

City of Kirkland Planned Action Ordinance Summary of Transportation Impacts and Mitigation

Roadway Operations

Roadway Operational impacts were assessed according to Traffic Impact Analysis (TIA) and concurrency guidelines, described as follows.

Traffic Impact Analysis

The City has established Traffic Impact Analysis (TIA) guidelines by which the effect of development proposals on roadway operations must be analyzed for the expected year of project completion. For 2014 Traffic Impact Analysis, an impact is identified if either of the following conditions occur:

- a. If the intersection is projected to operate at LOS E, an impact is identified and mitigation required if greater than 15% of traffic projected to travel through the intersection is generated by the project.
- b. If the intersection is projected to operate at LOS F, an impact is identified and mitigation required if greater than 5% of traffic projected to travel through the intersection is generated by the project.

Concurrency

Concurrency analysis considers the effects of proposed land use on the transportation system at the time of project completion, and for the long-range planning horizon. Concurrency planning for the year of project completion, which is 2014 for this project, is a legal requirement to ensure 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. Concurrency analysis is required additionally applied for the long-range planning horizon, which is 2022 for this project, because the Proposed Action would result in a change in the City Comprehensive Plan. The long-range concurrency analysis allows for a long-range transportation plan to be developed to support the Proposed Action proposed development through the planning year defined in the Comprehensive Plan. 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 greater than 1.40; and
- maximum allowed subarea average V/C for signalized system intersections in each subarea may not exceed the values listed in Table 1.

Table 1. Concurrency Thresholds

Subarea	Subarea Average V/C		
	Existing (2008)	2014	2022
Southwest	0.90	0.90	0.92
Northwest	0.90	0.91	1.01
Northeast	0.88	0.88	0.99
East	1.05	1.05	1.10
Maximum allowed individual system intersection V/C	1.40	1.40	1.40

Table 2 summarizes the intersections at which impacts were identified, under the No Action and Proposed Action scenarios. LOS and V/C values that reflect adverse impacts, based upon the guidelines described above, are underlined.

Table 2. Intersection Operational Impacts

ID	Location	2014 TIA (LOS/Delay)		2014 Concurrency (V/C)		2022 Concurrency (V/C)	
		No Action	Prop Action	No Action	Prop Action	No Action	Prop Action
4	Central Way/Parkplace Driveway	<u>F/>300</u>	<u>F/>300</u>	--	--	--	--
101	Lake Washington Boulevard/NE 38th Place	D/49.2	D/48.4	1.04	1.04	<u>1.47</u>	<u>1.48</u>
105	Central Way/6th Street	C/34.5	<u>F/96.3</u>	0.89	1.04	1.01	<u>1.43</u>
109	NE 85th Street/114th Avenue NE	<u>F/132.1</u>	<u>F/227.9</u>	1.30	<u>1.57</u>	<u>1.54</u>	<u>1.41</u>
110	6th Street/4th Avenue	B/17.5	<u>E/75.1</u>	--	--	--	--
112	Kirkland Way/6th Street	F/149.6	<u>F/231.0</u>	--	--	--	--
128	Central Way/5th Street	F/103.5	<u>E/66.2</u>	--	--	--	--
129	Central Way/4th Street	<u>F/82.4</u>	<u>F/119.0</u>	--	--	--	--
169	6th Street/7th Avenue	E/45.9	<u>F/86.7</u>	--	--	--	--
202	100th Avenue NE/NE 124th Street	E/58.3	E/62.6	1.06	1.09	1.27	1.29
204	116th Way NE/NE 132nd Street	--	--	0.99	1.00	<u>1.47</u>	<u>1.49</u>
211	Market Street/15th Avenue	F/70.1	<u>F/153.3</u>	--	--	--	--
304	NE 132nd Street/124th Street NE	F/213.4	F/217.4	1.06	1.07	<u>1.43</u>	<u>1.44</u>
316	Totem Lake Boulevard/NE 132nd Street	D/48.2	E/48.7	1.09	1.09	<u>1.69</u>	<u>1.70</u>
402	NE 85th Street/124th Avenue NE	E/74.2	<u>F/81.0</u>	1.07	1.08	0.99	1.01
	SW Subarea Average (for concurrency)	--	--	0.85	<u>0.91</u>	<u>0.99</u>	<u>1.05</u>
	NW Subarea Average (for concurrency)	--	--	0.81	0.81	<u>1.09</u>	<u>1.13</u>

1. TIA = Traffic Impact Analysis; LOS = Level of Service, Delay = average seconds per vehicle

2 No impact was identified at this intersection. This mitigation measure is recommended in order to improve conditions in the subarea, to address the concurrency impact that was identified in the northwest subarea under the 2022 Proposed Action scenario.

Table 3 summarizes the mitigation measures that have been identified to address intersection impacts for the Proposed Action. (Note, the identified mitigation measures would also address impacts identified under the No Action scenario)

Table 3. Proposed Mitigation to Address Operational Impacts – Proposed Action

ID	Location	Improvement	2014 TIA (LOS/Delay)		2014 Concurrency (V/C)		2022 Concurrency (V/C)	
			Unmiti- gated	Miti- gated	Unmiti- gated	Miti- gated	Unmiti- gated	Miti- gated
4	Central Way/Parkplace Driveway	Install signal	<u>F/>200</u>	C/21.3	--	--	--	--
101	Lake Washington Boulevard/NE 38th Place	Add 720-ft right lane on northbound receiving lanes (north of the Intersection), modified to extend up to NE 43rd St w/ bike lanes)	D/48.4	--	1.04	1.04	<u>1.48</u>	0.84
105	Central Way/6th Street	Construct dual westbound left turn lane. Modify signal to provide westbound left/northbound right overlap phase.	<u>F/96.3</u>	D/39.0	1.04	0.95	<u>1.43</u>	1.14
109	NE 85th Street/114th Avenue NE	Restripe southbound dual left and eastbound right to through conversion. Requires completion of HOV Queue Bypass for the eastbound-to-southbound on-ramp.	<u>F/227.9</u>	F/110.4	<u>1.57</u>	1.35	<u>1.41</u>	1.16
110	6th Street/4th Avenue	Dual eastbound left turn, with widening on 6th Street	<u>E/75.1</u>	C/22.0	--	--	--	--
112	Kirkland Way/6th Street	Install signal.	<u>F/231.0</u>	C/23.6	--	--	--	--
128	Central Way/5th Street	Install signal.	<u>E/66.2</u>	D/38.7	--	--	--	--
129	Central Way/4th Street	Extend two-way-left-turn by moving crosswalk to Parkplace Signal	<u>F/119.0</u>	C/21.3	--	--	--	--
169	6th Street/7th Avenue	Add left turn lanes on northbound and southbound approaches	<u>F/86.7</u>	E/42.6	--	--	--	--
202	100th Avenue NE/NE 124th Street	Modify the signal phase to be the same as during AM peak period, with northbound and southbound to be split phase, and southbound configuration to be left, left/through shared, and through/right shared. ²	E/62.6	--	1.09	1.09	1.29	1.15
204	116th Way NE/NE 132nd Street	Reconfigure the intersection based on the 132nd Street Study and new I-405 northbound on-ramp	--	--	1.00	1.00	<u>1.49</u>	1.03
211	Market Street/15th Avenue	Install signal	<u>F/153.3</u>	B/15.9	--	--	--	--
304	NE 132nd Street/124th Street NE	Construct eastbound dual left turn lane, based on the 132nd Street Study	F/217.4	--	1.07	1.07	<u>1.44</u>	1.36
316	Totem Lake Boulevard/NE 132nd Street	Reconfigure the intersection based on the 132nd Street Study and new I-405 northbound on-ramp	E/48.7	--	1.09	1.09	<u>1.70</u>	1.13
402	NE 85th Street/124th	Add northbound right-turn-only	<u>F/81.0</u>	E/78.4	1.08	1.08	1.01	1.01

ID	Location	Improvement	2014 TIA (LOS/Delay)		2014 Concurrency (V/C)		2022 Concurrency (V/C)	
			Unmiti- gated	Miti- gated	Unmiti- gated	Miti- gated	Unmiti- gated	Miti- gated
	Avenue NE	pocket						
	SW Subarea Average (for concurrency)		--	--	<u>0.91</u>	0.88	<u>1.05</u>	0.92
	NW Subarea Average (for concurrency)		--	--	0.81	0.81	<u>1.13</u>	1.01

1. TIA = Traffic Impact Analysis; LOS = Level of Service, Delay = average seconds per vehicle

2. No concurrency impact was identified at this intersection. This mitigation measure is recommended in order to improve conditions in the subarea, to address the concurrency impact that was identified in the northwest subarea under the 2022 Proposed Action scenario.

Table 4 summarizes the estimated cost of projects that have been identified as mitigation.

Table 4. Estimated Costs of Proposed Capacity Improvements

No	Intersection	Potential Mitigation	Estimated Cost	No Action	Proposed Action
Improvements Needed through 2014					
4	Central Way/ Parkplace Driveway	Install signal	\$566,000	X	X
109	NE 85th Street/ 114th Avenue NE	Restripe southbound dual left and eastbound right to through conversion (CIP Project #TR-0079 - funded). Requires CIP Project #TR-0056 (currently unfunded) HOV Queue Bypass for the eastbound-to-southbound on-ramp	166,400	X	X
129	Central Way/4th Street	Extend two-way-left-turn by moving crosswalk to Parkplace Signal	31,200	X	X
105	Central Way/6th Street	Construct dual westbound left turn lane. Modify signal to provide westbound left/northbound right overlap phase	3,044,000	-	X
110	6th Street/4th Avenue	Dual eastbound left turn, with widening on 6th Street	580,000	-	X
112	Kirkland Way/6th Street	Install signal. (CIP Project #TR-0065 - unfunded) ⁴	564,000	-	X
128	Central Way/5th Street	Install signal.	564,000	-	X
169	6th Street/7th Avenue	Add left turn lanes on northbound and southbound approaches	89,400	-	X

No	Intersection	Potential Mitigation	Estimated Cost	No Action	Proposed Action
211	Market Street/15th Avenue	Install signal. (CIP Project #TR20-11 - unfunded)	564,000	-	X
402	NE 85th Street/ 124th Avenue NE	Add northbound right-turn-only pocket	889,000	-	X
Cost of Improvement Projects Through 2014				\$763,600	\$7,058,000
Improvements Needed through 2022					
101	Lake Washington Boulevard/NE 38th Place ¹	Add 720 ft right lane on northbound receiving lanes (north of the Intersection), modified to extend up to NE 43rd St w/ bike lanes (CIP Project #TR-0090 – unfunded)	1,953,000	X	X
204	116th Way NE/ NE 132nd St	Reconfigure the intersection based on the 132nd St Study and New I-405 SB off-ramp. (CIP Project #TR20-11 – unfunded)	WSDOT ³	X	X
304	NE 132nd St/124th Ave NE	Construct eastbound dual left turn based on the 132nd Street Study	4,438,100	X	X
316	Totem Lake Blvd/ NE 132nd St	Reconfigure the intersection based on the 132nd Street Study and new I-405 northbound on-ramp. CIP Project #TR20-11 – unfunded)	WSDOT ³	X	X
202	100th Ave NE/NE 124th St	Modify the signal phase to be same as during AM peak period. NB and SB to be split phase. The SB lane configuration change to left, left/through shared and through/right shared during the peak period. ²	-	-	X
Cost of Improvement Projects 2015 through 2022				\$6,391,100	\$6,391,100

1. This cost estimate assumes that widening would occur to allow the bicycle lane that currently exists along this segment of roadway to remain. If the improvement were made without keeping the bike lane, the estimated project cost would be \$2,234,000
2. No cost is assumed for this measure, since it is already being implemented during the AM peak period.
3. Assumed that improvement to this intersection would be included in the larger improvement that is planned by WSDOT for this location.
4. Projects funded in the CIP are partially funded by existing impact fees.

Other Impacts and Mitigation

Table 5 summarizes the other potential impacts and proposed mitigation measures that have been identified for the Proposed Action. (Note, incorporated Plan Features are those features that the applicant has built into the proposal)

Table 5. Other Impacts and Mitigation

Impacts	Mitigation
<p>Parking</p> <p>For Area A, the spaces that would be required by the City's zoning code are much higher—approximately 5,157— than the approximately 3,500 spaces that are being proposed. The differences in standard code parking requirements and the proposed parking supply are due to expected shared parking and proposed measures to reduce parking demand. A parking management program, which encourages use of alternative modes and efficient use of the available parking, will be needed to ensure that parking supply is adequate to meet demand. Otherwise, there is potential for parking to spill out into the surrounding neighborhoods, which would be considered a significant impact.</p> <p>Since proposals for Areas B and C do not include any provisions for reduced parking supply, it is assumed that future development in these areas would follow provisions of the City zoning code.</p>	<p>Incorporated Plan Features</p> <p>Under the Proposed Action, Area A includes a total of 3,500 parking spaces at full build-out, which is lower than the approximate 5,100 spaces that would be required under current zoning. The applicant has provided analysis that demonstrates how the proposed amount of parking is expected to accommodate the shared parking demand.</p> <p>The parking demand estimate for the Area A mixed-use project was determined by combining parking accumulation (demand by time of day) for each of the proposed land uses, considering the following factors:</p> <ul style="list-style-type: none"> ▪ Mode of travel. The Area A development would include a transportation demand management plan developed for the office tenants to increase transit, carpooling, walking, and bicycling to work. Increased use of these modes would 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. ▪ Internal and multi-stop trips. Many of the daytime customers to the area's retail and restaurant uses are expected to come from offices at the area. Likewise, hotel guests could also shop or dine in the area. No additional parking would be needed for these customers. Many of the area's customers will visit more than one use. For example, a restaurant patron may also shop at the supermarket or retail store, or visit the theater. ▪ Parking demand by time of day or day of week. The peak parking demand for each use occurs at different times of the day or on different days of the week. This allows some of the parking to be shared among uses.
	<p><u>Transportation Demand Management</u></p> <p>The cumulative parking demand estimates for the office use require that some of the trips to and from Area A would occur by modes of travel other than SOV. To encourage use of other modes, the project proposes to implement a Transportation Management Plan (TMP) for the office tenants. The following elements are proposed:</p> <ul style="list-style-type: none"> ▪ Provide a transportation coordinator to manage and promote the program. ▪ Provide transit pass subsidy. ▪ Charge for daily parking. ▪ Offer a part-time parking pass option. ▪ Provide ride-match information. ▪ Provide free parking for vanpools. ▪ Provide reserved parking spaces for vanpools. ▪ Provide shower and locker facilities. ▪ Provide bike storage. ▪ Provide parking for a car-sharing program (e.g., Zipcar). ▪ Offer guaranteed ride home to employees who commute by

Impacts	Mitigation
	<p>alternative modes.</p> <ul style="list-style-type: none"> ▪ Install electronic kiosk(s) that provides up-to-date information about transportation services. ▪ Monitor success of the TDM program. ▪ Join transportation management association. ▪ Implement a TDM program as a condition of development approval, with specific measures defined in the case it does not meet mode split targets.
	<p>Parking Management</p> <p>The following parking management measures are proposed:</p> <ul style="list-style-type: none"> ▪ Charge for all daytime parking. ▪ Validate customer and visitor parking. ▪ Use internal gates and controls to divide the garage into sections that are reserved for specific uses at different times of the day. ▪ Reserve areas of the garage for short-term parking by customers and visitors. ▪ Reserve parking for hotel. ▪ Share office parking on weeknights and weekends. ▪ Do not reserve individual spaces for office parking. No parking space in the garage would be reserved for an individual user. This allows all office parking to be shared by employees. ▪ Monitor garage use and adjust allocation or implement additional management measures, if needed. ▪ Monitor public parking outside of Areas A, B, and C. The City may require a parking management program be implemented as a condition of development approval, with specific measures defined in the case that tenants do not meet parking demand targets.
	<p>Permitted Parking in Neighborhoods</p> <p>If, over the long-term, monitoring indicates that even with the parking management measure described above in place, that parking supply is not adequate to meet typical demand, and overflow traffic is parking in neighborhoods, the City may consider establishing permitted parking in neighborhoods. This would allow residents to park long-term in their neighborhoods at no charge, but would restrict visitors to an established maximum.</p>
	<p>Policy and Land Use Measures</p> <p>In the case that revenue is not available to address all identified capacity needs, or if TDM measures do not produce adequate reduction to reduce needed capacity improvements, the GMA allows the City to achieve the needed balance between land use and the transportation system through policy or land use measures. Land use measures may include reducing the level of development at certain locations to reduce the number of trips in the transportation system. Policy measures can include refining LOS and concurrency standards to allow more congestion at certain locations.</p>
<p>Pedestrian and Bicycle Mobility</p> <p>With the Proposed Action's potential for a master planned redevelopment more site amenities are likely to be provided in terms of non-motorized connectivity, landscaping, and gathering spaces. With these features, the Proposed Action would be more conducive to pedestrian and bicycle mobility, and would support the City's non-</p>	<p>No mitigation required.</p>

Impacts	Mitigation
<p>motorized policies.</p> <p>Lower square footages for retail and commercial uses and a potentially less efficient use of land could be less conducive to pedestrian and bicycle mobility and less supportive of the City's non-motorized policies than the Proposed Action. However, there is a greater potential for improved pedestrian and bicycle mobility compared with current conditions.</p>	
<p>Transit Service</p> <p>Higher density under the Proposed Action would be more conducive to transit service and would support the City's transit policies. A report by the PSRC identifies employment densities of 25 jobs per gross acre as a threshold for supporting frequent high-capacity transit service, with a density of 50 jobs per acre as preferred for higher frequency service. The PSRC report identifies that commercial uses with surface parking should strive for a floor area ratio of at least 0.5 to 1.0, and preferably 2.0.</p> <p>The Proposed Action would result in a net increased employment density of 238 jobs per acre above the No Action employment density. The Proposed Action alternative is expected to result in an employment density of 462 jobs per acre and a floor area ratio of 3.25. Both of these measures are well above the thresholds identified by the PSRC to support frequent high capacity transit service.</p> <p>Under the No Action alternative, increased residential and employment growth is anticipated, although to a lesser degree than under the Proposed Action. Therefore, it is expected that the No Action alternative would support increased transit service, although to a lesser degree than the Proposed Action. The No Action alternative is expected to result in an employment density of 224 jobs per acre and a floor area ratio of 1.4. Both of these measures are above the thresholds identified by the PSRC to support frequent high capacity transit service.</p>	<p>No mitigation required.</p>
<p>Greenhouse Gasses</p> <p>Greenhouse gas emissions are expected to increase with increased vehicle traffic. However, trip reduction measures would also have the effect of reducing greenhouse gases.</p>	<p>In addition to trip reduction measures such as transit, carpooling, and walking, there are several other ways that future developers in the analysis area could reduce greenhouse gas emissions. Appendix D of the DEIS lists a variety of additional mitigation measures that could reduce GHG emissions caused by building construction, space heating, and vehicle usage.</p>