REVISED AUGUST 2014

CITY OF KIRKLAND
Department of Public Works and
Planning and Community Development Department
123 Fifth Avenue, Kirkland, WA 98033
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To: Interested Parties

From: Eric Shields, SEPA Responsible Official

Date: August 2014

Subject: **Traffic Impact Analysis Guidelines**

I. Development Proposals Subject to SEPA and Road Concurrency

Development proposals that meet the threshold outlined below are subject to both environmental review under the State Environmental Policy Act (SEPA) and road concurrency under the City's Concurrency Management Ordinance.

The threshold for SEPA and road concurrency review include:

- Preliminary subdivisions of 10 lots or more;
- Residential projects of 21 units or more;
- Farming structures of more than 30,000 square feet;
- Non-residential buildings of more than 12,000 square feet with associated parking of more than 40 stalls;
- Parking lots with more than 40 stalls; or
- Additions or modifications to, or replacement of, any building or facility if the proposal changes the character of the building or facility and/or the cumulative impacts make the total development no longer exempt.

II. Transportation Plans – Concurrency LOS and City Project List

The City's adopted level of service standards (LOS) for road concurrency are found in the Comprehensive Plan. The City has a two part standard based on the ratio of traffic volume to intersection capacity (V/C) for system signalized intersections at PM peak hour:

Part 1. The average level of service (V/C ratio) of the impacted sub-area(s) is estimated and then compared to the adopted level of service standard from the Comprehensive Plan (see Figures 4a and 4b in the attached Traffic Impact Analysis Guidelines).

Part 2. All system intersections must have a V/C ratio of 1.4 or better.

The City has developed a long range transportation plan to maintain the adopted concurrency LOS. The long range transportation plan is composed of a 6-year

and a 20-year transportation project list found in Table CF-10 of the Comprehensive Plan.

III. Road Impact Fees

The transportation projects that increase capacity are funded in part by road impact fees (see Title 27 of the Kirkland Municipal Code). Capacity is reduced when new development generates more traffic in the transportation system. New development that generates traffic is required to pay its proportionate share to maintain the concurrency LOS through the payment of road impact fees.

The City's impact fees schedule (see Appendix A of the attached Traffic Impact Analysis Guidelines) was derived by taking the total cost of the transportation capacity projects needed to maintain the LOS, determining the expected land use growth within the city and adjacent areas outside of the city, converting the land use growth to traffic growth, deleting the pass-through traffic and then calculating the "cost per trip" by dividing the total growth costs in Kirkland cost by the number of new vehicle trips. The Institute of Transportation Engineers' (ITE) published trip generation rates were used to compute the magnitude of impact for various land use types.

IV. Road Concurrency Review

Concurrency review looks at a new development's vehicular impact on the *transportation network* as measured by the adopted level of service standards (LOS) for road concurrency found in the Comprehensive Plan.

All new development must pass the concurrency test before making an application for SEPA review, land use permits and building permits (see Title 24 of the Kirkland Municipal Code). The two part LOS standard note above must be met. The purpose of the test is to ensure that the proposed development will not result in the LOS falling below the adopted LOS. If concurrency is not passed, the applicant has options outlined in the attached Traffic Impact Analysis Guidelines.

V. SEPA Review

SEPA review looks at all traffic impacts on the *immediate and nearby vicinity*, such as vehicular access points, frontage right-of-way improvements and nearby intersections (see Kirkland Municipal Code, Title 24).

Review of transportation impacts is different for SEPA and concurrency. SEPA uses the "significance adverse environmental impact" standard and a LOS of A through F with a different calculation approach than road concurrency (see Table 1 in the attached Traffic Impact Analysis Guidelines). The intention of SEPA mitigation is to reduce a project's impact on a given intersection to attain the next better SEPA LOS. In addition, SEPA review looks at safety, specific access

points, circulation needs, and impacts on neighborhoods, pedestrians and transit facilities.

Under SEPA, the applicant must incorporate mitigating measures into the proposal as identified in the SEPA review process that are needed to reduce the impacts below the "significance adverse environmental impact" threshold. If no mitigating measures are needed or if mitigating measures are incorporated in the proposal, then the City will issue a Determination of Non-Significance and the applicant may obtain the necessary permits.

Some proposed developments may create a "significance adverse environmental impact" under SEPA to an intersection that is planned to be improved under the City's long range transportation plan. SEPA mitigation is considered met through the payment of the road impact fee for any impacted intersection that the City plans to improve and road impact fees are used to pay for the improvements. However, SEPA mitigation is not entirely met if the City's planned improvements for the impacted intersection do not include all of the improvements needed to fully mitigate impacts to the intersection based on the SEPA LOS.

For example, the City's planned improvements for a particular intersection does not include a left-turn lane, but SEPA review determines that the left-turn lane is needed to reduce the development's impact below a "significant adverse environmental impact." The applicant would need to install the left turn-lane or provide funds to the City to cover the cost of the additional lane when the intersection improvements are made.

VI. Review Process

A. Timing of Concurrency and SEPA review

Concurrency must be passed *before* both the SEPA review process begins and a land use permit or building permit is submitted. The City uses the results of the concurrency test to determine what additional information may be needed in the Traffic Impact Analysis for SEPA review.

Within *90 calendar days* of passing the concurrency test, a complete SEPA submittal must be provided to the City, including a checklist, a Traffic Impact Analysis and any other required environmental studies. If this deadline is not met, the concurrency test expires and the applicant must reapply for concurrency.

Once the City has completed its review of all environmental documents, a determination of Non-Significance (DNS), a mitigated DNS, a determination of Significance (DS) and/or Concurrency Notice are issued. The SEPA review process must be complete, including the appeal process, before the City may render a final decision on a land use permit or issue a building permit.

B. Request for Reconsiderations for Concurrency Test Notice

If a concurrency test is not passed, an applicant may submit a request for reconsideration of that decision within *14 calendar days* of the decision. Refer to the Kirkland Municipal Code Title 25 to see what can be reconsidered.

C. Appeals of Concurrency Test Notice and SEPA Determinations

The Concurrency Test Notice and/or the SEPA determination may be appealed by the applicant or anyone directly affected by the proposed development. Appeals must be filled within *14 calendar days* of the issuance of the SEPA Determination of Non-Significance (DNS), including those with mitigation, or within *7 calendar days* of publication of a Determination of Significance (DS). Appeals are heard at an open record hearing.

VII. Guidelines for Traffic Impact Analysis

Development proposals subject to SEPA and road concurrency require a traffic impact analysis to estimate impacts and mitigation and to determine if the development will result in the reduction of level of service below the adopted standards.

To assist applicants in the preparation of the information needed for the road concurrency test and traffic impact analysis for SEPA, the City has established the attached Traffic Impact Analysis Guidelines.

The goals of these guidelines are to:

- Assist in the determination of project compliance with road concurrency requirements and the State Environmental Policy Act (SEPA);
- Allow a thorough and complete review of potential traffic impacts; and
- Ensure that review and mitigation of all proposals occur in a consistent and equitable manner.

The attached guidelines are intended to cover a wide variety of situations and do not include special requirements that may apply to a specific proposal. To be sure that a specific traffic analysis contains the proper information, please review these guidelines with the Public Works Department's Transportation Engineer (425-587-3869).

CITY OF KIRKLAND TRAFFIC IMPACT ANALYSIS GUIDELINES

SEPA –TRANSPORTATION CONCURRENCY - ROAD IMPACT FEES

Revised June, 2012

Introduction

These guidelines describe how to prepare a traffic study, or Traffic Impact Analysis (TIA) for developments in the City of Kirkland. A traffic study is needed to determine if the project passes the transportation concurrency test and to determine impacts and mitigation for SEPA determinations. Traffic studies are also needed for independent fee calculations under the Road Impact Fee ordinance.

The guidelines are written in stepwise fashion from the perspective of an applicant wishing to understand the transportation review process administered by the Public Works Department. Because guidelines cannot cover all the circumstances that can arise in TIA preparation, applicants may be asked to do less or more than is described below. Questions are welcome and frequent communication between the applicant and the City makes for better analyses and projects.

The TIA must be prepared by a professional engineer or a qualified professional who have knowledge and experience in transportation engineering and planning. The Public Works Department will not review studies prepared by unqualified individuals. Thang Nguyen, the Public Works Transportation Engineer, is the primary contact for traffic analysis review. He can be reached at 425-587-3869 or at tnguyen@kirklandwa.gov

Summary of the review process

The Concurrency test must be passed before the SEPA review process can begin and a land use permit or building permit can be submitted. Concurrency review involves the following steps: the applicant has a pre-application meeting with the Public Works staff and submits preliminary information for the concurrency application; the Public Works staff reviews the preliminary application and provides information on trip distribution or PM peak link volumes; the applicant submits the concurrency application; and then the Public Works staff does the concurrency test and, if passed, issues a Concurrency Test Notice. The applicant or affected parties can appeal the Concurrency Test Notice.

Once the development permit or building permit is approved, a Certificate of Concurrency is issued. Both the Concurrency Test Notice and the Certificate of Concurrency have expiration dates outlined in the steps below and in the Kirkland Municipal Code Title 27.

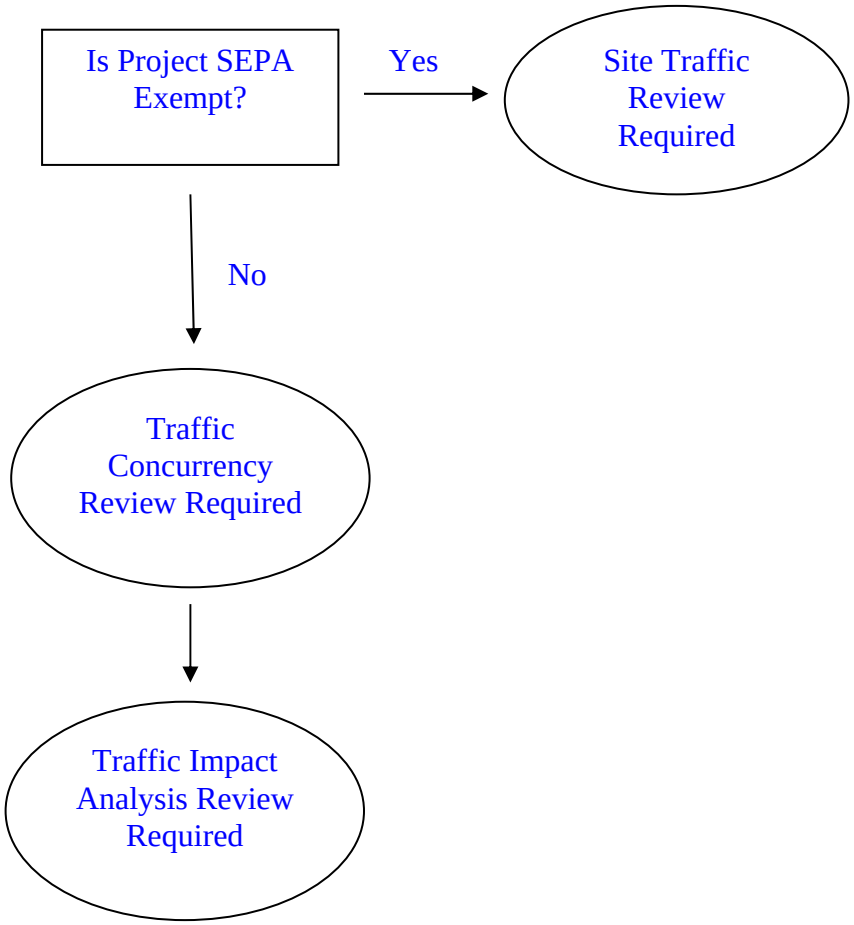
The SEPA checklist along with a complete traffic report and any other required environmental study must be submitted within 90 calendar days of the Concurrency Test Notice or the notice expires.

Preparing the traffic report for SEPA review involves the following steps: the applicant determines the significant road facilities for the project, computes the impacts, identifies the traffic mitigation measures (SEPA and concurrency

mitigations and road impact fees) and then submits the traffic report along with the SEPA checklist and any other required environmental studies.

Public Works reviews the traffic study and, if no modifications are needed, give a memo with the traffic SEPA conditions to the Planning Department. The Planning Department then completes the environmental review and issue the SEPA determination. Both the SEPA determination and the Concurrency Test Notice can be appealed by the applicant or affected parties.

Illustrated Review Procedure



CONCURRENCY REVIEW

Step1. Applicant and public works staff meet to discuss preliminary information needed for concurrency and SEPA:

This meeting is optional, but strongly encouraged and is used to clarify issues surrounding a project or some element of the review process. Meetings can take place over the phone and before preliminary information is submitted or after Public Works has received the information.

Step 2. Applicant prepares preliminary information for the concurrency application:

Preliminary information includes:
1. A narrative description of the project
2. Address or approximate location of the project site
3. Size and type of land use(s)
4. Project access/driveway location(s)
5. Vicinity Map showing the site location
6. Anticipated build-out year
7. Daily, AM and PM peak hour trip generation[1]

Notes on Trip Generation:

1. For most proposed uses, estimates of trip generation based on the *ITE Trip Generation Report*, most recent edition, will be used for trip generation rates. The use of a fitted curve or average rates will be decided on the basis of which method's data set best matches the proposed use.

2. Either City staff or the applicant may propose an alternate to the ITE rates noted above in No. 1. If the proposed project does not fit the land use within the ITE Trip Generation Report, the applicant shall provide local trip generation data for Public Works Staff review and approval. Proposals to develop independent trip generation estimates or to consider Trip Demand Management (TDM) for a specific project will be evaluated on a case by case basis. Where possible, trip generation data shall be developed by measurement rather than estimation.

3. Consistency in trip generation shall be maintained for Concurrency, SEPA and Road Impact Fee calculations. This means that if a non-ITE rate is developed for Concurrency and SEPA, the same rate shall be used for Road Impact Fee calculations as well (see the Kirkland Municipal Code, Chapter 27.04.040, and Appendix A in this memo).

4. The number of trips generated by the existing land use may be deducted from the number of trips generated by the proposed land use. [1] Trips that would have been generated by buildings that have been vacant for more than 12 months may not be deducted.

5. Rates may be adjusted to account for pass-by, diverted, and internal trips, and the use of such adjustments will be considered on a case by case basis.

Notes on Horizon Year:

1. Concurrency is based on the Vehicular LOS standards in the Comprehensive Plan (see Appendix C in this memo), and those standards are based on the projected level of service in a certain year. Also, concurrency requires that the testing of new development projects include the future trips from all projects that have received a passing Concurrency Test Notice. Therefore, for concurrency testing, all approved projects are added to the 6 year horizon year for the vehicular LOS standard found on Table T-2 in the Comprehensive Plan.

[1] Note that for Road Impact Fees, January 1, 1998 is used as the earliest date for which prior use credit may be claimed. That date stems from the calculation method for the Road Impact Fee rates. Similarly, 12 months stems from the calculation method for Concurrency and SEPA; namely that the calculations are based on the City's traffic counts, which are made every 12 months.

2. For SEPA analysis, the year of the project build out year will be used as the horizon year.

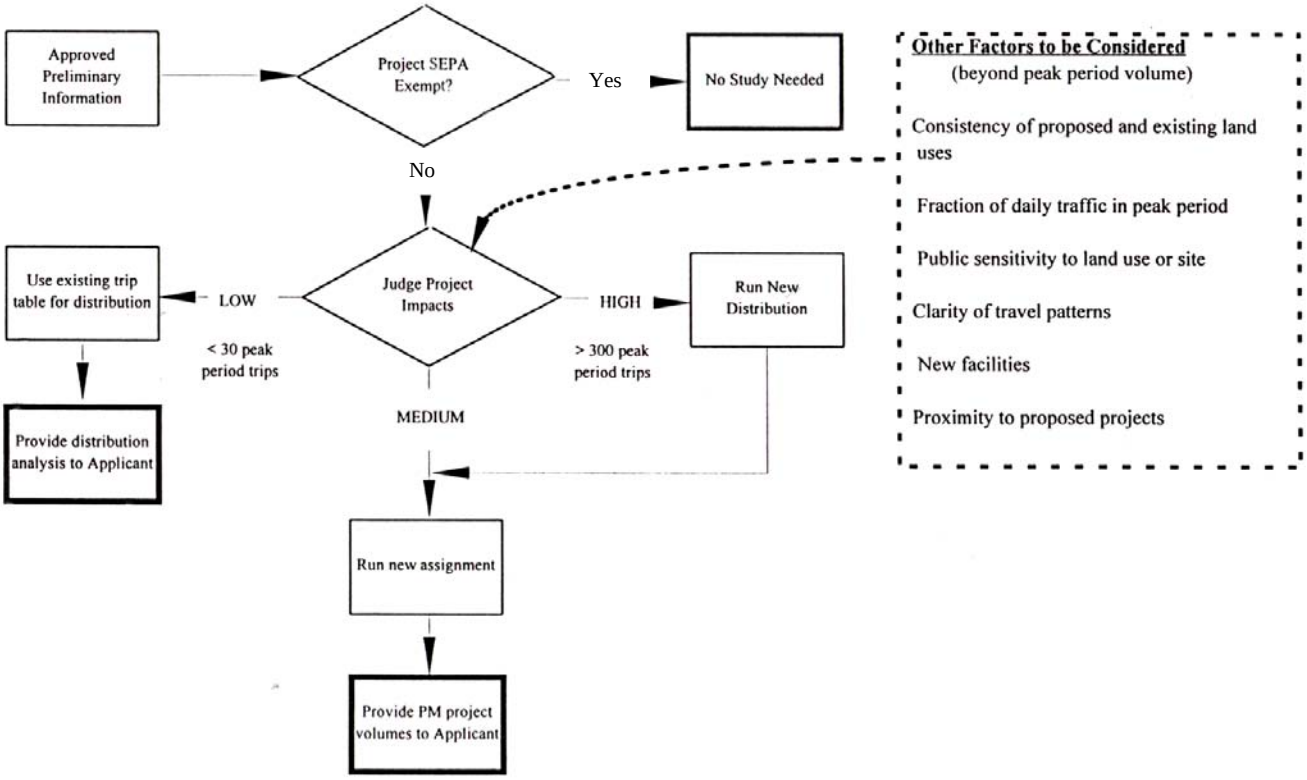
Step 3. Public Works Department evaluates preliminary traffic information for the concurrency application:

The Public Works Department reviews the submission of the preliminary traffic information for the concurrency application. If the information is complete, the project proceeds to Step 4. If the preliminary information needs to be revised, discussions take place between the Public Works Department and the applicant about any special items to be included in the Traffic Impact Analysis. Depending upon the specific nature of the proposal, it may be necessary to estimate longer term traffic impacts. In that case, Public Works staff makes recommendations regarding the appropriate project horizon year.

Step 4. Public Works supplies trip distribution and/or assignment to applicant:

The Public Works Department provides to the applicant information concerning how PM peak project traffic travels on the roadway network in the form of a distribution analysis or PM peak link volumes, depending on the project. The manner in which project traffic uses the network is estimated using the BKR model as shown in Figure 1. The location of project driveways may change the project traffic circulation within the vicinity of the project site. The applicant may suggest modification to the City by providing traffic distribution and assignment for City staff review and approval.

Figure 1
Process for Selecting Use of BKR Model to Assign PM Peak Traffic



Step 5. Applicant applies for concurrency test and city computes level of service at signalized intersections for concurrency test:

The applicant includes the preliminary traffic information with a completed concurrency application and the appropriate fee. The application is available from the Public Works Department. The applicant also provides a figure illustrating the impacted street network and the Daily and PM peak hour traffic assignments at significant and signalized intersections.

After reviewing the application, the City provides the following information to the applicant:

1. Background traffic for the future (build out of the project) year including through traffic;
2. Traffic from all projects, regardless of their build out year, that have received a passing Concurrency Test Notice and are not yet built; and
3. Projects that are built, but not reflected in the current traffic count database.

The future traffic information is to be used for SEPA traffic analysis. The City computes the Level of Service at existing signalized intersections using the TRB Circular 212, Critical Movement Analysis: Planning Method. The individual system intersection and the average Level of Service at signalized intersections

for each subarea are needed for performing the concurrency test in Step 6. The City then summarizes the project's impacts on Figure 2, the Concurrency Form.

Figure 2
Example of Concurrency Form

1 Project ID:	**4** Transportation Concurrency Status:	**5** Transportation Concurrency Certificate Date:
2 Project Description:	**6** Transportation Concurrency Test Date:	**7** Certificate of Occupancy Date:
3 Build-out Year:		

SUMMARY OF TRAFFIC IMPACTS

8 Daily Trips	**9** PM Peak Trips	**10** Impacted Subarea(s)	**11** TAZ

SIGNALIZED INTERSECTION P.M. PEAK TRAFFIC IMPACTS

CODE	INTERSECTION	Project P.M. Peak Turning Volumes												PM Peak Trips			
		Northbound			Southbound			Eastbound			Westbound						
		LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT				

TRANSPORTATION CONCURRENCY TEST

Subarea No.	LOS Standards		LOS with Project Impacts		A ≤ a?	B ≤ b?
	A= No. exceeding[1]	B= Average V/C[2]	a= No. exceeding[1]	b= Average V/C		
1. Southwest	4	0.97				

2. Northwest	2	1.05				
3. Northeast	7	0.87				
4. East	2	1.09				
TEST RESULTS						
Passed ☐ Not Passed ☐						

* Based on Critical Movement, Planning Method TRC #212.

[1] Number of intersections exceeding Average V/C LOS Standard (2012)

[2] Six Year Target Average V/C ratio. See step 6, part 1 of the guidelines

DEFINITIONS

1 Project ID:
Project identification number based on Permit*Plan file number plus another number representing order of arrival into the database. Should be alphanumerical and contain up to twelve characters.

2 Project Description:
Project description in terms of land use type, area/units, and location.

3 Build-out Year:
Year when the project will be fully operating.

4 Transportation Concurrency Status:
Define whether the project has:
a. passed concurrency test
b. obtained Certificate of Concurrency
c. received Certificate of Occupancy
d. been withdrawn

5 Transportation Concurrency Test Date:
Date when the project passed concurrency test.

6 Transportation Concurrency Certificate Date:
Date when the project received a Certificate of Concurrency.

7 Certificate of Occupancy Date:
Date when the project received a Certificate of Occupancy.

8 Daily Trips:
Total number of daily trips generated by the project. Five digits.

9 P.M. Peak Trips:
Total number of p.m. peak trips generated by the project. Four digits.

10 Impacted Subareas:
Subarea where the project is located, plus other subareas affected with more then 10 p.m. peak project trips. Two digits.

11 TAZ:
Traffic Analysis Zone where the project is located. Numerical three digits.

Northbound: p.m. peak project traffic going north on south leg of the intersection. Four digits.

Southbound: p.m. peak project traffic going south on north leg of the intersection. Four digits.

Eastbound: p.m. peak project traffic going east on west leg of the intersection. Four digits.

Westbound: p.m. peak project traffic going west on east leg of the intersection. Four digits.

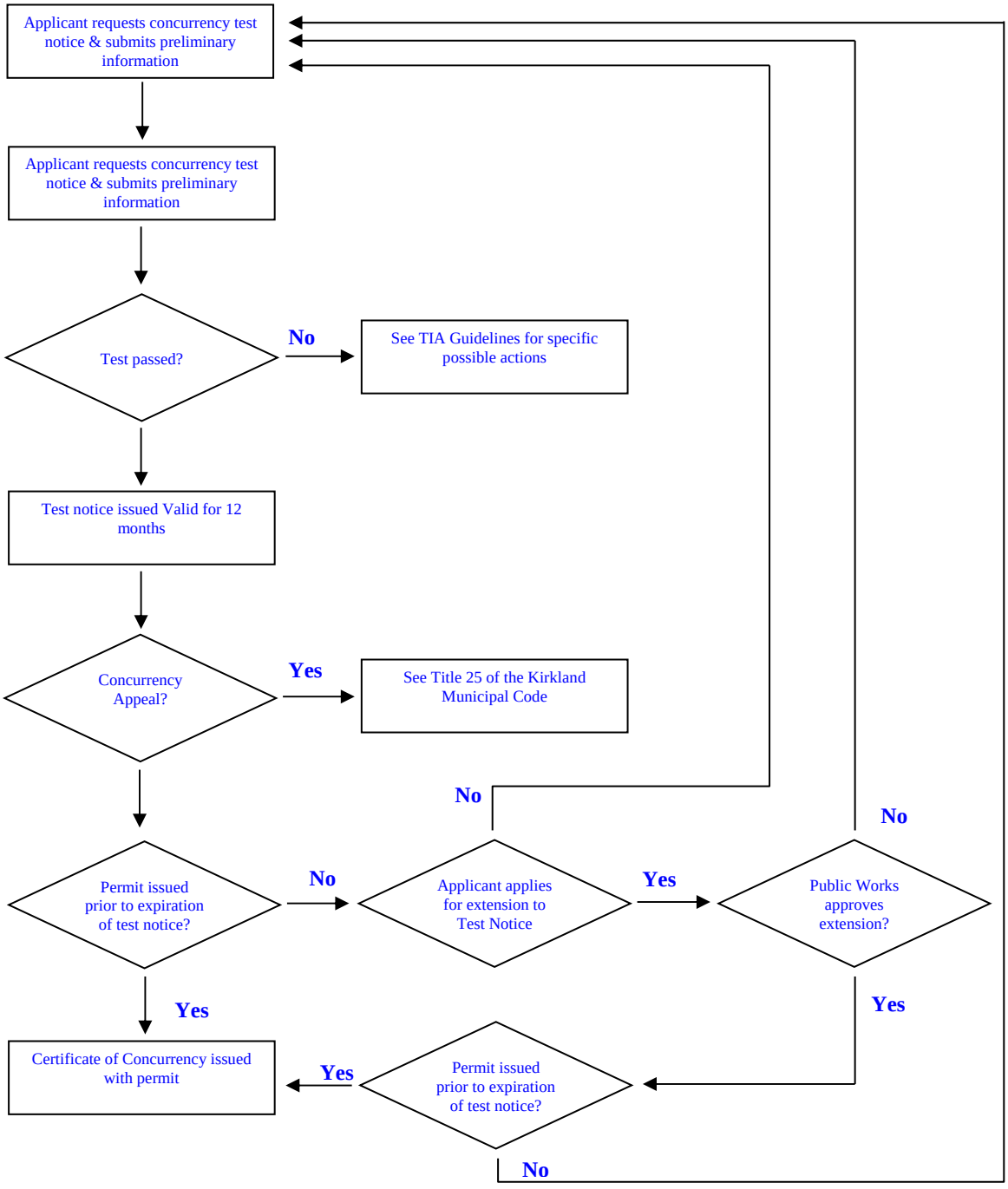
LT: Left-turn traffic movement.

TH: Through-traffic movement.

RT: Right-turn traffic movement.

The Concurrency process in ordinance form is described in Title 25 of the Kirkland Municipal Code and the Concurrency process in described in the flowchart in Figure 3.

Figure 3
Concurrency Process



Step 6. Public Works Department performs concurrency test:

The transportation concurrency test implements Policy T-5.3 of the City's Comprehensive Plan by ensuring that new development projects meet the two adopted standards for peak-hour level of service. The City forecasts future traffic volumes to the year of the adopted level of service for concurrency testing. These traffic volumes include all proposed development projects that have received a passing Concurrency Test Notice. The test consists of the following two parts and the proposal must pass both Parts 1 and 2 in order to pass the transportation concurrency test:

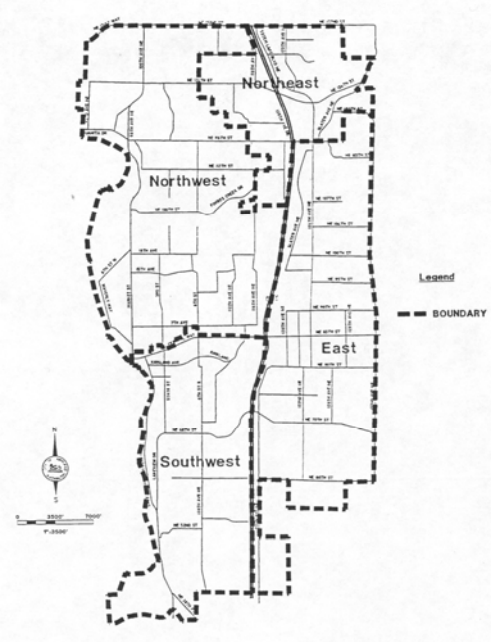
Part 3. The average level of service (V/C ratio) of the impacted sub-area(s) is estimated and then compared to the adopted level of service standard from the Comprehensive Plan. See Figures 4a and 4b.

Part 4. All system intersections must have a V/C ratio of 1.4 or better.

Figure 4a
Example of Maximum Allowed Subarea Average V/C and Maximum V/C for Signalized System Intersection

	Current Year				
Subarea	2012	2013	2014	2015	2016
Southwest	0.90	0.91	0.91	0.91	0.91
Northwest	0.94	0.95	0.95	0.96	0.97
Northeast	0.92	0.93	0.93	0.94	0.95
East	1.07	1.07	1.07	1.08	1.08
Individual System Intersection V/C	**1.04**	**1.04**	**1.04**	**1.04**	**1.04**

Figure 4b
Transportation Subareas



Step 7. Public Works evaluates concurrency test results and issues concurrency test notice:

The Public Works Department fills in the Concurrency Test Results portion of the Concurrency Form (Figure 2) and provides a copy of the form to the applicant along with the Concurrency Test Notice and the results of the concurrency test. The concurrency review process is not complete until the appeal period expires (see below appeal process).

If the proposal passes the test, the applicant may proceed with the SEPA review process in Step 9.

Expiration of Concurrency Test Notice

The Concurrency Test Notice expires and a new concurrency test is required unless:

1. The applicant submits a complete SEPA checklist, traffic impact analysis and all required environmental studies to the City within 90 calendar days of the Concurrency Test Notice.

2. The Public Works Department issues a Certificate of Concurrency within one year of issuance of the Concurrency Test Notice (see Step 8) or the applicant submits a written request for an extension prior to expiration of the Concurrency Test Notice and the Public Works grants the request (see Kirkland Municipal Chapter 25.10.020(7) and Appendix B in this memo).

Appeals

The applicant or any affected individual or entity may appeal the Concurrency Test Notice. Appeals must be filed within 14 calendar days of the issuance of the determination of Non-Significance (DNS) or within 7 calendar days of the date of publication of a Determination of Significance (DS). Appeals are heard at the open record hearing.

If the project fails the concurrency test, the applicant has the following options:

1. Reduce the size of the development or change the type of uses to reduce the trip generation rate;
2. Delay the application until additional improvements have been built by the City or by others;
3. Propose appropriate mitigation. The implementation of these mitigation measures shall be concurrent with the development, usually prior to issuance of a certificate of occupancy; or
4. Submit a Request for Reconsideration of the concurrency test disapproval (see the Kirkland Municipal Code Chapter 25.22 for what may be reconsidered.). The request must be filed with the Public Works Department within 14 calendar days of the written concurrency test decision.

Depending on what option is chosen, the applicant may have to go back to Step 6, or possibly Step 3 depending on the nature of the project.

Step 8. Public Works issues Certificate of Concurrency:

Public Works grants a Certificate of Concurrency at the same time a land use permit or building permit is approved if the applicant holds a valid Concurrency Test Notice. The Certificate of Concurrency is a statement granting the certificate included in the development standards of the underlying land use permit, if applicable, or in the conditions of approval for the underlying building permit. An hard-copy certificate document is not given.

A Certificate of Concurrency expires if:

1. The underlying development permit and/or building permit expire and the development project has not been completed.

2. The building permit has not been issued for a building approved under the Concurrency Test Notice within 6 years from the date of issuance of the Concurrency Test Notice. If a Concurrency Test Notice includes multiple buildings in a development and a building permit has not been issued for all building, then the Certificate of Concurrency expires for those buildings without valid building permits.

If the Certificate of Concurrency expires, the applicant must reapply for concurrency.

SEPA REVIEW

Step 9. Applicant determines Significant Facilities for SEPA:

Preparation of preliminary information and trip distribution and assignment (see Steps 2 and 4 above under Concurrency Review section) allows the amount of site traffic at any given intersection be determined using Figure 5. A formulated Excel spreadsheet is available for doing the proportional share calculation. For a copy, contact the City Transportation Engineer. Those intersections that have a proportional share greater than 1% are considered "significant intersections."

SEPA review and mitigation are required for roadway, intersection and safety impacts on streets carrying project traffic, except for those intersections with planned improvements funded with road impact fees.

Step 10. Applicant computes impacts at significant intersections and driveways, and performs other analyses:

For the site driveways and for the intersections identified in Step 9, the applicant performs the following analyses:

1. Analysis of existing conditions without project traffic. The applicant analyzes the existing p.m. peak hour LOS, using the operational method in the most recent *Highway Capacity Manual*. Public Works provides turning movement counts where current counts are available; otherwise the applicant makes the appropriate counts.

2. Analysis of future conditions without project traffic. The applicant calculates the LOS as in No. 1 above, using volumes for the project horizon year as determined in Step 5 under Concurrency Review. The Public Works Department supplies information on the appropriate level of background traffic, including traffic from projects that have received a passing Concurrency Test Notice and that are to be built within the horizon year of the proposed project.

3. Analysis of future conditions with project traffic. The applicant calculates the LOS as in No. 1 above, using volumes for the year the project is fully developed as in 2, as well as the project traffic as calculated in Step 9 under SEPA Review.

4. Analysis of safety impacts. The City provides traffic accident data where available. The applicant provides a site plan showing all non-project driveways within 75 feet of the project's driveway. Subsequently, the applicant analyzes and comments upon the impact of the project given the safety history of surrounding road network.

5. Analysis of access impacts. The applicant analyzes and comments on the project access and its impact to adjacent driveways and/or intersections.

All traffic impact analyses must include a map showing the future Daily and PM peak turning volumes at all significant intersections, both with and without project traffic.

Additional Analysis

In addition to intersection analysis, other analyses such as parking demand & utilization, queuing, gap analysis, impacts to non-motorized and transit or impacts to coordinated traffic signal systems may be needed depending on the project. On large projects, intersection, corridor and peak direction analyses may be required. Additionally, analysis of AM and or midday impacts may be required.

Figure 5 Worksheet for Determining Intersection Proportional Share[1]

Project Name_____

Major Street_____number of lanes* ☐ 1 ☐ >1

Minor Street_____number of lanes* ☐ 1 ☐ >1

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1. DAILY, PROJECT TRAFFIC VOLUME ENTERING THE INTERSECTION

V_1 = Major Street volume (total of both approaches) / Divide by 2 = _____

V_2 = Major Street volume (total of both approaches) / Divide by 2 = _____

2. DETERMINE GEOMETRIC FACTORS

If the number of lanes on the Major Street = 1, then f_1 = 0.833, f_2 = 1.0

If the number of lanes on the Major Street = 1, then f_1 = 1.0, f_2 = 1.33

Otherwise, f_1 and f_2 = 1.0

f_1 = _____ f_2=_____

3. CALCULATE BASE PERCENTAGES

$P_1 = (V_1 / 10{,}000) \times f_1 = (\_\_\_\_ / 10{,}000) \times \_\_\_\_ = \_\_\_\_\_$

$P_2 = (V_2 / 5{,}000) \times f_2 = (\_\_\_\_ / 5{,}000) \times \_\_\_\_ = \_\_\_\_\_$

$P_3 = (V_1 / 15{,}000) \times f_1 = (\_\_\_\_ / 15{,}000) \times \_\_\_\_ = \_\_\_\_\_$

$P_4 = (V_2 / 2{,}500) \times f_2 = (\_\_\_\_ / 2{,}500) \times \_\_\_\_ = \_\_\_\_\_$

4. CALCULATE PROPORTIONAL SHARE

$S_1 = (P_1 + P_2) / 2 = (\_\_\_\_ + \_\_\_\_) / 2 = \_\_\_\_$

$S_2 = (P_3 + P_4) / 2 = (\_\_\_\_ + \_\_\_\_) / 2 = \_\_\_\_$

Intersection proportional share = maximum of S_1 and S_2 = ☐

1. An Excel spreadsheet is available for making the calculation. Contact the City Transportation Engineer for a copy.

*Number of through lanes. Do not count exclusive turn lanes. Use the smaller number of lanes if the number of lanes is unequal on two legs. For example, if one minor leg has two lanes and one minor leg has one lane, the number of lanes on the minor leg is one.

TRAFFIC MITIGATION FOR BOTH CONCURRENCY AND SEPA

Step 11. Applicant identifies traffic mitigation measures:

Appropriate traffic mitigation shall include all or a combination of the following mitigation measures:

1) Transportation Concurrency Mitigation – Installation of Improvements.

   Development proposals that do not meet the City's Transportation Concurrency requirements, as identified in the City's Concurrency Ordinance (See Appendix B in this memo), may install an improvement in the impacted sub-area(s) in order to bring a proposal into compliance with concurrency requirements as described under Step 7 under Concurrency Review. If improvements are a part of a project noted as "used to determine Impact Fee rate" in Table CF-10 of the Comprehensive Plan (see Appendix C in this memo), the value of the improvement shall be deducted from the total amount of Road Impact Fees that the applicant is required to pay. Otherwise, no such credit shall be given.

   Additional mitigation that is not part of a planned city road project noted as "used to determine Impact Fee rate" and is necessary to meet the adopted concurrency level of service standards must be completed and the cost for the concurrency mitigation will be entirely borne by the new development.

2) Road Impact Fee - Mitigation of System-Wide Traffic Impacts.

   Road impact fees are collected to maintain the adopted level of service for the city's system-wide network of roads. The amount of the road impact fee is based on the type and size of the proposed land use using the Road Impact Fee Schedule found in Title 27 of the Kirkland Municipal Code.

   A list of the transportation improvements used in the calculation of the Road Impact Fees is in Table CF-10 of the Comprehensive Plan (See Appendix C in this memo). More information on the calculation of impact fees is available from the Public Works Development Review Staff.

3) SEPA - Installation of Improvements.

Installation of site specific improvements may be required under SEPA to offset traffic impacts from the proposed development. The type and timing of the required improvement is determined on a case by case basis and depends upon the significance of the development impacts to roadway and intersection performance, safety, specific access and circulation needs, neighborhood impacts, and impacts on pedestrian and transit facilities.

Examples of improvements under this category include, but are not limited to the following:

- Construction of new paths, trails, roads leading to the development;
- Construction of acceleration and deceleration lanes, or turn lanes at intersections;
- Installation of traffic control devices for driveways, paths, trails and roads, such as traffic signals, signs, lane marking, etc.;
- Installation of pedestrian improvements such as flashing crosswalks, etc.;
- Installation of transit improvements;
- Installation of neighborhood traffic calming devices.

Table 1 is used for determining when major intersection improvements are required under SEPA. The intention of improvements is to reach the next better Level of Service.

Table 1 Mitigations for SEPA impacts at intersections

Peak Hour Intersection LOS with project traffic Signalized intersection, use intersection average, unsignalized intersection, use minor approach impacted by project.	Install improvements?
A thru D	No.
E	If intersection proportional share > 15%
F	If intersection proportional share >5%

Developments are exempt from constructing any identified SEPA improvements that are a part of a city's planned road project noted as "used to determine Impact Fee rate" in Table CF-10 of the Comprehensive Plan, (see Appendix C). The following intersection improvements are exempt from SEPA mitigation:

Table 2. Road Impact Fee Intersection Projects

Intersections	Improvements
NE 124th Street/124th Avenue NE	Second northbound left-turn lane,

	northbound right-turn lane, southbound through-lane
NE 85th Street/132nd Avenue NE	Add WB right-turn lane
NE 85th Street/128th Avenue NE	New traffic signal
NE 116th Street/124th Avenue NE	Add a second southbound through lane on the south leg, new signal head for the southbound through
Kirkland Avenue/3rd Street	New traffic signal
6th Street/Kirkland Way	New traffic signal

However, additional mitigation necessary to meet SEPA LOS that are not part of a city planned road project noted as "used to determine Impact Fee rate" must be constructed concurrent with the development and the cost for the mitigation will be entirely borne by the new development.

Step 12. Applicant submits traffic report with the environmental checklist:

The applicant submits a report documenting the information gathered in the preceding steps to the Public Works Department. The outline shown in Figure 6 may be used as a reference for the organization and presentation of the report. A site plan showing adjacent non-project driveways shall be included with the traffic report. All calculations such as SEPA LOS and intersection proportional share must be submitted for Staff review.

Step 13. Responsible SEPA Official issues SEPA Determination

A copy of the traffic report is also submitted to the Planning Department along with the environmental checklist, any other required environmental study and the environmental review fee. Once these documents are submitted, the SEPA review process begins. The Planning staff reviews the checklist and other environmental studies, but not the traffic report.

Public Works staff reviews the traffic report and notifies the applicant of any needed modifications. If no modifications are needed, a memo from the Public Works Department is delivered to the Planning and Community Development Department containing the recommended mitigation. A copy is also sent to the applicant. The Planning and Community Development Department incorporates all SEPA conditions into a final SEPA memo and prepares a recommended determination.

The Responsible SEPA Official then makes the SEPA determination and has a copy sent to the applicant and published in the local newspaper if required.

Step 14. Site Traffic Review

If the proposed project is SEPA exempt, then the only a site traffic review is required. Depending on the type and size of the proposed project, the site traffic review may include but not limited to: on-site circulation, parking, sight distance analysis, pedestrian impact. The applicant or representative must contract the City Transportation Engineer to determine the scope of the site traffic review.

Figure 6
Sample Outline for a Traffic Impact Analysis

TIAs should include the following figures:

- Project trip assignments, both Daily and PM.
- PM peak turning volumes at all significant intersections, both existing and future, with and without project traffic.

I. Introduction and Summary
  - A. Summary
    1. Preliminary Information
    2. Principal Findings (impacts)
    3. Conclusions
    4. Recommendations (mitigation)

II. Proposed Development (site and nearby)
  - A. Off-Site Development (are there other developments planned nearby?)
  - B. Description of On-Site Development
    1. Land Use and Intensity
    2. Location
    3. Site Plan
    4. Proposed Access
    5. Phasing and Timing

III. Area Conditions
  - A. Study Area
    1. Area of Influence
    2. Area of Significant Traffic Impact (may also be part of Section IV)
  - B. Study Area Land Use
    1. Existing Land Uses
    2. Existing Zoning
    3. Anticipated Future Development
  - C. Site Accessibility
    1. Area Roadway System
       a) Existing
       b) Future
    2. Traffic Volumes and Conditions
    3. Transit Service
    4. Existing Relevant Transportation System Management Programs
    5. Other as applicable

IV. Projected Traffic
  - A. Site Traffic (each horizon year)
    1. Trip Generation
    2. Trip Distribution
    3. Modal Split
    4. Trip Assignment
  - B. Through Traffic (each horizon year)
    1. Method of Projection
    2. Non-Site Traffic for Anticipated Development in Study Area
       a) Method of Projections
       b) Trip Generation
       c) Trip Distribution
       d) Modal Split
       e) Trip Assignment
    3. Through Traffic
    4. Estimated Volumes
  - C. Total Traffic (each horizon year)

V. Traffic Analysis
  - A. Site Access
  - B. Capacity and Level of Service
  - C. Traffic Safety
  - D. Traffic Signals
  - E. Site Circulation and Parking

VI. Improvements Analysis
  - A. Improvements to Accommodate Base Traffic
  - B. Additional Improvements to Accommodate Site Traffic
  - C. Alternative Improvements
  - D. Status of Improvements Already Funded, Programmed, or Planned
  - E. Evaluation

VII. Findings
  - A. Site Accessibility
  - B. Traffic Impacts
  - C. Need for Any Improvements
  - D. Compliance with Applicable Local Codes

VIII. Recommendations
  - A. Site Access/Circulation Plan
  - B. Roadway Improvements
    1. On-Site
    2. Off-Site
    3. Phasing (if appropriate)
  - C. Transportation System Management Actions
    1. Off-Site
    2. On-Site Operational
    3. On-Site
  - D. Other

IX. Conclusions

Appendix A
Impact Fee Ordinance and Impact Fee Schedule

Appendix B
Concurrency Ordinance

Appendix C
Excerpts from City of Kirkland Comprehensive Plan