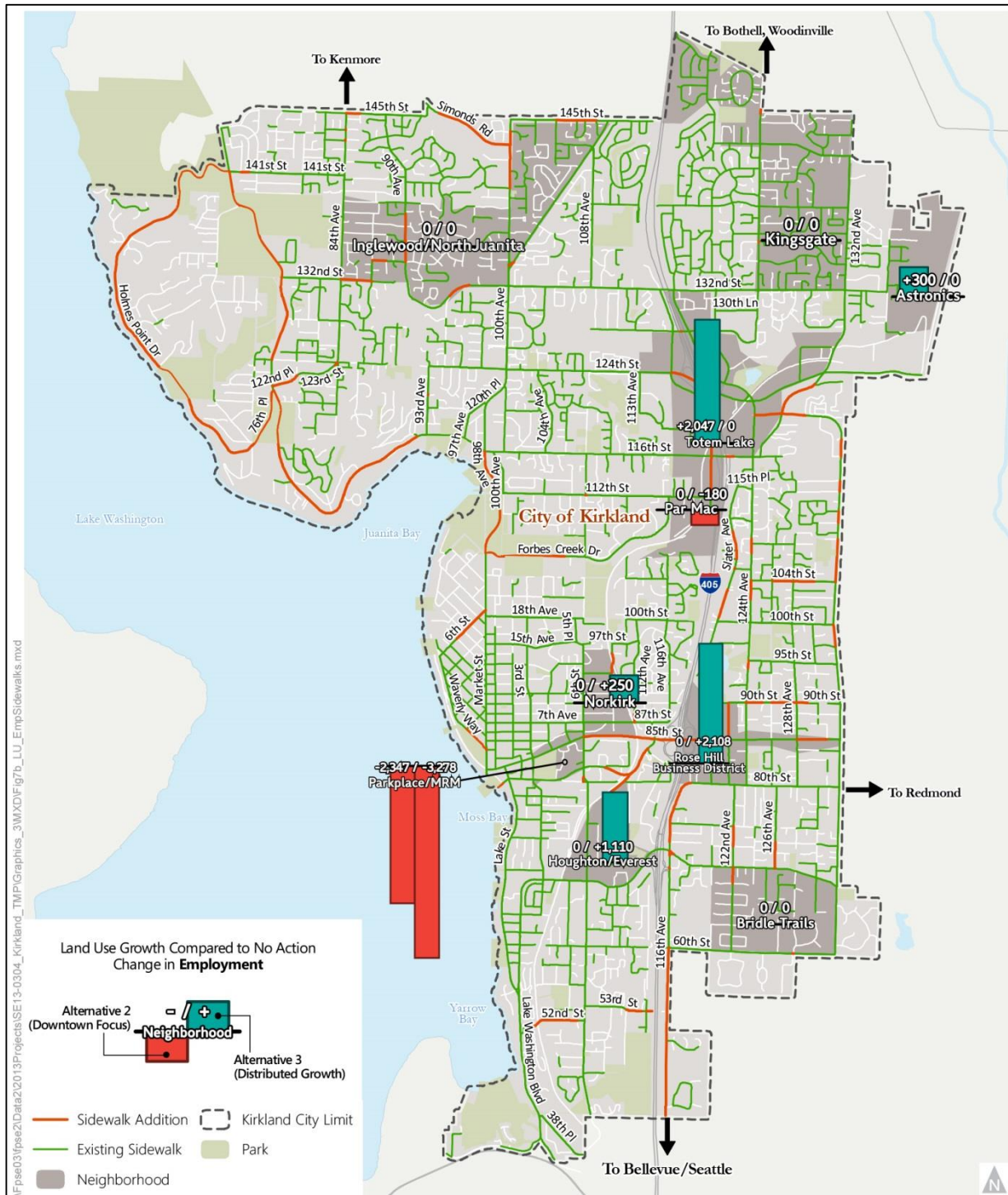
Again, the TMP shows Downtown and Kingsgate as fairly sidewalk rich areas. The TMP also anticipates completion of several new roadway connections within Totem Lake, which would include pedestrian facilities, as well as progress towards completion of the CKC Master Plan, which would be a major pedestrian amenity. Thus, the focus of this alternative on placing more homes in Downtown and Kingsgate is positive from a pedestrian perspective. However, the focus on increasing residential densities in other parts of the City (Bridle Trails, Inglewood/North Juanita) places residents in areas where walking opportunities are more limited.

With regards to the bicycle network, the TMP proposes building a bicycling network that provides relatively even coverage across the City, with the exception of the Inglewood/Juanita neighborhood, where topography makes even coverage infeasible. Thus, by placing more jobs in the Inglewood/Juanita neighborhood, the Distributed Growth Alternative provides fewer options for biking than the No Action Alternative.

Exhibit 3.6-29. Land Use Alternatives (Housing Unit Focus) – Sidewalks



3-149



3-150

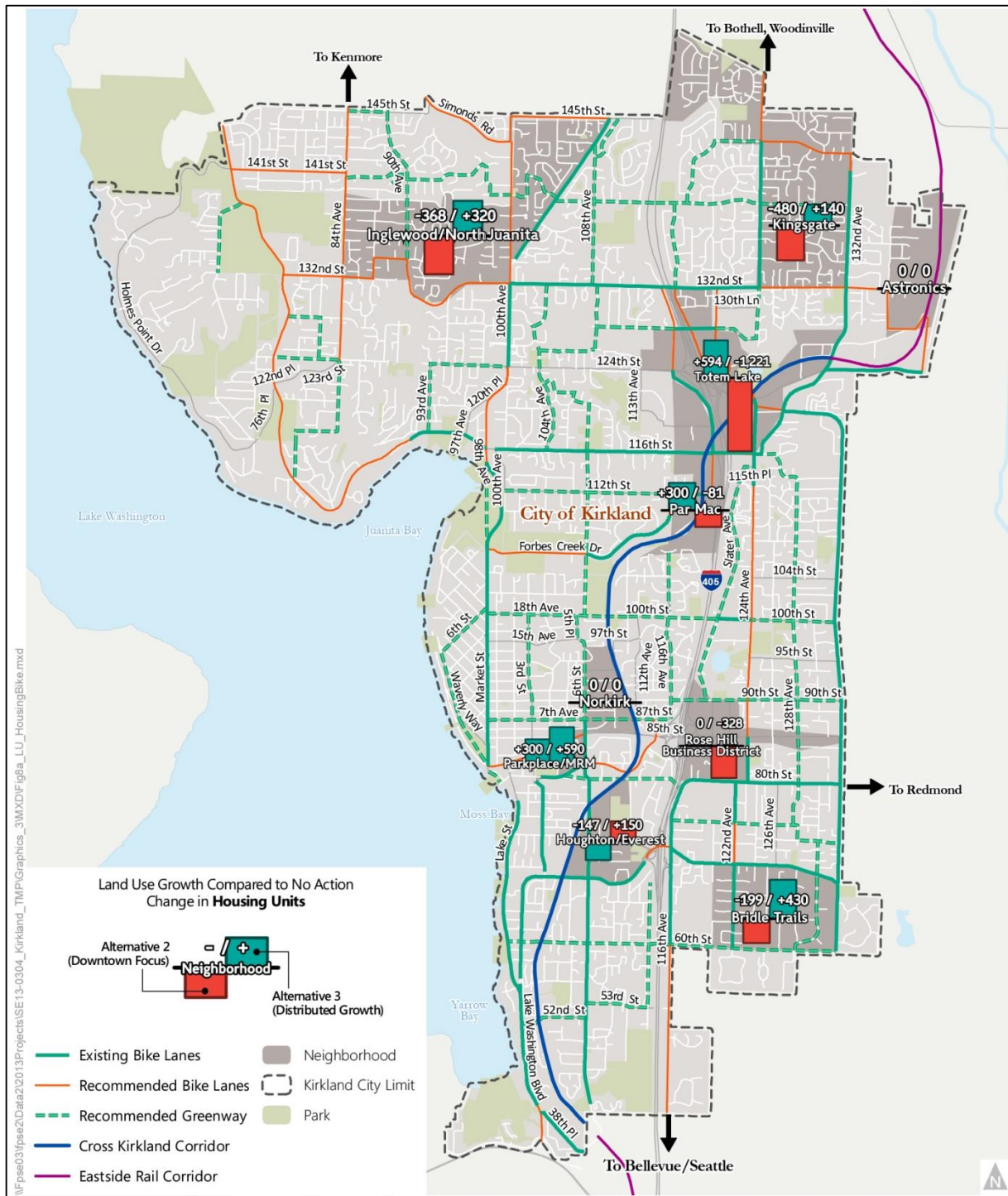
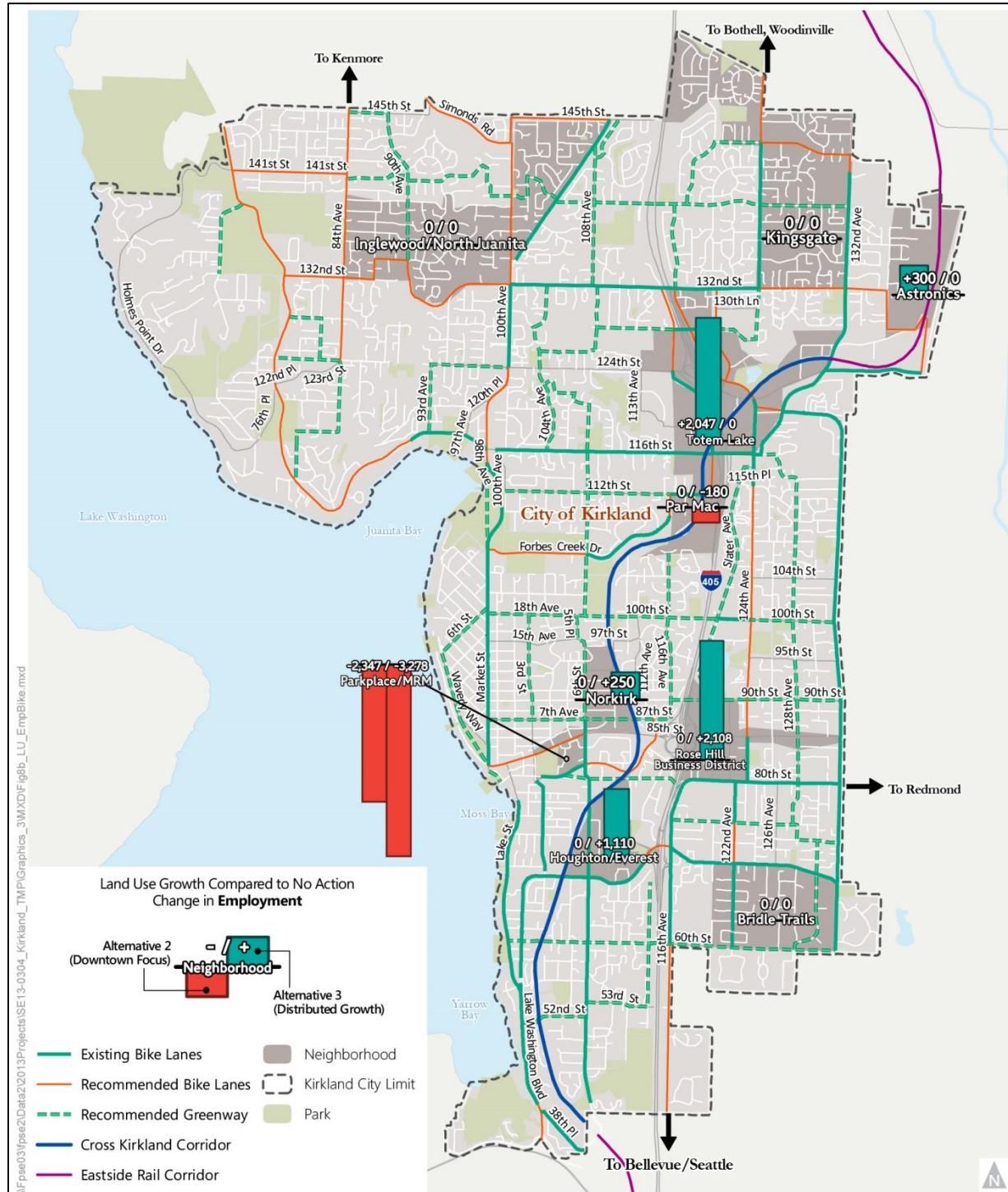


Exhibit 3.6-32. Land Use Alternatives (Employment Focus) – Bikeways



TOTEM LAKE PLANNED ACTION AREA

As shown in Exhibit 3.6-9, the TMP anticipates completion of several new roadway connections within the Totem Lake Planned Action Area, which would include pedestrian and bicycle facilities, as well as progress towards completion of the CKC Master Plan, a major amenity for walking and biking. The three alternatives differ in the amount and placement of development within the Totem Lake Planned Action Area, but not in the amenities provided.

Since all three alternatives would benefit from close proximity to an improved network of bicycle and pedestrian facilities, there are no specific impacts to differentiate between the alternatives, beyond their relative usage of improved facilities, which is summarized in the mitigation section later in this document.

Transit Demand Differences

KIRKLAND PLANNING AREA

Again, the TMP transit network is assumed as a constant among the three alternatives, Exhibit 3.6-30 shows how the three alternatives differ in terms of the proximity of future land use growth to elements of the transit network.

Alternative 2 (Totem Lake/Downtown Focus) places substantially more households in Totem Lake and Downtown compared to Alternative 1 (No Action). Since all of the alternatives have the same overall number of households added to Kirkland, this means that there are fewer homes placed in Kirkland's more suburban neighborhoods, including Inglewood/North Juanita, Kingsgate, Houghton/Everest, and Bridle Trails. On the employment side, Alternative 2 concentrates more jobs in the Totem Lake area, jobs that were assumed in Downtown under the No Action Alternative.

In terms of the transit network, the TMP envisions major investments along the Primary Transit Network (shown in teal) and more modest investments along the Secondary Transit Network (shown in purple). By focusing more development in Totem Lake, an area relatively well served by the overall transit network, and placing less development in more suburban areas that have less transit access (such as Inglewood/North Juanita), Alternative 2 would have a beneficial impact on transit access compared to the No Action Alternative.

Alternative 3 (Distributed Growth) sprinkles development more evenly citywide compared to the No Action Alternative. In terms of households, the Distributed Growth Alternative assumes more homes in Inglewood/Juanita, Kingsgate, Parkplace/MRM, Houghton, and Bridle Trails. On the employment side, Alternative 3 concentrates more jobs in Norkirk, Rose Hill, and Houghton/Everest than were assumed under the No Action Alternative. Overall, the Distributed Growth Alternative places considerably less residential development in Totem Lake and employment within Downtown.

By focusing less development in Totem Lake and more development in more suburban environments with lower transit access (Bridle Trails, Inglewood/North Juanita), the Distributed Growth Alternative provides fewer opportunities for Kirkland residents and employees to use transit than the No Action Alternative.

Exhibit 3.6-33. Land Use Alternatives (Housing Unit Focus) – Transit Service

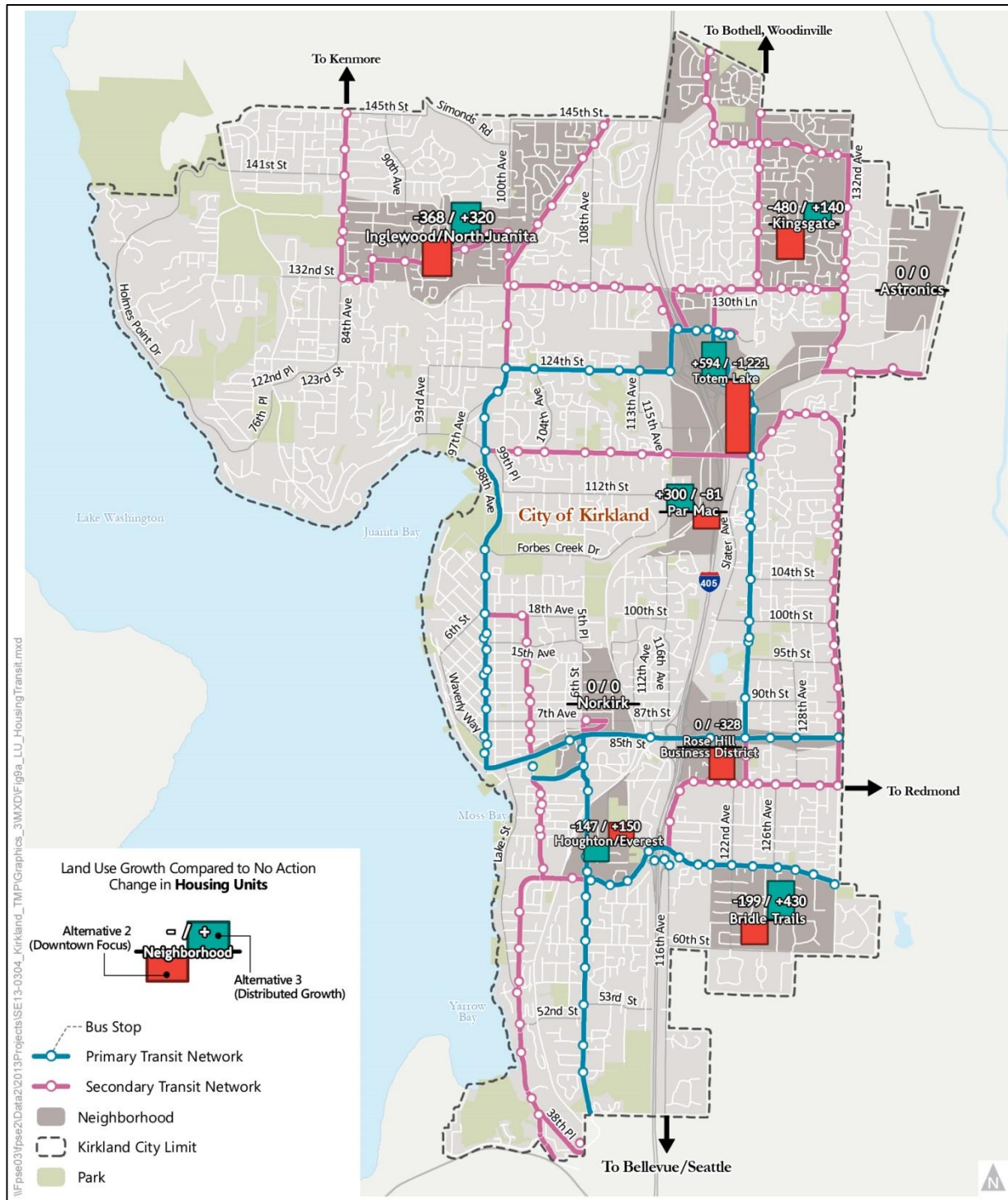
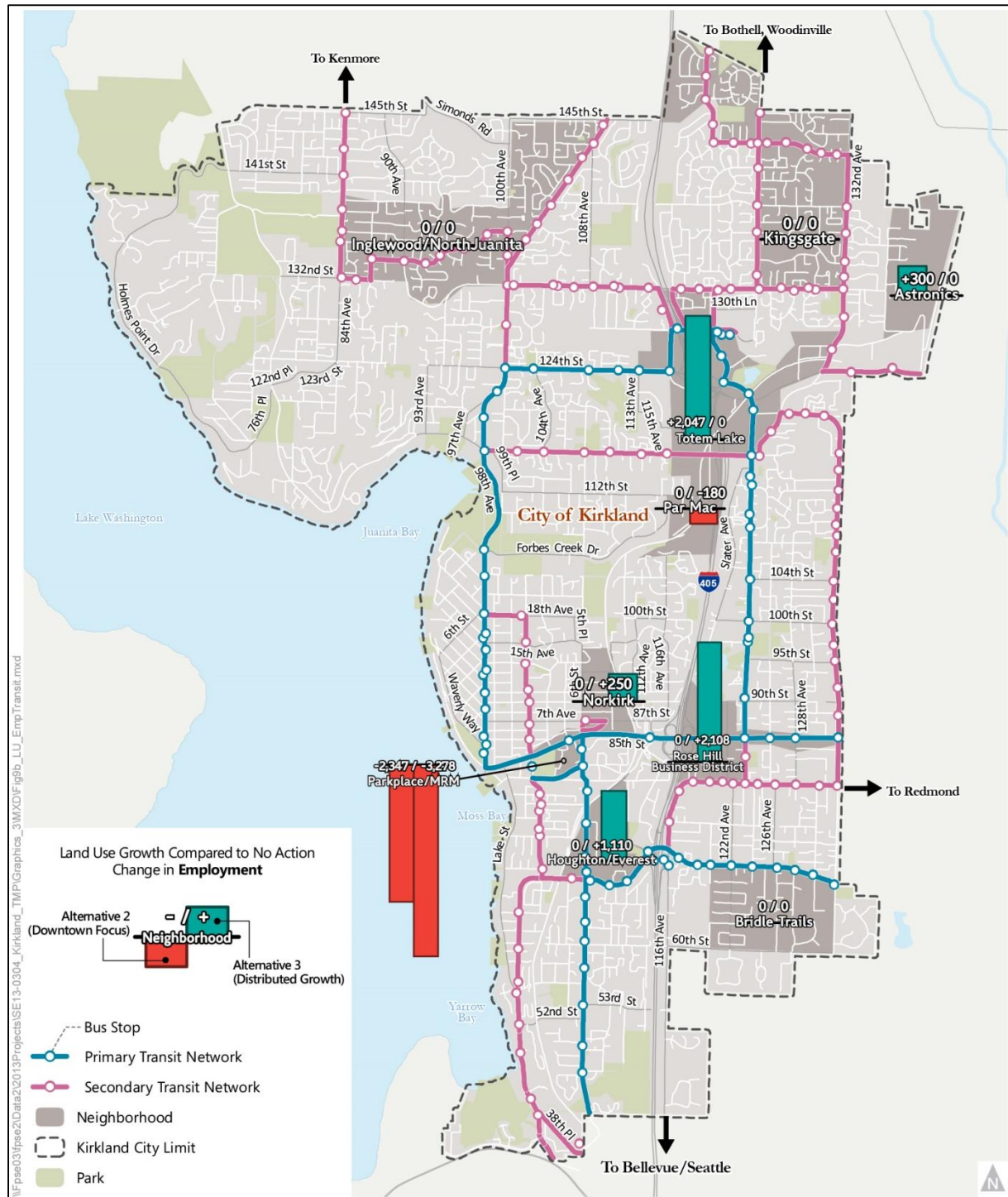


Exhibit 3.6-34. Land Use Alternatives (Employment Focus) – Transit Service



TOTEM LAKE PLANNED ACTION AREA

As shown in Exhibit 3.6-9, the TMP also anticipates completion of several new roadway connections within the Totem Lake Planned Action Area, which would include pedestrian and bicycle facilities, as well as progress towards completion of the CKC Master Plan, a major amenity for walking and biking. These improvements paired with investments along the Primary and Secondary Transit Networks would result in improved transit access under any of the three alternatives within the Totem Lake Planned Action Area.

Since all three alternatives would benefit from close proximity to an improved network of multimodal facilities, there are no specific impacts to differentiate between the alternatives, beyond their relative usage of improved facilities, which is summarized in the mitigation section later in this document.

Roadway Operation Differences

KIRKLAND PLANNING AREA

Exhibit 3.6-35 (table) and Exhibit 3.6-36 (map) summarize vehicle PM peak hour delay and operation grades for key City roadway corridors and subareas under Existing conditions and the three future-year Alternatives. The table shows that average PM peak hour delay would increase compared to existing conditions on nearly all corridors under the future year Alternatives. This increase in corridor delay is related primarily to the total amount of housing and employment growth expected to occur in the City of Kirkland under all future year Alternatives.

Under No Action (Alternative 1), three corridors would operate at LOS F – NE 124th Street west of I-405, Central Way, and 132nd Avenue NE. All other corridors and subareas would operate at grade E or better.

Exacerbated operating conditions for Alternatives 2 and 3 were identified if the corridor/subarea met the following criteria:

- Degrades to LOS F under Alternative 2 or 3; or
- Operates at LOS F under the No Action Alternative and would increase in terms of average delay per vehicle under Alternative 2 or 3

No corridors would be considered exacerbated under Alternative 2, but four corridors (shown in Exhibit 3.6-36) were identified as exacerbated under Alternative 3. Neither of the subareas would be considered exacerbated under Alternative 2 or 3. It should also be noted that Central Way operations would improve from LOS F to E under both Alternative 2 and 3, primarily due to the less intensive Downtown employment growth numbers assumed under those alternatives.

Exhibit 3.6-35. PM Peak Hour Traffic Operations for Corridors and Subareas under EIS Alternatives

Map ID	Corridor or Subarea	Existing		2035 Alternative 1 (Existing Plans- No Action)		2035 Alternative 2 (Totem Lake/Downtown Focus)		2035 Alternative 3 (Distributed Growth)	
		Ops Grade ^a	Delay ^b	Ops Grade	Delay	Ops Grade	Delay	Ops Grade	Delay
1	Juanita Drive	C	33	D	45	D	43	D	49
2	100th Avenue NE	D	52	E	64	E	59	E	66
3	NE 132nd Street	E	62	E	62	E	64	E	67
4-1	NE 124th Street west of I-405	E	65	F	127	F	119	F	131
4-2	NE 124th Street east of I-405	D	54	D	55	E	56	E	57
5	NE 116th Street	D	46	E	59	E	58	E	62
6	124th Avenue NE	D	36	D	41	D	43	D	53
7-1	Central Way	D	50	F	86	E	74	E	76
7-2	NE 85th Street	C	33	D	42	D	42	E	62
8	Lake Washington Boulevard-Lake Street	E	58	E	69	E	66	E	66
9	108th Avenue NE-6th Street	D	41	E	72	E	67	E	65
10-1	Lake View Drive-NE 68th Street	D	38	D	50	D	49	D	53
10-2	NE 70th Street	D	42	E	76	E	75	F	87
11	Market Street	D	39	E	58	D	51	E	57
12	124th Avenue NE	D	52	E	75	E	80	F	82
13	132nd Avenue NE	D	55	F	83	F	83	F	93
TL	Totem Lake	D	46	E	69	E	58	E	72
DT	Downtown	C	31	E	60	D	55	D	53

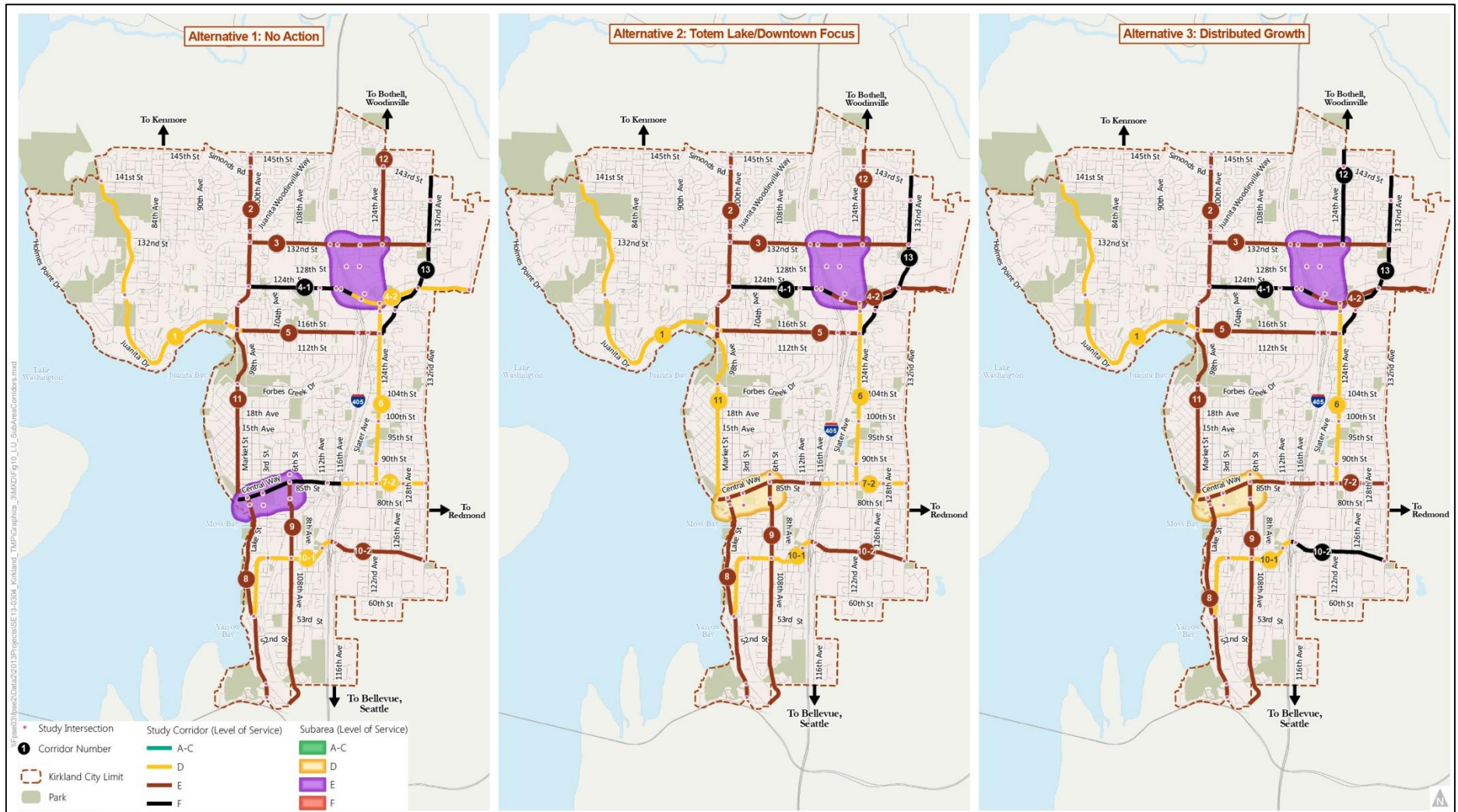
^a Traffic operations level of service grade

^b Measured in average seconds of delay per vehicle along corridor intersections

Note: Bolded values indicate segments that would operate at grade F. Shaded values indicate exacerbated operations compared to the 2035 Alternative 1 (Existing Plans/No Action). Exacerbated operations are identified for:

- Corridors that would degrade to LOS F under Alternative 2 and 3 conditions
- Corridors that would operate at LOS F under No Action conditions and would increase in terms of average delay per vehicle under Alternative 2 and 3 conditions

Exhibit 3.6-36. Comparison of PM Peak Hour Traffic Operations - Alternatives



TOTEM LAKE PLANNED ACTION AREA

Exhibit 3.6-37 (table) summarizes vehicle PM peak hour delay and operation grades for key Totem Lake PAO area intersections (identified on Exhibit 3.6-38) under existing conditions and the three future-year alternatives. The table shows that average PM peak hour delay would increase compared to existing conditions at most intersections under the future year alternatives. This increase in corridor delay is related primarily to the total amount of housing and employment growth expected to occur in the Totem Lake under all future year alternatives.

Under No Action (Alternative 1), five intersections would operate at LOS F:

- 124th Avenue NE/NE 132nd Street
- 116th Avenue NE/NE 124th Street
- 405 SB off Ramps/NE 124th Street
- Slater Avenue NE (132nd Avenue NE)/NE 124th Street
- NE 120th St/Slater Ave NE

All other intersections would operate at LOS E or better.

Exacerbated operating conditions for Alternatives 2 and 3 were identified using the following criteria:

- Intersections that would degrade to LOS F under Alternative 2 or 3; or
- Intersections that would operate at LOS F under the No Action Alternative and would increase in terms of delay per vehicle under Alternative 2 and 3

Two of the five intersections operating at LOS F under No Action conditions would be considered exacerbated under Alternative 2. Additionally, all five LOS F intersections were identified as exacerbated under Alternative 3. It should be noted that the 116th Avenue NE / NE 132nd Street intersection improves from grade F under existing conditions to D under No Action due to signal improvements to occur with the planned I-405 half-interchange with NE 132nd Street

Exhibit 3.6-37. PM Peak Hour Traffic Operations for Totem Lake PAO Intersections under EIS Alternatives

#	Intersection	Corridor	Existing		2035 Alternative 1 (Existing Plans- No Action)		2035 Alternative 2 (Totem Lake/Downtown Focus)		2035 Alternative 3 (Distributed Growth)	
			Ops Grade ^a	Delay ^b	Ops Grade ^a	Delay ^b	Ops Grade ^a	Delay ^b	Ops Grade ^a	Delay ^b
1	116th Avenue NE/NE 132nd	3	F	146	D	44	D	53	D	51
2	Totem Lake Boulevard/NE 132nd Street	3	C	24	D	51	D	50	D	50
3	120th Avenue NE/NE 132nd Street	3	B	15	C	33	C	32	D	34

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SIGNIFICANT IMPACTS, AND MITIGATION MEASURES

#	Intersection	Corridor	Existing		2035 Alternative 1 (Existing Plans- No Action)		2035 Alternative 2 (Totem Lake/Downtown Focus)		2035 Alternative 3 (Distributed Growth)	
			Ops Grade ^a	Delay ^b	Ops Grade ^a	Delay ^b	Ops Grade ^a	Delay ^b	Ops Grade ^a	Delay ^b
4	124th Avenue NE/NE 132nd Street	3	E	67	F	91	F	98	F	98
5	113th Avenue NE/NE 124th Street	4-1	B	19	D	36	C	24	C	23
6	116th Avenue NE/NE 124th Street	4-1	D	45	F	187	F	179	F	193
7	405 SB off Ramps/NE 124th Street	4-1	E	78	F	140	F	134	F	147
8	405 NB on/off Ramp/NE 124th Street	4-2	C	20	C	24	B	19	B	16
9	Totem Lake Boulevard (124th Avenue NE)/NE 124th Street	4-2 and 6	D	53	D	51	D	53	E	55
10	Slater Avenue NE (132nd Avenue NE)/NE 124th Street	4-2 and 13	F	99	F	93	F	94	F	100
11	120th Avenue NE/NE 116th Street	5	D	49	E	56	E	59	E	56
12	405 NB off Ramp/NE 116th Street	5	D	36	D	50	D	50	D	49
13	124th Avenue NE/NE 116th Street	5 and 6	D	36	E	62	E	64	E	74
14	124th Avenue NE/NE 120th Street (future intersection)	6	NA	NA	B	16	C	24	C	28
15	NE 120th St/Slater Ave NE	13	D	48	F	142	F	139	F	159
16	Totem Lake Boulevard /NE 128th Street	NA	C	28	C	27	C	28	D	37

KIRKLAND COMPREHENSIVE PLAN UPDATE & TOTEM LAKE PLANNED ACTION DEIS | AFFECTED ENVIRONMENT,
SIGNIFICANT IMPACTS, AND MITIGATION MEASURES

#	Intersection	Corridor	Existing		2035 Alternative 1 (Existing Plans- No Action)		2035 Alternative 2 (Totem Lake/Downtown Focus)		2035 Alternative 3 (Distributed Growth)	
			Ops Grade ^a	Delay ^b	Ops Grade ^a	Delay ^b	Ops Grade ^a	Delay ^b	Ops Grade ^a	Delay ^b
17	120th Avenue NE/NE 128th Street	NA	B	11	C	21	C	21	C	22
18	120th Avenue NE/Totem Lake Boulevard	NA	D	41	D	50	D	43	D	53

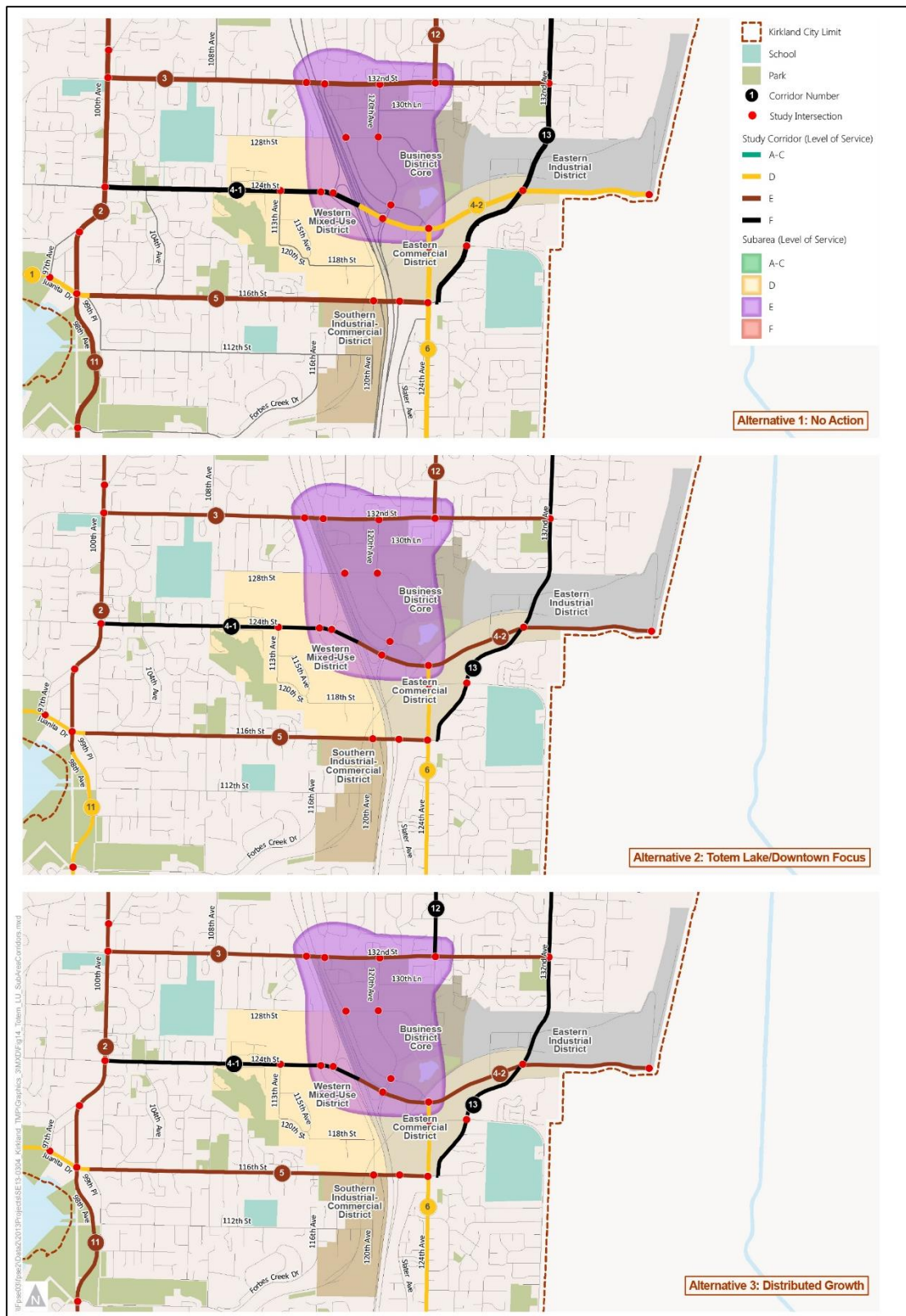
^aTraffic operations level of service

^b Measured in average seconds of delay per vehicle along corridor intersections

Note: Bolded values indicate segments that would operate at grade F. Shaded values indicate exacerbated operations compared to the 2035 Alternative 1 (Existing Plans/No Action). Exacerbated operations are identified for:

- Corridors that would degrade to LOS F under Alternative 2 and 3 conditions; or
- Corridors that would operate at LOS F under No Action conditions and would increase in terms of average delay per vehicle under Alternative 2 and 3 conditions

Exhibit 3.6-38. PM Peak Hour Traffic Operations for Totem Lake PAO Intersections under EIS Alternatives



Mitigation Measures

KIRKLAND PLANNING AREA

As described earlier, none of the alternatives would lead to a significant impact under the City's system completeness LOS standard. Thus, transportation mitigation measures are not required to address an LOS deficiency under any alternative. However, Alternatives 2 and 3 are expected to result in different transportation conditions compared to Alternative 1 (Existing Plans – No Action).

One measure that is useful in comparing Alternatives is average corridor delay. Delay values represent the varying levels of congestion experienced by transit vehicles, private vehicles, and freight along the City's corridors.

Exhibit 3.6-39 summarizes corridors where conditions would degrade under Alternatives 2 or 3 compared to the No Action Alternative. As the table shows, only Alternative 3 would see substantially increased delay values.

Exhibit 3.6-39. PM Peak Hour – Corridors with Impacts Compared to Alternative 1

Map ID	Corridor or Subarea	Existing		2035 Alternative 1 (Existing Plans- No Action)		2035 Alternative 2 (Totem Lake/Downtown Focus)		2035 Alternative 3 (Distributed Growth)	
		Ops Grade ^a	Delay ^b	Ops Grade	Delay	Ops Grade	Delay	Ops Grade	Delay
4-1	NE 124th Street west of I-405	E	65	F	127	F	119	F	131
10-2	NE 70th Street	D	39	E	71	E	72	F	84
12	124th Avenue NE	D	52	E	75	E	80	F	82
13	Slater Ave NE / 132nd Avenue NE	D	55	F	83	F	83	F	93

^a Traffic operations level of service

^b Measured in average seconds of delay per vehicle along corridor intersections

Note: Bolded values indicate segments that would operate at grade F. Shaded values indicate exacerbated operations compared to the 2035 Alternative 1 (Existing Plans/No Action). Exacerbated operations are identified for:

- Corridors that would degrade to LOS F under Alternative 2 and 3 conditions; or
- Corridors that would operate at LOS F under No Action conditions and would increase in terms of average delay per vehicle under Alternative 2 and 3 conditions

Exhibit 3.6-40 summarizes potential improvements that could address the increased corridor delays observed under Alternative 3 and thus improve conditions for riding transit, driving, and moving goods. It is important to note that the corridor-based delay measurement means that improvements at other intersections along the corridor could be considered to improve the corridor to No Action delay levels. Additionally, implementation of ITS measures in place of physical modifications to the roadway could be considered to reduce corridor delays.

Any potential improvements would need to be further evaluated for their feasibility and fit with other City objectives. Improvements may also be appropriate for inclusion in the City's transportation impact fee program.

Exhibit 3.6-40. Potential Corridor Improvements

ID	Corridor	Scenarios	Potential Improvement Option ^a
4-1	NE 124th Street west of I-405 ^b	Potential improvements only needed under Alternative 3 conditions. Alternative 2 corridor operations would be equivalent with No Action conditions.	NE 124 th Street / 116 th Avenue NE intersection – Add second eastbound left-turn pocket.
10-2	NE 70th Street	Potential improvements only needed under Alternative 3 conditions. Alternative 2 corridor operations would be equivalent with No Action conditions.	NE 70 th Street (NE 72 nd Place) / 116 th Avenue NE intersection – Add dedicated southbound right-turn pocket.
12	124th Avenue NE ^b	Potential improvements only needed under Alternative 3 conditions. Alternative 2 corridor operations would be equivalent with No Action conditions.	<ol style="list-style-type: none"> 1. NE 144th Street / 124th Avenue NE intersection – Add dedicated eastbound right-turn pocket. 2. NE 132nd Street / 124th Avenue NE intersection – Rearrange lane utilization on eastbound approach to include one right turn pocket, one through lane, and one right turn lane.
13	132nd Avenue NE ^b	Potential improvements only needed under Alternative 3 conditions. Alternative 2 corridor operations would be equivalent with No Action conditions.	<ol style="list-style-type: none"> 1. Slater Avenue NE (132nd Avenue NE)/NE 124th Street – Convert existing northbound shared right/through lane to through only. Add dedicated northbound right turn pocket. Add overlap phasing for northbound right turns. 2. NE 120th St/Slater Ave NE – Add dedicated right-turn pocket to northbound, westbound, and/or southbound approach.

^a Each improvement option would results in corridor operations equivalent to or better than No Action conditions.

^b ITS improvements are currently planned along this corridor. Due to limitations with the traffic capacity model, the potential benefits of ITS implementation are not accounted for in the future year traffic operations analysis. These planned ITS improvements may prevent the need for additional improvements along this corridor. It is recommended that the City closely monitor intersection operations after ITS implementation to quantify likely future-year benefits.

TOTEM LAKE PLANNED ACTION AREA

Similar to the Citywide assessment, none of the alternatives lead to an impact under the City's system completeness LOS standard. However, Exhibit 3.6-41 identifies areas where transportation operations would degrade under Alternatives 2 or 3 compared to the No Action Alternative. As described in the citywide section, delay values represent the varying levels of congestion experienced by transit vehicles, private vehicles, and freight on transportation facilities in the area.

Exhibit 3.6-41. PM Peak Hour Traffic Operations for Totem Lake PAO Intersections under EIS Alternatives

#	Intersection	Corridor	Existing		2035 Alternative 1 (Existing Plans- No Action)		2035 Alternative 2 (Totem Lake/Downtown Focus)		2035 Alternative 3 (Distributed Growth)	
			Ops Grade ^a	Delay ^b	Ops Grade _a	Delay ^b	Ops Grade _a	Delay ^b	Ops Grade _a	Delay ^b
4	124th Avenue NE/NE 132nd Street	3	E	67	F	91	F	98	F	98
6	116th Avenue NE/NE 124th Street	4-1	D	45	F	187	F	179	F	193
7	405 SB off Ramps/NE 124th Street	4-1	E	78	F	140	F	134	F	147
10	Slater Avenue NE (132nd Avenue NE)/NE 124th Street	4-2 and 13	F	99	F	93	F	94	F	100
15	NE 120th St/Slater Ave NE	13	D	48	F	142	F	139	F	159

^a Traffic operations level of service

^b Measured in average seconds of delay per vehicle along corridor intersections

Note: Bolded values indicate segments would operate at grade F. Shaded values indicate exacerbated operations compared to the 2035 Alternative 1 (Existing Plans/No Action). Exacerbated operations are identified for:

- Corridors that would degrade to LOS F under Alternative 2 and 3 conditions; or
- Corridors that would operate at LOS F under No Action conditions and would increase in terms of average delay per vehicle under Alternative 2 and 3 conditions

KIRKLAND COMPREHENSIVE PLAN UPDATE & TOTEM LAKE PLANNED ACTION DEIS | AFFECTED ENVIRONMENT, SIGNIFICANT IMPACTS, AND MITIGATION MEASURES

In order to achieve Kirkland’s vision of providing a mixed use center that is accessible via walking, biking, and transit modes, there are a number of transportation improvements that would need to take place in the Totem Lake Planning Action Area. Exhibit 3.6-42 summarizes potential improvements to enhance mobility within the Planned Action Area. In addition, Exhibit 3.6-43 displays potential new transportation connections that could help support development in the Totem Lake area. These connections include the portion of the CKC trail running through the district as critical infrastructure for providing mobility.

Any potential improvements would need to be further evaluated for their feasibility and fit with other City objectives. Improvements may also be appropriate for inclusion in the City’s transportation impact fee program.

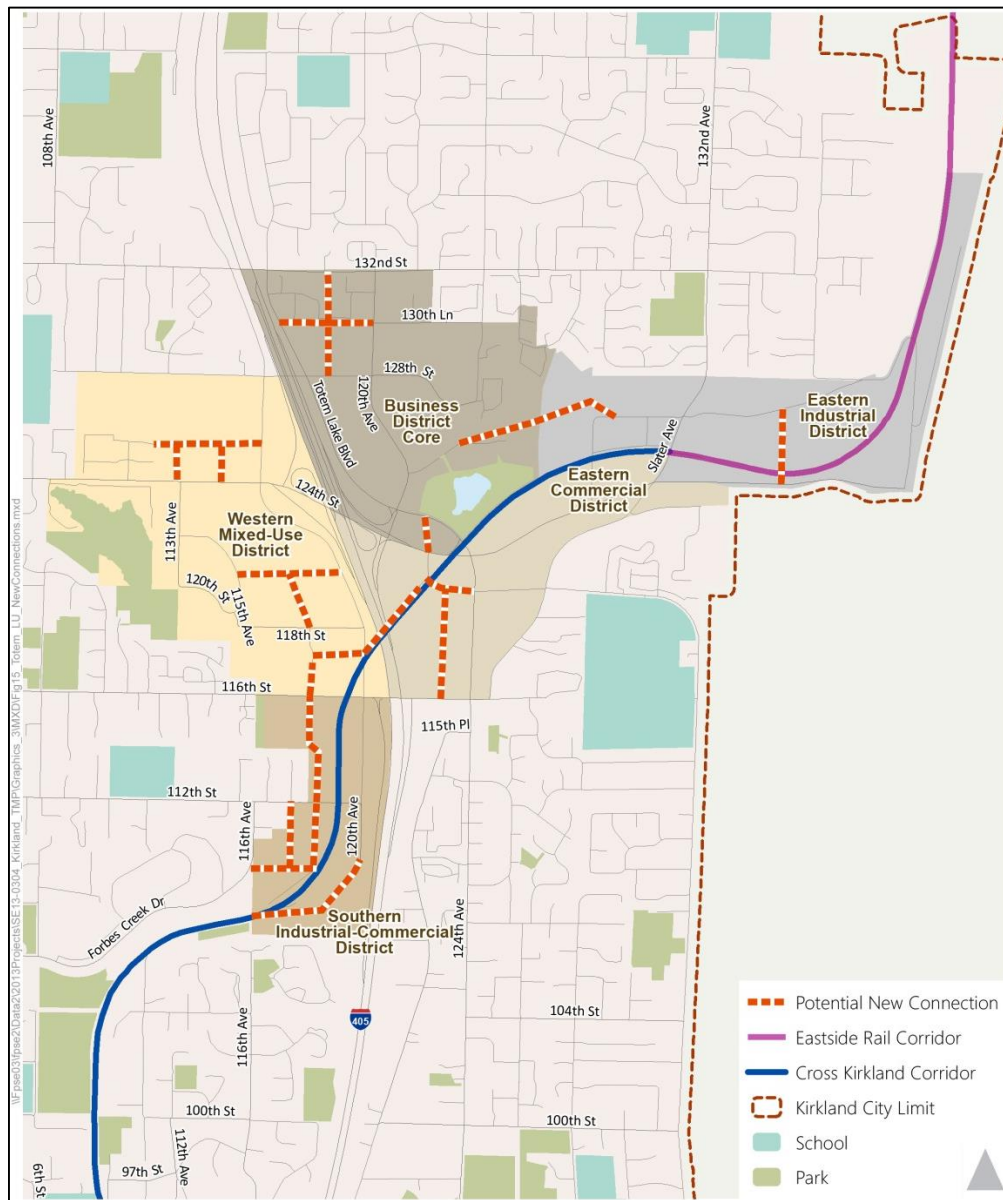
Exhibit 3.6-42. Potential Mobility Enhancements in Totem Lake PAO

Mode	Project	Source
Walk	School Walk Routes (see Exhibit 3.6-3)	TMP / Active Transportation Plan
	10 Minute Neighborhood Routes (see Exhibit 3.6-3)	TMP / Active Transportation Plan
	Arterials and Collectors - NE 124th Street and Totem Lake Boulevard (see Exhibit 3.6-3)	TMP / Active Transportation Plan
	Crosswalk Improvements (see Exhibit 3.6-4)	TMP
	Cross Kirkland Corridor and Connections (see Exhibit 3.6-5)	TMP
	Other Trails	TMP / Active Transportation Plan
	Pedestrian Accessibility Improvements	TMP / ADA Transition Plan
Bike	On-Street /Protected Bike Facilities (see Exhibit 3.6-7)	TMP / Active Transportation Plan
	Greenway Network (see Exhibit 3.6-7)	TMP / Active Transportation Plan
Transit	Transit Speed and Reliability Improvements (see Exhibit 3.6-8)	TMP
	Passenger Environment Improvements (see Exhibit 3.6-19)	TMP
Auto	120th Avenue NE/Totem Lake Way intersection improvements	Development agreement
	Totem Lake Plaza/Totem Lake Boulevard intersection improvements	Development agreement
	Totem Lake Plaza/120th Avenue NE intersection improvements	Development agreement
	120th Avenue NE/Totem Lake Plaza intersection improvements	Development agreement
	132nd Avenue NE roadway capacity improvements	CIP
	124th Avenue NE roadway capacity improvements (NE 116th Street to NE 124th Street)	CIP
	124th Avenue NE/NE 124th Street intersection improvements	CIP
	NE 116th Street/124th Avenue NE - add second northbound left-turn pocket	CIP
	NE 132nd Street intersection improvements (list 6 intersections)	CIP
	NE 132nd Street roadway capacity improvements from 100th Avenue NE to 132nd Avenue NE	CIP
	118th/119th Avenue NE roadway extension from NE 132nd Street to NE 128th Street	TMP
	NE 130th Lane roadway extension	TMP
	NE 120th Street roadway extension from NE 124th Avenue to 122nd Avenue Extension	TMP
	NE 126th Place extension from Totem Lake Way to 128th Lane NE	TMP

**KIRKLAND COMPREHENSIVE PLAN UPDATE & TOTEM LAKE PLANNED ACTION DEIS | AFFECTED ENVIRONMENT,
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Mode	Project	Source
	New connection - 134th Avenue NE from NE 124th Street to NE 126th Place	TMP
	New connection - 122nd Avenue NE from NE 116th Street to NE 120th Street	TMP
	120th Avenue NE extension from NE 124th Street to Totem Lake Boulevard NE	TMP
	Totem Lake Area Development Opportunity Program	TMP
	124th Avenue NE/NE 132nd Street - rearrange lane utilization	EIS operations analysis (Alternatives 2 and 3)
	116th Avenue NE/120th Avenue NE/NE 124th Street - add second eastbound left-turn pocket	EIS operations analysis (Alternative 3)
	Slater Avenue NE (132nd Avenue NE)/NE 124th Street - add dedicated northbound right-turn pocket	EIS operations analysis (Alternatives 2 and 3)
	NE 120th St/Slater Ave NE - add dedicated right-turn pocket	EIS operations analysis (Alternative 3)
	116th Avenue NE/120th Avenue NE/NE 124th Street - additional SBRT Pocket Addition	Other Potential Improvement
	120th Ave NE roadway extension	Other Potential Improvement
	NE 124th Street interchange with I-405 redesign	Other Potential Improvement
	ITS Enhancements on Key Corridors	TMP

Exhibit 3.6-43. Potential New Connections in Totem Lake



The City should explore how the above improvements can be funded over time. The Final EIS will further explore funding options, including how the costs of this infrastructure might be shared by the City and new development. .

Significant Unavoidable Adverse Impacts

The threshold for a transportation impact is defined by the City's level of service (LOS) policy, which is measured in terms of system completeness compared to the City's 20-year transportation vision⁶. Because specifics of the growth Alternatives would not significantly impact progress towards transportation system completeness, none of the Alternatives are expected to result in significant unavoidable adverse impact.

⁶ In-depth descriptions of 20-year vision items pertinent to each mode are provided in Section 3.6.1.1

3.7 Public Services

The public services section reviews the existing levels and potential impacts by alternative for the following publicly provided service: police protection, fire protection, parks and recreation, and schools. To the extent possible, the analysis is based on existing functional plans, contracts with service providers, and population-based estimations of demand.

Affected Environment and Methodology

Police Protection

KIRKLAND PLANNING AREA

The Kirkland Police Department (KPD) provides police services to the City of Kirkland study area. KPD currently employs 133 personnel (98 commissioned officers and 34.5 civilian support personnel) (Ball, 2015). KPD is organized into the following divisions and units:

- **Patrol Division** – the largest division, which is responsible for most patrol related law enforcement operations, provides 24 hour-a-day, 365 day-a-year emergency services to the City of Kirkland.
- **Investigations Division** – responsible for investigations, criminal intelligence, and undercover narcotics enforcement.
- **Family Violence Unit** – supports domestic violence victims.
- **Community Resource Unit** – provides crime prevention, education and school resource support.
- **Corrections Unit** – responsible for booking, housing, and transporting prisoners, and maintaining the security of the correctional facility.
- **Records Unit** – responsible for records maintenance, processing documents, and providing phone and counter customer service.

Exhibit 3.7-1 shows the number of calls received by NORCOM (North East King County Regional Public Safety Communications Agency) in 2012, 2013, and 2014. Exhibit 3.7-1 shows that the annual calls for service are decreasing.

Exhibit 3.7-1. Annual Calls for Service in Kirkland Planning Area

Year	Number of Calls
2012	63,787
2013	53,499
2014	54,993

Source: Personal Communication with Keith Polzin, NORCOM, April 10, 2015.

The Kirkland Justice Center, located at 11750 NE 118th Street, serves as the primary facility for police, municipal courts, and corrections in Kirkland. The Justice Center houses the Kirkland Municipal Court, and the Kirkland Police Department. The Kirkland Municipal Court includes two courtrooms, a small courtroom, and a spacious lobby. The KPD includes a tactical area, booking center, firing range, forensic lab, administrative offices, and a 55-bed jail.

TOTEM LAKE PLANNED ACTION AREA

The Totem Lake Planned Action area is served by the KPD as well. As described in the previous section, the Kirkland Justice Center is located in the Totem Lake Planned Action Area, which would allow quick responses to calls from this area.

LEVEL OF SERVICE

KPD has not adopted a quantitative/ qualitative level of service standard for police protection. The Public Services chapter of the City of Kirkland Comprehensive Plan provides the following information regarding police protection.

Policy PS-1.1: Provide fire and emergency services and police services to the public which maintain accepted standards as new development and annexations occur.

Basic public safety service should keep pace with growth. Kirkland should anticipate new growth to avoid deficiencies in accepted levels of service.

Based on a citywide 2014 population of 82,590 and 98 commissioned police officers, the ratio of police officers to residents is approximately 1: 843 (Population Estimates, 2014). In 2014, there were 54,993 calls for service; therefore, there were approximately 0.67 calls per resident in 2014.

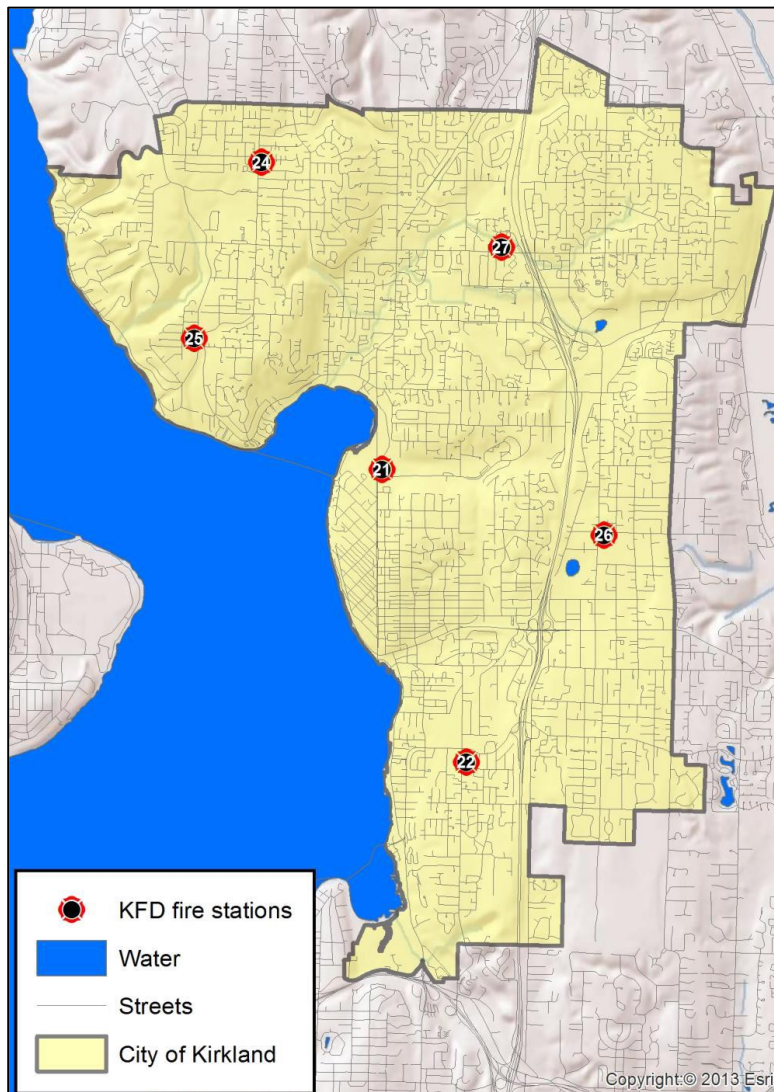
Fire and Emergency Services

KIRKLAND PLANNING AREA

Existing Services

The City of Kirkland Fire Department (KFD) provides fire and emergency services to the City of Kirkland, serving an area of approximately 18.25 square miles. The KFD is staffed by 108 employees, who cover six city-owned fire stations located throughout the city (Department, 2014). Exhibit 3.7-2 shows the location of each fire station in Kirkland. The North East King County Regional Public Safety Communications Agency (NORCOM) provides call receipt and dispatch services.

Exhibit 3.7-2. Location of KFD Fire Stations



Source: City of Kirkland Fire Department, Standards of Coverage and Deployment, June 2014.

KFD employs the following personnel:

- **93 Emergency Response Personnel:** 3 Battalion Chiefs, 1 Battalion Chief/ Training, 3 Floating Captains/ BC Aides, 7 Fire Captains, 1 Captain/ Training, 10 Fire Lieutenants, 1 temporary Fire Lieutenant, 67 Firefighters.
- **14.25 Management, Administration, and Support Personnel:** 1 Fire Chief, 2 Deputy Chiefs, 1 EMS Officer/ Capital, 1 Fire Marshal/ Battalion Chief, 1 Assistant Fire Marshal, 2 Fire Inspectors, 1 Office of Emergency Management Manager, 0.5 Office of Emergency Management Coordinator, 0.25 Office of Emergency Management Graduate Intern, 1 Administrative Services Supervisor, 1 Administrative Assistant, 2 Office Technicians, 0.5 Office Specialist.

KFD has a minimum shift staffing of 19 fire fighters, 24-hours per day. Exhibit 3.7-3 shows the apparatus per fire station.

Exhibit 3.7-3. Apparatus per Fire Station

Station	Apparatus	Year Built	Condition
Station 21	Engine 21	2005	Good
	Aid 21	2010	Good
	Engine 28 (Reserve)	1999	Fair
Station 22	Engine 22	2003	Good
	Aid 22	2006	Good
	Engine 29 (Reserve)	1995	Fair
	Air Unit 21	2006	Good
Station 24	Aid 24	2001	Fair
	Disaster Response Vehicle	1991	Fair
Station 25	Engine 25	2003	Good
	Aid 25	2008	Good
Station 26	Engine 26	2013	Excellent
	Aid 26	2002	Good
	Battalion 21	2008	Good
	Aid 28 (Reserve)	2006	Good
Station 27	Engine 27	2010	Good
	Aid 27	2012	Good
	Ladder 27	1997	Good
	Aid 29	2007	Good

Source: City of Kirkland Fire Department, Standards of Coverage and Deployment, June 2014.

KFD has mutual and automatic aid agreements with Bellevue Fire, Redmond Fire, Woodinville Fire and Life Safety, Bothell Fire, and the Northshore Fire District for major structure fires, other higher risk incidents, and during periods of high incident activity.

In 2014, KFD responded to 8,228 calls for emergency service, approximately 71.6% of which were for medical aid. A breakdown of those services are seen in Exhibit 3.7-4.

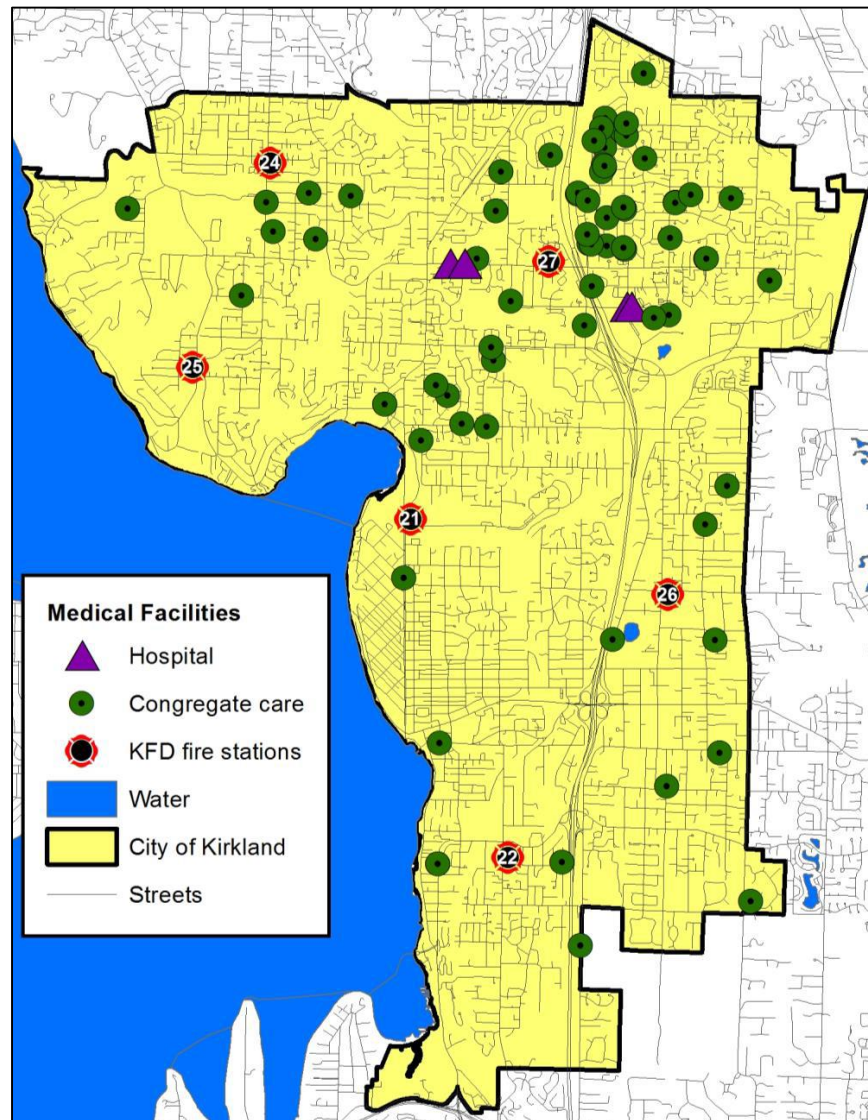
Exhibit 3.7-4. Fire Department Calls for Service by Type

Call Type	2012	2013	2014
Total Fires	296	334	293
EMS/ Rescue	5,934	5,777	5,895
Hazardous Condition	145	153	163
Service Call	234	250	254
False Calls	665	706	737
Other	708	813	886
Total Calls	7,982	8,033	8,228

Source: Kirkland Fire Department Annual Report, 2013; Person Communication with Audrey Martin, Administrative Supervisor with the Kirkland Fire Department, 2015.

Kirkland has many important medical facilities including the Evergreen Healthcare, Fairfax Hospital, and Milam in-patient recovery facilities. Kirkland also has skilled nursing, assisted living, and other in-patient care facilities. Exhibit 3.7-5 shows the medical and care facilities available in Kirkland.

Exhibit 3.7-5. Kirkland Medical and Care Facilities



Source: City of Kirkland Fire Department, Standards of Coverage and Deployment, June 2014.

TOTEM LAKE PLANNED ACTION AREA

The Totem Lake Planned Action area is also served by the Kirkland Fire Department. The closest Kirkland Fire Station is Station 27, which is located a tenth of a mile north of the Totem Lake Planned Action area, on 11210 NE 132nd Place. Station 27 has the following employees: 3 fire captains, 3 lieutenants, and 24 fire fighters. Station 27 has the following equipment in good condition: a 2010 engine, a 2012 aid vehicle, a 1997 ladder, and a 2007 aid vehicle (Department, 2014).

NE 132nd Place goes under the Interstate 405 overpass, which would easily permit fire engines and aid vehicles to access the eastern side of the Totem Lake Planned Action Area.

The Evergreen Hospital Medical Center is located in the Totem Lake Planned Action Area.

KIRKLAND COMPREHENSIVE PLAN UPDATE & TOTEM LAKE PLANNED ACTION DEIS | AFFECTED ENVIRONMENT, SIGNIFICANT IMPACTS, AND MITIGATION MEASURES

LEVEL OF SERVICE

The KFD has adopted response performance goals as its level of service standard, which is noted in Policy PS-1.2 of the draft 2015 City of Kirkland Comprehensive Plan Public Services Element.

- i. *Emergency medical: response time of five minutes to 90 percent of emergency incidents.*
- ii. *Fire suppression: response time of 5.5 minutes to 90 percent of all fire incidents.*

Exhibit 3.7-6 shows the performance data for each of the components.

Exhibit 3.7-6. Emergency Response Performance, 2012-13

Topic	Objective (for 90% of incidents)	2012 Performance – Actual 90% Time (minutes) and Percentage of Responses Meeting Standard	2013 Performance – Actual 90% Time (minutes) and Percentage of Responses Meeting Standard	2014 Performance – Actual 90% Time (minutes) and Percentage of Responses Meeting Standard
Turnout Time (EMS)	KFD's turnout time standard is 60 seconds, 90% of the time.	38%	37%	37%
Turnout Time (Fire)	KFD's fire turnout time standard is 80 seconds 90% of the time.	30%	26%	26%
Basic Life Support Unit (Aid Car)	KFD's response time standard for the arrival of the first emergency medical unit with 2 EMTs is 4 minutes 90% of the time.	75%	76%	75%
Arrival of First Engine at Fire	KFD's response time standard for the arrival of the first engine at a fire is 4 minutes, 90% of the time.	71%	62%	74%
Effective Response Force Arrival at Fire (ERF)	KFD's Fire ERF includes 20 firefighters arriving on a minimum of 4 engine companies, two ladder trucks, 1 aid unit, and 2 Battalion Chiefs. KFD's ERF time standard is 10 minutes, 90% of the time (from time of 911 call to arrival of entire ERF).	Percentage of time objective met: 0% Number of Calls: 14	Percentage of time objective met: 20% Number of Calls: 20	Percentage of time objective met: 23% Number of Calls: 31

Source: Personal Communication with Joe Sanford, Deputy Fire Chief, City of Kirkland on May 5, 2015.

The KFD has not adopted a Level of Service Standard for staffing. However, based on a 2014 population estimate of 82,590 and the 2014 employment of 67 firefighters, the City's effective level of service is approximately 1.23 firefighters per 1,000 residents.

Parks and Recreation

KIRKLAND PLANNING AREA

City of Kirkland Park System

The City of Kirkland's park system includes more than 588 acres of parkland and open spaces. The City also includes 12.8 miles of trails. Exhibit 3.7-7 shows the location of existing parks, natural areas, and facilities.

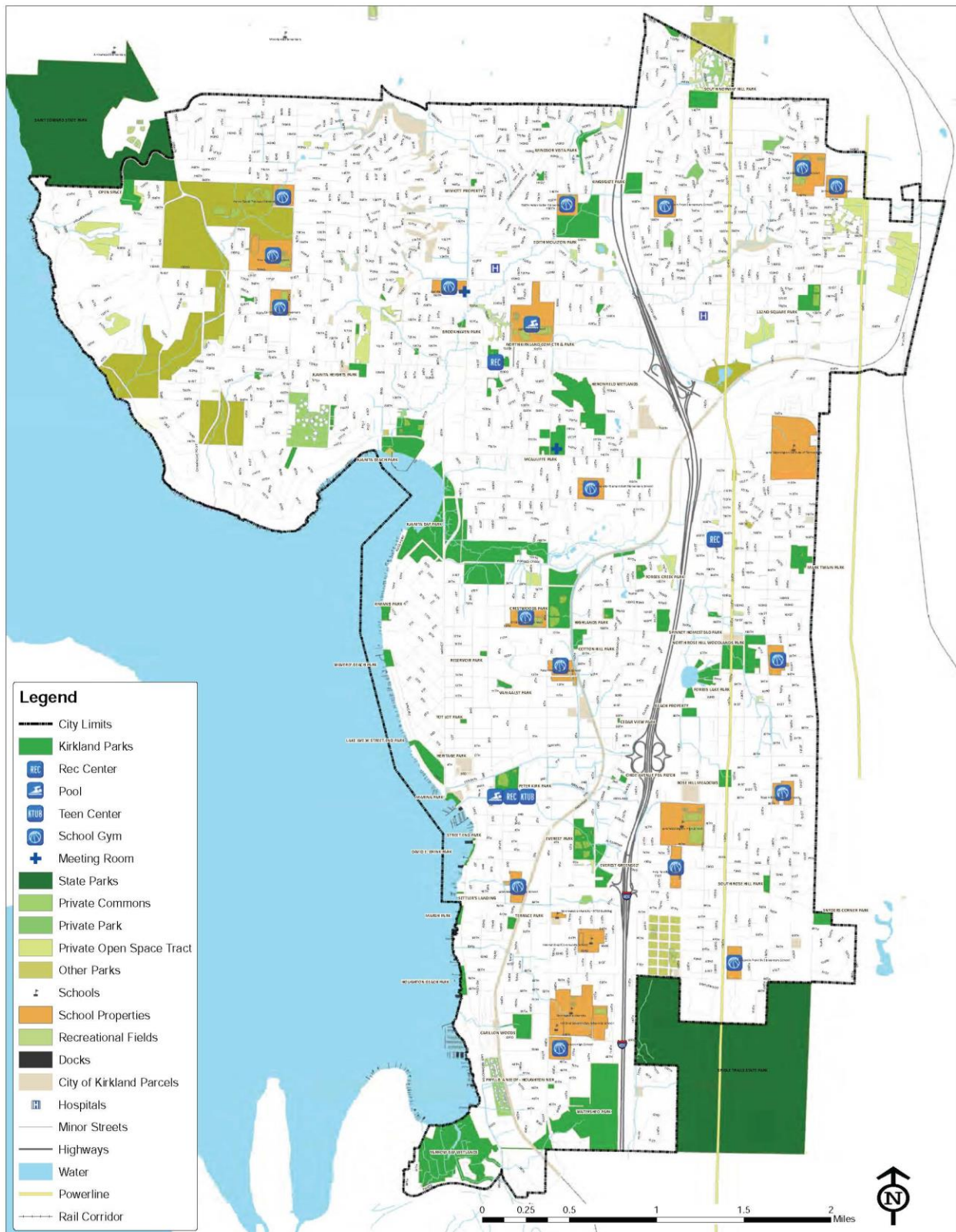
The 2014 Kirkland Parks, Recreation & Open Space Plan provides the following information about neighborhood and community parks:

- **Neighborhood Parks** are intended to serve residential areas within close proximity, up to ¼ mile walking. The goal of access to neighborhood parks is stated as: neighborhood parks are intended to serve residential areas within close proximity (up to ¼ mile walking or biking distance) of the park, and should be geographically distributed throughout the community. The current Level of Service (LOS) Standard for neighborhood parks is 1.5 acres/ 1,000 people. The City of Kirkland currently has 98.36 existing acres of neighborhood parks and is currently deficient by 25.39 acres (Kirkland, Kirkland Parks, Recreation & Open Space Plan, 2014).
- **Community Parks** are intended to serve residents within a 1-mile drive, walk, or bike ride. In areas without neighborhood parks, community parks can serve as local neighborhood parks. Community parks are designed for active and structural recreational activities and sports. The current LOS Standard for neighborhood parks is 2.25 acres/ 1,000 people. The City of Kirkland currently has 120.47 existing acres of community parks and is currently deficient by 65.15 acres (Kirkland, Kirkland Parks, Recreation & Open Space Plan, 2014).

As part of the 2015 comprehensive plan update, the City of Kirkland is replacing the current acreage per resident LOS standard with a LOS based on capital value per person. Value-based LOS systems establish a total value for the park system based on an inventory of current facilities and then divide that value by the number of residents. As growth occurs, the City makes additional investments in the park system to maintain the overall value of the system per resident. One of the advantages of a LOS based on per-capita value is that it provides flexibility for improvements to the parks system. Unlike the current system, which relies on continual acquisition of park land to meet the LOS standard, a value-based LOS can also be satisfied through improvements to existing parks, upgrades to facilities, or new equipment.

While the City is still in the process of precisely determining this per-capita value through a rate study, an estimated value of approximately \$4,000 per new resident is used for this analysis. The City anticipates that the rate study will be completed in Fall 2015, and the final per-capita value will be included in the Final EIS.

Exhibit 3.7-7. Existing Parks, Natural Areas, and Facilities



Source: City of Kirkland PROS Plan, 2014

Non-City Parks

Nearby parks not operated or owned by the City of Kirkland include two Washington State Parks, as shown on Exhibit 3.7-7. Bridle Trails State Park, a 482-acre day use park with 23 miles of hiking and equestrian trails, is located southeast of Kirkland. St. Edward State Park is a 316-acre day use park located in northwest Kirkland.

King County also owns four parks in the City of Kirkland. Big Finn Hill Park is a 220 acre park with hiking trails, a baseball complex, a softball field, a lacrosse/ soccer field, and a playground area. Juanita Woodlands Park and Juanita Triangle cover 36 acres of wooded natural area. The City of Seattle owns OO Denny Park, which is located in the northern part of Kirkland, and is maintained by the City of Kirkland.

The City of Kirkland partners with the Lake Washington School District for the use of sports fields at Mark Twain Elementary, Juanita Elementary, Ben Franklin Elementary, Rose Hill Elementary, Lakeview Elementary, Kirkland Junior High, and B.E.S.T. High. Ben Franklin Elementary School also provides the use of a neighborhood park.

TOTEM LAKE PLANNED ACTION AREA

The following parks are located in the Totem Lake Planned Action Area:

- **Totem Lake Park** is a partially developed community park covering 17.18 acres. The King Conservation District owns the park and co-manages it with the City of Kirkland. In December 2013, the Kirkland City Council adopted a new master plan for the future development of Totem Lake Park. The plan envisions the addition of a loop trail, benches, art, and interpretive signage around the lake, as well as improved connections to the adjacent business district and Cross Kirkland Corridor.
- **Heronfield Wetlands** are a natural park that spans 28.12 acres, and offers an educational self-guided interpretive walk with information on the wetlands and urban wildlife habitat (MyParksandRecreation.com, n.d.).
- **Jasper's Dog Park** is a two-acre, off-leash, fenced dog park.

The following parks are located close to the Totem Lake neighborhood – McAuliffe Park to the west, which is located on NE 116th Street three tenths of a mile from the western border of the Totem Lake Planned Action Area and 132nd Square Park, which is located just under a quarter of a mile from the northeast border of the Totem Lake Planned Action Area.

Schools

KIRKLAND PLANNING AREA

Existing Facilities

The Lake Washington School District provides public school services to Kirkland, Redmond, and portions of the cities of Sammamish, Bothell, and Woodinville. Lake Washington School District operates the following schools:

- 31 traditional and 4 choice elementary schools;
- 18 traditional and 6 choice middle schools; and
- 4 traditional and 4 choice high schools.

Students may attend one of the district's choice schools no matter where they live. Choice schools are optional schooling alternatives that are open to all students in the district. Students must apply to be considered for enrollment, and each school has its own application and enrollment process.

District enrollment for the 2013-2014 school year (OSPI, 2014) was as follows:

- Elementary School (Pre-School – 5th Grade): 13,060
- Middle School (6th Grade-8th Grade): 5,894

- High School: (9th Grade-12th Grade): 7,048
- Total: 26,002

The district's overall capacity is 27,761 students - 24,832 permanent and 2,929 in portable structures (District, 2014-19). The Lake Washington School District student generation rates for new development are shown in Exhibit 3.7-8 (District, 2014-19).

Exhibit 3.7-8. Lake Washington School District Student Generation Rates

	Single Family (students per dwelling unit)	Multi-family (students per dwelling unit)
Elementary School	0.3930	0.0550
Middle School	0.1310	0.0170
High School	0.1030	0.0120
Overall	0.6270	0.0840

Source: Lake Washington School District Capital Facility Plan, 2014-19

Level of Service Standard

The Lake Washington School District has adopted a Level of Service Standard, shown in Exhibit 3.7-9, which establishes a target teacher-student ratio for each grade level.

Exhibit 3.7-9. Lake Washington School District Level of Service Standard

Grade Level	Target Number of Students per Teacher
K-1	20 students
2-3	25 students
4-5	27 students
6-8	30 students
9-12	32 students

Source: Lake Washington School District Six-Year Capital Facilities Plan, 2014-2019.

The elementary school LOS model also includes:

- Special Education for students with disabilities, which may be provided in a self-contained classroom
- Music instruction provided in a separate classroom
- Computer lab
- Art/ Science room in modernized schools
- Identified elementary school students will be provided with the following corresponding classrooms:
 - Resource room
 - District remediation programs

- Learning assisted programs
- Special Education
 - English Language Learners
 - Preschool
 - Gifted education (pull-out Quest programs)

The secondary school level of service model includes:

- Special Education for students with disabilities may be provided in a self-contained classroom
- Identified students will also be provided other special educational opportunities in classrooms designated as follows:
 - Resource rooms
 - English Language Learners (ELL)

The Washington State Office of Superintendent of Public Instruction indicates that in the 2013-14 school year, the Lake Washington School District had 1,590 teachers resulting in a ratio of 16.35 students for each teacher.

Totem Lake Planned Action Area

Students who live in the Totem Lake Planned Action Area attend the following schools:

- Elementary Schools: Bell Elementary, Frost Elementary, Muir Elementary, Twain Elementary;
- Middle Schools: Kamiakin Middle School, Finn Hill Middle School, Rose Hill Middle School; and
- High School: Juanita High School and Lake Washington High School.

The Lake Washington School District Capital Facilities Plan 2014-19 identifies a Six-Year Planning and Construction Plan that identifies the rebuilding and expansion of Juanita High School among other capacity development projects.

There are no Lake Washington School District schools located in the Totem Lake Planned Action Area. The Providence Classical Christian School, a private K-12 school, and the Lake Washington Institute of Technology, a community and technical educational institute which offers professional/ technical degrees as well as three bachelor degree programs, are located in the Totem Lake Planned Action Area.

Impacts to Public Services

General Impacts

KIRKLAND PLANNING AREA

Population or employment growth generally creates a demand for increased public services. All three of the alternatives would generate the same overall population and employment growth across the city, and total citywide demand would be the same for all alternatives. The alternatives differ with regard to where in Kirkland the growth is distributed and where public service impacts would occur.

TOTEM LAKE PLANNED ACTION AREA

Exhibit 3.7-10 shows the distribution of projected housing and employment in the Totem Lake Planned Action Area by each alternative. The greatest distribution of projected growth, housing and employment, to the Totem Lake Planned Action Area is in Alternative 2, the Totem Lake/ Downtown Focus Alternative

Exhibit 3.7-10. Housing and Employment Growth Distribution by Alternative

Neighborhood	Alternative 1 (No Action)		Alternative 2 (Totem Lake/ Downtown Focus)		Alternative 3 (Distributed Growth)	
	<i>Housing</i>	<i>Employment</i>	<i>Housing</i>	<i>Employment</i>	<i>Housing</i>	<i>Employment</i>
Totem Lake	30.5%	37.5%	41.2%	48.0%	14.9%	36.7%
Central Business District	12.3%	26.9%	15.9%	16.4%	19.4%	12.2%
Neighborhood Centers	16.5%	1.3%	2.3%	1.3%	25.1%	10.7%
LIT	0%	8.6%	0.0%	8.6%	0.0%	14.6%
Other Areas	40.7%	25.7%	40.7%	25.7%	40.7%	25.7%
Totals	100%	100%	100%	100%	100%	100%

Source: BERK Consulting, 2015

Police Protection

IMPACTS COMMON TO ALL ALTERNATIVES

Under all alternatives, the Kirkland Planning Area would generate more population and employment creating a need for more police protection services. Based on a citywide 2014 population of 82,590 and the City of Kirkland Police Department's 98 commissioned police officers, the ratio of police officers to residents is approximately 1: 843 (Office of Financial Management 2014 Population Estimates). In 2014, there were 54,993 calls for service made to the Kirkland Police Department; therefore, the ratio of calls for assistance per resident was approximately 0.67.

Under all alternatives, there is an expected growth of an additional 8,361 housing units by 2035, which will generate an additional 17,042 people as shown in Exhibit 3.7-11. These residents would generate an estimated additional 11,348 calls based on 2014 calls per resident. This would result in a demand for an additional 20 police officers in order to maintain the 2014 ratio of police officers to residents.

Exhibit 3.7-11. City of Kirkland 2035 Population Generated by Housing Units

	2015 Existing Capacity Housing Proportion	2015 Average Household Size	2035 Projected Housing Units	2035 Population Generated
Single Family	23.16%	2.73	1,936	5,277
Multifamily	76.84%	1.83	6,425	11,765

Source: Office of Financial Management, 2014.

Exhibit 3.7-11 shows the 2015 existing residential development capacity proportions, and the 2015 average household size. The proportions were used to determine the 2035 projected housing units, and the 2015 average household size and the 2035 projected housing units were used to calculate the population generated in 2035.

Growth under any of the alternatives may result in changes to the spatial distribution of the Kirkland Police Department's calls for service, with a higher number of calls coming from those areas experiencing the greatest growth. The Kirkland Police Department does not keep records that differentiates between residential and employment calls. However, daytime calls are likely to be higher in areas with high concentrations of employment, while evening emergency calls are likely to be the highest in residential areas. Under all Alternatives, the Totem

Lake Planned Action Area would receive substantial new housing and employment growth, which would generate more calls for service in that neighborhood. Exhibit 3.7-12 shows the estimated population growth in the Totem Lake Planned Action Area by alternative.

Exhibit 3.7-12. Totem Lake Planned Action Area 2035 Population Generated by Housing Units

	2015 MF Household Size	2035 Population Generated		
		Alternative 1	Alternative 2	Alternative 3
Totem Lake	1.83	4,666	6,302	2,283

Source: BERK Consulting, 2015

ALTERNATIVE 1 (EXISTING PLANS - NO ACTION)

Kirkland Planning Area

Under the No Action Alternative, future housing growth would be concentrated primarily in Totem Lake and the various neighborhood centers, accounting for almost half (47%) of new dwellings. The Central Business District (CBD) would receive a relatively minor amount of housing growth, and most of the remaining housing units would be distributed across the other areas of the city. Under the No Action Alternative, it is likely that most future evening calls for police service would come from areas with new housing growth. Daytime calls are anticipated to be concentrated in Totem Lake and the CBD; combined, these two areas would account for approximately 64% of future employment growth under the No Action Alternative. Other areas outside of Totem Lake, the CBD and the Neighborhood Centers would account for 34.4% of new employment growth and may disperse new calls for service from these areas.

Totem Lake Planned Action Area

In the Existing Plans – No Action Alternative, the Totem Lake Planned Action Area receives 30.5% of the projected housing growth, and 37.5% of the projected employment growth. More residential development and increased population growth along with commercial development would generate more calls for service from the Totem Lake Planned Action Area. The No Action Alternative would allocate less housing and employment growth to Totem Lake than Alternative 2, but a greater share than Alternative 3. As a result, daytime and evening call levels from the Planned Action Area are anticipated to be greater than Alternative 3, but lower than Alternative 2.

ALTERNATIVE 2 (TOTEM LAKE/DOWNTOWN FOCUS)

Kirkland Planning Area

Under Alternative 2, the highest percentage of both housing (41%) and employment (48%) growth would be in the Totem Lake Planned Action Area. Under Alternative 2, the greatest concentration of both new daytime and evening calls for police service would be in Totem Lake, and the Kirkland Police Department may need to plan accordingly for changes in response patterns. While the CBD would receive a minority share of future housing and employment growth, it would remain a major growth center; combined, the CBD and Totem Lake would account for 57% of housing growth and 64% of employment growth, so most future new calls for service would be concentrated in these areas.

Totem Lake Planned Action Area

In the Totem Lake/ Downtown Focus Alternative, the Totem Lake Planned Action Area receives 41.2% of the new housing growth and 48.0% of the new employment growth. More residential development and increased population growth along with commercial development would generate more calls for service from the Totem Lake Planned Action Area, both during daytime and evening hours.

ALTERNATIVE 3 (DISTRIBUTED GROWTH)

Kirkland Planning Area

Under Alternative 3, approximately 59% of future housing growth is concentrated in Totem Lake, the CBD, and neighborhood centers; the remaining 41% would be distributed throughout the rest of the city. The 59% of new housing growth would be distributed in the following way: 25.1% in neighborhood centers, 19.4% in the Central Business District, and 14.9% in Totem Lake. Employment growth would be concentrated in Totem Lake (36.7%), the neighborhood centers (10.7%), and the CBD (12.2%). As a result, new daytime calls for service would be most concentrated in Totem Lake and the neighborhood centers, while evening calls would be concentrated in neighborhood centers, the CBD and the Totem Lake Planned Action Area.

Totem Lake Planned Action Area

Under Alternative 3, the Totem Lake Planned Action Area receives 14.9% of the new housing growth and 36.7% of the new employment growth. More residential development and increased population growth along with commercial development would generate more new calls for service from the Totem Lake Planned Action Area. This employment allocation is only slightly less than the No Action Alternative resulting in a similar level of daytime calls. Alternative 3 would represent the lowest amount of future housing growth in Totem Lake, resulting in the lowest anticipated new evening call levels for this area.

Fire and Emergency Medical Services

IMPACTS COMMON TO ALL ALTERNATIVES

Under all alternatives, the Kirkland Planning Area would generate more population and/or employment creating more demand for fire and emergency medical services while continuing to challenge staff to meet response time targets. Exhibit 3.7-11 shows that the Kirkland Planning Area would generate an additional 5,277 residents from new single family housing units, and 11,765 residents from multifamily residential units for a total of 17,042 new residents.

In order to maintain the City's current ratio of approximately 1.23 firefighters per 1,000 residents, there would be a need to hire an additional 21 firefighters by 2035.

Since firefighter positions are filled 24 hours per day, 365 days per year, each firefighter position may require hiring multiple personnel. In addition, to meet response time requirements as growth occurs, the fire department may need to re-evaluate staffing levels and equipment at specific fire stations located closest to areas planned for high levels of growth.

The Kirkland Fire Department (KFD) does not keep call data records that differentiate between commercial and residential calls. Therefore, it is not possible to quantify impacts specifically for employment growth numbers. More employment would generate a greater demand for fire and emergency medical services primarily during day time when office buildings are more likely to be occupied.

ALTERNATIVE 1 (EXISTING PLANS - NO ACTION)

Kirkland Planning Area

Under the No Action Alternative, future housing growth would be concentrated primarily in Totem Lake and the various neighborhood centers, accounting for almost half (47%) of new dwellings. The Central Business District (CBD) would receive a relatively minor amount of housing growth, and most of the remaining housing units would be distributed across the other areas of the city. Under the No Action Alternative, it is likely that most future calls for fire and emergency medical service would come from these areas of high employment and population concentration. Fire stations most likely to experience increased demand under this alternative include Fire

Stations 27 (Totem Lake), 26 (Rose Hill), and 22 (Downtown), as shown on Exhibit 3.7-2. As stated under Impacts Common to All Alternatives, citywide growth would demand the need for 21 additional firefighters.

Totem Lake Planned Action Area

Under the No Action Alternative, the Totem Lake Planned Action Area would generate an additional 8,416 jobs and an additional 2,550 housing units, which would produce approximately 4,666 people. Based on the City's current ratio of approximately 1.23 firefighters per 1,000 residents, this growth in the Totem Lake Planned Action Area would create a need for an additional 5.75 firefighters to serve the needs of those additional residents. The nearest fire station to Totem Lake is Fire Station 27, which would experience the greatest increase in demand for service as a result of growth in the Planned Action Area.

ALTERNATIVE 2 (TOTEM LAKE/ DOWNTOWN FOCUS)

Kirkland Planning Area

Under Alternative 2, the highest percentage of housing and employment growth would be in the Totem Lake Planned Action Area. As a result, this area would generate the greatest number of additional calls for fire protection services. Fire Station 27 is the nearest fire station to this area and would experience the greatest increase in demand for emergency response. The CBD would also receive a substantial share of housing and employment growth under Alternative 2, resulting in increased demand for services from Fire Station 22, the nearest fire department facility to that area. As stated under Impacts Common to All Alternatives, citywide growth would generate demand for an additional 21 firefighters.

Totem Lake Planned Action Area

Under Alternative 2, the Totem Lake Planned Action Area would generate an additional 10,763 jobs and an additional 3,444 housing units, which would produce 6,302 additional residents. Based on the City's current ratio of approximately 1.23 firefighters per 1,000 residents, the Totem Lake Planned Action Area would create a need for an additional 7.77 firefighters to serve those additional residents.

ALTERNATIVE 3 (DISTRIBUTED GROWTH)

Kirkland Planning Area

Under Alternative 3, housing and employment growth would be spread out in areas throughout the City, though it would be concentrated in neighborhood centers, the CBD, and Totem Lake. Under Alternative 3, the majority of future calls for fire protection service would be concentrated in these areas, and the fire stations most likely to experience increased demand would include Fire Stations 26 (Rose Hill), and 22 (Downtown), 27 (Totem Lake), as shown in Exhibit 3.7-2. As stated under Impacts Common to All Alternatives, citywide growth would generate demand for an additional 21 firefighters.

Totem Lake Planned Action Area

Under Alternative 3, the Totem Lake Planned Action Area would generate an additional 8,236 jobs and an additional 1,248 housing units, which would produce approximately 2,283 additional people. Based on the City's current ratio of approximately 1.23 firefighters per 1,000 residents, the Totem Lake Planned Action Area would create a need for an additional 2.81 firefighters to serve those additional residents.

Parks and Recreation

IMPACTS COMMON TO ALL ALTERNATIVES

Kirkland Planning Area

Population growth would increase the need for parks and recreation facilities and programs. The City of Kirkland does not maintain a Level of Service standard for non-residential uses, but, it is likely that additional employees from the projected employment growth would make use of any nearby park facilities before or after work, or during lunch breaks. However, level of usage would likely vary by location, and there is no reliable method for accurately estimating potential usage by employees.

Under all alternatives, the population of the Kirkland Planning Area is anticipated to grow by 17,042 as shown in Exhibit 3.7-11. As described in Affected Environment, the City's new Level of Service standard is based on park system value per resident. Based on the preliminary estimated value per-capita of \$4,000, the City would need to invest approximately \$68.2 million in the parks system over the next twenty years to accommodate demand from this additional population, as shown in Exhibit 3.7-13.

Exhibit 3.7-13. Parks and Recreation Level of Service Impacts Analysis

Preliminary Park System Value Level of Service Standard	2035 Estimated Additional Population Growth	Additional Investment Needed by 2035
\$4,000/ resident	17,042 residents	\$68,169,456

Source: BERK, 2015

The City of Kirkland's Parks and Recreation Level of Service standard for neighborhood and community parks is based on resident population; however, access and proximity to parks may differ depending on where in the City a resident is located. The Draft City of Kirkland Parks and Recreation Open Space Plan states that the proximity and access to both neighborhood and community parks is important; therefore, planning for additional parks and recreation spaces in areas where concentrated additional growth is planned should be prioritized to ensure sufficient access to parks based on the proximity standards for both neighborhood (1/4 mile) and community parks (1 mile).

Totem Lake Planned Action Area

Under all alternatives, population growth in the Totem Lake Planned Action Area would generate demand for additional parks and recreational facilities. Exhibit 3.7-14 shows the population generated by each alternative in the Totem Lake Planned Action Area, and the additional park investment dollars needed by each alternative to meet the new City of Kirkland LOS standard.

Exhibit 3.7-14. Totem Lake Planned Action Area Park Level of Service Impact Analysis

	2015 MF Household Size	2035 Population Generated			Additional Investment Needed by 2035		
		Alternative 1	Alternative 2	Alternative 3	Alternative 1	Alternative 2	Alternative 3
Totem Lake	1.83	4,666	6,302	2,283	\$ 18,664,325	\$ 25,208,405	\$ 9,133,685

Source: PSRC Regional Centers Monitoring Report, 2013; City of Kirkland Parks, Recreation, and Open Space Plan, 2015.

Currently, there are no neighborhood parks in the Totem Lake Planned Action area. It is important to note that According to the Draft 2014 City of Kirkland Park, Recreation and Open Space Plan, residents should also be able to reach a neighborhood park within a 1/ 4 mile walk or bike ride. Therefore, even if more neighborhood parks citywide were created, more neighborhood parks specifically in the Totem Lake Planned Action area would be needed.

Additionally, according to the Draft 2014 City of Kirkland Park, Recreation and Open Space Plan, residents should be able to reach a community park within a 1 mile drive. People on the western side of the I-405 may have a harder time accessing Totem Lake Park, which is located on the eastern side of the I-405 in the Totem Lake Planned Action Area, because a pedestrian would have to find an overpass road to walk across instead of crossing at a crosswalk.

Schools

IMPACTS COMMON TO ALL ALTERNATIVES

Kirkland Planning Area

Additional residential housing units would generate more demand for school services. As described in Chapter 3.3 – Population and Housing, approximately 23% of the City’s current residential development capacity consists of single family residences, and multifamily units account for the remaining 76%. Future development is anticipated to follow this distribution.

The school district’s student generation rates are 0.627 students per single family home and 0.084 students per multi-family dwelling unit. All alternatives would place a majority of future housing in multifamily/mixed use areas, and the share of multifamily housing is anticipated to increase over time.

Exhibit 3.7-15. Citywide New Student Generation (2035)

	Student Generation Rate	Additional Housing Units in 2035	Students Generated
Single Family	0.627	1,936	1,214
Multi Family	0.084	6,425	540

Using the current housing type distribution and the Lake Washington School District’s adopted student generation rates, each Alternative would generate approximately 1,214 school-age children from single family homes and 540 children from multifamily homes for a total of 1,754 school-age children. This would increase the district’s enrollment to 27,756 in 2035 from 26,002 in 2014, which is a 6.7% increase.

Under all Alternatives, the Lake Washington School District has the capacity to meet the need of students generated from the City of Kirkland. While this 6.7% increase of students from the City of Kirkland is not significant over twenty years, the Lake Washington School District also provides school services to Redmond, and portions of Sammamish, Bothell, and Woodinville as well as Kirkland. Cumulatively, there is a high possibility that the Lake Washington School District with its current facilities and capabilities would be unable to meet future need without investing more in facilities.

Totem Lake Planned Action Area

Under all alternatives, population growth in the Totem Lake Planned Action Area would generate additional students for the Lake Washington School District. Housing growth planned for the Totem Lake Planned Action Area is all multifamily housing; therefore, the Lake Washington School District multifamily student generation rates are used to determine how many students will be generated in 2035. Exhibit 3.7-16 shows the additional students generated by multifamily housing growth in the Totem Lake Planned Action Area under each alternative.

Exhibit 3.7-16. Student Generation in Totem Lake Planned Action Area

Type of Student	Student Generation Rate	Students Generated		
		Alternative 1	Alternative 2	Alternative 3
Elementary School	0.055	140	189	69
Middle School	0.017	43	59	21
High School	0.012	31	41	15
Total Students	0.084	214	289	105

Source: Lake Washington School District Capital Facilities Plan 2014-19; BERK, 2015.

Under all Alternatives, the additional growth in this area would increase the number of students at the following schools: A.G. Bell Elementary, Robert Frost Elementary, Mark Twain Elementary, John Muir Elementary, Kamiakin Junior High School, Finn Hill Junior High School, Rose Hill Junior High, Juanita High School, and Lake Washington High School.

ALTERNATIVE 1 (EXISTING PLANS - NO ACTION)

Kirkland Planning Area

Under the No Action Alternative, future housing growth would be concentrated primarily in Totem Lake and the various neighborhood centers, accounting for almost half (47%) of new dwellings. The Central Business District (CBD) would receive a relatively minor amount of housing growth, and most of the remaining housing units would be distributed across the other areas of the city. This distribution of growth to a variety of locations within the city would result in increased enrollment at almost all the schools that serve Kirkland. Because the greatest concentration of new growth would occur in Totem Lake, the schools that serve that area would experience the greatest increase in demand. However, distribution of housing growth to neighborhood centers and to residential areas outside major centers would affect schools across the city, leading to a need for additional capacity.

Totem Lake Planned Action Area

Future residential development in Totem Lake would be exclusively multifamily, household sizes would be smaller than in single-family areas, and fewer students would be generated per household. Based on the Lake Washington School District's adopted student generation rates, an additional 214 students would be generated by additional housing growth.

ALTERNATIVE 2 (TOTEM LAKE/ DOWNTOWN FOCUS)

Kirkland Planning Area

Under Alternative 2, schools throughout Kirkland would experience increased enrollment as a result of population growth. The highest concentrations of future housing growth would be in the Totem Lake Planned Action Area and in the CBD. Concentrating growth in these centers would place increased demand for services on the schools serving these areas and reduce demands on schools elsewhere in the city. Housing growth in these areas, however, would be primarily in the form of multifamily residences, which have smaller household sizes than single-family homes and would generate proportionately fewer students.

See Alternative 1.

Totem Lake Planned Action Area

Future residential development in Totem Lake would be exclusively multifamily, household sizes would be smaller than in single-family areas, and fewer students would be generated per household. Based on the Lake Washington School District's adopted student generation rates, an additional 289 students would be generated by additional housing growth.

ALTERNATIVE 3 (DISTRIBUTED GROWTH)

Kirkland Planning Area

Under Alternative 3, future housing growth would be concentrated primarily in the various neighborhood centers, the CBD, and the Totem Lake Planned Action Area, accounting for 59.3% of housing growth. The remaining housing units would be distributed across the other areas of the city. This distribution of growth to a variety of locations within the city would result in increased enrollment at almost all the schools that serve Kirkland. Schools that serve the neighborhood centers, the CBD, and to a smaller extent the Totem Lake Planned Action Area, would experience the greatest increase in demand. However, distribution of housing growth to neighborhood centers and to residential areas outside major centers would affect schools across the city, leading to a need for additional capacity.

See Alternative 1.

Totem Lake Planned Action Area

Future residential development in Totem Lake would be exclusively multifamily, household sizes would be smaller than in single-family areas, and fewer students would be generated per household. Based on the Lake Washington School District's adopted student generation rates, an additional 105 students would be generated by additional housing growth.

Mitigation Measures

Incorporated Plan Features

The Kirkland Comprehensive Plan Public Services Element identifies the following public services goals and policies:

- Goal PS-1: Provide fire protection, emergency medical services, emergency management, and police service to the community through a cost-effective and efficient delivery system to maintain a safe environment for the public.
 - Policy PS-1.1: Provide fire, emergency medical services and police services to the public which maintain accepted standards as new development occurs.
 - Policy PS-1.2: The adopted levels of service for fire and emergency management are as follows:
 - Emergency medical: response time of five minutes up to 90 percent of emergency incidents
 - Fire suppression: response time of 5.5 minutes to 90 percent of all fire incidents
 - Policy PS-1.3: Provide a system of streets that facilitates improved emergency response times
 - Policy PS-1.4: Develop and maintain a water system that provides adequate fire flow for anticipated development based on land use designations of the Comprehensive Plan.
 - Policy PS-1.5: Provide a robust training and exercise program in emergency management response operations for city employees.
 - Policy PS-1.6: Maintain accessible disaster plans that incorporate a Whole Community approach to emergency management for all-hazards.
 - Policy PS-1.7: Sustain a disaster response system that incorporates local, state, tribal, and federal partners to facilitate enhanced disaster readiness, response, recovery, and resilience.
 - Policy PS-1.8: Ensure that safety and security considerations are factored into the review of development proposals.

- Policy PS-1.9: Ensure compatibility in scale and design with surrounding uses by reviewing new public facilities for compliance with adopted urban design principles.
- Policy PS-1.10: Update Fire, Emergency Management, and Police functional plans at appropriate intervals to incorporate and remain consistent with the goals, policies, and land use projections of the Comprehensive Plan.
- Goal PS-3: Maintain the quality of life in Kirkland through the planned provision of regional services in coordination with other public services providers.
 - Policy PS-3.3: Coordinate with neighboring cities, King County, the Lake Washington School District, special districts and other agencies in the planning, provision, and use of joint activities and facilities.
 - Policy PS-3.4: Assess appropriate school impact fees to help offset the cost of financing new school public services infrastructure serving new development.
 - Policy PS-3.5: Coordinate with the Lake Washington School District on the planning, siting and development on new, replaced or expanded school facilities.
 - Policy PS-3.6: Commit resources to public services and infrastructure for underserved populations.
 - Policy PS-3.7 Ensure all public services and facilities are accessible to people with disabilities.

KIRKLAND PLANNING AREA

Parks

The 2014 Park PROS Plan identifies the development of these three undeveloped neighborhood park sites:

- Snyder's Corner Park Site – a 4.5 acre park site located at the intersection of NE 70th and 132nd Avenue in the Bridle Trails neighborhood.
- South Norway Hill Park – a 9.8 acre, heavily wooded park site located in the Kingsgate neighborhood.
- Windsor Vista - a 4.9 acre park bordered by single family residences, with a creek running through property.

The 2014 Park PROS Plan identifies the following potential acquisition areas in order to improve overall distribution and equity of neighborhood parks, while promoting recreation within walking distance of residential areas. These acquisition areas do not identify a specific parcel of land to consider; however, these targets represent a long-term vision for improving parkland distribution throughout Kirkland.

- Northeastern portion of the Finn Hill neighborhood (Gap Area 'A')
- Southwestern portion of the North Juanita neighborhood (Gap Area 'B')
- Northeastern portion of the North Juanita neighborhood (Gap Area 'C')
- Northeastern portion of the Kingsgate neighborhood (Gap Area 'D')
- Central portion of the Kingsgate neighborhood (Gap Area 'E')
- Northern portion of the North Rose Hill neighborhood (Gap Area 'F')
- Western portion of the South Rose Hill neighborhood (Gap Area 'G')
- Southern portion of the Bridle Trails neighborhood (Gap Area 'H')

The 2014 Park PROS Plan identifies the development of Edith Moulton Community Park as a community park. Additionally, the plan notes that in order to establish more community parks in the future, the City of Kirkland must think creatively and foster partnerships to provide park amenities. Some examples include enhancing

partnerships with the Lake Washington School District, and the Taylor Fields landfill site as a potential future community park.

TOTEM LAKE PLANNED ACTION AREA

The 2014 Parks PROS Plan identifies the following neighborhood-based recommendations for the Totem Lake Planned Action Area:

- Heronfield Wetlands:
 - Create a restoration and improvement plan for Heronfield Wetlands. Develop trails and interpretive signage per plan.
 - Natural Area Park Restoration: Implement a restoration and enhancement program.
 - Stormwater Parks Implementation Program: Provide Stormwater water mitigation from upland contaminants and nutrient overload
- Jasper's Dog Park:
 - ADA Compliance: Add ADA accessible pathway from parking to dog park
 - Stormwater Parks Implementation Program
- Totem Lake Park Neighborhood Park Development
 - Park Development: Implement Master Plan improvements
 - Cross Kirkland Corridor Eddies Development
 - Consider the potential for community garden or pea patches
- The Draft Totem Lake Plan identifies the following policies:
 - TL-6.3 The City should acquire Totem Lake and develop park improvements at identified in the Totem Lake Park Master Plan.
 - TL-7.1 Create a public greenway to link the community's cultural, historic, recreational and conservation needs.

Applicable Regulations and Commitments

KIRKLAND PLANNING AREA

Fire

- New development is required to comply with the provisions of Title 21 of the Kirkland Municipal Code – Buildings and Construction. All new buildings with a gross floor area greater than 5,000 square feet require fire extinguishing systems (KMC 21.33.040).

Parks and Recreation

- New development is subject to the collection of park impact fees under the Kirkland Municipal Code Chapter 27.06. Park Impact fees are used to maintain existing parks and recreation facilities and acquire new facilities.
- Common recreational open space is required for certain forms of multiunit residential development in medium-density and high-density residential zones. Common open space requirements range from 150 square feet to 800 square feet per residential unit, depending upon the zone.

Schools

- New development is subject to the collection of school impact fees under Chapter 27.08 of the Kirkland Municipal Code. On behalf of the Lake Washington School District, the City will collect school impact fees to offset the costs of additional students generated by new development.
- The following projects are underway to address planned capacity needs for the next three years. They are to serve the needs of the current students, and those projected from development in the current pipeline. These projects would not add available capacity to serve additional enrollment from the Totem Lake Planned Action Area (Fogard, 2015).
 - Lake Washington High School – 10 portables
 - Juanita High School – interior building modifications to increase capacity
 - Frost Elementary – 1 portable
- A Long-Term Facilities Planning Task Force has been convened to make recommendation on long-term strategy to address lack of classroom capacity as well as aging facilities. A recommendation is anticipated in June 2015 (Fogard, 2015).

TOTEM LAKE PLANNED ACTION AREA

The same regulations and commitments enumerated for the Kirkland Planning Area would apply in the Totem Lake Planned Action Area.

Other Potential Mitigation Measures

KIRKLAND PLANNING AREA

Police

- The City could adopt a formal Level of Service standard for police, which would help to identify how many additional police officers are necessary for projected growth.
- The City could consider the option of hiring additional police officers and staff to maintain levels of service consistent with growth over time.

Fire

- The City could adopt a population-based Level of Service Standard for fire and EMS to help identify project-specific demand.
- As development occurs, the Fire Department should reassess future operations plans to ensure that staff and equipment are located close enough to areas of concentrated development to maintain adequate response times. This may entail redistribution of staff or equipment between fire stations or construction of new facilities..

Parks

- The current 6-Year Capital Facilities Plan indicates \$11.5 million of investment in acquisition, development, and renovation of the parks system over the next six years and identifies additional investment priorities for the future.
- The City could change their Level of Service Standard to provide proximity to parks and open space areas.
- The City could adopt park impact fees for new residential development.

TOTEM LAKE PLANNED ACTION AREA

Parks

The Totem Lake Planned Action Area does not have any neighborhood parks. Even if more neighborhood parks citywide were created, more neighborhood parks specifically in the Totem Lake Planned Action area would be needed. Additionally, with the added growth, more community parks are needed in the Totem Lake Planned Action Area to meet the demand for the increased housing population. Park impact fees could be adopted and may be used to serve the neighborhood and community park needs within proximity to the development that is generating the additional demand.

Significant Unavoidable Adverse Impacts

Future population and employment growth will increase the demand for public services. With implementation of mitigation measures, no significant unavoidable adverse impacts to public services are anticipated.

3.8 Utilities and Capital Facilities

This section documents existing utility systems in the City of Kirkland, reviews existing levels of service, estimated needs and demand for service, and projected levels of service under each alternative for water, sewer, stormwater, and other municipal facilities. The analysis is based on existing functional plans, conversations with service providers, and population-based estimates of demand.

Affected Environment and Methodology

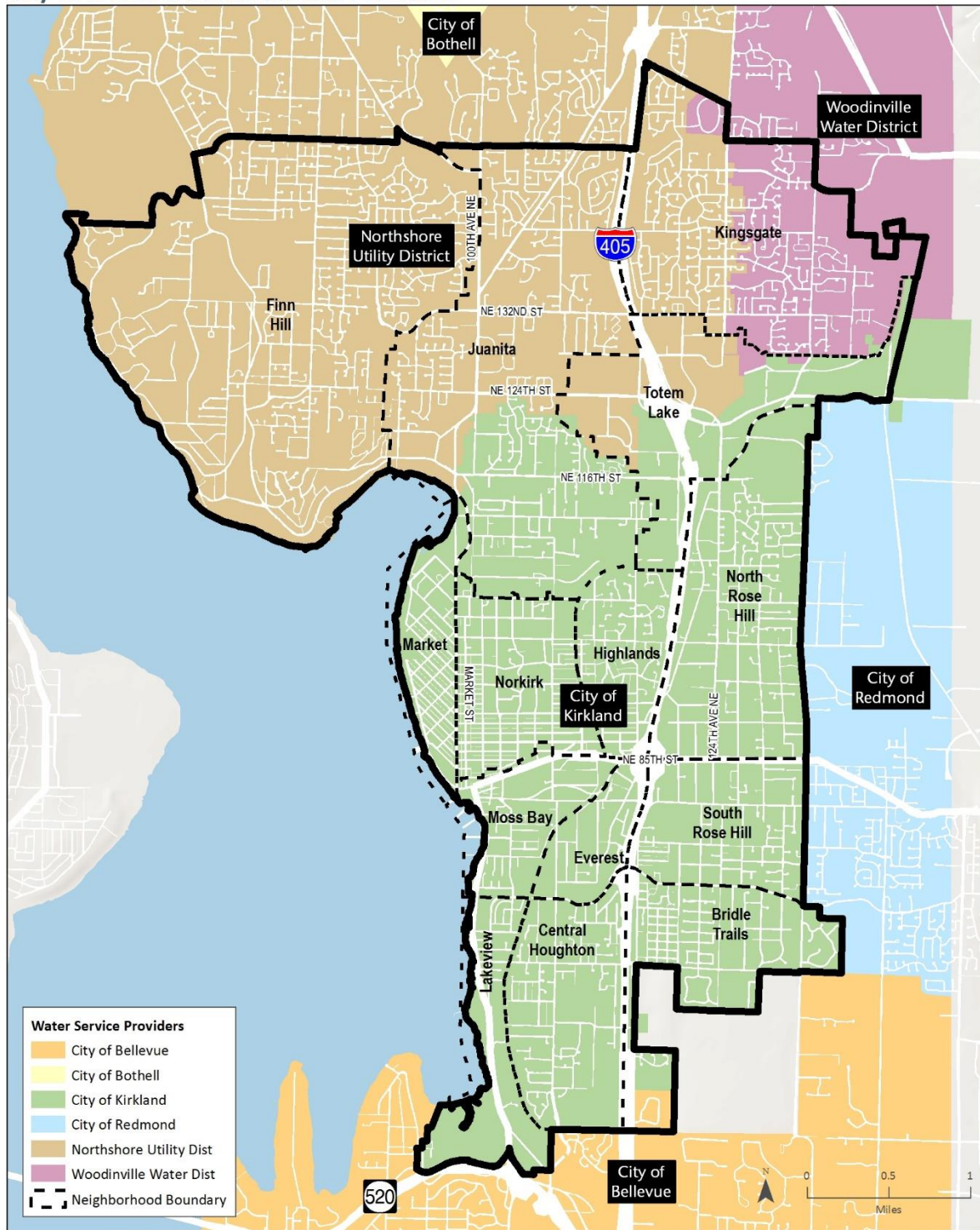
Water

In Washington State, public water systems are classified into two categories, Group A and Group B systems. Group A public water systems have 15 or more service connections or regularly serve 25 or more people 60 or more days per year. State law requires all Group A public water systems to apply for an annual operating permit. Group B public water systems serve fewer than 15 connections and fewer than 25 people per day. Group B systems are regulated by the State Department of Health or a local health jurisdiction. Full descriptions of Groups A and B public water systems can be found in the Washington Administrative Code (WAC) 246-290 and 246-291.

The City of Kirkland, Northshore Utility District, and Woodinville Water District all operate Group A public water systems within Kirkland's city limits. The City of Bellevue's water service area includes approximately 46 acres in southeast Kirkland, adjacent to Bridle Trails State Park. The following sections describe the water systems and infrastructure in the Kirkland Planning Area and the Totem Lake Planned Action Area. The service areas for water providers in Kirkland are shown on Exhibit 3.8-1.

Exhibit 3.8-1. Kirkland Water Utility Providers

City of Kirkland Water Service Providers



BERK Date: June, 2015
Source: City of Kirkland

KIRKLAND PLANNING AREA

City of Kirkland Water Utility

SUPPLY AND INFRASTRUCTURE

The City of Kirkland purchases drinking water from Seattle Public Utilities (SPU) through the Cascade Water Alliance (Cascade), which is an association of cities and regional water districts. Cascade has a “block” contract with SPU through 2039 for 33.3 MGD, after which the available block declines by one MGD a year until 2064. The contract includes a provision that allows for future modification, if necessary. Typically, the water comes from the South Fork Tolt River Watershed in the Cascade Mountains. The Kirkland Water Division operates and maintains the City’s water infrastructure, and SPU performs most of the sampling and treatment for Kirkland’s drinking water.

Kirkland and Cascade’s interlocal contract states that Cascade will provide full supply to the city for future water needs, provided that growth is consistent with applicable growth management plans.

The City of Kirkland provides water service to approximately 12,318 customers, primarily residential customers, who account for 84 percent of all customer accounts and 52 percent of water supplied. The City’s water system has eight pressure zones, 35 pressure reducing valve (PRV) stations, four emergency interties, 12.62 million gallons of storage capacity, and 171 miles of water main. The City’s distribution system is composed of water mains in a variety of sizes, ranging in diameter from 4 inches to 48 inches.

Kirkland does not provide retail water service to all of the areas within its city limits. The neighborhoods Kirkland annexed in 2011 are served by other utility districts. The northwest portion of Kirkland (Finn Hill and portions of the Juanita neighborhood) is served by the Northshore Utility District, and the northeast corner of the city (portions of the Kingsgate and Totem Lake neighborhoods) is served by Woodinville Water District. A very small portion of the southeastern city is served by the City of Bellevue.

Kirkland operates a few joint-use facilities that provide supply to parts of the City of Redmond and the City of Bellevue. All three cities have agreed to proportional responsibility for the cost of maintenance and operations of the joint-use facilities. All of the joint-use facilities are within the area formerly served by the Rose Hill Water District.

WATER DEMAND

Although population and service connections increased from 2005 to 2013, the total system-wide water usage has decreased, primarily due to increased water efficiency practices. From 2005 to 2013, the average water demand per capita decreased, as did the average water demand per equivalent residential unit (ERU). Overall water demand is estimated to increase by up to 33 percent by 2033 according to the City’s growth projections.

Exhibit 3.8-2. Kirkland Water System Attributes

City of Kirkland	
Residential Level of Service	103 gallons/capita/day
Non-residential Level of Service	249 gallons/capita/day
Annual Supply	1.3 billion gallons
2013 Retail Water Service Population	40,370
2035 Estimated Retail Water Service Population	50,402

Source: City of Kirkland Comprehensive Water System Plan, 2013. City of Kirkland Comprehensive Plan Utilities Element, 2015 (Draft).

Kirkland anticipates using its three Tolt Pipeline connections to meet water system demands through 2035; the capacity of these pipeline connections is adequate to meet the projected demands of the system through 2035. Cascade Water Alliance can also provide water to Kirkland through alternative sources if there is demand. In

addition to the supply from SPU, Cascade has an agreement with the City of Tacoma for additional supply until 2042, and has the ability to develop Lake Tapps in Pierce County if there is demand beyond 2063.

Northshore Utility District

SUPPLY AND INFRASTRUCTURE

Northshore Utility District (NUD) is a special purpose district that provides water and sewer service to parts of Kirkland, Lake Forest Park, and Bothell, and to all of Kenmore. It also serves a few areas of unincorporated King County.

NUD provides water to 20,050 connections, which include; a mix of residential, commercial, and industrial customers. The majority of NUD's water service connections are located in unincorporated King County and the City of Kenmore. Kirkland accounts for only 9% of NUD's water service connections.

NUD has a distribution system with over 258 miles of pipe, ranging from 1.5-inch to 24-inches in diameter, storage facilities, and three booster stations. NUD's corporate boundary consists of approximately 11,860 acres and its retail water service boundary is approximately 10,912 acres.

Northshore Utility District has a fixed block water supply agreement with SPU for 8.55 million gallons a day of treated water supply. The agreement expires on January 1, 2062. Per NUD's contract with SPU, there is a maximum average flow rate during the peak season (June 1 through September 30) and peak month (the consecutive 30-day period in which there is maximum demand) of each calendar year. The peak season flow rate is 11.97 mgd, and the peak flow rate is 14.96 mgd. NUD incurs monetary penalties for exceeding this withdrawal rate.

NUD is also a member of the Snohomish River Regional Water Authority (RWA). By RWA agreement, NUD has a 28 percent share of the former Weyerhaeuser water right that was acquired by the RWA in 1996. This share provides NUD with an additional 10 mgd of instantaneous draw and 6.6 mgd of untreated annual supply.

WATER DEMAND

The average daily demand (ADD) for NUD in 2005 was 5.19 mgd. Approximately 66% of NUD's total demand is from residential customers, and 91% of its connections are for single-family residential homes. NUD projects a deficiency of 1.08 mgd for ADD and Peak Season Demand in its Buildout scenario planning.

As a part of its 2009 Water System Plan, NUD and King County conducted a study to determine the number of residential units at buildout for the water service area. The analysis identified the total land area for each zoning classification and calculated the total number of residential units based upon the allowable dwelling unit density. Total population was calculated based upon an average number of persons per household for each zoning classification using the 2000 Census. Buildout is then used as a future planning scenario that occurs depending on the rate of growth. At a 2 percent growth rate, NUD estimates buildout will occur by 2039; at a 0.5 percent growth rate buildout will occur by 2109.

Exhibit 3.8-3. Northshore Water System Attributes

Northshore Utility District	
Level of Service	174 gallons/day/ERU
2005 Average Daily Consumption per capita	64.4 gallons
2005 Average Daily Consumption per employee	36.7 gallons
Annual Supply	2.08 billion gallons
2006 Water Service Population	68,835
Buildout Water Service Population	118,584

Source: Northshore Utility District Water System Plan, 2009. City of Kirkland Comprehensive Plan Utilities Element, 2015 (Draft).

* Equivalent Residential Unit = ERU.

Woodinville Water District

SUPPLY AND INFRASTRUCTURE

The Woodinville Water District (WWD) provides water and sewer service to the City of Woodinville, areas of unincorporated King County, and portions of the cities of Kirkland, Redmond, and Bothell. The District is comprised of the area north of Redmond, east of Bothell, and west of Duvall. The District supplies water to roughly 13,500 connections, and approximately 92% of the customers are residents in single family homes and account for 74% of the system total demand.

WWD purchases wholesale water from SPU and has a contract with an expiration date of 2064. All water supply is distributed through nine active metered connections along the Tolt and Eastside supply lines.

WWD service area within the City of Kirkland is defined as the West Service Area. This area includes territory west of the Sammamish River, including the western portion of Woodinville and small areas of Bothell and Kirkland (40 acres). The West Service Area has three sources of supply, four emergency interties, two storage reservoirs, and eight PRV stations.

WATER DEMAND

In 2006, the ADD for the Woodinville Water District was 249 gallons per ERU. The total system demand, including all usage categories, for 2006 was 1.5 billion gallons. The bulk of WWD's water sales are for residential water service, the majority being for single-family connections.

Exhibit 3.8-4. Woodinville Water System Attributes

Woodinville Water System Attributes	
Level of Service	193 gallons per day/ERU
Demand per ERU (West Service Area)	205 gallons/day
2006-2027 Annual Supply	9.08 billion gallons
2000-2006 Average Daily Demand	4.16 million gallons
2007 Retail Water Service Population	48,400
2040 Estimated Water Service Population	68,000

* A portion of the Totem Lake Planned Action Area is within Woodinville's West Service Area.

* Equivalent Residential Unit = ERU.

* WWD is currently serving less than the Retail Water Service population because of the presence of over 500 wells inside the service area boundary. It is not known exactly how many of these wells are actively serving water on an ongoing basis.

Source: Woodinville Water District Comprehensive Water System Plan, 2008. City of Kirkland Comprehensive Plan Utilities Element, 2015 (Draft).

TOTEM LAKE PLANNED ACTION AREA

City of Kirkland Water Utility

The portion of the Totem Lake Planned Action Area within Kirkland's retail water service area is covered by the water supply pressure zones 285, 395, 450, and 545. The northern portion of the study area that is within the City limits but outside of the retail water service area is served by Woodinville Water District (West Service Area) and Northshore Utility District. A map of water utility service areas in Totem Lake is shown in Exhibit 3.8-5.

There are seven PRV stations located and two emergency interties within the Planned Action Area. The two emergency supply interties connect to the Northshore Utility District system and are located along Kirkland's retail water service area limits.

PRESSURE ZONES 285 AND 295

The 285 and 395 zones within the Planned Action Area are supplied by water through a series of PRV stations. 285 is the lowest pressure zone in the system and receives water through 11 PRV stations to reduce pressure from the 450 Zone and the 315 Zone, which are located along the western edge of the city. Elevations in the 285 Zone range from 15 feet to 203 feet. The 395 Zone also serves the part of the 285 Zone in the Totem Valley.

PRESSURE ZONES 450 AND 545

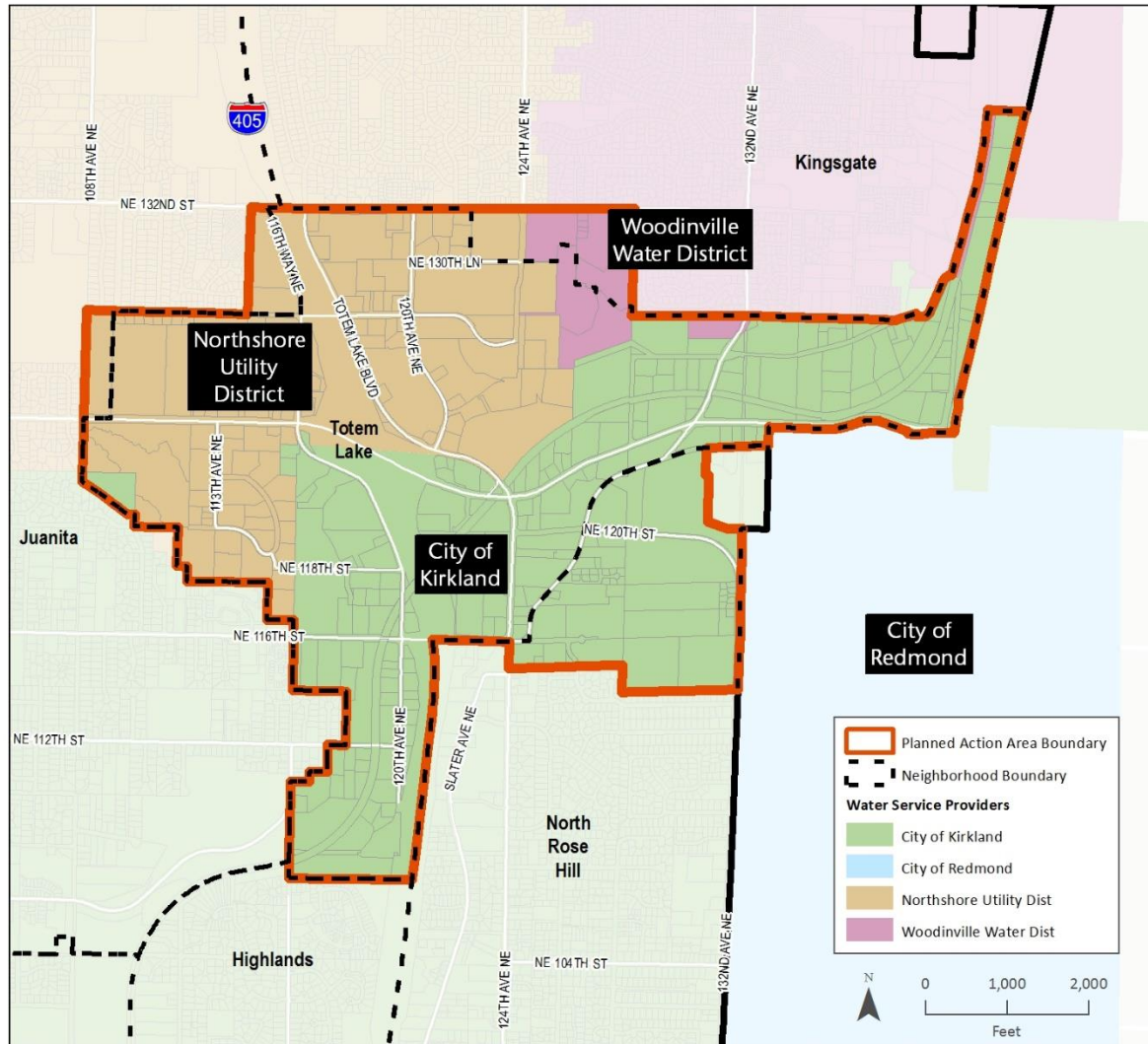
The 450 and 545 zones are supplied by the North and South Reservoirs with pressure regulated by the surface water level and overflow elevation of the reservoir. The 450 zone has an elevation range of 104 feet to 335 feet, and the 545 Zone serves customers within an elevation range of 235 to 435 feet.

Supply Station S3 is located the Planned Action Area at 11605 132nd Avenue NE. This station provides supply to the 545 Zone with a 12-inch inlet pipe from the Seattle supply system.

Kirkland's only storage supply facilities are the North (14.3 MG) and South (11.2 MG) Reservoirs, and they are both located in the 545 Zone. The North Reservoir 545 Zone Pump Station is located adjacent to the North Reservoir at 10733 132nd Avenue NE and supplies water to the Zone from the reservoir. This pump station can also transfer water from the 545 Zone to the 450 Zone to the South Reservoir.

Exhibit 3.8-5. Totem Lake Planned Action Area Water Service Providers

Totem Lake Planned Action Area Water Service Providers



BERK Date: June, 2015
Source: City of Kirkland

Northshore Utility District

North of Kirkland's retail water service area limits, the Totem Lake Planned Action Area is covered by NUD's 380, 366, and 451 water supply pressure zones.

The Westhill standpipe (3 MG) provides gravity supply to the 380 Zone, while the 366 and 451 zones receive supply from the Norway Hill Reservoir (5 MG).

In 2008, for redevelopment of the Totem Lake Plaza, NUD planned to upsize approximately 4,050 linear feet of water mains and add 1,150 linear feet of water main. This project was planned to coincide with the City of Kirkland's work to widen 120th Avenue NE to five lines.

Included in NUD's 20-year Capital Improvement Plan, is a project to construct a water main between the east and west sides of I-405 to improve reliability to the 451 Zone. This project will consist of a boring beneath the interstate and construction of a pressure reducing valve station to connect the 529 Zone to the 451 Zone.

Woodinville Water District

North of Kirkland's retail water service area limits and east of Northshore limits, the Totem Lake Planned Action area is covered by 260, 305, 420 and 510 water supply pressure zones. Storage analysis for the West Service Area suggested that by 2027, there will be a deficiency of storage capacity by more than 900,000 gallons. Additional storage for the West Service Area is included as a recommendation for improvement in Woodinville's water system plan.

Wastewater

Sewer service is provided to residents within Kirkland city limits by the City of Kirkland, Northshore Utility District, and Woodinville Water District. A map of sewer provider service areas is included in Exhibit 3.8-7.

KIRKLAND PLANNING AREA

City of Kirkland Wastewater Division

In addition to service request response, the City of Kirkland's Wastewater Division of Public Works primarily handles operation maintenance for city sewer mains, holes, and pump stations. The City of Kirkland serves 8.24 square-miles and approximately 57,000 people (residential and employment population). All of the City's wastewater discharges to the King County Department of Natural Resources and Parks, Wastewater Treatment Division (KCWTD). King County accepts up to 100 gallons per day per capita from Kirkland under the terms of an intergovernmental agreement.

The City of Kirkland's sewer service area is within Kirkland's city limits. The City does not anticipate a change in the service area boundaries. The city maintains approximately 122 miles of sewer main and six lift stations. There are 40 wastewater collection sub-basins within the service area.

According to Kirkland's 2008 Sewer Plan, the City is predicting that an ultimate buildout of the service area will be reached by 2022, and the sewer plan's sewer system analysis has used this assumption to determine and prepare for future basin flows.

Exhibit 3.8-6. Kirkland Sewer Service Area Projections

Year	Estimated Service Area Population ¹	Estimated Employment Population ²
2007	33,636	23,350
2022	35,523	25,517

1. Compound Annual Growth Rate for population is 0.4% and the Total Growth Percentage for 2007 to 2022 is 5.6%.

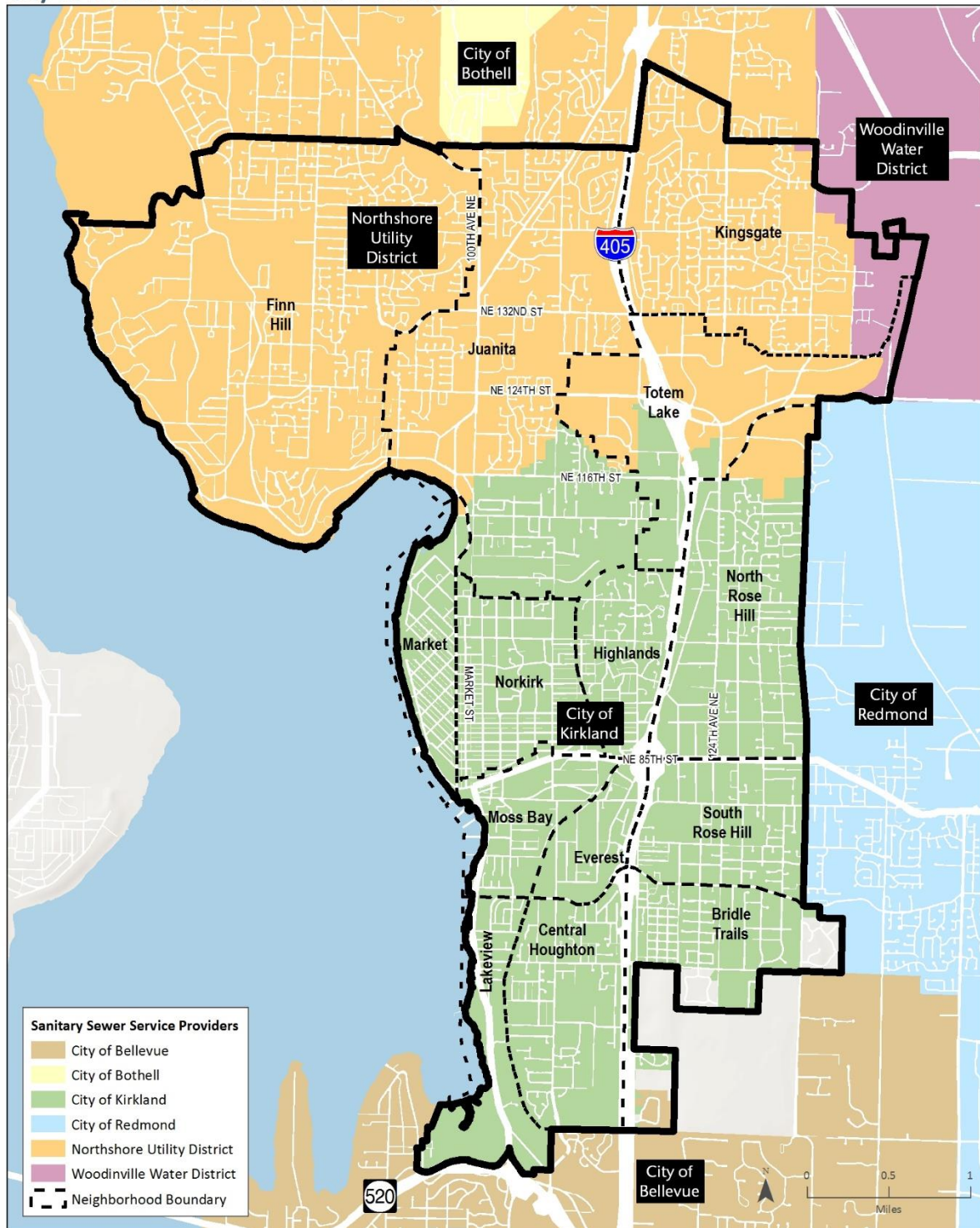
2. Compound Annual Growth Rate for employment is 0.6% and the Total Growth Percentage for 2007 to 2022 is 9.3%.

Source: City of Kirkland 2008 Sewer Comprehensive Plan Update.

Flow analysis in the 2008 Sewer Plan concludes that there is excessive inflow and infiltration (I/I) in two sub-basins and three mini-basins within the Kirkland Planning Area. Excessive I/I can cause system failures and permit failures, and can affect the overall capacity of the King County Treatment Plant. As a result, the City plans to continue to pursue abatement options for the basins with excessive I/I.

Exhibit 3.8-7. Kirkland Sewer Provider Service Areas

City of Kirkland Sewer Service Providers



BERK Date: June, 2015
Source: City of Kirkland

Northshore Utility District

The Northshore Utility District (NUD) provides sewer service to customers in Lake Forest Park, Kenmore, Bothell, Woodinville, Kirkland, and unincorporated King County. NUD's service area within Kirkland city limits is generally north of NE 116th Street, south of NE 145th Street, west of 132nd Avenue NE, and east of Holmes Point Drive along Lake Washington. This area is served by NUD because its topography differs, and it is more practical sensible for NUD to extend service to those boundaries than for the City to develop infrastructure to serve a different topography than its existing service area. NUD's system flows are predominately residential; approximately 90% of NUD's sewer service area is zoned residential, and 10% percent is zoned non-residential.

NUD's wastewater collection system consists primarily of sewers, lift stations, and mains. Throughout the system, there are approximately 240 miles of gravity sewer pipe ranging from 8 to 30 inches in diameter, 11 lift stations, and four grinder pump stations. Like the City of Kirkland, NUD does not have a wastewater treatment facility and instead conveys its waste to two King County Department of Natural Resources wastewater treatment plants – West Point in Seattle and the South Treatment Plant in Renton.

Exhibit 3.8-8. Northshore Utility District Sewer System Attributes

Northshore Utility District Sewer System Attributes	
Total Connections	20,258
Sewer Service Area Population (2005)	69,168
Percent of Sewer Connections in Kirkland	9%
Peaking factor	2.5
Non-residential flow rate (gpcd)	26
Residential level of service (gpcd)	71

Source: Northshore Utility District Sewer Plan, 2009. City of Kirkland Comprehensive Plan Utilities Element, 2015 (Draft).

Woodinville Water District

All analysis discussed in this Comprehensive Plan regarding Woodinville Water District (WWD) refers to information provided the Woodinville General Sewer Plan from 2007. Woodinville's plan predates the City of Kirkland's annexation of parts of unincorporated King County, north of NE 131st Street.

WWD provides sanitary service to customers within its boundaries within the urban growth area (UGA) that are not served by other agencies such as the Northshore Utility District. The existing service area encompasses nearly 18,200 acres. WWD has 2,500 sewer connections with approximately 2,100 for residential purposes and 400 for commercial, industrial, or municipal purposes. WWD's level of service is 75 gallons per day per capita.

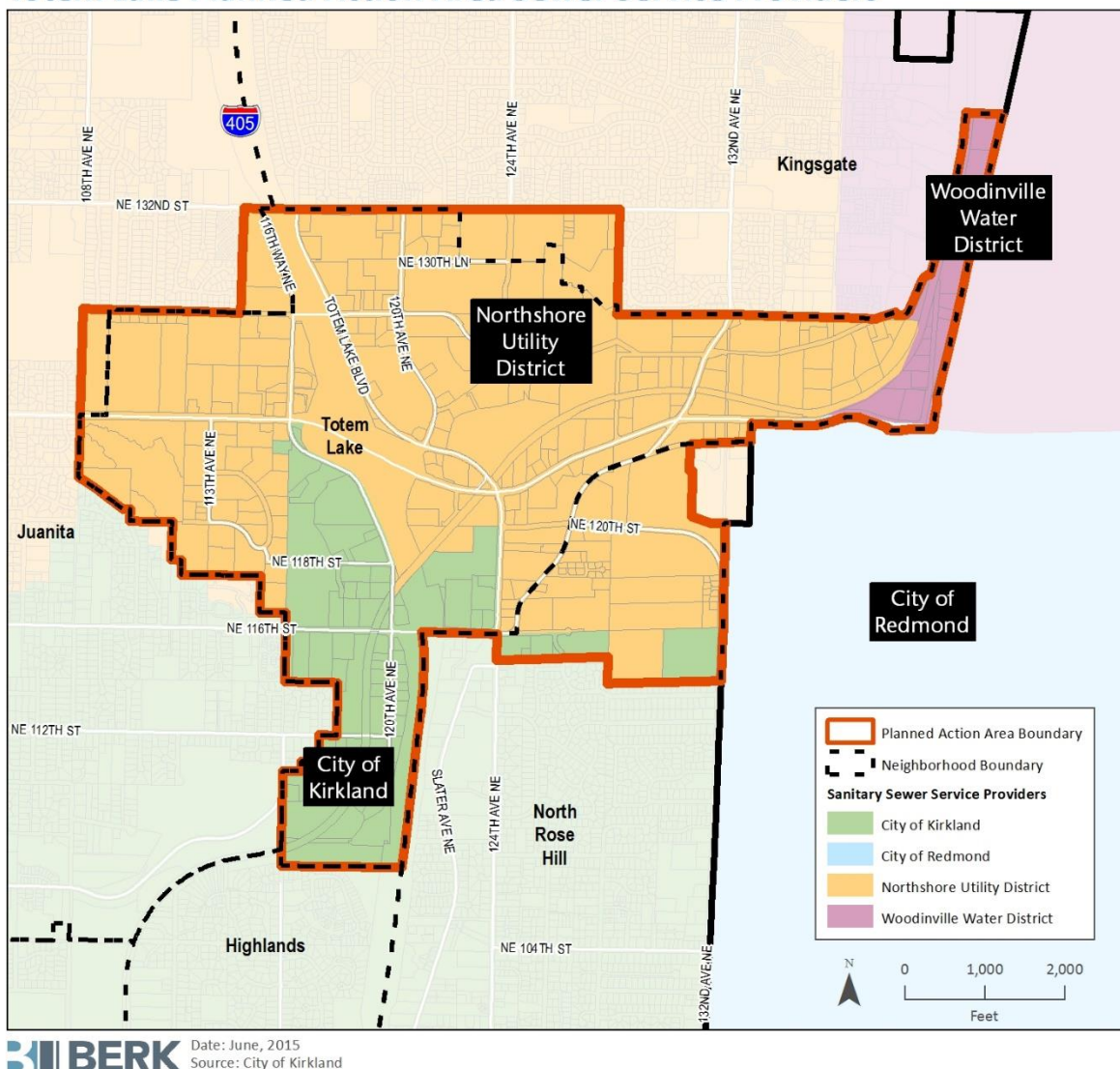
Wastewater flows are collected and conveyed through WWD owned facilities and then discharged into King County owned facilities. WWD's service area consists of ten mini-basins with a mix of land uses.

TOTEM LAKE PLANNED ACTION AREA

NUD provides sewer service to the area north of NE 116th Street within the Totem Lake Planned Action Area; the remaining area is served by the City of Kirkland and WWD. WWD's provides sewer service to the area north of NE 131st Street and west of 132 Avenue NE. The Totem Lake Planned Action Area spans four drainage basins and four sub-basins within the Kirkland sewer system: KRK015, KRK001, KRK005, and ESI14058. A map of sewer provider service areas within the Totem Lake Planned Action Area is shown in Exhibit 3.8-9.

Exhibit 3.8-9. Totem Lake Planned Action Area Sewer Service Providers

Totem Lake Planned Action Area Sewer Service Providers



Stormwater

This section addresses current conditions, impacts, and mitigation measures on constructed drainage facilities such as ditches, culverts, enclosed drainage system, detention ponds, and infiltration facilities.

EXISTING REGULATORY REQUIREMENTS

Stormwater is water that runs off the landscape during or directly after rain or snow events (Kirkland, Surface Water Masterplan, 2014). In urban areas, development has changed the amount and rate of stormwater runoff and pollution. This has led to problems with flooding, water quality, and aquatic habitat in local streams and lakes. The City of Kirkland updated its Surface Water Master Plan in November 2014; the previous update was in 2005. The Surface Water Master Plan addresses stormwater management within the City through 2035, which is the responsibility of the Surface Water Utility.

The Kirkland Surface Water Utility was created in 1998. In the following years, important regional and national regulatory changes regarding stormwater took place and were implemented that focused on clear recognition of

impacts to natural resources and aquatic species. The listing of the Puget Sound Chinook salmon as a threatened species in 1999 under the Endangered Species Act (ESA) resulted in significant surface water management changes. Since the 2005 update to the Surface Water Master Plan, the city of Kirkland's size has increased with the annexation of the Finn Hill, Juanita, and Kingsgate areas. Additionally, the National Pollutant Discharge Elimination System (NPDES) Phase II Municipal Separated Storm Sewer System (MS4) Permit (Permit) was issued on August 1, 2013. In recent years, the concept of low-impact development (LID) has gained recognition as a preferred method of stormwater management. LID is a land use and stormwater management strategy that strives to minimize hydrologic processes that would happen in a natural landscape.

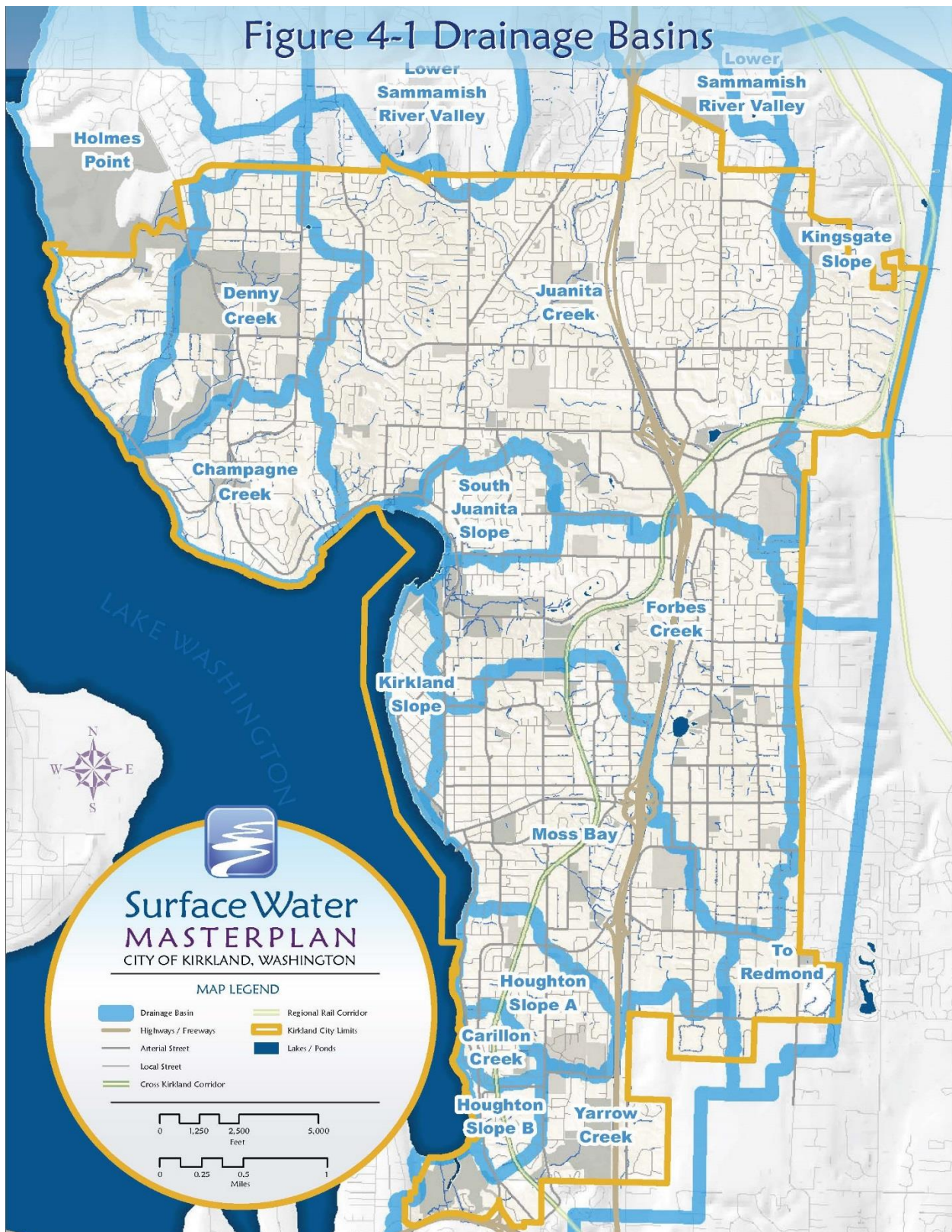
INVENTORY OF CURRENT FACILITIES

Kirkland Planning Area

Kirkland's stormwater management system is a collection of both public and private facilities. Publicly owned stormwater flow control facilities are maintained by the City, while privately-owned facilities are inspected by City crews, and owners are required to perform maintenance according to City code.

There are 15 drainage basins within the City of Kirkland. Most of these basins drain into Lake Washington, and a few drain into the Sammamish River, which then flows into Lake Washington. The City of Kirkland lies within the Cedar River/ Lake Washington Watershed. Exhibit 3.8-10 shows the location of the city of Kirkland Drainage Basins.

Exhibit 3.8-10. City of Kirkland Drainage Basins



KIRKLAND COMPREHENSIVE PLAN UPDATE & TOTEM LAKE PLANNED ACTION DEIS | AFFECTED ENVIRONMENT, SIGNIFICANT IMPACTS, AND MITIGATION MEASURES

Exhibit 3.8-11 describes the condition of the miles of water pipes (excellent, fair, good, poor) for each water basin in the City of Kirkland. Exhibit 3.8-11 also shows the percent of city pipes that have been CCTV inspected, the miles of city pipes cleaned, the percentage of city pipes cleaned, and the percent of city pipes CCTV inspected/ cleaned per basin.

Exhibit 3.8-11. Summary of Pipes CCTV Inspected and Condition Ratings by Drainage Basin

Basin	Condition of Pipe (in miles)				Percent of City Pipe CCTV Inspected	City Pipe Cleaned (in miles)	Percent of City Pipe Cleaned	Percent of City pipe CCTV inspected/ cleaned per basin
	Excellent	Fair	Good	Poor				
Carillon Creek	0.03	0.22	0.06	0.01	12.34%	1.19	42.16%	54.50 %
Champagne Creek	0.00	0.06	0.08	0.11	1.85%	0.39	2.86%	4.71 %
Denny Creek	0.01	0.16	0.08	0.04	2.10%	0.57	3.97%	6.07 %
Forbes Creek	0.59	4.55	4.21	2.07	24.61%	13.01	28.03%	52.64 %
Holmes Point	0.00	0.05	0.09	0.08	3.53%	0.36	5.89%	9.42 %
Houghton Slope A	0.09	1.44	0.93	0.40	29.67%	2.70	28.02%	57.69 %
Houghton Slope B	0.00	0.17	0.30	0.11	22.11%	1.55	60.39%	82.49 %
Juanita Creek	0.54	7.51	4.52	2.22	17.26%	8.82	10.29%	27.54 %
Kingsgate Slope	0.01	0.81	0.17	0.05	7.85%	0.89	6.69%	14.54 %
Kirkland Slope	0.12	2.88	1.40	0.59	74.38%	0.47	7.01%	81.39 %
Lower Sammamish River Valley	0.00	0.29	0.03	0.02	42.54%	0.00	0.00%	42.58 %
Moss Bay	0.50	5.69	4.31	1.31	26.61%	12.05	27.14%	53.74 %
South Juanita Slope	0.06	1.17	1.23	0.68	37.60%	2.55	30.52%	68.12 %
To Redmond	0.16	0.96	0.84	0.12	25.58%	3.58	43.98%	69.57 %
Yarrow Creek	0.00	0.23	0.32	0.11	8.70%	2.88	37.96%	46.67 %
Grand Total	2.11	26.19	18.57	7.92	20.25 %	50.94	18.83 %	39.08 %

Legend: CCTV = Closed Caption Television

Source: City of Kirkland Surface Water Master Plan, 2014.

CAPITAL IMPROVEMENT PROJECTS

The Surface Water Master Plan identifies the following Capital Improvement Projects (CIP) planned for 2013-18:

- Surface Water Funding for Transportation Projects (\$950,000 per year)
- Other Projects (\$1.59 M per year on average for 2013-18):
 - Streambank stabilization projects (\$350,000 per year)
 - Neighborhood drainage assistance projects (\$50,000 per year)

KIRKLAND COMPREHENSIVE PLAN UPDATE & TOTEM LAKE PLANNED ACTION DEIS | AFFECTED ENVIRONMENT, SIGNIFICANT IMPACTS, AND MITIGATION MEASURES

- Replacement of aging/ failing infrastructure (\$200,000 per year)
- Annual infrastructure replacement (\$350,000 per year on average)
- Other projects (remainder, or about \$100,000 - \$150,000 per year)

Totem Lake Planned Action Area

The drainage basins close to the Totem Lake Planned Action Area include Juanita, and Forbes Creek basins.

The City of Kirkland Surface Water Master Plan identifies Totem Lake as a neighborhood that has the largest flooding problems in the City of Kirkland. The Master Plan states that projects constructed in 2011-13 have already reduced water levels, and future projects scheduled to be completed in 2016 would further reduce water levels and flood risk. In order to alleviate these flooding problems, the Totem Lake Flood Relief project monitors water levels in the Totem Lake Area. This work would be continued through 2016. Additionally, an Ecology/ National Estuary Program grant is currently studying the stormwater retrofit of the Totem Lake portion of Juanita Creek.

LEVEL OF SERVICE

Under the City's Comprehensive Plan, the level of service for stormwater services is as follows:

"Convey, detain and treat stormwater runoff in a manner that provides adequate drainage for the appropriate storm to ensure safety, welfare, and convenience in developed areas while protecting the hydrologic regime and quality of water and fish/ wildlife habitat in streams, lakes and wetland."

Performance Measures

The Surface Water Master Plan identifies the following performance measures in order to help the Utility stay accountable to the City Council and citizens of Kirkland. The following proposed Utility performance measures specifically address Utility goals and relevant elements of City-wide goals. Many of these are already tracked as part of required reporting on the NPDES Phase II Permit.

FLOODING

- Flood reduction projects constructed within 5 years of problem identification (implementation)
- Number of flood-related road closures. Goal: 0 for up to a 50-year event (effectiveness)

WATER QUALITY

- Compliance with NPDES Phase II Permit. Goal: 100% compliance (implementation)
- Number of stream reaches on the Department of Ecology's list of water-quality-impaired waters (the 303(d) list): Goal = 0 (effectiveness)

INFRASTRUCTURE

- Percentage of pipes TV inspected per year. Goal: 10% of total length per year inspected and/or cleaned (implementation)
- Number of calls regarding infrastructure-related flooding. Goal: trend downwards (effectiveness)

HABITAT

- Area retrofit with stormwater treatment and flow control facilities. Goal: develop percentage upon completion of map showing areas already treated (implementation)
- Benthic Index of Biotic Integrity (BIBI) Improvement. Goal: bring all Kirkland stream reaches up to fair (BIBI of 35) condition in 20 years (effectiveness)

Power and Natural Gas

KIRKLAND PLANNING AREA

Puget Sound Energy (PSE) provides both electric and natural gas services in Kirkland. PSE is the oldest local energy provider in Washington and maintains over 7,000 miles of electric distribution lines and over 5,800 miles of natural gas pipeline in King County. As of 2010, PSE served over 514,000 electric customers and 427,000 natural gas customers in King County. (Puget Sound Energy, 2010)

The Washington Utilities and Transportation Commission (WUTC) requires providers of electricity to provide service on demand in support of growth that occurs in their service areas. As such, PSE conducts an ongoing capacity planning process to ensure their power supply and infrastructure are adequate to meet anticipated future needs.

A 2013 report prepared for PSE determined that an electricity transmission capacity deficiency will develop in the Eastside Area of Lake Washington, including Kirkland, by the winter of 2017-2018. (Quanta Technology, 2013) The projected shortfall would cause a loss of redundancy which could lead to power outages. To address transmission capacity deficiency, PSE is planning a new electric substation and 18 miles of transmission lines from Redmond to Renton. (Puget Sound Energy, 2015)

PSE provides natural gas to six counties in Washington State, including King County. The gas industry is regulated by the Washington Utilities and Transportation Commission.

TOTEM LAKE PLANNED ACTION AREA

Totem Lake is served by the same natural gas, electricity, and telecommunications infrastructure and services as the rest of the Kirkland planning area.

The Olympic Pipeline Company, operated by BP Pipelines, operates petroleum pipelines that which pass through the Kingsgate and Totem Lake neighborhoods carrying gasoline, diesel, and aviation fuel. The pipelines are hazardous liquid pipelines and, if ruptured or damaged, can pose a risk to public safety and the environment. The Federal Office of Pipeline Safety (OPS) regulates interstate pipeline facilities; the Washington State Utilities and Transportation Commission has authority to act as an agent for OPS. Kirkland's Fire Department has reciprocal emergency response agreements with surrounding jurisdictions in the event of a pipeline failure.

Telecommunications

Telephone service in Kirkland is provided by Frontier Communications Northwest, Inc. (Washington Utilities and Transportation Commission, 2014) Telecommunication providers provide their services upon demand from consumers and engage in their own capacity planning processes to ensure that they have adequate facilities to accommodate future growth in their service areas. In addition, providers of essential utilities, such as landline telephone service, are required by the Washington Utilities and Transportation Commission (WUTC) to regularly evaluate the capacity of their facilities.

Impacts

Water

IMPACTS COMMON TO ALL ALTERNATIVES

Demand for water service would increase under any of the alternatives, which will impact supply. Water distribution improvements for system deficiencies as identified in the City's Comprehensive Water System Plan, the Northshore Water System Plan, and the Woodinville Water System Plan must be provided and fire flow requirements must be met by the City and Districts under all alternatives.

Each of the alternatives would result in the same amount of citywide population growth, but the distribution of the growth within the city would differ across alternatives as displayed in Exhibit 3.8-12.

Because there are multiple water service providers across the City of Kirkland, and no formal coordinated planning effort has been established, it is important that the City of Kirkland share anticipated growth under each alternative with both Northshore Utility District and Woodinville Water District to ensure that providers understand that there are different possibilities for the distribution of growth across the city and are able to update their system plans accordingly.

Exhibit 3.8-12. Additional Growth (2035) by Water System

	No Action		Alternative 2		Alternative 3	
	New Housing Units	New Employees	New Housing Units	New Employees	New Housing Units	New Employees
City of Kirkland	5,143	16,236	5,991	15,886	5,331	16,236
Northshore Utility District	2,566	4,709	2,029	4,759	2,283	4,709
Woodinville Water District	645	1,489	334	1,789	740	1,489
Total	8,354	22,434	8,354	22,434	8,354	22,434

Source: City of Kirkland, BERK Consulting, 2015. This table does not evaluate growth in the small area of southeastern Kirkland served by the City of Bellevue.

City of Kirkland Water Utility

Estimated water service demand for each of the alternatives was derived by multiplying the average demand per capita in Kirkland for years 2011-2013 by the estimated planning area population for 2035. This calculation results in an overestimation of demand because the Kirkland Planning Area is larger than the existing retail water service area, and is served by Northshore Utility District and Woodinville Water District.

Exhibit 3.8-13 shows the estimated retail water service area population for the City of Kirkland and is provided for context. Under all three alternatives, the City of Kirkland has sufficient capacity to serve projected growth demands.

Exhibit 3.8-13. Estimated Water Demand and Supply Analysis

Area of Demand	2035 Estimated Water Demand (in gallons) Alternatives 1 - 3
Kirkland Planning Area	3,526,898,275
Surplus/Deficiency	2,057,601,725
Kirkland Service Area	1,853,374,692
Surplus/Deficiency	3,731,125,308

Source: BERK Consulting, 2015.

Northshore Utility District

According to its 2009 Water System Plan, Northshore Utility District projected service demands through 2026 and performed a complete buildout scenario. The NUD plan defines the buildout condition for its service area as a population of approximately 118,584 and employment of 24,199. Using this analysis, NUD states that it has sufficient capacity in its existing storage and distribution system to meet projected growth through 2026, but as stated earlier, NUD projects a deficiency of 1.08 mgd for District ADD and Peak Season Demand in its buildout scenario planning. NUD has identified system upgrades and replacements that will be required to maintain and improve reliability; these improvements are outlined in their Capital Improvement Program.

Exhibit 3.8-14 demonstrates the estimated additional water consumption for each alternative, according to 2005 average daily consumption data per capita and per employee as provided in the NUD water system plan.

Exhibit 3.8-14. Northshore Utility District Employment and Residential Consumption Analysis

Northshore Utility District	Employment	Households ¹	Estimated Additional Consumption (gpd)
Alternative 1	4,709	2,566	579,292
Alternative 2	4,759	2,029	496,060
Alternative 3	4,709	2,283	534,489

1. Consumption for households assumes average of 2.4 persons per household, which is the average number of persons for low density, moderate density, and high density residential households based on data from the 2000 Census as provided by the Washington State Office of Financial Management.

Source: BERK Consulting, 2015.

Woodinville Water District

Woodinville Water District forecasted demand and performed source analysis in their 2008 Comprehensive Water System Plan. Source analysis revealed that in 2027, the West Service Area – the area in which the Totem Lake Planning Area falls – will be deficient by approximately 200 gpm of supply. However, the West Service Area has an additional available source (Tap 167) that is undeveloped, but could be used if future growth required it.

Exhibit 3.8-15. Woodinville Water District Residential Consumption Analysis

Woodinville Water District	Residential Units	Estimated Additional Consumption (gpd)
Alternative 1	645	132,291
Alternative 2	334	68,527
Alternative 3	740	151,726

* Additional consumption for employment units was not evaluated because there was no average employment consumption metric available in the Woodinville water system plan.

Source: BERK Consulting, 2015.

ALTERNATIVE 1 (EXISTING PLANS - NO ACTION)

Kirkland Planning Area

As displayed in Exhibit 3.8-12, the City of Kirkland water service area will receive the greatest share of growth under Alternative 1. According to the analysis, the City of Kirkland can meet estimated water demands for projected growth under the Existing Plans – No Action Alternative. The bulk of this new growth will be in the form of new employment.

Northshore Utility District will receive a large amount of growth under Alternative 1, with the majority of the growth being new employment. Alternative 1 results in the largest amount of additional consumption.

Woodinville Water District will receive considerable growth under Alternative 1. The majority of the new growth will be in employment, but there will also be new housing units to serve.

Totem Lake Planned Action Area

As described above, the City of Kirkland is projected to have sufficient supply to meet water demands for projected growth in the portion of Totem Lake within its service area.

Northshore Utility District and Woodinville Water District will need to evaluate their system to make sure they can serve continued growth in their small service area portions of the study area. The majority of this growth will be additional employment. WWD has a very small area of service within the Totem Lake Planned Action area compared to Kirkland and NUD's service area responsibility.

ALTERNATIVE 2 (TOTEM LAKE/DOWNTOWN FOCUS)

Kirkland Planning Area

For Alternative 2 the majority of housing and employment growth is allotted to Kirkland's retail service area. The City of Kirkland can meet water demands for projected growth under the Totem Lake/Downtown Focus Alternative.

Alternative 2 presents the lowest estimated water consumption growth for Northshore Utility District and Woodinville Water District and would result in lower estimated demand for water service from these providers than Alternatives 1 or 3.

Totem Lake Planned Action Area

In order to accommodate concentrated development in Totem Lake and Downtown, the City of Kirkland and NUD may need to make modifications to the existing distribution systems there. For areas that are up-zoned and anticipate a growth in business and/or multifamily residential development, new or upsized distribution infrastructure may be necessary.

More detailed site-specific analysis of water availability will be required as part of project permitting for any specific development proposals.

ALTERNATIVE 3 (DISTRIBUTED GROWTH)

Kirkland Planning Area

Under Alternative 3, the majority of housing and employment growth is allotted to Kirkland's retail water service area. Kirkland has sufficient capacity to meet water demands for projected growth under the Distributed Growth Alternative.

NUD sees more housing growth in Alternative 3 than in Alternative 2, but less than in Alternative 1. Employment growth under Alternative 3 for NUD is the same as in Alternative 1, but less than the growth estimated under Alternative 2.

Alternative 3 presents the most housing and employment growth for WWD of all three alternatives.

Totem Lake Planned Action Area

Alternative 3 results in the greatest amount of employment growth for WWD, and may require modifications to the existing distribution systems, there depending on the specific development proposals. More detailed site-specific analysis of water availability will be required as part of project permitting for any specific development proposals.

Wastewater

IMPACTS COMMON TO ALL ALTERNATIVES

Demand for sewer service would increase under all alternatives, as increased population and growth will add to sewer flows. While overall population growth in Kirkland would be consistent, distribution of that growth to different areas of the community would vary by alternative. Sewer system improvements to meet future growth,

as identified in the City's Comprehensive Sewer Plan and the Northshore Utility District Sewer Plan, to meet future growth must be provided under all alternatives.

Because multiple sewer providers offer service within Kirkland's city limits, and no formal, coordinated planning process has been established among between them, it is important that Kirkland communicate anticipated growth under each alternative with both Northshore Utility District and Woodinville Water District to ensure that providers understand that there are different possibilities for the distribution of growth across the city.

Exhibit 3.8-16. Additional Growth (2035) by Sewer System

	No Action		Alternative 2		Alternative 3	
	New Housing Units	New Employees	New Housing Units	New Employees	New Housing Units	New Employees
City of Kirkland	4,093	15,262	4,841	13,465	4,480	15,262
Northshore Utility District	4,089	7,149	3,341	8,646	3,702	7,149
Woodinville Water District	171	23	171	323	171	23
Total	8,354	22,434	8,354	22,434	8,354	22,434

* This table does not evaluate growth in the small area of southeastern Kirkland served by the City of Bellevue.

Source: BERK Consulting, 2015.

City of Kirkland Wastewater Division

Estimated sanitary flows shown in Exhibit 3.8-18 were derived by multiplying the assumed rates of flow for residential population as shown in Exhibit 3.8-17 by the estimated planning area population for 2035. Flows are also estimated with a peaking factor of 2.0, which is consistent with King County's sewer monitoring methodology. This calculation results in an overestimation of flows because the City of Kirkland is larger than the Kirkland sewer service area.

Exhibit 3.8-17. Sewer Flow Projection Assumptions by Category

Category	Assumed Sewer Flows (gpcd)
Employment	10
Schools	7 to 10
Residential	60 to 100

Source: City of Kirkland 2008 Sewer Comprehensive Plan Update.

Exhibit 3.8-18. Kirkland Residential Sewer Flow Projections

Year	Estimated Service Area Population	Assumed Sewer Flow (gpcd)	Estimated Total Daily Flow (million gpd)	Peaking Factor	Peak Flow Rate (gpm)
2007	33,636	60 to 100	2.02 to 3.36	2.0	1,402 to 2,336
2022	35,523	60 to 100	2.13 to 3.55	2.0	1,480 to 2,467
2035*	37,289	60 to 100	2.23 to 3.72	2.0	1,554 to 2,590

* Years 2007 and 2022 are service population estimations provided by the City of Kirkland. 2035 is a projection using the same average annual growth rate for years 2007 to 2022.

Source: City of Kirkland 2008 Sewer Comprehensive Plan Update; Berk Consulting, 2015.

Northshore Utility District

NUD provides sewer service to the northern part of the City of Kirkland and most of the Totem Lake Planning Area. This area falls within NUD's Southeast Basin. NUD uses a peak factor of 2.5, which is higher than the City of Kirkland's peak factor of 2.0.

Exhibit 3.8-19. Northshore Utility District Residential Sewer Flow Projections

Year	Estimated Average Residential Flow (mgd)	Estimated Residential Peak Flow (mgd)
2005	4.91	12.30
2012	5.07	12.70
2026	5.40	13.50
Buildout	8.87	22.20

* Based on assumptions of 71 gpcd for average flow and a peak factor of 2.5.

Source: Northshore Utility District Sewer Plan, 2009.

Exhibit 3.8-20. Northshore Utility District Sewer Flow Projections

Year	Estimated Average District Flow (mgd)	Estimated Peak Flow (mgd)
2005	7.74	50.10
2012	7.97	50.60
2026	8.45	51.80
Buildout	12.00	60.60

*Includes domestic, commercial, and I/I and assumes 187 gallons per acre per day.

Source: Northshore Utility District Sewer Plan, 2009.

NUD's Sewer Plan identifies a number of projects that are required because the infrastructure is deficient under the current system or would be deficient at buildout. These projects include continued study on the development of an additional supply source from the Snohomish River Regional Water Authority water right, rehabilitating PRV stations throughout the system for system performance, upgrading and repairing transmission mains, upgrading the Norway Hill Booster Station to provide maximum day demand, repair and replacing distribution mains, and extending mains and services to increase reliability and reduce pumping costs to new development.

Woodinville Water District

The Woodinville Water District bases its future flow projections on flow monitoring conducted from 2000 to 2002 in each of their mini-basins. This flow data is presented in Exhibit 3.8-21.

Exhibit 3.8-21. Woodinville Water District Average Daily Sewer Flows

Year	Average Daily Flow in MGD (Weekdays)
2000-2001	0.0921
2001-2002	0.106

Source: Woodinville Water District General Sewer Plan, 2007.

Using these flows, the district estimated their buildout capacity, as shown in Exhibit 3.8-22. The district estimates that its service area will reach full development buildout conditions by the year 2025.

Exhibit 3.8-22. Woodinville Water District Sewer Flow Projections

Land Use	Estimated Buildout Sewage Flow
Residential	200 GPD/Dwelling Unit
Commercial	1,200-2,000 GPD/acre
Industrial	300-500 GPD/acre

Source: Woodinville Water District General Sewer Plan, 2007.

ALTERNATIVE 1 (EXISTING PLANS - NO ACTION)

Kirkland Planning Area

Under Alternative 1, Kirkland’s sewer service area would experience the highest amount of employment growth and about the same level of housing growth as NUD. The employment growth estimated for Kirkland’s retail service area is the same under Alternatives 1 and 3. NUD sees its highest amount of new housing growth under Alternative 1, and Woodinville Water District experiences the same amount of housing growth across all three alternatives, and lower employment growth under Alternatives 1 and 3.

With planned improvements, the City of Kirkland can serve through 2022 – the year the City’s current sewer plan assumes achievement of development buildout. If the number of people within the City’s sewer service continues to growth beyond the projected 2022 buildout conditions, additional sewer infrastructure would be necessary to serve the additional population and ensure that King County can continue to treat the system’s flows.

Totem Lake Planned Action Area

Northshore Utility District and the City of Kirkland will need to evaluate their systems to make sure they it can serve continued growth within its service area portions of the study area. The majority of this growth will be additional employment for NUD to serve and new housing units for the City of Kirkland to serve.

More detailed site-specific analysis of sewer service availability will be required as part of project permitting for any specific development proposals.

ALTERNATIVE 2 (TOTEM LAKE/DOWNTOWN FOCUS)

Kirkland Planning Area

Under Alternative 2, Northshore Utility and Woodinville Water District would experience higher employment growth than under Alternatives 1 and 3. Kirkland’s sewer service area receives lower employment growth than under Alternatives 1 or 3, but higher residential growth than under Alternatives 1 and 3. Woodinville Water District experiences its highest employment growth under Alternative 2, and the same amount of housing growth across all three alternatives.

With planned improvements, the City of Kirkland can serve its current retail sewer service area through 2022 – the year when the current sewer plan estimates development buildout will be achieved. If the number of people within the City’s sewer service continues to growth beyond the projected 2022 development buildout conditions, additional sewer infrastructure would be necessary to serve the additional population and ensure that King County can continue to treat the system’s flows.

Totem Lake Planned Action Area

Woodinville Water District sees a larger share of employment growth within the Totem Lake Planned Action Area. In order to accommodate concentrated development in Totem Lake and Downtown, the City of Kirkland, NUD, and Woodinville Water District may need to make modifications to the existing sewer facilities there. For areas that are up-zoned and anticipate a growth in business and/or multifamily residential development, new or upsized sewer infrastructure may be necessary.

More detailed site-specific analysis of sewer service availability will be required as part of project permitting for any specific development proposals.

ALTERNATIVE 3 (DISTRIBUTED GROWTH)

Kirkland Planning Area

Under Alternative 3, Northshore and the City of Kirkland's sewer service area would see the same amount of employment growth as in Alternative 1, which is less growth than in Alternative 2. NUD would see more housing growth than in Alternative 2, but less than Alternative 1. Under Alternative 3, Kirkland's sewer service area experiences more housing growth than under Alternative 1, but less than under Alternative 2. Woodinville Water District sees the same amount of housing growth across all three alternatives, and less employment growth in Alternatives 1 and 3.

With planned improvements, the City of Kirkland can serve its current retail sewer service area through 2022 – the year when the current sewer plan estimates buildout will be achieved. If the number of people within the City's sewer service continues to grow beyond the projected 2022 buildout conditions, additional sewer infrastructure would be necessary to serve the additional population and ensure that King County can continue to treat the system's flows.

Totem Lake Planned Action Area

Northshore Utility District, the City of Kirkland, and Woodinville Water District will need to evaluate their system to make sure it can serve continued growth within its service area portions of the study area. The majority of this growth will be additional employment for NUD and new housing units for the City of Kirkland.

More detailed site-specific analysis of water availability will be required as part of project permitting for any specific development proposals.

Stormwater

IMPACTS COMMON TO ALL ALTERNATIVES

Kirkland Planning Area

Under all alternatives, additional growth and development would likely increase the total amount of impervious surface in the city, creating additional stormwater runoff that will require management and treatment. However, as the quantity and intensity of development increases there may be opportunities to enhance stormwater treatment and water quality. Redevelopment at higher densities may actually result in a reduction of impervious surfaces if new landscaping and open space areas are incorporated into the redevelopment projects, depending on the nature of existing development. For example, the conversion of a large surface parking lot to high density mixed-use development would result in increased intensity and quantity of development (for housing and employment growth), but may result in a decrease in impervious surfaces and improved stormwater facilities such as Low Impact Development (LID) features may improve water quality. Concentrating growth in areas that are already heavily developed would minimize impervious surface increases and make stormwater management more efficient. This would allow for a greater use of consolidated stormwater collection, including regional detention and infiltration systems. Distribution of growth across the city into areas that are currently less intensely developed could lead to greater increases in citywide impervious surface area, which would create demand for more dispersed stormwater infrastructure (pipes, detention ponds, etc.) for a larger area, thus reducing the efficiency with which the City can provide this service.

Totem Lake Planned Action Area

Under all of the Alternatives, the Totem Lake Planned Action Area would receive large percentages of housing and employment growth – with the exception of housing growth in Alternative 3. Since the Totem Lake Planned Action

Area is already developed, focusing additional concentrated growth into this area is effective for making stormwater collection more efficient. However, because the Totem Lake area also has the highest number of flooding problems in the city, it would be important to continue to prioritize this area for stormwater management capital improvements and flood control projects to effectively manage stormwater and reduce threats to property from flood events.

The following drainage basins collect stormwater runoff from the Totem Lake Planned Action Area:

- **Juanita Creek.** This basin contains 27.54% of the pipes the City has inspected via CCTV. Based on these inspections, the Juanita Creek Basin includes 0.54 mile of excellent pipes; 7.51 miles of fair pipes; 4.52 miles of good pipes; and 2.22 miles of poor pipes.
- **Forbes Creek.** This basin contains 52.64% of the pipes the City has inspected via CCTV. Based on these inspections, the Forbes Creek Basin includes 0.59 mile of excellent pipes; 4.55 miles of fair pipes; 4.21 miles of good pipes; and 2.07 miles of poor pipes.

ALTERNATIVE 1 (EXISTING PLANS - NO ACTION)

Kirkland Planning Area

Under the No Action Alternative, the largest percentage of housing growth would be distributed throughout the City; however, there would still be a high percentage of additional housing growth concentrated in the Totem Lake Planned Action Area.

See Impacts Common to All Alternatives.

Totem Lake Planned Action Area

Under the No Action Alternative, the Totem Lake Planned Action Area receives 30.5% of the projected housing growth, and 37.5% of the projected employment growth. With over four miles of poor pipes at Juanita Creek and Forbes Creek, additional concentrated housing and employment growth would increase the need for new pipes.

See Impacts Common to All Alternatives.

ALTERNATIVE 2 (TOTEM LAKE/DOWNTOWN FOCUS)

Kirkland Planning Area

Under Alternative 2, the highest percentage of housing and employment growth would be in the Totem Lake Planned Action Area. See Impacts Common to All Alternatives.

Totem Lake Planned Action Area

Under Alternative 2, the Totem Lake Planned Action Area receives 41.2% of the new housing growth and 48.0% of the new employment growth. With over four miles of poor pipes at Juanita Creek and Forbes Creek, additional concentrated housing and employment growth would increase the need for new pipes.

See Impacts Common to All Alternatives.

ALTERNATIVE 3 (DISTRIBUTED GROWTH)

Kirkland Planning Area

Alternative 3 would result in a distribution of future growth over a large portion of the city. Under Alternative 3, the greatest concentration of housing growth would be located in neighborhood centers (25.1%), while Totem Lake would remain the primary employment growth center (36.7%). The Central Business District would receive a higher share of housing growth than under any other alternative, but a lower share of employment growth, and would remain a major development center for the city.

See Impacts Common to All Alternatives.

Totem Lake Planned Action Area

Under Alternative 3, the Totem Lake Planned Action Area receives 14.9% of the new housing growth and 36.7% of the new employment growth. With over four miles of poor pipes at Juanita Creek and Forbes Creek, additional concentrated housing and employment growth would increase the need for new pipes and improved stormwater management infrastructure.

See Impacts Common to All Alternatives.

Power, Gas, and Telecommunications

IMPACTS COMMON TO ALL ALTERNATIVES

Population growth under any of the alternatives will result in increased demand for utility services. All three alternatives test the same level of overall growth, consistent with the City's adopted 2035 growth targets: 8,361 housing units and 22,435 jobs, but each alternative tests a different distribution of growth within Kirkland. The areas with the highest levels of housing or employment growth could require more electrical, natural gas, and telecommunications infrastructure to serve that growth.

Under all alternatives, development in the study area will increase the consumption of electricity and natural gas, though the precise level of consumption will vary based on the specific uses developed. Both electric power and natural gas are readily available in the study area, and PSE conducts continuous resource planning to ensure adequate energy supply within its service area. No significant impacts associated with electrical power and natural gas are anticipated under any of the Alternatives.

A variety of telecommunications services are available in the study area. While development in the area would likely require additional installation of telecommunication infrastructure (phone lines, fiber optic cables, etc.), these are private facilities owned and operated by private service providers. The cost for these system improvements would be borne by the individual service providers, and no significant impacts associated with telecommunications are anticipated under any of the Alternatives.

ALTERNATIVE 1 (EXISTING PLANS - NO ACTION)

Kirkland Planning Area

Under Alternative 1, future employment would be concentrated in Totem Lake and the CBD; Together, these two centers would accommodate approximately 64% of future employees, and the CBD would receive substantially more employment growth under Alternative 1 than under the other alternatives. Additional facilities for electrical power, natural gas, and telecommunications could be necessary to support this employment growth, particularly telecommunications infrastructure to support businesses. Housing growth in these areas, as well as in Neighborhood Centers, which would receive about 17% of future housing, could also require additional services and infrastructure.

Totem Lake Planned Action Area

Under Alternative 1, Totem Lake would be allocated fewer new jobs than under Alternatives 2 and 3: 8,416 new jobs versus 10,763 in Alternative 2 and 10,583 in Alternative 3. This could reduce the need for electrical, natural gas, and telecommunications facility improvements in Totem Lake, as compared to the other Alternatives.

ALTERNATIVE 2 (TOTEM LAKE/DOWNTOWN FOCUS)

Kirkland Planning Area

Alternative 2 would focus approximately 57% of housing growth and 64% of employment growth in Totem Lake and CBD. Under this Alternative, the CBD would be allocated fewer jobs than under Alternative 1, but more than under Alternative 3. However, the CBD would experience increased housing growth relative to Alternative 1. Neighborhood centers would experience their lowest levels of growth under Alternative 2, reducing demand for services and infrastructure in these locations.

Totem Lake Planned Action Area

Under this alternative, 3,444 new households and 10,763 new jobs would be allocated to Totem Lake, more than under Alternatives 1 and 3. As a result, the largest concentrated demand for additional power, natural gas, and telecommunications facilities under Alternative 2 would be concentrated in the Totem Lake area.

Concentrating new households in Totem Lake rather than in Neighborhood Centers or other parts of the city may create efficiencies in the distribution of utilities like power, natural gas, and telecommunications, requiring less transmission and distribution infrastructure.

ALTERNATIVE 3 (DISTRIBUTED GROWTH)

Kirkland Planning Area

Under this Alternative, more housing and job growth would be allocated to Neighborhood Centers, and increased employment would be allocated to the LIT areas, which could require new or upgraded electrical, natural gas, and telecommunications facilities in those areas.

Totem Lake Planned Action Area

This Alternative allocates the smallest amount of new housing units to Totem Lake, as compared to the other Alternatives, and the second-highest number of new jobs. This could reduce requirements for expanded electrical, natural gas, and telecommunications facilities in Totem Lake.

Mitigation Measures

Water

INCORPORATED PLAN FEATURES

Kirkland Planning Area

- City of Kirkland 2013 Comprehensive Plan's Policy U-1.9 directs the City to coordinate with other jurisdictions when utility additions and improvements cross jurisdictional boundaries to ensure that decisions are consistent with regional demand and resources and consistency in timing of permit review.
- City of Kirkland 2013 Comprehensive Plan's Policy U-2.1 directs the City to work in coordination with other jurisdictions and purveyors in the region to ensure a reliable, economic source of water and to address the long-term regional water demand needs of all agencies and purveyors.
- City of Kirkland's 2015 Revised Utilities Element's Policy U-7.1 directs the City to encourage energy through public education. Water conservation is the most cost effective source of additional supply and is hydroelectric dams are a critical source of energy throughout the region. It is important to promote conservation to further Kirkland's sustainability goals.

Totem Lake Planned Action Area

None.

APPLICABLE REGULATIONS AND COMMITMENTS

Kirkland Planning Area

- Pursuant to RCW 58.17.110, local authorities must review plat applications and require that adequate provisions are made for a variety of public facilities, including potable water.
- Water supply facilities for new development and public water system expansions must be designed to meet, at a minimum, the fire flow levels specified in the Washington Administrative Code (WAC) 246-293-640, the International Fire Code, and the King County Code (KCC) Title 13.

Totem Lake Planned Action Area

- Pursuant to City Code, utility improvement costs associated with development projects are generally the responsibility of the developer, though the precise amount is dependent on a variety of factors, including timing and funding of planned capital improvements.
- Goal TL-11 of the Totem Lake Plan seeks to prioritize available infrastructure funding to projects within Totem Lake to support development within its Urban Center. Policy TL-11.1 supports this goal by directing the City to coordinate with developer to provide required flow control and water quality treatment.

OTHER POTENTIAL MITIGATION MEASURES

Kirkland Planning Area

- The City should update its Comprehensive Plan Utilities Element, as well as its Water System Plan to address potential deficiencies.
- The City should coordinate with water service providers to make sure each provider is prepared to meet the anticipated level and type of growth.
- The City and adjacent water providers should, as needed, increase the size of piping, install additional looping to increase water pressure for fire flow, and/or increase frequency of hydrant placement to meet fire flow requirements.
- The City could review and revise landscaping codes as necessary to encourage use of native plantings and reduce demand for water.

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- The City and adjacent water service providers should encourage water conservation, native plantings, and the use of rainwater retention systems in new and existing development to reduce water demand for domestic and commercial landscaping needs.

Totem Lake Planned Action Area

- The City should coordinate with Northshore Utility District and Woodinville Water District to make sure each provider is prepared to meet the growth planned for the Totem Lake Planned Action Area.

Wastewater

INCORPORATED PLAN FEATURES

Kirkland Planning Area

- City of Kirkland 2013 Comprehensive Plan's Policy U-3.1 directs the City to work with King County, adjoining jurisdictions, and local purveyors to manage, regulate, and maintain the regional sewer system.

Totem Lake Planned Action Area

No additional mitigation measures are proposed.

APPLICABLE REGULATIONS AND COMMITMENTS

Kirkland Planning Area

- Pursuant to the Revised Code of Washington (RCW) 58.17.110, local governments must review plat applications to ensure that adequate provisions are made for a variety of public facilities, including "sanitary wastes."
- Capital plans of wastewater service providers are intended to proactively plan for future systems to meet growth projections.

Totem Lake Planned Action Area

OTHER POTENTIAL MITIGATION MEASURES

KIRKLAND PLANNING AREA

- The City should update its Comprehensive Plan Utilities Element, as well as its Sewer System Plan to address potential deficiencies.
- The City should coordinate with sewer service providers to make sure each provider is prepared to meet the anticipated level and type of growth.

Totem Lake Planned Action Area

- The City should coordinate with Northshore Utility District and Woodinville to make sure each provider is prepared to meet the growth planned for the Totem Lake Planned Action Area.

Stormwater

INCORPORATED PLAN FEATURES

Kirkland Planning Area

- The following policy-oriented programmatic strategies are included in the 2014 Surface Water Master Plan:
 - CW 12- Beaver Management Policy: Evaluate the need for a formal policy of how and when to manage beavers that impact public facilities or large numbers of private parcels, and consider how to fund ongoing costs for beaver management.
 - CW 14 -Evaluate Incentives and Rebate Programs: Evaluate existing incentive and rebate programs for financial impacts and effectiveness at achieving desired results

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- CW 15 – Utility Rate Study: Conduct a rate study to assess short-term and long-term program revenue needs and evaluate partitioning of funds between operations and capital projects
- CW 20 – Incorporation of LID into City Capital Projects: Develop a preliminary policy to support capital project engineers in the use of LID on City projects
- CW 25 – Evaluation of Stream Deltas in Lake Washington: Evaluate whether a policy is needed to direct the Surface Water Utility in decisions related to if or when it would conduct dredging to maintain functionality of marinas or boat launches
- CW 35 – Private Streambank Stabilization Program: Evaluate the existing private streambank stabilization program and provide recommendations for future continuation and project criteria
- CW 37 – Volunteer Involvement: Evaluate the use of volunteers for surface water program activities and recommend whether the program should be expanded, diminished, or abandoned based on benefits and costs
- CW 38 – Neighborhood Drainage Assistance: Evaluate the current neighborhood drainage assistance program and develop criteria for providing assistance

Totem Lake Planned Action Area

The 2014 Surface Water Master Plan recommends the following capital projects to address stormwater management and flooding in the Totem Lake Planned Action Area. Because runoff draining into Juanita Creek and Forbes Creek has the potential to affect conditions in Totem Lake, not all the listed projects are located within the Planned Action Area. It is worth noting that out of the 27 non-citywide capital projects listed, 15 are projects targeting Forbes Creek and Juanita Creek basins.

Exhibit 3.8-23. Surface Water Master Plan Totem Lake Capital Projects

ID	Basin	Location	Project Type	Description	Cost (\$K) in 2014 Dollars
CW-INF-01	Citywide	Various: 14 poorly rated pipes located along arterials	Infrastructure	Pipe repair and replacement	\$769
CW-INF-02	Citywide	Various: 70 poorly rated pipes in the rest of the city	Infrastructure	Pipe repair and replacement	\$3,025
FO-01	Forbes Creek	108 th Avenue NE	Habitat	Fish Passage	\$333
FO-02	Forbes Creek	Near NE 116 th Street	Flooding	Regional detention in Forbes Creek basin	\$10,000
FO-05	Forbes Creek	KC Metro Access Road	Habitat	Culvert replacement	\$1,058
FO-07	Forbes Creek	Coors Pond	Water Quality	Channel grade control	\$165
FO-08	Forbes Creek	Forbes Creek crossing under CKC	Habitat	Forbes Creek/ BNSF Fish Passage Improvement	\$424

KIRKLAND COMPREHENSIVE PLAN UPDATE & TOTEM LAKE PLANNED ACTION DEIS | AFFECTED ENVIRONMENT, SIGNIFICANT IMPACTS, AND MITIGATION MEASURES

ID	Basin	Location	Project Type	Description	Cost (\$K) in 2014 Dollars
FO-13	Forbes Creek	Rose Hill Retrofit	Water Quality	Pilot LID project associated with planned transportation project	\$65
JC-01	Juanita Creek	109 th Avenue NE, north of NE 135 th Street (Weaver's Pond)	Water Quality	Sediment Removal	\$194
CJC-9	Juanita Creek	NW Tributary at 137 th Street	Habitat	Culvert replacement to improve fish passage	\$613
JC-02	Juanita Creek	NE 132 nd Street between I-405 and 124 th Avenue NE	Infrastructure	Infrastructure/conveyance	\$874
JC-03	Juanita Creek	SW corner of intersection of 100 th Avenue NE and NE 128 th Street	Habitat	Juanita Creek floodplain creation	\$533
JC-04	Juanita Creek	12204 NE 124 th Street (north side of Totem Lake Boulevard) Comfort Inn Pond	Flooding	Flow Diversion	\$266
JC-05	Juanita Creek	NE 141 st Street and 111 th Avenue NE	Infrastructure	Culvert replacement	\$765
JC-06	Juanita Creek	Goat Hill	Flooding	Re-route flow	\$521
JC-07	Juanita Creek	Goat Hill	Flooding	Stabilize eroding channel	\$299
JC-08	Juanita Creek	Goat Hill	Flooding	Increase conveyance capacity	\$490

Source: City of Kirkland, Surface Water Master Plan, 2014.

The Draft Totem Lake Plan identifies the following policies:

TL – 5.1: Enhance the habitat quality of the Juanita Creek corridor. The City should initiate and support efforts to enhance the biological integrity of Juanita Creek, such as requirements for improved/ enhanced buffers and reduced impervious surface area, partnership with other agencies or interested parties for improvements, acquisition of key areas or other measures.

TL – 11.2: Provide Stormwater management facilities to serve untreated and uncontrolled run off from already-developed impervious surfaces.

TL – 11.3: Evaluate opportunities for regional approaches to provide Stormwater management facilities and provide incentives to property owners to partner with the City to site these facilities.

TI – 11.4: Reduce the overall rate and volume of Stormwater runoff during peak storm periods.

APPLICABLE REGULATIONS AND COMMITMENTS

Kirkland Planning Area

- Design and construction standards for stormwater management facilities are established in Chapter 15.52.060 of the Kirkland Municipal Code. This chapter requires the application of best management practices as set forth in the 2005 Stormwater Management Manual for Western Washington.
- Hydraulics Project Approval permits from the Washington Department of Fish and Wildlife will be required for any in-water work for stormwater infrastructure, such as outfalls.
- City stormwater projects must comply with the provisions of Section 404 of the Federal Clean Water Act.

Totem Lake Planned Action Area

Applicable regulations and commitments in the Totem Lake Planned Action Area are the same as for the Kirkland Planning Area as a whole.

OTHER POTENTIAL MITIGATION MEASURES

Kirkland Planning Area

- The City currently applies the Department of Ecology's 2005 stormwater manual. The City's NPDES permit will require adoption of the 2012 Ecology Stormwater Manual by December 2016.
- Implementing more Low-Impact Development (LID) stormwater management techniques and facilities, as they are becoming the preferred and commonly used stormwater management strategy in the region. These techniques are allowed under Chapter 114 of the Kirkland Zoning Code, but they are currently voluntary. The terms of the City's NPDES permit will require adoption of more stringent LID rules by December 2016. Additional regulations to require the application of LID in certain circumstances could reduce overall stormwater flows and potentially alleviate flooding conditions.

Totem Lake Planned Action Area

- No additional mitigation is proposed in addition to the citywide measures listed above.

Power, Gas, and Telecommunications

INCORPORATED PLAN FEATURES

The City of Kirkland Comprehensive Plan Utilities Element guides coordination between the City and service providers. Alternatives 2 and 3 would update this element, including the following new goals and policies:

Goal U-7: Promote energy infrastructure that is energy-efficient, addresses climate change, and protects the community character.

- Policy U-7.1: Encourage the public to conserve energy through public education.
- Policy U-7.2: Participate in regional efforts to increase renewable electricity use 20% beyond 2012 levels Countywide by 2030, phase out coal fire electricity sources by 2025, limit construction of new natural gas based electricity power plants, and support development of increasing amounts of renewable energy sources.
- Policy U-7.3: Work with and encourage Puget Sound Energy to provide clean and renewable energy that meets the needs of existing and future development, and provides sustainable, highly reliable and energy efficient service for Kirkland customers.

- Policy U-7.4: Promote the use of small to large scale renewable energy production facilities.
- Policy U-7.5: Require new and, where feasible, existing electrical distribution lines in the right of way to be underground.
- Policy U-7.6: Screen above ground equipment cabinets and other structures associated with electrical distribution without hindering access as required by the provider.
- Policy U-7.7: Require siting analysis in the development review process for new and expanded electrical transmission and substation facilities to address land use and sensitive areas and provide mitigation to minimize visual and environmental impacts.

APPLICABLE REGULATIONS AND COMMITMENTS

- The City should continue to implement the International Energy Conservation Code.

OTHER POTENTIAL MITIGATION MEASURES

- Consistent with City policies, the City should provide annual updated population, employment, and development projections to Puget Sound Energy so they can evaluate actual patterns and rates of growth and compare these patterns to electrical demand forecasts.

Significant Unavoidable Adverse Impacts

Water & Wastewater

Future population and employment growth will significantly increase demand for water and sewer services in Kirkland. With continued advanced planning, phased implementation of improvements, and periodic updates of capital facility plans, as well as the review of development permits in terms of water and sewer system impacts, the adverse effects associated with this increase in demand can be avoided, resulting in no significant unavoidable adverse water or wastewater impacts would be anticipated within the range of alternatives reviewed.

Stormwater

Future population and employment growth will increase the demand for stormwater management. With implementation of mitigation measures, no significant unavoidable adverse impacts to stormwater management are anticipated.

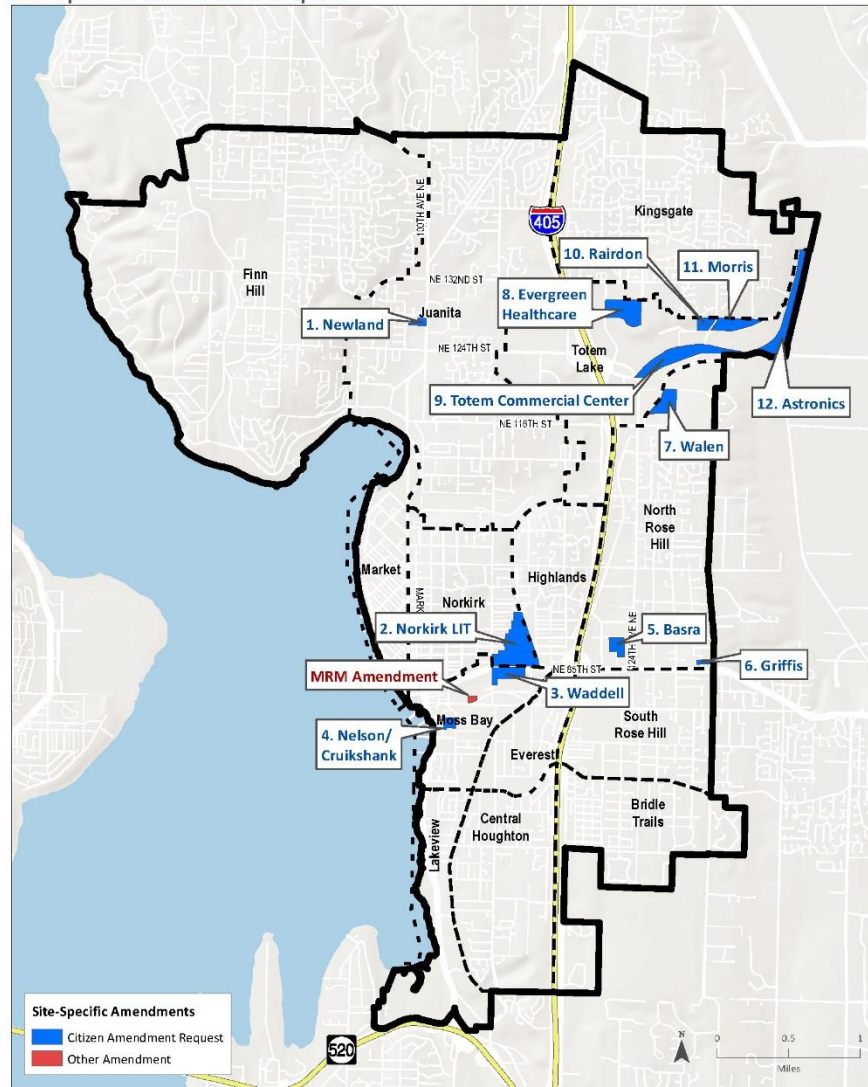
Power, Gas, and Telecommunications

Additional population and employment growth will increase the demand for electricity, natural gas, and telecommunication services. The City's coordination with service providers along with mitigation measures should allow for increased demand to be met. Significant, unavoidable or adverse impacts are not anticipated.

4.0 AMENDMENT REQUESTS

As described in Chapter 2, the City has solicited public requests for location-specific changes to plans, policies, zoning designations, or development regulations, to be analyzed as part of this DEIS. Twelve Citizen Amendment Request (CAR) study areas are addressed in this chapter. Each CAR is qualitatively reviewed for its potential to cause environmental impacts, as well as its consistency with one or more of the alternatives studied in Chapter 3. The location of each amendment request study area is shown in Exhibit 2.7-2 and on the map below.

Site-Specific Amendment Requests



Source: BERK Consulting, 2015

One additional amendment for the MRM property in downtown Kirkland is also addressed at the end of this chapter. The proposed MRM amendment was studied through a Supplemental EIS process in 2013, but no action was taken by the City deferred the to approve the request so it could be considered in the context of the Comprehensive Plan update at that time. The compatibility of the request with one or more of the alternatives studied in Chapter 3 is also assessed at a programmatic level.

Citizen Amendment Requests

4.1 Newland

Overview and Location

The Newland CAR study area is located in the Juanita neighborhood at 12625 100th Avenue NE and includes three additional lots to the north. The proposal would rezone these four parcels from Single Family Residential (RSX 7.2) to Medium Density Residential (RM 3.6).

Compatibility with the Alternatives

Land Use Patterns

The proposed zoning change from single family residential to multifamily will increase housing capacity in the City and within one of the neighborhood centers by doubling the allowed residential density on the subject parcel from approximately 6 units to 12 units per acre. The RM 3.6 zone also allows attached and stacked dwelling units. The subject property is adjacent to existing multi-family development to the south and east across the street, existing RM 3.6 Zone. The amendment request is compatible with existing and planned land uses in the study area. The proposed amendment is most compatible with Alternatives 1 and 2 that allocate the most housing growth to the neighborhood centers.

Plans and Policies

In general, the proposal does not impact consistency with the Growth Management Act, Vision 2040, the King County Countywide Planning Policies or the current Comprehensive Plan. Similarly, it is generally consistent with all Alternatives. As with the other CARs, the changes that the Newland CAR proposes to land use and zoning designations are small-scale and will not change the overall land use pattern or distribution of growth in the City.

The Newland CAR would convert an existing Low Density Residential (LDR) land use designation to Medium Density Residential (MDR). The proposal would match the existing MDR designation to the south and east and provides a boundary that recognizes existing development patterns to the north and west. The CAR would be consistent with plans and policies, and no significant adverse impacts are identified.

Population and Housing

A rezone of four parcels from the low density single family zone RSX7.2 to multifamily residential at a medium density of around 12 units per acre (RM 3.6) would create added opportunities for housing on parcels near an existing neighborhood center. The lots requesting change currently have a total of six housing units, while a rezone would allow for a total of 23 housing units. The incremental increase in housing and population is minor. Although the Juanita neighborhood is generally low density, the proximity of the Newland amendment request area to a neighborhood center and the services available would makes the added density appropriate. New zoning would not allow for increased building heights or create a change in setback standards, while still providing for added units.

Adding a denser concentration of residential population, as the Newland CAR would allow, would be most appropriate in Alternatives 1 and 3, where Neighborhood Centers are expected to absorb 16.5% and 10.8% of additional housing units between 2013 and 2035, respectively. Alternative 2 would generally not support upzoning of the four parcels because housing growth is expected to concentrate in Totem Lake and the CBD, with only 2.3% of units added in the Neighborhood Centers.

Employment and Economic Development

Because this proposal changes zoning of parcels from one residential zone to another, it does not impact where jobs and businesses can locate, and therefore is equally compatible with all three alternatives from an employment and economic development perspective.

Natural Environment

The Newland CAR is in a seismic hazard area and is mapped as low to moderate risk for liquefaction. With proper design and compliance with the critical areas regulations, risk to life and property from geologic hazards would be insignificant. Of greater concern is the presence of Juanita Creek in this study area. An increase in impervious surfaces near the creek could result in increased stormwater pollutants directly entering the creek. Existing vegetation in the proposed area is dense (although probably invasive); therefore, because the proposed change would be expected to increase density of development onsite, it would be likely to negatively affect water quality. There are no other mapped habitats or species of concern in the study area. The dominant vegetation on the site appears to be Himalayan blackberry, an invasive species, although there appears to be a band of trees adjacent to the stream. The critical areas regulations governing streams should preserve the majority of the vegetation that is contributing to stream and upland habitat functions.

Transportation

The Newland CAR study area encompasses four parcels of land adjacent to Brookhaven Park and 100th Avenue NE. The area is zoned as RSX7.2 as a single family annexation area, and the CAR proposes a zoning change to RM3.6, a medium density residential designation with a density of 12 units per acre. Additionally, allowable lot coverage would increase from 50% to 60%. Two land use scenarios were considered in this analysis. The first is a maximum allowable use of the existing zoning, and the second is a full redevelopment of the potential multifamily residential zoning on all four parcels with 3,600 square-foot units. Scenario 1 would require that some of the current parcels be split to allow additional single family units. This would result in approximately 10 single family homes and 10 total vehicle trips generated during the PM peak hour per day. In Scenario 3, 23 dwelling units of multifamily housing would be allowed. This would result in 14 PM peak hour vehicle trips per day, an increase of about four PM peak hour trips.

Exhibit 4.1-1. PM Peak Hour Trip Generation Analysis – Newland CAR

	Scenario 1	Scenario 2
Description	No action allowable	CAR proposal
Use	Low density residential	Multifamily residential
Total area of study (sf)	109,056	109,056
Residential Units	10	23
ITE Rate	1.00 ¹	0.62 ²
Vehicle Trips	10.0	14.3
Total	10.0	14.3

1: Trips per dwelling unit in the PM peak hour of the adjacent street; Land Use Category 210 - Single Family Detached Housing (ITE Trip Generation Manual, 9th Edition)

2: Trips per dwelling unit in the PM peak hour of the adjacent street; Land Use Category 220 - Apartment (ITE Trip Generation Manual, 9th Edition)

Source: Fehr & Peers, 2015

Public Services

The change from single family to multi-family zoning on these four parcels would increase the potential density of development in the area, roughly doubling the number of residential units that could be built, creating a potential for an increased demand for calls for police and fire services in this area. Additional population growth at this

location would also generate a moderate increase in demand for parks and schools. The closest parks to the Newland location are the Brookhaven Park, the Juanita Heights Park, and Juanita Beach Park. The Newland location is near the following schools: Juanita Elementary School, Finn Hill Middle School & Environmental and Adventure School, Juanita High School & Futures School.

The Newland Citizen Amendment Request is most closely aligned with Alternative 1 (No Action) or Alternative 3 (Distributed Growth).

Utilities and Capital Facilities

The area surrounding the study area is Low Density Residential and Medium Density Residential; High Density Residential exists a few blocks away. Given the presence of Medium and High Density Residential zones nearby, it is not likely that rezoning the study area from single family to multifamily will require additional water and sewer infrastructure or upsizing of existing infrastructure to meet more concentrated demand. Both water and sewer service for this study area are provided by the Northshore Utility District.

The proposed changes for this study most closely align with Alternatives 1 because they create new housing units outside of the Central and Totem Lake Business Districts and the neighborhood centers.

4.2 Norkirk LIT

Overview and Location

Several requests have been made. One request would rezone two properties on the periphery of the Norkirk LIT from Low Density Residential (RS 7.2) to Light Industrial, expanding the LIT area to the west. Another request would also amend zoning to allow live/work lofts in the LIT. Several individuals also requested consideration of transitional use standards to reduce impacts of industrial uses on the residential uses. A third

Compatibility with the Alternatives

Land Use Patterns

Concerning the rezone proposal, the subject property is currently used for single family residential use, as is the adjoining parcel to the east that is included in the expanded study area. Single family residential uses exist to the west and north with vacant land, industrial, commercial and institutional uses also in the immediately vicinity. Future land use and zoning designations include single family residential to the west and north with industrial to the south and west. The proposed land use and zoning designation change would extend the industrial boundary to the west; the City currently has landscape buffer standards to manage the transition between industrial and residential uses, but the inclusion of transitional use standards would help mitigate impacts associated with expansion of the LIT zone. The proposed amendment is most compatible with Alternative 3, which places a greater focus on development of LIT areas and allocates a greater share of future employment growth to these areas than the other alternatives.

Plans and Policies

The rezone proposal is generally consistent with plans and policies and with all alternatives.

The proposed expansion of the Industrial (IND) land use designation would convert adjoining LDR properties to IND. The existing IND designation adjoins an established single family residential area with an LDR designation. This creates an abrupt transition in land use designations with potential for land use conflicts. The proposed expansion of the IND designation neither increases nor decreases the potential for future land use conflicts. Proposals for transitional use standards could help address potential land use conflicts and the abrupt transition between land use designations and corresponding zoning. No significant adverse impacts to plans and policies consistency are identified.

The Norkirk LIT CAR is located in the Norkirk industrial area. Based on the proposed land use designation changes, the area's capacity to accommodate residential uses would likely increase and the capacity to accommodate industrial uses would likely decrease somewhat. The Norkirk LIT CAR is particularly supportive of Alternative 3, which would transition the Norkirk industrial area to a greater mix of uses.

Population and Housing

The Norkirk LIT CARs discusses opportunities for converting residential land to industrial and mixing industrial and residential through allowing live/work mixed use. Norkirk LIT is currently light industrial with a relatively abrupt transition to residential. In the changes proposed, there are options to expand the industrial activity and to integrate the two uses and allow for residential and industrial activities to both occur in the Norkirk LIT. The CARs also address a need for transition areas between residential and industrial areas.

With regard to housing, the Norkirk CAR would be most consistent with Alternative 2, given the impacts of reducing capacity for residential development on housing and the residential population. Since Alternative 2 concentrates housing in Totem Lake and the CBD without targeting the Neighborhood Centers or LIT areas for housing unit development, the zoning change in Norkirk from residential to industrial would have a lower level of impact compared to other alternatives.

If live/work units were allowed, the Norkirk CAR would be more consistent with Alternative 1 and Alternative 3 since they are the alternatives that anticipate greater housing development in centers outside the CBD and Totem Lake. Having live/work units in the industrial areas would provide capacity for housing where it did not previously exist in Norkirk.

Employment and Economic Development

The proposal to expand the LIT by rezoning parcels at 642 and 648 9th Ave from residential to Light Industrial Technology (LIT) would fit best with Alternative 3, which allocates 250 additional jobs in the Norkirk LIT, by providing more space for businesses and jobs in the LIT.

The proposal to reduce the size of the LIT by rezoning some portions to residential use would likely reduce the number amount of jobs that could be accommodated in the LIT. As such, this request would fit best with Alternative 1 or Alternative 2, which allocates less employment growth to the Norkirk LIT.

The proposal to allow live/work lofts in the Norkirk LIT would likely reduce the number of jobs that could be accommodated in the Norkirk LIT, by converting some spaces to housing. In addition, introducing housing to an industrial area could result in conflicts between residents and businesses, which might result in businesses leaving the LIT. As such, this CAR is most compatible with Alternatives 1 or 2, which allocate less employment growth to the Norkirk LIT.

The proposal to consider use transitions between the Industrial and Residential area would likely reduce space for businesses in the buffer zone, thus reducing employment capacity in the LIT. This would be most compatible with Alternatives 1 or 2, which allocate less employment growth to the LIT.

Natural Environment

Small areas of high and moderate landslide hazard are present at the southern and northern borders of this study area. The City's regulations would require a geotechnical study, which would preclude development that increased geological hazards. No streams or wetlands are located within the study area and it is not clear that the proposed zoning change would substantially alter existing impervious surface coverage. Therefore, no significant effect is anticipated from the proposed CAR.

Transportation

The Norkirk CAR study area involves seven requests within and adjacent to the Norkirk LIT zone. Two single family parcels on 9th Avenue would be added to the LIT zone, while the parcels currently within the LIT zone north of 7th

Avenue and west of 8th Street would be rezoned to low or high density residential. Two scenarios were evaluated. In the first scenario, a development capacity analysis for the Norkirk zone was used to determine the worst case scenario for the current zoning. According to the capacity analysis, there are six parcels within the area that are designated as available for redevelopment as office space. Redeveloping these parcels as office space would generate the largest amount of PM peak hour trips as office zoning tends to have greater trips generated than light industrial/technology zoning. The associated trip generation for these parcels was estimated to be 122 PM peak hour vehicle trips. In Scenario 2, these same parcels were allowed to be redeveloped into medium density residential with a density of 9 dwelling units per acre. Additionally, the two single family home parcels on 9th Avenue would be rezoned into the LIT area. This zoning allows office space, so these parcels were analyzed as though they redeveloped as office units. This worst case scenario would result in a total of 35 PM peak hour vehicle trips if all of the available area was redeveloped.

Exhibit 4.2-1. PM Peak Hour Trip Generation Analysis – Norkirk CAR

	Scenario 1		Scenario 2	
Description	No action allowable		CAR proposal	
Use	Office	Low density residential	Medium density residential	Office
Total area of study (sf)	129,005	15,360	129,005	15,360
Building Size (sf)	82176	n/a	9 DU per acre	FAR = 0.8
Residential Units	n/a	2	26.65	n/a
Rate	1.49 ¹	1.00 ²	0.62 ³	1.49 ¹
Vehicle Trips	122.4	2.0	16.5	18.3
Total	124.4		34.8	

1: Trips per thousand SF GFA in the PM peak hour of the adjacent street; Land Use Category 710 – General Office (ITE Trip Generation Manual, 9th Edition)

2: Trips per dwelling unit in the PM peak hour of the adjacent street; Land Use Category 210 - Single Family Detached Housing (ITE Trip Generation Manual, 9th Edition)

3: Trips per dwelling unit in the PM peak hour of the adjacent street; Land Use Category 220 - Apartment (ITE Trip Generation Manual, 9th Edition)

Public Services

The proposed rezoning from light industrial to residential would introduce residential uses into a predominantly light industrial area. Residential development in this area would potentially increase demand for public services over existing levels, as well as possibly create demand for more residentially-focused services, such as parks and schools, that are not currently in high demand due to the area's industrial character. Peter Kirk Park is the closest park in proximity that is likely to be affected. Residential development in the area would potentially produce new students for Peter Kirk Elementary, Kirkland Middle School, Lake Washington High School, and the International Community School.

Because of its proximity to the Central Business District, the Norkirk LIT Citizen Amendment Request is most closely aligned Alternative 2 (Totem Lake/ Downtown Focus), which would generate more growth in major mixed used centers.

Utilities and Capital Facilities

This study area examines a rezone from Residential to LIT/Mixed Use. Both water and sewer service for this study area are provided by the City of Kirkland. While residential uses generally require more water and generate greater wastewater flows than employment uses, additional infrastructure may be necessary to accommodate commercial

building fire flow requirements. In addition, light industrial uses may require greater water flow than is currently available in the area. The study area is surrounded by industrial and light residential development, so extension of the necessary services should be feasible. Site-specific utility analysis will be necessary at the time of development permit application.

The proposed changes for this study most closely align with Alternatives 1 because they result in an increase of employment growth outside of the Central and Totem Lake Business Districts and the neighborhood centers.

4.3 Waddell

Overview and Location

The Waddell CAR study area consists of the property at 220 6th Street in downtown Kirkland, as well as the remainder of the PLA 5C zone. The proposal would remove the requirement for common recreational open space for multifamily development, similar to the CBD zones immediately to the west.

Compatibility with the Alternatives

Land Use Patterns

No land use and zoning designation changes are proposed. A reduction or elimination of in open space requirements may increase residential development on the subject property and also increase the demand for parks and open space if the residential open space requirement is removed. However, Peter Kirk Park is located in close proximity to the study area and may be sufficient to meet park and open space needs for existing and future residential development. The proposed amendment is most compatible with Alternatives 2 and 3, which allocate additional housing growth to the CBD.

Plans and Policies

The proposal is generally consistent with plans and policies and with all alternatives.

Although the requirement for common recreational space for multifamily development in Planned Area 5 is not specifically addressed in the Comprehensive Plan, the general intent of this requirement is to ensure adequate access to open space for community residents. In this case, the nearest public open space area is Peter Kirk Park, located a little less than a half-mile from the study area, or within an approximate 10-minute walk. Although not defined in the Comprehensive Plan, this is generally considered a reasonable service standard and no significant adverse impacts to plans and policies consistency are identified as a result of the proposal.

Population and Housing

The Waddell CAR seeks to remove requirements for common recreation and open space areas for multifamily developments in the office/multifamily PLA5C zone. The applicant indicates that requirements for common space have made development of residential units infeasible, which indicates that there is unbuilt residential capacity available near Kirkland's CBD.

The Waddell CAR is most compatible with Alternative 3, where almost a quarter of household growth is targeted in the CBD. By removing limitations to development, more residential units could potentially be built, which would support the expected increase in units for Kirkland's downtown center, although at the expense of open space.

Employment and Economic Development

This proposal would remove the requirement for recreational open space for new multifamily development in the Planned Area 5/PLA5C zone east of the CBD. Because the proposal is specifically related to requirements for residential open space, it would not have any significant effect on employment in the area. By reducing the amount of recreational space required when multifamily is built, this proposal could allow for a larger amount of

multifamily units to be built. Because these parcels are located just outside the CBD, this proposal would likely fit best with Alternative 1, which allocates the most jobs to the CBD.

Natural Environment

The proposed CAR would not have adverse effects on geohazard risk, water resources, or plants and animals. The study area does not contain any mapped geologically hazardous areas or wetlands. A low functioning piped stream is located on the south edge of the study area. Vegetation is limited to small patches of low-functioning landscape trees.

Transportation

The Waddell CAR would remove the requirement for common recreational open space for multi-family developments in zone PLA5C, potentially allowing for a greater density of multi-family units on parcels within the zone. It should be noted that this zoning designation does not require dedicated open space for developments consisting of other land uses, such as commercial properties. Furthermore, the number of PM peak hour vehicle trips generated per square foot of commercial space is higher than that of a multi-family apartment building. Thus, allowing a greater density of multi-family units under the CAR would not cause the vehicle trip generation to exceed the amount currently allowed by commercial uses under the existing zoning code, building assuming the height limit remains the same.

Public Services

Adoption of the Waddell CAR would remove the requirement for common recreational open space for multifamily development in the Planned Area 5/ PLA5C zone east of the Central Business District. Parks and open space areas located close to the Waddell location include Peter Kirk Park and Everest Park. Future multifamily development in this area would not be required to provide on-site open space for residents. However, residential development would continue to generate demand for park space and recreational opportunities. Without common open space available on-site, nearby parks may experience increased usage as a result. Adoption of the CAR is unlikely to have significant effects on other public services.

The Waddell Citizen Amendment Request is most closely aligned with Alternative 2 (Totem Lake/ Downtown Focus), which would generate more growth in mixed used centers.

Utilities and Capital Facilities

This study area proposes not requiring recreational open space. The zoning surrounding the study area includes High Density Residential, Medium Density Residential, Industrial, and Commercial. Given the size of the site area, and the existing zoning, it is unlikely that there will need to be any additional water and sewer infrastructure or upsizing of existing infrastructure to meet demand. Both water and sewer service for this study area are provided by the City of Kirkland.

The proposed changes for this study do not especially align with any of the three alternatives.

4.4 Nelson/Cruikshank

Overview and Location

The study area is located immediately south of the Central Business District at the intersection of 2nd Street S and 2nd Avenue S in the Moss Bay neighborhood. The proposal would rezone the entire PLA 6C (single family residential) zone at this location to PLA 6A (multifamily).

Compatibility with the Alternatives

Land Use Patterns

The subject properties are located in the Moss Bay Neighborhood just outside of the Central Business District. The PLA6C zone, which currently allows approximately 8.7 units per acre would be up- zoned to allow for up to 24 units per acre. The current land use of properties in the study area is single family with one non-conforming multi-family residential use. Existing land use at adjacent properties is mixed with single-family residential multi-family development and a church. The proposed multi-family land use and zoning designations is compatible with the existing and proposed mix of land uses in the study area. The proposed amendment is most compatible with Alternatives 2 and 3, which allocate additional housing growth to the CBD.

Plans and Policies

The proposal is generally consistent with plans and policies and with all alternatives.

The proposal would re-designate an existing LDR area to High Density Residential (HDR) for multifamily development. The study area is bounded to the north by commercially designated property in the Central Business District, to the west by an HDR designated area and to the east and south by an Office/Multifamily (O/MF) designated area. Re-designation of this study area to HDR would maintain consistency with surrounding land use designations. No significant adverse impacts to plans and policies consistency are identified.

Population and Housing

The Nelson/Cruikshank CAR proposes a significant increase in development density in PLA6C, which would allow for increased residential density. All of the current single family zoning would be changed to multifamily, with increases in height and lot coverage and no changes to lot coverage. The PLA6C zone, which currently allows approximately 8.7 units per acre would be up zoned to allow for up to 24 units per acre.

Given the location of the PLA6C zone in proximity to the CBD and higher density development surrounding it, the impacts of the amendment would be minimal. Alternative 3, which focuses development in the CBD area more so than Alternative 1 and 2, would be the most appropriate scenario for the Nelson/Cruikshank amendment request.

Employment and Economic Development

Because this proposal changes zoning of parcels from one residential zone to another, it does not impact where jobs and businesses can locate, and therefore is equally compatible with all three alternatives from an economic development perspective.

Natural Environment

The proposed CAR would not have adverse effects on geohazard risk, water resources, or plants and animals. The study area does not contain any mapped geologically hazardous areas, wetlands, or streams. Vegetation is limited to small patches of low-functioning landscape trees. Impervious surfaces would increase under this alternative, but compliance with stormwater control and treatment standards would minimize potential impacts.

Transportation

The Nelson/Cruikshank CAR study area consists of 21 parcels currently zoned as PLA 6C (low density residential). These parcels are located near the Kirkland CBD south of 2nd Avenue S between 2nd Street S and State Street. Current zoning allows one housing unit per 5,000 square feet of land. Under Scenario 1, the maximum development of these parcels could result in 26 units. This would create 26 PM peak trips. The CAR proposal would rezone this to allow multifamily housing, and two scenarios were evaluated to estimate high and low values for density limits. In Scenario 2, the dwelling units were estimated at 1,800 SF per unit. This would allow up to 73 units and would create approximately 45 PM peak trips. Scenario 3 has units of 3,600 square feet which results in 36 units and 23 PM peak trips. Scenario 3 would produce the least number of trips of all three scenarios. The high density CAR proposal scenario (Scenario 2) would have the greatest impact on local traffic as it generates 45 PM peak hour vehicle trips.

Exhibit 4.4-1. PM Peak Hour Trip Generation Analysis – Nelson/Cruikshank CAR

	Scenario 1	Scenario 2	Scenario 3
Description	No action allowable	CAR proposal high	CAR proposal low
Use	Low density residential	Multifamily residential	Multifamily residential
Total area of study (sf)	131,641	131,641	131,641
Residential Units	26.3	73.1	36.6
Rate	1.00 ¹	0.62 ²	0.62 ²
Vehicle Trips	26.3	45.3	22.7
Total	26.3	45.3	22.7

1: Trips per dwelling unit in the PM peak hour of the adjacent street; Land Use Category 210 - Single Family Detached Housing (ITE Trip Generation Manual, 9th Edition)

2: Trips per dwelling unit in the PM peak hour of the adjacent street; Land Use Category 220 - Apartment (ITE Trip Generation Manual, 9th Edition)

Source: Fehr & Peers, 2015

Public Services

The proposed rezoning from low density residential to multifamily zoning would increase the residential population for all parcels. Increased residential development in this area would potentially increase the demand for public services over existing levels for city-wide fire and police services, and for parks and schools located near the development. Nearby parks likely to be affected include Peter Kirk Park and Everest Park. Residential development in the area would potentially produce new students for: Lakeview Elementary School, Kirkland Middle School, and Lake Washington High School.

Because of its proximity to the Central Business District, the Nelson/ Cruikshank Citizen Amendment Request is most closely aligned with Alternative 2, which would generate more growth in major mixed used centers.

Utilities and Capital Facilities

The area surrounding the study area is Low Density Residential, High Density Residential, Commercial, and Office/Multifamily. The study examines rezoning the area from Low Density Residential to Multifamily. Given the presence of Multifamily, Commercial, and Multifamily beside the study area, it is unlikely that additional water and sewer infrastructure or upsizing of existing infrastructure would be required to meet demand. Both water and sewer service for this study area are provided by the City of Kirkland.

The proposed changes for this study most closely align with Alternative 2 because they result in increased housing units directly beside the Central Business District.

4.5 Basra

Overview and Location

The study area for the proposal is the North Rose Hill Light Industrial Manufacturing Park (LIT zone) along NE 90th Street. The proposal would rezone the entire LIT zone to Commercial/Mixed Use (RH 3). This rezone would alter the mix of uses allowed and permit building heights to increase from the current limit of 35 feet to 67 feet.

Compatibility with the Alternatives

Land Use Patterns

The subject property is located in the NE 85th Street Subarea portion of the North Rose Hill Neighborhood and the existing land use is Light Manufacturing Park (LMP). The property borders the RH mixed use zone to the south and property designated for multi-family development to the east. The study area consists of a mix of commercial, light industrial single family land uses. A change in zoning from industrial to commercial business district zoning in the North Rose Hill neighborhood would reduce lot coverage while increasing heights for an overall increased intensity of development. With a zoning change, heights would increase significantly, potentially creating compatibility, height/bulk, or shading impacts on nearby uses in the Medium Density Residential (MDR) zone to the east. The proposed amendment is most compatible with Alternatives 1 and 3 that allocate the greatest amount of housing and employment growth to the neighborhood centers.

Plans and Policies

The proposal is generally consistent with plans and policies and with all alternatives.

The proposal to convert the existing Light Manufacturing Park (LMP) designation to Commercial (C) would be consistent with adjoining Commercial-designated areas to the south and west. Properties to the east and north are designated Medium Density Residential and Office/Multifamily respectively. Compared to development under the LMP designation, development under the Commercial designation may have higher activity levels that may impact residential neighborhoods. In order to minimize impacts on adjacent residential designations, a future Commercial designation in the study area should include consideration of measures to ensure compatibility. Policies in current plans support this. For instance, the NE 85th Street Subarea Plan states that commercial development is subject to appropriate architectural and site design standards to assure appropriate transition and buffering between the commercial area and adjacent residential areas. The North Rose Hill neighborhood plan states that transitions should be provided between residential and commercial uses, and that commercial uses should be subject to design guidelines to ensure that they support the residential character of the neighborhood. It is anticipated that this policy direction will be carried forward in the Comprehensive Plan update.

The Basra CAR is located in the North Rose Hill industrial area. It is particularly supportive of Alternative 3, which would transition the North Rose Hill industrial area to a greater mix of uses.

Population and Housing

A change in zoning from industrial to commercial business district zoning in the North Rose Hill neighborhood would reduce lot coverage while increasing heights for an overall increased intensity of development. With a zoning change, heights could almost double, from 35 feet to 67 feet. The RH zone would also allow for multifamily development as a conditional use.

Impacts on housing for the Basra CAR scenario would be minimal in all three alternatives since the amendment under consideration would be a transition from industrial to commercial business activities. However, the amendment is most compatible with Alternatives 1 and 3, which allocate the greatest amount of growth to neighborhood centers.

Employment and Economic Development

Because employment density for industrial uses is generally lower than for commercial uses, this proposal to rezone parcels in the North Rose Hill Light Industrial Manufacturing Park from Light Industrial Technology to Commercial may allow for additional employment capacity in the Rose Hill Business District. Because it would promote additional employment capacity outside the major centers of Totem Lake and the CBD, this proposal would be most consistent with Alternative 3.

Natural Environment

The study area contains geologically hazardous areas, which may affect future development. A wetland is mapped in the northwestern portion of the study area, and a stream, which is piped for most of its length, runs through the center of the CAR. The CAR area is currently developed, and vegetation is limited to landscaping among buildings and paved areas. Any redevelopment associated with the proposed zoning change from light industrial to residential or mixed use would need to meet stormwater standards, and potentially upgrade existing facilities. Development would also need to meet critical areas regulations. Overall, the potential improvement in stormwater infrastructure would be expected to result in a net benefit in environmental conditions on-site.

Transportation

The Basra CAR study area consists of six parcels located along 122nd Avenue NE and NE 90th Street. Three of the properties are currently single family homes, one is an office, while the remaining two parcels are used as an industrial park and office. The entire area is zoned as Rose Hill Light Manufacturing Park. The CAR proposes a zoning change to Rose Hill Business District 3 designation (RH3), which would allow a mix of office and retail uses. Scenario 1 estimates the trips generated if all of the parcels were developed as light industrial. Scenario 2 estimates the trips generated if the land were to be developed into office and retail. The allowable office area would have a floor to area ratio (FAR) of 2.2 while the retail area would have a FAR of 0.8. Under RH3, at least 50% of the ground floor must be retail use. An FAR of 0.8 assumes the entire ground floor is used for retail, up to the 80% lot coverage restriction for RH3. Scenario 1 would generate approximately 167 PM peak trips. In Scenario 2, the office area would generate the majority of the PM peak traffic, nearly 940 trips, and the retail portion would generate approximately 380 vehicle trips. In total, the CAR proposal under Scenario 2 would result in over 750 more vehicle trips than Scenario 1. These additional vehicles trips would be consistent with Kirkland's vision for Rose Hill under all three study Alternatives.

Exhibit 4.5-1. PM Peak Hour Trip Generation Analysis – Basra CAR

	Scenario 1	Scenario 2	
Description	No action allowable	CAR proposal	
Use	Light Industrial	Office	Retail
Total area of study (sf)	172,285	172,285	
Building size	-	FAR 2.2	FAR 0.8
Residential Units	n/a	n/a	n/a
Rate	0.97 ¹	1.49 ²	2.71 ³
Vehicle Trips	167.1	564.8	375.5
Total	167.1	938.3	

1: Trips per thousand SF GFA in the PM peak hour of the adjacent street; Land Use Category 110 – General Light Industrial (ITE Trip Generation Manual, 9th Edition)

2: Trips per thousand SF GFA in the PM peak hour of the adjacent street; Land Use Category 710 – General Office (ITE Trip Generation Manual, 9th Edition)

3: Trips per thousand SF GFA in the PM peak hour of the adjacent street; Land Use Category 826 – Specialty Retail Center (ITE Trip Generation Manual, 9th Edition)

Source: Fehr & Peers, 2015

Public Services

The proposed rezoning from light industrial to commercial zoning would introduce commercial into a light industrial area. Employment growth in this area would potentially increase demand for public services over existing services for public services such as police and fire services. Employment growth in the area could potentially increase the demand for parks located near the development. Nearby parks include the Forbes Lake Park.

Because of its proximity to the Rose Hill Neighborhood Center, the Basra Citizen Amendment Request is most closely aligned with the No Action Alternative or Alternative 3.

Utilities and Capital Facilities

This study area proposes changing the existing LIT/Light Manufacturing Park to Commercial zoning. The zoning surrounding the study area includes Medium Density Residential and Commercial. Depending on the type of commercial activity taking place following the rezone and any added jobs/employment, there may need to be adjustments from water infrastructure that once served light manufacturing or upsizing for additional sewer demand. Both water and sewer service for this study area are provided by the City of Kirkland.

The proposed changes for this study most closely align with Alternative 3 because they result in employment growth within the Rose Hill neighborhood center.

4.6 Griffis

Overview and Location

The study area consists of six lots at the eastern edge of the Rose Hill Business District, north of NE 85th Street between 131st Avenue NE and 132nd Avenue NE. The proposal would rezone these properties from RSX 7.2 (single family residential) to RH8 (office).

Compatibility with the Alternatives

Land Use Patterns

The subject property is located just north and adjacent to the Rose Hill Business District (NE 85th Street Subarea) boundary, within the North Rose Hill Neighborhood, and is currently being used for single family residential use. The study area consists of a mix of single family land uses. To the south of the study are existing commercial and office uses fronting on NE 85th Street, but the subject property does not have frontage on NE 85th Street. However, the adjacent property to the south with frontage along NE 85th Street is designated for office uses. Therefore, the proposed amendment is compatible with future land use and zoning designations. The proposed amendment is most compatible with Alternatives 1 and 3 that allocate greatest amount of housing and employment growth to neighborhood centers.

Plans and Policies

The proposal is generally consistent with the Growth Management Act, Vision 2040 and the King County Countywide Planning Policies. As noted below, it is not consistent with current Comprehensive Plan policy direction or supported by proposed changes in any of the alternatives.

Conversion of the study area from an LDR to an Office (O) designation would help create a more regular boundary for the northern edge of the office area. This change would expand the Rose Hill Business District and may raise questions about future designation of the residential area immediately to the west, between 128th and 130th Avenues. Similarly, access to the study area would be from 132nd or 131st Avenues NE, rather than directly from NE 85th Street as is the case with the existing O designated properties. In the case of 131st Avenue NE, increased traffic on this residential street may impact surrounding residential uses.

A potential adverse impact of this CAR may be a weakening of the boundary between residential and office designations in this area, leading to uncertainty about future change in the residential area adjacent to the new boundary. Concern about this boundary is specifically addressed in the current NE 85th Street Subarea Plan, which states that commercial development in the NE 85th Street commercial area should be defined by the land use designations in Figure NE 85-2 (NE 85th Street Land Use). Figure NE 85-2 maintains the existing office boundary in the vicinity of the study area and is not consistent with the proposed CAR. Similar guidance regarding preservation of existing residential neighborhoods is provided in the North Rose Hill neighborhood plan.

Population and Housing

The Griffis CAR would rezone six parcels of low density residential to office/business district zoning in the North Rose Hill neighborhood. The changes would increase heights slightly and increase lot coverage from 50% to 70%, also changing the use of the land. There would be a decrease in residential capacity in the North Rose Hill neighborhood as a result of this change. Alternative 2, where Neighborhood Centers are not a priority location for accommodating housing growth, would support this CAR.

Employment and Economic Development

This proposal would add more capacity for office use in the Rose Hill Business District area by rezoning several parcels from residential to office. As a result, the proposal would be most compatible with Alternative 3, which allocates the most jobs to Neighborhood Centers, including over 2,100 new jobs in the Rose Hill Business District.

Natural Environment

The proposed CAR would not have adverse effects on geohazard risk, water resources, or plants and animals. The study area does not contain any mapped geologically hazardous areas, wetlands, or streams. Vegetation is limited to small patches of low-functioning landscape trees. Impervious surfaces would increase under this alternative, but compliance with stormwater control and treatment standards would minimize potential impacts.

Transportation

The Griffis CAR study area consists of six parcels located on the eastern border of the City of Kirkland, one to two lots north of NE 85th Street. Currently, the six parcels are zoned as RSX7.2 for low density residential, allowing a maximum of 6 dwelling units per acre. This results in a maximum of 5 dwelling units in this area and 5 total PM peak hour trips. At the highest intensity of development, the proposed Rose Hill Business District 8 zoning would allow full redevelopment of the property into office space with a maximum FAR of 0.65. The office land use allowable under this proposal would generate 38 PM peak hour vehicle trips.

Exhibit 4.6-1. PM Peak Hour Trip Generation Analysis – Griffis CAR

	Scenario 1	Scenario 2
Description	No action allowable	CAR proposal
Use	Low density residential	Office
Total area of study (sf)	72,125	72,125
Building Size	n/a	FAR = 0.65
Residential Units	5.4	n/a
Rate	1.00 ¹	1.49 ²
Vehicle Trips	10.0	69.9
Total	10.0	69.9

1: Trips per dwelling unit in the PM peak hour of the adjacent street; Land Use Category 210 - Single Family Detached Housing (ITE *Trip Generation Manual*, 9th Edition)

2: Trips per thousand SF GFA in the PM peak hour of the adjacent street; Land Use Category 710 – General Office (ITE *Trip Generation Manual*, 9th Edition)

Public Services

The proposed rezoning from low density residential to office zoning would reduce demand for certain public services such as schools, but potentially increase the demand for police and fire services, access to parks and open space. Nearby parks likely to be affected include the Forbes Lake Park.

Because of its proximity to the Rose Hill neighborhood Center, the Griffis Citizen Amendment Request is most closely aligned with the No Action Alternative or Alternative 3.

Utilities and Capital Facilities

This study area examines changing the existing Residential Zoning to Office. The zoning surrounding this study area is Low Density Residential and Office. Given the small size of the site area and the existing Office zoning that abuts the sites, it is unlikely that there will need to be any additional water and sewer infrastructure or upsizing of existing infrastructure to meet demand. Both water and sewer service for this study area are provided by the City of Kirkland.

The proposed changes for this study most closely align with Alternative 3 because it results in employment growth within the Rose Hill neighborhood center.

4.7 Walen

Overview and Location

The study area for the Walen CAR is located southeast of the Totem Lake Business District, east of Slater Avenue NE, between NE 120th Street and NE 116th Street. The study area includes two properties zoned NRH 5 (office), one property zoned NRH 6 (office), and 18 lots zoned RM 1.8 (multifamily). The proposal would modify the zoning in this area to allow limited commercial uses, specifically vehicle sales, repair, and storage.

Compatibility with the Alternatives

Land Use Patterns

The subject property is located within the designated Totem Lake Neighborhood and is currently being used as an office and for employee parking. The property is adjacent to existing multi-family uses, also located within the study area. The current future land use and zoning designations for the property area for office and multi-family use. The request to allow limited commercial uses on the property would apply to other properties with the same zoning designation and therefore may have broader citywide impacts on land use and compatibility in the City. The properties across the street to the west are designated for commercial and mixed use development. The proposed amendment is most compatible with Alternative 2 that allocates the greatest amount of employment growth to Totem Lake and would require capacity increases to accommodate the employment allocation.

Plans and Policies

The proposal is generally consistent with the Growth Management Act, Vision 2040, the King County Countywide Planning Policies and with all alternatives. As noted below, it is not consistent with current Comprehensive Plan policy direction.

The proposal would expand allowable commercial uses to include retail establishments providing vehicle or boat sales, services or repair in areas designated as Office/Multifamily and zoned NRH 5 in the North Rose Hill neighborhood. The North Rose Hill Subarea Plan calls for sustaining the predominately residential character of the neighborhood and focusing commercial uses toward NE 85th St and the North Rose Hill Business District. The Walen CAR study area is next to the North Rose Hill Business District. Goal NRH-19 calls for limiting the types of commercial uses in this area to those that are compatible with the residential focus of the North Rose Hill Business District. Policies under this goal provide direction to prohibit retail uses in the NRH 5 zone and to prohibit boat and vehicles sales and services in other NRH zones where limited retail uses are allowed. If the City moves forward with the Walen CAR proposal, changes to the subarea plan would be needed and impacts to surrounding residential uses would need to be addressed.

Population and Housing

The Walen CAR would rezone office and multifamily at three stories to commercial at a similar density similar to the existing zoning. This rezone would reduce future capacity for residential development in the North Rose Hill neighborhood.

Alternative 2, where Neighborhood Centers are not a priority location for accommodating housing growth, would support this CAR. Since the Walen CAR would create a loss in future residential development capacity it would not be supported in Alternative 3, where Neighborhood Centers are targeted for housing growth.

Employment and Economic Development

Allowing limited commercial uses in the NRH 5 zone, which is currently limited to office use, could reduce the number of jobs likely to locate in this area in the future. Commercial uses typically have a lower density of jobs per acres than office uses. This area is adjacent to Totem Lake. By reducing the likely number of jobs adjacent to

Totem Lake, this proposal would be most compatible with Alternative 1, which allocates the fewest new jobs to Totem Lake.

Natural Environment

The proposed CAR would not have adverse effects on geohazard risk, water resources, or plants and animals. The study area does not contain any mapped geologically hazardous areas, wetlands, or streams. Vegetation is limited to strips of low-functioning landscape trees.

Transportation

The Walen CAR study area is located west of Slater Avenue NE and south of NE 120th Street. There are two parcels zoned as NRH5, one parcel zoned as NRH6, and 18 parcels zoned as RM1.8. The proposal would allow commercial use for automobile sales on these properties. Specifically, this would allow a retail establishment providing vehicle or boat sales, service, repair, or storage. The ITE trip generation for auto sales establishments was assumed to be equivalent to these potential uses. Under the current zoning, the worst case scenario for trip generation would be full redevelopment of the NRH parcels into office space with the allowable FAR assumed to be 3.0. Additionally, the RM1.8 parcels would be redeveloped into high density housing with an allowable FAR of 3.0, a lot coverage of 60%, and with 1,800 SF per residential unit. The current zoning would then allow approximately 646 PM peak trips in the worst case scenario. Under the new proposal, it was assumed that all of the available land would be developed into auto sales lots. The building coverage for the auto sales lots was estimated at 10%; this matches a typical building coverage for an automobile sales lot in Kirkland. This development would result in approximately 145 PM peak hour trips.

Exhibit 4.7-1. PM Peak Hour Trip Generation Analysis – Walen CAR

		Scenario 1	Scenario 2
Description		No action allowable	CAR proposal
Use	Office	Multifamily	Commercial (auto sales)
Lot size (sf)	78,776	474,587	553,363
Residential Units	n/a	474.6	n/a
Rate	1.49 ¹	0.62 ²	2.62 ³
Vehicle Trips	352.1	294.2	145.0
Total	646.3		145.0

1: Trips per thousand SF GFA in the PM peak hour of the adjacent street; Land Use Category 710 – General Office (ITE Trip Generation Manual, 9th Edition)

2: Trips per dwelling unit in the PM peak hour of the adjacent street; Land Use Category 220 - Apartment (ITE Trip Generation Manual, 9th Edition)

3: Trips per thousand SF GFA in the PM peak hour of the adjacent street; Land Use Category 841 – Automobile Sales (ITE Trip Generation Manual, 9th Edition)

Source: Fehr & Peers, 2015

Public Services

The proposed rezone from office/ multifamily to commercial zoning would reduce demand for certain public services, such as schools. Demand for police and fire services is likely to remain relatively unaffected, though commercial and office development is likely to require these services more during daytime hours, while residential development is more likely to need these services in the evening. Demand for parks and open space would also be reduced due to the shift from residential to employment uses in the study area.

Because of its location in the Totem Lake Planned Action Area, the Walen Citizen Amendment Request is most closely aligned with Alternative 2.

Utilities and Capital Facilities

This study area, which is within the Totem Lake Planned Action Area, examines the impacts of allowing limited commercial use in North Rose Hill, which is currently a mix of High Density Residential and Office/Multifamily. Given the small site area, and the adequate infrastructure to serve the current zoning, no impact to water or sewer service is expected by limiting the commercial use within the study area. The City of Kirkland provides water service to the study area; Northshore Utility District provides sewer service.

The proposed change for this study is most closely aligned with Alternative 2 because it results in employment growth in the Totem Lake Planned Action Area.

4.8 Evergreen Healthcare

Overview and Location

The study area is a single multifamily residential parcel adjacent to the northwest corner of the Evergreen Healthcare Medical Center in Totem Lake. The proposal would rezone the property from multifamily residential (TL 1B) to institutional (TL 3D) for inclusion in the revised Evergreen Healthcare Master Plan.

Compatibility with the Alternatives

Land Use Patterns

The existing land use at the subject property is office. The study area consists of a mix of office, institutional, multi-family and commercial land uses along with a few vacant properties. The subject property is designated for office and multi-family use in the future. Other future land use and zoning designations in the study area include institutional, multi-family, commercial and parks/open space. The extension of the institutional land use and zoning designation to the north and east to include the subject property would not create incompatibility between land uses and is consistent with existing relationship and proximity between land uses. The amendment is compatible with all alternatives, but is most compatible with Alternatives 2 that allocates the greatest amount of employment growth to Totem Lake and would require capacity increases to accommodate the employment allocation.

Plans and Policies

The proposal is generally consistent with plans and policies and with all alternatives.

Conversion of the existing O/MF parcel to an Institutional (I) designation for inclusion in the Evergreen Healthcare Master Plan would help create a more regular boundary for the Institutional area and promote the strength and vitality of the Totem Center, consistent with adopted policy guidance in the Totem Lake neighborhood plan. No significant adverse impacts to plans and policies consistency are identified.

The Evergreen Healthcare CAR is particularly supportive of Alternative 2, which would focus growth primarily in Totem Lake.

Population and Housing

The Evergreen Healthcare CAR seeks a rezone from multifamily to institutional in the Totem Lake Business District. The rezone would enable Evergreen Healthcare to carry out their Master Plan and would allow for medical offices at a maximum height of 65 feet.

All three alternatives target 25.6% to 41.2% of household growth in the Totem Lake neighborhood, and the rezone to institutional use would result in a reduction of residential development capacity at this location. Additional capacity would need to be identified at alternate locations. However the growth of Evergreen Healthcare supports

the growth of Totem Lake as an urban center overall, provides an anchor institution, and creates jobs in the neighborhood. For all three alternatives, the Evergreen Healthcare CAR could create positive outcomes for overall neighborhood growth in the Totem Lake Center. However, of the three alternatives, Alternative 3 would be the best fit for the Evergreen Healthcare CAR since developable residential land would convert to institutional use and Alternative 3 targets the least amount of household growth to Totem Lake.

Employment and Economic Development

While TL 1B is designated as a multifamily zone, office uses are allowed, subject to permit conditions. Rezoning this parcel to institutional would therefore have limited effect on employment capacity. However, the purpose of the proposed rezone is to include the property in the Evergreen Healthcare Master Plan. This would increase the likelihood of employment development on the site, and would be most compatible with Alternative 2, which allocates the highest proportion of new jobs to Totem Lake.

Natural Environment

The proposed CAR would not introduce increased risk from geologic hazards, nor would it be likely to have adverse effects on water resources or plants and animals. Although a tributary of Totem Lake passes through the site, the critical areas regulations would preserve the existing functioning buffer, and the remainder of the study area is already largely impervious with limited pockets of landscaping.

Transportation

The Evergreen CAR study area is located north of the Evergreen Healthcare Medical Center on NE 130th Place. The proposal would change one parcel from TL1B multifamily housing zoning to TL3D for inclusion in the Evergreen Medical Center master plan. Although the current use is already a medical office building, Scenario 1 evaluates the trip generation that would occur if the entire area were redeveloped under the current zoning, which allows both office and multifamily uses, as office space. This use represents the worst case scenario for trip generation under TL3D. This would result in 335 PM peak trips. Under Scenario 2, the TL3D zoning would allow a medical building with lot coverage of 85% and an FAR of 3.0. This new land use would allow institutional medical development and the implementation of the Evergreen Healthcare Medical Center Master Plan. At maximum redevelopment, this would generate up to 682 PM peak trips. These additional vehicles trips would be consistent with Kirkland's vision for Totem Lake under all three study Alternatives and the neighborhood's status as a regional growth center.

Exhibit 4.8-1. PM Peak Hour Trip Generation Analysis – Evergreen CAR

	Scenario 1	Scenario 2
Description	No action allowable	CAR proposal
Use	Office	Medical Office
Lot size (sf)	74,858	74,858
Building Size	FAR 3.0	Lot coverage 85%, FAR 3.0
Residential Units	-	-
Rate	1.49 ¹	3.57 ²
Vehicle Trips	334.6	681.5
Total	334.6	681.5

1: Trips per thousand SF GFA in the PM peak hour of the adjacent street; Land Use Category 710 – General Office (ITE *Trip Generation Manual*, 9th Edition)

2: Trips per thousand SF GFA in the PM peak hour of the adjacent street; Land Use Category 720 – Medical-Dental Office (ITE *Trip Generation Manual*, 9th Edition)

Source: Fehr & Peers, 2015

Public Services

The proposed rezone from multifamily to medical office would reduce the demand of all public services such as a school services, police and fire protection, and the demand for parks and open space.

Because of its location in the Totem Lake Planned Action Area, the Evergreen Healthcare Citizen Amendment Request is most closely aligned with Alternative 2.

Utilities and Capital Facilities

The study area is within the Totem Lake Planned Action Area, and the zoning surrounding the study area is Office/Multifamily and Industrial. The site area is small however there may be impacts to water and sewer service if the addition to Evergreen Medical has high employment or medical labs that require special service. Both water and sewer service are provided by the Northshore Utility District.

The proposed change for this study is most closely aligned with Alternative 2 because it results in employment growth within the Totem Lake Business District.

4.9 Totem Commercial Center

Overview and Location

The study area includes all properties zoned TL 7 (industrial/commercial) east of 124th Avenue NE, west of 135th Avenue NE, north of NE 124th Street, and south of the Cross Kirkland Corridor. The request is for increased building heights from 45 feet to 80 feet and to change the allowed use mix from commercial/light industrial to multifamily/commercial/light industrial office.

Compatibility with the Alternatives**Land Use Patterns**

The Totem Commercial Center property is developed with a mix of office, retail and industrial uses with a land use and zoning designation for limited commercial and industrial use. The amendment request would not change the land use and zoning designations on the subject property, but would allow for increased building height and a broader range of uses in the district, particularly to allow residential use. Increasing the allowable building height and range of land uses would also affect other properties with the same zoning designation within the Study Area. The proposed amendment is most compatible with Alternative 2 that allocates the greatest amount of employment growth to Totem Lake and would require capacity increases to accommodate the employment allocation.

Plans and Policies

The proposal is generally consistent with plans and policies, with the exception of residential uses, which are not supported by the existing land use designation in the Totem Lake Neighborhood Plan.

The study area is currently designated for Industrial/Commercial (IND/COM) uses and is surrounded by areas designated for commercial and industrial uses, as well as the Totem Lake Park. If the proposed expansion of the range of permitted uses and increase in permitted height is compatible with the surrounding land use designations, no significant adverse impacts to plans and policies consistency would be anticipated.

The Totem Commercial Center CAR is particularly supportive of Alternative 2, which would increase the range of office uses permitted in the study area relative to Alternatives 1 and 3.

Population and Housing

The Totem Commercial Center CAR calls for an increase in height and diversity of uses within Totem Lake's industrial area. The existing commercial and industrial zoning would be changed to allow for commercial and

multifamily development at with a 80 foot height limit. This is consistent with the objective of plans to develop Totem Lake as a regional center.

All three alternatives allocate between 25.6% and 41.2% of household growth to Totem Lake, so all three alternatives would support added residential capacity by allowing multifamily through a mixed use rezone. Since Alternative 2 would require that additional capacity for residential development be added to the neighborhood, the Totem Commercial Center CAR would help increase this capacity. Currently, Totem Lake has capacity for 2,902 additional units, while Alternative 2 anticipates 3,444 additional units by 2035. As a result, the CAR would not adversely affect the ability of the City to accommodate its 2035 housing target, but would provide added residential capacity in Totem Lake to meet the demand anticipated under Alternative 2.

Employment and Economic Development

Increasing allowed height in the Totem Lake 7 industrial zone would increase the capacity for jobs in Totem Lake. As such, the proposal would be most compatible with Alternative 2, which allocates the most new jobs in Totem Lake and promotes Totem Lake as Kirkland's primary growth center.

This increase in building height could, over time, contribute to a conversion of industrial uses to office space in the Totem Lake area as land prices rise, rents increase, and new office buildings are developed. Industrial employment in Kirkland has been declining for several years, accounting for a shrinking proportion of Kirkland's workforce. This decline could reduce access to higher-paying jobs for workers with fewer credentials. However, as described in Chapter 3.4 – Employment and Economic Development, the 2014 Heartland report found that widespread conversion of industrial land to office uses in Kirkland is unlikely in the near future, due to developer preference for Bellevue and other locations for new office development (Heartland, 2014).

Natural Environment

An increase in height limits would not have adverse effects on water resources or plants and animals. The proposed change in zoning would also have little to no adverse effects on water resources or plants and animals as the existing condition is built out. The study area is mapped in a seismic hazard area, so any redevelopment would require a geotechnical study and review to ensure the seismic hazard is addressed. One wetland with associated streams is located south of Totem Lake Park. Several small wetlands are on the north edge of the CAR, within the Cross Kirkland Corridor.

Transportation

The Totem Commercial Center CAR study area is located between NE 124th Street and the Cross Kirkland Corridor. This proposal involves an increase in height restrictions and in a range of permitted uses within the current TL 7 industrial zone. Both scenarios evaluated consider a mix of office and commercial land uses with the only difference being allowable FAR. Both scenarios use office and commercial land uses as these are more intensive with regards to trip generation than residential use. Additionally, only the three parcels identified in the capacity analysis as attractive for development were used for this study. This was done in order to reduce the study area. In Scenario 1, the FAR for office and commercial was 0.35 and 0.3, respectively. Maximum lot coverages were assumed to be 80% for office and 90% for retail. This would generate approximately 132 PM peak trips. Under the CAR proposal, the office FAR increases to 2.7. Full development under Scenario 2 would result in approximately 981 PM peak trips. These additional vehicles trips would be consistent with Kirkland's vision for Totem Lake under all three study Alternatives and the neighborhood's status as a regional growth center.

Exhibit 4.9-1. PM Peak Hour Trip Generation Analysis – Totem Commercial Center CAR

	Scenario 1		Scenario 2	
Description	No action allowable		CAR proposal	
Use	Office	Commercial	Office	Commercial
Total area of study (sf)	202,939		202,939	
Building Size	FAR 0.35, lot coverage 80%	FAR 0.3, lot coverage 90%	FAR 2.7, lot coverage 80%	FAR 0.3, lot coverage 90%
Res Units	n/a	n/a	n/a	n/a
Rate	1.49 ¹	2.71 ²	1.49 ¹	2.71 ²
Trips	71.0	60.9	816.4	165.0
Total	131.9		981.4	

1: Trips per thousand SF GFA in the PM peak hour of the adjacent street; Land Use Category 710 – General Office (ITE Trip Generation Manual, 9th Edition)

2: Trips per thousand SF GFA in the PM peak hour of the adjacent street; Land Use Category 826 – Specialty Retail Center (ITE Trip Generation Manual, 9th Edition)

Source: Fehr & Peers, 2015

Public Services

The proposed rezone change from commercial/ light industrial to multifamily/ commercial zoning would increase the potential density of development in the area, creating a potential for an increased demand for school, and parks services. Nearby parks likely to be affected include the Totem Lake Park. Residential development in the area would potentially produce new students for the following schools: Muir Elementary School, Kamiakin Middle School, and Juanita High School & Futures School. The change can also potentially increase the demand for police and fire services depending on the number of people served.

Because of its location in the Totem Lake Planned Action Area, the Totem Commercial Center Citizen Amendment Request is most closely aligned with Alternative 2.

Utilities and Capital Facilities

This study area proposes increased height and range of permitted uses within Industrial area of a portion of the Totem Lake Business District. The study area covered in this CAR is in the Totem Lake Planned Action Area. Given the areas existing industrial use, it is unlikely that there will need to be any additional water and sewer infrastructure or upsizing of existing infrastructure to meet demand. However, additional height may require stronger pressure for required fire flows. The City of Kirkland provides water service to this site and the Northshore Utility District provides sewer service.

The proposed change for this study is most closely aligned with Alternative 2 because it results in employment growth within the Totem Lake Business District.

4.10 Rairdon

Overview and Location

The study consists of two properties in the eastern portion of the Totem Lake Business District, located along 132nd PI NE, south of NE 128th Street. One property is currently zoned TL 9B (multifamily residential), and the other is zoned TL 9A (industrial). The proposal would rezone both properties to TL 7 (industrial/commercial), consistent with zoning to the south.

Compatibility with the Alternatives

Land Use Patterns

The southern parcel of the subject properties is partially vacant and partially being used for industrial uses. The northern parcel is vacant. The future land use and zoning designations are for multi-family uses (north parcel – TL 9B) and industrial uses (south parcel – TL 9A). No changes to the future land use designation on the industrial portion of the property are proposed, but a change in zoning to TL 7 is requested to allow retail sales and storage of vehicles. Properties to the east within the study area are already zoned TL 7. The proposed land use and zoning amendment would maintain the existing proximity and relationship between land uses that already exists in the study area, which includes a mix of industrial and multi-family uses with single family residential uses to the north. The proposed amendment is most compatible with Alternatives 2 that allocates the greatest amount of employment growth to Totem Lake and would require capacity increases to accommodate the employment allocation.

Plans and Policies

The proposal is generally consistent with plans and policies and with all Alternatives.

The northern parcel in the study area is identified in the Totem Lake Neighborhood Plan as an area that may be appropriate for multifamily residential use. The southern parcel is designated for industrial use. The Neighborhood Plan further states that the parcel contains a steep, heavily vegetated hillside that may constrain development, and that natural environment policies in the plan set conditions for development of the parcel. The natural environment policies should continue to be applicable with the Industrial/Commercial designation for both parcels. The southern portion of the study area is designated for industrial development. As such, re-designation from IND to IND/COM on the southern parcel would be generally consistent with the plan and would not result in significant inconsistencies with plans and policies.

The Rairdon CAR is particularly supportive of Alternative 2, which would increase the range of office and commercial uses permitted in the study area relative to Alternatives 1 and 3.

Population and Housing

A zoning change to allow for industrial and commercial uses in an area currently zoned for industrial and multifamily would reduce the likelihood of multifamily development in the Totem Lake Business District.

In all three alternatives, Totem Lake will take a significant portion (25.6% to 41.2%) of residential development by 2035, so creating obstacles to residential development would reduce housing capacity. However, the most compatible alternative is Alternative 3, which allocates the least amount of household growth to Totem Lake of the three alternatives. In addition, Totem Lake has excess residential capacity relative to housing targets.

Employment and Economic Development

These proposals would likely lead to more commercial space in Totem Lake, by allowing commercial uses on the TL 9A parcel (currently zoned industrial) and allowing commercial uses on the TL9B parcel, currently zoned multifamily. Converting parcels from industrial to commercial is likely to increase employment capacity, as employment density is typically higher for commercial than industrial uses. Conversion of multifamily use to

commercial would also increase employment capacity at the expense of residential capacity. As such, these proposals are most compatible with Alternative 2, which allocates the most employment growth to Totem Lake.

Industrial employment in Kirkland has been declining for several years, and the proportion of Kirkland's workforce employed in industrial jobs been steadily shrinking. This proposal could contribute to this decline in industrial jobs, thus also reducing access to higher-wage jobs for workers with fewer credentials.

Natural Environment

The northern portion of the study area is located in a well-vegetated wildlife corridor connecting to Totem Lake, and contains two wetlands (Type 2 and 3) and two Class C streams (Watershed study, dated December 3, 2013). The area also contains a high risk landslide hazard area (steep slope), and borders a tributary stream to Totem Lake along the western parcel boundary. Any development on this portion of the site, under the existing or proposed zoning, could have adverse effects on terrestrial habitat and water quality with replacement of vegetation by impervious surfaces. Such impacts would be minimized by application of the critical areas regulations. A change in zoning to industrial use from residential use would help lower the risk to human safety of any development that could be accommodated on the site given the environmental constraints. The City's geologically hazardous areas regulations will require geotechnical study and review prior to development in these areas.

The change in zoning on the southern part of the study area would have no impacts on geohazard risk, water resources, or plants and animals.

Transportation

The Rairdon CAR study area encompasses two parcels of land north of NE 126th Place and adjacent to 132nd Avenue NE. One parcel is zoned as TL9A industrial while the second is zoned as TL9B multifamily residential. The CAR proposal would rezone both parcels as TL 7 industrial/commercial in order to allow auto sales. Under Scenario 1, the full allowable development under current zoning, a total of 61 PM peak hour trips would be generated. Under Scenario 2, both lots would redevelop as commercial auto sales. The building coverage of this development was estimated at about 10%; this matches a typical building coverage for an automobile sales lot in Kirkland. This would generate 73 PM peak trips, an increase of about 13 trips.

Exhibit 4.10-1. PM Peak Hour Trip Generation Analysis – Rairdon CAR

	Scenario 1		Scenario 2	
Description	Lot 1 - No action	Lot 2 - No action	Lot 1 – CAR proposal	Lot 2 – CAR proposal
Use	Low density residential	Light industrial	Commercial (auto sales)	Commercial (auto sales)
Lot size (sf)	162,914	95,832	162,914	95,832
Building Size (sf)	-	-	17,639	10,376
Residential Units	32.9	-	-	-
Rate	1.00 ¹	0.97 ²	2.62 ³	2.62 ³
Vehicle Trips	32.6	27.9	46.2	27.2
Total	60.5		73.4	

1: Trips per dwelling unit in the PM peak hour of the adjacent street; Land Use Category 210 – Single Family Detached Housing (ITE Trip Generation Manual, 9th Edition)

2: Trips per thousand SF GFA in the PM peak hour of the adjacent street; Land Use Category 110 – General Light Industrial (ITE Trip Generation Manual, 9th Edition)

3: Trips per thousand SF GFA in the PM peak hour of the adjacent street; Land Use Category 841 – Automobile Sales (ITE Trip Generation Manual, 9th Edition)

Source: Fehr & Peers, 2015

Public Services

The proposed rezone from light industrial and low density residential to industrial/ commercial zoning would decrease the demand for school services, and potentially increase the demand for fire and police services.

Because of its close proximity to the Totem Lake Planned Action Area, the Rairdon Citizen Amendment Request is most closely aligned with Alternative 2.

Utilities and Capital Facilities

This study area examines the impacts of rezoning Industrial and Multifamily Residential to Industrial/Commercial. Depending on the commercial development, there may be a need to upsize or provide additional water and sewer infrastructure to meet demand. The City of Kirkland provides water service to the study area; Northshore Utility District provides sewer service.

The proposed change for this study is most closely aligned with Alternative 1 because it results in employment growth outside of the Central and Totem Lake Business Districts and the neighborhood centers.

4.11 Morris

Overview and Location

The study area for the Morris CAR includes all properties zoned TL 7 (industrial/commercial) east of 132nd Avenue NE, north of NE 126th Pl and south of NE 128th Street. The proposal would rezone these properties to multifamily residential (RMA 3.6) and increase the maximum allowed height to 40 feet.

Compatibility with the Alternatives

Land Use Patterns

The northern portion of the subject property is currently vacant with industrial use to the south. The study area consists of a mix of commercial, industrial and residential uses. Future land use and zoning designations are for industrial and commercial uses in the study area with commercial uses to the south. The proposed designation to multi-family residential would create an island of multi-development in an otherwise industrial and commercial area. The commercial land use and zoning designation south of the subject property provides a buffer between industrial uses and multi-family development to the south. Multi-family development adjacent to industrial uses may be incompatible without adequate development standards to mitigate potential impacts. The proposed amendment is most compatible with Alternative 2 that allocates the greatest amount of housing growth to Totem Lake.

Plans and Policies

The proposal is generally consistent with plans and policies and with all Alternatives.

This proposal would expand an existing multifamily area designated Medium Density Residential (MDR) by converting adjoining Industrial (IND) designated properties to MDR. The study area is outside the current designated urban center but is within the Planned Action Area. It is bounded to the south by an area that is designated IND and an area to the north that is designated LDR. The proposal may help provide a transition area between the LDR and IND areas. It also is consistent with Totem Lake Neighborhood Plan policies that support expansion of housing opportunity in the Totem Lake neighborhood. Re-designation for multifamily development should include buffers or other measure to ensure that future residential development is not adversely impacted and industrial activities are not prevented from future continued viability. No significant inconsistencies with plans and policies are identified.

Population and Housing

The Morris CAR seeks a rezone of industrial parcels in Totem Lake to multifamily residential at a medium density.

The rezone, since it would occur in a neighborhood that is planned to continue growing as a regional growth center, would benefit all three alternatives by adding additional residential density. Since Alternative 2 would require that additional capacity for residential development be added to the neighborhood, the Totem Commercial Center CAR would help increase this capacity. Currently, Totem Lake has capacity for 2,902 additional units, while Alternative 2 anticipates 2,444 additional units by 2035.

Employment and Economic Development

By rezoning parcels in Totem Lake from Industrial to Multifamily, this proposal would reduce capacity for jobs in Totem Lake. As such, it would be most compatible with Alternative 1, which allocates the lowest number of new jobs to Totem Lake of the three alternatives.

Natural Environment

Similar to the Rairdon CAR, this study area is part of a well-vegetated wildlife corridor connecting to Totem Lake, contains a high risk landslide hazard area (steep slope), and includes a wetland and tributary stream to Totem

Lake. A potential wetland, referred to as “marginal” in a November 2014 Watershed Company study, exists on the site, and two confirmed wetlands and two streams exist on the property directly west of the subject property. Any development under the existing or proposed zoning, could have adverse effects on the Totem Lake hydrograph, terrestrial habitat and water quality with replacement of vegetation by impervious surfaces. Such impacts could be minimized on a portion of the site by application of the critical areas regulations; most of the site would not be subject to regulations protecting wetlands and streams. A change in zoning to multi-family use from industrial use could increase the risk to human safety of any development that could be accommodated on the site given the environmental constraints. However, the City’s geologically hazardous areas regulations will require geotechnical study and review prior to development in these areas.

Transportation

The Morris CAR study area encompasses 9 parcels north of NE 126th Place between 132nd Avenue NE and NE 128th Street. These parcels are currently zoned for industrial use under TL7. Scenario 1 shows the total allowable development that could occur in this area under the current zoning which would result in approximately 444 PM peak trips. This scenario assumes an FAR of 0.8. Under the CAR proposal, all of the land would be developed into multifamily housing (RMA 3.6). Assuming a density of 12 dwelling units per acre, this would result in approximately 350 fewer PM peak hour trips than could occur under the existing zoning.

Exhibit 4.11-1. PM Peak Hour Trip Generation Analysis – Morris CAR

	Scenario 1	Scenario 2
Description	No action allowable	CAR proposal
Use	Industrial	Multifamily residential
Total area of study (sf)	572,615	572,615
Building area	458,092	n/a
Residential Units	n/a	157.7
Rate	0.97 ¹	0.62 ²
Vehicle Trips	444.3	97.8
Total	444.3	97.8

1: Trips per thousand SF GFA in the PM peak hour of the adjacent street; Land Use Category 110 – General Light Industrial (ITE *Trip Generation Manual*, 9th Edition)

2: Trips per dwelling unit in the PM peak hour of the adjacent street; Land Use Category 220 –Apartment (ITE *Trip Generation Manual*, 9th Edition)

Source: Fehr & Peers, 2015

Public Services

The zoning change from light industrial to medium density multifamily zoning would introduce residential uses into a predominantly light industrial area. Residential development in the area would potentially increase the demand for public services over existing levels, as well as create demand for more residentially focused services such as parks and schools, that are not currently in high demand due to the area’s industrial character. Nearby parks likely to be affected include the Totem Lake Park. Residential development in area would potentially produce new students for Muir Elementary, Kamiakin Middle School, and Juanita High School & Futures School.

Because of its location in the Totem Lake Planned Action Area, the Morris Citizen Amendment Request is most closely aligned with Alternative 2.

Utilities and Capital Facilities

This study area, which is within the Totem Lake Planned Action Area, examines the impacts of rezoning Industrial to Multifamily Residential. There may be a need to adjust water distribution infrastructure to meet residential needs or extend infrastructure from the nearby Medium Density Residential Infrastructure. The City of Kirkland provides water service to the study area; Northshore Utility District provides sewer service.

The proposed change for this study is most closely aligned with Alternative 2 because it results in new housing units within the Totem Lake Planned Action Area.

4.12 Astronics Corp.**Overview and Location**

The study area for the Astronics CAR includes the portion of the TL 7 zone in eastern Totem Lake that falls east of the Cross Kirkland Corridor. The proposal would maintain current zoning on these properties but would increase the maximum allowed height from 45 feet to 65 feet.

Compatibility with the Alternatives***Land Use Patterns***

The northern portion of the subject property is vacant with industrial use to the south. The proposed height increase in the TL 7 Zone would not change the allowable land uses, but would increase the intensity of development allowed. The property is adjacent to vacant lands to the north and east, the city limits boundary to the west and industrial use to the south. The proposal would not have substantial impacts on land use impacts within the study area. However, an increase in height in the TL 7 Zone would allow for additional height on other properties within the zoning district and may result in land use impacts in other locations. The proposed amendment is most compatible with Alternative 2 that allocates the greatest amount of employment growth to Totem Lake and would require capacity increases to accommodate the employment allocation.

Plans and Policies

The proposal is generally consistent with plans and policies and with all Alternatives.

The area for which an increase in permitted height is proposed is located at the foot of a hill and is not expected to result in any significant adverse impacts to plans and policies consistency.

The Astronics CAR is particularly supportive of Alternative 2, which would increase the range of office uses permitted in the study area relative to Alternatives 1 and 3.

Population and Housing

The Astronics Corp. CAR seeks a rezone from light industrial to a greater intensity of light industrial development by increasing height allowances. There would be no impacts to population and housing for any of the three alternatives.

Employment and Economic Development

By increasing allowed height in the TL7 zone of Totem Lake, this proposal would increase the capacity for jobs in Totem Lake. As such, it would be most compatible with Alternative 2, which allocates the most new jobs to Totem Lake and promotes Totem Lake as Kirkland's primary growth center.

Natural Environment

An increase in height limits would not have adverse effects on water resources or plants and animals. The area is mapped as a liquefaction hazard. However, the geologically hazardous areas regulations will require geotechnical study and review to ensure the hazard is addressed. One wetland and two streams are mapped in the Astronics CAR. Additional wetlands and stream are mapped north and west of the site.

Transportation

The Astronics CAR study area is located on the eastern border of the City of Kirkland and north of NE 124th Street. This area includes 16 parcels which are currently zoned as TL7 for industrial use. The CAR proposal would increase the allowed height within this zone. To account for the increase in allowable building height, a change in the FAR was assumed to be from 0.35 to 0.4. The existing lot coverage was calculated from the existing Astronics building. Under the existing zoning, full use of the industrial area would result in 433.3 PM peak trips. This would increase to approximately 496 PM peak hour vehicle trips if the allowable FAR were increased to 0.4, or 62 additional vehicle trips.

Exhibit 4.12-1. PM Peak Hour Trip Generation Analysis – Astronics CAR

	Scenario 1	Scenario 2
Description	No action allowable	CAR proposal
Use	Light Industrial	Light Industrial
Total area of study (sf)	1,277,108	1,277,108
Building Size (sf)	Lot coverage 35%	FAR 0.4
Residential Units	n/a	n/a
Rate	0.97 ¹	0.97 ¹
Vehicle Trips	433.3	495.5
Total	433.3	495.5

1: Trips per thousand SF GFA in the PM peak hour of the adjacent street; Land Use Category 110 – General Light Industrial (ITE Trip Generation Manual, 9th Edition)

Source: Fehr & Peers, 2015

Public Services

The change to an increased height within the Totem Lake/ TL 7 Zone would potentially require additional fire flow requirements, and more calls for police and fire services.

Because of its location in the Totem Lake Planned Action Area, the Astronics Corp. Citizen Amendment Request is most closely aligned with Alternative 2.

Utilities and Capital Facilities

This study area proposes increasing allowed height for a commercial business within a portion the Totem Lake Planned Action Area. Given the areas existing commercial use, it is unlikely that there will need to be any additional water and sewer infrastructure or upsizing of existing infrastructure to meet demand. However, additional height may require stronger pressure for required fire flows. The City of Kirkland provides water service to this site and the Northshore Utility District provides sewer service.

The proposed change for this study is most closely aligned with Alternative 2 because it results in employment growth within the Totem Lake Business District.

Other Amendments

4.13 MRM

Overview and Location

The MRM amendment addresses the property at 434 Kirkland Avenue. The site is located in the CBD and within the Moss Bay Neighborhood. The proposal would amend the Kirkland Zoning Code and the Comprehensive Plan to allow additional residential uses on the site if specific public amenities are provided as part of development. Currently allowed uses would continue to be allowed on the property.

In addition, the amendment would increase the maximum allowed height on the property for certain uses. The existing 67-foot height limit would remain in place for all uses except for office. Office uses would be allowed up to 80 feet, if specific public amenities are provided. The Comprehensive Plan would also be amended to allow for an increase in building stories from 5 to 6, if the public amenities are provided. The adopted upper-story setback requirements adjacent to Peter Kirk Park and Kirkland Way would remain.

Public amenities that would be provided in exchange for the above amendments include on-site easement improvements, the inclusion of ground-floor retail in any future development, the provision of a public plaza and public art, designation of at least 10% of new housing units as affordable housing, and compliance with Green Building standards (LEED Silver or equivalent).

As described in Chapter 2, the MRM amendment was studied in a Supplemental EIS (SEIS) in 2013, which contains detailed analysis of the environmental topics summarized below. The EIS studied a range of alternatives for the site, including the potential effects of expanding the proposed zoning amendments to the entire CBD 5 zone, in which the MRM property is located. This more specific proposal falls within the range of the alternatives studied, and the impacts associated with it are within the range of impacts identified in the 2013 SEIS.

Compatibility with the Alternatives

Land Use Patterns

The subject property is currently being used for an office use; and is adjacent to Peter Kirk Park to the east, commercial uses to the north, office uses to the east and residential and mixed-use development across the street to the south. The property is within the CBD, which allows a wide range of land uses as part of mixed-use development. Increased maximum heights in this area could potentially result in conflicts of building scale, and the application of design standards would be necessary to avoid height/bulk and land use compatibility impacts.

Plans and Policies

The proposal is generally not consistent with current plans and policies. Policies and regulations will need to be revised to support the increase of residential use and height. The draft Comprehensive Plan proposes to revise those policies to remove the inconsistency..

The proposal for increased height and additional residential units would result in increased development intensity, consistent with expectations for development in the Central Business District. The MRM SEIS also contains an extensive discussion of the consistency of residential and commercial land use alternatives with the Comprehensive Plan.

The MRM proposal is particularly supportive of Alternative 3, which proposes increased housing development and increased building heights for the property owned by MRM Development in the Central Business District.

Population and Housing

The MRM proposal would allow for a substantial increase in development intensity. The MRM SEIS contains an extensive discussion of the effects of the proposal on housing and employment capacity in the CBD.

Due to the increase in development intensity and the added residential unit potential, the MRM amendment scenario is most compatible with Alternatives 2 and 3, which distribute greater amounts of residential growth to the CBD than Alternative 1.

Employment and Economic Development

The MRM SEIS contains an extensive discussion of the effects of the proposal on housing and employment capacity in the CBD. By increasing the proportion of residential development allowed at the MRM site, this proposal would reduce capacity for office use and employment in favor of residences, which is most compatible with Alternative 3.

Natural Environment

The proposed request would not have adverse effects on geohazard risk, water resources, or plants and animals. The study area does not contain any mapped geologically hazardous areas, wetlands, or streams. Vegetation is limited to small strips of low-functioning landscape trees.

Transportation

The request proposes to increase the amount of residential density allowed on the MRM site in CBD 5. Currently, only 12.5% of the gross floor area may be used for residential housing. The MRM SEIS includes a detailed analysis of transportation impacts associated with the proposal, as well as mitigation measures.

Public Services

The additional residential development would create an increased demand for city-wide fire and police services, as well as increased demand for parks and schools located near the development. The MRM SEIS includes a more detailed description of the specific impacts to police, fire, parks, and schools associated with the proposal.

The MRM amendment is most closely aligned with Alternative 2 (Totem Lake/ Downtown Focus), which would generate more growth in major mixed used centers.

Utilities and Capital Facilities

More intensive development of the MRM site would increase demand for water and sewer service, which would require upgrades to water and sewer infrastructure in the area, both to correct existing deficiencies and accommodate future demand. The MRM SEIS contains a detailed analysis of the utilities impacts associated with the proposal.

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6.0 ACRONYMS AND ABBREVIATIONS

CAR	Citizen Amendment Request
CBD	Central Business District
CIP	Capital Improvement Program
CKC	Cross Kirkland Corridor
CPP	Countywide Planning Policies
DEIS	Draft Environmental Impact Statement
DSEIS	Draft Supplemental Environmental Impact Statement
EIS	Environmental Impact Statement
FAR	Floor-Area-Ratio
FEIS	Final Environmental Impact Statement
FSEIS	Final Supplemental Environmental Impact Statement
GMA	Growth Management Act
gpd	gallons per day
gpm	gallons per minute
I/I	infiltration/inflow
LDR	Low Density Residential
LIT	Light Industrial Technology
LOS	Level of Service
MDR	Medium Density Residential
O/MF	Office/Multifamily
PAO	Planned Action Ordinance
PSRC	Puget Sound Regional Council
RCW	Revised Code of Washington
SEPA	State Environmental Policy Act
SR	State Route
TAZ	Transportation Analysis Zone
TDM	Transportation Demand Management
TMP	Transportation Master Plan
WAC	Washington Administrative Code

7.0 DISTRIBUTION LIST

7.1 Federal Agencies

U.S. Army Corps of Engineers

U.S. Environmental Protection Agency

7.2 Tribes

Muckleshoot Indian Tribe

7.3 State and Regional Agencies

A Regional Coalition for Housing (ARCH)

Association of Washington Cities

King County Conservation District (WA State Conservation Commission)

King County Parks

King County Public Health

King County Wastewater

Lake Washington Institute of Technology

Lake Washington School District

METRO Transit

Northwest University

Parks and Recreation

Puget Sound Clean Air Agency

Puget Sound Partnership

Puget Sound Regional Council (PSRC)

Sound Transit

Washington State Department of Commerce

Washington State Department of Corrections

Washington State Department of Social and Health Services

Washington State Department of Ecology

Washington State Department of Fish and Wildlife

Washington State Department of Health

Washington State Department of Natural Resources

Washington State Department of Parks and Recreation

Washington State Department of Transportation

WRIA8 Lake Washington - Cedar- Sammamish Watershed

7.4 Services, Utilities, and Transit

Cascade Bicycle Club

Cascade Water Alliance

Eastside Trail Advocates

King County Library

Kirkland Greenways

Northshore Water District

Olympic Pipeline

Puget Sound Energy

Seattle City Light

Woodinville Water District

7.5 Community Organizations

Boys and Girls Club of Kirkland

Central Houghton Neighborhood Association

Eastside Audubon Society

Everest Neighborhood Association

Evergreen Hill (Kingsgate) Neighborhood Association

Evergreen Hospital

Finn Hill Neighborhood Association

Finn Hill Park District Neighborhood Association

Forterra

Friends of Youth

Future Wise

Highlands Neighborhood Association

Hopelink

Juanita Neighborhoods Neighborhood Association

Kirkland Alliance of Neighborhoods (KAN)

Kirkland Chamber of Commerce

Kirkland Heritage Society

Kirkland Interfaith Network

Kirkland Interfaith Transitions in Housing (KITH)

Kirkland Kiwanis Club

Lakeview Neighborhood Association

Master Builders Association

Market Neighborhood Association

Moss Bay Neighborhood Association

Municipal Research and Services Center (MRSC)

Norkirk Neighborhood Association

North Rose Hill Neighborhood Association

South Rose Hill/Bridle Trails Neighborhood Association

YMCA of Seattle (Kirkland Teen Union Building)

Youth Eastside Services

7.6 Newspapers

Kirkland Patch

Kirkland Reporter

7.7 Adjacent Jurisdictions

City of Bellevue

City of Bothell

City of Clyde Hill

City of Kenmore

City of Medina

City of Redmond

City of Woodinville

King County

Town of Hunts Point

Town of Yarrow Point

APPENDIX A. SCOPING DOCUMENTATION



City of Kirkland 2015 Comprehensive Plan Update Environmental Impact Statement

Scoping Summary

Introduction

The City of Kirkland (City) is updating its Comprehensive Plan in accordance with the requirements of the Growth Management Act (GMA). This periodic update will address projected population, housing and employment growth to the new horizon year of 2035, integrate newly annexed areas, and incorporate new and updated city master plans and neighborhood plans. The EIS will also evaluate Citizen Amendment Requests that may result in changes to land use, policies, and/or development regulations.

The City has determined that the proposed plan update requires study in a programmatic Environmental Impact Statement (EIS) pursuant to the State Environmental Policy Act (SEPA). This EIS will also analyze a potential Planned Action for the Totem Lake business district. The City issued a combined determination of significance and scoping notice on April 24, 2014, and the scoping period closed on June 20, 2014. During this time, the City received six (6) comment letters or emails on the scope of the EIS.

Comments and the approach to the EIS analysis are described in Exhibit 1. Full copies of the comments are attached to the end of this document.

**Exhibit 1. Summary of Comments Received – Comprehensive Plan EIS Scoping**

Name/Agency/Date	Summary	EIS Review Approach
1. Janice Gerrish, Citizen, June 18, 2014	<p>Concerned about quality of life and environmental and community health in the new annexed neighborhoods in Kirkland. Citizens of these neighborhoods are not being treated fairly. There is not enough quality business time or hard data to do neighborhood planning. A lot of property was sold to developers.</p> <p>From a letter written by the Finn Hill Neighborhood Alliance on February 26, 2013 to the Kirkland City Council and Planning Commission: The City should not take action on any Planned Action Request until a neighborhood plan for Finn Hill is completed. The City should defer significant zoning changes in Finn Hill until planning priorities for the community are developed.</p> <p>Concerned about housing density and the apparently random placement of new developments.</p> <p>Concerned about the environmental impacts and aesthetics of new residential buildings. Vegetation and large trees are removed, while impervious sidewalks and roofs are built. There is not a focus on reducing the carbon footprint, saving energy, or reducing environmental impact. The new houses lead to water runoff and utilities overload.</p> <p>Concerned about capacity of fire and emergency services. There have been cutbacks in number of stations and services.</p> <p>Concerned that development is happening faster than planning.</p> <p>Would like to see “fast track permitting” disappear and put zoning changes and building permits on hold until the newly annexed neighborhoods and the City decide how to improve quality in suburban part of the city.</p>	<p>The EIS will programmatically analyze the land use patterns associated with each of the alternatives and identify potential impacts. The land use analysis will address potential impacts resulting from future growth by evaluating the type, scale, and location of development. The EIS will also programmatically evaluate potential impacts related to visual quality, height/bulk/scale, and compatibility.</p> <p>The EIS will programmatically address the potential impacts of each alternative on Kirkland’s natural environment and ecological systems, including water resources. Mitigation measures to preserve ecological resources will be recommended where impacts are identified.</p> <p>The EIS will programmatically address impacts on a variety of public services, including fire and emergency services.</p>
2. Gary Kriedt, Metro Transit, June 24, 2014	<p>The Comprehensive Plan should discuss how Kirkland will support, promote, and prioritize local and regional transit.</p> <p>The City should include an enhanced transit network alternative with frequent service in Kirkland and regional connections including designated transit corridors and capital investments to minimize transit delay.</p> <p>The EIS should analyze how growth will impact intersection LOS and transit speed and reliability.</p> <p>The EIS should discuss prioritizing capital investments that maximize mobility and transit efficiency.</p> <p>The EIS should discuss the potential for repurposing/development of the Cross Kirkland Corridor.</p>	<p>The EIS includes an alternative that concentrates the majority of future growth in major development centers, where access to transit service is highest. The EIS will programmatically analyze the impacts of all alternatives on Kirkland’s transportation infrastructure, including transit and non-motorized transportation systems.</p>
3. Dr. Traci Pierce, Lake Washington School District, June 20, 2014	<p>The City must consider impacts to school facilities in plans for future growth.</p>	<p>The EIS will programmatically address the impacts of future growth on a variety of public services and facilities, including schools.</p>



Name/Agency/Date	Summary	EIS Review Approach
4. Kayla Schott-Bresler, Housing Development Consortium of Seattle-King County, June 20, 2014	<p>The City should analyze the impact of each alternative's proposed growth type on housing affordability, and include policies to mitigate impacts.</p> <p>The City should compare alternative growth scenarios based on their ability to provide a diverse array of housing choices to meet the housing needs of low and moderate income households.</p> <p>The City should consider how land prices will change in transit-oriented communities under each alternative, to help plan to meet affordable housing needs near transit.</p> <p>The City should consider the extent to which services such as employment, open space, transit, and education are or will be provided near planned growth. For example, under each alternative the City should analyze the portion of Kirkland's residential growth within one-half mile of a park, school, and frequent transit service. The preferred alternative should focus residential growth around these opportunities. The availability of affordable housing near opportunities and amenities should be increased.</p>	<p>The EIS will programmatically address impacts to housing, including how each alternative would meet the needs of future residents, based on demographic trends, and how each alternative would influence housing mix and affordability.</p> <p>The relationship between housing, transit, and the planned transportation network will also be addressed in EIS, and the different growth patterns created by each alternative will be evaluated for their potential effects on both housing stock and the city's transportation network.</p>
5. Gayle Shimokura, Citizen, June 19, 2014	<p>The Comprehensive Plan should include strategies to mitigate the adverse effects of climate change on Kirkland citizens and wildlife. Infrastructure will be particularly impacted by climate change, including transportation, energy, and emergency preparedness systems. The City could use the Washington State Integrated Climate Change Response Strategy to help prepare.</p>	<p>The City has proposed updated goals and policies in the Natural Environment, Transportation, Public Services, and Utilities elements of the Comprehensive Plan for addressing climate change. The EIS will programmatically review the effects of these goals and policies on the natural environment.</p>
6. Karen Walter, Muckleshoot Indian Tribe Fisheries Division, June 20, 2014	<p>The City should discuss the status of its assessment of the ability of road culverts to provide for fish passage.</p> <p>The City should include a plan for fixing culverts that are barriers to fish passage. This should be done as part of the Capital Improvement Program efforts that are part of the Comprehensive Plan. The city should coordinate with the Washington Department of Transportation on its work to fix barrier culverts.</p> <p>In the Comprehensive Plan and its supporting environmental analysis, the City should use information and recommendations from the Stormwater Retrofit Analysis and Recommendations for Juanita Creek Basin in the Lake Washington Watershed, produced by the City of Kirkland, King County, WDOE, and WSDOT. The City should develop an implementation plan from these recommendations and include it in the Comprehensive Plan for use as sites in the planning area develop or redevelop.</p>	<p>The EIS will programmatically address the potential impacts of each alternative on Kirkland's natural environment and ecological systems, including water resources and fish. Mitigation measures to preserve ecological resources will be recommended where impacts are identified.</p>



APPENDIX B. DRAFT PLANNED ACTION ORDINANCE

ORDINANCE _____

AN ORDINANCE OF THE CITY OF KIRKLAND RELATING TO LAND USE AND PLANNING; ESTABLISHING A PLANNED ACTION FOR THE TOTEM LAKE URBAN CENTER PURSUANT TO THE STATE ENVIRONMENTAL POLICY ACT, RCW 43.21C.031.

WHEREAS, the State Environmental Policy Act (“SEPA”, 43.21C) and implementing rules (WAC 197-11) provide for the integration of environmental review with land use planning and project review through designation of “Planned Actions” by jurisdictions planning under the Growth Management Act (“GMA”); and

WHEREAS, designation of a Planned Action expedites the permitting process for subsequent, implementing projects whose impacts have been previously addressed in a Planned Action environmental impact statement (“EIS”), and thereby encourages desired growth and economic development; and

WHEREAS, the Planned Action EIS identifies impacts and mitigation measures associated with planned development in the Planned Action Area;

NOW, THEREFORE, the City Council of the City of Kirkland does ordain as follows:

Section 1. Purpose. The purpose of this ordinance is to:

- A. Combine environmental analysis with land use planning;
- B. Streamline and expedite the development permit review process by relying on the EIS completed for the Planned Action;
- C. Establish criteria and procedures, consistent with state law, that will determine whether subsequent projects qualify as Planned Actions;
- D. Provide the public with an understanding of Planned Actions and how the City will process Planned Actions; and
- E. Apply the City’s development regulations together with the mitigation measures described in the EIS and this Ordinance to address the impacts of future development contemplated by the Planned Action.

Section 2. Findings. The City Council finds as follows:

- A. The City is subject to the requirements of the Growth Management Act, RCW 36.70A, and is located within an Urban Growth Area;

B. The City has adopted a Comprehensive Plan complying with the GMA;

C. The City is adopting development regulations applicable to the proposed development concurrent with adoption of this Planned Action Ordinance to address many of the impacts of future development;

D. The City has prepared an EIS complying with SEPA for the area designated as a Planned Action and finds that the EIS adequately addresses the probable significant environmental impacts associated with the type and amount of development planned to occur in the designated Planned Action area;

E. The mitigation measures identified in the Planned Action EIS are attached to this Ordinance as Exhibit B. These mitigation measures, together with City development regulations, will adequately mitigate significant impacts from development within the Planned Action area;

F. The EIS and this Ordinance identify the location, type and amount of development that is contemplated by the Planned Action;

G. Future projects that are consistent with the Planned Action will protect the environment, benefit the public and enhance economic development;

H. The City has provided numerous opportunities for meaningful public involvement in the proposed Planned Action; has considered all comments received; and, as appropriate, has modified the proposal or mitigation measures in response to comments;

I. The proposal is not an essential public facility as defined by RCW 36.70A.200(1);

J. The Planned Action area applies to a defined area that is smaller than the overall City boundaries; and

K. Public services and facilities are adequate to serve the proposed Planned Action with the mitigation measures identified in Exhibit B..

Section 3. Procedures and criteria for evaluating and determining projects as Planned Actions:

A. Planned Action Area. The Planned Action designation shall apply to the area in the Totem Lake Neighborhood, and identified contiguous areas, specifically shown in Exhibit A, "Planned Action Area" (Exhibit A). Additionally, the Planned Action designation shall apply to any off-site improvements necessitated by proposed development in the subject subarea, where the off-site improvements have been analyzed in the Planned Action EIS.

B. Environmental Documents.

- (i) A Planned Action determination for a site-specific permit application shall be based on the environmental analysis contained in the Draft Totem Lake Planned Action EIS issued by the City on June 26, 2015, and the Final Planned Action EIS published on_____.
- (ii) The mitigation measures contained in Exhibit B, which is attached hereto and adopted by reference as though fully set forth herein, are based upon the findings of the Draft and Final EISs, and shall, along with existing City codes, ordinances, and standards, provide the framework that the City will use to impose appropriate conditions on qualifying Planned Action projects.

C. Planned Action Designated. Land uses described in the Planned Action EIS, subject to the thresholds described in Subsection D of this Section and the mitigation measures contained in Exhibit B, are designated Planned Actions pursuant to RCW 43.21C.031. A development application for a site-specific Planned Action project located within the Planned Action Area shall be designated a Planned Action if it meets the criteria set forth in Subsection D of this Section and applicable laws, codes, development regulations and standards of the City.

D. Planned Action Thresholds. The following thresholds shall be used to determine if a site-specific development proposed within the Planned Action area is contemplated by the Planned Action and has had its environmental impacts evaluated in the Planned Action environmental documents.:

(1) *Land Uses.* Subject to the mitigation measures described in Exhibit B, the following land uses, together with the customary accessory uses and amenities described in the Planned Action EIS, are Planned Actions pursuant to RCW 43.21C. 031.

(a) The following uses are the primary uses analyzed in the Totem Lake Planned Action EIS:

- (i) Office;
- (ii) Retail and Other Commercial uses;
- (iii) Residential; and
- (iv) Industrial.

(2) *Land Use Review Threshold.*

(a) The Planned Action designation applies to future development proposals that are comparable or within the ranges established by the EIS, as shown below:

Land Use	Totem Lake Planned Action Area
Office	_____ sq. ft.
Residential	_____ units
Retail/Commercial	_____ sq. ft.
Industrial	_____ sq. ft.
Total	

(b) If future development proposals in the Planned Action Area exceed the maximum development parameters reviewed in the Planned Action EIS, further environmental review may be required under SEPA, as provided in WAC 197-11-172. If proposed plans significantly change the location of development or uses in a manner that would alter the environmental determinations in the Planned Action EIS, additional SEPA review would also be required. Shifting development between categories of land uses may be permitted so long as the resulting development does not exceed the trip generation thresholds (see sub-section 4(a) below) reviewed in the Planned Action EIS and does not exceed the proportions or minimums noted in sub-section 2(a) above.

(3) *Building Heights, Bulk, and Scale.* Building heights, bulk, and scale shall not exceed the maximums reviewed in the Planned Action EIS.

(4) *Transportation.*

(a) *Trips:* The maximum number of PM peak hour trips reviewed in the Planned Action EIS is as follows:

	Total Trips
PM Peak Hour	

(b) *Trip Threshold.* Development proposals that would exceed the maximum trips levels shown above will require additional SEPA review.

(c) *Public Works Discretion.* The City Public Works Director shall have discretion to determine incremental and total trip generation, consistent with the Institute of Traffic Engineers (ITE) Trip Generation Manual (latest edition) or an alternative manual accepted at the City Public Works Director's sole discretion, for each Planned Action Project permit application proposed under this Planned Action. It is understood that development in the Planned Action area may in increments over a period of years. The City shall require that off-site mitigation and transportation improvements identified in the Planned Action EIS be implemented in conjunction with development to maintain adopted levels of service standards.

(d) *Transportation improvements.*

(i) Intersection Improvements. The Planned Action will require transportation improvements identified in Exhibit B to mitigate significant impacts. These transportation improvements have been analyzed in the Planned Action EIS.

(ii) Significant changes to the City's transportation improvement plan proposed as part of any Planned Action Project that have the potential to significantly increase impacts to any element of the environment beyond the levels analyzed in the Planned Action EIS may require additional SEPA review.

(iii) Transportation Management Program. Qualifying planned action projects may be required to develop and submit a Transportation Management Program (TMP) prior to building permit issuance. A TMP, if required, shall be developed in collaboration with the City Engineer, and shall be implemented as a means to encourage alternatives to single-occupant vehicles, including transit, and to thereby reduce traffic generation and parking demand. The TMP shall establish a percentage reduction goal for an individual project, and shall identify the measures that will be implemented by the applicant to achieve the goal. The measures will include a monitoring program and a contingency plan to track progress in achieving the trip reduction goal.

(iv) Parking Management. Parking to support development shall be provided as required by Kirkland Zoning Code Chapter 105. Consistent with the incentive provision of Section 105.103.3c of the aforementioned Zoning Code, a developer may choose to reduce the number of parking spaces based on a demand and utilization study prepared by a licensed transportation engineer. The City's Transportation Engineering Manager must approve the scope and methodology of the study as well as the effectiveness of the TMP and parking management measures.

(e) Transportation Impact Fees. All Planned Action Projects shall pay, as a condition of approval, the applicable transportation impacts fees according to the methodology contained in the ordinance adopting such impact fees. The City may adjust such fees from time to time.

(f) Capital Facilities. Improvements to water and sewer facilities are identified in Exhibit B.

(5) *Changed Conditions.* Should environmental conditions or assumptions change significantly from those analyzed in the Planned Action EIS,

the City's SEPA Responsible Official may determine that the Planned Action designation is no longer applicable until supplemental environmental review is conducted.

(6) *Additional Mitigation Fees.* The City may adopt and apply such other fees as may be deemed necessary and appropriate to mitigate impacts to other capital facilities in the City and to accommodate planned growth. Such fees, if adopted, shall be in addition to the fee required in item (4)(e) of this subsection, and shall apply only to required improvements that are not addressed in this subsection.

E. Planned Action Review Criteria.

(1) The City's Planning and Community Development Director or designee is authorized to designate a project application that meets all of the following conditions as a Planned Action pursuant to RCW 43.21C.440, and WAC Sections 197-11-164, -168, and -172:

(a) The project is located within the Planned Action Area identified in Exhibit A, pursuant to Section 3(A) of this ordinance or is an off-site improvement directly related to a proposed development within the Planned Action Area;

(b) The project is consistent with the City of Kirkland Comprehensive Plan and the Comprehensive Plan policies for the Totem Lake Neighborhood Plan;

(c) The project's significant adverse environmental impacts have been adequately addressed in the Planned Action EIS;

(d) The proposed uses are consistent with those described in the Planned Action EIS and Section 3(D) of this Ordinance;

(e) The project is within the Planned Action thresholds of Section 3(D) and other criteria of this section of this Ordinance;

(f) The project's significant impacts have been mitigated by application of the measures identified in Exhibit B, as well as other City, county, state and federal requirements and conditions, including compliance with any conditions agreed to pursuant to a development agreement between the City and applicant if executed, which together constitute sufficient mitigation for the significant environmental impacts associated with the proposed project;

(g) The proposed project complies with all applicable local, state and/or federal laws and regulations, and where appropriate, the proposed

project complies with needed variances or modifications or other special permits which have been identified; and

(h) The proposed project is not an essential public facility.

F. Effect of Planned Action.

(1) Upon designation by the City's Planning and Community Development Director that the project qualifies as a Planned Action pursuant to this Ordinance and WAC 197-11-172, the project shall not require a SEPA threshold determination, preparation of an EIS, or be subject to further review under SEPA.

(2) Being designated as a Planned Action means that a proposed project has been reviewed in accordance with this Ordinance and found to be consistent with the development parameters and environmental analysis contained in the Planned Action EIS.

(3) Planned Actions that meet all criteria established in this ordinance will not be subject to further procedural review under SEPA. However, projects will be subject to conditions as outlined in this document and the attached Exhibit B which are designed to mitigate any environmental impacts which may result from the project proposal. Additionally, projects will be subject to applicable City, state, and federal regulatory requirements. The Planned Action designation shall not excuse a project from meeting the City's code and ordinance requirements apart from the SEPA process.

G. Planned Action Permit Process. The City's Planning and Community Development Director or designee shall review projects and determine whether they meet the criteria as Planned Actions under applicable state, federal, local laws, regulations, codes and ordinances. The procedures shall consist, at a minimum of the following:

(1) Development applications shall meet the applicable requirements of the Kirkland Municipal Code (KMC). Applications shall be made on forms provided by the City and shall include a SEPA checklist, revised SEPA checklist or such other environmental review forms provided by the City;

(2) The City's Planning and Community Development Director shall determine whether the application is complete;

(3) If the application is for a project within the Planned Action Area, shown on Exhibit A, the application will be reviewed to determine if it is consistent with and meets all of the qualifications of Section 3 of this Ordinance;

(4) After the City receives and reviews a complete application, the City's Planning and Community Development Director shall determine whether the project qualifies as a Planned Action. If the project does qualify, the Director shall notify the applicant and the project shall proceed in accordance with the applicable permit review procedure, except that no SEPA threshold determination, EIS, or additional SEPA review shall be required. The decision of the Director regarding qualification as a Planned Action shall be final;

(5) Public notice and review for projects that qualify as Planned Actions shall be tied to and shall follow the procedural requirements of the underlying development permit, and shall also satisfy any notice requirements in the SEPA rules or statute specific to planned actions.

(6) If a project is determined not to qualify as a Planned Action, the City's Planning and Community Development Director shall so notify the applicant and the SEPA Responsible Official shall prescribe a SEPA review procedure consistent with the City's SEPA regulations and the requirements of state law. The notice shall describe the elements of the application that result in failure to qualify as a Planned Action. If deemed ineligible, the application may be amended to qualify; and

(7) Projects that fail to qualify as Planned Actions may incorporate or otherwise use relevant elements of the Planned Action EIS, as well as other relevant SEPA documents, to assist in meeting SEPA requirements. The SEPA Responsible Official may limit the scope of SEPA review for the non-qualifying project to those issues and environmental impacts not previously addressed in the Planned Action EIS.

H. Development Agreements. The City or an applicant may request consideration and execution of a development agreement for a Planned Action project. The development agreement may address the following: review procedures applicable to a planned action project; permitted uses; mitigation measures; construction, financing and implementation of improvements, including methods of financing and proportionate shares, and latecomers agreements; payment of impact fees; phasing; and any other topic that may properly be considered in a development agreement consistent with RCW 36.70B.170 et seq.

I. Monitoring and Review.

A. The City shall monitor the progress of development in the designated Planned Action area to ensure that it is consistent with the assumptions of this Ordinance and the Planned Action EIS regarding the type and amount of development and associated impacts, and with the mitigation measures and improvements planned for the Planned Action area.

B. This Planned Action Ordinance shall be reviewed by the SEPA Responsible Official as part of the City's ongoing Comprehensive Plan update procedure to determine its continuing validity with respect to the environmental conditions of the Planned Action Area, the impacts of development, and the adequacy of required mitigation measures. Based upon this review, this Ordinance may be amended as needed, the City may supplement or revise the Planned Action EIS, and/or another review period may be specified. Subsequent reviews of the Planned Action Ordinance shall occur as part of the City's Comprehensive Plan amendment process.

Section 4. Conflict. In the event of a conflict between this Ordinance or any mitigation measures imposed pursuant thereto and any ordinance or regulation of the City, the provisions of this Ordinance shall control, except that the provisions of the state building code shall supersede this Ordinance. In the event of a conflict between this Ordinance (or any mitigation measures imposed pursuant thereto) and any development agreement between the City and a Planned Action applicant(s), the provisions of the development agreement shall control.

Section 5. Severability. Should any section, subsection, paragraph, sentence, clause or phrase of this Ordinance or its application be declared unconstitutional or invalid or unconstitutional for any reason, such decision shall not affect the validity of the remaining portions of this Ordinance or its application to any other person or situation.

Section 6. Expiration. This Ordinance shall expire ten (10) years from the date of passage, or of amendment if it is subsequently amended, unless it is extended by the City Council following a report from the SEPA Responsible Official and a public hearing.

Section 7. This ordinance shall be in force and effect five days from and after its passage by the Kirkland City Council and publication pursuant to Section 1.08.017, Kirkland Municipal Code in the summary form attached to the original of this ordinance and by this reference approved by the City Council.

Passed by majority vote of the Kirkland City Council in open meeting this ____ day of _____, 2015.

Signed in authentication thereof this ____ day of _____, 2015.

MAYOR