6.1 Land Use and Aesthetics Summary

Proposal

In 2008, the Touchstone Corporation requested land use approvals to allow redevelopment of the Parkplace retail/office complex located at 457 Central Way. The project contained as much as 1.8 million square feet of office, retail, and hotel use, including increases in permissible building height up to a maximum of 8 stories.

In 2014, Talon Private Capital (Talon) is proposing a new redevelopment proposal in conjunction with the current property owner, Prudential Real Estate Investors. The "Revised Proposal" is 34 percent smaller than the 2008 Proposal at approximately 1.2 million (1,175,000) square feet. The mix of uses would include office and retail similar to the 2008 Proposal. The Revised Proposal will also add up to 300 units and 300,000 square feet of multifamily residential. The development would generally be 5-8 stories in height consistent with the Zoning Code standards in place. Variable setback standards in the Kirkland Zoning Code along Peter Kirk Park would also be retained. Design standards would continue to apply.

The Revised Proposal includes the following code amendments addressing the proportion of various uses and other use specific standards:

- The current zoning code limits residential development to 10 percent of the allowed gross floor area for the master plan; a zoning amendment is requested to increase this to 30 percent.
- The movie theater currently may count as 10 percent of total retail/restaurant uses. This is proposed to change to 20 percent to provide flexibility.
- A bank drive-through may be contemplated on the eastern portion of the site, requiring a zoning code amendment. The current bank drive-through is legally non-conforming.
- The Revised Project proposal includes modifications to the adopted Master Plan and Design Guidelines to reflect the revised site plan and development concept. These changes generally include the following:
    - Updating of project parameters to reflect the decreased amount of development and proposed mix of uses (i.e., addition of residential use) of the Revised Proposal;
    - New discussion of residential use which was not an element of the approved Parkplace project;
    - New graphics to illustrate the intent of the design standards and guidelines;
    - Minor changes in phraseology (e.g., "pedestrian weather protection" replaces "covered walkway");
    - For a few design parameters, such as modulation and building design in the Central Way and Gateway districts, a greater emphasis on design intent and elimination of a quantitative/prescriptive standard (e.g., the depth of building modulation);
    - Revisions to the setbacks, building step backs, and modulation of buildings to the south to address appropriate transitions;
    - Some minor reconfigurations of street sections (e.g., sidewalks, parking lanes) on some streets, although sidewalks are generally the same or wider;
    - A change in primary access to Central Way;
    - An increase in required open space, from 10 percent/50,000 s.f. to 15 percent/75,000 s.f.; and

Overall, the revised Design Guidelines are substantially the same as the adopted Design Guidelines.

City regulations establish a design review process for many types of projects. The process includes review and approval of proposals by the Design Review Board (KZC 142.35.9), and allows design departures and minor variations in design pursuant to established criteria (KZC 142.37) in appropriate circumstances. The Revised Proposal may request minor deviations through this process as more detailed site planning occurs.

The Revised Proposal includes amendments to the original Planned Action Ordinance to reflect the Revised Proposal.

Purpose of Summary Analysis

This document provides a summary of current land use patterns and compares land use and aesthetic impacts of the 2008 Proposal and the 2014 Revised Proposal.

Land Use

Current Conditions

The existing Parkplace site contains seven retail and office buildings ranging from 1 to 6 stories in height, as well as surface and structured parking. The current square footage by use is listed below.

Table 6.1-1. Current Land Use and Square Footage

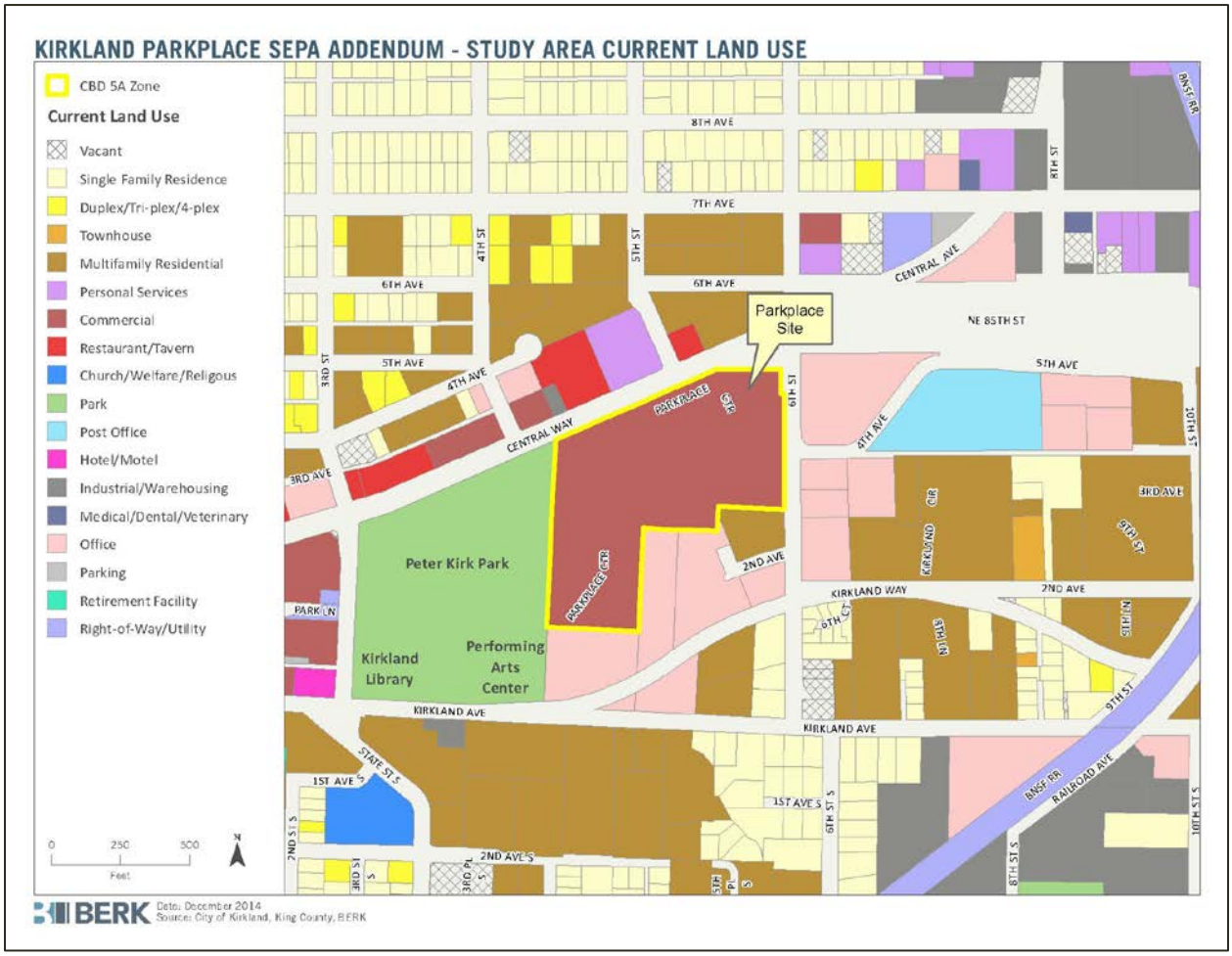
Type	Square Feet
Office	95,300
Retail	143,150
Residential	-
Total	238,450

Source: ICF Jones & Stokes, 2008.

A map of the site, adjacent properties, and the broader neighborhood is shown in Figure 6.1-1. Current uses adjacent to Parkplace on the north, east, south and west are described below.

- **North:** Along Central Way, there are a mix of commercial, restaurant, and service uses. The area between 6th Street and 10th Street transitions from office uses along 6th Street to multifamily uses eastward towards 10th Street.
- **South:** Office uses abut the Parkplace site on the south and a multi-family development lies southeast. The office buildings to the south range from 1 to 5 stories in height. Residential uses with ground floor commercial lie south of Kirkland Way.
- **East:** Office development is located east of the Parkplace site across 6th Street.
- **West:** Peter Kirk Park, the Kirkland Performance Center and Community Center, Pool, Kirkland Library, and Kirkland Transit center lie west of the MRM site and CBD 5 zone.

Figure 6.1-1.Parkplace Current Land Use



Source: BERK 2014

Compatibility

Under the 2008 Proposal, the Parkplace site would include the same types of land uses as exist today, but with a substantial increase in office and commercial development. The 2014 Revised Proposal will increase employment in Downtown substantially, adding approximately 2,383 new jobs, but the increase is 55 percent less than the 2008 proposal.

The 2014 Proposal will also add up to 300 units and 300,000 square feet of multifamily residential. This addition of housing to the Parkplace site represents a change from the existing land use on the site, but is still compatible with adjacent uses. As described above, to the south and north of the Parkplace site are mixed-use developments; to the east is a mix of employment and multifamily, and to the west is Peter Kirk Park. The addition of residential use at the site will increase night-time use, which is not expected to have an impact on adjacent properties.

Under the 2008 Proposal, building heights would increase from a maximum of 5 stories under existing conditions to 8 stories. The 2008 Proposal would allow lower maximum building heights along the frontage of Central Way, within 100 feet of Peter Kirk Park, and along the south edge of the area, allowing greater compatibility with the Park, nearby residential uses, and surrounding buildings of lower height and smaller scale. The 2014 Proposal, which would also increase building heights to maximum of 8 stories, is required to have the same zoning and master plan requirements of the code approved as a result of the 2008 Proposal, including decreased maximum heights along Central Way, within 100 feet of Peter Kirk Park, and along the south edge of the site.

Employment and Housing Mix

Based on standard assumptions for retail and office square feet per employee (250 square feet per office employee and 500 square feet per retail employee) the total jobs onsite would equal 668 presently.

The 2014 Proposal would contribute a substantial quantity of jobs and some housing which would help the City to achieve its growth targets. At buildout, Parkplace as proposed would provide approximately 3,050 total jobs (2,383 new) jobs and 300 housing units. As a result of the reduction in scale of the overall project, there would be 2,935 fewer jobs compared to the previously approved project and more similar to the 2008 No Action Alternative, as shown in Table 6.1-2. Due to the diversification in uses, there would also be 300 more housing units compared to the previously approved project.

Table 6.1-2. Job Estimates by Alternative

	Office SF	Commercial SF	Total SF	Office Jobs	Commercial Jobs	Total Jobs
Existing (estimated)	95,300	143,150	238,450	381	286	668
No Action 2008 FEIS	629,500	209,200	838,700	2,518	418	2,936
Parkplace Approved 2008 FEIS	1,200,000	592,700	1,792,700	4,800	1,185	5,985
Parkplace Revised 2014 Addendum	650,000	225,000	875,000	2,600	450	3,050
2014 Revised Proposal - Increase about Existing (estimated)	554,700	81,850	636,550	2,219	164	2,383
2014 Revised Propsal - Increase above 2008 No Action	20,500	15,800	36,300	82	32	114
2014 Revised Propsal - Decrease since 2008 Proposal	(550,000)	(367,700)	(917,700)	(2,200)	(735)	(2,935)

Source: BERK 2014
Note: Based on 500 square feet/retail employee, and 250 square feet/office employee

The effect of the Revised Proposal is that the City's capacity for housing would increase and provide further cushion to meet its 2031 and 2035 estimated growth targets. It would reduce the City's low range job capacity estimate below what is needed to meet the 2031 and 2035 targets but given the excess capacity at Totem Center, the City's high range job capacity estimate would continue to have excess capacity for growth targets, as shown in Table 6.1-3.

Table 6.1-3. Comparison of Targets, Capacity, and 2014 Revised Parkplace

Type of Growth/Year	Growth Targets				Revised Capacity Range	
	2006 - 2031 – City and Annexation	2035 Estimated Target	2013 Draft Land Capacity Results with approved Parkplace 2008	Effect of Revised Parkplace	Low Range	High Range
New Housing Units	8,570	8,361	9,907 – 16,222	300	10,207	16,522
New Employment	20,850	22,435	22,905 – 50,615	(2,935)	19,970	47,680

Source: BERK 2014

Housing at the Parkplace site would be designed for compatibility with the overall master plan and is expected to be placed above commercial uses in a traditional mixed use pattern. Housing mixed with commercial and office would be compatible with surrounding uses. To the north of the Parkplace site are residential developments with ground floor commercial retail uses; to the east are office developments and to the southeast on the same block is a multifamily development; to the west is Peter Kirk Park; and to the south are office buildings, with additional residential development and ground floor commercial south of Kirkland Way. The addition of residential use at the site will increase night-time use, which is not expected to have an impact on adjacent properties, particularly where there is like mixed use patterns; in the case of adjacent employment areas, these would typically be unused in the night time and would not be affected by Parkplace residential uses.

Aesthetics

Height Requirements

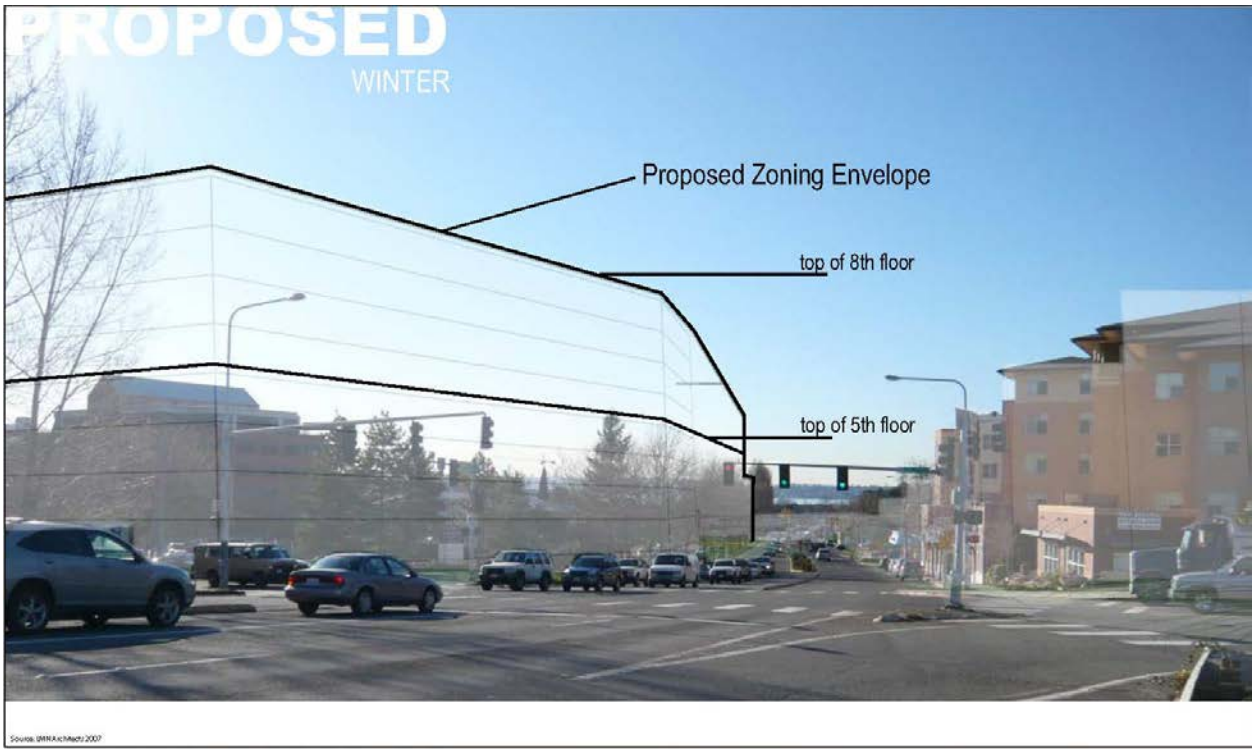
The 2014 Proposal would fall within all height requirements of the 2008 Proposal including code amendments adopted at that time. That Alternative and the current zoning code allows 7 stories and 100 feet in height along Central Way, and then a maximum of 8 stories and 115 feet after a 110 foot setback from Central Way. There is also a variable height limit along the western property line, ranging from four stories and 60 feet within 100 feet from Peter Kirk Park, then 7 stories and 100 feet after the 100 foot setback, and finally 115 feet and 8 stories allowed after a 120 foot setback from the Park. A portion of the 60 foot height limit extends to a setback of 195 feet from the Park boundary. In addition, there is a 55 foot setback required adjacent to the Park for placement of a north-south access road connecting to the access easement on the property to the south.

The 2014 Proposal would generally be up to 8 stories in height. The combined retail and residential development in the center of the site would likely be 8 stories. Buildings on the east side of the site would be about 5-7 stories in height. Buildings fronting Central Way would be up to 7 stories in height. The development will contain multiple plazas and no heights would be in excess of the Master Plan or zoning code.

Building Height Envelope

The 2014 Proposal does not change the maximum building envelope from the 2008 Proposal, as shown in Figure 6.1-2. The 2008 view analysis depicted in Figure 6.1-2 assumes full property coverage with no modulation since at the time of the analysis the zoning and design standards were not yet developed; the code requirement for 7 stories within 100 feet is not depicted and would lessen the bulk, as would the 2014 proposed amended Design Guidelines that include principles of reducing building modulation. All of the height limits and setbacks adopted in the code as a result of the 2008 Proposal are required for the 2014 Proposal. In addition revisions to the setbacks, building step backs, and modulation of buildings to the south to address appropriate transitions.

Figure 6.1-2. View Corridor



Source: ICF Jones & Stokes, 2008.

Zoning Code Changes

There are several changes to the zoning code required by the 2014 Revised Proposal, none of which would have a significant impact on the prior analysis of aesthetics from earlier SEPA reviews.

First, the 2014 Revised Proposal would include up to 30 percent of the gross area as residential development, which is higher than the 10 percent limit for district CBD 5A under the current zoning code. The increase in housing development on site will not have a greater aesthetic impact than the 2008 Proposal because it is required to meet substantially the same design standards instituted in the code. In addition, since residential floor-to-floor heights will probably be less than office floor-to-floor heights (e.g. 10 feet instead of a minimum of 13 feet or greater for office), it is probable that the residential mixed use building would be designed to a lesser height than an office mixed use building. This means the building with residential and retail uses in the 2014 Proposal could have a lower height than the office/commercial buildings in the 2008 Proposal.

Second, the 2014 Revised Proposal includes zoning code amendments to allow a bank drive-through on the eastern portion of the site subject to Public Works review.

6.2 Plans and Policies

Introduction

Prior SEPA Analysis of Parkplace

Several previous environmental impact statements (EISs) have evaluated the consistency of development on and adjacent to the Parkplace site with state, regional and local plans and policies. The 2008 Parkplace EIS (*Comprehensive Plan Land Use, Capital Facility and Transportation Amendments and Zoning and Municipal Code Amendments Planned Action EIS*) evaluated a redevelopment proposal comprised of approximately 1.8 million gross square feet of office and retail development. The EIS contains a thorough discussion of that Proposed project and a No Action alternative relative to relevant state, regional and local plans and policies. The Draft EIS analysis identified inconsistencies with several Comprehensive Plan policies and zoning standards, and identified a program of mitigation measures to resolve those conflicts. Those measures were incorporated into a revised alternative (FEIS Review Alternative) and redevelopment proposal in the Final EIS, and proposed amendments to the Comprehensive Plan and zoning code, and planned action ordinance.

The City Council approved the Parkplace actions in December, 2008. Adopted Comprehensive Plan amendments included revisions to the Moss Bay Neighborhood Plan to allow taller buildings in the new CBD 5A land use district in exchange for provision of public spaces, pedestrian-oriented development, retail streets and sustainability measures. A new view corridor was identified on NE 85th Street west of I-405. A Master Plan and design guidelines for the site were adopted. Development standards for the CBD 5A zoning district, which applies only to the Parkplace site, allow mixed-use development containing primarily office, retail and restaurant uses. Retail use is required to equal at least 25 percent of office use. Additional permitted uses include hotel, athletic club, movie theatre, assisted living facility, a variety of public and institutional uses, and multi-family residential units up to a maximum of 10 percent of total gross floor area. Maximum building height was established at 115 feet/8 stories (excluding roof-top appurtenances). A 55-foot minimum setback was established from Peter Kirk Park, and 20-foot minimum setbacks were established along the southern portion of the site.

The project was subsequently appealed. In 2010, to comply with a decision of the Central Puget Sound Growth Management Hearings Board, a Supplemental EIS (SEIS) was prepared to evaluate three additional on-site and off-site alternatives. The SEIS included an analysis of the relative consistency of these alternatives with the same state, regional and local policies addressed in the 2008 EIS. All appeals were resolved and the Parkplace amendments to the Comprehensive Plan and zoning code went into effect in 2010.

In 2014, the City published a Supplemental EIS for a Private Amendment Request (PAR) for the MRM property, which is located contiguous to Parkplace (*MRM Private Amendment Request Supplemental EIS)*. The SEIS considered six alternatives for mixed-use residential or mixed-use office development on the MRM site and at two off-site locations within the CBD-5 district. The residential alternatives would modify existing zoning limitations on residential development.

The MRM SEIS (Section 3.2) includes an analysis of the consistency of both residential and office development in the Central Business District relative to state, regional and local plans and policies. The residential mixed-use alternatives in the MRM SEIS considered similar and greater amounts of housing to that being proposed in the Parkplace Addendum. The analysis generally concluded that the residential alternatives would be consistent with many goals and policies relating Land Use and Economic Development in the CBD as a whole. However, the intent of some policies in the Moss Bay Neighborhood Plan specific to the East Core Frame, an area that includes the MRM and Parkplace sites,

were less clear regarding residential development, and the analysis attempted to construe them. The City has deferred action on the PAR.

As noted in the Fact Sheet of this Addendum, these prior EISs/SEISs are being adopted for the purposes of SEPA review of the Revised Parkplace Proposal. Many elements of the Revised Proposal are the same as or substantially similar to the prior proposals, and most of the prior policy analysis is, therefore, directly relevant and still accurate. The analysis in this section of the Addendum is focused on proposed changes to the Proposal to identify any conflicts with City policy. For the convenience of the reader, however, and to clarify how the Revised Proposal relates to adopted policy, much of the prior analysis of Comprehensive Plan policies is repeated here.

Changes to the Proposal

The most significant changes that are proposed to the approved Parkplace project include an approximate 34 percent reduction in the overall scale of the redevelopment, from approximately 1.8 million gross square feet to 1.175 million gross square feet; and the addition of up to 300 mixed-use multifamily residential units in a mixed-use building. Proposed building heights are 3-8 stories (maximum 115 feet), which is the same as approved for the original Parkplace project. More specific information about the types and amounts of different land uses proposed is included in Section 3.0 of the Addendum.

Policy Analysis

From a policy perspective, the most significant question presented by the Revised Parkplace Proposal is whether the proposed changes in scale and land use are still consistent with Kirkland's adopted Comprehensive Plan, particularly goals and policies relating to Land Use and Economic Development in the Downtown area, and to the Moss Bay Neighborhood Plan. Those policies are the focus of the analysis. Policies included in the analysis were selected based on their relevance to the proposal, particularly the type and location of development. The Addendum does not repeat the prior analyses of consistency with the Growth Management Act, King County Countywide Planning Policies, and Vision 2040, because the proposed changes to the project are not significant from the perspective of state and regional growth management policies.

It is noted that the City's Comprehensive Plan is a general, long-range and city-wide blueprint for the city's growth. By necessity and by design, many policies are broad and attempt to encompass numerous situations. Because of their generality and breadth, some policies can be interpreted in varying ways in a site-specific or project-specific context; the analysis attempts to identify these situations and construe the intent of the policy. In some cases, broadly stated policies may also overlap with other policies that address a more specific geographic location. For example, the Revised Proposal is located within the broader "Downtown" area of Kirkland, and is subject to policies which describe the overall mix of land uses desired in the Downtown. It is also located within the Moss Bay Neighborhood, and some policies of the Neighborhood Plan express desired outcomes (e.g., achieving a mix of uses) at a general neighborhood level. At the same time, the site is within the Moss Bay neighborhood's designated East Core Frame, to which additional policies apply regarding the appropriate mix of land uses. The analysis addresses the Revised Proposal at these numerous policy levels.

It is noted that policy analysis is based on a generalized master plan for the Revised Parkplace Proposal, since detailed design information is not available at this time. The Revised Proposal will be subject to Kirkland's design review process, however, which will consider and ensure consistency with Comprehensive Plan policies applicable to building design.

Vision Statement (Excerpt): Downtown Kirkland is a vibrant focal point of our hometown with a rich mix of commercial, residential, civic and cultural activities in a unique waterfront location. Our downtown maintains a human scale through carefully planned pedestrian and transit-oriented development.

> *Discussion*: The Revised Proposal includes a mix of office, retail and residential uses in the Downtown, and reflects the broad mix of activities envisioned in the Vision Statement. The Parkplace site has been planned to facilitate on-site pedestrian movement and will provide connections to other portions of the Downtown. The Parkplace site is also located adjacent to and within short walking distance of the Kirkland Transit Center. Higher density mixed-use development located adjacent to a transit center can also encourage greater use of transit.

Framework Goals

FG-3: Maintain vibrant and stable residential neighborhoods and mixed-use development, with housing for diverse income groups, age groups, and lifestyles.

> *Discussion:* The Revised Proposal is a mixed-use development that would include housing. It is assumed that KZC 112.15 would apply to the revised Proposal and would require that 10 percent of residential units be affordable.

FG-4: Promote a strong and diverse economy.

> *Discussion*: The Revised Proposal includes 875,000 square feet of office and retail use, and would provide approximately 3,050 total jobs which would promote the local economy. A resident population would provide support for goods and services provided on-site and within the Downtown area.

FG-8: Maintain and enhance Kirkland's strong physical, visual and perceptual linkages to Lake Washington.

> *Discussion*: The prior Parkplace EIS and SEIS evaluated the visual impacts of the proposal and alternatives, which was approved with buildings up to 8 stories in height. The Revised Proposal includes buildings up to the same height; aesthetic impacts are discussed in greater detail in Section 4.0 of this Addendum.

FG-14: 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.

> *Discussion*: The Revised Proposal would provide approximately 3,050 total jobs (2,383 new jobs) and 300 housing units in a compact, high density pattern in an urban downtown. This growth would help the City to meet its adopted growth targets. Please also refer to Section 4.0 of the Addendum regarding growth forecasts.

Land Use

LU-1.4: Create an effective transition between different land uses and housing types.

> *Discussion*: Parkplace is located in the CBD 5A zoning district which currently permits a mix of office, commercial and residential uses. Residential uses would be contained in a mixed-use building located central to the site. Adjacent land uses are residential mixed-use to the north, across Central Way; multifamily residential and office to the east; office and residential to the south; and civic uses and Peter Kirk Park to the west. The prior Parkplace EISs evaluate potential land use impacts from the approved, more intensive Parkplace development to adjacent uses. Mitigation measures to address identified impacts were incorporated into the zoning regulations and design guidelines that apply to Parkplace. The Revised Proposal is less intensive

and impacts would be similar or lower; zoning regulations may be modified, however, to reflect the change in use and revised site plan.

Similarly, the MRM SEIS discusses potential impacts associated with locating residential land uses in this general area of the Downtown. The number of housing units proposed to be included in the Revised Parkplace Proposal is similar to the number of units considered in MRM Alternative 2a, and impacts would be similar as well.

Additional information about land use compatibility is included in the Land Use section of this Addendum.

LU-3.1: Provide employment opportunities and shops and services within walking or bicycling distance of home.

Discussion: The Revised Parkplace Proposal would provide employment opportunities for approximately 3,050 total (2,383 net) workers and housing for approximately 513 people. Integrating commercial and residential uses on the same site in Downtown Kirkland would facilitate walking or bicycling to shops and services within Parkplace and in the Downtown by those living on-site and in adjacent residential buildings and neighborhoods.

LU-3.2. Encourage residential development within commercial areas.

Plan explanatory text: "Housing within commercial areas provides the opportunity for people to live close to shops, services and places of employment. Conversely, residents living within commercial areas create a localized market for nearby goods and services, provide increased security, and help to create a sense of community for those districts. Residential development within commercial areas should be compatible and complementary to business activity. Residential use should not displace existing or potential commercial use."

Discussion: Parkplace is an existing shopping center and office development, and it is identified in the Comprehensive Plan as a commercial area. As originally approved, Parkplace did not include any residential units, although the zoning regulations for district CBD 5A does permit up to 10 percent of the gross area to be developed for multifamily housing and assisted living facilities. Proposed zoning changes would increase the permitted proportion of residential development to 30 percent (maximum 300 units). Incorporating residences in a mixed-use land use pattern could achieve the benefits identified in the plan text for policy LU-3.2, such as creating a base of residences who would contribute to the market for nearby goods and services, both on-site and in the Downtown more generally.

The increase in residential use could, however, be viewed as displacing "potential commercial use" since the approved project was entirely office and retail. The proposed addition of residential use is also occurring in the context of a project that is being reduced in scale overall compared to what was originally approved, so some "potential" for commercial use is being eliminated, with or without the addition of housing. But any residential use developed in the originally approved project, a use which is allowed by existing zoning standards, would also have displaced some "potential commercial use." The site's new owners have revised the site plan to reflect changed market conditions; the Revised Proposal includes what is considered to be supportable and desirable land uses in the Kirkland real estate market. From this perspective, although there may be the "potential" for additional commercial use in terms of theoretical utilization of the site's land area, additional "potential" commercial use is not considered to be marketable.

Overall, it seems likely that the intent of LU-3.2 is to provide direction in the context of the rezoning or change in use of an individual parcel from commercial to residential. Its application

in the current situation, which is a diversification and reallocation of uses within a master planned site where uses are predominantly office and retail, is less clear. The policy issue of residential use is also discussed relative to the Moss Bay Neighborhood Plan below.

LU-3.5: Incorporate features in new development projects which support transit and nonmotorized travel as alternatives to the single-occupant vehicle.

Discussion: As noted in the discussion of LU-3.1, integrating housing with office and retail uses on the same site in Downtown Kirkland, proximate to the transit center, would facilitate walking or bicycling to shops and services – within Parkplace and in the Downtown -- by those living on-site and in adjacent residential buildings and neighborhoods. Mixed-use development proximate to transit can also encourage use of public transit as an alternative drive-alone commuting. Other transit-supportive and nonmotorized features were incorporated into the original Parkplace project, including implementation of transportation management program (TMP) program, and it is assumed that the same or a similar program would apply to the Revised Proposal.

LU-3.6: Encourage vehicular and nonmotorized connections between adjacent properties.

Discussion: Section 8 of the adopted Parkplace Master Plan and Design Guidelines (KMC 3.30) require a network of pedestrian connections from the site to existing streets and to Peter Kirk Park. It is assumed that the same or a similar network would be required for the Revised Proposal.

Goal LU-4: Protect and enhance the character, quality and function of existing residential neighborhoods while accommodating the City's growth targets.

Discussion: Residential neighborhoods, some of which are mixed-use in character, are located in Downtown Kirkland adjacent to the site. Chapter 3.1 of the Parkplace Draft EIS (City of Kirkland, 2008) discusses the potential for significant impacts to these neighborhoods from redevelopment of Parkplace. Most potential impacts to adjacent residential areas were related to the intensification of development/activity on the site and from increased height, and these impacts were addressed through a combination of building height limits, increased setbacks, and application of design guidelines. Proposed changes would add a residential component to the project and would reduce the intensity of redevelopment overall, but would maintain the same building heights. The inclusion of housing would help the City to achieve its population growth targets, while the reduction in employment would entail increased growth in other commercial areas, primarily the Totem Lake Urban Center. Impacts would likely be the same or less, and the Revised Proposal would be consistent with Goal LU-4.

LU-4.2: Locate the most dense residential areas close to shops and services and transportation hubs.

Discussion: In general, Kirkland's Downtown, which includes the Parkplace site, contains the City's highest residential densities, and this concentration of housing is close to a concentration of shops and services. The high-density residential building proposed for Parkplace would be integrated within a mixed-use retail and office project that is within a short walk of the Downtown transit center.

LU-4.3: Continue to allow for new residential growth throughout the community, consistent with the basic pattern of land use in the City.

Discussion: The City's "basic pattern of land use" in the Downtown, as expressed in the Vision Statement and policy LU-5.3 below, includes a mix of residential, office and retail uses; the Revise Proposal is currently part of and would continue this basic pattern. The question of the

appropriate mix of land uses on the Parkplace site in relationship to the Moss Bay Neighborhood is discussed below.

LU-4.4: Consider neighborhood character and integrity when determining the extent of land use changes.

Discussion: The amended proposal will increase employment significantly in Downtown, but by less than half as much as the 2008 proposal (approximately 2,383 new employees rather than approximately 5,318 new employees). The 2014 Proposal will also add up to 300 units and 300,000 square feet of multifamily residential. This addition of housing to the Parkplace site represents a change from the existing land use on the site, which is retail and office. Housing would be designed for compatibility with the overall master plan and is expected to be placed above commercial uses in a traditional mixed use pattern. Housing mixed with commercial and office would be compatible with surrounding uses. To the south and north of the Parkplace site are residential developments with ground floor commercial; to the east is a mix of employment and multifamily uses; to the west is Peter Kirk Park. The addition of residential use at the site will increase night-time use, which is not expected to have an impact on adjacent properties, particularly where there is like mixed use patterns; in the case of adjacent employment areas, these would typically be unused in the night time and would not be affected by Parkplace residential uses.

LU-5.1: Reflect the following principles in development standards and land use plans for commercial areas:

- Create lively and attractive districts with a human scale.
- Support a mix of retail, office and residential uses in multistory structures.
- Create effective transitions between commercial uses and surrounding residential neighborhoods.
- Protect residential areas from excessive noise, exterior lighting, glare, visual nuisances, and other conditions which detract from the quality of the living environment.

Discussion: Standards and guidelines for redevelopment of Parkplace were adopted in 2010 and were incorporated in the Comprehensive Plan, zoning regulations for CBD 5A (KZC 50.38) and the Parkplace Master Plan and Design Guidelines. While the zoning code and master plan/design guidelines will likely change somewhat to reflect the Revised Proposal, the basic elements of the redevelopment plan will remain the same. Adopted design guidelines will help create an attractive area, and the addition of housing will complement the commercial elements of the project (1st policy bullet). Proposed uses include a mix of office, retail, and residential in multi-story structures (2nd policy bullet). Transitions to adjacent residential and park/recreation uses would be achieved by the organization of building heights and setbacks (3rd policy bullet). Mitigation measures to protect adjacent residential area from potential impacts of office and retail development were identified in the prior Parkplace EIS and are incorporated into the policy and regulatory changes referenced above. Changes to the Project would result in similar or reduced impacts (4th policy bullet).

LU-5.2: Maintain and strengthen existing commercial areas by focusing economic development within them and establishing development guidelines.

Explanatory text: “The intent of this policy is that future economic development be concentrated in existing commercial areas. This concentration can help to maintain and strengthen these areas and also promote orderly and efficient growth that minimizes impacts and service expansion costs.

Concentration also allows businesses to benefit from proximity to each other. Intensification, rather than expansion of the boundaries of existing commercial areas into surrounding residential neighborhoods, is desirable. Infilling is preferred, particularly when it would create a denser pattern of development that is focused less on the private automobile and more on the opportunity for multiple transportation modes. Redevelopment may also provide new opportunities, especially in commercial areas where the community vision has changed over time."

Discussion: Parkplace is an existing retail and office development in Downtown Kirkland, and is identified as a commercial area in the Comprehensive Plan. The goals of redeveloping the site include updating, revitalizing, diversifying and strengthening its economic performance, which is harmonious with the intent of LU-5.2. The site would be developed more intensively with a broader mix of uses than at present; no change in site boundaries would occur. Development guidelines are established in the zoning code, and in the Parkplace Master Plan and Design Guidelines; these are proposed to be revised to reflect a reduction in development scale, the inclusion of housing and revisions to the site plan.

Proposed redevelopment would also achieve many of the benefits described in the plan's explanatory text. For example, the site is located within a short walk of the Kirkland Transit Center and redevelopment would provide pedestrian connections to the surrounding area. These features would encourage transit use and nonmotorized transit modes, respectively.

LU-5.3: Maintain and enhance Kirkland's Central Business District (CBD) as a regional Activity Area, reflecting the following principles in development standards and land use plans:

- Create a compact area to support a transit center and promote pedestrian activity.
- Promote a mix of uses, including retail, office and housing.
- Encourage uses that will provide both daytime and evening activities.
- Support civic, cultural and entertainment activities.
- Provide sufficient public open space and recreational activities.
- Enhance, and provide access to, the waterfront.

Explanatory text: "The Central Business District (CBD) has historically been the center of commercial activity in Kirkland. As Framework Goal 3 states, Downtown is also a residential, civic, cultural and entertainment focal point and has the most dominant role in contributing to the City's identity. These prominent roles of the CBD should be maintained and enhanced."

Discussion: The Revised Parkplace would be an intensively developed commercial area within the CBD, located within a short walk of the Downtown Transit Center. It would contain a mix of office, retail and residential uses; this is identical to the existing and desired mix of uses in the Downtown area overall. Retail uses, including restaurants and entertainment, would attract people during the day and evening. Public and private open spaces are included in the site plan. Redevelopment and the resulting provision of 3,050 total jobs (2,383 new jobs) would help to reinforce the central commercial function of Downtown Kirkland.

Housing

H-2.4: Provide affordable housing units when increases to development capacity are considered.

Discussion: Although the Revised Proposal would decrease the overall development capacity of the Parkplace site, it would also increase residential development capacity, from 10 percent of gross floor area to approximately 26 percent of gross floor area. It is assumed that the affordable housing requirement of KZC 112.15 would apply to the revised project, which could result in up to 30 affordable units.

Economic Development

ED-1: Foster a strong and diverse economy consistent with community values, goals and policies.

Discussion: The Revised Proposal would contain approximately 875,000 gross square feet of office and retail use and would provide approximately 3,050 total jobs. Planned employment land uses would support the local economy and would advance relevant goals and policies of the Comprehensive Plan.

ED-1.5: Encourage clusters of complementary businesses.

Discussion: Parkplace is an existing retail shopping center and office development. The essence of a retail shopping center is that complimentary uses are clustered together to make shopping convenient and to create synergy among activities. The retail component of the center would be expanded, from an existing 143,150 gross square feet to approximately 225,000 gross square feet. The specific types of office-based businesses that would locate in Parkplace are not known at this time.

ED-1.6: Strive to maintain a balance of jobs and housing.

Discussion: Policy ED-1.6 speaks to a desired balance of jobs and housing for the City as a whole; it does not suggest that each individual project needs to provide a balance. The Revised Proposal would contribute a substantial quantity of jobs and some housing which would help the City to achieve its growth targets. At buildout, Parkplace as proposed would provide approximately 3,050 total jobs (2,383 new)jobs and 300 housing units. As a result of the reduction in scale of the overall project, there would be 2,935 fewer jobs compared to the previously approved project and more similar to the 2008 No Action Alternative; see Table 1. Due to the diversification in uses, there would also be 300 more housing units compared to the previously approved project.

Table 1. Job Estimates by Alternative

	Office SF	Commercial SF	Total SF	Office Jobs	Commercial Jobs	Total Jobs
Existing (estimated)	95,300	143,150	238,450	381	286	668
No Action 2008 FEIS	629,500	209,200	838,700	2,518	418	2,936
Parkplace Approved 2008 FEIS	1,200,000	592,700	1,792,700	4,800	1,185	5,985
Parkplace Revised 2014 Addendum	650,000	225,000	875,000	2,600	450	3,050
2014 Revised Proposal - Increase about Existing (estimated)	554,700	81,850	636,550	2,219	164	2,383
2014 Revised Propsal - Increase above 2008 No Action	20,500	15,800	36,300	82	32	114
2014 Revised Propsal - Decrease since 2008 Proposal	(550,000)	(367,700)	(917,700)	(2,200)	(735)	(2,935)

Note: Based on 500 square feet/retail employee, and 250 square feet/office employee

The effect of the Revised Parkplace proposal is that the City's capacity for housing would increase and provide further cushion to meet its 2031 and 2035 estimated growth targets. It would reduce the City's low range job capacity estimate below what is needed to meet the 2031 and 2035 targets but given the excess capacity at Totem Center, the City's high range job capacity estimate would continue to have excess capacity for growth targets. See Table 2 below.

Table 2. Comparison of Targets, Capacity, and Revised Parkplace

Type of Growth/Year	Growth Targets				Revised Capacity Range	
	2006 - 2031 – City and Annexation	2035 Estimated Target	2013 Draft Land Capacity Results with approved Parkplace 2008	Effect of Revised Parkplace	Low Range	High Range
New Housing Units	8,570	8,361	9,907 – 16,222	300	10,207	16,522
New Employment	20,850	22,435	22,905 – 50,615	(2,935)	19,970	47,680

ED-2.4: Consider the economic effects on businesses and the economic benefit to the community when making land use decisions.

Discussion: The Revised Proposal would expand Parkplace from an existing 238,450 gross square feet to 1,175,000 square feet of office, retail and residential use. Employment would increase from approximately 668 at present (applying standard employment square footage ratios) to an estimated 3,050 office and retail jobs. An economic objective of redevelopment is to increase spending for goods and services, which would generate additional tax revenues to the City. The project's residential population would provide economic support for businesses within Parkplace and within the Downtown generally.

ED-3.3: Encourage infill and redevelopment of existing commercial areas consistent with the role of each commercial area.

Discussion: The Proposal is redevelopment, intensification and diversification of an existing retail shopping center in Downtown Kirkland. Redevelopment would revitalize the existing development, expand employment opportunities and enhance the center's economic function within the City.

ED-3.5: Encourage mixed-use development within commercial areas.

Explanatory text: "A mix of uses improves the vitality of commercial areas. Mixed-use residential and commercial development provides the opportunity for residents to live, shop and work in commercial areas. Mixed-use development encourages one-stop shopping when a variety of businesses are located in close proximity to each other and shared parking is provided. Mixed-use development, when combined with multi-story structures, promotes a more compact and sustainable land use pattern and encourages walking and transit use to reduce dependence on automobiles."

Discussion: Changes to the Proposal would embody the principles stated in ED-3.5 and explanatory text. Redevelopment of Parkplace would result in a mix of office, retail and residential uses being located on an existing commercial site in Downtown Kirkland. Complementary retail uses would be located in proximity to one another. The site would be intensively developed in a compact pattern with multi-story buildings, ranging in height 3 to 8 stories. The project would provide pedestrian connections to surrounding development in the Downtown and to the nearby Transit Center.

Moss Bay Neighborhood Plan

Land Use. The Downtown area is appropriate for a wide variety of permitted uses. The area's economic vitality and identity as a commercial center will depend upon its ability to establish and retain a critical mass of retail uses and services, primarily located west of 3rd Street.

The enhancement of the area for retail and service businesses will best be served by concentrating such uses in the pedestrian core and shoreline districts and by encouraging a substantial increase in the amount of housing and office floor area either within or adjacent to the core.

Discussion: The statement above about Land Use is focused primarily on the pedestrian core of the Downtown, which is bounded by 3rd Street and located one block west of Parkplace. However, the "area" is not limited geographically to the pedestrian core, and presumably includes retaining and enhancement of retail and service businesses in the Downtown more generally. The Revised Proposal would redevelop and expand retail and service businesses and office uses in an important commercial area within the Downtown, which would enhance the area and contribute to its vitality.

The Land Use text also encourages a substantial increase in the amount of housing and office use within or adjacent to the core. The revised Parkplace Proposal, which is located adjacent to the core, includes both a substantial amount of office use and some housing.

As identified in the MRM SEIS, there is currently strong demand for housing in Downtown Kirkland. The SEIS notes a documented market trend that has preferred to develop housing in Downtown zoning districts which allow either housing and office use.

East Core Frame. Development in the East Core Frame should be in large, intensively developed mixed-use projects.

The East Core Frame is located east of Peter Kirk Park, extending from Kirkland Way northerly to 7th Avenue. The area includes the Parkplace shopping center as well as several large office buildings and residential complexes. South of Central Way, the area is largely commercial and provides significant opportunities for redevelopment. Because this area provides the best opportunities in Downtown for creating a strong employment base, redevelopment for office use should be emphasized. Within the Parkplace Center site, however, retail uses should be a significant component of a mixed-use complex. Limited residential use should be allowed as a complimentary use.

Discussion: This plan text addresses both the larger East Core Frame, which includes Parkplace, and the Parkplace site more specifically. The Revised Proposal is consistent with the statement about the preferred form of development in the East Core Frame: it is a large, intensively developed mixed-use project. The explanatory text goes on to establish a hierarchy of preferred uses: office use should be "emphasized" (in the East Core Frame generally); retail use should be a significant component of mixed-use development in Parkplace; and "limited" residential use should be allowed in Parkplace. This preferred hierarchy is generally reflected in the Revised Proposal. Offices would be the most extensive use, at 55 percent of total gross floor area. Retail, theater and health club uses would comprise 19 percent of the total project. Together, office and retail uses would make up almost 75 percent of the total site. Retail and restaurant uses would comprise more than 25 percent of office use, which would meet the requirements of the CBD 5A zoning regulations (KMC 50.38.010, Special Regulation 2). While these amounts of development, and the overall project, are reduced from what was contained in the adopted Parkplace master plan, the emphasis of the revised redevelopment plan is still on office development, and retail use is still a significant component of the project. Retail uses would increase by approximately 50 percent compared to what exists in Parkplace today.

The text is clear that office and retail uses should be emphasized and that residential use should be "limited." The word "limited" is defined in Webster's New World College Dictionary (4th Edition) to mean "confined within bounds, restricted, narrow in scope or extent." The existing CBD 5A regulations limit residential development within Parkplace to 10 percent of the gross floor area (KZC 50.38, Special Regulation 3.d). The Revised Proposal would increase this limit to

26 percent (300,000 square feet), which would permit development of up to 300 housing units. While this proposed change would increase the amount of housing, this use would still be limited by regulation and secondary to commercial uses (74 percent of total area). The specific proportion of housing that is allowed is a legislative decision that will be made by the City Council.

The CBD-5A zone (KZC 50.38.010) permits a variety of uses and it is not an exclusive office or retail district. As noted previously, the code limits the amount of residential use and includes some requirements for different types of retail/commercial uses. The MRM Private Amendment Request Final EIS (City of Kirkland, 2014, page 4-6) evaluated the requirements of the CBD 5 zone, which applies to properties contiguous to Parkplace on the south. The CBD-5 zone permits a variety of uses that are similar to those in CBD-5A. Residential use in the CBD-5 district is permitted on properties with frontage on on 2nd Avenue but is limited on properties within 170 feet of Peter Kirk Park to 12.5% of gross floor area. The MRM FEIS evaluated whether the introduction of additional residential use in the CBD-5 zone, beyond the limits specified in the zoning code, and the resulting replacement of some potential office use by housing, would result in significant impacts. The FEIS analysis concluded that, in the context of adopted land use policy, additional residential use would not adversely affect the land use pattern in the CBD, was not inconsistent with the pattern of zoning that implements the Moss Bay Plan, and would be supportive of and complement retail and commercial uses both in Parkplace and in the CBD generally. These same conclusions would apply to an increase of residential use on the Parkplace site.

Master Plan & Design Guidelines. City regulations establish a design review process for many types of projects. The process includes review and approval of proposals by the Design Review Board (KZC 142.35.9), and allows design departures and minor variations in design pursuant to established criteria (KZC 142.37) in appropriate circumstances.

The City adopted a Master Plan and Design Guidelines for Parkplace in 2008 (KMC 3.30.040(4)), and that document establishes a framework for the design and development of the project, and provides a means to gauge design compliance during project review. Topics addressed in the Master Plan and Design Guidelines include basic project parameters (amounts and types of uses), site planning, building design, public access and amenities, and the design of streets. The heart of the document provides statements of design intent and graphic illustrations of design objectives for various components of the project.

Discussion: The Revised Project proposal includes modifications to the adopted Master Plan and Design Guidelines to reflect the revised site plan and development concept. These changes generally include the following:

- Updating of project parameters to reflect the decreased amount of development and proposed mix of uses (i.e., addition of residential use) of the Revised Proposal;
- New discussion of residential use which was not an element of the approved Parkplace project;
- New graphics to illustrate the intent of the design standards and guidelines;
- Minor changes in phraseology (e.g., “pedestrian weather protection” replaces “covered walkway”);
- For a few design parameters, such as modulation and building design in the Central Way and Gateway districts, a greater emphasis on design intent and elimination of a quantitative/prescriptive standard (e.g., the depth of building modulation);

- Revisions to the setbacks, building step backs, and modulation of buildings to the south to address appropriate transitions;
- Some minor reconfigurations of street sections (e.g., sidewalks, parking lanes) on some streets, although sidewalks are generally the same or wider;
- A change in the primary site access to Central Way; and
- An increase in required open space, from 10 percent/50,000 s.f., to 15 percent/75,000 s.f.

Overall, the revised Design Guidelines are substantially the same as the adopted Design Guidelines. Like the adopted guidelines, they are intended to ensure that project design is consistent with its physical context and the intent of adopted City policy. The proposed changes would not be likely to result in substantially different or greater impacts compared to the adopted Guidelines.

The revised Master Plan and Design Guidelines are still undergoing discussion and will be reviewed by the Planning Commission and the City Council. Once adopted, they will be applied to the proposed project design by the Design Review Board to determine compliance.

Design District 5A. Redevelopment of this area should be governed by the Kirkland Parkplace Master Plan and Design Guidelines as set forth in the Municipal Code. Heights of up to eight stories are appropriate as an inventive to create a network of public open spaces around which is organized a dynamic retail destination. Development under the Master Plan and Design Guidelines should guide the transformation of this district from an auto-oriented center surrounded by surface parking into a pedestrian-oriented center integrated into the community…Residential development could be designed to integrate into both the office/retail character of the zone and the active urban nature of Peter Kirk Park.

Discussion: The 2014 Proposal would increase total office and commercial square footage in the analysis area, in addition to adding residential space, with larger buildings and greater area coverage than currently exist. However, because this proposal has approximately 34 percent less development space than the 2008 proposal, impacts are likely to be reduced. The revised proposal continues to propose eight stories, and the potential for view impacts of the 2008 EIS would not change; design standards proposed for mitigation have been adopted and would apply to reduce impacts.

6.3 Transportation

This section describes the existing transportation system in the vicinity of the project site and the future transportation conditions that are expected with and without the proposed project. Although the proposed Action alternative would have lower density, and in turn generate less traffic, than the proposal evaluated in the *Downtown Planned Action Ordinance Environmental Impact Statement* (EIS) (City of Kirkland, 2008) , transportation was reevaluated for this addendum to take into account changes in background traffic volumes and patterns that have occurred since the 2008 analysis, and also the cumulative conditions with additional regional background growth projected to occur through 2022, the anticipated build-out year of the current proposal. Figure 6.3-1 shows the transportation study area, which includes the 51 citywide study intersections defined for the City's Concurrency Management System and 19 intersections evaluated to meet the City's Traffic Impact Analysis requirements (described later in this section). Vehicle traffic that is expected to result from the Action and No Action alternative is analyzed cumulatively with traffic from other planned or potential regional growth. Future conditions are analyzed for the proposed build-out year of 2022, which is also the long-range planning year defined in the City's adopted Comprehensive Plan.

Affected Environment

This section describes existing transportation facilities within the study area, including roadways, parking, transit, pedestrian and bicycle facilities.

Existing Roadway Network

CITY ROADWAYS

The City has established a system of roadway classifications based on intended mobility and access functions. The classification system allows the application of appropriate design and maintenance standards, and guides the programming of roadway improvements. Figure 6.3-2 shows the existing functional classifications of the City's roadways. The classifications are described as follows.

- **Principal arterials** provide connections between the City and other regional locations and facilitate movement within City limits. These roadways allow higher speed limits, carry the highest traffic volumes, and provide the best mobility in the roadway network by limiting access and traffic control devices. Regional bus routes are typically located on principal arterials, as are transit centers and Park and Ride lots.
- **Minor arterials** connect with and augment principal arterials. Minor arterials give densely populated areas easy access to principal arterials and provide key circulation routes within the City. These roadways tend to have lower traffic volumes than principal arterials, but may provide more direct access to adjacent land uses (such as shopping centers, office buildings, etc.). Local and regional bus routes often operate on minor arterials.
- **Collector streets** allow easy movement within neighborhoods and channel neighborhood traffic onto the principal and minor arterials. Collectors generally carry moderate traffic volumes, move very little through traffic, and accommodate shorter trips than either principal or minor arterials. Local bus routes more typically operate along collectors.
- **Local access streets** comprise all remaining roadways and streets other than state and federal highways. The main function of local access streets is to provide direct access to abutting properties, while often limiting traffic movement. Local streets are generally associated with low vehicle speeds and traffic volumes. Bus routes are not typically located along local access streets. There are about 146 miles of streets in Kirkland, of which about 74% are designated as local access streets (City of Kirkland 2013).

Figure 6.3-1. Transportation Study Area

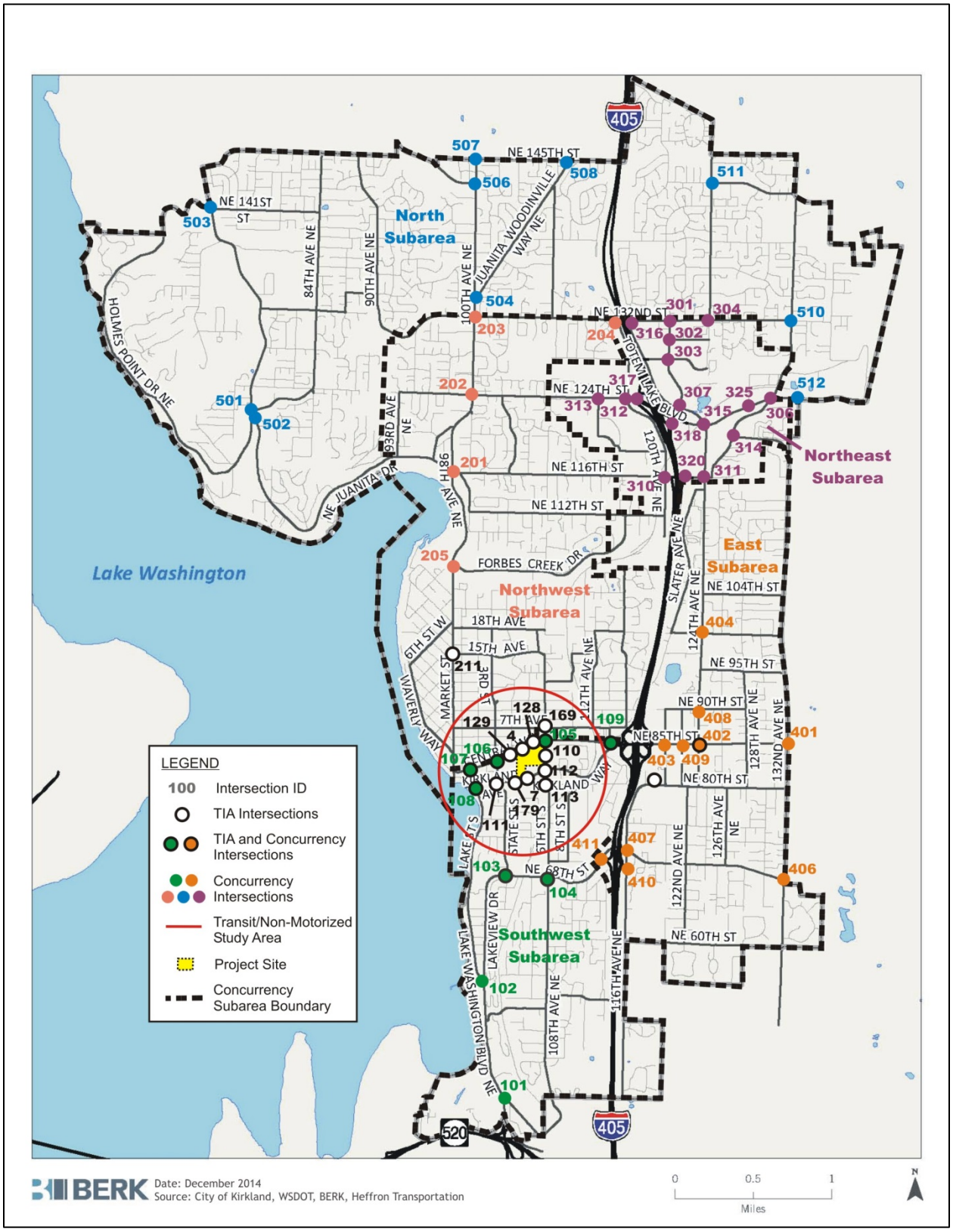
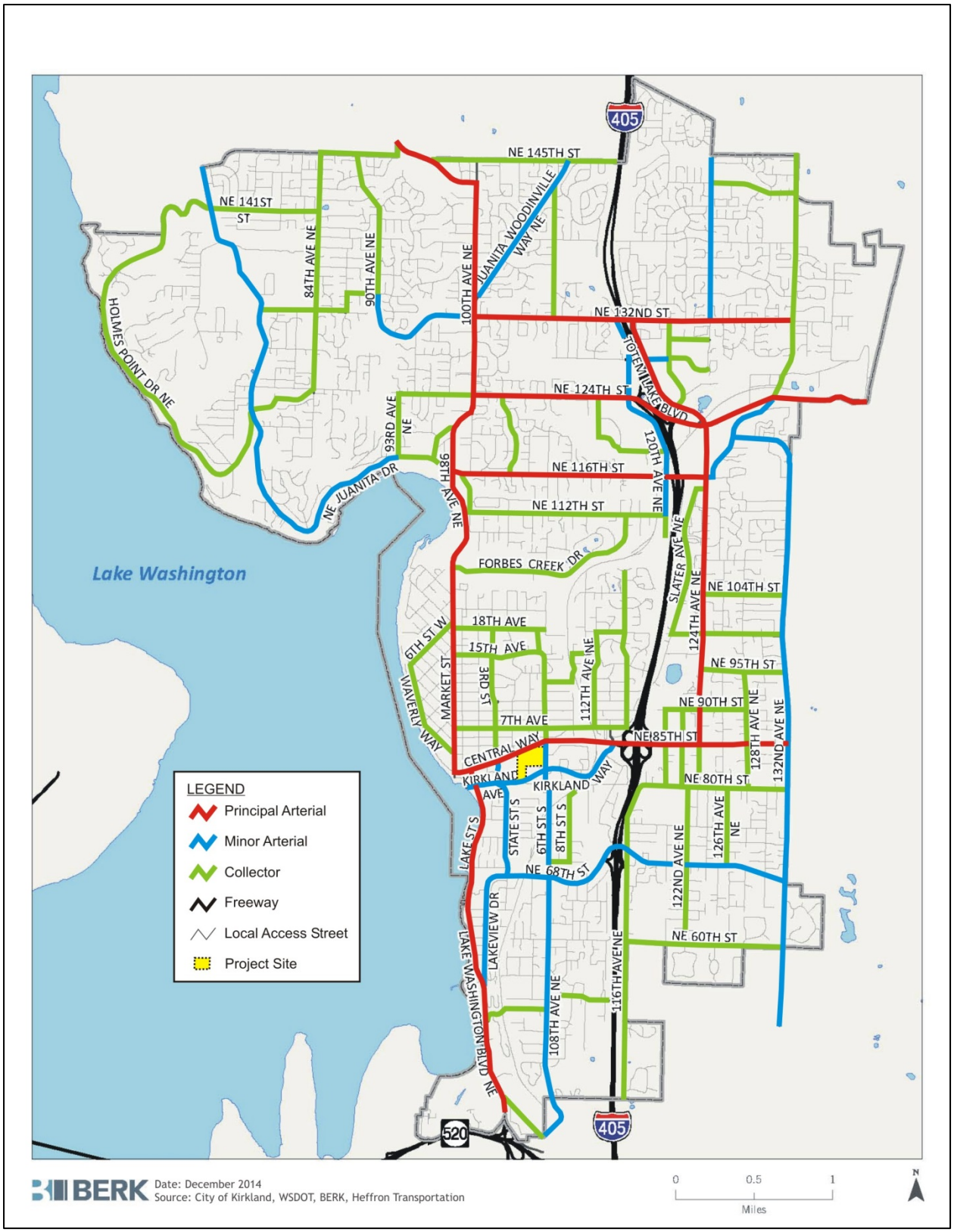


Figure 6.3-2. Roadway Functional Classifications



The following major roadways are located within the vicinity of the project site:

Central Way/NE 85th Street is an east-west principal arterial with one to two travel lanes in each direction. To the west of 6th Street it has curbs, gutters, and sidewalks on both sides, and left-turn pockets at most intersections. A parking lane is present along most of the north side of the road. To the east of 6th Street, there are no curbs, gutters, or parking lanes, and sidewalks are intermittent. The road has a speed limit of 35 miles per hour (mph) to the east of 6th Street, 30 mph between 3rd Street and 6th Street, and 25 mph to the west of 3rd Street.

Kirkland Avenue/Kirkland Way is an east-west minor arterial with one travel lane in each direction. It has curbs, gutters, sidewalks, bicycle lanes, and parking lanes on both sides. It has a speed limit of 30 mph. About 1,000 feet west of 6th Street, Kirkland Avenue becomes Kirkland Way. To the east of this intersection, Kirkland Avenue continues east as a local access street, located to the south of Kirkland Way.

3rd Street is a north-south minor arterial with one travel lane in each direction. It has curbs, gutters and sidewalks on both sides. South of Kirkland Way it has bicycle lanes and parking lanes on both sides. It has a speed limit of 30 mph. The Kirkland Transit Center is located on 3rd Street at Park Lane.

6th Street is a north-south minor arterial with one travel lane in each direction. It has curbs, gutters and sidewalks on both sides. South of Kirkland Way it has bicycle lanes on both sides. It has no on-street parking in the vicinity of the project site. It has a speed limit of 30 mph.

STATE HIGHWAYS

Interstate-405 (I-405) is a north-south freeway that provides primary regional access to and from the area. The I-405 interchange nearest the project site is located at NE 85th Street, about a half-mile east of the site. Northbound and southbound on- and off-ramps are also provided at NE 124th Street, and 116th Avenue NE/NE 70th Street/NE 68th Street; and a northbound off-ramp and a southbound on-ramp are provided at NE 116th Street.

In 1998, the Washington State Legislature enacted legislation for Highways of Statewide Significance (HSS), codified as RCW 47.06.140. HSS facilities provide and support transportation functions that promote and maintain significant statewide travel and economic linkages. The legislation emphasizes that these significant facilities should be planned from a statewide perspective and that local jurisdictions should assess the effects of local land use plans on HSS facilities. I-405 is designated as an HSS facility.

Any state highways that are not designated as HSS facilities are considered Highways of Regional Significance (HRS). There are no HRS facilities located within Kirkland. It is noted that NE 85th Street east of I-405 was formerly designated as a State Highway. It was officially transferred to the jurisdictional control of the Cities of Kirkland and Redmond in 2009 (Washington Transportation Commission, 2009).

EXISTING ROADWAY OPERATIONS

Analysis of existing traffic conditions is based on traffic volume counts that were collected at every study intersection in 2013 and 2014. For counts conducted in 2013, 2014 volumes were estimated by applying an average annual growth rate of 1.5%[1] to take into account additional traffic growth from other development that has occurred during that time. This is consistent with the average annual traffic growth assumptions applied in the 2008 EIS.

Traffic analysis was completed for this DEIS to comply with the City's following requirements:

- Traffic Impact Analysis guidelines, which require that the effect of development proposals on roadway operations be directly analyzed; and

[1] Average annual traffic growth rate provided by Thang Nguyen, City of Kirkland Public Works Department, November 2014.

- Concurrency Management System, for which the City has defined thresholds to measure the effectiveness of the transportation system to support planned land use.

Each of these elements is described in the following sections.

Traffic Impact Analysis

The City has established Traffic Impact Analysis (TIA) Guidelines (City of Kirkland, 2014) by which the effect of development proposals on roadway operations must be analyzed for the expected year of project completion. To comply with the City's TIA requirements for development requests, level of service (LOS) was analyzed at individual intersections according to procedures set forth in the Highway Capacity Manual (Transportation Research Board 2010). LOS is the primary measurement used to determine the operating quality of a roadway segment or intersection. The quality of traffic conditions is graded into one of six LOS designations: A, B, C, D, E, or F. LOS A and B represent the fewest traffic slow-downs, and LOS C and D represent intermediate traffic flow with some delay. LOS E indicates that traffic conditions are at or approaching congested conditions and LOS F indicates that traffic volumes are at a high level of congestion with unstable traffic flow.

Table 6.3-1 summarizes the LOS criteria for signalized and stop-controlled intersections.

Table 6.3-1. Level of Service Criteria for Intersections

	Average Delay (second per vehicle)	
LOS Designation	**Signalized Intersections**	**Unsignalized Intersections**
A	≤ 10	≤ 10
B	> 10–20	> 10–15
C	> 20–35	> 15–25
D	> 35–55	> 25–35
E	> 55–80	> 35–50
F	> 80	> 50

Source: Transportation Research Board, 2010

At signalized intersections, level of service is determined by the average amount of delay experienced by all vehicles that travel through the intersection. For two-way or one-way stop-controlled intersections, level of service is based on the average delay experienced by vehicles entering the intersection on the minor (stop-controlled) approaches. For all-way stop-controlled intersections, LOS is determined by the average delay for all movements through the intersection. The level of service criteria for stop-controlled intersections have different threshold values than those for signalized intersections, primarily because drivers expect different levels of performance from distinct types of transportation facilities. In general, stop-controlled intersections are expected to carry lower volumes of traffic than signalized intersections, and a smaller amount of delay is typically tolerated than for a signalized intersections.

The City's TIA guidelines indicate that level of service analysis should be completed for the expected year of project completion, which is 2022 for the proposed project. Analysis intersections are those through which project-generated traffic would comprise 1% or more of an intersection's capacity (proportional share); the intersection capacity and proportional share calculation is determined through the City' s prescribed procedures. Analysis is typically conducted for the PM peak hour, but the City guidelines also give the Public Works Department the authority to identify intersections for AM peak hour analysis. Since the current proposal is lower in land use density and would generate fewer vehicle trips than the 2008 proposal, the proportional share of project-generated trips to intersection capacity would be lower for the current proposal. Therefore, for this EIS addendum, the City required that AM and PM peak hour level of service be evaluated at 17 intersections located in the vicinity of the project site, and that PM peak hour level of service be evaluated at two additional intersections

located farther from the site where PM peak hour impacts had been identified in the 2008 EIS analysis. These intersections are shown on Figure 6.3-1.

Table 6.3-2 summarizes the existing AM and PM peak hour level of service at the TIA intersections. As shown, (112) 6th Street/ Kirkland Way intersection is currently operating at LOS E during the PM peak hour; however, installation of a traffic signal at this location is planned in 2015. (113) 6th Street/Kirkland Avenue intersection is operating at LOS E during both the AM and PM peak hours, and (129) 4th Street/Central Way and (211) Market Street/15th Avenue are operating at LOS E and LOS F during the PM peak hour, respectively. All other analysis intersections are currently operating at LOS D or better during both peak hours.

Table 6.3-2. Existing (2014) Level of Service at TIA Intersections – AM and PM Peak Hours

		AM Peak Hour		PM Peak Hour	
ID#	**Intersection**	**LOS[1]**	**Delay[2]**	**LOS**	**Delay**
Signalized[3]					
103	State Street/NE 68th Street	B	19.7	C	25.9
104	108th Avenue NE/NE 68th Street	D	46.9	D	46.4
105	6th Street/Central Way	C	31.3	C	33.2
106	3rd Street/Central Way	B	12.6	C	21.4
107	Lake Street/Central Way	C	23.5	C	31.6
108	Lake Street/Kirkland Avenue	B	12.1	B	14.0
109	114th Avenue NE/NE 85th Street	C	30.4	D	53.3
110	4th Avenue/6th Street	A	6.2	B	10.6
111	Kirkland Avenue/3rd Street	B	18.1	D	41.0
402	124th Avenue NE/NE 85th Street	(5)	(5)	C	30.9
All-Way Stop Control[3]					
112	6th Street/Kirkland Way	D	27.4	E	44.3
169	6th Street/7th Avenue	C	23.1	C	24.2
One- or Two-Way Stop Control[4]					
4	Parkplace Driveway/Central Way	B	12.3	C	15.1
7	Parkplace Driveway/Kirkland Way	B	12.0	C	15.8
113	6th Street/Kirkland Avenue	E	41.9	E	41.3
128	5th Street/Central Way	C	15.0	C	24.0
129	4th Street/Central Way	B	14.3	E	39.4
179	Kirkland Way/Kirkland Avenue	B	12.9	C	17.6
211	Market Street/15th Avenue	(5)	(5)	F	68.0

Source: City of Kirkland, Heffron Transportation, January 2015. Levels of service determined using Synchro 8.0 model and HCM 2010 methodology; however, HCM 2010 will not report level of service for intersections with complex signal phasing such as overlapping right turn phases. For these locations, results are reported using the HCM 2000 methodology. Shaded cells indicate locations operating at LOS E or LOS F during one or both peak hours.

1. LOS = Level of service
2. Delay = Average delay (seconds per vehicle)
3. Level of service for signalized and all-way stop-controlled intersections is based upon the average delay of all vehicles that travel through the intersection.
4. Level of service for one- and two-way stop-controlled intersections is based upon the average delay of the most congested (stop-controlled) movement through the intersection.
5. AM peak hour analysis was not required for this intersection.

Concurrency Management System

Transportation planning at the state, county and local levels is guided by the Growth Management Act (GMA) [RCW 36.70A] for cities and agencies subject to the Act. The GMA mandates that local agencies adopt concurrency management systems to ensure that new development does not occur unless adequate transportation infrastructure already exists to support it, or is built concurrent with development. In addition to construction of new capital facilities, improvements to meet concurrency may include transit service or transportation demand management (TDM) strategies.

The Concurrency Management System is included as a policy in the transportation element of the City's Comprehensive Plan (City of Kirkland, 2013) and is adopted as Chapter 25 of the Kirkland Municipal Code (KMC). As part of the Concurrency Management System, the City measures level of service according to calculated volume-to-capacity (V/C) ratios of designated signalized intersections. The V/C ratios of signalized intersections are used to determine levels of service using the planning methods established in *Transportation Research Circular 212* (Transportation Research Board, 1980). The City assesses its roadway system based on the weekday PM peak hour operations of 51 designated major intersections. The weekday PM peak hour is analyzed because it is the period in which the highest citywide traffic volumes typically occur. It is important to note that level of service as defined for concurrency management is different than that defined under the City's Transportation Impact Analysis (TIA) guidelines for development proposal described previously.

The capacity (C) of a signalized intersection is a measure of the maximum number of vehicles that can travel through the intersection in a set period of time. It is calculated based on signal phasing and the number of lanes on each intersection approach. The volume (V) is the sum of "critical" volumes that indicate maximum demand at the intersection. The V/C ratio is the volume divided by the capacity. The V/C ratio is calculated for the PM peak hour of a typical weekday, which is the most congested hour of the day.

A V/C ratio of less than 1.0 indicates that the traffic volume moving through the intersection is lower than the capacity of the intersection. If the V/C ratio is equal to 1.0, the intersection's volume and capacity are approximately equal. A V/C ratio greater than 1.0 indicates that the volume has exceeded capacity. If an intersection V/C ratio is projected to increase over time, this indicates that congestion is expected to increase and that level of service would become worse at that location.

Concurrency analysis considers the effects of proposed land use on the transportation system for a future forecast year, and occurs at both a planning level and for proposed development projects. At the planning level, concurrency analysis is applied for the long-range planning horizon identified in the City's adopted Comprehensive Plan, which is currently 2022. The long-range concurrency analysis allows for a transportation plan to be developed to support proposed development through the planning year defined in the Comprehensive Plan.

For project-level analysis in Kirkland, the required future forecast year is six years from the date of a development project's concurrency application. This requirement ensures that the City has funding secured in its 6-year Capital Improvement Plan (CIP) for transportation projects needed to support development planned through that time period. The 2022 analysis presented in this EIS addendum extends beyond the six-year period. However, the Mitigation section identifies the level of development at which mitigation would be triggered (mitigation threshold) to ensure that appropriate projects to support the proposed development would be identified for the CIP in accordance with the proposed project phasing.

City transportation policy establishes a two-tiered concurrency standard. Traffic conditions meet concurrency standards when both of the following conditions are met for a typical weekday PM peak hour:

- No individual signalized system intersection may have a V/C ratio greater than 1.40; and
- The maximum allowed subarea average V/C ratio for signalized system intersections in each subarea may not exceed the values listed in Table 6.3-3.

The intersections and subareas are shown on Figure 6.3-1. The concurrency program requires both standards to be satisfied as new development occurs. Underlying the concurrency definition is the concept that the system is not automatically considered to fail concurrency if the peak hour is congested at an individual location. Use of the peak hour for measuring LOS is typical throughout the region. This "worst case" measure implies that traffic will flow better during the rest of the day. In some circumstances, a V/C ratio greater than 1.0 for the peak hour is considered acceptable according to City standards because practical financial and physical constraints limit the number of roadway improvements that are considered feasible within Kirkland.

Table 6.3-3. Concurrency Thresholds

	Average V/C for Subarea	
Subarea	**Existing (2014)**	**2022**
Southwest [1]	0.91	0.92
Northwest	0.95	1.01
Northeast	0.93	0.99
East	1.07	1.10
North	No subarea average V/C has been established. Appropriate standards will be established upon completion of an updated land use plan as part of the City's next Comprehensive Plan update.	
Maximum allowed individual system intersection V/C	1.40	1.40

Source: City of Kirkland 2013

1. Subarea in which the alternatives are located.

The signalized intersections included in the Concurrency Management System are established by city policy, and shown previously on Figure 6.3-1. Analysis of existing traffic conditions is based on PM peak hour traffic volume counts that were conducted at every study intersection in 2013 and 2014. As described previously, for counts conducted in 2013, an average annual traffic growth rate of 1.5% was applied to account for additional traffic due to growth in development that has occurred since that time.

Table 6.3-4 lists the intersections included in the Concurrency Management System, as well as their individual and subarea V/C ratios for existing conditions. As shown, all individual intersections and subareas are currently operating at V/C ratios lower than the established City thresholds.

Table 6.3-4. Concurrency V/C Ratio Assessment – Existing (2014) Conditions

ID#	Intersection	V/C Ratio Threshold [1]	Existing V/C Ratio
Southwest Subarea			
101	Lake Washington Boulevard/NE 38th Place	1.40	0.96
102	Lake Washington Boulevard/Lakeview Drive	1.40	0.78
103	State Street/NE 68th Street	1.40	0.61
104	108th Avenue NE/NE 68th Street	1.40	0.81
105	6th Street/Central Way	1.40	0.65
106	3rd Street/Central Way	1.40	0.57
107	Lake Street/Central Way	1.40	0.68
108	Lake Street/Kirkland Avenue	1.40	0.45

Table 6.3-4. Concurrency V/C Ratio Assessment – Existing (2014) Conditions

ID#	Intersection	V/C Ratio Threshold [1]	Existing V/C Ratio
109	114th Ave NE/NE 85th Street	1.40	0.79
	Southwest Subarea Average	**0.91**	**0.70**
Northwest Subarea			
201	98th Avenue NE/NE 116th Street	1.40	0.77
202	100th Avenue NE/NE 124th Street	1.40	0.76
203	100th Avenue NE/NE 132nd Street	1.40	0.82
204	116th Way NE/NE 132nd Street	1.40	0.86
205	Market Street/Forbes Creek Drive	1.40	0.56
	Northwest Subarea Average	**0.95**	**0.75**
Northeast Subarea			
301	120th Avenue NE/NE 132nd Street	1.40	0.65
302	120th Avenue NE/NE 130th Street	1.40	0.51
303	120th Avenue NE/NE 128th Street	1.40	0.54
304	124th Avenue NE/NE 132nd Street	1.40	0.77
306	Slater Avenue NE/NE 124th Street	1.40	0.94
307	120th Avenue NE/Totem Lake Boulevard	1.40	0.69
310	120th Avenue NE/NE 116th Street	1.40	0.58
311	124th Avenue NE/NE 116th Street	1.40	0.97
312	116th Avenue NE/NE 124th Street	1.40	0.87
313	113th Place NE/NE 124th Street	1.40	0.79
314	Slater Avenue NE/NE 120th Street	1.40	0.87
315	124th Avenue NE/NE 124th Street	1.40	0.90
316	Totem Lake Boulevard/NE 132nd Street	1.40	0.73
317	I-405 Southbound Off Ramp/NE 124th Street	1.40	0.64
318	I-405 Northbound On-Off Ramps/NE 124th Street	1.40	0.50
320	I-405 Northbound Off Ramp/NE 116th Street	1.40	0.37
325	128th Lane NE/NE 124th Street	1.40	0.70
	Northeast Subarea Average	**0.93**	**0.71**
East Subarea			
401	132nd Avenue NE/NE 85th Street	1.40	1.00
402	124th Avenue NE/NE 85th Street	1.40	0.78
403	120th Avenue NE/NE 85th Street	1.40	0.95
404	124th Avenue NE/NE 100th Street	1.40	0.88
406	132nd Avenue NE/NE 70th Place	1.40	0.76
407	116th Avenue NE/NE 70th Place	1.40	0.89
408	124th Avenue NE/NE 90th Street	1.40	0.90

Table 6.3-4. Concurrency V/C Ratio Assessment – Existing (2014) Conditions

ID#	Intersection	V/C Ratio Threshold [1]	Existing V/C Ratio
409	122nd Avenue NE/NE 85th Street	1.40	0.68
410	116th Avenue NE/I-405 Northbound Ramps	1.40	0.90
411	I-405 Southbound Ramps/NE 72nd Place	1.40	0.85
	East Subarea Average	**1.07**	**0.86**
North Subarea			
501	Juanita Drive NE/NE 122nd Place	1.40	1.09
502	Juanita Drive NE/76th Place NE	1.40	0.39
503	Juanita Drive NE/NE 141st Street	1.40	0.71
504	100th Avenue NE/Juanita-Woodinville Way	1.40	0.87
506	100th Avenue NE/Simonds Road NE	1.40	0.83
507	100th Avenue NE/NE 145th Street	1.40	0.84
508	Juanita-Woodinville Way/NE 145th Street	1.40	0.63
510	132nd Avenue NE/NE 132nd Street	1.40	0.59
511	124th Avenue NE/NE 144th Street	1.40	0.69
512	Willows Road NE/NE 124th Street	1.40	0.82
	North Subarea Average	N/A [2]	**0.75**

Source: City of Kirkland, 2013; Fehr & Peers, 2014; Heffron Transportation, 2014.

1. V/C Ratio = volume-to-capacity ratio.
2. N/A = Not Applicable. No subarea average V/C has been established for the North Subarea. Appropriate standards will be established upon completion of an updated land use plan as part of the City's next Comprehensive Plan update.

Collision History

Collision data for roadways in the vicinity of the proposed project site were obtained from the Washington State Department of Transportation (WSDOT) for the period from January 1, 2009, to September 30, 2014 (5.75 years). The WSDOT data were corroborated with collision data obtained from the City of Kirkland for the period from January 1, 2009, to July 12, 2014. Table 6.3-5 presents a summary of the data, which were examined to determine if there are any unusual traffic safety conditions that could impact or be impacted by the proposed project.

Table 6.3-5. Summary of Historical Collision Data

ID#	Intersection	Collision Type							Summary		
		Rear-End	SS/Lane Change	Right Turn	Left Turn	Right Angle	Ped/ Cycle	Other [1]	Total (5.75 yrs)	Avg/ Year	Rate per MEV [2]
105	Central Way/6th Street	6	2	1	0	6	0	3	18	3.1	0.30
106	Central Way/3rd Street	6	2	1	0	11	1	3	24	4.2	0.52
110	4th Avenue/6th Street	2	1	0	1	1	3	1	9	1.6	0.34
111	Kirkland Avenue/3rd Street	2	1	0	0	1	1	1	6	1.0	0.20
112	Kirkland Way/6th Street	1	0	0	1	9	0	0	11	1.9	0.41
113	Kirkland Ave/6th Street	0	1	0	4	3	1	0	9	1.6	0.39
128	Central Way/5th Street	19	0	0	0	1	1	1	22	3.8	0.65
129	Central Way/4th Street	9	0	0	0	3	2	0	14	2.4	0.47
179	Kirkland Way/Kirkland Avenue	0	0	0	0	1	1	0	2	0.3	0.12
Roadway Segment		**Rear-End**	**SS/Lane Change**	**Right Turn**	**Left Turn**	**Right Angle**	**Ped/ Cycle**	**Other [1]**	**Total (5.75 yrs)**	**Avg/ Year**	**Rate per MVM [3]**
Central Way between 4th Street and 5th Street		1	2	0	0	6	0	4	13	2.3	3.5
Central Way between 5th Street and 6th Street		2	1	0	0	0	0	3	6	1.0	1.8
6th Street between Central Way and 4th Avenue		0	0	0	0	0	0	2	2	0.3	0.9
6th Street between 4th Avenue and Kirkland Way		0	1	0	0	0	0	0	1	0.2	0.7
Kirkland Avenue between 3rd Street and Kirkland Way		4	0	0	0	4	1	7	16	2.8	7.1

Source: WSDOT 2014; City of Kirkland 2014; Compiled by Heffron Transportation, 2014. Reflects data compiled for the period from January 1, 2009 through September 30, 2014.

1. Other collisions include improper movement, hitting an object/parked vehicle, overturned vehicle, and vehicle pulling out from on-street parking space.
2. MEV = million entering vehicles.
3. MVM = million vehicle miles traveled.

The totals presented in Table 6.3-5 reflect almost six years of data, with the highest numbers of collisions occurring at the Central Way/3rd Street and Central Way/5th Street intersections (averages of 4.2 and 3.8 collisions per year, respectively). Rear end collisions were the most common type that occurred along Central Way, with the highest number recorded in the vicinity of Central Way/5th Street. Review of the data indicated that collisions occurred in both directions during both peak and off-peak periods, with the majority during daytime hours in dry conditions. Causes were primarily reported as drivers exceeding reasonable safe speeds, following too closely, or inattention. The most common type of collision at Central Way/3rd Street was right angle collision. Review of the data indicated that the majority of collisions were caused by vehicles traveling in the northbound or southbound directions, with causes primarily reported as drivers not granting right-of-way, disregarding the signal, or inattention. The rates of collisions at the two intersections were 0.52 and 0.65 collisions per million entering vehicles (MEV). Typically, rates exceeding 1.0 collision per MEV are considered to indicate that potential safety issues may exist; the rates at intersections within the study area intersections are well below this level. No collisions resulting fatalities occurred in the study area. Collisions were also assessed along the roadway segments located between the intersections. Overall, the data do not indicate any unusual safety patterns in the vicinity of the project site, and are typical for roadways with higher traffic volumes. Any future projects that improve roadway operating conditions in the area would also be expected to benefit safety conditions.

Parking

Table 6.3-6 summarizes the public parking facilities that currently exist in downtown Kirkland (Downtown).

Table 6.3-6. Public Parking in Downtown Kirkland

Parking Type	Location
Free 2-Hour Parking	▪ On street parking in the Downtown core ▪ Lakeshore Plaza Lot ▪ Lake Street Lot
Free 4-Hour Parking	▪ The upper lot of the Municipal Parking Garage located under the Kirkland Public Library at the intersection of 3rd Street and Kirkland Avenue (enforced until 7:30 p.m.)
Paid Parking	▪ Spaces in the Municipal Parking Garage are provided for all-day parking (9:00 a.m. to 7:30 p.m.) ▪ A limited number of metered parking spaces in the Lake Street Lot and Lakeshore Plaza Lot for $1 per hour (4-hour limits)

Source: City of Kirkland 2008.

In addition, many commercial establishments provide parking for customers on private lots located at their sites. Some of these lots also offer parking for the general public in the evening at a cost.

The City collected parking utilization data in the downtown area in 2007. This is the most recent available information about parking utilization, and was verified by city staff as still reflecting downtown parking trends. The data indicated the following.

- The highest parking demand occurs in August, and the next highest occurs in November.
- For the permit parking at the Municipal Parking Garage, the time of peak demand is 1:00 p.m. to 3:00 p.m.
- For the free public parking provided on-street, in the Municipal Garage, and at the two lots, the highest demand occurs between 6:00 p.m. and 9:00 p.m., and the next highest demand occurs at noon and at 2:00 p.m.
- Average occupancy at the Lake Street lot ranges between 65% and 80% during off-peak times of the day. The lot is 85% to 100% full during the peak periods of the day.

- Average occupancy at the Lakeshore Plaza lot ranges between 40% and 100%. During peak months, occupancy is 90% to 100% during much of the day.
- Average occupancy of the free parking spaces at the Municipal Garage ranges between 45% and 80%. During peak periods, the average occupancy is around 80%.
- Average occupancy of on-street parking ranges between 40% and 70% during off-peak periods. Peak demand ranges between 50% and 95%, with average occupancy exceeding 90% during the peak periods in the peak months of the year.

The data indicated that parking supply is typically adequate to meet demand during most times of the day, and during most times of the year. However, the 85% to 100% occupancy rates during peak demand periods in August and November indicate that there is little excess public parking supply during the times of highest demand (City of Kirkland 2008).

Transit

King County Metro Transit (Metro) and Sound Transit provides bus transit service throughout the region including to and through the City of Kirkland. Figure 6.3-3 shows the transit facilities and service within the study area, which is described in the following sections.

KIRKLAND TRANSIT CENTER

The Kirkland Transit Center is located at 3rd Street and Park Lane, about one block to the west of the project site. The transit center serves as a central stop for the bus routes that operate in the area. This location is not a park-and-ride and does not have parking spaces available, although bicycle lockers are provided.

PARK AND RIDE FACILITIES

The following major park-and-ride facilities are located in the City.

- Houghton Park-and-Ride. I-405 and 70th Place – 470 parking spaces plus bicycle lockers
- Kingsgate Park-and-Ride. I-405 and NE 132nd Street – 502 parking spaces plus eight bicycle lockers
- South Kirkland Park-and-Ride. 106th Avenue NE and NE 38th Place – 760 parking spaces, including nine electric vehicle charging stations, and two rows of bicycle racks. (Reflects capacity with expansion project completed in fall of 2013.)

Metro also contracts with owners of other small lots located throughout the City to serve as park-and-ride lots during weekdays. (King County Metro 2014)

BUS SERVICE

Fixed Bus Routes

Fixed bus routes may be classified as local routes that provide all-day service (often including weekends) or as commuter routes operating only during peak travel periods. Most routes serve the City as an intermediate point between a starting and ending end point. Some routes operate along city roadways while others serve only park-and-ride lots in the City. Every Metro and Sound Transit bus is equipped to accommodate wheelchairs. All buses are also equipped with bicycle racks. Table 6.3-7 summarizes the bus routes that serve Kirkland.

Local and commuter bus routes serving Kirkland are operated by Metro. The local routes generally operate 5 to 7 days a week, and typically provide two-way service between destinations in the City and surrounding areas, from morning through evening. Commuter bus service provides service to major employment destinations in King County, typically operating only during the weekday morning and evening peak commute periods, and may only operate in the peak travel direction.

Sound Transit, which provides regional service to the urban portions of Snohomish, King, and Pierce counties, operates three additional routes in Kirkland. Route 540 directly serves the analysis area, and two other Sound Transit routes serve north Kirkland.

Figure 6.3-3. Transit Service

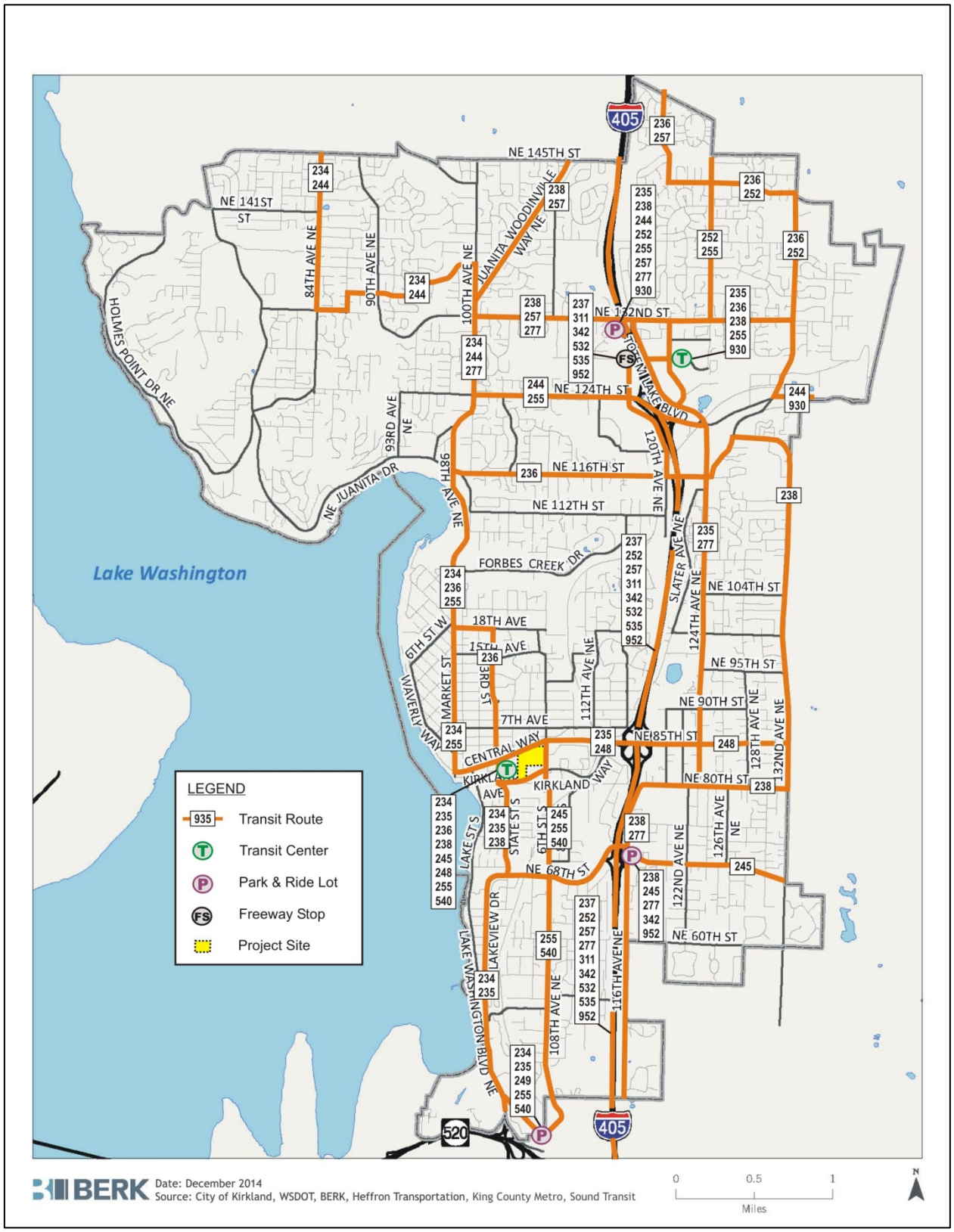


Table 6.3-7. Bus Service

Route	Service Area	Service Type
Routes Serving Downtown Kirkland		
Metro 234	Kenmore – Juanita –Kirkland – South Kirkland – Bellevue	Local
Metro 235	Kingsgate –Kirkland – South Kirkland – Bellevue	Local
Metro 236	Woodinville – Totem Lake – Juanita –Kirkland	Local
Metro 238	Bothell – Finn Hill – Kingsgate – Rose Hill – Kirkland	Local
Metro 245	Kirkland – Overlake – Bellevue – Factoria	Local
Metro 248	Kirkland – Rose Hill – Redmond	Local
Metro 255	Kingsgate – Downtown Kirkland – Seattle	Local
Sound Transit 540	Kirkland – University of Washington	Regional
Other Routes[1]		
Metro 237	Woodinville – Kingsgate – Houghton – Bellevue	Commuter
Metro 244	Kenmore – Kingsgate – Overlake	Commuter
Metro 249	Bellevue – South Kirkland – Overlake	Local
Metro 252	Kingsgate – Evergreen Point – – Seattle	Commuter
Metro 257	Brickyard – Kingsgate – Evergreen Point – Seattle	Commuter
Metro 277	Juanita – Kingsgate – Houghton – University of Washington	Commuter
Metro 311	Woodinville – Totem Lake – Evergreen Point –Seattle	Commuter
Metro 342	Shoreline – Bothell – Totem Lake – Houghton – Bellevue	Commuter
Metro 952	Boeing Everett – Houghton – Bellevue –Kent – Auburn	Commuter
Sound Transit 532	Bellevue – Totem Lake – Canyon Park – Lynnwood – Everett	Regional
Sound Transit 535	Bellevue – Totem Lake – UW Bothell – Canyon Park – Lynnwood	Regional

Source: King County Metro 2014; Sound Transit 2014.

1. Travelers to/from downtown Kirkland can connect to other routes by taking local bus service to/from the Houghton, Kingsgate or South Kirkland park-and-ride lots.

Rideshare Services

Metro provides the following rideshare services:

- **Commuter Vanpools.** Metro Transit maintains the oldest and largest public vanpool program in the United States. Metro provides vehicles, driver orientation, vehicle maintenance, and assistance in forming vanpool groups.
- **Carpools.** Metro provides ride-matching services for people seeking carpool partners. People interested in finding carpool partners can call Metro for information.

Paratransit Services

Metro offers Access Transportation service using shared van transportation throughout most of King County for those eligible for the Americans with Disabilities Act (ADA) Paratransit Program. Reservations must be made 1 to 3 days in advance.

Dial-A-Ride Transit

Dial-A-Ride Transit (DART) is a specialized bus service provided by Metro using vans that can deviate from regular fixed bus routes within a designated service area. It is available to the general public and reservations must be made in advance. DART service is operated by Hopelink, a non-profit organization under contract to Metro. DART Route 930 provides service between Kingsgate and Redmond Town Center.

Non-motorized Facilities

Non-motorized facilities in the City include sidewalks, paved trails, multipurpose unpaved trails, limited purpose unpaved trails, roadway shoulders, and the shared use of streets with low vehicle volumes.

Sidewalk connections are generally complete along arterial roadways between the project site and downtown Kirkland to the west, with sidewalks located on both sides of Central Way and Kirkland Way to the west of 6th Street, and on both sides of 3rd Street and 6th Street to the north of Kirkland Way. These sidewalks provide connections between the project site and Peter Kirk Park, the Kirkland Transit Center, as well as other downtown destinations farther to the west. To the east of 6th Street, sidewalks are intermittent on Central Way/NE 85th Street and Kirkland Way.

Sidewalks are required on both sides of all new streets and as part of all major street improvement projects. City policies support improved connectivity between destinations, including transit stops, as an important principle in maintaining or enhancing the pedestrian network.

Bicycle facilities in Kirkland total approximately 50.2 miles of marked bicycle lanes located alongside vehicle lanes, and a 0.4-mile shared use path (City of Kirkland 2013). In the vicinity of the site, bicycle lanes are present on both sides of 3rd Street and 6th Street to the south of Kirkland Way, and on Kirkland Way between 3rd Street and 6th Street. In the downtown area, bicycle lanes are also present on Lake Street S south of 2nd Avenue S, and on Market Street north of Central Way.

The Cross Kirkland Corridor crosses NE 85th Street less than one-half mile to the east of the project site. Formerly a BNSF Railway right-of-way, this corridor traverses Kirkland in a generally north-south direction, connecting between the south city limits and the Eastside Rail Corridor in northeast Kirkland in the eastern part of Totem Lake. The right-of-way extends through many Eastside cities and connects to other existing regional trails. The City acquired the right-of-way in 2012 for a non-motorized multi-use trail and/or transit route through Kirkland, and has improved some sections of the route with trail amenities. Rails are now being removed and an interim compacted gravel trail is opening in early 2015. Future inter-jurisdictional planning and implementation is envisioned for this multi-modal facility within the City Transportation Master Plan currently under development. (City of Kirkland 2013)

Impacts

Roadway Operations

LAND USE ASSUMPTIONS

Table 6.3-8 summarizes the land use assumptions for the No Action and Action alternatives. The No Action alternative reflects the level of maximum redevelopment at the Parkplace site previously approved by the City after completion of the 2008 *Downtown Planned Action EIS*. The Action alternative reflects the updated maximum level of redevelopment currently proposed at the Parkplace site. Although actual development may reflect lower density than that proposed, the maximum potential level was evaluated to reflect a worst case transportation impact scenario. These alternatives are described in detail in Chapter 3 of this EIS Addendum.

Table 6.3-8. Land Use Assumptions for the Project Alternatives

Land Use Type	No Action	Action
Office (square feet)	1,200,000	650,000
Commercial (square feet)	592,750	225,000
Multifamily Residential (dwelling units)	---	300

Sources: City of Kirkland, 2008; Collins Woerman, 2014.

The 2022 forecasts used for this analysis reflect an assumption of additional development on the MRM site, which is located adjacent to the southeast edge of the Parkplace site and shares its driveways. The 2008 EIS preceded the MRM plans, and assumed no development growth at this location. In 2013, an application for the proposed redevelopment of the MRM site was submitted to the City that would change that site's land use designation and zoning.. Although the proposed land use and zoning changes were not approved, the analysis presented in this EIS Addendum includes an assumption of the maximum development (mixed office and retail) allowed under current zoning, to reflect conservative cumulative conditions at the site driveways.

Travel demand forecasts for future 2022 conditions take into account the cumulative traffic generated by development growth, both within and outside of Kirkland. Within Kirkland, land use assumptions included the following future vested and planned development projects using information provided in the project applications:

- C&G Subdivision – single family residential – NE 75th Street, between 126th and 128th Avenues NE
- Chevron Mixed Use – multi-family residential, retail – 324 Central Way
- Fairfax Hospital – additional beds – 10200 NE 132nd Street
- Google Phase 2 – office – 451 7th Street S
- Juanita High School – improvements to expand capacity – 10601 NE 132nd Street
- Kirkland Live Work Art Community – residential suites, multi-family residential, retail – 450 Central Way
- Lake Street Place Mixed Use – retail, office – 112 Lake Street S
- Lake Washington High School – improvements to expand capacity – 12033 NE 80th Street
- South Kirkland Park-and-Ride Expansion – additional park-and-ride stalls, multi-family residential, retail – 10610 NE 38th Place
- Totem Station – multi-family residential, retail, office – NE 116th Street/124th Avenue NE
- Toyota Scion Dealership – retail – 13210 NE 124th Street
- Wells Fargo Redevelopment – multi-family residential, retail – Central Way/5th Street
- Yarrow Bay – office – Lake Washington Boulevard/Northup Way

FUTURE TRANSPORTATION PROJECTS

As described earlier, the purpose of this EIS Addendum transportation analysis is to determine the potential effect of the proposal on the City's long term transportation improvement plan, and whether it would trigger a need for additional improvements. Therefore, future transportation improvement projects that have been defined by the City to support the current adopted land use plan were assumed to be in place for the analysis of future conditions. These include projects that are funded in the City's current Capital Improvement Program (City of

Kirkland 2012b), future planned projects that would be funded with impact fees under the City's Concurrency Management Program, and developer-funded projects that would need to be completed as a condition of the development projects described in the previous section. The list of future improvement projects assumed in the 2022 analysis is provided in Attachment 6.3-1. It should be noted that two projects listed in Attachment 6.3-1 are developer-funded projects that were associated with the originally-approved (No Action) Parkplace proposal. These projects, along with improvements that the original project would have made at the site access driveways were assumed to be in place with the No Action scenario, because if that proposal had been implemented, the applicant had committed to completing the improvements in conjunction with the new development. The improvements assumed to be in place for the No Action alternative are summarized as follows:

- Signalize existing site access driveway on Central Way.
- Add second access driveway on Central Way, aligned with 5th Avenue to the north, and signalize. Prohibit north-south through-traffic between 5th Avenue and the site driveway to discourage cut-through traffic in the neighborhood located to the north of the site.
- Central Way/6th Street – add second westbound left-turn lane, modify signal to provide westbound left and northbound right overlap phase.
- Widen 6th Street between Central Way and 4th Avenue to accommodate the dual left turn movement from Central Way. The second lane would become a right turn only lane into the Parkplace site.
- NE 85th Street/114th Avenue – restripe eastbound right-turn lane to shared thru-right, and add second northbound right-turn lane.

For the Action alternative, a proposed second access driveway on Central Way, aligned with 5th Avenue to the north was also assumed, but it was not assumed in the initial analysis to be signalized. The Central Way driveways would be signed to serve as the main entrance to the Parkplace site. Similar to the No Action alternative, it was assumed that the intersection would be designed to prohibit north-south through-traffic between the site driveway and 5th Avenue, to discourage cut-through traffic in the neighborhood to the north. The Action alternative also proposes a second access driveway at 6th Street between 4th Avenue and 2nd Avenue, which would serve a small number of trips entering and exiting the site. Because it would serve as a secondary driveway, it is expected that the driveway would operate at an adequate level of service, accommodating some trips that would otherwise be accommodated at the driveway aligned with 4th Avenue. Since the number of trips served by this driveway would be small, operational analysis presented in this section conservatively assumes that all trips entering via 6th Street would use the driveway at 4th Avenue, reflecting the worst-case condition at that location.

TRAVEL DEMAND FORECASTING

The projected build-out year for the 2008 EIS was 2014, so the 2022 analysis presented in this EIS Addendum updates the TIA analysis of the original proposal (No Action alternative) to reflect additional growth expected between 2014 and 2022.The long-range planning year of 2022 has not changed from the 2008 EIS, but the 2022 forecasts reflect updates to background growth and travel patterns.

Roadway operational analysis for projected year 2022 PM peak hour conditions was performed using traffic forecasts generated by the Bellevue-Kirkland-Redmond (BKR) travel demand forecasting model. This model provides traffic forecasts on which the City of Kirkland's concurrency management system is based. The BKR model forecasts future traffic volumes for use in development review and comprehensive planning. It includes each jurisdiction's existing and projected land use in the analysis area; land use information is routinely updated to support transportation planning activities. The BKR model integrates elements of the regional model developed by the Puget Sound Regional Council (PSRC).

The BKR model employs the traditional travel demand forecast modeling process, utilizing Emme software. The roadway network is represented as a series of links (roadway segments) and nodes (intersections), and the

regional model area is divided into Transportation Analysis Zones (TAZ). Land use characteristics are quantified within each zone. Trips generated by the existing and future planned land uses are calculated using statistical data on population and household characteristics, employment, economic output, and the likelihood to use other modes such as transit, walking, and bicycling. The trips are distributed onto the modeled roadway network using an assignment process that accounts for the effect of traffic volumes and congestion on travel times and routes. The resulting forecasts consist of traffic volumes projected for each roadway segment and intersection.

The BKR model projects future travel demand for the Puget Sound region with the primary focus on Bellevue, Kirkland and Redmond. The base-year model is updated annually to reflect changes in land use and roadway network improvements, and is validated regularly according to new observed data from sources such as traffic counts and household travel surveys. The future-year model incorporates the capital improvement programs and future land use plans of all of the jurisdictions within the modeled area. Therefore, the model applied for this EIS Addendum analysis reflects updated regional traffic volumes and travel patterns as compared to the model that was applied for the 2008 analysis.

The City does not have an AM peak-hour model, so year 2022 volumes were projected according to the following procedures.

1. No Action volumes were derived from the existing traffic counts using the following steps:
    a. Existing (2014) volumes were increased by 1.5% per year to account for general growth in traffic. This rate was compounded annually to 2022. As discussed previously, the average annual growth rate was identified by City staff and represents typical traffic growth in the City.
    b. AM peak hour traffic estimated for pipeline projects was added to the study area. Traffic volumes for these projects were based upon information provided in the projects' concurrency applications.
    c. Traffic associated with build-out that would be allowed under current zoning of the adjacent MRM site (which shares driveways with the Parkplace site) was added to the study area. The trip estimates were based upon the No Action alternative defined in the *MRM Redevelopment EIS* that was completed by the City in 2013.
    d. Traffic growth associated with build-out of the 2008 Parkplace proposal (as previously approved and adopted by the City) was added to the study area. The AM peak hour trip estimates were based upon the analysis that was completed for the 2008 EIS.
2. Action volumes were derived by completing steps (a) through (c) above, and adding traffic growth associated with build-out of the current proposal for the Parkplace site. The AM peak hour trip estimates for the Action alternative are described in the following section.

TRIP GENERATION ESTIMATES

Vehicle trips generated by the Action alternative were calculated using methods established by the Institute of Transportation Engineers (ITE) in *Trip Generation* (ITE 2009) and the *Trip Generation Handbook* (ITE 2014). The trip generation method and calculations for the Action alternative are described in detail in Attachment 6.3-2. The vehicle trips generated by the No Action alternative, also calculated using ITE methods, were obtained from the 2008 EIS.

Table 6.3-9 summarizes the daily, AM peak hour, and PM peak hour trips projected to result from development of the No Action and Action alternatives.

Table 6.3-9. Total Vehicle Trips for the Project Alternatives

Alternative	Daily	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
No Action [1]	31,570	1,581	475	2,056	1,471	2,074	3,545
Action [2]	16,330	913	355	1,268	706	974	1,680

1. Source: City of Kirkland, 2008. Reflects trips that would be generated by the previously-approved project.
2. Source: Heffron Transportation, 2014. Reflects trips that would be generated by the current proposal.

TIA Level of Service Impacts

Table 6.3-10 summarizes the 2022 AM and PM peak hour level of service at the TIA analysis locations with the No Action and Action alternatives. As described previously, the No Action scenario assumes that the transportation improvements identified in the 2008 EIS are in place. However, as the table shows, additional background growth between the original analysis year of 2014 and the current analysis year of 2022 results in increased delay and lower levels of service compared to the 2008 analysis, and the No Action alternative would likely require additional mitigation beyond what was identified in the original EIS. It is noted that three of the off-site intersections projected to operate at LOS F in 2022 under both alternatives—6th Street/Kirkland Avenue, 4th Street/Central Way, and Market Street/15th Avenue NE—are operating at LOS E or LOS F under existing conditions.

Under the City's TIA guidelines (City of Kirkland, 2014), a traffic impact is identified if either of the following conditions occurs:

- If an intersection is projected to operate at LOS E, an impact is identified and mitigation required if the project's proportionate share (proportion of new daily trips generated by the project to the intersection's capacity) is greater than 15%.
- If an intersection is projected to operate at LOS F, an impact is identified and mitigation required if the project's proportionate share is greater than 5%.

Table 6.3-11 shows the proportionate share of new daily trips generated by the Action alternative at intersections projected to operate at LOS E or LOS F in 2022. As shown, project-generated trips are expected to exceed the City's proportionate share threshold of 5% at the following intersections projected to operate at LOS F during one or both peak hours:

- (109) 114th Avenue NE/NE 85th Street
- (128) Central Way/5th Avenue (location of proposed additional site driveway that would serve as the site's main entrance)

Based upon the City's TIA guidelines, the project would result in significant traffic impacts at these two locations, and mitigation would be required.

Table 6.3-10.Future (2022) Intersection Level of Service – AM and PM Peak Hours – Unmitigated

		No Action Alternative (With Committed Improvements)				Action Alternative (Without Improvements)			
		AM Peak		PM Peak		AM Peak		PM Peak	
ID#	Intersection	LOS[1]	Delay[2]	LOS	Delay	LOS	Delay	LOS	Delay
Signalized[3]									
4	Parkplace Dwy/Central Way[5]	C	22.4	C	29.2	*No signal assumed, see Stop Control LOS*			
103	State Street/NE 68th Street	C	26.0	C	33.1	C	24.4	C	32.7
104	108th Avenue NE/NE 68th Street	E	75.3	F	93.9	E	68.7	E	77.9
105	6th Street/Central Way[5]	E	59.7	E	69.4	D	43.4	E	55.7
106	3rd Street/Central Way	B	17.0	C	28.3	B	15.5	C	23.0
107	Lake Street/Central Way	D	36.5	D	37.3	C	28.0	C	34.4
108	Lake Street/Kirkland Avenue	B	14.2	B	16.1	B	17.2	B	15.6
109	114th Avenue NE/NE 85th Street[5]	E	58.9	F	148.1	D	50.2	F	125.8
110	4th Avenue/6th Street[5]	D	44.2	D	48.6	A	8.0	C	23.8
111	Kirkland Avenue/3rd Street	C	33.9	D	51.7	B	27.3	D	47.1
112	Kirkland Way/6th Street	C	32.7	C	33.8	D	36.5	C	30.4
128	5th Street/Central Way[5]	B	10.8	C	29.3	*No signal assumed, see Stop Control LOS*			
402	124th Avenue NE/NE 85th Street	(6)	(6)	D	48.1	(6)	(6)	D	42.1
All-Way Stop Control[3]									
169	7th Avenue/6th Street	F	81.3	F	70.3	F	51.6	F	69.8
One- or Two-Way Stop Control[4]									
4	Parkplace Dwy/Central Way[5]	*Signal assumed, see Signalized LOS*				C	19.0	C	20.0
7	Parkplace Dwy/Kirkland Way	C	24.0	F	103.8	B	16.8	D	34.1
113	6th Street/ Kirkland Avenue	F	>200	F	>200	F	>200	F	130.2
128	5th Street/Central Way[5]	*Signal assumed, see Signalized LOS*				F	152.9	F	>200
129	4th Street/ Central Way	C	19.4	E	47.1	D	28.7	F	94.8
179	Kirkland Way/Kirkland Avenue	C	16.4	D	27.4	C	15.6	C	22.7
211	Market Street/15th Avenue	(6)	(6)	F	176.0	(6)	(6)	F	91.4

Source: City of Kirkland, Heffron Transportation, January 2015. Levels of service determined using Synchro 8.0 model and HCM 2010 methodology; however, HCM 2010 will not report level of service for intersections with complex signal phasing such as overlapping right turn phases. For these locations, results are reported using the HCM 2000 methodology. Shaded cells indicate locations projected to operate at LOS E or LOS F.

1. LOS = Level of service
2. Delay = Average delay (seconds per vehicle)
3. Level of service for signalized and all-way stop-controlled intersections is based upon the average delay of all vehicles that travel through the intersection.
4. Level of service for one- and two-way stop-controlled intersections is based upon the average delay of the most congested (stop-controlled) movement through the intersection.
5. No Action Alternative assumes improvements that were identified as project elements or mitigation in the 2008 EIS. These improvements are not assumed as part of the baseline condition for the Action alternative.
6. AM peak hour analysis was not required for this location.

Table 6.3-11. Intersection Proportionate Share of Daily Project-Generated Trips – Action Alternative

		2022 Level of Service					
		AM Peak Hour		PM Peak Hour		Proportionate	Mitigation
ID#	Intersection	LOS	Delay	LOS	Delay	Share	Required [1]
Signalized							
104	108th Avenue NE/NE 68th Street	E	68.7	E	77.9	2.8%	No
105	6th Street/Central Way	D	43.4	E	55.7	14.0%	No
109	114th Avenue NE/NE 85th Street	D	50.2	F	125.8	**11.2%**	**Yes**
All-Way Stop Control							
169	7th Avenue/6th Street	F	51.6	F	69.8	1.1%	No
One- or Two-Way Stop Control							
113	6th Street/Kirkland Avenue	F	>200	F	130.2	4.0%	No
128	5th Street/Central Way	F	147.3	F	>200	**>5.0%**	**Yes**
129	4th Street/Central Way	D	28.7	F	94.8	2.2%	No
211	Market Street/15th Avenue	--	--	F	91.4	2.1%	No

Source: Heffron Transportation, January 2015.

1. Mitigation is required if a project's proportionate share exceeds 15% for intersections projected to operate at LOS E, and 5% for intersections projected to operate at LOS F.

It is noted that at the Central Way/6th Street intersection, forecasts reflect an assumption that the majority of trips traveling between the site and I-405 would utilize the main driveways located on Central Way rather than the driveway on 6th Street, based upon indication from the applicant that the Central Way/5th Street driveway would be intended to serve as the site's primary entrance. In the outbound direction, this assumption has a conservative effect on operations at Central Way/6th Street because it would result in more vehicles traveling westbound straight through the intersection rather than making a northbound-to-westbound right turn from 6th Street. However, in the inbound direction, this assumption results in lower average delay because more vehicles would travel straight through the intersection westbound, rather than making a westbound-to-southbound left turn. Therefore, sensitivity analysis was conducted to determine the effect on intersection operations if a greater share of inbound vehicles were to turn left from westbound Central Way and enter the site at the 6th Street driveway. In this analysis, half of the vehicles inbound from westbound Central Way were assumed to turn left onto 6th Street and enter the site at the 6th Street/4th Avenue driveway, and the other half were assumed to utilize the Central Way driveways. The resulting levels of service of affected intersections are shown in Table 6.3-12. Analysis showed that this would increase the average delay at 6th Street/Central Way, but the intersection would still operate at LOS E. With the project's proportionate share at this intersection less than 15%, no additional adverse impacts are identified with this assumption. Average delay would also increase at 4th Avenue/6th Street since more vehicles would enter the site (via southbound right turns) at this driveway, but the intersection is still projected to operate at LOS D or better. Average delay would decrease at the Central Way driveways, but 5th Street/Central Way is still projected to operate at LOS F during the PM Peak hour.

Table 6.3-12.Future (2022) Intersection Level of Service – Unmitigated – Driveway Distribution Scenarios

		Action Alternative (Majority of Eastbound Entering Use Central Way)				Action Alternative (Half of Eastbound Entering Use Central Way, Half Use 6th Street)			
		AM Peak		PM Peak		AM Peak		PM Peak	
ID#	Intersection	LOS[1]	Delay[2]	LOS	Delay	LOS	Delay	LOS	Delay
Signalized[3]									
105	6th Street/Central Way	D	43.4	E	55.7	E	68.6	E	69.2
110	4th Avenue/6th Street	A	8.0	C	23.8	B	13.3	D	37.0
One- or Two-Way Stop Control[4]									
4	Parkplace Dwy/Central Way	C	19.0	C	20.0	C	15.7	C	16.9
128	5th Street/Central Way	F	152.9	F	>200	D	29.6	F	>200

Source: City of Kirkland, Heffron Transportation, January 2015. Levels of service determined using Synchro 8.0 model and HCM 2010 methodology; however, HCM 2010 will not report level of service for intersections with complex signal phasing such as overlapping right turn phases. For these locations, results are reported using the HCM 2000 methodology.

1. LOS = Level of service
2. Delay = Average delay (seconds per vehicle)
3. Level of service for signalized intersections is based upon the average delay of all vehicles that travel through the intersection.
4. Level of service for one- and two-way stop-controlled intersections is based upon the average delay of the most congested (stop-controlled) movement through the intersection.

SITE ACCESS AND CIRCULATION

The sensitivity analysis summarized above shows that the level of operation of 6th Street/Central Way, as well as the site driveway intersections, would vary depending on the site access and circulation patterns of vehicles entering and exiting the site. At four intersections located adjacent to the site—(4) Central Way/Parkplace Driveway, (105) Central Way/6th Street, (110) 4th Avenue/6th Street, and (129) Central Way/4th Street—it is possible that additional improvements could be needed to address potential access and circulation issues for vehicular or non-motorized traffic, even though analysis indicates that with the lower numbers of vehicle trips generated by the Action alternative, TIA impacts are not expected to exceed the City's mitigation thresholds. For example, analysis indicates that queues of westbound left-turning vehicles at Central Way/5th Street may exceed the available lane storage length during peak morning conditions if the majority of inbound vehicles from the west use this driveway. In this case, it may be desired to design site access characteristics to encourage a greater number of vehicles to utilize the other proposed driveways. This could lead to a need for additional improvements at these locations, either to add capacity or to channel more vehicles where desired. Vehicle circulation patterns on the streets adjacent to the site will ultimately depend on detailed design-level factors such the layout of the parking garage, design of driveways and signage at entrances, and the types of measures implemented to manage parking patterns on the site. Detailed site-level analysis would be needed as part of the project design and permitting process to determine if improvements would be needed to mitigate potential access and circulation impacts. Potential measures to address access and circulation impacts along Central Way and 6th Street are discussed in more detail in the Mitigation section.

In addition, although Kirkland Way has existing sidewalks adjacent to the site, the existing south internal roadway road that provides access at (7) Parkplace Driveway/Kirkland Way does not include pedestrian facilities. Pedestrians accessing the site along this roadway must currently share the vehicle lane. As part of redevelopment of the site, improvement of the internal roadway to include a sidewalk or pathway on one or both sides would improve access and safety for pedestrians entering and exiting the site to and from the south.

CONCURRENCY V/C IMPACTS

Table 6.3-13 summarizes the results of the concurrency V/C ratio assessment for the No Action and Action scenarios, projected for 2022 conditions. As shown, all individual intersections and the subareas other than the Northwest subarea are projected to operate within the City-defined thresholds in 2022 with the City's existing transportation improvement plan in place. Under No Action, the projected 2022 average Northwest subarea average of 1.02 would exceed the adopted threshold of 1.01 by 0.01, resulting in a concurrency violation. With the Action alternative, the Northwest subarea average V/C is projected to drop by 0.03 compared to No Action, which would put it under the City's threshold. Therefore, no significant adverse concurrency impacts are projected to result from the Action alternative.

Table 6.3-13. 2022 Concurrency Assessment – No Action and Action Alternatives

			V/C Ratio	
ID#	**Intersection**	**V/C Ratio [1] Threshold**	**No Action Alternative**	**Action Alternative**
Southwest Subarea				
101	Lake Washington Boulevard/NE 38th Place	1.40	0.57	0.56
102	Lake Washington Boulevard/Lakeview Drive	1.40	0.83	0.80
103	State Street/NE 68th Street	1.40	0.75	0.75
104	108th Avenue NE/NE 68th Street	1.40	1.06	0.99
105	6th Street/Central Way	1.40	1.10	0.90
106	3rd Street/Central Way	1.40	0.73	0.61
107	Lake Street/Central Way	1.40	0.75	0.72
108	Lake Street/Kirkland Avenue	1.40	0.54	0.52
109	114th Ave NE/NE 85th Street	1.40	0.99	1.00
	Southwest Subarea Average	**0.92**	**0.81**	**0.76**
Northwest Subarea				
201	98th Avenue NE/NE 116th Street	1.40	1.17	1.07
202	100th Avenue NE/NE 124th Street	1.40	1.12	1.12
203	100th Avenue NE/NE 132nd Street	1.40	0.97	0.95
204	116th Way NE/NE 132nd Street	1.40	1.05	1.05
205	Market Street/Forbes Creek Drive	1.40	0.79	0.75
	Northwest Subarea Average [2]	**1.01**	**1.02**	**0.99**
Northeast Subarea				
301	120th Avenue NE/NE 132nd Street	1.40	1.07	1.06
302	120th Avenue NE/NE 130th Street	1.40	0.56	0.55
303	120th Avenue NE/NE 128th Street	1.40	0.60	0.58
304	124th Avenue NE/NE 132nd Street	1.40	1.37	1.36
306	Slater Avenue NE/NE 124th Street	1.40	1.05	1.04
307	120th Avenue NE/Totem Lake Boulevard	1.40	0.73	0.73
310	120th Avenue NE/NE 116th Street	1.40	0.71	0.71

ID#	Intersection	V/C Ratio [1] Threshold	V/C Ratio	
			No Action Alternative	Action Alternative
311	124th Avenue NE/NE 116th Street	1.40	0.70	0.69
312	116th Avenue NE/NE 124th Street	1.40	1.13	1.13
313	113th Place NE/NE 124th Street	1.40	0.91	0.91
314	Slater Avenue NE/NE 120th Street	1.40	1.17	1.16
315	124th Avenue NE/NE 124th Street	1.40	1.09	1.09
316	Totem Lake Boulevard/NE 132nd Street	1.40	1.29	1.29
317	I-405 Southbound Off Ramp/NE 124th Street	1.40	0.83	0.83
318	I-405 Northbound On-Off Ramps/NE 124th Street	1.40	0.65	0.65
320	I-405 Northbound Off Ramp/NE 116th Street	1.40	0.49	0.49
325	128th Lane NE/NE 124th Street	1.40	0.71	0.71
	Northeast Subarea Average	**0.99**	**0.89**	**0.88**
East Subarea				
401	132nd Avenue NE/NE 85th Street	1.40	1.13	1.13
402	124th Avenue NE/NE 85th Street	1.40	0.91	0.87
403	120th Avenue NE/NE 85th Street	1.40	1.22	1.17
404	124th Avenue NE/NE 100th Street	1.40	0.90	0.88
406	132nd Avenue NE/NE 70th Place	1.40	0.84	0.83
407	116th Avenue NE/NE 70th Place	1.40	1.06	1.06
408	124th Avenue NE/NE 90th Street	1.40	1.03	0.99
409	122nd Avenue NE/NE 85th Street	1.40	0.87	0.83
410	116th Avenue NE/I-405 Northbound Ramps	1.40	0.97	0.96
411	I-405 Southbound Ramps/NE 72nd Place	1.40	1.14	1.14
	East Subarea Average	**1.10**	**1.01**	**0.99**
North Subarea				
501	Juanita Drive NE/NE 122nd Place	1.40	1.36	1.31
502	Juanita Drive NE/76th Place NE	1.40	0.57	0.56
503	Juanita Drive NE/NE 141st Street	1.40	0.95	0.92
504	100th Avenue NE/Juanita-Woodinville Way	1.40	0.87	0.87
506	100th Avenue NE/Simonds Road NE	1.40	1.16	1.15
507	100th Avenue NE/NE 145th Street	1.40	1.03	1.00
508	Juanita-Woodinville Way/NE 145th Street	1.40	0.82	0.81
510	132nd Avenue NE/NE 132nd Street	1.40	0.72	0.72
511	124th Avenue NE/NE 144th Street	1.40	1.18	1.18
512	Willows Road NE/NE 124th Street	1.40	0.87	0.87
	North Subarea Average	N/A [3]	**0.95**	**0.94**

Sources: City of Kirkland 2013; Fehr & Peers 2014; Heffron Transportation 2014.
1. V/C Ratio = volume-to-capacity ratio.
2. Shaded cells indicate that the projected V/C ratio is projected to exceed the adopted threshold, indicating a concurrency violation.
3. N/A = Not Applicable. No subarea average V/C has been established for the North Subarea. Appropriate standards will be established upon completion of an updated land use plan as part of the City's next Comprehensive Plan update

Traffic Safety

Historical collision data in the site vicinity do not indicate any unusual safety patterns. The project would add vehicle trips to the street network which along with additional vehicles generated by other development growth, could increase the potential for vehicle conflicts. However, the project would be subject to City design standards ensuring that adequate sight distance is provided at site driveways, and the addition of project-generated traffic is not expected to change overall safety conditions in the area. However, any future projects that improve roadway operating conditions in the area would also be expected to benefit safety conditions.

Parking

Parking supply within the project site would be subject to Kirkland Zoning Code requirements (KZC Chapter 50.36). For the No Action alternative, the 2008 EIS presented parking calculations that supported reducing the required parking through use of shared parking and parking management measures. The Action alternative proposes no code modifications. Table 6.3-14 shows the parking code requirements for the land uses proposed with the Action alternative, with no shared parking.

Table 6.3-14. Parking Requirement without Shared Parking – Action Alternative

Land Use	Area	Parking Requirement[1]	Total Parking Stalls Required
Office	650,000 sf	1 stall per 350 sf	1,857
Retail			
Restaurant	53,000 sf	1 stall per 125 sf	424
Other	172,000 sf	1 stall per 350 sf	491
Residential	300 units	1.7 stalls per unit[2]	510
		Total	3,282

Source: Collins Woerman, December 2014.
1. Per KZC Chapter 50.36 with no shared parking.
2. For residential uses, the City may require guest parking spaces in excess of the required parking spaces, up to a maximum additional 0.5 stall per dwelling unit, if there is inadequate guest parking on the subject property. However, with over 2,700 additional spaces required for other non-residential uses on the site, and low office-generated parking demand during evenings and weekends when demand for residential guest parking would be highest, it is expected that supply to accommodate guest parking would be determined to be adequate without requiring the additional supply per dwelling unit.

Table 6.3-15 summarizes the locations and amount of parking supply proposed with the Action alternative. As shown, the proposed parking supply of 3,283 would meet City code requirements without shared parking.

Table 6.3-15. Proposed Parking Supply without Shared Parking – Action Alternative

Location	Total Parking Stalls Proposed
Surface Lot	78
Curbside	40
L1.5 Garage	262
L1 Garage	269
P1 Garage	1,345
P2 Garage	1,289
	3,283

Source: Collins Woerman, December 2014.

The parking requirements presented in Table 6.3-14 assumes no shared parking between uses on the site. Under KZC 50.36, shared parking principles could potentially be applied if different uses have peak parking demands that occur during different times of day (e.g. residential parking with peak demand occurring in the evening and office parking with peak demand occurring midday could potentially share some of the same parking supply). An analysis of shared parking with the proposed mix of uses is presented in Attachment 6.3-3. The analysis shows that even with a conservative approach that would reserve 510 spaces for residential use and 650 spaces for short-term commercial use (3 hours or less), shared parking among other uses would result in a cumulative peak demand of about 2,440 spaces—about 840 fewer spaces than the straight code requirement without shared parking. The parking analysis also identifies measures that could be included in a Transportation Management Plan (TMP), which would support reduction in parking demand and managing the overall supply (discussed in more detail in the Mitigation section). Since the proposed parking supply would meet City code requirements, and a TMP combined with shared parking would reduce peak parking demand and allow a parking reduction consistent with KZC 50.36, no adverse parking impacts are expected to result from the Action alternative.

Transit

Located about one block away from the Kirkland Transit Center, the site is well served by transit. As shown previously in Table 6.3-7, the Transit Center serves seven local bus routes and one regional bus route. These routes provide service to local and regional destinations, and connect to other local and regional buses at other park-and-ride lots within Kirkland. No adverse transit impacts are expected to result from the Action alternative.

Non-Motorized Facilities

Non-motorized access and circulation would be subject to City development code, including design guidelines for frontage and non-motorized improvements. With City development code requirements incorporated, and improvements identified through project-level analysis to ensure adequate pedestrian access and circulation at the site, no adverse non-motorized impacts are expected to result from the Action alternative.

Mitigation Measures

Applicable Regulations and Commitments

The analysis presented in this Addendum assumes implementation of the City's adopted long-range transportation improvement program. Future projects would be required to pay transportation impact fees established under KMC Chapter 25 to contribute its share toward citywide transportation improvement projects identified to support growth in development.

Future projects would also be required to adhere to City development code (KMC Chapter 20), including design guidelines for frontage and non-motorized improvements

Other Potential Mitigation Measures

CAPACITY IMPROVEMENTS

The following capacity improvements are identified to mitigate operational impacts that would result from the proposed Action alternative. Note, these improvements were also previously identified to mitigate transportation impacts of the No Action alternative in the 2008 EIS.

- (109) 114th Avenue NE/NE 85th Street – Restripe eastbound right-turn lane to shared thru-right and extend westward. Add second northbound right-turn lane. With projected 2022 conditions, this would improve operation from LOS F to LOS D (average delay 38.3 seconds per vehicle) during the PM peak hour and from LOS D to LOS C during the AM peak hour.
- (128) Central Way/5th Street – Install a traffic signal and coordinate the timing with the signal at Central Way/6th Street. With projected 2022 conditions, this would improve operation from LOS F to LOS C during both the AM and PM peak hours, with average delays of 20.5 and 21.3 seconds per vehicle, respectively. Although the proportionate share of project-generated trips through (105) Central Way/6th Street does not trigger mitigation, analysis indicates that retiming and coordination of this signal with the Central Way/5th Street signal would improve 2022 operation from LOS E to LOS D during the PM peak hour, and maintain LOS D operation during the AM peak hour. North-south through movement between the site driveway and 5th Street should be prohibited, to discourage cut-through traffic in the neighborhood north of the site.
- Coordinate signals on streets adjacent to Parkplace site: Central Way between 3rd Street and 6th Street, and 6th Street between Central Way and Kirkland Way.

The following additional capacity improvements were previously identified at locations adjacent to the site to mitigate transportation impacts of the No Action alternative in the 2008 EIS. Analysis presented in this section indicates that with the lower numbers of vehicle trips generated by the Action alternative, TIA impacts are not expected to exceed the City's mitigation thresholds at these locations. However, the City may require mitigation at these locations to the extent warranted by site access and circulation conditions; further some are included in the Master Plan and Design Guidelines applicable to the property (#105). As part of project permitting, detailed site-level traffic analysis that reflects the effects of parking garage design, driveway design, other design elements such as signage and parking management measures, would be required to determine the timing and extent to which the following additional improvements would be needed to accommodate site access and circulation for vehicles and pedestrians. The required analysis may include capacity improvements or additional trip reduction measures.

- (4) Central Way/West Parkplace Driveway– Install a signal and manage coordination with the intersection of Central Way/4th Street..
- (105) Central Way/6th Street and (110) 4th Avenue/6th Street – Construct dual westbound left turn lane. Add second southbound receiving lane on 6th Street between Central Way and 4th Avenue, which would serve as a southbound right-turn lane into the site. Modify signal to provide westbound left/northbound right overlap phase.
- (129) Central Way/4th Street - Extend two-way-left-turn lane by moving crosswalk to Central Way/West Parkplace Driveway signal at the current site driveway.

If nearer-term conditions do not warrant improvement at some or all of these locations, the City should require that redevelopment on the site be designed to leave the space needed to accommodate the identified improvements in case they are warranted in the future.

The following improvement is identified to improve access and safety for pedestrians entering and exiting the site to and from the south.

- (7) Parkplace Driveway/Kirkland Way – Improve the internal roadway to include a sidewalk or pathway on one or both sides.

TRANSPORTATION DEMAND AND PARKING MANAGEMENT

Transportation demand and parking management is recommended for the Action alternative to reduce vehicle trips and parking demand, and to manage parking supply. This could include but is not excluded to some of all of the following measures.

1. **Implement a Transportation Management Plan (TMP) for office tenants and provide a transportation coordinator to manage and promote the TMP.** The cumulative parking demand estimates for the office use assume that 23% of trips would occur by non-vehicular modes. To encourage use of these other modes, the following TMP measures are suggested.
    a. **Provide transit pass subsidy to employees who commute by transit.** The value of the subsidy would equal or exceed 50% of the cost of a two-zone King County Metro Transit pass or equivalent ORCA pass.
    b. **Charge for daily parking.** Employees of the offices should be charged a fee to park on site.
    c. **Offer a part-time parking pass option.** Employees who desire to use alternative modes of transportation (or telecommute) one or more days per week should be offered a parking pass that is only charged for the days parked. These types of passes work like a debit card, and the pass holder is only charged for parking on the days that they park.
    d. **Provide ride-match information.** The developer should encourage its tenants to provide information to employees about ride-match programs that are available through King County Metro and other transit agencies. These programs can help match an employee with potential carpool mates who live in close proximity.
    e. **Provide free parking for vanpools.** Vanpools registered with a public transit agency should be provided free on-site parking. At least six of the riders in each of vanpool must be employed at the site to qualify for free parking.
    f. **Provide reserved parking spaces for vanpools.** Parking in a preferred location within the garage should be reserved for registered vanpools.
    g. **Provide shower and locker facilities.** The complex should have at least one shower and locker facility (outside of the on-site health club) for commuters who walk or bike to work.
    h. **Provide bike storage.** Bicycle corrals should be provided within the garage for employees who commute by bike. These should be in an easily-accessible location, and have good lighting and security.
    i. **Provide parking for a car-sharing program.** The developer should provide up to five parking spaces for car-sharing program to support employees who commute by alternative modes of travel by providing vehicles that can be used for daytime errands or meetings.
    j. **Offer guaranteed ride home to employees who commute by alternative modes.** The developer should encourage employers to provide guaranteed rides home for commuters who use alternative forms of transportation but need to get home quickly in an emergency or after available transit service has stopped. The ride home can be by taxi, company-owned vehicle, or car-sharing vehicle. The number of rides available per month or year may be limited. This program reassures employees that they will have transportation during emergencies so they are more comfortable using transit or carpools.
    k. **Install electronic kiosks with travel information.** The developer should install up to three electronic kiosks that provide up-to-date information about transportation services. This could include transit route maps and stop times, commuter congestion, parking rates, and information about alternative modes of travel.

2. **Monitor success of TMP.** The on-site transportation coordinator should conduct biennial surveys of site tenants and employees regarding the modes of travel used and the success of various TMP programs. The first survey should be performed within one year of the first tenant's occupancy. Results are to be compiled and sent to the City of Kirkland. The survey questionnaire and reporting requirements must be approved by City of Kirkland staff before the first survey is taken.
3. **Reserve areas of the garage for short-term parking by customers and visitors.** Designate parking spaces for short-term parking only. This parking would be for customers and visitors. The initial limit should be set to three hours, which is sufficient time for most daytime dining and entertainment users. The short-term parking restrictions could apply during just midday weekday hours when office users are on site.
4. **Reserve parking for residents.** Reserve up to 1.7 spaces per residential unit. Of these, a portion should be designated for residential visitors. The remaining spaces could be assigned to individual units, if desired.
5. **Share office parking on weeknights and weekends.** All parking in the garage should be available for customers and the general public on weeknights and weekends.
6. **Do not reserve individual spaces for office parking.** No parking space in the garage may be reserved for an individual user. This allows all office parking to be shared by employees.
7. **Implement measures to discourage hide-and-ride, if needed.** Measures may be needed to prevent outsiders from parking at the site (for example, commuters who use the near-by transit center). Such programs could include enforcement of short-term parking restrictions, permit parking for site employees, pay parking, and customer validation programs. These can be implemented by site management, when and if needed.
8. **Monitor garage use.** Monitor the allocation of the parking supply to various users during weekday hours. Adjust allocation or implement additional management measures, if needed.
9. **Provide a Bike Share station.** Bike sharing allows individuals to check out bicycles for short trips. Individuals purchase a membership or pass to check out bicycles, which are obtained from and returned to stations located throughout the program area. If this type of program is launched in Kirkland, the Parkplace site would be an ideal location for a Bike Share station due to its proximity to denser downtown residential, office and commercial development, as well as the Cross Kirkland Corridor Trail.

With transportation and parking demand measures in place, a parking reduction could be allowed based on shared parking analysis, consistent with the KZC 50.36. Parking demand analysis indicates that with a conservative approach that would reserve 510 spaces for residential use and 650 spaces for short-term commercial use (3 hours or less), shared parking among other uses would result in a cumulative peak demand of about 2,440 spaces—about 840 fewer spaces than the straight code requirement without shared parking.

Significant Unavoidable Adverse Impacts

With implementation of mitigation measures identified in this section, the proposed Action alternative would not result in significant unavoidable adverse transportation impacts.

References

City of Kirkland. 2014. Traffic Impact Analysis Guidelines. Memorandum from Eric Shields, SEPA Responsible Official, August.

City of Kirkland. 2012. 2013 – 2018 Capital Improvement Program.

City of Kirkland. 2013. Comprehensive Plan, Transportation Element. Last updated April 2013.

City of Kirkland. 2008. Draft Environmental Impact Statement: Downtown Area Planned Action Ordinance. April.

King County, Metro Transit. 2014. Bus route and schedule information. Accessed December 2014.

Institute of Transportation Engineers, 2009, Trip Generation, 9th Edition.

Institute of Transportation Engineers, 2014, Trip Generation Handbook, 3rd Edition.

Sound Transit. 2014. Bus route and schedule information. Accessed December 2014.

Transportation Research Board. 2010. Highway Capacity Manual. Special Report 209.

Transportation Research Board. 1980. Transportation Research Circular 212.

Washington Transportation Commission, Report of Final Finding, Redmond/Kirkland SR 908 Route Jurisdiction Transfer Request, October 2009.

Assumed Future Projects

Project	CIP #	Description	Affected Study Intersections
NE 132nd Street Roadway Improvements	ST 0077 ST 0078 ST 0079	Widen NE 132nd Street from 2 to 3 lanes, from 100th Avenue NE to NE 132nd Street	203, 204, 316, 301, 304, 510 *Note: Does not affect V/C calcs because these intersections all have existing left-turn pockets in the east and west directions*
120th Avenue NE Roadway Improvements	ST 0063 000	Widen 120th Avenue NE from 3 to 5 lanes, from NE 128th Street to NE 132nd Street	301, 302, and 303
124th Avenue NE Roadway Improvements	ST 0059 000	Widen 124th Avenue NE from 3 to 5 lanes, from NE 116th Street to NE 124th Street	311 and 315
NE 120th Street Roadway Extension	ST 0057 001	Extend NE 120th Street (new roadway) from Slater Avenue NE to 124th Avenue NE	314
Kirkland Way/6th Street Intersection Improvement	(1)	Install new traffic signal; one left-turn lane and one thru-right lane in all four directions	112
NE 85th Street / 120th Avenue NE Intersection Improvement	TR 0088 000	Add northbound exclusive right-turn lane	403
NE 70th Street / 132nd Avenue NE Intersection Improvement	TR 0086 000	Add northbound and westbound right-turn lanes	406
100th Avenue NE / NE 132nd Street Intersection Improvement	TR 0083 000	Restripe eastbound right-turn lane to shared thru-right Add northbound receiving lane on north leg Extend westbound left and right turn lanes	203
100th Avenue NE / NE 124th Street Intersection Improvement	TR 0084 000	Add northbound receiving lane on north leg and restripe northbound right-turn lane to shared thru-right	202
NE 124th Street / 124th Avenue NE Intersection Improvement	TR 0091 000	Add second southbound thru-lane, second northbound left-turn lane, and northbound right-turn lane	315

Assumed Future Projects

Project	CIP #	Description	Affected Study Intersections
Lake Washington Boulevard / NE 38th Place	TR 0090 000	Add northbound thru-right lane, and northbound receiving lane on north leg	101
Central Way / 6th Street Intersection Improvement	(1)	Add second westbound left-turn lane, modify signal to provide westbound left and northbound right overlap phase	105
NE 85th Street / 114th Avenue Intersection Improvement	(1)	Restripe southbound dual left-turn lane and eastbound right-turn lane to through lanes	109
NE 132nd Street / 124th Avenue NE	TR 0096 000	Add second eastbound left-turn lane	304

1. Developer funded. Kirkland Way/6th Street improvements are scheduled for construction in 2015. Central Way/6th Street and NE 85th Street/114th Avenue NE improvements were committed projects and assumed in place for the No Action alternative, but were not assumed for the Action alternative.

TECHNICAL MEMORANDUM

Project: Parkplace EIS Addendum

Subject: Trip Generation Estimate - Action Alternative

Date: January 29, 2015

Author: Jennifer Barnes, PE

This memorandum presents the methodology and assumptions used to estimate trips generated by the proposed Action alternative for the Parkplace Environmental Impact Statement (EIS) Addendum.

1. Project Description

The Parkplace site is bounded by Central Way on the north, 6th Street on the east, and Kirkland Way on the south, and currently has one access driveway at each of these three streets. Peter Kirk Park, located directly to the west of the site, provides pedestrian access to and from the west, but no vehicular access. The proposed project would redevelop the site from its existing commercial land uses to a mix of office, retail and residential. The proposed project program is summarized in Table 1. The proposal previously evaluated in the *Downtown Area Planned Action Ordinance DEIS*[1] is provided for comparison.

Table 1. Proposed Program for Action Alternative

		Size Evaluated	
Land Use Type	ITE Land Code [1]	Current Proposal [2]	2008 Proposal [3]
Office	710	650,000 sf	1,200,000 sf
Supermarket	850	54,000 sf	54,000 sf
Restaurant	932	53,000 sf	60,000 sf
Retail [4]	820	48,000 sf	170,000 sf
Movie Theater [4]	445	40,000 sf	600 seats
Health Club	492	30,000 sf	70,000 sf
Multifamily Residential	220	300 units	---
Hotel	310	---	325 rooms

sf = square feet

1. Institute of Transportation Engineers, Trip Generation Manual, 9th Edition, 2012.

2. Collins Woerman, December 2014.

3. City of Kirkland, April 2008.

4. Although a movie theater is intended to be provided with the current proposal, the theater space was assumed to be general retail in the updated trip generation estimate (for a total assumed 88,000 sf of retail) because retail has a higher trip generation rate, and it provides a more conservative estimate of total trips in case a theater tenant is not secured.

[1] City of Kirkland, April 2008.

2. Trip Generation for Proposed Project

The number of trips generated by the Block 21 project was determined using the recommended methodology in the Institute of Transportation Engineers (ITE) current *Trip Generation Handbook.*[2] ITE recognizes that development projects located in urban environments generate fewer trips than those in suburban settings. The new *Handbook* states:

> *Most data presented in the Trip Generation Manual data volumes are vehicle-based and have been collected at low-density, single-use, suburban developments with little or no transit service, limited bicycle access, and little or no convenient pedestrian access. These sites are called* ***baseline*** *sites because they are the starting points for vehicle trip generation estimation.*
>
> *The analyses needs to adjust baseline vehicle trip generation estimates to correctly estimate trip generation for a site*
> - *Surrounded by compact urban development;*
> - *Consisting of a mix of complementary land uses;*
> - *Served by public transit;*
> - *That attracts walking and bicycling trips;*
> - *That prices on-site parking; and*
> - *In an area with high vehicle occupancy as a result of an area-wide transportation demand management program or preferential treatment for ridesharing.*

With expected parking and transportation demand management measures applied to the proposed project, almost all of these attributes apply to the Parkplace site; therefore, the following approach recommended in the *Trip Generation Handbook* was used to estimate trips for each mode of travel:

1. Estimate the baseline vehicle trips using data from the *Trip Generation Manual.*[3]

2. Convert the baseline vehicle trips to baseline person trips using baseline mode shares and vehicle occupancy rates for each land use (note, baseline vehicle occupancy rates are those inherent in the ITE rates).

3. Determine the appropriate mode of travel and vehicle occupancy for the subject site based on its characteristics and context.

4. Calculate person trips by mode of travel using the local mode of travel factors for the site.

5. Convert the person trips by vehicle into adjusted vehicle trips using the local vehicle occupancy rates for the site.

Baseline Trip Generation Factors

Table 2 summarizes the baseline trip generation rates, equations and average vehicle occupancy (AVO) factors used to estimate the proposed project's person trips.

---

2 Institute of Transportation Engineers, Trip Generation Handbook, 3rd Edition, August 2014.
3 Institute of Transportation Engineers, Trip Generation, 9th Edition, 2012.

Table 2. Basline Trip Generation Rates, Equations and AVO Assumptions

Land Use (ITE Land Use Code)	ITE Baseline Trip Generation Equation or Rate [a]	Baseline Average Vehicle Occupancy (AVO)
Apartment (220) – Dwelling units located within the same building with at least three other dwelling units.		
Daily	T = 6.06(X) + 123.56	1.20 [b]
AM Peak Hour	T = 0.49(X) + 3.73	1.20 [b]
PM Peak Hour	T = 0.55(X) + 17.65	1.20 [b]
Health Club (492) – A facility that primarily focuses on individual fitness or training, typically providing exercise classes, weightlifting, fitness and gymnastics equipment, spas, locker rooms, and small restaurants or snack bars.		
Daily	32.93 trips/1,000 sf	1.00 [c]
AM Peak Hour	1.41 trips/1,000 sf	1.00 [c]
PM Peak Hour	Ln(T) = 0.95Ln(X) + 1.43	1.00 [c]
Office (710) – A location where affairs of businesses, commercial or industrial organizations or professional persons or firms are conducted.		
Daily	Ln(T) = 0.76Ln(X) + 3.68	1.10 [d]
AM Peak Hour	Ln(T) = 0.80Ln(X) + 1.57	1.10 [d]
PM Peak Hour	T=1.12(X) + 78.45	1.10 [d]
Retail (820) – Group of commercial establishments that may include uses such as traditional retail stores, banks, post offices, recreational uses, and others.		
Daily	Ln(T) = 0.65Ln(X) + 5.83	1.20 [e]
AM Peak Hour	Ln(T) = 0.61Ln(X) + 2.24	1.20 [e]
PM Peak Hour	Ln(T) = 0.67Ln(X) + 3.31	1.20 [e]
Supermarket (850) – Free standing retail store selling a complete assortment of food, food preparation and wrapping materials, and household cleaning items. They may also contain additional products or services including ATMs, automobile supplies, bakeries, books and magazines, dry cleaning, floral, greeting cards, limited service banks, photo centers, pharmacies or video rental.		
Daily	102.24 trips/1,000 sf	1.00 [c]
AM Peak Hour	3.40 trips/1,000 sf	1.00 [c]
PM Peak Hour	9.48 trips/1,000 sf	1.00 [c]
High-Turnover Sit Down Restaurant (932) – Sit-down, full-service eating establishments with typical duration of stay of approximately one hour. They are usually moderately priced and often belong to a chain. This type would generate more trips than a quality restaurant and was selected to provide a conservatively high estimate of trips		
Daily	127.15 trips/1,000 sf	1.52
AM Peak Hour	10.81 trips/1,000 sf	1.52
PM Peak Hour	9.85 trips/1,000 sf	1.52

a. Institute of Transportation Engineers (ITE) Trip Generation, 9th Edition, 2012. "T" = trips during time period; "X" = size of use in dwelling units for apartments, and in 1,000 square feet of area for other uses; "Ln" = Natural logarithm; "sf" = square feet.

b. Final Report on Improved Vehicle Occupancy Data Collection Methods, Battelle, April 1997.

c. No vehicle occupancy data are provided in Trip Generation for these uses, so a conservatively low estimate of 1.0 person per vehicle was assumed.

d. No AVO data are provided in Trip Generation for General Office (Land Use Code 710); assumed rate is from ITE's AVO rate for Single-Tenant Office Building (Land Use Code 715).

e. No vehicle occupancy data are directly provided in Trip Generation for the Shopping Center (Land Use Code 820); however, ITE data available for other retail uses indicate occupancy rates range from 1.17 (for a hardware store) to 1.46 (for a discount store). For this analysis, an AVO rate of 1.2 persons-per-vehicle was assumed.

Internal Trips

In addition to trips to and from a site, the total number of trips generated by a mixed-use development includes "internal trips," or trips made between different uses on the site. For example, a trip that an office worker makes at lunchtime to a local retail shop is calculated in the trip generation estimates for

both the office and the retail uses. Chapter 6 of the *Trip Generation Handbook*[4] is devoted to estimating trip generation for multi-use developments, and provides a methodology to estimate the number of internal trips that can be expected for specific mixes of uses. This method is based on the type and size of various land uses. The more balanced the mix of uses, the higher the percentage of internal trips. Developments with a predominance of one type of use (e.g., mostly office, or mostly residential) typically have lower percentages of internal trips, while developments with a more balanced mix of uses (e.g. office, retail and residential) typically have higher percentages of internal trips.

ITE's methodology to determine internal trips has four steps:

1. Determine the number of person trips expected to be generated by each land use as if each was on a separate site.
2. Determine the number of internal trips based on internal capture rates presented in the *Trip Generation Handbook.*
3. Balance the number of internal trips to and from all land uses at the site.
4. Total the resulting number of internal trips and calculate the percentage of internal trips.

Person Trips

The estimated person trips generated by the Action alternative are summarized in Table 3. Based on ITE methods, internal trips are estimated to account for about 36% of the daily trips, 27% of the AM peak hour trips and 31% of the PM peak hour trips, reflecting more balanced mix between the office, retail, restaurant, and residential uses. The internal trip calculations are provided in Attachment 1. The total number of person trips external to the site is estimated at 20,740 per day, with about 1,738 in the AM peak hour and 2,184 in the PM peak hour.

Table 3. Total Person Trips Generated by the Action Alternative

		Daily	AM Peak Hour			PM Peak Hour		
Person Trip Summary	Size	Trips	In	Out	Total	In	Out	Total
Retail (LU 820)	88,000 sf	7,500	107	66	173	317	343	660
Apartment (LU 220)	300 units	2,330	36	145	181	142	77	219
General Office (LU 710)	650,000 sf	5,990	828	113	941	151	736	887
Health Club (LU 492)	30,000 sf	990	21	21	42	60	46	106
High Turn Restaurant (LU 932)	53,000 sf	10,240	479	392	871	476	318	794
Supermarket (LU 850)	54,000 sf	5,520	114	70	184	261	251	512
Total All Person Trips		32,570	1,585	807	2,392	1,408	1,770	3,178
Internal Trips		11,830	327	327	654	497	497	994
% Internal Trips		36.3%		27.3%			31.3%	
Total External Person Trips		20,740	1,258	480	1,738	911	1,273	2,184

Source: Heffron Transportation, Inc. January, 2015. Trips estimated using procedures in the ITE Trip Generation Handbook, August, 2014.

[4] Institute of Transportation Engineers, 3rd Edition, August 2014

Local Mode of Travel and Average Vehicle Occupancy

The mode of travel percentages and average vehicle occupancies (AVOs) for residents and employees in the area in which the Parkplace site is located were derived from Journey-to-Work survey results from the year *2010 Census*, compiled by the Puget Sound Regional Council (PSRC).[5] Since the PSRC data did not include mode share data for retail trips, the same mode of travel assumptions applied to the 2008 analysis—0% transit, 3.5% non-motorized, and 96.5% vehicle—were assumed. Given the proximity of the Parkplace site to other downtown office, retail and residential development, it is expected that the assumed non-motorized travel share for retail-generated trips is conservatively low, resulting in a higher estimate of vehicle trips. AVOs for trips generated by retail uses were assumed to be the same as the baseline AVOs.

Table 4 summarizes the AVO and mode-split percentage assumptions that were applied to the person trips for each land use type. Table 5 summarizes the resulting trips by mode of travel for the Action alternative.

Table 4. Mode Split & Average Vehicle Occupancy for Local Neighborhood

Land Use Type	Local AVO Rate for Area	Mode of Travel		
		Walk & Bike	Transit Trips	Vehicle Trips
Office[1]	1.07	8.0%	15.0%	77.0%
Residential[1]	1.03	4.0%	9.0%	87.0%
Retail[2]	Varies[2]	3.5%	0%	96.5%

1. PSRC, Journey-to-Work data from 2010 U.S. Census, Data for Transportation Analysis Zones (TAZs) 258 and 260.

2. Mode of travel share: City of Kirkland, 2008; AVOs vary by retail type, assumed to be the same as baseline (see Table 2).

[5] PSRC, Journey-to-Work data from 2010 U.S. Census, Data for Transportation Analysis Zones (TAZs) 258 and 260.

Table 5. Person Trips by Mode of Travel

Project Component and Type of Trip by Mode	% of Trips	Daily Trips	AM Peak Hour Trips			PM Peak Hour Trips		
			In	Out	Total	In	Out	Total
Retail (LU 820)								
Walk or Bicycle Trips	3.5%	180	3	1	4	7	8	15
Transit Trips	0.0%	0	0	0	0	0	0	0
Person Trips by Vehicle	96.5%	5,090	81	42	123	204	219	423
Total	100.0%	5,270	84	43	127	211	227	438
Apartment (LU 220)								
Walk or Bicycle Trips	4.0%	40	1	5	6	2	1	3
Transit Trips	9.0%	100	3	10	13	4	3	7
Person Trips by Vehicle	87.0%	940	29	97	126	42	22	64
Total	100.0%	1,360	33	112	145	48	26	74
General Office (LU 710)								
Walk or Bicycle Trips	8.0%	330	54	1	55	10	54	64
Transit Trips	15.0%	620	101	2	103	19	100	119
Person Trips by Vehicle	77.5%	3,180	521	7	528	96	515	611
Total	100.0%	4,130	676	10	686	125	669	794
Health Club (LU 492)								
Walk or Bicycle Trips	3.5%	20	1	0	1	1	1	2
Transit Trips	0.0%	0	0	0	0	0	0	0
Person Trips by Vehicle	96.5%	680	15	14	29	39	30	69
Total	100.0%	700	16	14	30	40	31	71
Restaurant (LU 932)								
Walk or Bicycle Trips	3.5%	200	13	8	21	11	5	16
Transit Trips	0.0%	0	0	0	0	0	0	0
Person Trips by Vehicle	96.5%	5,490	346	247	593	301	150	451
Total	100.0%	5,690	359	255	614	312	155	467
Supermarket (LU 850)								
Walk or Bicycle Trips	3.5%	140	3	2	5	6	6	12
Transit Trips	0.0%	0	0	0	0	0	0	0
Person Trips by Vehicle	96.5%	3,740	87	44	131	168	160	328
Total	100.0%	3,880	90	46	136	174	166	340
Total Person Trips								
Walk or Bicycle Trips		910	75	17	92	37	75	112
Transit Trips		720	104	12	116	23	103	126
Person Trips by Vehicle		19,120	1,079	451	1,530	851	1,095	1,946
Total		20,750	1,258	480	1,738	911	1,273	2,184

Source: Heffron Transportation, Inc., January, 2015.

Vehicle Trips for Proposed Project

Vehicle trips were determined by applying the local AVO rates to the person trips by vehicle generated by each land use. The total vehicle trips for the Action alternative are summarized in Table 6. The Proposed Action is estimated to generate 16,150 vehicle trips per day, with 1,268 in the AM peak hour and 1,680 in the PM peak hour.

Table 6. Total Vehicle Trips Generated by the Action Alternative

Land Use	Size	Daily Vehicle Trips	AM Peak Hour Vehicle Trips			PM Peak Hour Vehicle Trips		
			In	Out	Total	In	Out	Total
Retail (LU 820)	88,000 sf	4,240	68	35	103	170	183	353
Apartment (LU 220)	300 units	910	28	94	122	41	21	62
General Office (LU 710)	650,000 sf	2,970	487	6	493	90	481	571
Health Club (LU 492)	30,000 sf	680	15	14	29	39	30	69
Restaurant (LU 932)	53,000 sf	3,610	228	162	390	198	99	297
Supermarket (LU 850)	54,000 sf	3,740	87	44	131	168	160	328
Total		16,150	913	355	1,268	706	974	1,680

Source: Heffron Transportation, Inc. January, 2015. Estimated using procedures in the ITE Trip Generation Handbook, 2014.

Trip Components

Two types of trips—primary and pass-by trips—reflect the traffic impact characteristics associated with the retail element of the proposed mixed-use land uses.

- **Pass-by Trips** are already on the roadway network on the way to another destination. For example, a trip to a retail store during a trip home from work that uses Central Way would be a pass-by trip.

- **Primary (New) Trips** are single-purpose trips generated by the retail or other land use types. New trips are generally assumed to begin and end at home, although some new trips could originate at work or other locations.

Pass-by trips would affect driveway volumes at the site access points, but do not represent new trips on the citywide roadway network. The same average pass-by trip percentages that were applied in the 2008 analysis for general retail, restaurant, and supermarket uses at the site were applied to these uses in the current proposal—25% for general retail, 10% for high turnover restaurant, and 26% for supermarket. The pass-by percentages that were applied are lower than the respective ITE average pass-by percentages published in the *Trip Generation Handbook* (34% for general retail, 43% for high turnover restaurant, and 36% for supermarket).[6] Therefore, the assumptions that were applied are considered conservatively low, resulting in a higher estimate of primary (new) vehicle trips generated by the project. Table 7 summarizes the vehicle trips by component for each proposed land use.

[6] Institute of Transportation Engineers, 2014.

Table 7. Vehicle Trip Generation by Trip Component

Project Component and Type of Trip by Mode	Trip Component %	Daily Trips	AM Peak Hour Trips			PM Peak Hour Trips		
			In	Out	Total	In	Out	Total
Retail (LU 820)								
Primary Trips	75%	3,180	55	22	77	126	139	265
Pass-by Trips	25%	1,060	13	13	26	44	44	88
Total	100%	4,240	68	35	103	170	183	353
Apartment (LU 220)								
Primary Trips	100%	910	28	94	122	41	21	62
Pass-by Trips	0%	0	0	0	0	0	0	0
Total	100%	910	28	94	122	41	21	62
General Office (LU 710)								
Primary Trips	100%	2,970	487	6	493	90	481	571
Pass-by Trips	0%	0	0	0	0	0	0	0
Total	100%	2,970	487	6	493	90	481	571
Health Club (LU 492)								
Primary Trips	100%	680	15	14	29	39	30	69
Pass-by Trips	0%	0	0	0	0	0	0	0
Total	100%	680	15	14	29	39	30	69
Restaurant (LU 932)								
Primary Trips	90%	3,250	208	142	350	183	84	267
Pass-by Trips	10%	360	20	20	40	15	15	30
Total	100%	3,610	228	162	390	198	99	297
Supermarket (LU 850)								
Primary Trips	74%	2,770	64	33	97	125	117	242
Pass-by Trips	26%	970	17	17	34	43	43	86
Total	100%	3,740	87	44	131	168	160	328
Total Person Trips								
Primary Trips		13,760	857	311	1,168	604	872	1,476
Pass-by Trips		2,390	50	50	100	102	102	204
Total		16,150	907	361	1,268	706	974	1,680

Source: Heffron Transportation, Inc., January, 2015.

ATTACHMENT 1

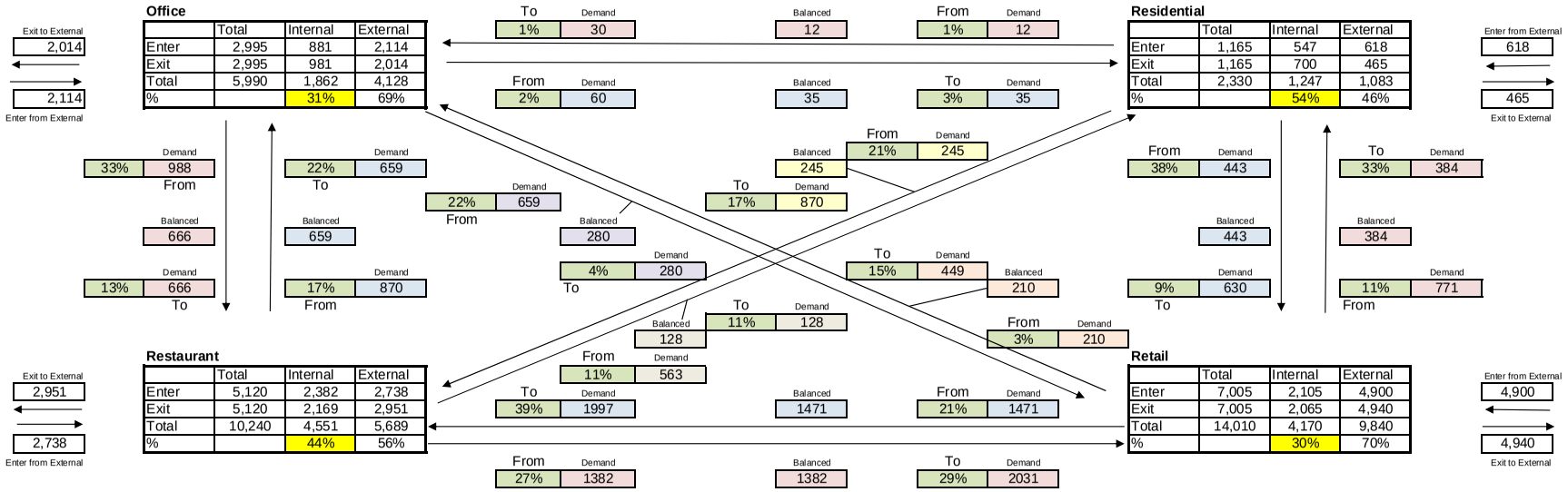
INTERNAL TRIP CALCULATIONS

DAILY, AM PEAK, PM PEAK

Name of Development: **Parkplace Addendum**
Time Period: **Daily**

MULTI-USE DEVELOPMENT
TRIP GENERATION
AND INTERNAL CAPTURE SUMMARY

Sources: ITE Trip Generation Handbook, 3rd edition, August 2014
ITE Trip Generation Handbook, 2nd edition, June 2004



Summary

Net External Trips for Multi-Use Development						Internal	
	Office	Restaurant	Residential	Retail	Total	Trips	
External Trips Enter	2,114	2,738	618	4,900	10,370	5,915	
External Trips Exit	2,014	2,951	465	4,940	10,370	5,915	
Total External Trips	4,128	5,689	1,083	9,840	20,740	11,830	Internal %
Total All Trips	5,990	10,240	2,330	14,010	32,570		36.3%
Internal Trips	1,862	4,551	1,247	4,170	11,830		

Total All Trips

Enter	16,285
Exit	16,285
Total	32,570

Sum of Total on Input Sheet = 32,570 ***Match***

Internal Trips - Data to Transfer to Assumptions & Calculations Sheet

	In	Out	Total
Retail (LU 820)	1,127	1,105	2,232
Apartment (LU 220)	547	700	1,247
General Office (LU 710)	881	981	1,862
Health Club (LU 492)	149	146	295
High Turnover Restaurant (LU 932)	2,382	2,169	4,551
Supermarket (LU 850)	829	814	1,643
Total Internal Person Trips	5,915	5,915	11,830

Distribute retail internal trips between General Retail, Health Club, and Supermarket

Total Retail Person Trips		Proportion of Total	
In	*Out*	*In*	*Out*
3,750	3,750	0.54	0.54
495	495	0.07	0.07
2,760	2,760	0.39	0.39
7,005	7,005		

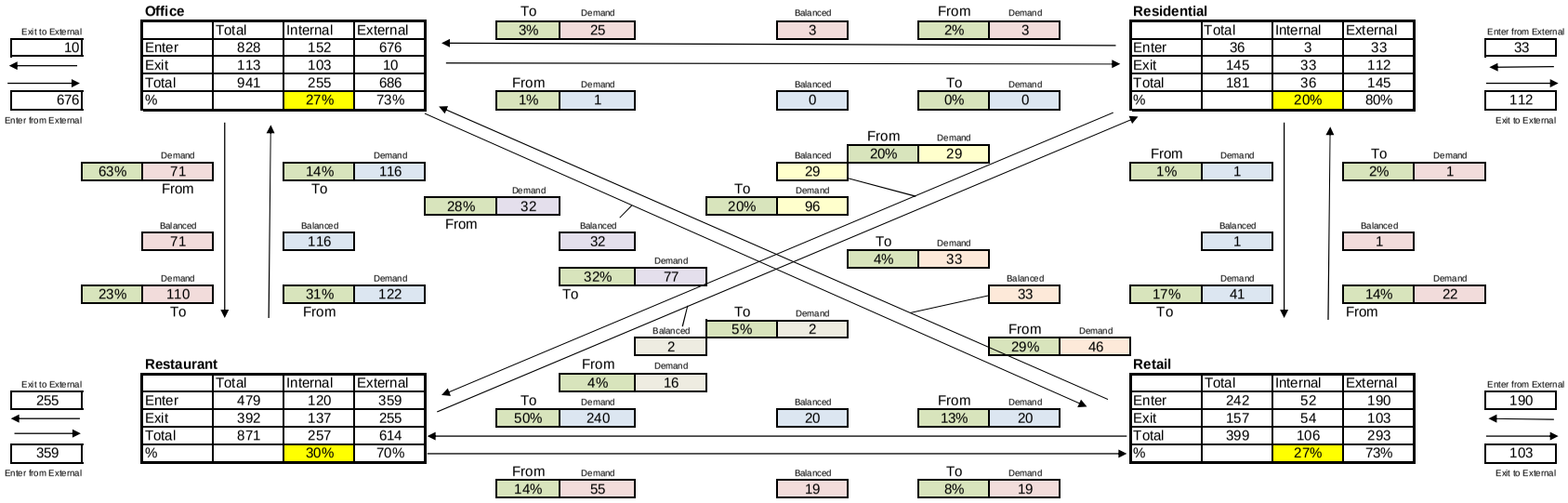
Total Internal Retail Person Trips

In	Out	Total
2,105	2,065	4,170

Name of Development: Parkplace Addendum
Time Period: AM Peak Hour

MULTI-USE DEVELOPMENT
TRIP GENERATION
AND INTERNAL CAPTURE SUMMARY

Source: ITE Trip Generation Handbook, 3rd edition, August 2014



Summary

	Net External Trips for Multi-Use Development					Internal	
	Office	Restaurant	Residential	Retail	Total	Trips	
External Trips Enter	676	359	33	190	1,258	327	
External Trips Exit	10	255	112	103	480	327	
Total External Trips	686	614	145	293	1,738	654	Internal %
Total All Trips	941	871	181	399	2,392		27.3%
Internal Trips	255	257	36	106	654		

Total All Trips

Enter	1,585
Exit	807
Total	2,392

Sum of Total on Input Sheet = **2,392** ***Match***

Internal Trips - Data to Transfer to Assumptions & Calculations Sheet

	In	Out	Total
Retail (LU 820)	23	23	46
Apartment (LU 220)	3	33	36
General Office (LU 710)	152	103	255
Health Club (LU 492)	5	7	12
High Turnover Restaurant (LU 932)	120	137	257
Supermarket (LU 850)	24	24	48
Total Internal Person Trips	327	327	654

Distribute retail internal trips between General Retail, Health Club, and Supermarket

Total Retail Person Trips		Proportion of Total	
In	*Out*	*In*	*Out*
107	66	0.44	0.42
21	21	0.09	0.13
114	70	0.47	0.45
242	157		

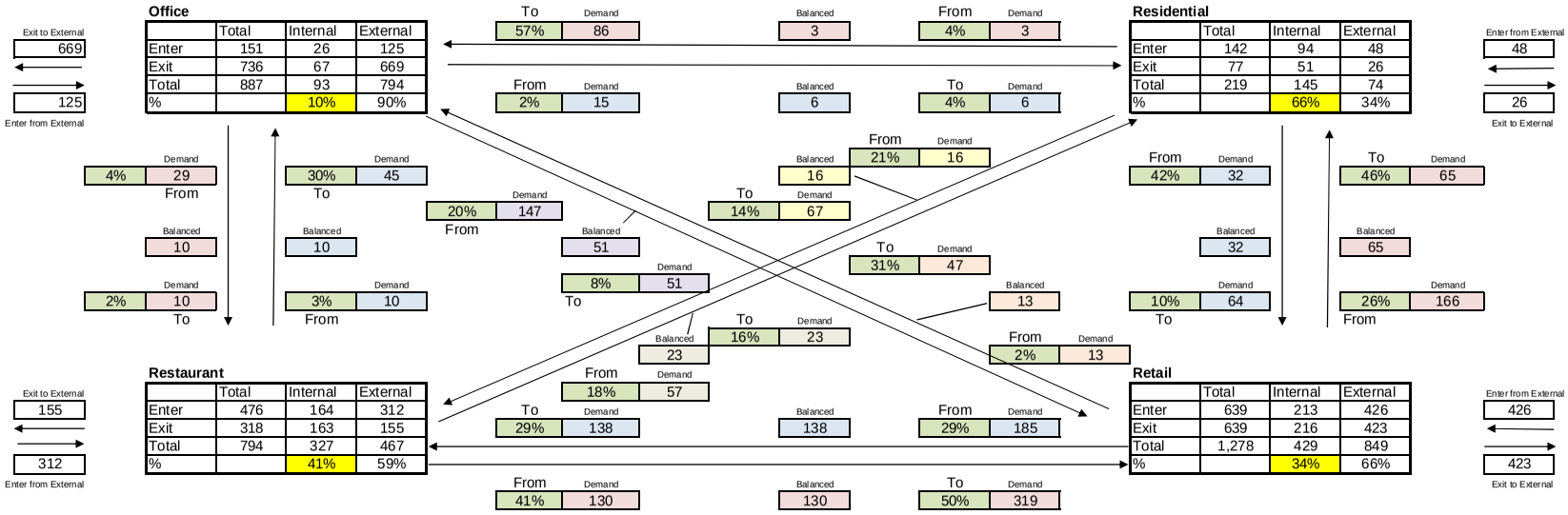
Total Internal Retail Person Trips

In	Out	Total
52	54	106

Name of Development: Parkplace Addendum
Time Period: PM Peak Hour

MULTI-USE DEVELOPMENT
TRIP GENERATION
AND INTERNAL CAPTURE SUMMARY

Source: ITE Trip Generation Handbook, 3rd edition, August 2014



Summary

Net External Trips for Multi-Use Development						Internal	
	Office	Restaurant	Residentia	Retail	Total	Trips	
External Trips Enter	125	312	48	426	911	497	
External Trips Exit	669	155	26	423	1,273	497	
Total External Trips	794	467	74	849	2,184	994	Internal %
Total All Trips	887	794	219	1,278	3,178		31.3%
Internal Trips	93	327	145	429	994		

Total All Trips

Enter	1,408
Exit	1,770
Total	3,178

Sum of Total on Input Sheet = **3,178** ***Match***

Internal Trips - Data to Transfer to Assumptions & Calculations Sheet

	In	Out	Total
Retail (LU 820)	106	116	222
Apartment (LU 220)	94	51	145
General Office (LU 710)	26	67	93
Health Club (LU 492)	20	15	35
High Turnover Restaurant (LU 932)	164	163	327
Supermarket (LU 850)	87	85	172
Total Internal Person Trips	497	497	994

Distribute retail internal trips between General Retail, Health Club, and Supermarket

Total Retail Person Trips		Proportion of Total	
In	*Out*	*In*	*Out*
317	343	0.50	0.54
60	46	0.09	0.07
261	251	0.41	0.39
639	639		

Total Internal Retail Person Trips

In	Out	Total
213	216	429

heffron transportation, inc.

TECHNICAL MEMORANDUM

Project: Kirkland Parkplace EIS Addendum

Subject: Parking Demand and Supply for Action Alternative

Date: January 29, 2015

Author: Marni C. Heffron, P.E., P.T.O.E.

This memorandum presents information and analysis to determine the parking demand for the current Kirkland Parkplace project, taking into account shared parking between uses, and to determine if parking overflow could occur. It also reviews potential parking management strategies that could be considered to limit the potential for parking overflow.

The sections below detail the City's code requirements, describe the project's parking demand based on the shared-parking principles, and present potential transportation demand management and parking management measures that could be applied to the project.

1. City of Kirkland Parking Code

The Parkplace site is zoned "CBD-5A." The required number of parking spaces is set forth in Section 50.38 of the Kirkland Zoning Code's Use Zone Chart. The relevant parking requirements for the various land uses proposed at the site are summarized in Table 1.

If the zoning code were applied as prescribed, the proposed Parkplace project would require 3,282 parking spaces. However, as documented in the sections below, the mixed-use nature of this project allows some of the parking on the site to be shared by the different uses. For example, the peak parking demand for the retail, restaurant, theater and health club uses occurs in the evenings or on weekends when little to no office parking would occur. The result is that fewer spaces would be needed than if all of these uses were located on their own site.

Table 1. City of Kirkland Zoning Code Requirements

Land Use	Proposed Size	Required Parking Spaces [a]	Equivalent Rate [b]	Number of Code Required Spaces
Office	650,000 sf	1 space / 350 sf	2.86 spaces / 1,000 sf	1,857
Supermarket	54,000 sf	1 space / 350 sf	2.86 spaces / 1,000 sf	154
Restaurants	53,000 sf	1 space / 125 sf	8.0 spaces / 1,000 sf	424
Retail	48,000 sf	1 space / 350 sf	2.86 spaces / 1,000 sf	137
Theater	40,000 sf (~1,700 seats)	1 space / 350 sf [c]	0.067 spaces/seat	114
Residential	300 units	1.7 spaces / unit [d]		510
Health Club	30,000 sf	1 space / 350 sf	2.86 spaces / 1,000 sf	86
Total				3,282

a. Source: All rates from the Kirkland Zoning Code (KZC) Section 50.38 for Zone CBD-5A, current through Ordinance 4450, passed September 2, 2014.

b. An equivalent rate was calculated in terms used in the Institute of Transportation Engineers (ITE) Parking Generation. This allows for comparison to calculations performed for shared parking presented later.

c. Number of seats estimated using 23.5 sf per seat, which is the ratio of seats to square footage for the 41,800-sf theater at Crossroads Mall.

d. For residential uses, the City may require guest parking spaces in excess of the required parking spaces, up to a maximum additional 0.5 stall per dwelling unit, if there is inadequate guest parking on the subject property. However, with over 2,700 additional spaces required for other non-residential uses on the site, and low office-generated parking demand during evenings and weekends when demand for residential guest parking would be highest, it is expected that supply to accommodate guest parking would be determined to be adequate without requiring the additional supply per dwelling unit.

2. Parking Demand for Parkplace

The parking demand estimate for the Parkplace mixed-use project was determined by combining parking accumulation (demand by time of day) for each of the proposed land uses. Peak parking demand rates in the Institute of Transportation Engineers (ITE) *Parking Generation* (4th Edition) were used as a basis for this analysis. However, as stated in *Parking Generation*, "Most of the data currently available are from suburban sites with isolated single land uses and free parking.[1]" ITE recognizes that there are many factors that affect parking demand including the "type of area, parking pricing, transit availability and quality of transportation demand management plans, mixing of land uses, pedestrian friendly design, land use density, trip chaining/multi-stop trip activity, the split between employee and visitor parking, the split between long-term and short-term parking."

At the Parkplace site, the following major factors would affect the overall parking demand:

- **Mode of travel.** A transportation demand management plan would be required for the office users to increase transit, carpooling, walking, and bicycling to work, and 2010 Census data indicate that 23% of employees in downtown Kirkland commute by these alternative modes.[2] Use of these other modes reduce the parking demand associated with the office use. In addition, some of the retail and restaurant customers are expected to walk to the site from nearby residential uses.

[1] Page 2 of the Institute of Transportation Engineers (ITE) *Parking Generation, 4th Edition, 2010.*
[2] Puget Sound Regional Council, Journey-to-Work data from 2010 U.S. Census, Data for Transportation Analysis Zones (TAZs) 258 and 260.

- **Internal and multi-stop trips.** Many of the daytime customers to the site's retail and restaurant uses would come from office employees at the site. No additional parking would be needed for these customers. Many of the site's customers would visit more than one use—for example, a restaurant patron who also shops at the supermarket or retail store or visits the theater.

- **Parking by time of day or day of week.** The peak parking demand for different uses would occur at different times of the day or on different days of the week. This would allow some of the parking to be shared among uses.

The following sections describe how each of the above factors is expected to affect the peak parking demand rates and the cumulative demand.

Mode of Travel

Trip generation analysis performed for the EIS Addendum assumed that some of the project's trips would occur by modes other than a single-occupant vehicle (SOV). For the office use, it was assumed that 77% of the employee trips would occur by vehicle (either drive alone or carpool). The remaining 23% would be transit and walk/bike trips. As previously discussed, these mode of travel shares are based on employee commute data from the *2010 Census* for the site area.

For all of the non-office uses, it was assumed that 3.5% of the trips would be walking trips, based upon previous assumptions that were developed for the 2008 *Downtown Area Planned Action Ordinance EIS*.[3] Given the population density in Kirkland surrounding the site, this rate is considered conservative, particularly during daytime hours when the cumulative parking demand would be highest.

Internal and Multi-stop Trips

Parking demand is affected by internal and multi-stop trips where a customer or employee parks once, but can visit multiple locations at the site. For example, a customer to the supermarket who also visits a retail store, or an office employee who shops or dines at lunch. The percentages used in this analysis were determined and approved for the 2008 proposal. Since that time, new internal trip data has been published by the ITE that supports even higher amounts of internal capture for these uses. However, to be conservative the original assumptions were applied. It is expected that internal trips would be highest midday when the majority of office workers shop or dine on the site. The internal trip assumptions are listed in Table 2.

Parking Accumulation by Time of Day and Day of Week

The published peak parking demand rates reflect the peak demand at some time during the day. These peaks occur at different times for different uses. For example, the peak parking demand for an office occurs mid-morning, while the peak demand for restaurants occurs in the evening. ITE's *Parking Generation* includes information about how parking for each use fluctuates by time of day—parking accumulation rates. The parking accumulation data from ITE were used for all of the land uses, except for the supermarket. The data published in ITE indicate that the weekday peak demand for a supermarket occurs at 1:00 P.M. This is not supported by experience or data for supermarkets in the Puget Sound region, and may reflect older shopping patterns when households had one working member. With current households often having two working members, shopping patterns have shifted. Heffron Transportation has performed peak parking demand counts at many supermarkets and determined that the peak weekday demand typically

[3] City of Kirkland, 2008.

occurs in the late afternoon, coinciding with trips home from work. That is supported by the driveway count data obtained for the existing Parkplace site in 2008, which showed that peak weekday parking demand occurs in the late afternoon, even though this site had a substantial amount of office space and many employees would have left the site when the peak demand was observed. The hourly accumulation rates for supermarkets were derived from 48-hour counts that were performed at the Lake Forest Park Shopping Center which includes an Albertson's supermarket.

Parking demand would also be different on weekends. For example, the large demand generated by the office use would not occur on Saturday. However, peak parking demand for the theater, supermarket, retail, and restaurants are expected to be higher on Saturday than on weekdays.

Adjusted Peak Parking Demand Rates

The ITE peak parking demand rates were adjusted to account for the internal trips and non-vehicle trips described above. Table 2 summarizes the project land uses, size, ITE rates, and adjustments. Table 3 shows how these rates compare to the City of Kirkland's code-required rates. Table 3 also includes the rates for Saturday to reflect how peak demand would be different on different days of the week. These tables show that some of the rates, even adjusted, are higher than what the City's code requires. This also shows that the peak parking demand for some of the uses occurs on a weekend.

Table 2. Project Program and Parking Demand Rates

Land Use	Proposed Size	Peak Weekday Parking Demand Rates from ITE	Reductions for: Internal Trips Midday / Afternoon	Reductions for: Non-Auto Trips	Adjusted Peak Weekday Parking Rate
Office	650,000 sf	2.55 spaces/1,000 sf [a]	0% / 0%	23% [b]	1.96 spaces/1,000 sf
Supermarket	54,000 sf	3.78 spaces/1,000 sf	30% / 8%	3.5%	3.36 spaces/1,000 sf
Restaurants	53,000 sf	13.30 spaces/1,000 sf [c]	30% / 8%	3.5%	11.81 spaces/1,000 sf
Retail	48,000 sf	2.55 spaces/1,000 sf [d]	30% / 8%	3.5%	2.26 spaces/1,000 sf
Theater	40,000 sf / 1,700 seats	0.15 spaces/seat	0% / 0%	3.5%	0.14 spaces/1,000 sf
Residential	300 units	1.23 spaces/unit [e]	0% / 0%[c]	0%	1.23 spaces/unit
Health Club	30,000 sf	5.27 spaces/1,000 sf	30% / 8%	3.5%	4.68 spaces/1,000 sf

Source: Heffron Transportation, Inc., January 2015, using rates from ITE's Parking Generation (4th Edition, 2004) and methodology from ITE's Trip Generation Handbook (3rd Edition, August 2014)

a. Derived from equation for Office Building (LU 701): P= 2.51X + 26.

b. Assumes 15% of employees commute by transit and 8% walk or bike, based upon 2010 Census data.

c. Rate for high-turnover sit-down restaurant (LU 932).

d. Rate for non-December condition (LU 820).

e. Rate for low to mid-rise apartment (LU221).

Table 3. Comparison of Kirkland Zoning Code and Adjusted ITE Rates

Land Use	Kirkland Zoning Code Rate	Adjusted Peak Parking Demand Rates from ITE: Weekday	Adjusted Peak Parking Demand Rates from ITE: Saturday [a]
Office	2.86 spaces/1,000 sf	1.96 spaces/1,000 sf	0.10 spaces/1,000 sf
Supermarket	2.86 spaces/1,000 sf	3.36 spaces/1,000 sf	3.78 spaces/1,000 sf
Restaurants	8.0 spaces/1,000 sf	11.81 spaces/1,000 sf	15.73 spaces/1,000 sf
Retail	2.86 spaces/1,000 sf	2.26 spaces/1,000 sf	2.77 spaces/1,000 sf
Theater	0.067 spaces/seat	0.14 spaces/seat	0.14 spaces/seat
Residential	1.7 spaces/unit	1.23 spaces/unit	1.03 spaces/1,000 sf
Health Club	2.86 spaces/1,000 sf	3.154.68 spaces/1,000 sf	2.79 spaces/1,000 sf

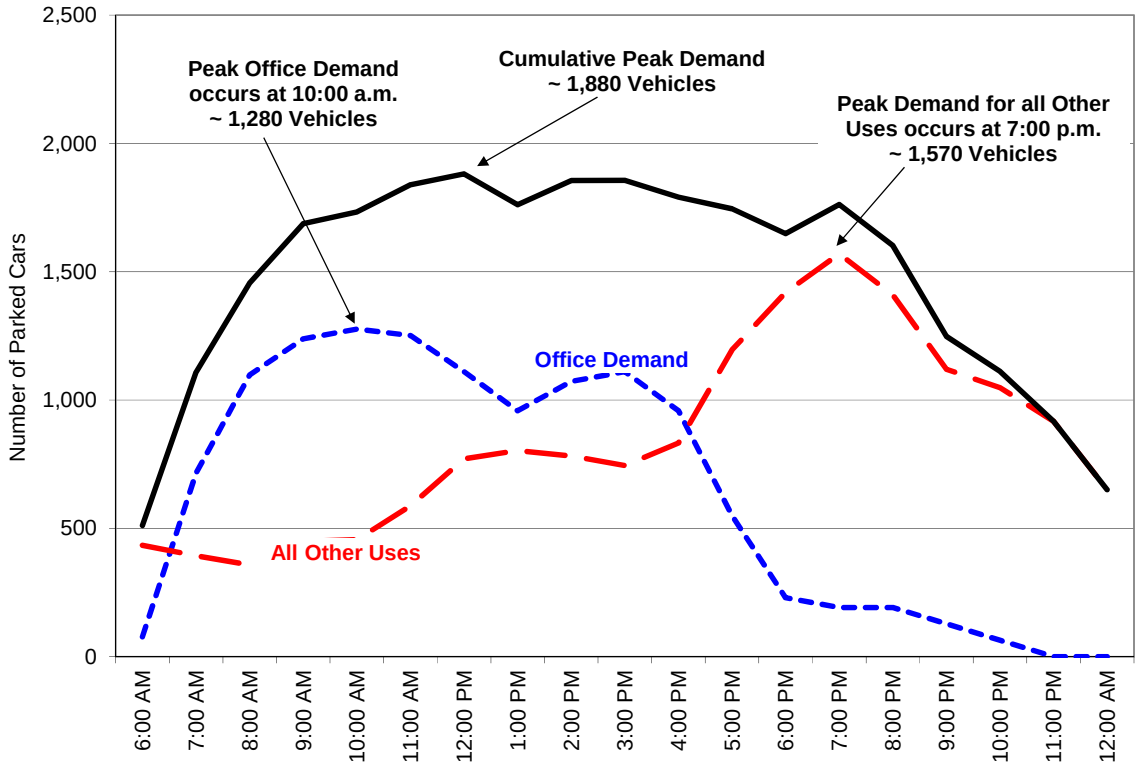
Source: Rates from the Kirkland Zoning Code and the adjusted weekday rates were defined earlier in this report.

a. The adjusted Saturday rates apply the same methodology as used for weekday rates. The difference is that no internal trips between the office and other uses are assumed to occur on a Saturday.

Cumulative Weekday Parking Demand

The cumulative parking demand for all of the on-site uses was determined using the derived peak parking demand rates and accumulation data. Figure 1 shows the parking by time of day for the office and all non-office uses if all spaces could be shared and there are no reserved spaces. This shows that the office parking demand, which peaks at about 10:00 A.M., dominates the midday parking need, while all of the other uses peak in the evening. During the peak parking hour, the parking demand is estimated to be approximately 1,880 vehicles.

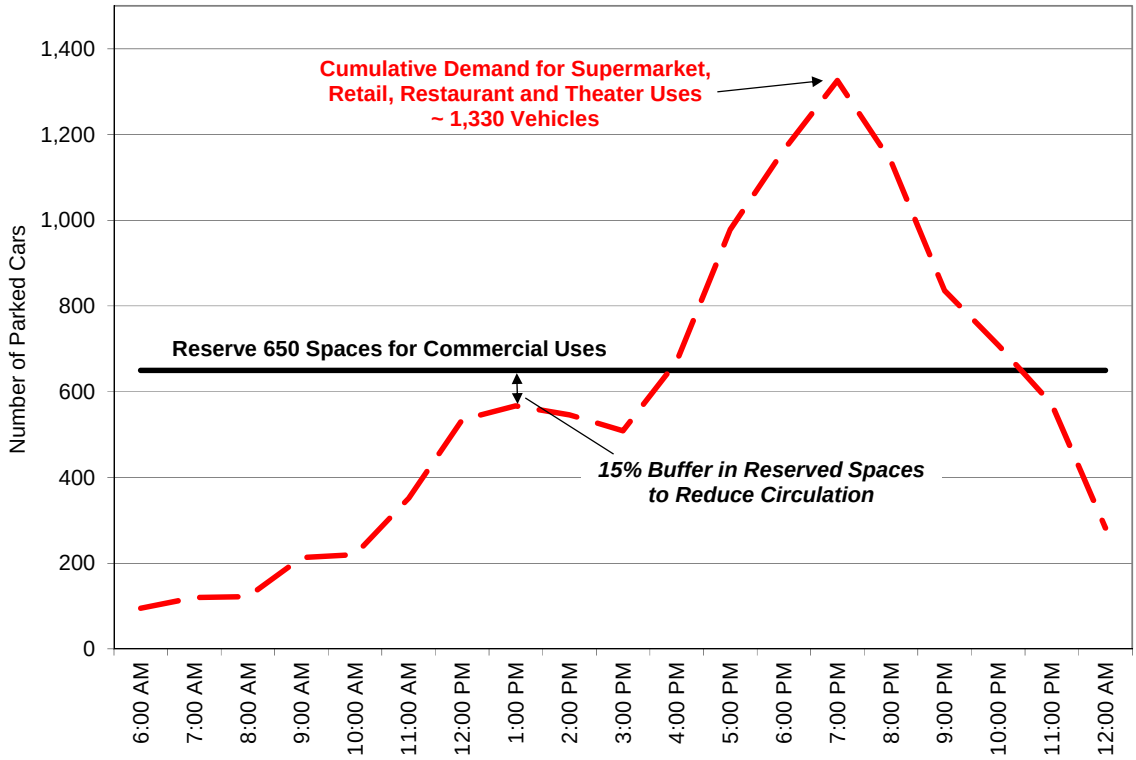
Figure 1. Parking Demand by Time of Day – Weekday



Source: Heffron Transportation, Inc., January, 2015.

To maintain adequate daytime parking for the retail, restaurant, theater and health club uses, portions of the parking garage may be reserved for commercial uses. This could be done by reserving areas for specific uses and/or designating short-term parking areas (3 hours or less). With this scenario, 650 spaces could be reserved for the commercial uses, which would provide a 15% buffer in supply to accommodate the projected peak midday demand. After 4:00 P.M., the commercial spaces would exceed the reserved space supply, but at that time, many of the office spaces on the site would be available to share. This is shown on Figure 2.

Figure 2. Parking Demand for Commercial Uses

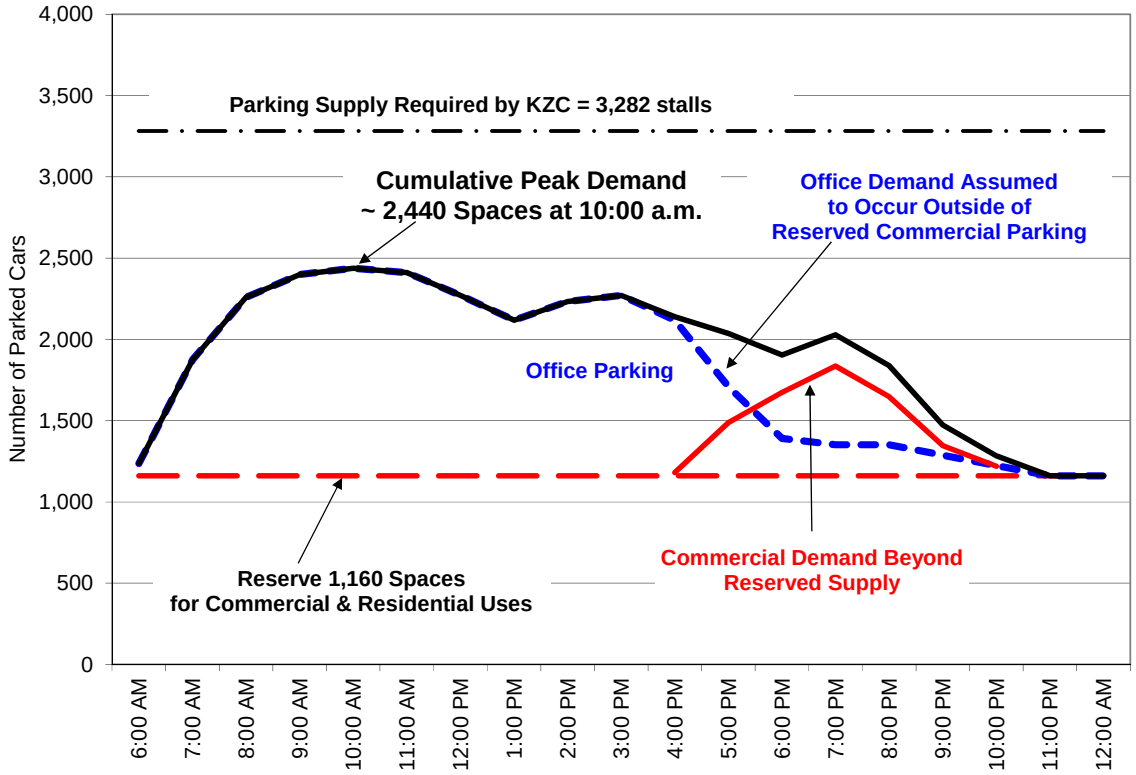


Source: Heffron Transportation, Inc., January, 2015.

Parking spaces may also be reserved for residents, particularly as more and more would likely use alternative modes of travel to commute to their places of employment, leaving their vehicles at home during the day. It was assumed that the code-required parking (1.7 spaces per unit) could be reserved the residents, amounting to 510 spaces.

The optimal on-site parking supply must account for the spaces reserved for the commercial and residential customers since office workers would not be allowed to park in these spaces. Figure 3 shows the office parking demand after considering the reserved for other uses (1,160 spaces: 510 for residents and 650 for commercial uses). The overall cumulative demand would increase to about 2,440 spaces after accounting for the reserved spaces. This is well below the 3,282 spaces that would be required by the Kirkland Zoning Code, which assumes that all uses would have their own parking areas and could not share space.

Figure 3. Total Parking Supply Needed with Reserved Space



Source: Heffron Transportation, Inc., January, 2015.

Cumulative Saturday Parking Demand

The cumulative parking demand on Saturdays would be much lower than on weekdays since few office workers would be on site. There would be ample parking available to accommodate the project's Saturday demand.

Summary

The project could justify a modification to the Kirkland Zoning Code parking requirement since parking on the site can be shared, which reduces the peak demand compared to what would occur if the uses were located on separate site. Overall, analysis indicates that 2,440 parking spaces would accommodate cumulative demand with shared parking, which is about a 26% reduction from the 3,282 spaces required by code. This would include inclusion of 1,160 reserved spaces: 510 for residents and 650 for short-term (less than 3 hours) commercial uses It is noted that this supply assumes that 1.7 spaces would be reserved for each residential unit. A portion of the 510 residential spaces should be allocated for visitors to the apartments. Parking and transportation management would be needed to assure that the provided supply would serve the project's needs. Measures that could be included in a management plan are described below.

3. Transportation and Parking Management Plan

The following measures could be considered for the Kirkland Parkplace project to reduce parking demand and manage the available supply.

1. **Implement a Transportation Management Plan (TMP) for office tenants and provide a transportation coordinator to manage and promote the TMP.** The cumulative parking demand estimates for the office use assume that 23% of trips would occur by non-vehicular modes. To encourage use of these other modes, the following TMP measures are suggested.

    a. **Provide transit pass subsidy to employees who commute by transit**. The value of the subsidy would equal or exceed 50% of the cost of a two-zone King County Metro Transit pass or equivalent ORCA pass.

    b. **Charge for daily parking.** Employees of the offices should be charged a fee to park on site.

    c. **Offer a part-time parking pass option.** Employees who desire to use alternative modes of transportation (or telecommute) one or more days per week should be offered a parking pass that is only charged for the days parked. These types of passes work like a debit card, and the pass holder is only charged for parking on the days that they park.

    d. **Provide ride-match information.** The developer should encourage its tenants to provide information to employees about ride-match programs that are available through King County Metro and other transit agencies. These programs can help match an employee with potential carpool mates who live in close proximity.

    e. **Provide free parking for vanpools.** Vanpools registered with a public transit agency should be provided free on-site parking. At least six of the riders in each of vanpool must be employed at the site to qualify for free parking.

    f. **Provide reserved parking spaces for vanpools.** Parking in a preferred location within the garage should be reserved for registered vanpools.

    g. **Provide shower and locker facilities.** The complex should have at least one shower and locker facility (outside of the on-site health club) for commuters who walk or bike to work.

    h. **Provide bike storage.** Bicycle corrals should be provided within the garage for employees who commute by bike. These should be in an easily-accessible location, and have good lighting and security.

    i. **Provide parking for a car-sharing program.** The developer should provide up to five parking spaces for car-sharing program to support employees who commute by alternative modes of travel by providing vehicles that can be used for daytime errands or meetings.

    j. **Offer guaranteed ride home to employees who commute by alternative modes.** The developer should encourage employers to provide guaranteed rides home for commuters who use alternative forms of transportation but need to get home quickly in an emergency or after available transit service has stopped. The ride home can be by taxi, company-owned vehicle, or car-sharing vehicle. The number of rides available per month or year may be limited. This program reassures employees that they will have transportation during emergencies so they are more comfortable using transit or carpools.

k. **Install electronic kiosks with travel information.** The developer should install up to three electronic kiosks that provide up-to-date information about transportation services. This could include transit route maps and stop times, commuter congestion, parking rates, and information about alternative modes of travel.

2. Monitor success of TMP. The on-site transportation coordinator should conduct biennial surveys of site tenants and employees regarding the modes of travel used and the success of various TMP programs. The first survey should be performed within one year of the first tenant's occupancy. Results are to be compiled and sent to the City of Kirkland. The survey questionnaire and reporting requirements must be approved by City of Kirkland staff before the first survey is taken.

3. **Reserve areas of the garage for short-term parking by customers and visitors.** Designate parking spaces for short-term parking only. This parking would be for customers and visitors. The initial limit should be set to three hours, which is sufficient time for most daytime dining and entertainment users. The short-term parking restrictions could apply during just midday weekday hours when office users are on site.

4. **Reserve parking for residents.** Reserve up to 1.7 spaces per residential unit. Of these, a portion should be designated for residential visitors. The remaining spaces could be assigned to individual units, if desired.

5. **Share office parking on weeknights and weekends**. All parking in the garage should be available for customers and the general public on weeknights and weekends.

6. **Do not reserve individual spaces for office parking.** No parking space in the garage may be reserved for an individual user. This allows all office parking to be shared by employees.

7. **Implement measures to discourage hide-and-ride, if needed.** Measures may be needed to prevent outsiders from parking at the site (for example, commuters who use the near-by transit center). Such programs could include enforcement of short-term parking restrictions, permit parking for site employees, pay parking, and customer validation programs. These can be implemented by site management, when and if needed.

8. **Monitor garage use.** Monitor the allocation of the parking supply to various users during weekday hours. Adjust allocation or implement additional management measures, if needed.

9. **Provide a Bike Share station.** Bike sharing allows individuals to check out bicycles for short trips. Individuals purchase a membership or pass to check out bicycles, which are obtained from and returned to stations located throughout the program area. If this type of program is launched in Kirkland, the Parkplace site would be an ideal location for a Bike Share station due to its proximity to denser downtown residential, office and commercial development, as well as the Cross Kirkland Corridor Trail.

MCH/mch

6.4 Public Services Summary

Introduction

In 2008, the Touchstone Corporation requested land use approvals to allow redevelopment of the Parkplace retail/office complex located at 457 Central Way with as much as 1.8 million square feet of office, retail, and hotel use, including increases in permissible building height up to a maximum of 8 stories, and reduced setbacks along nearby streets and Peter Kirk Park.

In 2014, Talon Private Capital (Talon) is proposing a new redevelopment Proposal in conjunction the current property owner, Prudential Real Estate Investors. The "Revised Proposal" is 34 percent smaller than the 2008 Proposal at 1.2 million (1,175,000) square feet. The mix of uses would include office and retail similar to the 2008 Proposal. The Revised Proposal will also add up to 300 units and 300,000 square feet of multifamily residential. The development would generally be up to 8 stories in height consistent with the Zoning Code standards in place. Variable setback standards along Peter Kirk Park in the Kirkland Zoning Code would also be retained. The Revised Proposal would amend the Master Plan and Design Guidelines applicable to the site but retain the intent for a pedestrian-oriented, cohesive development.

Table 6.4-1 compares the 2008 and 2014 Revised Proposals.

Table 6.4-1.Total Development Space, 2008 and 2014 Revised Proposals

Development Type	2008 Proposal	2014 Revised Proposal
Office (square feet)	1,200,000	650,000
Retail/Commercial (square feet)[1]	592,700	225,000
Residential (square feet)	0	300,000
Dwelling units	0	300
Total square feet	1,792,700	1,175,000

Source: City of Kirkland 2008, Talon 2014

1 The Retail/Commercial category includes uses such as: restaurants, grocery and other retail stores, health clubs, and movie theaters.

Police Protection

Current Conditions

Police protection services in the study area are provided by the City of Kirkland Police Department. The department currently employs 133 personnel: 97 commissioned officers and 36 civilian support personnel. The Operations division, which consists of the Patrol, Traffic, and K-9 units, is the largest division in the Police Department and provides emergency services within City boundaries 24 hours a day. This division is responsible for most patrol-related law enforcement operations. The Department had 26,879 calls for service in 2011 and 25,868 in 2012 (City of Kirkland, 2013).

Kirkland has not adopted a quantitative/population-based level of service standard for police service. Rather, the Public Services chapter of the City's Comprehensive Plan provides the following guidance 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.

The current effective level of service, based on a citywide 2013 population estimate of 81,730, is approximately 1.2 officers per 1,000 residents (City of Kirkland, 2013).

Calls for Service

Two methodologies for estimating calls for police service were used in the 2014 Final Supplemental Environmental Impact Statement (FSEIS) for the MRM Private Amendment Request: Total Service Population and Representative Development.

Total Service Population method evaluates potential demand for police service based on total logged calls for service and the total population served, which includes both residents and employees. The MRM FSEIS estimated a ratio of calls for police service per capita (resident or employee) per year based on Kirkland's total population served and logged calls for service. The ratio is 0.24 calls per capita (resident or employee). As shown in Table 6.4-2, the 2008 Proposal would have generated 1,287 new calls for service under this method. Multiplied by the Police Department's estimate of one officer per 1,500 calls (City of Kirkland, 2013), this proposal would have generated demand for 0.86 new police officers. The 2014 Revised Proposal would generate an estimated 701 new calls for service. At one officer per 1,500 calls, that provides demand for 0.47 new police officers.

Table 6.4-2. New Police Calls for Service: Total Population Method

Factor	2008 Proposal	2014 Proposal
New employees	5,318	2,383
New residents	0	513
Total new service population	5,318	2,896
New calls for service	**1,287**	**701**
New officers required	**0.86**	**0.47**

Source: BERK 2014

The Representative Development method is based on call volume rates for different development types, based on logged calls for service at representative developments in the Parkplace vicinity. Between 2010 and 2012 there were 0.0125 calls per office employee per year; 0.165 calls per resident per year; and 0.75 calls per retail employee per year. As shown, the 2008 Proposal would have generated an estimated 730 new calls for police service each year under this method, which would require 0.49 new police officers. The 2014 Revised Proposal would generate an estimated 235 new calls for police service each year under this method, which would require an additional 0.16 new police officers.

Table 6.4-3. New Police Calls for Service: Representative Development Method

Factor	2008 Proposal	2014 Proposal
New office employees	4,419	2,219
New office calls for service	55.2	27.7
New retail employees	899.1	163.7
New retail calls for service	674.3	122.8
New residents	0	513
New residents calls for service	0	84.6
Total new calls for service	**730**	**235**
New officers required	**0.49**	**0.16**

Source: BERK 2014

In summary, the 2008 Proposal would have generated between 730 and 1,287 new calls for police service (depending on methodology used), requiring 0.49 to 0.86 new police officers. The 2014 Revised Proposal would generate between 235 and 701 new calls for service, requiring 0.16 to 0.47 new police officers. As such, the new proposal clearly has less impact on police services than the 2008 proposal.

Fire Protection and EMS

Current Conditions

Fire protection service in the study area is provided by the City of Kirkland Fire and Building Department (KF&BD), which staffs five full-time fire stations 24 hours per day; one reserve station is staffed from 7:30 pm to 5:00 am with volunteer EMT's. The nearest fire station is Station 22, located approximately 1 mile south of the study area at 6602 108th Avenue NE. Based on fire station service area maps contained in the Public Services Element of the City's Comprehensive Plan, projected response time from Station 22 to the study area is less than 5.5 minutes (City of Kirkland, 2012). The Department's firefighting equipment includes one tiller aerial ladder truck capable of reaching 100 feet in height. In 2012, KF&BD responded to 7,982 calls for emergency service, approximately 74% of which were for medical aid.

The Fire Department's established levels of service are adopted in Policy PS-1.2 of the City's Comprehensive Plan (City of Kirkland May 2009 Revision):

> *The adopted levels of service for fire and emergency medical services are as follows:*
>
> *i. Emergency medical: response time of five minutes to 90 percent of emergency incidents.*
>
> *ii. Nonemergency medical: response time of 10 minutes to 90 percent of nonemergency incidents.*
>
> *iii. Fire suppression: response time of 5.5 minutes to 90 percent of all fire incidents.*

The City of Kirkland has not adopted a population-based Level of Service Standard for fire department staffing. However, based on current employment of 90 line personnel and the citywide 2013 estimated population of 81,730, current staffing level equates to approximately 1.1 firefighters per 1,000 residents.

Staffing Needs

The increase in staff needed for the 2008 Proposal was estimated by the Kirkland Fire Department to be eight FTE firefighters and three FTE EMS firefighters. This increase was calculated based on both the increased number of employees and the increased building heights (up to eight stories), which were not

assumed in the City's fire incident response for this area. The additional employees and new heights would require one additional firefighter for the first two engine companies likely to respond to calls; for all shifts 24 hours/day, 7 days a week, this equals eight firefighters.

The 2014 Revised Proposal would generate fewer new employees than the 2008 Proposal (2,383 compared to 5,318), would add up to 513 new residents (compared to zero for the Parkplace proposal), and would maintain the same building height as the Parkplace proposal (eight stories). The Kirkland Fire Department has indicated that the 2014 Revised Proposal would require adding six firefighters (personal communication, Ahren-Byington, November 25, 2014; see Attachment). This includes one new position at Station 22, in order to allow a secondary medical response from that station and to increase the firefighters on a fire response. To fill 24/7 staffing, adding this one new position requires hiring a total of five new positions. The last new position would be for the Fire Prevention Bureau. The Bureau, which is required to complete yearly safety inspections for all buildings, is currently at maximum capacity and would require another staffer because of the size of the 2014 Revised Proposal. A comparison of new employees and residents and new firefighters required is depicted in Table 6.4-4.

Table 6.4-4. Fire Department Staffing Needs

Factor	2008 Proposal	2014 Proposal
New employees	5,318	2,383
New residents	0	513
Building heights (stories)	8	8
New firefighters required	**11**	**6**

Source: BERK 2014

Parks and Recreation

Current Conditions

The City of Kirkland owns more than 500 acres of land designated for park and open space uses. The nearest recreational facility to the study area is Peter Kirk Park, which comprises over 12 acres. Peter Kirk Park contains a children's playground, basketball and tennis courts, picnic tables and open lawn areas, a pool, a baseball field, a Community Center, Performance Center, Teen Union Building, and the Kirkland Library. The City has adopted the following residential Level of Service Standards for various types of park and recreation facilities in its Comprehensive Plan:

- Neighborhood parks: 2.1 acres/1,000 persons
- Community parks: 2.1 acres/1,000 persons
- Nature parks: 5.7 acres/1,000 persons
- Indoor recreation (non-athletic): 700 square feet/1,000 persons
- Indoor (athletic) recreation space: 500 square feet./1,000 persons

Park Needs

The 2008 Proposal did not include a residential development component, and so there was no impact on residential demand for park facilities. However, the MRM Proposal did include a residential component, and the FSEIS analyzed several development alternatives at and near Parkplace. MRM Alternative 2C would have generated 1,011 new residents, generating additional demand for park and recreational facilities.

The new residential demand for park and recreation space generated by the 2014 Revised Proposal is similar to the MRM SEIS Alternative 2A and smaller than that generated by the MRM 2C Alternative, as shown in Table 6.4-5.

Table 6.4-5. New Residential Demand for Parks and Recreation Facilities

Type	MRM 2A	MRM 2C	2014 Proposal
Neighborhood park (acres)	1.0	2.1	1.1
Community park (acres)	1.0	2.1	1.1
Nature park (acres)	2.8	5.8	2.9
Indoor recreation, non athletic (square feet)	346	707	359
Indoor athletic recreation space (square feet)	247	505	257

Source: BERK 2014

In addition to residential demand for park and recreation facilities, new employees from new development will generate new demand, including greater numbers of employees using the park and park facilities (during their lunch hour and before and after work). The 2014 Revised Proposal has a smaller number of employees than the 2008 Proposal (2,383 net employees rather than 5,318net employees), which would lead to a smaller increase in park demand during weekdays and a smaller demand for improved pedestrian connections.

Schools

Current Conditions

Public school services in Kirkland are provided by Lake Washington School District, which serves the cities of Kirkland and Redmond, as well as portions of the cities of Sammamish, Bothell, and Woodinville. The District operates 31 traditional and 4 choice elementary schools (grades K–5), 18 traditional and 6 choice middle schools (grades 6–8), and 4 traditional and 4 choice high schools (grades 9–12). The District also operates a combination junior/senior high school under the international school program. There are no schools in the immediate vicinity of the study area. Students living in the study area currently attend Lakeview Elementary School, Kirkland Middle School and Lake Washington High School. Students may also attend one of the District's choice schools, regardless of where they live.

District enrollment for the 2012-2013 school year was 25,408; capacity is 26,910 students. The District projects that overall enrollment will increase to 28,675 students by 2018, a 12.9% increase over current enrollment. The District has established a school modernization and expansion schedule, and construction for many schools is currently underway. As of October 2012, the schools serving the study area were generally within capacity parameters, with no significant overcrowding.

The Lake Washington School District has adopted Level of Service Standards in the form of target teacher-to-student ratios. These range from 20 students per teacher in Kindergarten and 1st grade to 32 students per teacher in 9th through 12th grades. The District has not published data on achieved student-teacher ratios by grade level, but their 2012 Annual Report indicates that the District employed 1,550 teachers for the 2011-2012 school year, and corresponding enrollment was 24,912, resulting in an average of 1 teacher for approximately every 16 students.

New Students

The MRM FSEIS examined how many new students would likely be generated by the new residential development. The Lake Washington School District student generation rates per multifamily dwelling

unit were at the time of study equal to: 0.049 elementary students, 0.014 middle school students, 0.016 high school students. Under this methodology, MRM Alternative 2A would generate 22.8 students, and Alternative 2C would generate 46.7 students. The Lake Washington School District's 2014-2019 Capital Facilities Plan provides new student generation rates. The updated rates per multifamily dwelling unit are: 0.055 elementary students, 0.017 middle school students, and 0.012 high school students. With these rates, the 2014 Revised Proposal would add 16.5 elementary students, 5.1 middle school students, and 3.6 high school students, as shown in Table 6.4-6. Even with the slightly higher student generation rates, this is in the range of the MRM SEIS alternatives, and as with that analysis shows deminimus impacts.

Table 6.4-6. New Students from MRM and 2014 Revised Proposals

Impact	MRM 2A	MRM 2C	2014 Proposal
New Multifamily Dwelling Units	289	591	300
Elementary Students	14.2	29.0	16.5
Middle School Students	4.0	8.3	5.1
High School	4.6	9.5	3.6
Total	22.8	46.7	25.2

MRM Student Rates: 0.049 elementary students, 0.014 middle school students, 0.016 high school students.

2014 Proposal Student Rates:

Source: BERK 2015

References

City of Kirkland. 2013. Draft Supplemental Environmental Impact Statement: MRM Private Amendment Request.

Attachment: Fire Department Correspondence

From: Helen Ahrens-Byington [mailto:HAhrens-Byington@kirklandwa.gov]
Sent: Tuesday, November 25, 2014 4:38 PM
To: Melanie Mayock
Cc: Angela Ruggeri; Lisa Grueter
Subject: RE: Parkplace documents

New Park Place Proposal:

With the changes in the proposal would need to increase staffing to Station 22 – the primary response station – by 1 position. Adding this position to station 22 will allow a secondary medical response from that station as well as increasing the firefighters on a fire response. Kirkland Fire Department has a response time objective that is expected to be meet 90% of the time. In the current Standard of Coverage Study completed station 22 should be available .90 or less, unit utilization, to meet the 90% objective. In this study it was found that Station 22 is at 1.06 availability. The impact of this project requires that staffing be increased to adjust for the increase in calls.

To fill one firefighter position 24/7 365 days a year it takes hiring 4.8 people. Fire is not able to hire .8 so the recommendation is hiring 5.

This project also is an impact to the Fire Prevention Bureau and to account for this impact 1 Firefighter needs to be hired due to the size of this complex and the fact that the Fire Prevention Bureau is currently at maximum capacity. The Fire Prevention Bureau is required to complete a safety inspection each year for the life of the occupancy.

Total Firefighters = 6

Please let me know if you have any questions.

Helen Ahrens-Byington

Deputy Fire Chief

City of Kirkland Fire and Building Department

Work week: Tuesday - Friday

Office: 425-587-3603

Cell: 425-306-2493

*Our City * Our People * Our Duty*

Our Commitment to Serve

RH2 ENGINEERING, INC.
www.rh2.com
mailbox@rh2.com
1.800.720.8052

WASHINGTON LOCATIONS

BOTHELL
MAIN OFFICE
22722 29th Drive SE, Suite 210
Bothell, WA 98021

BELLINGHAM

EAST WENATCHEE

ISSAQUAH

RICHLAND

TACOMA

OREGON LOCATIONS

NORTHERN OREGON
MAIN OFFICE
6500 SW Macadam Ave. Suite 100
Portland, OR 97239

SOUTHERN OREGON
Central Point

CENTRAL OREGON
Bend

December 15, 2014

Ms. Lisa Grueter, Manager
BERK Consulting
2025 First Avenue, Suite 800
Seattle, WA 98121

Sent via: *Email and US Mail*

Subject: Kirkland Parkplace SEPA Addendum Hydraulic Analyses

Dear Ms. Grueter:

This letter contains the results of the hydraulic analyses for the Kirkland Parkplace State Environmental Policy Act (SEPA) Addendum. The analyses were performed using a computer model of the City of Kirkland's (City) existing water system to determine the capability of the water system to meet the needs of the proposed redevelopment project. This letter summarizes the results of the analyses and the operational conditions used in the hydraulic model. These engineering services are being provided in accordance with the agreement signed on November 5, 2014 and the addendum dated December 15, 2014.

BACKGROUND

In 2008, RH2 Engineering, Inc., (RH2) prepared a letter to Mr. Rob Jammerman at the City regarding "Park Place EIS Water System Analyses." At the time the letter was prepared, the Touchstone Corporation was proposing to redevelop the Parkplace Center (i.e., Kirkland Parkplace), located within the City's 285 Zone on the southwest corner of Central Way and 6th Street. The project would replace the existing 238,450 square feet of office and retail space with nearly 1.8 million square feet of office, retail, and hotel space, including a parking structure. The Parkplace Center site was identified as Site A. Two additional sites (i.e., Sites B and C) on the east side of 6th Street were also being considered for redevelopment. RH2 estimated demand and performed hydraulic analyses for the proposed development. At the time of this effort, the No Action Alternative was based on existing zoning designations and the Proposed Action Alternative included the proposed improvements at Sites A, B, and C.

The planned improvements for the Kirkland Parkplace have been modified since the 2008 studies and the proposed usage is now less intensive than originally planned. The modified planned improvements include 875,000 square feet of office and retail space and 300 multi-family units in 300,000 square feet of residential space. A SEPA Addendum is currently being prepared to address the alternative concept plan at Kirkland Parkplace. Hydraulic analyses are necessary to determine if the water system improvements proposed for the previous Proposed Action Alternative require modification.

For the purposes of these SEPA Addendum analyses, the 2008 Proposed Action Alternative will now be referred to as the 2014 No Action Alternative, because the improvements were previously approved. The most recent alternative proposal for Kirkland Parkplace will now

be referred to as the 2014 Proposed Action Alternative. Furthermore, only Kirkland Parkplace (i.e., Site A) is under consideration at this time and, therefore, the other adjacent sites are not included in the following analyses. The analyses are based on the assumption that the fire flow requirement for Kirkland Parkplace will be 4,000 gallons per minute (gpm) for 4 hours, which is the same as the original analyses.

DEMAND ANALYSIS

The estimated demand was derived from general demand levels for various commercial and multi-family uses and the finished floor area for each use (**Table 1**). Under the No Action Alternative (i.e., 2008 Proposed Action Alternative), the average day demand (ADD) for the Kirkland Parkplace site was estimated at 249 gpm. The new proposal assumes 650,000 square feet of office space, 225,000 square feet of retail space, and 300,000 square feet of multi-family residential space with a maximum of 300 dwelling units. The ADD for the Proposed Action Alternative is approximately 139 gpm, which is a reduction of approximately 110 gpm from the previous proposal.

Table 1
Estimated Average Day Demands

Use	Future Office/Retail		Future Multi-family Residential		Future Demands	
	Total Future Office/Retail Area (sq ft)	Estimated ADD per 100 sq ft[1] (gpd)	Total Future Multi-family Residential Units	Estimated ADD per Multi-family Unit[2] (gpd)	Total Estimated Future ADD (gpd)	Total Estimated Future ADD (gpm)
2014 No Action Alternative						
Kirkland Parkplace	1,792,750	20	0	83	358,550	249
2014 Proposed Action Alternative (SEPA Addendum)						
Kirkland Parkplace	875,000	20	300	83	199,996	139
Total Change (Proposed - No Action)					**-158,554**	**-110**

1 = For office, retail, and entertainment uses. From the Community Water Systems Source Book (1990) and the Orange Book (2006).
2 = Based on 2013 TAZ and mult-family residential metered consumption data.

RH2 considered a more detailed demand analysis for Kirkland Parkplace that estimated demands individually for the different development components (i.e., theater, health club, general retail, etc.), but the results provided a lower demand estimate. Based on conversations with BERK Consulting (BERK), it is our understanding that the estimates should be conservative for the purposes of the SEPA Addendum analyses. As additional information on the specific office and retail tenants is known, a more detailed demand analysis may be necessary to refine the demand estimate for other purposes. The estimated ADD values shown in **Table 1** are considered conservative (overestimated) so that any water system improvements recommended as a result of the estimates are adequately sized for most office, retail, or multi-family uses.

HYDRAULIC ANALYSES RESULTS

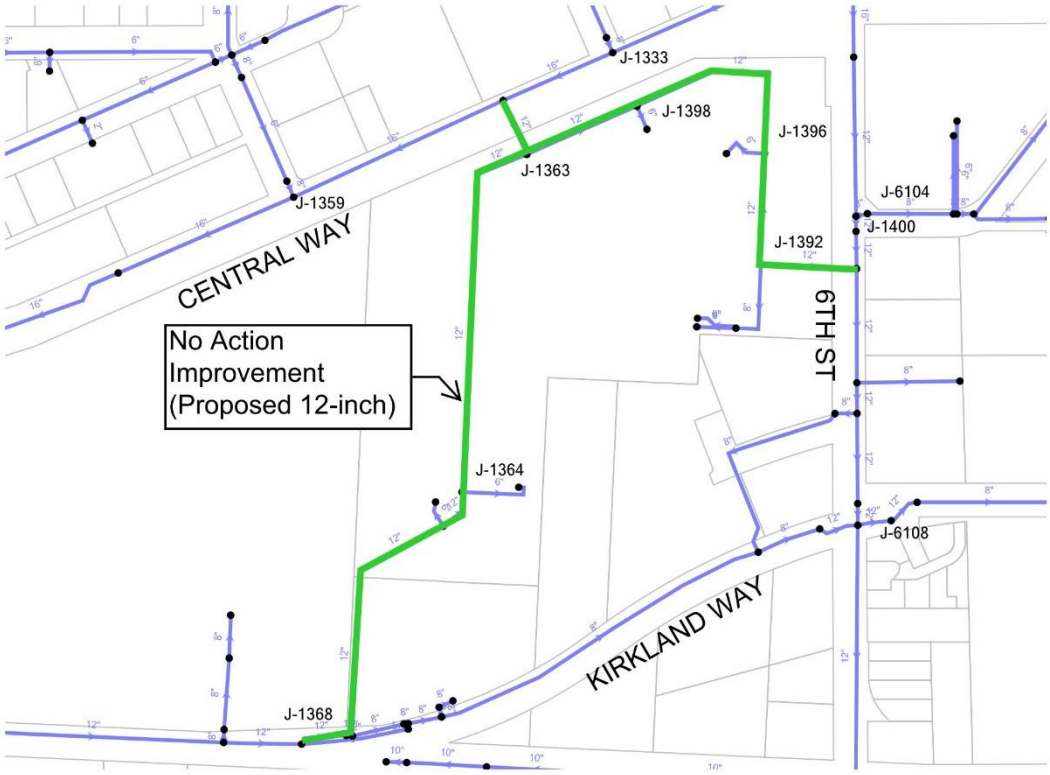
The computer model of the City's existing water system was analyzed under existing conditions with the 2035 projected system demands and the additional projected demands from Kirkland Parkplace. The water model includes improvements to the water system since the 2008 analyses, including the 12-inch water main in 6th Street that is currently under construction. The 2035 projected system demands are based on the City's projected growth in each transportation analysis zone (TAZ) as summarized in the City's 2014 *Comprehensive*

Water System Plan (WSP). The analyses were performed to determine the available fire flow and dynamic pressures in and around the site.

The first set of analyses was performed with the Kirkland Parkplace No Action Alternative demands and the No Action Alternative improvements (i.e., 2008 Proposed Action Alternative). The No Action Alternative improvements, shown in **Figure 1**, were identified as Segment A in the 2008 analyses letter report and include the following:

- Replace the existing on-site 8-inch water main with new 12-inch water main.
- Replace the existing connections on the north side of the site, crossing Central Way west of 5th Street, and on the east side of the site crossing 6th Street south of 4th Avenue with 12-inch water main.
- Construct a new 12-inch connection at the south side of the site so that a looped connection is created to connect the proposed on-site 12-inch main to the existing 8-inch and 12-inch water mains in Kirkland Way.

Figure 1
No Action Alternative Water Main Improvements



The results of the No Action Alternative analyses, as shown in **Table 2**, indicate that service pressures will be well above the Washington State Department of Health's minimum allowable pressure of 30 pounds per square inch (psi). The 4,000 gpm fire flow requirement could be met on-site with the No Action Alternative improvements, except at J-1398 where fire flow availability is slightly less than the 4,000 gpm requirement. The fire flow rates shown in the table are based on a residual pressure of 20 psi in the water main adjacent to the hydrant and water velocities in the distribution system at 8 feet per second (fps) or less.

Table 2
Fire Flow Analyses Results

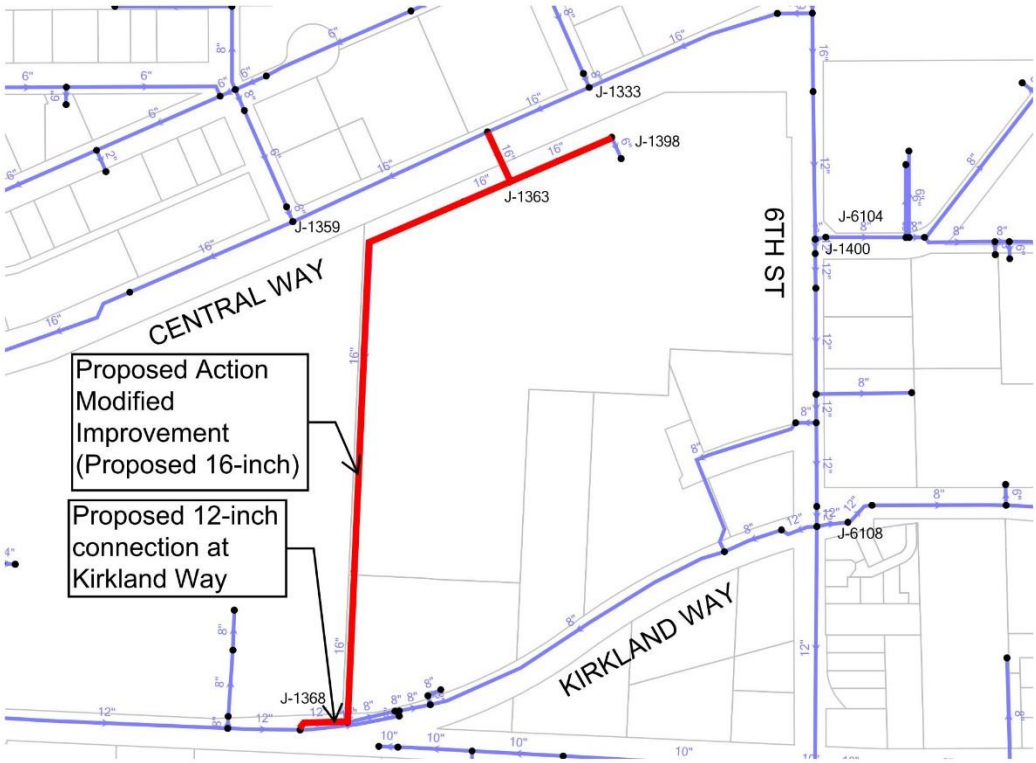
			No Action		Proposed Action			
			Existing Water System with 2035 System Demands and Parkplace No Action Demands and No Action Improvements		Existing Water System with 2035 System Demands and Parkplace Proposed Action Demands and No Action Improvements		Existing Water System with 2035 System Demands and Parkplace Proposed Action Demands and Modified Improvements	
Label	Description	Fire Flow Requirement (No Action and Proposed Action) (gpm)	Pressure (psi)	Derated Fire Flow (gpm)	Pressure (psi)	Derated Fire Flow (gpm)	Pressure (psi)	Derated Fire Flow (gpm)
J-1363	North Side of Kirkland Parkplace	4,000	93	4,150	93	4,390	90	4,390
J-1398	North Side of Kirkland Parkplace at 5th Street	4,000	93	3,990	93	4,180	90	4,390
J-1364	Middle of Kirkland Parkplace	4,000	94	4,120	94	4,360	-	-
J-1396	Northeast Side of Kirkland Parkplace	4,000	87	4,130	87	4,360	-	-
J-1392	East Side of Kirkland Parkplace	4,000	86	4,120	86	4,350	-	-
J-1400	Proposed Hydrant on 6th Street	4,000	84	4,110	84	4,350	80	4,250
J-6104	Existing Hydrant at 6th Street and 4th Avenue	3,000	84	1,390	84	1,390	80	1,390
J-1359	Intersection of Central Way and 4th Street	3,500	95	4,160	95	4,400	100	4,400
J-1333	Intersection of Central Way and 5th Street	3,500	86	4,170	86	4,410	90	4,400
J-6108	Intersection of Kirkland Way and 6th Street	3,000	67	3,270	67	3,270	70	3,270
J-1368	Kirkland Way at Parkplace Center	4,000	91	4,110	91	4,340	90	4,370

The first set of Proposed Action Alternative analyses was performed with the Proposed Action Alternative demands and the No Action Alternative improvements (i.e., the 12-inch on-site loop connecting to Central Way, 6th Street, and Kirkland Way, as shown in **Figure 1**). The results of these analyses, as shown in **Table 2**, indicate that service pressures remain the same with the Proposed Action Alternative. In addition, the available fire flow increases slightly due to the decrease in demand and the 4,000 gpm fire flow requirement can be met on site with the No Action Alternative Improvements.

An additional set of Proposed Action Alternative analyses were performed based on the Preliminary Kirkland Parkplace Conceptual Site Plan (enclosed). The conceptual plan indicates that a parking garage is planned where the No Action Alternative improvements proposed a water main connection to 6th Street. Since this connection may not be possible, a modified improvement plan was prepared as follows and as shown on **Figure 2**:

- Replace the existing on-site 8-inch water main with 16-inch water main within the access driveway on the north, west, and south side of the site.
- Replace the existing connections on the north side of the site, crossing Central Way west of 5th Street, with a 16-inch water main.
- Construct a new 12-inch connection at the south side of the site so that a looped connection is created to connect the proposed on-site 16-inch main to the existing 8-inch and 12-inch water mains in Kirkland Way.

Figure 2
Proposed Action Alternative Modified Water Main Improvements



The results of the Proposed Action Alternative analyses with the modified improvements indicates that the planning-level fire flow requirement can be met on-site if the modified improvements are constructed instead of the No Action Alternative improvements. In order for adequate fire flow to be provided to the structures on the east side of the site, fire hydrants should be installed on the new 12-inch water main in 6th Street to replace the hydrants that were available from the 6th Street connection water main (i.e., fire flow from J-1400 instead of J-1396 and J-1392). The City's fire marshal shall determine appropriate fire hydrant locations. In general, the fire flow availability is dependent on the actual location of the fire hydrants. When the construction plans are available for review by the City, fire flow availability shall be calculated at the specific proposed fire hydrant locations. The analyses may impact the size of the on-site water main (i.e., 12-inch vs. the 16-inch, as illustrated above).

The planning-level fire flow requirement may be met for the Proposed Action Alternative by constructing one of the two water system configuration options identified above. The first option is to construct the No Action Alternative improvements as previously recommended, as shown in **Figure 1**. The other option includes installing the Proposed Action Alternative modified improvements, as shown in **Figure 2**. **Table 3** lists the proposed length and size of each option.

Table 3
Water Main Improvements

Water Main Improvement Alternative	Description	2014 WSP CIP Number	Existing Diameter (inches)	12-inch Water Main Length[3,4] (ft)	16-inch Water Main Length (ft)	Total Length[4] (ft)
No Action[1] and Proposed Action[2]	12-inch Water Main with 3 Connections	150	8	2,370	0	2,370
Proposed Action[2] - Modified Improvements	12-inch and 16-inch Water Main with 2 Connections	150	8	97	1,533	1,630

1 = The No Action Alternative is based on the Proposed Action Alternative from the 2008 Parkplace EIS Analyses.
2 = The Proposed Action Alternative is based on the 2014 SEPA Addendum.
3 = The No Action and Proposed Action Length is based on the length of Segment A as identified in the 2008 EIS Analyses.
4 = The Proposed Action Modified Length is based on an update to the proposed water main per the Kirkland Parkplace Schematic Site Plan, which indicates that a connection to 6th Street may not be feasible.

WATER SUPPLY EVALUATION

A water supply evaluation was performed to determine whether the City has sufficient supply capacity from the existing supply facilities to accommodate the Proposed Action Alternative. The 2035 evaluation shown in **Table 4** is based on the future 2035 water supply evaluation summarized in Table 7-2 of the City's 2014 WSP. The No Action Alternative includes an increase in demands based on the Kirkland Parkplace No Action Alternative demands, as shown in **Table 1**. The Proposed Action Alternative water supply evaluation is based on the increase in demands anticipated under the Proposed Action Alternative, as shown in **Table 1**. The results of the water supply evaluation indicate that the City will have approximately 5,246 gpm of excess supply capacity based on year 2035 and Proposed Action Alternative demand levels.

Table 4
Water Supply Evaluation

Description	Future Projections		
	2035 (+20 yrs)[1]	No Action Year 2035	Proposed Action Year 2035
Required Source Capacity (gpm)			
Kirkland Max. Day Demand	7,350	7,802	7,558
Redmond Max. Day Demand[2]	4,339	4,339	4,339
Bellevue Max. Day Demand*	80	80	80
Supply Area Total Max. Day Demand	11,769	12,220	11,977
Available Source Capacity (gpm)			
Supply Station 1* **	4,500	4,500	4,500
Kirkland's Percent Ownership**	57.2%	57.2%	57.2%
Supply Available to Kirkland	2,574	2,574	2,574
Supply Station 2	8,000	8,000	8,000
Kirkland's Percent Ownership**	66.0%	66.0%	66.0%
Supply Available to Kirkland	5,280	5,280	5,280
Supply Station 3* **	7,500	7,500	7,500
Kirkland's Percent Ownership**	66.0%	66.0%	66.0%
Supply Available to Kirkland	4,950	4,950	4,950
Kirkland's Total Available Supply	12,804	12,804	12,804
Supply Area Total Available Supply	20,000	20,000	20,000
Surplus or Deficient Source Capacity (gpm)			
Kirkland Surplus or Deficient Amt.	5,454	5,002	5,246
Supply Area Surplus or Deficient Amt.	8,231	7,780	8,023

(1) The City's demands have decreased since preparation of the 2007 WSP. Therefore, the existing and future system supply and hydraulic analyses presented in the City's 2007 WSP are conservative, and are duplicated in the 2014 WSP for the existing, 6-, 10-, and 20-year analyses.

(2) Redmond's existing and future demands were updated to reflect the demands shown in the City of Redmond's 2011 Draft WSP (Table 9-2).
*Estimated demands were expected to reach build-out levels by 2010 in small area of Bellevue supplied by joint facilities.
**Contract percent is the contractual ownership interest of each City, per the Rose Hill Water District Assumption Agreement.

***Future capacities reflect improvements described in Chapter 9 of the 2014 WSP.

STORAGE ANALYSIS

Storage analyses were performed to determine if the City's existing storage facilities have sufficient capacity to meet the future storage requirements of the system under the Proposed Action Alternative. Similar to the water supply evaluation, the 2035 storage analyses is based on an evaluation completed for the City's 2014 WSP. This evaluation is summarized in **Table 5** and identified as the future 2035 storage evaluation in Table 7-5 of the 2014 WSP. The storage analysis for the No Action Alternative is based on the increase in demand anticipated under the No Action Alternative as shown in **Table 1**. The storage analysis for the

Proposed Action Alternative is based on the increase in demand anticipated under the Proposed Action Alternative, as shown in **Table 1**. The results of the storage analyses indicate that the City will have approximately 1.52 million gallons of excess storage capacity based on year 2035 and Proposed Action Alternative demand levels.

Table 5
Storage Analysis

Description	Future Projections[1]		
	2035 WSP	2035 No Action	2035 Proposed Action
Available/Usable Storage (MG)			
Maximum Storage Capacity	25.50	25.50	25.50
Dead (Non-usable) Storage	-4.89	-4.89	-4.89
Total Available Storage	20.61	20.61	20.61
Redmond Usable Storage[2]	-6.49	-6.49	-6.49
Bellevue Usable Storage[2]	-1.50	-1.50	-1.50
Total Storage Available to Kirkland	12.62	12.62	12.62
Operational Storage (MG)			
Redmond Operational Storage[2]	0.93	0.93	0.93
Bellevue Operational Storage[2]	0.21	0.21	0.21
Kirkland Operational Storage[2]	1.81	1.81	1.81
Required Storage for Kirkland (MG)			
Operational Storage	1.81	1.81	1.81
Equalizing Storage	2.65	2.81	2.72
Standby Storage[3]	5.06	5.06	5.06
Fire Flow Storage	1.50	1.50	1.50
Total Storage Required for Kirkland	10.00	11.19	11.10
Surplus or Deficient Storage for Kirkland (MG)			
Kirkland's Surplus or Deficient Amt.	2.62	1.43	1.52

(1) Projections are based on growth within the City's water service area.

(2) Operational and Usable Storage amounts are based on each city's ownership in joint-use reservoirs and the typical reservoir draw-downs.

(3) Standby storage is the only value that changed from the 2007 WSP.

HYDRAULIC ANALYSES CRITERIA

A summary of the hydraulic model's operational conditions used in the analyses is included in **Table 6**.

Table 6
Hydraulic Analyses Operational Conditions

Description	Fire Flow Analysis	Pressure Analysis
Demands	2035 MDD (Projected)	2035 PHD (Projected)
Supply Station S1 head (feet)	544	544
Supply Station S2 head (feet)	531	531
Supply Station S3 head (feet)	533	533
North Reservoir HGL (feet)	421.10	426.50
South Reservoir HGL (feet)	531.40	534.70
650 Zone BPS Status	Three Large Pumps Operating	Two Small Pumps Operating
545 Zone BPS Status	Off	Off

CONCLUSION

The 2008 Kirkland Parkplace hydraulic analyses identified proposed improvements to meet the future fire flow needs of the Kirkland Parkplace site. The improvements included an on-site 12-inch loop with connections at Central Way, 6th Street, and Kirkland Way. The improvements had the capacity to convey the 4,000 gpm fire flow requirement and the 2008 Proposed Action Alternative demands, which are now the 2014 No Action Alternative demands. The proposed improvements also have the capacity to convey the 4,000 gpm fire flow requirement and the 2014 Proposed Action Alternative demands, which are lower than the 2014 No Action Alternative demands.

The current conceptual plan for Kirkland Parkplace includes a parking garage near 6th Street where a water main connection was proposed. The proposed improvements were analyzed without the connection to 6th Street to determine if the 4,000 gpm fire flow requirement and Proposed Action Alternative demands could be met with connections at Central Way and Kirkland Way. The results indicated that the connection at Central Way would need to be 16-inch-diameter pipe and the 16-inch water main would need to be extended towards the parking garage if a hydrant was necessary on the west side of the parking garage and south to the connection in Kirkland Way. The water main connection in Kirkland Way can remain 12-inch-diameter pipe. In addition, fire hydrants would be necessary on 6th Street to properly service the buildings on the east side of the Kirkland Parkplace site. During the development review phase, fire flow analyses shall be performed for the actual fire hydrant locations to verify the proposed water main sizing.

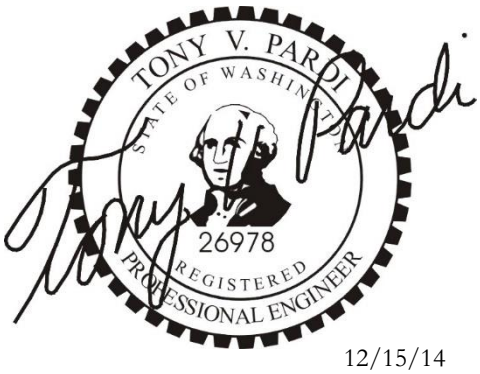
Previously, a supply and storage analysis was performed with the 2008 Proposed Action Alternative demands and the City's projected 2024 demand levels. The 2008 analysis indicated that the City would have a surplus of water supply and storage capacity under the 2008 Proposed Action Alternative (i.e., 2014 No Action Alternative). The demands for the 2014 Proposed Action Alternative are less than the 2014 No Action Alternative, but the City's supply and storage analyses were updated in the 2014 WSP. An updated analysis was performed with the City's projected 2035 demand levels and the results indicate that the system will have a surplus of water supply and storage capacity under both the No Action and Proposed Action Alternatives.

If you have any questions regarding the analyses, please call me at (425) 951-5427. Thank you for the opportunity to assist you with this project.

Sincerely,

RH2 ENGINEERING, INC.

12/15/14



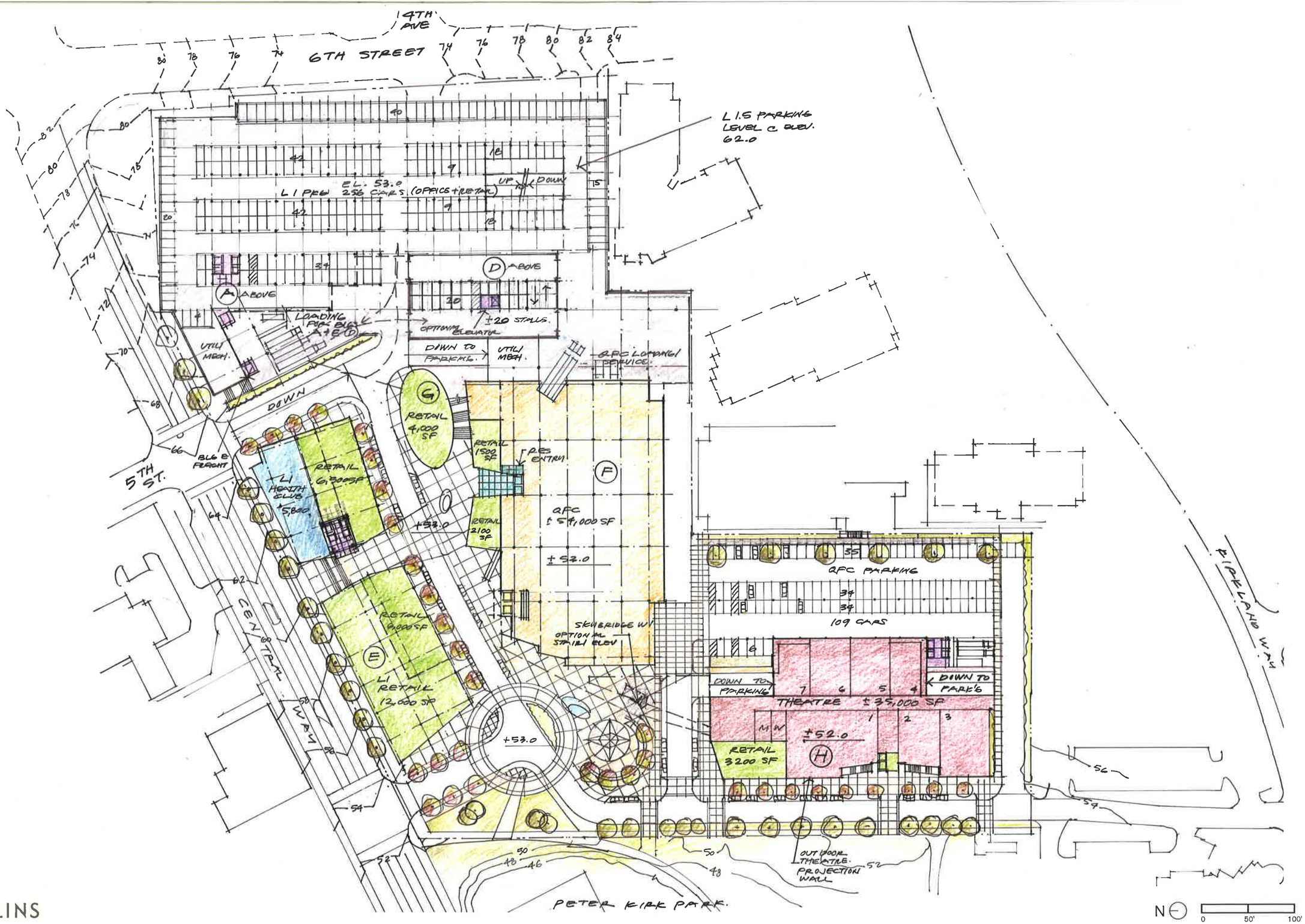
12/15/14

Kimberly A. Kuzak, P.E.
Project Engineer

KAK/MRC/TVP/jq/ms

Enclosures: Preliminary Kirkland Parkplace Conceptual Plan – Level 1

cc: Mr. Rob Jammerman, Development Engineering Manager, City of Kirkland



COLLINS WOERMAN

PRELIMINARY KIRKLAND PARKPLACE CONCEPTUAL SITE PLAN – LEVEL 1

Stantec

Memo

Stantec Consulting Services, Inc.
11130 NE 33rd Place, Suite 200
Bellevue, WA 98004
425.869.9448

To:	Lisa Grueter, AICP Berk Consulting	From:	Erik Brodahl, PE Brian Wolf, PE Bellevue, WA
File:	2002005235	Date:	December 10, 2014

Reference: Parkplace EIS Sewer System Analysis – 2014 Proposal

In 2008, The Touchstone Corporation proposed a redevelopment of the existing Parkplace property, which is located on the south side of Central Way, immediately east of Peter Kirk Park. This proposal was for 1,792,700 square feet of commercial space, including office, retail, grocery, a cinema, restaurants, a sports club, and a hotel.

In 2014, a new redevelopment alternative has been proposed by the Talon Corporation. This proposal is for 1,135,000 square feet of commercial and residential space, including office, retail, grocery, a cinema, restaurants, a health club, and multi-family development (equaling 300 dwelling units).

As requested by the City of Kirkland, an analysis was performed to determine the capacity impacts to the City's Sanitary Sewer System from the new EIS alternative, compared to the original Parkplace proposal.

Flow Projection Methodology

Roth Hill (now Stantec) previously performed the basin analysis for the City's Comprehensive Plan update utilizing the Year 2000 through 2002 flow monitoring data from King County's Regional Infiltration and Inflow Study. King County (KC) used flow monitors to measure flow rates at the outlets from sub-basins of the City's sewer system (delineated by KC and herein referred to as "mini-basins") as part of that study. The site under review for the Parkplace EIS addendum is located in Mini-Basin KRK028. The trunk sewer in Central Way collects all of the sewage flow from Mini-Basin KRK029, in addition to the Mini-Basin KRK028 flows from the east. Mini-Basin KRK008 drains to the trunk sewer at the intersection of Central Way and Third Street and includes tributary sewage flows from Mini-Basins KRK006, KRK007, and KRK011 from the west. The sewage flows from all of these basins discharge to KC's Kirkland Lift Station at 77 3rd Street. Sewers in Kirkland Avenue and State Street collect drainage from Mini-Basin KRK009,

which also discharges to the Kirkland Lift Station through the trunk line on 3rd Street. Figure A shows the layout of the mini-basins, and the location of the downstream sewer trunk analyzed for capacity in 2008 and again in 2014 for this analysis.

A prior analysis was performed for the Parkplace redevelopment based on the 2008 Touchstone redevelopment proposal. Results of that analysis, including a summary of projected mini-basin peak flow rates are documented in the Parkplace Redevelopment – Revised Analysis memorandum, dated September 26, 2008. The projected Parkplace peak sewage flow rate, based on that analysis, was 417 gallons per minute (gpm). By comparison, the projected Year 2027 peak flow rate based on the City's Sewer Comprehensive Plan was 290 gpm.

Another analysis was conducted for redevelopment of the adjacent MRM property, located at 434 Kirkland Way. The property is located in Mini-Basin KRK029, and the existing buildings drain to the north through the Parkplace Property sewers into the Central Way sewer, which discharges to the west, tributary to the KC Kirkland Lift Station. Multiple alternatives were previously proposed for the MRM property. We assumed that the "no action" Alternative 1D, which includes redevelopment of the existing site for office/retail use at a density consistent with existing plans and zoning regulations (and based on a five-story office building), will be constructed for purposes of a cumulative analysis with Parkplace. Based on discussion with City staff, it was assumed that due to topography of the projected MRM redevelopment, all sewage from that property will be re-routed to the south into the Kirkland Way sewer, which is in Mini-Basin KRK009. Mini-Basin KRK009 separately discharges to the KC Kirkland Lift Station. Alternatives for redevelopment of the MRM property are included in the Kirkland MRM EIS Sewer System Analysis memorandum, dated September 11, 2013.

Two flow rate projections were performed for the 2014 Parkplace redevelopment proposal. The water system analysis for the 2014 Parkplace redevelopment proposal was performed by RH2 Engineering, and assumed an average day demand (ADD) of 20 gallons per day (gpd) per 100 square feet for all office/retail space. An ADD of 83 gpd was applied for each residential unit. This ADD value was based on metered multi-family flow data. For the sewer analysis, a slightly more conservative approach for the residential area was used. An ADD of 60 gpd per person was assumed, and an average of 1.71 people per multi-family unit, resulting in an ADD of 102.6 gpd per unit. The same office/retail space flow projection of 20 gpd per 100 square feet used by RH2

was applied to the sanitary sewage flow projection. For this analysis, the same assumption was used for the Theater and Health Club. A peaking factor of 3.0 was applied to all sanitary flow rates. **Table 1** shows projected development conditions and peak flow rates for the new development alternative using these assumptions.

Table 1: Parkplace Peak Sanitary Sewage Flow Rates – Basic Assumptions

Site/Building	Proposed Area (sq. ft.)	Residential Units	Population	Peak Sanitary Flow (gpm)
Office	650,000			271
Grocery Store	54,000			23
Restaurant	53,000			22
Other Retail	48,000			20
Health Club	30,000			13
Theater	40,000			17
Residential	300,000	300	513	64
Total				**430**

For comparison, a second flow projection was performed using a more detailed set of flow rate assumptions for the proposed redevelopment. For this flow projection, the employment population for the office space was estimated using a factor of 1 employee per 250 square feet of office space. Per the Table 5-2 in the Washington State Department of Heath Water System Design Manual (2009), average daily demand for an office worker is 15 gallons per day (gpd). For restaurants, overall seating capacity for the total restaurant space was estimated using general industry standards, and a demand of 50 gpd per seat, per the Washington State Department of Ecology Sewage Works Deign Manual. For the Health Club, a daily facility usage was estimated, and demand of 20 gpd was applied. This value was based on the demands listed for bathhouses, showers, and toilets listed in the Water System Design Manual. For the theater, a

seating capacity was estimated based on a review of theaters of similar size in the region. A demand of 5 gpd per seat, as listed in the Water System Design Manual, was applied. Flow rates applied for other retail and residential use were the same as those for the projections using basic assumptions. **Table 2** shows projected development conditions and peak flow rates for the new development alternative using these assumptions.

Table 2: Parkplace Peak Sanitary Sewage Flow Rates – Detailed Assumptions

Site/Building	Proposed Area (sq. ft.)	Units	Population /seats	Peak Sanitary Flow (gpm)
Office	650,000		2,600	81
Grocery Store	54,000			23
Restaurant	53,000		1,325	138
Other Retail	48,000			20
Health Club	30,000		500	21
Theater	40,000		2,300	24
Residential	300,000	300	513	64
Total				**371**

Year 2027 King I/I flow rates for the site was calculated as percentages of the total basin flow rates, based on area. Table 1 shows projected development conditions and peak flow rates for the new development alternative using these general assumptions. The analysis assumes that the differences in the proposed development compared to the previous development will have a negligible impact to the I/I rate within the project area, so the previous I/I calculation and assumptions were used for this analysis.

For comparison, a summary of the estimated peak sanitary sewage flow rates for the 2008 Touchstone redevelopment is provided below in **Table 3**. Please note that the assumptions for the projected peak flow rates for some of the

specific facility types vary compared to the assumptions used in the analysis of the 2014 Parkplace proposal.

Table 3: Parkplace Peak Sanitary Sewage Flow Rates – 2008 Proposal

Site/Building	Proposed Area (sq. ft.)	Population	Peak Sanitary Flow (gpm)
Office	1,200,000	5099	141
Supermarket	54,000	92	5
Restaurants	60,000	214	78
Retail	170,000	338	99
Health Club	70,000	83	6
Theater	16,000	12	6
Hotel	222,750	148	82
Total			**417**

Peak flow estimates using both methodologies show small variations in flows compared to the 2008 Touchstone redevelopment proposal. Using general assumptions for the redevelopment, there is a minimal increase in flow rate. Applying a more detailed (and less conservative) set of demands generates a lower projected sanitary flow rate from the site, with an approximate 11% overall decrease from the 2008 redevelopment proposal.

Pipe Capacity Analysis

The downstream gravity sewer conveyance system t serving Parkplace consists of a 10-inch diameter PVC main draining to the 18-inch and 24-inch trunk sewer within Central Way. The trunk sewer drains west along Central Way to Third Street where it turns south, discharging through a newly-upsized 48-inch diameter trunk to the KC Kirkland Lift Station, located near the intersection of Park Lane and Third Street.

The conveyance piping analyzed for the project is shown on Figure B.

Results of the analysis for all alternatives, including the 2008 redevelopment proposal and both flow projections for the 2014 alternative, predict surcharging (pressurized pipes with water levels above the top of the pipe in manholes) in the single 24-inch diameter pipe section directly upstream of the new 48-inch pipe, which discharges to the KC Kirkland Lift Station. This is consistent with the previous analysis performed for the 2008 Parkplace redevelopment. The prior Parkplace analysis also showed surcharging in the sewer on 3rd Street between Central Avenue and the Kirkland Lift Station. This has been eliminated through the construction of the 48-inch diameter sewer. A project to expand the lift station and upsize the force main to convey a peak flow rate of approximately 9.3 million gallons per day of sewage was completed in the spring of 2014. This should provide sufficient downstream capacity for future flows from the projected redevelopment under all alternatives.

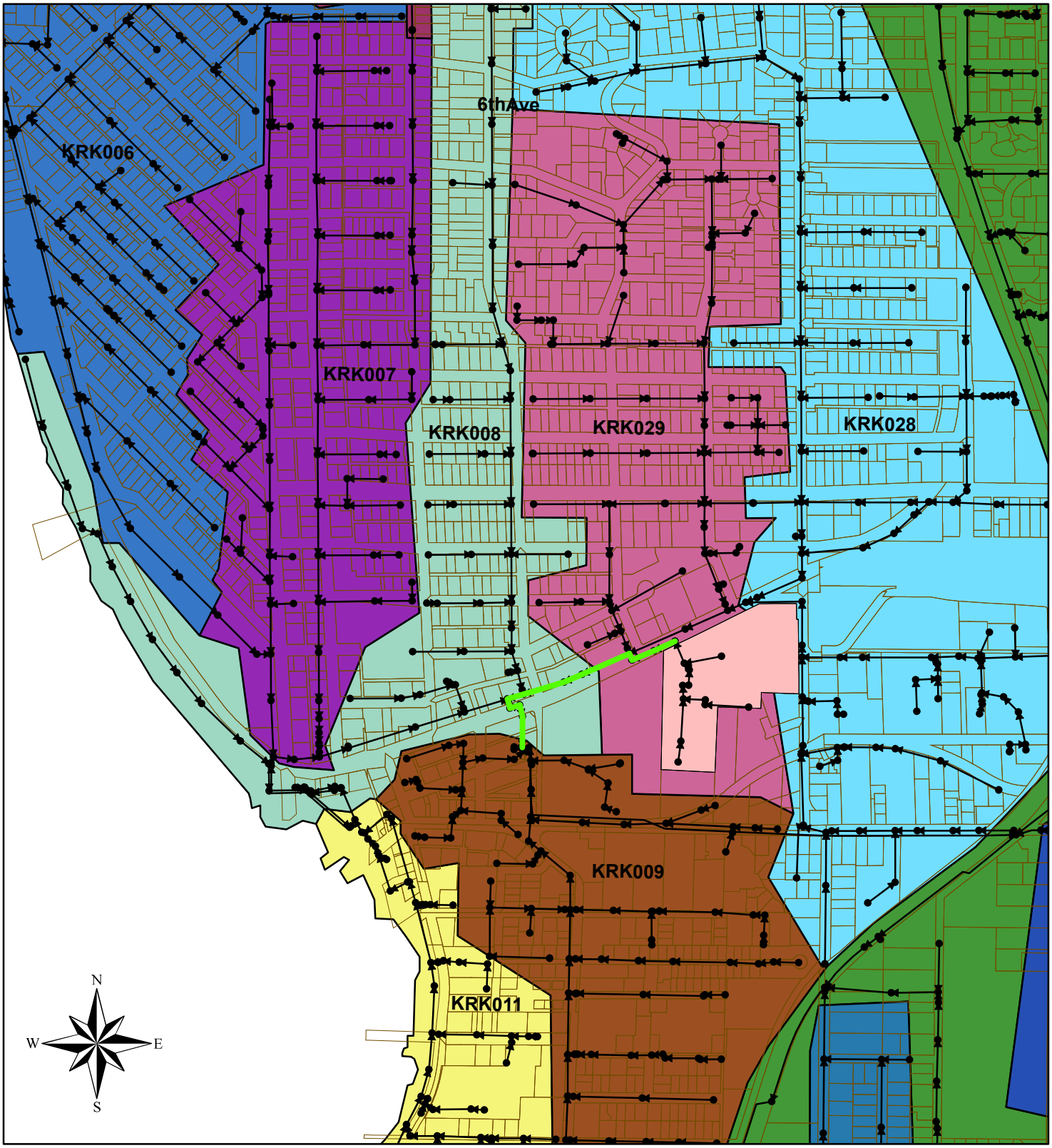
Outside of the conveyance system described above, the other piping downstream of the redevelopment site appears to have adequate capacity to accommodate the future flows, including the additional flows from the proposed redevelopment of the site. The peak flow rates in this analysis are conservative, since hydraulic modeling software was not used to attenuate the peak flows based on travel times from the various mini-basins tributary to the Central Way and sewer. Attenuation of the flows would reduce, and could potentially alleviate the surcharging.

Recommendations

Based on results of this analysis, the recommended downstream improvements include upsizing the existing 24-inch pipe at the intersection of Central Way and 3rd Street to 48-inch diameter pipe. This is consistent with the improvements immediately downstream already installed by KC for the Kirkland Lift Station, and is consistent with prior recommendations for this portion of the sewer system. This section of pipe installation would involve a crossing perpendicular to multiple lanes of Central Way, and may contain utility conflicts. The pipe upsizing could potentially be reduced to 30-inches, to avoid conflicts; however, this would need to be verified with a backwater analysis, and may involve some surcharging.

Although the flow rates from the proposed Parkplace development would represent an increase compared to the existing flows, they would represent a slight increase over the prior Parkplace development. The downstream 24-inch

diameter sewer trunk would need to be upsized regardless of the future development at Parkplace, due to the other tributary sewage flows within the basin. The Parkplace redevelopment would contribute to increased flow rates through the undersized pipe, but would not be the primary cause of the capacity issues.



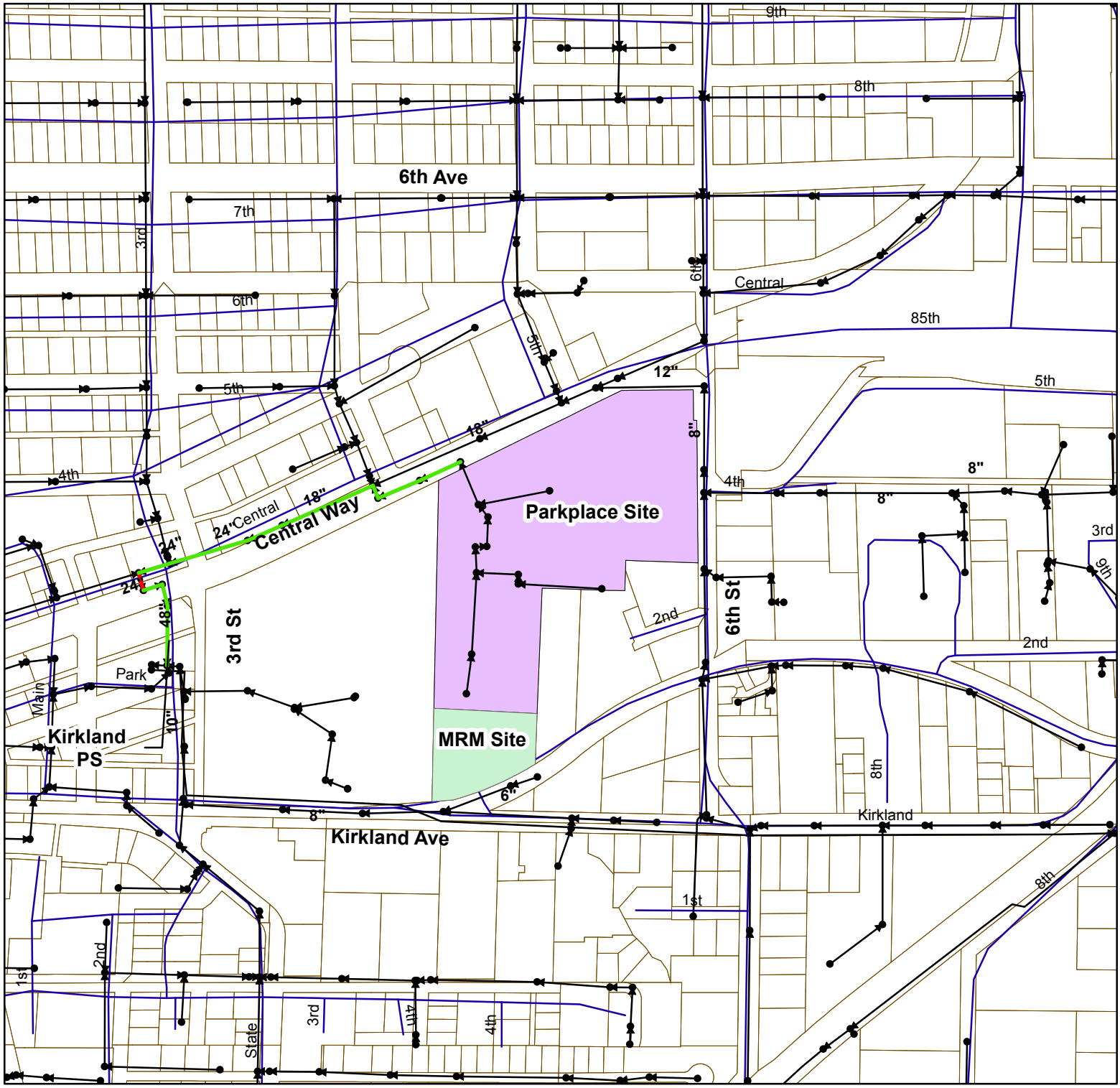
Parkplace EIS
Tributary Mini-Basins

Figure A

Legend

- Sanitary Sewer Manholes
- Sanitary Sewer Pipes
- Sanitary Sewer Pipes Analysis
- Parkplace Redevelopment

Stantec



N
W E
S

Parkplace EIS
Sewer System Analysis

Figure B

Legend

- Sanitary Sewer Pipes Analysis
- Capacity Issues/Recommended Improvements
- MRM Redevelopment
- Sanitary Sewer Manholes
- Sanitary Sewer Pipes
- Parkplace Redevelopment

Stantec