



CITY OF KIRKLAND
Planning and Community Development Department
123 Fifth Avenue, Kirkland, WA 98033 425.587-3225
www.ci.kirkland.wa.us

DEVELOPMENT STANDARDS LIST

FILE: ZON07-00035, LWHS MASTER PLAN AND PUD

ZONING CODE STANDARDS

95.50.2.a Required Landscaping. All required landscaping shall be maintained throughout the life of the development. The applicant shall submit an agreement to the city to be recorded with King County which will perpetually maintain required landscaping. Prior to issuance of a certificate of occupancy, the proponent shall provide a final as-built landscape plan and an agreement to maintain and replace all landscaping that is required by the City.

95.40.7.a Parking Area Landscape Islands. Landscape islands must be included in parking areas as provided in this section.

95.40.7.b Parking Area Landscape Buffers. Applicant shall buffer all parking areas and driveways from the right-of-way and from adjacent property with a 5-foot wide strip as provided in this section. If located in a design district a low hedge or masonry or concrete wall may be approved as an alternative through design review.

95.45 Tree Installation Standards. All supplemental trees to be planted shall conform to the Kirkland Plant List. All installation standards shall conform to Kirkland Zoning Code Section 95.45.

100.25 Sign Permits. Separate sign permit(s) are required. In JBD and CBD cabinet signs are prohibited.

105.18 Pedestrian Walkways. All uses, except single family dwelling units and duplex structures, must provide pedestrian walkways designed to minimize walking distances from the building entrance to the right of way and adjacent transit facilities, pedestrian connections to adjacent properties, between primary entrances of all uses on the subject property, through parking lots and parking garages to building entrances. In design districts through block pathways or other pedestrian improvements may be required. See also Plates 34 in Chapter 180.

105.32 Bicycle Parking. All uses, except single family dwelling units and duplex structures with 6 or more vehicle parking spaces must provide covered bicycle parking within 50 feet of an entrance to the building at a ratio of one bicycle space for each twelve motor vehicle parking spaces. Check with Planner to determine the number of bike racks required and location.

105.18 Overhead Weather Protection. All uses, except single family dwellings, multifamily, and industrial uses, must provide overhead weather protection along any portion of the building, which is adjacent to a pedestrian walkway.

105.18.2 Walkway Standards. Pedestrian walkways must be at least 5' wide; must be distinguishable from traffic lanes by pavement texture or elevation; must have adequate lighting for security and safety. Lights must be non-glare and mounted no more than 20' above the ground.

105.18.2 Overhead Weather Protection Standards. Overhead weather protection must be provided along any portion of the building adjacent to a pedestrian walkway or sidewalk; over the primary exterior entrance to all buildings. May be composed of awnings, marquees, canopies or building overhangs; must cover at least 5' of the width of the adjacent walkway; and must be at least 8 feet above the ground immediately below it. In design districts, translucent awnings may not be backlit; see section for the percent of property frontage or building facade.

105.65 Compact Parking Stalls. Up to 50% of the number of parking spaces may be designated for compact cars.

105.60.2 Parking Area Driveways. Driveways which are not driving aisles within a parking area shall be a minimum width of 20 feet.

105.60.3 Wheelstops. Parking areas must be constructed so that car wheels are kept at least 2' from pedestrian and landscape areas.

105.60.4 Parking Lot Walkways. All parking lots which contain more than 25 stalls must include pedestrian walkways through the parking lot to the main building entrance or a central location. Lots with more than 25,000 sq. ft. of paved area must provide pedestrian routes for every 3 aisles to the main entrance.

105.77 Parking Area Curbing. All parking areas and driveways, for uses other than detached dwelling units must be surrounded by a 6" high vertical concrete curb.

110.52 Sidewalks and Public Improvements in Design Districts. See section, Plate 34 and public works approved plans manual for sidewalk standards and decorative lighting design applicable to design districts.

110.60.5 Street Trees. All trees planted in the right-of-way must be approved as to species by the City. All trees must be two inches in diameter at the time of planting as measured using the standards of the American Association of Nurserymen with a canopy that starts at least six feet above finished grade and does not obstruct any adjoining sidewalks or driving lanes.

115.25 Work Hours. It is a violation of this Code to engage in any development activity or to operate any heavy equipment before 7:00 am. or after 8:00 pm Monday through Friday, or before 9:00 am or after 6:00 pm Saturday. No development activity or use of heavy equipment may occur on Sundays or on the following holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving, and Christmas Day. The applicant will be required to comply with these regulations and any violation of this section will result in enforcement action, unless written permission is obtained from the Planning official.

115.45 Garbage and Recycling Placement and Screening. For uses other than detached dwelling units, duplexes, moorage facilities, parks, and construction sites, all garbage receptacles and dumpsters must be setback from property lines, located outside landscape buffers, and screened from view from the street, adjacent properties and pedestrian walkways or parks by a solid sight-obscuring enclosure.

115.75.2 Fill Material. All materials used as fill must be non-dissolving and non-decomposing. Fill material must not contain organic or inorganic material that would be detrimental to the water quality, or existing habitat, or create any other significant adverse impacts to the environment.

115.90 Calculating Lot Coverage. The total area of all structures and pavement and any other impervious surface on the subject property is limited to a maximum percentage of total lot area. See the Use Zone charts for maximum lot coverage percentages allowed. Section 115.90 lists exceptions to total lot coverage calculations See Section 115.90 for a more detailed explanation of these exceptions.

115.95 Noise Standards. The City of Kirkland adopts by reference the Maximum Environmental Noise Levels established pursuant to the Noise Control Act of 1974, RCW 70.107. See Chapter 173-60 WAC. Any noise, which injures, endangers the comfort, repose, health or safety of persons, or in any way renders persons insecure in life, or in the use of property is a violation of this Code.

115.115 Required Setback Yards. This section establishes what structures, improvements and activities may be within required setback yards as established for each use in each zone.

115.115.3.g Rockeries and Retaining Walls. Rockeries and retaining walls are limited to a maximum height of four feet in a required yard unless certain modification criteria in this section are met. The combined height of fences and retaining walls within five feet of each other in a required yard is limited to a maximum height of 6 feet, unless certain modification criteria in this section are met.

115.115.3.p HVAC Equipment: These may be placed no closer than five feet of a side or rear property line, and shall not be located within a required front yard; provided, that HVAC equipment may be located in a storage shed approved pursuant to subsection (3)(m) of this section or a garage approved pursuant to subsection (3)(o)(2) of this section. All HVAC equipment shall be baffled, shielded, enclosed, or placed on the property in a manner that will ensure compliance with the noise provisions of KZC 115.95.

115.115.5.c Driveway Setbacks. Vehicle parking areas for schools and day-care centers greater than 12 students shall have a minimum 20-foot setback from all property lines.

115.120 Rooftop Appurtenance Screening. New appurtenances on existing buildings shall be surrounded by a solid screening enclosure equal in height to the appurtenance. New construction shall screen rooftop appurtenances by incorporating them in to the roof form.

115.135 Sight Distance at Intersection. Areas around all intersections, including the entrance of driveways onto streets, must be kept clear of sight obstruction as described in this section.

152.22.2 Public Notice Signs. Within seven (7) calendar days after the end of the 21-day period following the City's final decision on the permit, the applicant shall remove all public notice signs.

Prior to issuance of a grading or building permit:

95.35.2.b.(3)(b)i Tree Protection Techniques. A description and location of tree protection measures during construction for trees to be retained must be shown on demolition and grading plans.

95.35.6 Tree Protection. Prior to development activity or initiating tree removal on the site, vegetated areas and individual trees to be preserved shall be protected from potentially damaging activities. Protection measures for trees to be retained shall include (1) placing no construction material or equipment within the protected area of any tree to be retained; (2) providing a visible temporary protective chain link fence at least 4 feet in height around the protected area of retained trees or groups of trees until the Planning Official authorizes their removal; (3) installing visible signs spaced no further apart than 15 feet along the protective fence stating "Tree Protection Area, Entrance Prohibited" with the City code enforcement phone number; (4) prohibiting excavation or compaction of earth or other damaging activities within the barriers unless approved by the Planning Official and supervised by a qualified professional; and (5) ensuring that approved landscaping in a protected zone shall be done with light machinery or by hand.

Prior to occupancy:

95.50.2.a Required Landscaping. All required landscaping shall be maintained throughout the life of the development. The applicant shall submit an agreement to the city to be recorded with King County which will perpetually maintain required landscaping. Prior to issuance of a certificate of occupancy, the proponent shall provide a final as-built landscape plan and an agreement to maintain and replace all landscaping that is required by the City

95.50.2.b Tree Maintenance. For detached dwelling units, the applicant shall submit a 5-year tree maintenance agreement to the Planning Department to maintain all pre-existing trees designated for preservation and any supplemental trees required to be planted.

110.60.5 Landscape Maintenance Agreement. The owner of the subject property shall sign a landscape maintenance agreement, in a form acceptable to the City Attorney, to run with the subject property to maintain landscaping within the landscape strip and landscape island portions of the right-of-way (see Attachment). It is a violation to pave or cover the landscape strip with impervious material or to park motor vehicles on this strip.

Date: 1/17/2008

DEVELOPMENT STANDARDS
CASE NO.: ZON07-00035
PCD FILE NO.:ZON07-00035

FIRE DEPARTMENT CONDITIONS

Fire lane marking and signs will be required.

Additional hydrants required; all shall be equipped with Stortz fittings..

Fire sprinkler system is required.

A fire alarm system is required.

A key box is required for fire department access.

Fire flow requirement is based on type of construction and square footage. For buildings of the size proposed, with type IIB construction, 2,000 gpm is required.

You can review your permit status and conditions at www.kirklandpermits.net

PUBLIC WORKS CONDITIONS

Permit #: ZON07-00035

Project Name: LW High School

Project Address: 12033 NE 80th St

Date: December 21, 2007

Public Works Staff Contacts

Land Use and Pre-Submittal Process:

Rob Jammerman, Development Engineering Manager

Phone: 425-587-3845 Fax: 425-587-3807

E-mail: rjammer@ci.kirkland.wa.us

Building and Land Surface Modification (Grading) Permit Process:

John Burkhalter, Development Engineering Supervisor

Phone: 425-587-3853 Fax: 425-587-3807

E-mail: jburkhal@ci.kirkland.wa.us

General Conditions:

1. All public improvements associated with this project including street and utility improvements, must meet the City of Kirkland Public Works Pre-Approved Plans and Policies Manual. A Public Works Pre-Approved Plans and Policies manual can be purchased from the Public Works Department, or it may be retrieved from the Public Works Department's page at the City of Kirkland's web site at www.ci.kirkland.wa.us.

2. This project will be subject to Public Works Permit and Connection Fees. At the pre-application stage, the fees can only be estimated. It is the applicant's responsibility to contact the Public Works Department by phone or in person to determine the fees. The fees can also be review the City of Kirkland web site at www.ci.kirkland.wa.us. The applicant should anticipate the following fees:
 - o Water and Sewer connection Fees (paid with the issuance of a Building Permit)
 - o Side Sewer Inspection Fee (paid with the issuance of a Building Permit)
 - o Water Meter Fee (paid with the issuance of a Building Permit)
 - o Right-of-way Fee
 - o Review and Inspection Fee (for utilities and street improvements).
 - o Traffic Impact Fee (paid with the issuance of Building Permit). For additional information, see notes below. Note: Traffic and Park Impact Fees increase on February 1, 2008.
3. All street and utility improvements can be permitted by obtaining a Land Surface Modification (LSM) Permit. The LSM Permit can not be issued until a complete Building Permit is applied for.
4. Prior to submittal of a Building or Zoning Permit, the applicant must apply for a Concurrency Test Notice. Contact Thang Nguyen, Transportation Engineer, at 425-587-3869 for more information.
5. Building Permits associated with this proposed project will be subject to the traffic impact fees per Chapter 27.04 of the Kirkland Municipal Code. The School District will receive a traffic impact fee credit for the existing school that will be demolished. Any impact fees shall be paid prior to issuance of the Building Permit(s).
6. All civil engineering plans which are submitted in conjunction with a building, grading, or right-of-way permit must conform to the Public Works Policy titled ENGINEERING PLAN REQUIREMENTS. This policy is contained in the Public Works Pre-Approved Plans and Policies manual.
7. All street improvements and underground utility improvements (storm, sewer, and water) must be designed by a Washington State Licensed Engineer; all drawings shall bear the engineers stamp.
8. All plans submitted in conjunction with a building, grading or right-of-way permit must have elevations which are based on the King County datum only (NAVD 88).
9. A completeness check meeting is required prior to submittal of any Building Permit applications.
10. Prior to issuance of any Building Permit, the applicant shall provide a plan for garbage storage and pickup. The plan shall be approved by Waste Management and the City.
11. The required tree plan shall include any significant tree in the public right-of-way along the property frontage.

Sanitary Sewer Conditions:

1. The existing sanitary sewer main within the public rights-of-way along the front of the property are adequate.
2. Extend an 8 inch sewer main to serve the new buildings. All sewer manholes must be accessible for City maintenance.
3. Provide a plan and profile design for the sewer line extension
4. A 20 foot wide public sanitary sewer easement shall encompass the on-site sewer main
5. All side sewer stubs shall be 6-inch minimum.

Water System Conditions:

1. The existing water main in the public right-of-way along the front of the subject property is adequate for domestic service to this project.
2. The Fire Department shall determine where new fire hydrants are required. Loop a new 8-inch minimum water main around the buildings to provide water to the new fire hydrants.
3. The applicant is working with the Fire Marshall to determine the minimum required fire flow. The Public Works Department has had our water modeling consultant, RH2 Engineering, analyze the water system to see if any off-site water main upgrades are required to supply a minimum 2000 gpm fire flow. RH2 found that the existing system is slightly deficient and if the school requires 2000 gpm, a new 12-inch water main will need to be installed in NE 75th Street from 118th Ave. NE to 122nd Ave. NE. One other water main replacement could be substituted for the part of the water main in NE 75th St, but because of off-site construction impacts to the neighborhood, Public Works does not recommend pursuing this option. If the applicant can design a building that requires 1700 gpm or less fire flow, no off-site water main replacements will be required.
4. Provide water service to the buildings per the Uniform Plumbing Code.
5. Any unused existing water services shall be abandoned at the water main.
6. The water main loop shall be encompassed in a 15 ft wide public water easement.

Surface Water Conditions:

1. Provide temporary and permanent storm water control per the 1998 King County Surface Water Design Manual. Contact City of Kirkland Surface Water Staff at (425) 587-3800 for help in determining drainage review requirements.

Full Drainage Review

The drainage design for projects that create more than 5,000 square feet of new impervious surface area must comply with Core Requirements #1 - #8 in the 1998 King County Surface Water Design Manual.

2. If a storm water detention system is required, it shall be designed to Level II standards.
3. The City supports and encourages that School Districts plan to use Low Impact Development drainage techniques on this site.
4. This project is creating or replacing more than 5000 square feet of new impervious area that will be used by vehicles (PGIS - pollution generating impervious surface). Provide storm water quality treatment per the 1998 King County Surface Water Design Manual.
5. The Army Corps of Engineers (COE) has asserted jurisdiction over upland ditches draining to streams. Either an existing Nationwide COE permit or an Individual COE permit may be necessary for work within ditches, depending on the project activities. Applicants should obtain the applicable COE permit; information about COE permits can be found at: U.S. Army Corps of Engineers, Seattle District Regulatory Branch
http://www.nws.usace.army.mil/PublicMenu/Menu.cfm?sitename=REG&pagename=mainpage_NWPs
 Specific questions can be directed to: Seattle District, Corps of Engineers, Regulatory Branch, CENWS-OD-RG, Post Office Box 3755, Seattle, WA 98124-3755, Phone: (206) 764-3495
6. This project disturbs greater than one acre, the applicant is responsible to apply for a Construction Stormwater General Permit from Washington State Dept. of Ecology. Specific permit information can be found at the following website: <http://www.ecy.wa.gov/programs/wq/stormwater/construction/> Among other requirements, this permit requires the applicant to prepare a Storm Water Pollution Prevention Plan (SWPPP) and identify a Certified Erosion and Sediment Control Lead (CESCL) prior to the start of construction. The CESCL shall attend the City of Kirkland Public Works Department

pre-construction meeting with a completed SWPPP.

7. Provide an erosion control plan with Building or Land Surface Modification Permit application. The plan shall be in accordance with the 1998 King County Surface Water Design Manual (or most currently adopted manual).

8. Construction drainage control shall be maintained by the developer and will be subject to periodic inspections. During the period from April 1 to October 31, all denuded soils must be covered within 15 days; between November 1 and March 31, all denuded soils must be covered within 12 hours. If an erosion problem already exists on the site, other cover protection and erosion control will be required.

9. Provide collection and conveyance of right-of-way storm drainage

Street and Pedestrian Improvement Conditions:

1. The subject property abuts NE 80th Street (a collector), NE 75th Street (a neighborhood access), and 122nd Ave. NE (a collector). Zoning Code sections 110.10 and 110.25 require the applicant to make half-street improvements in rights-of-way abutting the subject property. Section 110.30-110.50 establishes that this street must be improved with the following:

NE 75th Street and NE 80th Street

- A. The existing street improvements are adequate.
- B. Replace any cracked curb and gutter, or sidewalk.
- C. Along NE 75th Street, replace any street trees that are unhealthy or damaged per City arborist direction.
- D. The assessor's map shows that there is 30 ft of street right-of-way on NE 75th Street that needs to be dedicated to the City.

122nd Ave. NE

- A. Widen the street to 17 ft. from centerline to face of curb which will allow for a 12 ft southbound driving lane and a 5 ft wide bike lane.
- B. Install storm drainage, curb and gutter, a 4.5 ft. planter strip with street trees 30 ft. on-center, and a 5 ft. wide sidewalk.
- C. Provide a 6 ft wide parallel parking bump-out for a least three cars (approximately 70 ft in length) near the existing tennis courts at the northeast corner of the property. No landscape strip will be required along the parking bump-out. By providing this parking, it will deter parking on the east side of the street.
- D. The improvements along 122nd Ave. NE shall include Low Impact Development features where feasible. Some items that shall be considered are:
 - " Rain Gardens and bio-retention swales.
 - " Pervious concrete sidewalks
 - " A bike lane design that doesn't qualify as pollution generating impervious surface.

2. A 2-inch asphalt street overlay will be required where three or more utility trench crossings occur within 150 lineal ft. of street length or where utility trenches parallel the street centerline. Grinding of the existing asphalt to blend in the overlay will be required along all match lines. The said off-site water main improvements will trigger an asphalt overlay.

3. All street and driveway intersections shall not have any visual obstructions within the sight distance triangle. See Public Works Pre-approved Policy R.13 for the sight distance criteria and specifications.

4. It shall be the responsibility of the applicant to relocate any above-ground or below-ground utilities which conflict with the project associated street or utility improvements.

5. Underground all new and existing on-site utility lines and overhead transmission lines.

6. Zoning Code Section 110.60.9 establishes the requirement that existing utility and transmission (power, telephone, etc.) lines on-site and in rights-of-way adjacent to the site must be underground.

The Public Works Director may determine if undergrounding transmission lines in the adjacent right-of-way is not feasible and defer the undergrounding by signing an agreement to participate in an undergrounding project, if one is ever proposed. In this case, the Public Works Director has determined that undergrounding of existing overhead utility on NE 75th Street, NE 80th Street, and 122nd Ave. NE is not feasible at this time and the undergrounding of off-site/frontage transmission lines should be deferred with a Local Improvement District (LID) No Protest Agreement. The final recorded subdivision mylar shall include a condition requiring all associated lots to sign a LID No Protest Agreement prior to the issuance of a building permit for said lot. In addition, if a house is to be saved on one of the lots within the subdivision, a LID No Protest Agreement shall be recorded against this lot at the time of subdivision recording.

7. New street lights may be required per Puget Power design and Public Works approval. Contact the INTO Light Division at PSE for a lighting analysis. If lighting is necessary, design must be submitted prior to issuance of a grading or building permit.

BUILDING DEPARTMENT CONDITIONS

Buildings must comply with current editions of the International Building, Residential, Mechanical and Fire Codes and the Uniform Plumbing Code as adopted and amended by the State of Washington and the City of Kirkland.

Structure must comply with Washington State Energy Code (WAC 51-11); and the Washington State Ventilation and Indoor Air Quality Code (WAC 51-13).

Structures must be designed for seismic design category D, wind speed of 85 miles per hour and exposure B.

1. Fire rated walls will be required between the new gymnasium building and the existing school that is to remain in use until new school is complete.
2. An accessible route is required from the raised 'Rain Garden' court to the public way.
3. The vertical circulation stairs shown in the Main building beside the mechanical rm on all floors appear to connect 3 floors and are open. Open stairs are only allowed to interconnect with 2 floors. this stair is required to be enclosed.

Sound Tree Solutions, Inc.

Exploring ways for people and trees to live together

Elizabeth G. Walker
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425/844-9038
ewtreelady@gmail.com

December 11, 2007

RE: Tree Plan II for Lake Washington High School Re-development, Kirkland, WA

I have been retained for a tree plan and report for proposed new school facilities (and demolition) on existing Lake Washington High School campus located at 11833 NE 75th Street, Kirkland, WA. The intent is to build new structures followed by the demolition of existing buildings. The reason for my consultation is assess the significant trees on-site and fulfill the requirements set forth by the City of Kirkland (KZC 95) for an arborist report as follows:

1. Perform a site visit to confirm size, species, and dripline of each impacted tree by number (where appropriate), assess condition, and determine viability of each impacted tree.
2. Prepare a written report to include:
 - Viability of the subject trees
 - Limits of disturbance to see if the viable trees can be safely protected and retained
 - Location and type of protection measures
3. The site plan must also include approximate trunk location and dripline of significant trees that are on adjacent property with driplines extending over the subject property line.

This information is to be incorporated onto a site plan to be included with the submittal.

Methodology

My assessment techniques are based on fifteen years experience and training in the arboriculture and urban forestry. The tools I use are limited to visual external means and may include diameter tape, binoculars, rubber mallet for sounding, and small trowel for minimal removal of soil around root systems, if needed. I do not normally implement any invasive techniques such as drilling, Resistograph™ or coring, unless discussed and agreed upon by the client (and tree owner).

I affixed aluminum tree tags on the significant trees on the site that are included in this report. This number should be shown on the site plan along with the driplines, species, and size (diameter) of the trees.

Observations

I made a site visit on December 5th to tag and assess the trees and site conditions. The campus is several acres in South Rose Hill area. The site is fairly flat except for a significant slope along the

south edge on NE 75th Street and a terracing down toward the west property line. The majority of the trees that occupy the site are along the south edge. The west edge is pre-dominantly a thicket of Himalayan blackberry, and in and around the stormwater facility are several red alder (*Alnus rubra*) saplings. There are only a handful of significant trees in the northwest area. I chose not to tag and number the trees just west of the north entrance drive as they are in marginal to poor condition. Several landscape trees adjacent to the existing buildings are of typical ornamental species, and are not intended to be retained due to the significant development activity in the area.

There is a row of significant street trees along the northeast edge of the campus. While this area is not part of the on-site re-development, the City is requiring that sidewalk and street improvements are made along 122nd Avenue NE. The intent is to assess the trees along the right-of-way (public or private) and coordinate with the City at a later date as to alternative design and placement of improvements adjacent to the viable trees.

For the purposes of the re-development, I identified 41 significant trees on the site that will be impacted or are near proposed re-development, mainly along the south property line (from the east parking lot drive to the southwest corner), along the west property line, and the area west of the north entrance and north of the parking lot. My observations of condition, defects, and issues with each tree are documented on the attached spreadsheet. I also noted the dripline, diameter, and species.

Findings

As shown on the spreadsheet, the majority of the significant trees on the site are in good condition and viable enough to consider incorporating into the required landscaping on the perimeter of the site. The trees are essentially all native species and are doing rather well in their location. The Douglas fir and bigleaf maple along the slope on the south edge appear to be effective in stabilizing the slope and, without knowing the exact plans for any re-grading, should continue to be maintained on the slope. The only trees of question would be the handful of Douglas fir near the southwest corner that have been topped by the utilities. Their long-term viability has been compromised.

Of the trees that I did not tag or number, the trees just west of the north entrance drive are not in good condition and/or are in an area that is identified as a potential site for improved stormwater facilities. There is an “orchard” of nine fruit trees (8 cherries and 1 apple) and the trees are in significant decline and are in poor condition. I do not recommend retaining them.

Regarding the location of trees on adjacent property with encroaching crowns, the only applicable area is along the west property line. I provided approximate locations of the various trees and estimated driplines onto the subject property. While no improvements or disturbance is planned for a considerable distance from this area, this information is shown as required.

For the viable trees, I am to provide limits of disturbance, which is the minimum distance to the trunk of the viable tree that is permissible for construction impact. Based on the existing site conditions and the species and condition of the trees, I have recommended distances. Not all sides of the trees require protection as many of the trees backed onto adjacent property or right-of-way. Further refinement of the actual protection plan will need to be done after the final design and placement of buildings and improvements are made.

Please ensure that the City’s Tree Protective Fencing Detail is on the site plan. The notes in the detail with the location of the fencing should be sufficient in protecting the trees.

Thank you for the opportunity to provide my consulting services. If you have any questions, please don’t hesitate to contact me.

Respectfully submitted,

**Elizabeth G.
Walker**



Digitally signed by Elizabeth G. Walker
DN: CN = Elizabeth G. Walker, C =
US, O = Sound Tree Solutions
Reason: I am the author of this
document
Date: 2007.12.11 20:41:19 -08'00'

Elizabeth G. Walker
Certified Arborist PN-0402a
Member of American Society of Consulting Arborists

Attachment: Assumptions and Limiting Conditions
Lake Washington High School, Kirkland tree spreadsheet
City of Kirkland – Tree Protection Fencing Detail

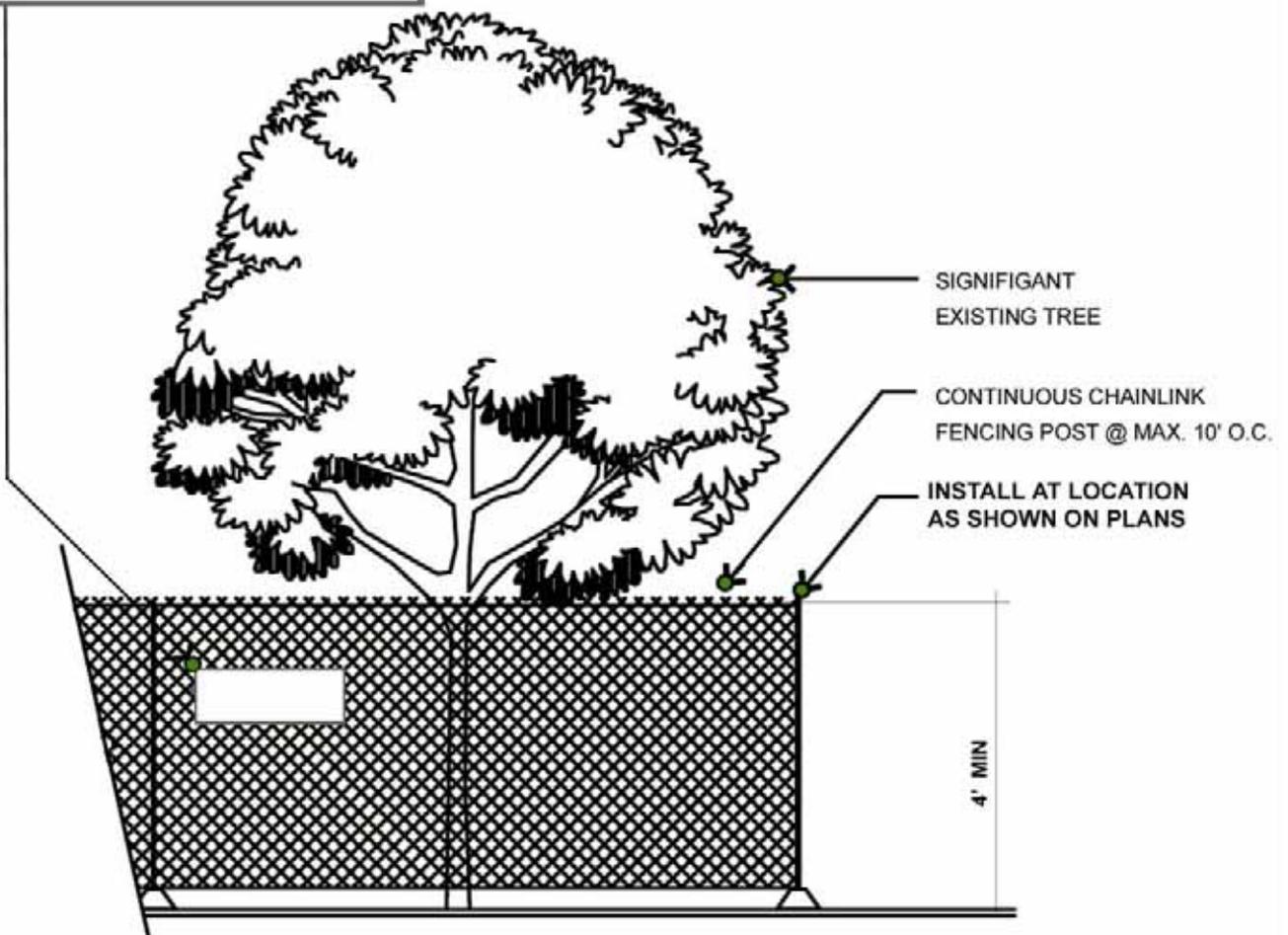
ASSUMPTIONS AND LIMITING CONDITIONS

Elizabeth G. Walker
ISA Certified Arborist #PN-0402a
Sound Tree Solutions, Inc.

1. Any legal description provided to the consultant is assumed to be correct. Any titles and ownerships to any property are assumed to be good and marketable. No responsibility is assumed for matters legal in character.
2. All existing liens, encumbrances, and assessments, if any, have been disregarded (unless otherwise noted), and the trees are evaluated as though free and clear, under responsible ownership and competent management. It is assumed that no violations of applicable governmental regulations have occurred.
3. Care has been taken to obtain all information from reliable sources. All data has been verified insofar as possible, however, Sound Tree Solutions, Inc. can neither guarantee nor be responsible for the accuracy of information.
4. Sound Tree Solutions, Inc. shall not be required to give testimony or to attend court by reason of this report unless subsequent contractual arrangements are made, including payment of an additional fee for such services as described in our fee schedule and contract of engagement.
5. Loss or alteration of any part of this report invalidates the entire report.
6. This report shall be used for its intended purpose only and by the parties to whom it is addressed. Possession of this report does not include the right of publication.
7. Neither all or any part of the contents of this report, nor copy thereof, shall be conveyed by anyone, including the client, to the public through advertising, public relations, news, sales, or other media, without the prior expressed written or verbal consent of Sound Tree Solutions, Inc.
8. This report and any values expressed herein represent the opinion of Sound Tree Solutions, Inc. Our fee is in no way contingent upon any specified value, a result or occurrence of a subsequent event, nor upon any finding to be reported.
9. Sketches, diagrams, graphs, and photographs in this report, being intended as visual aids, are not necessarily to scale and should not be construed as engineering or architectural reports or surveys.
10. Unless expressed otherwise: 1) information contained in this report covers only those items that were examined and reflects the condition of those items at the time of inspection, and 2) the inspection is limited to visual examination of accessible items without dissection, excavation, probing, or coring.
11. There is no warranty or guarantee expressed or implied that problems or deficiencies of the tree or other plant or property in question may not arise in the future.
12. The right is reserved to adjust tree valuations, if additional relevant information is made available.

FENCING SIGN DETAIL

Tree Protection Area, Entrance Prohibited
To report violations contact
City Code Enforcement
at (425)587-3225



1. MINIMUM FOUR (4) FOOT HIGH TEMPORARY CHAINLINK FENCE SHALL BE PLACED AT THE CRITICAL ROOT ZONE OR DESIGNATED LIMIT OF DISTURBANCE OF THE TREE TO BE SAVED. FENCE SHALL COMPLETELY ENCIRCLE TREE (S). INSTALL FENCE POSTS USING PIER BLOCK ONLY. AVOID POST OR STAKES INTO MAJOR ROOTS. MODIFICATIONS TO FENCING MATERIAL AND LOCATION MUST BE APPROVED BY PLANNING OFFICIAL.

2. TREATMENT OF ROOTS EXPOSED DURING CONSTRUCTION: FOR ROOTS OVER ONE (1) INCH DIAMETER DAMAGED DURING CONSTRUCTION, MAKE A CLEAN STRAIGHT CUT TO REMOVE DAMAGED PORTION OF ROOT. ALL EXPOSED ROOTS SHALL BE TEMPORARILY COVERED WITH DAMP BURLAP TO PREVENT DRYING, AND COVERED WITH SOIL AS SOON AS POSSIBLE.

3. NO STOCKPILING OF MATERIALS, VEHICULAR TRAFFIC, OR STORAGE OF EQUIPMENT OR MACHINERY SHALL BE ALLOWED WITHIN THE LIMIT OF THE FENCING. FENCING SHALL NOT BE MOVED OR REMOVED UNLESS APPROVED BY THE CITY PLANNING OFFICIAL. WORK WITHIN PROTECTION FENCE SHALL BE DONE MANUALLY UNDER THE SUPERVISION OF THE ON-SITE ARBORIST AND WITH PRIOR APPROVAL BY THE CITY PLANNING OFFICIAL.

4. FENCING SIGNAGE AS DETAILED ABOVE MUST BE POSTED EVERY FIFTEEN (15) FEET ALONG THE FENCE.



**TREE PROTECTION
FENCING DETAIL**
(For public & private trees)

Lake Washington High School

5-Dec-07

#	Common Name	Botanical name	DBH	Drip	Limits of Disturbance	Condition/Defects	Viable
201	Shore pine	Pinus contorta contorta	8"	6'	dripline	good condition	Yes
202	Shore pine	Pinus contorta contorta	11"	6'	dripline	good condition	Yes
203	Shore pine	Pinus contorta contorta	9"	6'	dripline	good condition	Yes
204	Shore pine	Pinus contorta contorta	10"	8'	dripline	good condition	Yes
205	Shore pine	Pinus contorta contorta	11"	10'	dripline	good condition	Yes
206	Shore pine	Pinus contorta contorta	11"	8'	dripline/curb	double trunk; included bark at base btw trunks, may split	marginal
207	Douglas fir	Pseudotsuga menziesii	30"	15'	dripline	some storm damage but looks good; on slope, no erosion; crown clean, raise 20' up	Yes
208	Douglas fir	Pseudotsuga menziesii	28"	18'	dripline	utility pruned on south side; good condition	Yes
209	Bigleaf maple	Acer macrophyllum	20" clump	20'	dripline with 210	good condition, no sig defects	Yes
210	Bigleaf maple	Acer macrophyllum	12"	10'	dripline with 209 (narrow)	upper maple - indented trunk may be internal decay; utility pruned	Yes
211	Bigleaf maple	Acer macrophyllum	12"	15'	dripline	good condition, in group with 212, 213	Yes
212	Douglas fir	Pseudotsuga menziesii	14"	10'	dripline of group	good condition	Yes
213	Bigleaf maple	Acer macrophyllum	16"	15'	dripline of group	good condition	Yes
214	Bigleaf maple	Acer macrophyllum	10"	5'	dripline	good condition	Yes
215	Bigleaf maple	Acer macrophyllum	8"	10'	dripline	good condition	Yes
216	Bigleaf maple	Acer macrophyllum	12" clump	10'	dripline w 215	good condition	Yes
217	Bigleaf maple	Acer macrophyllum	10"	8'	dripline	good condition; double stem, tight crotch; young	Yes

#	Common Name	Botanical name	DBH	Drip	Limits of Disturbance	Condition/Defects	Viable
218	Bigleaf maple	Acer macrophyllum	9" clump	8'	dripline	good condition	Yes
219	Bigleaf maple	Acer macrophyllum	9"	10'	dripline	good condition	Yes
220	Bigleaf maple	Acer macrophyllum	12"	10'	dripline	good condition	Yes
221	Bigleaf maple	Acer macrophyllum	8"	8'		declining; decay in trunk; poor structure	No
222	Bigleaf maple	Acer macrophyllum	28"	20'	dripline	typical multi-stem older maple; some deadwood and tight crotches - may fail btw stems; no sig decay at base	yes
223	Douglas fir	Pseudotsuga menziesii	10"	10'		topped; crown raised with sap from cuts	marginal
224	Douglas fir	Pseudotsuga menziesii	10"	10'		topped; crown raised with sap from cuts	marginal
225	Douglas fir	Pseudotsuga menziesii	10"	10'		topped; crown raised with sap from cuts	marginal
226	Douglas fir	Pseudotsuga menziesii	10"	10'		topped; crown raised with sap from cuts	marginal
227	Douglas fir	Pseudotsuga menziesii	10"	10'	dripline	good condition; crown raised with reasonable success; sap	Yes
228	Douglas fir	Pseudotsuga menziesii	10"	10'	dripline	good condition; crown raised with reasonable success; sap	Yes
229	Douglas fir	Pseudotsuga menziesii	10"	10'	dripline	good condition; crown raised with reasonable success; sap	Yes
230	Douglas fir	Pseudotsuga menziesii	12"	10'	dripline	good condition; crown raised with reasonable success; sap	Yes
231	Douglas fir	Pseudotsuga menziesii	12"	10'	dripline	good condition; crown raised with reasonable success; sap	Yes
232	Douglas fir	Pseudotsuga menziesii	12"	10'	dripline	good condition; crown raised with reasonable success; sap	Yes

#	Common Name	Botanical name	DBH	Drip	Limits of Disturbance	Condition/Defects	Viable
233	Bigleaf maple	Acer macrophyllum	36" clump	20'	walls W, S; dripline E	good condition for age, size of maple	Yes
234	Lombardy poplar	Populus italica	~24"	8'	15' E, N, S	narrow crown OK condition	Yes
235	Black cottonwood	Populus trichocarpa	10"	10'	12' E	young; good condition	Yes
235 A	Black cottonwood	Populus trichocarpa	12"	10'	12' E	young; good condition	Yes
236	Red alder	Alnus rubra	(6) 12"	10'	15' E	grove of young alder in wet area	Yes
236 A	Red alder	Alnus rubra	<12"	6'	10'	in wetland/stormwater runoff	Yes
236 B	Bigleaf maple	Acer macrophyllum	<12"	6'	10'	in wetland/stormwater runoff	Yes
237	Black cottonwood	Populus trichocarpa	40"	20'	dripline	good condition; multiple trunks; might start dropping branches	Yes
238	Pine	Pinus sp.	21"	10'	dripline	good condition	Yes
					Dripline = radius		

RECEIVED
JAN 02 2008

City of Kirkland
Planning and Community Development Dept
123 Fifth Ave
Kirkland WA 98033

PLANNING DEPT
BY _____ PM

Regarding Notice of Application for Lake Washington High School:

The building height increase in this proposal does not comply with Kirkland's Zoning Code and should not be granted just because it is requested for a school. This school was remodeled with ball fields, stadium, running tracks added not that long ago and even then the entrance on the left with the rocks had to be done over. With this additional height and expansion, this school will start to look like the inner city schools and even now the area around the bus stop at the entrance to the school looks like a garbage dump during the school year. Each plan/remodel done or requested for this school does not seem to have a long-term outlook that would be a pleasing addition for this existing neighborhood.

Manuel Cervantes
11709 NE 75th PL
Kirkland WA 98033

Tony Leavitt

From: ckucinski@earthlink.net
Sent: Sunday, January 06, 2008 1:55 PM
To: Tony Leavitt
Subject: ZON07-00035 LWHS plan

Please please please tell me there is a plan for a swimming pool in this new High School plan. There is such a huge lack of pool space anywhere on the eastside and we are very tired of having to swim at 4am due to lack of pool space. To whom do I place my request about this?

Thank you

Christy Kucinski
7316 128th Ave Ne
Kirkland 98033
ckucinski@earthlink.net
425-822-3963

Tony Leavitt

From: A Drews [Pythagorus_@msn.com]
Sent: Monday, January 14, 2008 6:44 PM
To: Tony Leavitt
Subject: Fw: Comments on LWHS Master Plan - File # ZON07-00035

Tony,

I would like to give you some comments on the Master Plan for Lake Washington High School. We have lived just South of the site for 14 years. We're the folks with all the Christmas lights each year.

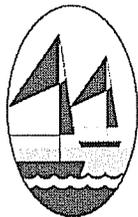
We have been to sessions with the architects and School District staffers and feel we understand the plan fairly well. We would prefer that the new school occupy the same portion of the property as the existing structures, as this would have the least impact on the neighborhood. The current structures, noise, etc. are at least partially hidden by topography of the site and you kind of look over the structure from the South. We understand that it is much more costly to tear down the existing structure, temporarily relocate the school and rebuild on that site, so we accept that building the new structures on the South portion of the site before removing the existing structures is a better use of tax dollars, ours included.

Given that the new structures are going to be closer to the edge of the property and have more impact on the surrounding area, WE ASK THAT THE VARIANCE/INCREASE IN MAXIMUM ALLOWABLE BUILDING HEIGHT NOT BE GRANTED.

Given that the buildings are being moved South where the elevation is roughly 20 feet higher, the effective or perceived height difference will not be the 15 feet from 35 to 50 feet in height, but more like 35 or more feet. We think that such an imposing structure, located so close to the edge of the property is unnecessary and very impacting to the neighborhood, ourselves included. The school should live within the existing rules for the site. If a lower height requires a larger foot print, we feel there is ample land on the site to accommodate that.

If you would like to discuss this, please feel free to contact us. Thank you very much for your time and consideration.

Ann and Tom Drews
12017 NE 75th St, Kirkland, WA 98033
pythagorus_@msn.com



Lake Washington
School District No. 414

DETERMINATION OF NONSIGNIFICANCE

Issued with a 14 day comment and appeals period

Description of Proposal:

This threshold determination analyzes the environmental impacts associated with the following action:

The modernization of Lake Washington High School. Project involves site work to accommodate the construction of new school buildings, a bus/ vehicle driveway, vehicle parking lot & courtyards. Upgraded utility services to support the new buildings will all be constructed. Construction to start spring of 2009 and move in to new buildings is scheduled for fall of 2011.

Proponent: Lake Washington School District No. 414

Location of the Proposal:

12033 NE 80th Street, Kirkland, WA 98033

Lead Agency:

Lake Washington School District No. 414 is the lead agency pursuant to WAC 197-11-926.

The lead agency for this proposal has determined that the proposal does not have a probable significant adverse environmental impact on the environment. An environmental impact statement (EIS) is not required under RCW 43.21C.030(2)(c). This decision was made after a review of the completed environmental checklist and other information on file with the lead agency. This information is available to the public upon request.

This Determination of Non-significance (DNS) is issued under WAC 197-11-340(2). The lead agency will not act on this proposal for 14 days from the date of issue. Comments must be submitted by 5 p.m., December 21, 2007. The responsible official will reconsider the DNS based on timely comments and may retain, modify, or, if significant adverse impacts are likely, withdraw the DNS. If the DNS is retained, it will be final after the expiration of the comment deadline.

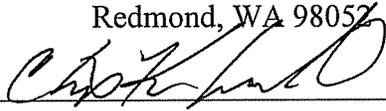
Responsible Official: Chip Kimball, Superintendent

Telephone: 425-702-3200

Address: 16250 NE 74th Street

Redmond, WA 98052

Signature: _____



You may appeal this determination in writing by 5 p.m., December 21, 2007 to Chip Kimball, Lake Washington School District, and 16250 NE 74th Street. Redmond, WA 98052

Date of Issue: December 7, 2007

Date Published: December 7, 2007

**ENVIRONMENTAL CHECKLIST
LAKE WASHINGTON HIGH SCHOOL**

A. BACKGROUND

1. **Name of proposed project, if applicable:** *Lake Washington High School Modernization*

2. **Name of Applicant:** *Lake Washington School District No. 414*

3. **Address and phone number of applicant and contact person:**

15212 NE 95th Street

Redmond, WA 98052

Phone: 425-882-5101

Contact: Steve Cole

4. **Date checklist prepared:** *September 17, 2007*

5. **Agency requesting checklist:** *Lake Washington School District No. 414*

6. **Proposed timing or schedule (including phasing, if applicable):**

Construct replacement high school. Project involves site work to accommodate the construction of a school building, student drop off loop, bus and vehicle parking lot. New utility services to support the building will all be constructed as well. Construction to start winter of 2009 and move in to new building is scheduled for fall of 2011.

7. **Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.**

Yes, this initial proposal will be designed to accommodate a site master planned for a future classroom wing to accommodate 300 students in approximately 22,000 square feet.

8. **List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.**

Tree retention survey and soils report,

9. **Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain.**

No

10. **List any government approvals or permits that will be needed for your proposal, if known.**

City of Kirkland planned urban development (PUD) permit, building permit, plumbing permit, mechanical permit, Washington State Department of Labor & Industries electrical permit, Seattle/King County Health Department approval, Washington State Department of Ecology National Pollutant Discharge Elimination System General Permit, Sewer & Water Agreement with the Kirkland Utility District.

11. **Give brief, complete description of your proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page.**

Build a high school building with sixty new classrooms and associated support areas for performing arts art, physical education, sports activities, student services, school administration, and food service (approximately 208,500 square feet) to accommodate the existing high and junior high student population. The new construction will be accommodated by the demolition of the existing parking lot, and the existing school buildings including portable classroom units. The site will be landscaped with grass, trees and shrubs in areas disturbed by the construction and not built upon.

- 12. Location of the proposal.** Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist.

12033 NE 80TH STREET KIRKLAND, WA 98033.

THE EAST HALF OF THE NORTHWEST QUARTER OF THE NORTHWEST QUARTER AND A PORTION OF THE NORTHEAST QUARTER OF THE NORTHWEST QUARTER LYING WEST OF ANDREEN ACRE TRACTS ADDITION LESS COUNTY ROADS; TOGETHER WITH VACATED STREET, SITUATED IN THE COUNTY OF KING, STATE OF WASHINGTON

B. ENVIRONMENTAL ELEMENTS

1. EARTH

- A. General description of the site (circle one):** Flat, rolling hilly, steep slopes, mountainous, other _____.

The majority of the site is low sloping from south to north with one hill on the south side of the property. The property is surrounded by residential neighborhoods.

- B. What is the steepest slope on the site (approximate percent slope)?**

The majority of the site is generally low slopes of approximately 2 – 5.5 percent. Slopes at the edges are 3:1

From the south parking lot to lower staff parking lot the slope is 2.5:1

- C. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any prime farmland.**

The geologic soils maps Quaternary-glacial till and glacial outwash. The glacial till is a mixture of silt, sand and gravel and ranges in density from dense to very dense. The glacial outwash is a mixture of sands and gravels and ranges in density from loose to very dense depending on whether it is advance or recessional outwash. Based on the on-site geological explorations the majority of the site is glacial till and advance outwash, ranging from dense to very dense. The loose to medium dense recessional outwash was found in the southwest portion of the site.

- D. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.**

There are no surface indications of unstable soils or slopes within the project limits. The site has been studied by a Geotechnical Engineer and will comply with the with the King County Seismic Hazard Area requirements.

- E. Describe the purpose, type, and approximate quantities of any filling or grading proposed. Indicate source of fill.**

Grading will occur across the property to generally provide level areas typical of a new school and associated parking. Any fill will be accomplished using existing soils or imported structural fill. The project includes approximately 13,983 cubic yards of stripping, 90,000 cubic yards of cut, and 60,000 cubic yards of fill. If needed, the contractor will import fill to the site from an approved location.

F. Could erosion occur as a result of clearing, construction, or use? If so, generally describe.

Erosion could occur during the grading phase of the project as a result of clearing and removal of the existing buildings, vegetation and surface site elements. Best erosion control management practices will be implemented that have been approved by the City of Kirkland during all phases of construction. The project will comply with The City of Kirkland and the Washington State Department of Ecology approved best management practices for erosion control.

G. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)?

Currently, 45.4% of the site is impervious (17.4 acres of impervious surface). Developed conditions, 39% of the site will be comprised of impervious surfaces as well (15.0 acres of impervious surface).

H. Proposed measures to reduce or control erosion, or other impacts to the earth.

The demolition and earthwork portions of the project will be performed in the summer months when drier weather conditions are prevalent. Erosion control measures approved by the City of Kirkland and the Washington State Department of Ecology will be in place during the construction of all phases of the project. This will include temporary filter fabric fencing, catch basin inlet protection, and a construction access pad and construction swales consisting of rock check dams and associated sedimentation pools.

I. Does the landfill or excavation involve over 100 cubic yards throughout the lifetime of the project?
Yes.

2. AIR

A. What types of emissions to the air would result from the proposal (i.e., dust, automobile, odors, industrial wood smoke) during construction and when the project is completed? If any, generally describe and give approximate quantities if know.

During construction, exhaust from generators and other construction equipment relating to the construction. dust may occur during periods of dry weather when earthwork / grading activity is underway.

B. Are there any off-site sources of emissions or odors that may affect your proposal? If so, generally describe. *None known.*

C. Proposed measures to reduce or control emissions or other impacts to air, if any:

Water trucks or other means of providing water, provided in conformance with the City of Kirkland and the Washington State Department of Ecology standards and best practices, will be used to control dust during periods of dry weather.

3. WATER

A. Surface

1. Is there any surface water body on or in the immediate vicinity of the site (including year round and seasonal streams, saltwater, lakes, ponds, wetlands): *No*

If yes, describe type and provide names. If appropriate, state what stream or river it flows into.

2. Will the project require any work over, in, or adjacent to (within 200 feet) the described waters? If yes, please describe and attach available plans. *No*
3. Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material. *None*
4. Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known. *No*
5. Does the proposal within a 100-year flood plain? If so, note location on the site plan. *No*
6. Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge. *No*

B. Ground

1. Will ground water be withdrawn, or will water be discharged to ground water? Give general description, purpose, and approximate quantities if known.

No, the soils onsite are not conducive to infiltration and no ground water will be withdrawn. Rain gardens might be implemented on site however to handle storm water quality but they would include an underdrain system that would route the water to the piped storm conveyance system once it has infiltrated through the rain garden soils.

2. Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: domestic sewage; industrial, containing any toxic chemicals; agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) is (are) expected to serve.

Fertilizer and minimal herbicides for landscape installation and maintenance will be used on site. Other such systems as listed above are not applicable.

C. Water Runoff (including storm water)

1. Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.

Surface water runoff will be collected by the use of onsite catch basins and conveyed to localized infiltration facilities. Stormwater overflows will discharge to the existing public storm system in NE 800th Street. Collection and disposal of stormwater runoff will be designed per City of Kirkland standards.

2. Could waste materials enter ground or surface waters? If so, generally describe. *No*
3. Proposed measures to reduce, or control surface, ground, and runoff water impacts, if any:

The proposed plan has less impervious area than existing conditions; therefore based on current City of Kirkland codes no new storm water detention will be required. Surface water runoff from parking will likely be routed through rain gardens and then discharged into the existing ponds onsite. Surface water

runoff impacts will be controlled through the use of these onsite rain gardens as a water quality treatment in accordance with The City of Kirkland standards.

4. PLANTS

A. Check or circle types of vegetation found on the site:

- deciduous tree: alder, maple, aspen, other.
- evergreen tree: fir, cedar, pine, other.
- shrubs.
- grass.
- pasture.
- crop or grain.
- wet soil plants: cattail, buttercup, bullrush, skunk cabbage, other.
- water plants: water lily, eelgrass, milfoil, other.
- other types of vegetation.

B. What kind and amount of vegetation will be removed or altered?

Existing lawn area, a minimal amount of evergreen and deciduous trees, and an assortment of shrubs.

C. List threatened or endangered species known to be on or near the site: *None*

D. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any: *New grass, trees, and shrubs.*

5. ANIMALS

A. Circle any birds and animals that have been observed on or near the site or are known to be on or near the site:

- Birds: hawk, heron, eagle, songbirds, other:
- Mammals: deer, bear, elk, beaver, other: *squirrel, chipmunk, opossum*
- Fish: bass, salmon, trout, herring, shellfish, other: *none*

B. List any threatened or endangered species known to be on or near the site. *None*

C. Is the site part of a migration route? If so, explain. *No*

D. Proposed measures to preserve or enhance wildlife, if any: *Retain existing fir trees and deciduous trees as feasible and understory at the perimeter of the property.*

6. ENERGY AND NATURAL RESOURCES

A. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc.

Ground source low temperature boiler or natural gas boiler heating, electric lighting, electric power, mechanical ventilation, and communication systems.

B. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe. *No*

- C. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any:

This will be a low impact development. Ventilation in compliance with the Washington State ventilation and indoor air quality code, which exceeds building code requirements. Electric dimmable lighting with daylight sensors used to adjust lighting levels to maximize use of daylighting and reduce lighting power consumption. Project will comply with Washington State Schools Protocol required by Washington State law.

7. ENVIRONMENTAL HEALTH

- A. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste that could occur as a result of this proposal? If so, describe.

No

1. Describe special emergency services that might be required: *None*
2. Proposed measures to reduce or control environmental health hazards, if any: *Project will be monitored during construction by the General Construction / Construction Manager and the Architects and engineers of record.*

B. Noise

1. What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)? *Normal Residential noise from surrounding properties and vehicular traffic on surrounding streets.*
2. What types and levels of noise would be created by or associated with the project on a short-term or a long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from the site. *Construction noise would be from work trucks.*

Noise would be from excavation and construction equipment, typically within the hours of 7am to 5pm Monday through Friday.

3. Proposed measures to reduce or control noise, if any:

The Design Team includes an Acoustical Consultant who will test ambient noise levels and review project design to assure the City of Kirkland noise ordinance and WA State Health Department standards for noise control will be met. Construction hours will be limited to hours governed by the City of Kirkland Municipal code.

- C. Describe the potential use of the following:

1. Flammable liquids *Gasoline for equipment*
2. Combustible liquids *Gasoline for equipment*
3. Flammable gases *Propane for plumbers & temporary building dry in heat*
4. Combustible or flammable fibers *None*
5. Flammable solids *Lumber*
6. Unstable materials *None*
7. Corrosives *None known*
8. Oxidizing materials *None*
9. Organic peroxides *None*
10. Nitromethane *None*
11. Ammonium nitrate *None*

12. **Highly toxic material** *None*
13. **Poisonous gas** *None*
14. **Smelless powder** *None*
15. **Black sporting powder** *None*
16. **Ammunition** *None*
17. **Explosives** *None*
18. **Cryogenics** *None*
19. **Medical gas** *None*
20. **Radioactive material** *None*
21. **Biological material** *None*
22. **High piled storage (over 12' in most cases)** *None*

8. LAND AND SHORELINE USE

J. What is the current use of the site and adjacent properties?

High School; no change in current use of the site is proposed.. Adjacent properties are residential, a church and a cemetery.

B. Has the site been used for agriculture? If so, describe: *No*

C. Describe any structures on the site:

Existing high school buildings

D. Will any structures be demolished? If so, what?

Yes. Existing school buildings, classroom portable units, parking lot, and the ball fields will be temporary used for parking and returned to ball fields at the end of the project.

E. What is the current zoning classification of the site?

Single Family Residential R-X

F. What is the current comprehensive plan designation of the site?

Single Family Residential R-X

G. If applicable, what is the current shoreline master program designation of the site? *Not applicable.*

H. Has any part of the site been classified as an "environmentally sensitive" area? If so, specify:

No

I. Approximately how many people would reside or work in the completed project?

Approximately 90 full and part time Teachers/staff and 1340 high school and junior high school students

J. Approximately how many people would the completed project displace? *None*

K. Proposed measures to avoid or reduce displacement impacts, if any: *Not Applicable*

- L. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:**

Submit plans to The City of Kirkland and obtain all necessary permits.

- M. What percentage of the building will be used for:**

1. Warehousing
2. Manufacturing
3. Office
4. Retail
5. Service (specify)
6. Other *100 % School Use*
7. Residential

- N. What is the proposed I.B.C. construction type?**

IBC 2003 Type II-B fully fire sprinkled construction

- O. How many square feet are proposed (gross square footage including all floors, mezzanines, etc.)?**

208,500 square feet

- P. How many square feet are available for future expansion (gross square footage including all floors, mezzanines, and additions).**

We are planning for approximately 22,000 square feet of additional classroom space in addition to 4 portable classrooms. The site would accommodate more than is being planned.

9. HOUSING

- A. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.** *None*
- B. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.** *None*
- C. Proposed measures to reduce or control housing impacts, if any:** *Not Applicable*

10. AESTHETICS

- A. What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed?**

The tallest height of any portion of the proposed structure is 50 feet. The principal building materials are masonry, cement board siding, metal panels and glass.

- B. What views in the immediate vicinity would be altered or obstructed?**

None

- C. Proposed measures to reduce or control aesthetic impacts, if any:**

The foot print of the building will be consolidated on the southwest quadrant of the site leaving most of the site open. The new school building will blend in with the existing neighborhood. Landscaping will provide relief at boundary areas.

11. LIGHT AND GLARE

A. What type of light or glare will the proposal produce? What time of day would it mainly occur?
No Glare should be produced by the project

B. Could light or glare from the finished project be a safety hazard or interfere with views? *No*

C. What existing off-site sources of light or glare may affect your proposal? *None*

D. Proposed measures to reduce or control light and glare impacts, if any:

Shielding of parking and site lighting from adjacent properties.

12. RECREATION

A. What designated and informal recreational opportunities are in the immediate vicinity?

The City of Kirkland has parks in the surrounding area. The project site affords recreational opportunities for the community.

B. Would the proposed project displace any existing recreational uses? If so, describe.

No

C. Proposed measures to reduce or control impacts on recreation, including recreation, including recreation opportunities to be provided by the project or applicant, if any:

Facility will be available to the community for recreational use. Existing ball playfield, running track, tennis courts and stadium will remain open for public use. The facility will be available for community use during non-school hours.

13. HISTORIC AND CULTURAL PRESERVATION

A. Are there any places or objects listed on, or proposed for, national, state, or local preservation registers known to be on or next to the site? If so, generally describe: *No*

B. Generally describe any landmarks or evidence of historic, archaeological, scientific, or cultural importance known to be on or next to the site. *None known*

C. Proposed measures to reduce or control impacts, if any: *Not Applicable*

14. TRANSPORTATION

A. Identify public streets and highways serving the site, and describe proposed access to the existing street system. Show on site plans, if any.

NE 80th Street is the public street serving the site. Bus access, Staff, Parent, and Visitors entrance access will be via NE 80th Street.

- B. Is site currently served by public transit? If not, what is the approximate distance to the nearest transit stop? *Yes. Public bus stop on NE 80th Street in front of the school.*
- C. How many parking spaces would the completed project have? How many would the project eliminate?

The existing parking count is 650 spaces. The proposed project will have 503 parking spaces.

- D. Will the proposal require any new roads or streets, or improvements to existing roads or streets, not including driveways? If so, generally describe (indicate whether public or private): *No new roads or streets will be required. A new side walk along 122nd is required by the City of Kirkland*
- E. How many weekday vehicular trips (one way) per day would be generated by the completed project?

496.

- F. If known, indicate when peak volumes would occur.

7:30 am to 9:00 am (school start time period) and 1:30 pm to 3:30 pm

- G. How many of these trips occur in the a.m. peak hours? *440*

- H. How many of these trips occur in the p.m. peak hours? *297*

- I. Proposed measures to reduce or control transportation impacts, if any:

Provide pavement marking arrows at school entrance/exit on NE 80th Street. Provide public bus passes to students. Provide adequate on-site parking for staff, students, visitor and parent vehicles during school periods to accommodate the majority of the peak parking demand for the school enrollment of 1340 students. Traffic Impact Analysis (TIA) will be prepared as required by the City of Kirkland.

15. PUBLIC SERVICES

- A. Would the project result in an increased need for public services (for example: fire protection, police protection, health care, schools, other)? If so, generally describe: *No*
- B. Proposed measures to reduce or control direct impact on public services, if any:

Not Applicable

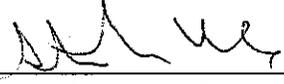
16. UTILITIES

- A. Circle utilities currently available at the site: electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other
- B. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed.

New utility connections or modifications to existing utility connections will be constructed and may require access to the public right of way for final connection. These will be installed by a private contractor. The utility providers are the City of Kirkland, Puget Sound Energy, Verizon and Comcast

C. SIGNATURE

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

Signature: 
Steven L. Cole

Date Submitted: 12/4/07

Relationship of signer to project:

Modernization Manager for the Lake Washington School District

CITY OF KIRKLAND

123 FIFTH AVENUE ● KIRKLAND, WASHINGTON 98033-6189 ● (425) 587-3000

**DEPARTMENT OF PUBLIC WORKS
MEMORANDUM**

To: Planning Department

From: Thang Nguyen, Transportation Engineer

Date: December 13, 2007

Subject: Lake Washington High School Concurrency Test Notice

PROJECT DESCRIPTION

The Lake Washington School District proposes to expand the existing Lake Washington High School to accommodate 107 additional students. Currently, there are 1,143 High and 90 Junior High School students.

TRIP GENERATION & DISTRIBUTION

Based on the Institute of Transportation Engineers (ITE) trip generation data, the proposed expansion would generate approximately 183 daily, 44 AM peak and 15 PM peak hour trips.

TRAFFIC CONCURRENCY

The proposed project passed traffic concurrency and received a traffic concurrency test notice on December 13, 2007 that will expire on December 13, 2008 unless a development permit and certificate of concurrency are issued or an extension is granted.

Expiration

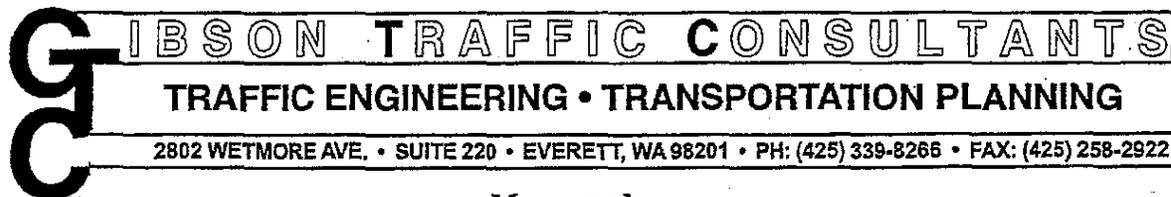
The concurrency test notice shall expire and a new concurrency test application is required unless:

1. A complete SEPA checklist, traffic impact analysis and all required documentation are submitted to the City within 90 calendar days of the concurrency test notice.
2. A Certificate of Concurrency is issued or an extension is requested and granted by the Public Works Department within one year of issuance of the concurrency test notice. (A Certificate of Concurrency is issued at the same time a development permit or building permit is issued if the applicant holds a valid concurrency test notice.)
3. A Certificate of Concurrency shall expire six years from the date of issuance of the concurrency test notice unless all building permits are issued for buildings approved under the concurrency test notice.

Appeals

The concurrency test notice may be appealed by the public or agency with jurisdiction. The concurrency test notice is subject to an appeal until the SEPA review process is complete and the appeal deadline has passed. Concurrency appeals are heard before the Hearing Examiner along with any applicable SEPA appeal. For more information, refer to the Kirkland Municipal Code, Title 25.

Cc: John Burkhalter, Development Engineer
Matthew Palmer, Gibson Traffic Consultants
File
ammerman, Public Works



Memorandum

TO: Thang Nguyen, City of Kirkland, Transportation Engineer
FROM: Matthew Palmer, P.E., Gibson Traffic Consultants (GTC)
DATE: November 20, 2007
RE: **Evaluation of Existing Parking, Traffic Conditions & Potential Impacts of Lake Washington High School Replacement Project for Concurrency**

School Project, Access & Parking: Lake Washington School District (LWSD) proposes a school replacement project for Lake Washington High School campus between NE 75th Street and NE 80th Street, west of 122nd Avenue NE in the City of Kirkland. Lake Washington HS is open from 8:00 AM to 2:31 PM each school day. The existing school site has three (3) driveways to NE 75th Street and a main access as the south leg of the signalized intersection of NE 80th Street at 120th Avenue NE. A site vicinity map is included as **Figure 1**. There are plans to close one access to the south and create a one-way drop-off loop with the west access as ingress and the east access as egress only. There will be a gated fire lane that will run along the east side of the new school buildings, with no connectivity between the north parking lot and the south accesses. The horizon year for the completion of the replacement is 2011.

Existing-Proposed Parking/Utilization: Prior to GTC's School PM peak count at the school driveways on Tuesday March 6, 2007, a parking utilization survey was conducted from 12:30 to 1:30 PM. At present, the Lake Washington High School campus has a total of approximately 650 marked parking spaces split into five (5) different parking areas. Of the 5 parking areas the highest occupancy at 92 % was in the northeast lot directly west of the track/football field. **Overall, there were 455 parked vehicles on campus prior to the school PM peak for a total occupancy of 70 %.** A summary table has been provided in the attachments as **Table 1**. With the school replacement the parking will all be moved to the north, with one small lot on the southwest corner of the site. The total parking that will be provided will be 503 stalls, 21 of which will be designated as handicap accessible stalls.

Existing Peak Traffic Volumes & LOS Conditions: GTC has identified six potential study intersections to identify the impacts of the school replacement. New AM (7 to 9 AM) and PM School peak (1:30 to 3:30 PM) counts were conducted at all of the study intersections and PM peak (4 to 6 PM) traffic counts were taken at the two offsite intersections on Tuesday March 6th by Traffic Data Gathering (TDG). The six (6) study intersections include:

1. NE 85th St at 120th Ave NE – Signalized
2. NE 80th St at 120th Ave NE – Signalized
3. NE 75th St at East School Dwy – Two-way Stop Controlled

4. NE 75th St at Middle School Dwy – Two-way Stop Controlled
5. NE 75th St at West School Dwy – Two-way Stop Controlled
6. NE 70th St at 116th Ave NE – Signalized

The existing TM volumes are included in **Figures 2A, 2B and 2C**, for the AM, PM School and PM peak periods, respectively. The PM School peak-hour volumes at the accesses are approximately only 60% of the AM peak-hour volumes.

Traffic flow and congestion on streets and roadways is usually measured in terms of level-of-service (LOS) at critical intersections. Traffic flow varies from LOS A free-flow conditions to LOS F forced-flow conditions, with LOS E representing capacity conditions (see **Table 2**). Using the methodology described in the *2000 Highway Capacity Manual* and Synchro software version 6 (build 614), GTC calculated the existing LOS at the study intersections. All of the intersections would operate at LOS D or better during all of the study times. Note: Refer to **Tables 3A, 3B and 3C** for summaries of peak LOS results.

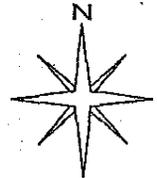
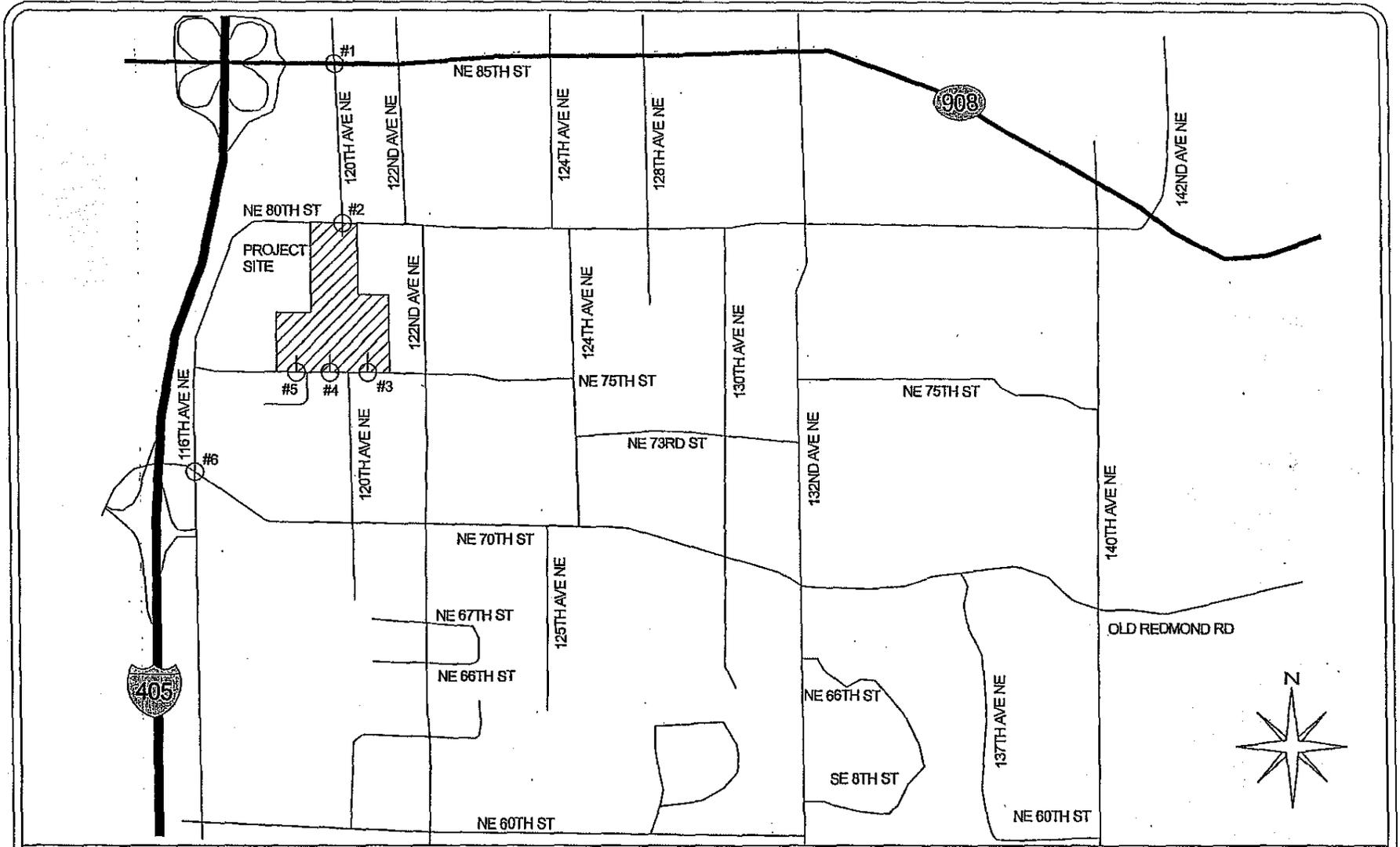
Potential Impacts of New School (Preliminary): The existing school has an enrollment of approximately 1,143 HS students and 90 JH students. However, the current build out capacity of the school is 1,500 students. The replacement would be for a total campus capacity of 1,250 HS students and 90 JH students. The trip generation for the difference between the existing HS students and the future HS students was calculated by using the *ITE Trip Generation* manual (7th Edition, 2003), Land Use Code 530, High School. Based on an increase from existing conditions of 107 HS students, the new students would generate an additional **107 daily, 44 AM peak-hour trips (30 inbound/14 outbound), 30 PM School peak-hour trips (10 inbound/20 outbound), and 15 PM peak-hour trips (7 inbound/8 outbound)** on an average weekday or school day. A summary of the expected trip generation for the new school has been included in **Table 4**. Based on the existing traffic counts it is anticipated that approximately 75% of the new trips would utilize the main access to the north, 14% to the west access and the remaining 11% to the east and middle access. Peak traffic conditions during the AM/PM school peaks at the proposed accesses would likely remain at LOS B or LOS C with the school replacement. Also, with the parking lots at 70% occupancy the additional high school students that would drive would be able to be accommodated on-site.

City of Kirkland Mitigation Fees: Based on the existing capacity for the school being greater than the proposed capacity, the school should not have to pay traffic mitigation fees to the City. However, if the City does require traffic mitigation fees they would be assessed per the City of Kirkland, Appendix A "Road Impact Fee Schedule". The City imposes a per student fee for High Schools a \$76.00 per student. Based on the proposed replacement of 107 HS students the replacement would be responsible for paying a total of \$8,132 in road impact fees to the City.

This memorandum summarizes GTC's preliminary traffic/parking analyses for the Lake Washington High school project so the City of Kirkland can complete it's traffic concurrency. If you have any questions please feel free to give us a call. Thanks.

Attachments (Figures, LOS tables, AM/PM peak TM counts)

XC: David Zeitlin, Lake Washington School District



GIBSON TRAFFIC CONSULTANTS

TRAFFIC IMPACT STUDY
GTC #06-380

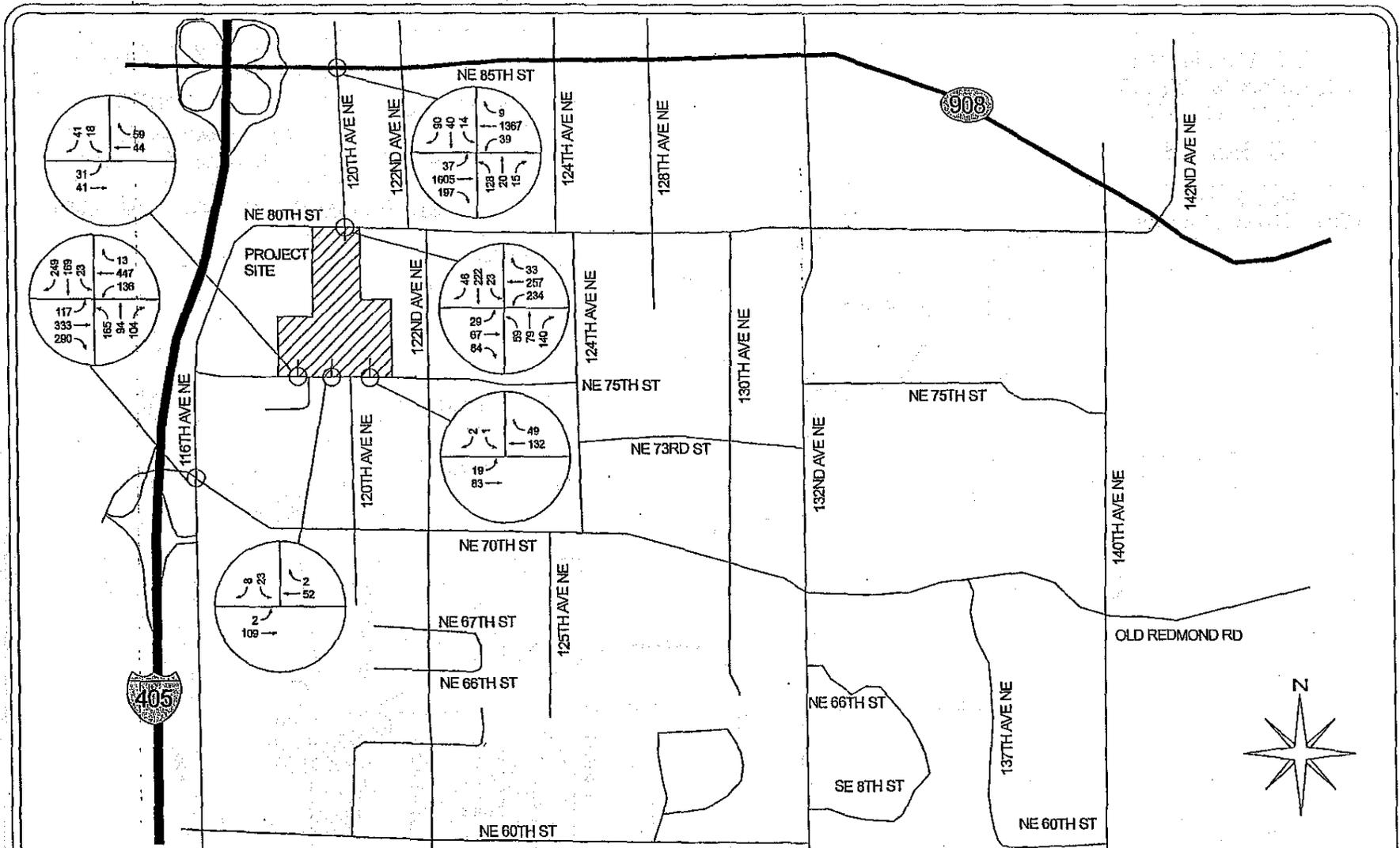
LAKE WASHINGTON
HIGH SCHOOL EXPANSION
(165 STUDENTS)

CITY OF KIRKLAND

LEGEND

-  PROJECT SITE
-  STUDY INTERSECTION

FIGURE 1
SITE VICINITY
MAP



GIBSON TRAFFIC CONSULTANTS

TRAFFIC IMPACT STUDY
GTC #06-380

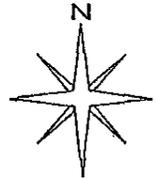
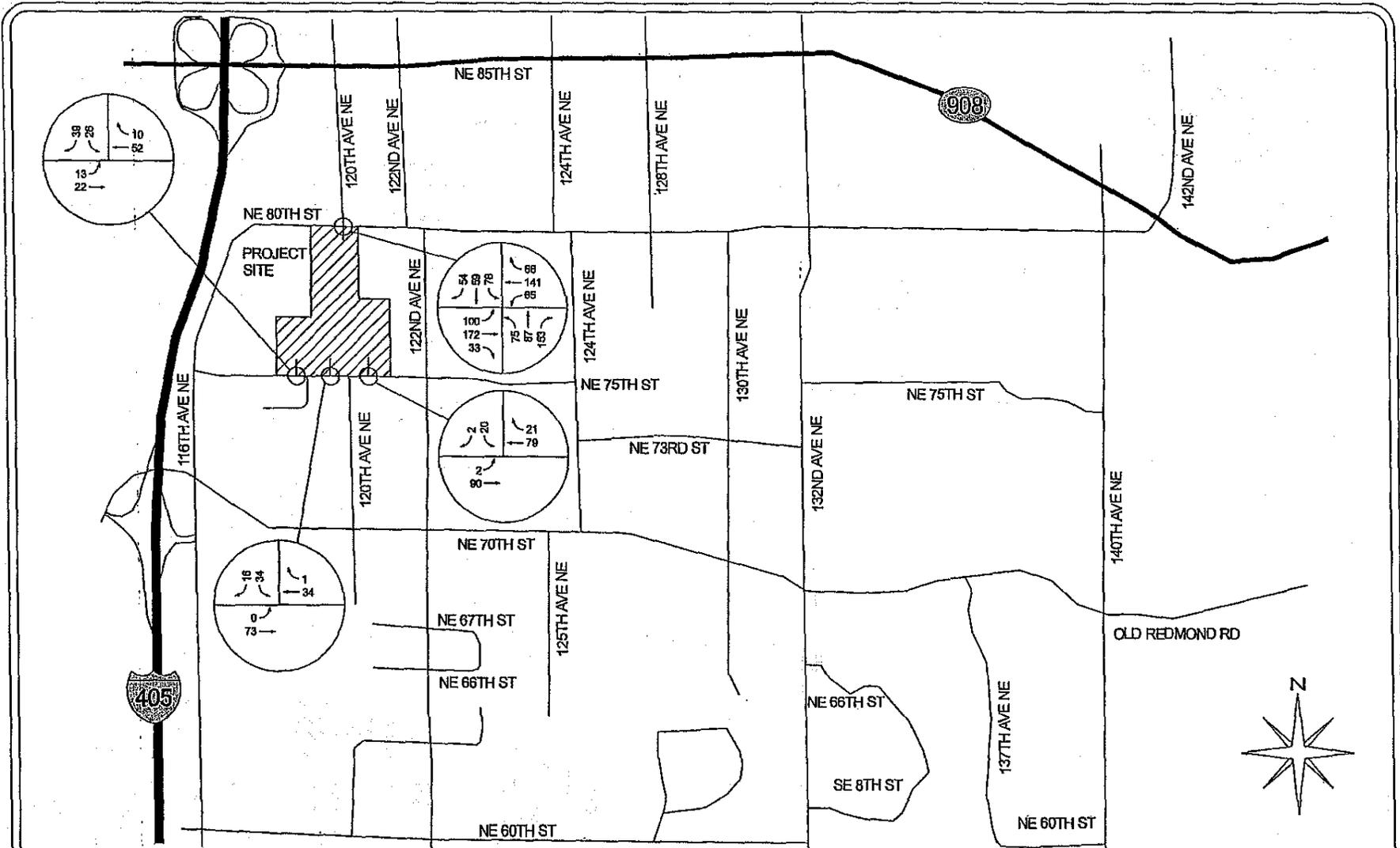
LAKE WASHINGTON
HIGH SCHOOL EXPANSION
(165 STUDENTS)

LEGEND

158 → PEAK HOUR
TURNING MOVEMENT VOLUMES

CITY OF KIRKLAND

FIGURE 2A
EXISTING 2007 AM
PEAK-HOUR
TRAFFIC VOLUMES



GIBSON TRAFFIC CONSULTANTS

TRAFFIC IMPACT STUDY
GTC #06-380

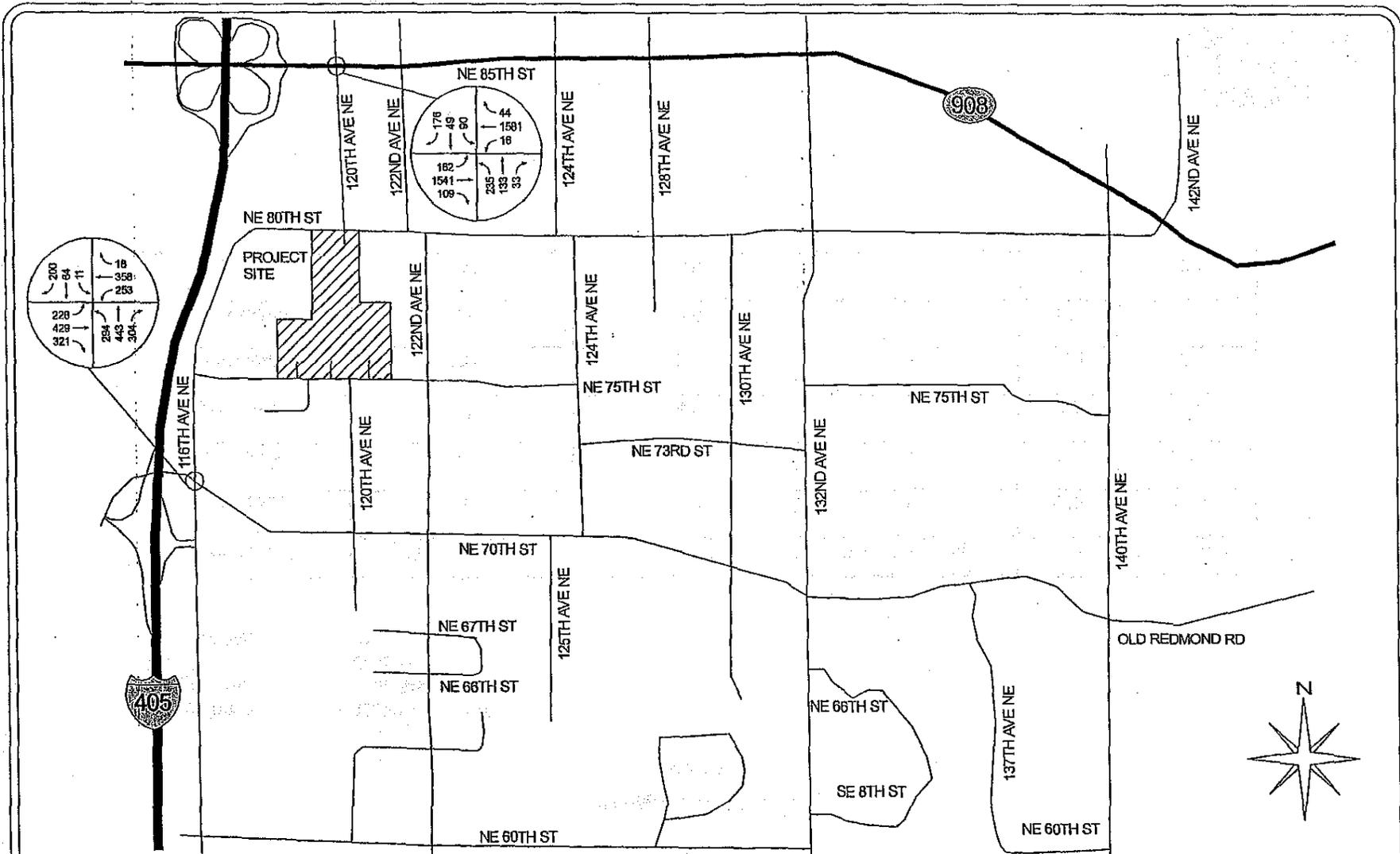
**LAKE WASHINGTON
HIGH SCHOOL EXPANSION
(165 STUDENTS)**

LEGEND

273 → PEAK HOUR
TURNING MOVEMENT VOLUMES

CITY OF KIRKLAND

FIGURE 2B
EXISTING 2007 PM
SCHOOL PEAK-HOUR
TRAFFIC VOLUMES



GIBSON TRAFFIC CONSULTANTS TRAFFIC IMPACT STUDY
GTC #06-380

LAKE WASHINGTON
HIGH SCHOOL EXPANSION
(165 STUDENTS)

CITY OF KIRKLAND

LEGEND
285 → PEAK HOUR
TURNING MOVEMENT VOLUMES

FIGURE 2C
EXISTING 2007 PM
PEAK-HOUR
TRAFFIC VOLUMES

Lake WA High School Expansion
GTC #06-380

TABLE 1

Lake Washington High School
Parking Survey

Survey Time: 12:30 - 1:30 PM
Survey Date: Tue. Mar 06, 2007
Weather: Sunny
Surveyed By: JH

Parking Lot	Empty Stalls	Occupied Stalls	Illegal Parking	Total	Occupancy
Northeast	9	102	1	112	92%
Northwest	43	117	0	160	73%
Southeast	10	48	2	60	83%
Southwest	121	68	0	189	36%
Gymnasium	12	114	3	129	91%
Total	195	449	6	650	70%

TABLE 2

INTERSECTION LEVEL OF SERVICE (LOS) CRITERIA

Level of Service ¹	Expected Delay	Control Delay (Seconds per Vehicle)	
		Unsignalized Intersections	Signalized Intersections
A	Little/No Delay	≤10	≤10
B	Short Delays	>10 and ≤15	>10 and ≤20
C	Average Delays	>15 and ≤25	>20 and ≤35
D	Long Delays	>25 and ≤35	>35 and ≤55
E	Very Long Delays	>35 and ≤50	>55 and ≤80
F	*	>50	>80

* When demand volume exceeds the capacity of the lane, extreme delays will be encountered with queuing which may cause severe congestion affecting other traffic movements in the intersection.

Source: *Highway Capacity Manual 2000*.

- ¹ LOS A: free-flow traffic conditions, with minimal delay to stopped vehicles (no vehicle is delayed longer than one cycle at signalized intersection).
- LOS B: generally stable traffic flow conditions.
- LOS C: occasional back-ups may develop, but delay to vehicles is short term and still tolerable.
- LOS D: during short periods of the peak hour, delays to approaching vehicles may be substantial but are tolerable during times of less demand (i.e. vehicles delayed one cycle or less at signal).
- LOS E: intersections operate at or near capacity, with long queues developing on all approaches and long delays.
- LOS F: jammed conditions on all approaches with excessively long delays and vehicles unable to move at times.

TABLE 3A

EXISTING LEVEL OF SERVICE
Weekday AM Peak Hour

		EXISTING CONDITIONS	
Intersection		LOS	Delay
1.	120th Ave NE @ NE 85th St	C	26.3 sec
2.	120th Ave NE @ NE 85th St	B	16.5 sec
3.	East Driveway @ NE 75th St	A	10.0 sec
4.	Middle Drvieway @ NE 75th St	A	9.8 sec
5.	West Driveway @ NE 75th St	B	10.6 sec
6.	116th Ave NE @ NE 70th St	D	40.6 sec

TABLE 3B

**EXISTING LEVEL OF SERVICE
School PM Peak Hour (2:15 to 3:15)**

Intersection.		EXISTING CONDITIONS	
		LOS	Delay
1.	120th Ave NE @ NE 85th St	B	12.4 sec
2.	East Driveway @ NE 75th St	B	10.0 sec
3.	Middle Drvieway @ NE 75th St	A	9.7 sec
4.	West Driveway @ NE 75th St	A	9.7 sec

TABLE 3C

EXISTING LEVEL OF SERVICE
Weekday PM Peak Hour

Intersection		EXISTING CONDITIONS	
		LOS	Delay
1.	120th Ave NE @ NE 85th St	C	34.4 sec
2.	116th Ave NE @ NE 70th St	C	34.9 sec

Lake WA High School Expansion
 GTC #06-380

TABLE 4
TRIP GENERATION SUMMARY

Proposed Land Uses	Units (Students)	Average Daily Trips	AM Peak-Hour			PM School Peak-Hour			PM Peak-Hour		
			Total	Inbound	Outbound	Total	Inbound	Outbound	Total	Inbound	Outbound
High School	107	183	44	30	14	30	10	20	15	7	8
Total	107	183	44	30	14	30	10	20	15	7	8

Lake WA High School Expansion
GTC #06-380

Trip Generation for: Weekday
(a.k.a.): Average Weekday Daily Trips (AWDT)

		NET EXTERNAL TRIPS BY TYPE																		
		IN BOTH DIRECTIONS										DIRECTIONAL ASSIGNMENTS								
LAND USES	VARIABLE	ITE LU code	Gross Trips				Internal Crossover		TOTAL	PASS-BY		DIVERTED LINK		NEW	PASS-BY		DIVERTED LINK		NEW	
			Trip Rate	% IN	% OUT	In+Out (Total)	% of Gross Trips	Trips In+Out (Total)	In+Out (Total)	% of Ext. Trips	In+Out (Total)	% of Ext. Trips	In+Out (Total)	In+Out (Total)	In	Out	In	Out	In	Out
High School	107 Student	530	1.71	50%	50%	183	0%	0	183	0%	0	0%	0	183	0	0	0	0	91	91
Total	107 Student					183		0	183		0		0	183	0	0	0	0	91	91

Lake WA High School Expansion
GTC #06-380

Trip Generation for: Weekday, AM Peak Hour

		NET EXTERNAL TRIPS BY TYPE																			
		IN BOTH DIRECTIONS											DIRECTIONAL ASSIGNMENTS								
		Gross Trips					Internal Crossover		TOTAL	PASS-BY			DIVERTED LINK		NEW	PASS-BY		DIVERTED LINK		NEW	
LAND USES	VARIABLE	ITE LU code	Trip Rate	% IN	% OUT	In+Out (Total)	% of Gross Trips	Trips In+Out (Total)	In+Out (Total)	% of Ext. Trips	In+Out (Total)	% of Ext. Trips	In+Out (Total)	In+Out (Total)	In	Out	In	Out	In	Out	
High School	107 Student	530	0.41	69%	31%	44	0%	0	44	0%	0	0%	0	44	0	0	0	0	30	14	
Total	107 Student					44		0	44		0		0	44	0	0	0	0	30	14	

Lake WA High School Expansion
GTC #06-380

Trip Generation for: Weekday, PM Peak Hour of Generator

LAND USES	VARIABLE	ITE LU code	NET EXTERNAL TRIPS BY TYPE																		
			Gross Trips						Internal Crossover		IN BOTH DIRECTIONS					DIRECTIONAL ASSIGNMENTS					
			Trip Rate	% IN	% OUT	In+Out (Total)	% of Gross Trips	Trips In+Out (Total)	TOTAL In+Out (Total)	% of Ext. Trips	In+Out (Total)	% of Ext. Trips	In+Out (Total)	NEW In+Out (Total)	PASS-BY		DIVERTED LINK		NEW		
High School	107 Student	530	0.28	32%	68%	30	0%	0	30	0%	0	0%	0	30	0	0	0	0	10	20	
Total	107 Student					30		0	30		0		0	30	0	0	0	0	10	20	

Lake WA High School Expansion
GTC #06-380

Trip Generation for: Weekday, PM Peak Hour

		NET EXTERNAL TRIPS BY TYPE																		
		IN BOTH DIRECTIONS										DIRECTIONAL ASSIGNMENTS								
LAND USES	VARIABLE	ITE LU code	Gross Trips				Internal Crossover		TOTAL	PASS-BY		DIVERTED LINK		NEW	PASS-BY		DIVERTED LINK		NEW	
			Trip Rate	% IN	% OUT	In+Out (Total)	% of Gross Trips	Trips In+Out (Total)	In+Out (Total)	% of Ext. Trips	In+Out (Total)	% of Ext. Trips	In+Out (Total)	In+Out (Total)	In	Out	In	Out	In	Out
High School	107 Student	530	0.14	47%	53%	15	0%	0	15	0%	0	0%	0	15	0	0	0	0	7	8
Total	107 Student					15		0	15		0		0	15	0	0	0	0	7	8

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	400		0	100		0	65		0	100		240
Storage Lanes	1		0	1		0	1		0	1		1
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50		50	50		50	50	50
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.984			0.999			0.937				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1719	3383	0	1719	3435	0	1719	1696	0	1719	1810	1538
Flt Permitted	0.950			0.950			0.656			0.732		
Satd. Flow (perm)	1719	3383	0	1719	3435	0	1187	1696	0	1325	1810	1538
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		20			1			16				59
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		1512			2531			1405			502	
Travel Time (s)		29.5			49.3			31.9			11.4	
Volume (vph)	37	1605	197	39	1367	9	128	20	15	14	40	90
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	41	1764	216	43	1502	10	141	22	16	15	44	99
Lane Group Flow (vph)	41	1980	0	43	1512	0	141	38	0	15	44	99
Turn Type	Prot			Prot			pm+pt			pm+pt		pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases							2			6		6
Detector Phases	7	4		3	8		5	2		1	6	7
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Minimum Split (s)	8.0	20.0		8.0	20.0		8.0	20.0		8.0	20.0	8.0
Total Split (s)	11.0	88.0	0.0	10.0	87.0	0.0	10.0	24.0	0.0	8.0	22.0	11.0
Total Split (%)	8.5%	67.7%	0.0%	7.7%	66.9%	0.0%	7.7%	18.5%	0.0%	6.2%	16.9%	8.5%
Maximum Green (s)	7.0	84.0		6.0	83.0		6.0	20.0		4.0	18.0	7.0
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	0.5
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None		None	Max		None	Max	None
Walk Time (s)		5.0			5.0			5.0			5.0	
Flash Dont Walk (s)		11.0			11.0			11.0			11.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	6.7	74.5		6.0	73.8		28.1	25.9		22.5	18.5	29.1
Actuated g/C Ratio	0.06	0.63		0.05	0.62		0.24	0.22		0.18	0.16	0.24
v/c Ratio	0.43	0.93		0.51	0.71		0.46	0.10		0.06	0.16	0.24
Control Delay	73.2	28.9		80.5	17.5		48.2	31.5		41.9	50.6	20.6
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	73.2	28.9		80.5	17.5		48.2	31.5		41.9	50.6	20.6

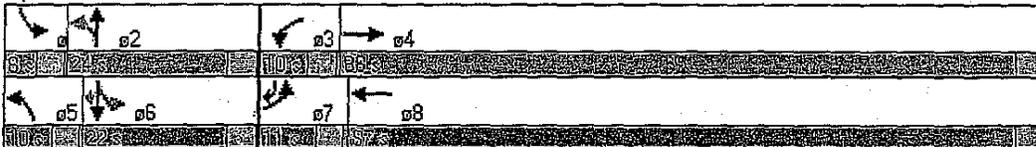
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	E	C		F	B		D	C		D	D	C
Approach Delay		29.8			19.2			44.7			31.0	
Approach LOS		C			B			D			C	
Queue Length 50th (ft)	34	689		36	404		103	15		10	33	27
Queue Length 95th (ft)	74	832		#88	483		168	50		30	71	77
Internal Link Dist (ft)		1432			2451			1325			422	
Turn Bay Length (ft)	400			100			65			100		240
Base Capacity (vph)	101	2229		86	2234		308	381		253	282	418
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.41	0.89		0.50	0.68		0.46	0.10		0.06	0.16	0.24

Intersection Summary

Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 119
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.93
 Intersection Signal Delay: 26.3
 Intersection Capacity Utilization 71.1%
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Intersection LOS: C
 ICU Level of Service C

Splits and Phases: 1: NE 85th St & 120th Ave NE



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	85		0	70		0	0		0	0		0
Storage Lanes	1		0	1		0	0		1	0		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50		50	50	50	50	50	
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr't		0.917			0.983				0.850		0.979	
Flt Protected	0.950			0.950				0.979			0.996	
Satd. Flow (prot)	1752	1692	0	1752	1813	0	0	1806	1568	0	1799	0
Flt Permitted	0.369			0.590				0.712			0.966	
Satd. Flow (perm)	681	1692	0	1088	1813	0	0	1313	1568	0	1745	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		131			14				219		19	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		661			683			302			1405	
Travel Time (s)		18.0			18.6			6.9			31.9	
Volume (vph)	29	67	84	234	257	33	59	79	140	23	222	46
Peak Hour Factor	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Adj. Flow (vph)	45	105	131	366	402	52	92	123	219	36	347	72
Lane Group Flow (vph)	45	236	0	366	454	0	0	215	219	0	455	0
Turn Type	Perm			Perm			Perm		Perm	Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		
Detector Phases	4	4		8	8		2	2	2	6	6	
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0	20.0	20.0	20.0	
Total Split (s)	31.0	31.0	0.0	31.0	31.0	0.0	29.0	29.0	29.0	29.0	29.0	0.0
Total Split (%)	51.7%	51.7%	0.0%	51.7%	51.7%	0.0%	48.3%	48.3%	48.3%	48.3%	48.3%	0.0%
Maximum Green (s)	27.0	27.0		27.0	27.0		25.0	25.0	25.0	25.0	25.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5	0.5	0.5	0.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None		Max	Max	Max	Max	Max	
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	
Act Effct Green (s)	22.2	22.2		22.2	22.2			25.3	25.3		25.3	
Actuated g/C Ratio	0.40	0.40		0.40	0.40			0.46	0.46		0.46	
v/c Ratio	0.17	0.31		0.84	0.62			0.36	0.26		0.57	
Control Delay	11.7	6.2		34.4	16.6			13.8	2.9		15.5	
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Delay	11.7	6.2		34.4	16.6			13.8	2.9		15.5	

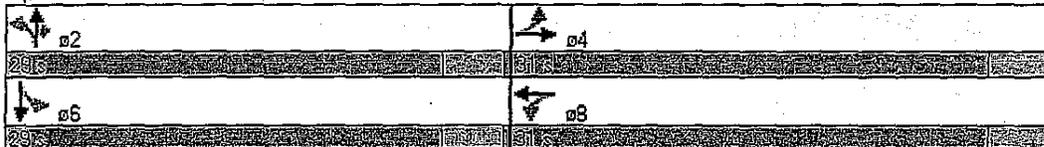
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	B	A		C	B			B	A		B	
Approach Delay		7.1			24.6			8.3			15.5	
Approach LOS		A			C			A			B	
Queue Length 50th (ft)	9	21		104	109			51	0		117	
Queue Length 95th (ft)	18	30		114	113			65	9		122	
Internal Link Dist (ft)		581			603			222			1325	
Turn Bay Length (ft)	85			70								
Base Capacity (vph)	306	833		490	824			598	833		805	
Starvation Cap Reductn	0	0		0	0			0	0		0	
Spillback Cap Reductn	0	0		0	0			0	0		0	
Storage Cap Reductn	0	0		0	0			0	0		0	
Reduced v/c Ratio	0.15	0.28		0.75	0.55			0.36	0.26		0.57	

Intersection Summary

Area Type: Other
 Cycle Length: 60
 Actuated Cycle Length: 55.6
 Natural Cycle: 45
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.84
 Intersection Signal Delay: 16.5
 Intersection Capacity Utilization 55.6%
 Analysis Period (min) 15

Intersection LOS: B
 ICU Level of Service B

Splits and Phases: 2: NE 80th St & 120th Ave NE



						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	19	83	132	49	1	2
Peak Hour Factor	0.69	0.69	0.69	0.69	0.69	0.69
Hourly flow rate (vph)	28	120	191	71	1	3
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	262				402	227
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	262				402	227
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				100	100
cM capacity (veh/h)	1308				593	815
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	148	262	4			
Volume Left	28	0	1			
Volume Right	0	71	3			
cSH	1308	1700	725			
Volume to Capacity	0.02	0.15	0.01			
Queue Length 95th (ft)	2	0	0			
Control Delay (s)	1.6	0.0	10.0			
Lane LOS	A		A			
Approach Delay (s)	1.6	0.0	10.0			
Approach LOS			A			
Intersection Summary						
Average Delay			0.7			
Intersection Capacity Utilization		28.7%		ICU Level of Service		A
Analysis Period (min)			15			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↖	↗		↖	↗
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	2	109	52	2	23	8
Peak Hour Factor	0.69	0.69	0.69	0.69	0.69	0.69
Hourly flow rate (vph)	3	158	75	3	33	12
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	78				241	77
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	78				241	77
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				96	99
cM capacity (veh/h)	1526				748	987
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	161	78	45			
Volume Left	3	0	33			
Volume Right	0	3	12			
cSH	1526	1700	798			
Volume to Capacity	0.00	0.05	0.06			
Queue Length 95th (ft)	0	0	4			
Control Delay (s)	0.1	0.0	9.8			
Lane LOS	A		A			
Approach Delay (s)	0.1	0.0	9.8			
Approach LOS			A			
Intersection Summary						
Average Delay			1.6			
Intersection Capacity Utilization			17.3%	ICU Level of Service		A
Analysis Period (min)			15			

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	31	41	44	59	18	41
Peak Hour Factor	0.46	0.46	0.46	0.46	0.46	0.46
Hourly flow rate (vph)	67	89	96	128	39	89
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	224				384	160
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	224				384	160
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	95				93	90
cM capacity (veh/h)	1351				590	888
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	157	224	128			
Volume Left	67	0	39			
Volume Right	0	128	89			
cSH	1351	1700	769			
Volume to Capacity	0.05	0.13	0.17			
Queue Length 95th (ft)	4	0	15			
Control Delay (s)	3.6	0.0	10.6			
Lane LOS	A		B			
Approach Delay (s)	3.6	0.0	10.6			
Approach LOS			B			
Intersection Summary						
Average Delay			3.8			
Intersection Capacity Utilization		20.7%		ICU Level of Service		A
Analysis Period (min)			15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	380		280	120		0	240		240	120		0
Storage Lanes	1		1	1		0	1		1	1		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50		50	50	50	50	50	
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.996				0.850		0.911	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1719	1810	1538	1719	1802	0	1719	1810	1538	1719	1648	0
Flt Permitted	0.157			0.286			0.950			0.950		
Satd. Flow (perm)	284	1810	1538	518	1802	0	1719	1810	1538	1719	1648	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			322		1				116		61	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			25			25	
Link Distance (ft)		540			920			657			435	
Travel Time (s)		12.3			20.9			17.9			11.9	
Volume (vph)	117	333	290	136	447	13	165	94	104	23	169	249
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Adj. Flow (vph)	130	370	322	151	497	14	183	104	116	26	188	277
Lane Group Flow (vph)	130	370	322	151	511	0	183	104	116	26	188	277
Turn Type	pm+pt		pm+ov	pm+pt			Prot		Perm	Prot		
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases	4		4	8					2			
Detector Phases	7	4	5	3	8		5	2	2	1	6	
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	8.0	20.0	8.0	8.0	20.0		8.0	20.0	20.0	8.0	20.0	
Total Split (s)	12.0	46.0	23.0	14.0	48.0	0.0	23.0	60.0	60.0	10.0	47.0	0.0
Total Split (%)	9.2%	35.4%	17.7%	10.8%	36.9%	0.0%	17.7%	46.2%	46.2%	7.7%	36.2%	0.0%
Maximum Green (s)	8.0	42.0	19.0	10.0	44.0		19.0	56.0	56.0	6.0	43.0	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5		0.5	0.5	0.5	0.5	0.5	
Lead/Lag	Lead	Lag	Lead	Lead	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None		None	Max	Max	None	Max	
Walk Time (s)		5.0			5.0			5.0	5.0		5.0	
Flash Dont Walk (s)		11.0			11.0			11.0	11.0		11.0	
Pedestrian Calls (#/hr)		0			0			0	0		0	
Act Effct Green (s)	43.9	35.9	56.4	47.0	37.5		16.4	58.2	58.2	5.9	43.4	
Actuated g/C Ratio	0.36	0.30	0.46	0.39	0.31		0.14	0.48	0.48	0.05	0.36	
v/c Ratio	0.66	0.69	0.36	0.51	0.92		0.79	0.12	0.15	0.32	0.74	
Control Delay	41.1	45.5	3.1	30.0	63.0		75.3	20.9	4.4	70.5	39.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	41.1	45.5	3.1	30.0	63.0		75.3	20.9	4.4	70.5	39.6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	D	D	A	C	E		E	C	A	E	D	
Approach Delay		28.2			55.5			40.8			41.2	
Approach LOS		C			E			D			D	
Queue Length 50th (ft)	66	265	0	78	395		146	50	0	21	304	
Queue Length 95th (ft)	#119	375	47	126	#579		#253	90	36	54	#458	
Internal Link Dist (ft)		460			840			577			355	
Turn Bay Length (ft)	380		280	120			240		240	120		
Base Capacity (vph)	198	599	885	302	623		265	868	798	82	628	
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	
Reduced v/c Ratio	0.66	0.62	0.36	0.50	0.82		0.69	0.12	0.15	0.32	0.74	

Intersection Summary

Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 121.4
 Natural Cycle: 80
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.92
 Intersection Signal Delay: 40.6
 Intersection Capacity Utilization 77.4%
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Intersection LOS: D
 ICU Level of Service D

Splits and Phases: 6: NE 70th St & 116th Ave NE



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔		↔	↔			↑	↑		↔	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	85		0	70		0	0		0	0		0
Storage Lanes	1		0	1		0	0		1	0		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50		50	50	50	50	50	
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.976			0.952				0.850		0.962	
Flt Protected	0.950			0.950				0.977			0.980	
Satd. Flow (prot)	1752	1800	0	1752	1756	0	0	1802	1568	0	1739	0
Flt Permitted	0.527			0.529				0.782			0.793	
Satd. Flow (perm)	972	1800	0	976	1756	0	0	1443	1568	0	1407	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		21			51				219		41	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		661			683			302			1405	
Travel Time (s)		18.0			18.6			6.9			31.9	
Volume (vph)	100	172	33	65	141	66	75	87	153	78	59	54
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Adj. Flow (vph)	143	246	47	93	201	94	107	124	219	111	84	77
Lane Group Flow (vph)	143	293	0	93	295	0	0	231	219	0	272	0
Turn Type	Perm			Perm			Perm		Perm	Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		
Detector Phases	4	4		8	8		2	2	2	6	6	
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0	20.0	20.0	20.0	
Total Split (s)	31.0	31.0	0.0	31.0	31.0	0.0	29.0	29.0	29.0	29.0	29.0	0.0
Total Split (%)	51.7%	51.7%	0.0%	51.7%	51.7%	0.0%	48.3%	48.3%	48.3%	48.3%	48.3%	0.0%
Maximum Green (s)	27.0	27.0		27.0	27.0		25.0	25.0	25.0	25.0	25.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5	0.5	0.5	0.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None		Max	Max	Max	Max	Max	
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	
Act Effct Green (s)	12.5	12.5		12.5	12.5		26.0	26.0	26.0	26.0	26.0	
Actuated g/C Ratio	0.27	0.27		0.27	0.27		0.56	0.56	0.56	0.56	0.56	
v/c Ratio	0.55	0.59		0.35	0.58		0.29	0.23	0.23	0.34	0.34	
Control Delay	22.1	18.0		16.7	16.2		8.1	2.1	2.1	7.5	7.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	22.1	18.0		16.7	16.2		8.1	2.1	2.1	7.5	7.5	

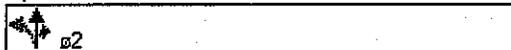
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	C	B		B	B			A	A		A	
Approach Delay		19.3			16.3			5.2			7.5	
Approach LOS		B			B			A			A	
Queue Length 50th (ft)	31	60		19	53			27	0		27	
Queue Length 95th (ft)	52	81		35	73			60	12		60	
Internal Link Dist (ft)		581			603			222			1325	
Turn Bay Length (ft)	85			70								
Base Capacity (vph)	432	812		434	809			805	971		803	
Starvation Cap Reductn	0	0		0	0			0	0		0	
Spillback Cap Reductn	0	0		0	0			0	0		0	
Storage Cap Reductn	0	0		0	0			0	0		0	
Reduced v/c Ratio	0.33	0.36		0.21	0.36			0.29	0.23		0.34	

Intersection Summary

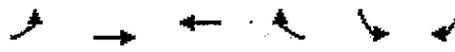
Area Type: Other
 Cycle Length: 60
 Actuated Cycle Length: 46.6
 Natural Cycle: 40
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.59
 Intersection Signal Delay: 12.4
 Intersection Capacity Utilization 44.4%
 Analysis Period (min) 15

Intersection LOS: B
 ICU Level of Service A

Splits and Phases: 1: NE 80th St & 120th Ave NE

 02	 04
 05	 08

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	2	90	79	21	20	2
Peak Hour Factor	0.72	0.72	0.72	0.72	0.72	0.72
Hourly flow rate (vph)	3	125	110	29	28	3
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	139				255	124
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	139				255	124
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				96	100
cM capacity (veh/h)	1451				735	929
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	128	139	31			
Volume Left	3	0	28			
Volume Right	0	29	3			
cSH	1451	1700	749			
Volume to Capacity	0.00	0.08	0.04			
Queue Length 95th (ft)	0	0	3			
Control Delay (s)	0.2	0.0	10.0			
Lane LOS	A		B			
Approach Delay (s)	0.2	0.0	10.0			
Approach LOS			B			
Intersection Summary						
Average Delay			1.1			
Intersection Capacity Utilization			16.3%	ICU Level of Service		A
Analysis Period (min)			15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↔		↔	
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	0	73	34	1	34	16
Peak Hour Factor	0.55	0.55	0.55	0.55	0.55	0.55
Hourly flow rate (vph)	0	133	62	2	62	29
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	64				195	63
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	64				195	63
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				92	97
cM capacity (veh/h)	1545				796	1005

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	133	64	91
Volume Left	0	0	62
Volume Right	0	2	29
cSH	1545	1700	852
Volume to Capacity	0.00	0.04	0.11
Queue Length 95th (ft)	0	0	9
Control Delay (s)	0.0	0.0	9.7
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.7
Approach LOS			A

Intersection Summary			
Average Delay		3.1	
Intersection Capacity Utilization		13.8%	ICU Level of Service
Analysis Period (min)		15	A

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	13	22	52	10	26	39
Peak Hour Factor	0.57	0.57	0.57	0.57	0.57	0.57
Hourly flow rate (vph)	23	39	91	18	46	68
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	109				184	100
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	109				184	100
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				94	93
cM capacity (veh/h)	1475				790	953
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	61	109	114			
Volume Left	23	0	46			
Volume Right	0	18	68			
cSH	1475	1700	880			
Volume to Capacity	0.02	0.06	0.13			
Queue Length 95th (ft)	1	0	11			
Control Delay (s)	2.9	0.0	9.7			
Lane LOS	A		A			
Approach Delay (s)	2.9	0.0	9.7			
Approach LOS			A			
Intersection Summary						
Average Delay			4.5			
Intersection Capacity Utilization			19.0%		ICU Level of Service	A
Analysis Period (min)			15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	400		0	100		0	65		0	100		240
Storage Lanes	1		0	1		0	1		0	1		1
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50		50	50		50	50	50
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frnt		0.990			0.996			0.970				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3504	0	1770	3525	0	1770	1807	0	1770	1863	1583
Flt Permitted	0.950			0.950			0.592			0.593		
Satd. Flow (perm)	1770	3504	0	1770	3525	0	1103	1807	0	1105	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		10			3			8				32
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		1512			2531			1405			502	
Travel Time (s)		29.5			49.3			31.9			11.4	
Volume (vph)	162	1541	109	16	1581	44	235	133	33	90	49	176
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	172	1639	116	17	1682	47	250	141	35	96	52	187
Lane Group Flow (vph)	172	1755	0	17	1729	0	250	176	0	96	52	187
Turn Type	Prot			Prot			pm+pt			pm+pt		pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases							2			6		6
Detector Phases	7	4		3	8		5	2		1	6	7
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Minimum Split (s)	8.0	20.0		8.0	20.0		8.0	20.0		8.0	20.0	8.0
Total Split (s)	19.0	84.0	0.0	9.0	74.0	0.0	15.0	28.0	0.0	9.0	22.0	19.0
Total Split (%)	14.6%	64.6%	0.0%	6.9%	56.9%	0.0%	11.5%	21.5%	0.0%	6.9%	16.9%	14.6%
Maximum Green (s)	15.0	80.0		5.0	70.0		11.0	24.0		5.0	18.0	15.0
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	0.5
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None		None	Max		None	Max	None
Walk Time (s)		5.0			5.0			5.0			5.0	
Flash Dont Walk (s)		11.0			11.0			11.0			11.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	14.2	80.4		5.0	65.6		33.2	24.1		23.1	18.1	36.4
Actuated g/C Ratio	0.11	0.64		0.04	0.52		0.27	0.19		0.18	0.14	0.29
v/c Ratio	0.86	0.78		0.25	0.93		0.71	0.50		0.42	0.19	0.39
Control Delay	90.0	19.4		70.8	38.2		54.0	50.0		46.5	51.7	32.9
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	90.0	19.4		70.8	38.2		54.0	50.0		46.5	51.7	32.9
LOS	F	B		E	D		D	D		D	D	C

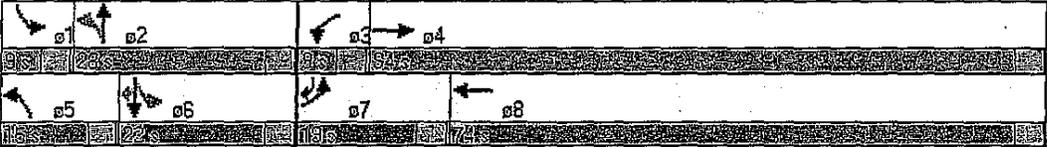
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		25.7			38.5			52.3			39.7	
Approach LOS		C			D			D			D	
Queue Length 50th (ft)	144	447		14	668		184	129		64	39	105
Queue Length 95th (ft)	#271	668		41	794		#286	206		114	80	176
Internal Link Dist (ft)		1432			2451			1325			422	
Turn Bay Length (ft)	400			100			65			100		240
Base Capacity (vph)	212	2284		68	1910		351	355		231	269	489
Starvation Cap Reductn	0	0		0	0		0	0		0	0	0
Spillback Cap Reductn	0	0		0	0		0	0		0	0	0
Storage Cap Reductn	0	0		0	0		0	0		0	0	0
Reduced v/c Ratio	0.81	0.77		0.25	0.91		0.71	0.50		0.42	0.19	0.38

Intersection Summary

Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 125.1
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.93
 Intersection Signal Delay: 34.4
 Intersection Capacity Utilization 83.8%
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Intersection LOS: C
 ICU Level of Service E

Splits and Phases: 1: NE 85th St & 120th Ave NE



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↑	↗	↖	↑	↗	↖	↑	↗	↖	↑	↗
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	380		280	120		0	240		240	120		0
Storage Lanes	1		1	1		0	1		1	1		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50		50	50	50	50	50	
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frnt			0.850		0.993				0.850		0.887	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1850	0	1770	1863	1583	1770	1652	0
Flt Permitted	0.319			0.163			0.950			0.950		
Satd. Flow (perm)	594	1863	1583	304	1850	0	1770	1863	1583	1770	1652	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			334		2				317		106	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			25			25	
Link Distance (ft)		540			920			657			435	
Travel Time (s)		12.3			20.9			17.9			11.9	
Volume (vph)	228	429	321	253	358	18	294	443	304	11	64	200
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	238	447	334	264	373	19	306	461	317	11	67	208
Lane Group Flow (vph)	238	447	334	264	392	0	306	461	317	11	275	0
Turn Type	pm+pt		pm+ov	pm+pt			Prot		Perm	Prot		
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases	4		4	8					2			
Detector Phases	7	4	5	3	8		5	2	2	1	6	
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	8.0	20.0	8.0	8.0	20.0		8.0	20.0	20.0	8.0	20.0	
Total Split (s)	20.0	44.0	33.0	24.0	48.0	0.0	33.0	54.0	54.0	8.0	29.0	0.0
Total Split (%)	15.4%	33.8%	25.4%	18.5%	36.9%	0.0%	25.4%	41.5%	41.5%	6.2%	22.3%	0.0%
Maximum Green (s)	16.0	40.0	29.0	20.0	44.0		29.0	50.0	50.0	4.0	25.0	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5		0.5	0.5	0.5	0.5	0.5	
Lead/Lag	Lead	Lag	Lead	Lead	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None		None	Max	Max	None	Max	
Walk Time (s)		5.0			5.0			5.0	5.0		5.0	
Flash Dont Walk (s)		11.0			11.0			11.0	11.0		11.0	
Pedestrian Calls (#/hr)		0			0			0	0		0	
Act Effct Green (s)	44.8	31.0	58.5	48.9	33.1		23.4	52.1	52.1	4.0	27.4	
Actuated g/C Ratio	0.39	0.27	0.51	0.43	0.29		0.21	0.46	0.46	0.03	0.24	
v/c Ratio	0.63	0.88	0.34	0.79	0.73		0.84	0.54	0.35	0.18	0.58	
Control Delay	28.2	59.7	2.4	39.7	44.9		65.5	28.7	4.0	68.0	31.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	28.2	59.7	2.4	39.7	44.9		65.5	28.7	4.0	68.0	31.9	
LOS	C	E	A	D	D		E	C	A	E	C	

Lane Group												
Approach Delay		33.5			42.8			31.8			33.3	
Approach LOS		C			D			C			C	
Queue Length 50th (ft)	110	320	0	124	265		218	238	0	8	117	
Queue Length 95th (ft)	172	476	41	215	387		#374	435	59	31	236	
Internal Link Dist (ft)		460			840			577			355	
Turn Bay Length (ft)	380		280	120			240		240	120		
Base Capacity (vph)	404	611	982	382	658		434	852	896	60	478	
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	
Reduced v/c Ratio	0.59	0.73	0.34	0.69	0.60		0.71	0.54	0.35	0.18	0.58	

Intersection Summary

Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 114
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.88
 Intersection Signal Delay: 34.9
 Intersection Capacity Utilization 81.9%
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

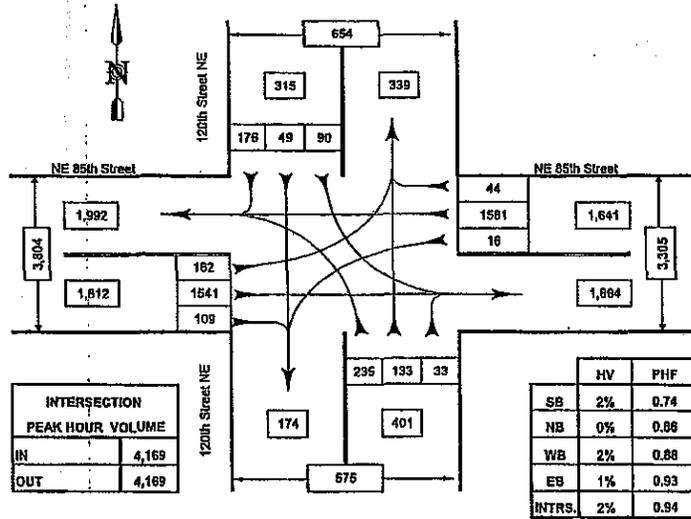
Intersection LOS: C
 ICU Level of Service D

Splits and Phases: 2: NE 70th St & 116th Ave NE

38s	34s	24s	44s
38s	29s	20s	49s

TURNING MOVEMENTS DIAGRAM

4:00 - 6:00 PM PEAK HOUR: 4:45 PM TO 5:45 PM



NE 85th St @ 120th Ave NE
Kirkland, WA

COUNTED BY: JHPB
REDUCED BY: CN
DATE: Wed. 3/7/07

DATE OF COUNT: Tue. 3/6/07
TIME OF COUNT: 4:00 - 6:00 PM
WEATHER: Sunny

	HV	PHF
SB	2%	0.74
NB	0%	0.86
WB	2%	0.88
EB	1%	0.93
INTRS.	2%	0.94

HV = Heavy Vehicles
PHF = Peak Hour Factor

INTERSECTION TURNING MOVEMENTS AND PEDESTRIAN REDUCTION SHEET

LOCATION: NE 85th St @ 120th Ave NE DATE OF COUNT: Tue. 3/6/07 COUNTED BY: JHPB
Kirkland, WA TIME OF COUNT: 4:00 - 6:00 PM WEATHER: Sunny

TIME INTERVAL ENDING AT	VEHICLE COUNT																INTERVAL TOTALS
	FROM NORTH (SOUTHBOUND)				FROM SOUTH (NORTHBOUND)				FROM EAST (WESTBOUND)				FROM WEST (EASTBOUND)				
	120th Street NE				120th Street NE				NE 85th Street				NE 85th Street				
	HV	Left	Thru	Right	HV	Left	Thru	Right	HV	Left	Thru	Right	HV	Left	Thru	Right	
04:15 PM	0	20	7	57	0	18	18	31	6	3	328	12	9	23	294	13	634
04:30 PM	3	20	8	27	1	45	29	2	8	5	358	12	13	33	358	14	853
04:45 PM	1	17	9	31	1	21	39	18	9	9	338	24	9	29	328	18	869
05:00 PM	1	36	27	44	1	80	34	8	15	4	450	11	3	32	374	28	1109
05:15 PM	1	18	8	50	0	57	22	15	7	9	351	17	6	31	400	24	1012
05:30 PM	1	18	9	40	1	52	35	1	10	2	393	6	8	65	388	36	1045
05:45 PM	2	16	5	42	0	66	42	9	8	1	377	10	5	44	360	21	1004
06:00 PM	0	24	12	32	0	63	48	7	5	0	365	6	1	26	377	30	1006
PEAK HOUR TOTALS	8	90	49	178	2	239	133	33	41	16	1591	44	22	162	1541	109	INTERSECTION
ALL MOVEMENTS		315				491					1641			1812			4189
% HV		2%				6%					2%			3%			2%
PEAK HOUR FACTOR		0.74				0.86					0.88			0.93			0.94

TIME INTERVAL ENDING AT	PEDESTRIAN COUNT				TOTAL
	X-Ing the North Leg on 120th Street NE	X-Ing the South Leg on 120th Street NE	X-Ing the East Leg on NE 85th Street	X-Ing the West Leg on NE 85th Street	
04:15 PM	0	0	0	0	0
04:30 PM	0	0	0	0	0
04:45 PM	0	0	0	0	0
05:00 PM	0	0	0	0	1
05:15 PM	0	0	0	0	0
05:30 PM	0	0	0	0	0
05:45 PM	0	0	0	0	0
06:00 PM	0	0	0	0	0

HV = Heavy Vehicles
PHF = Peak Hour Factor

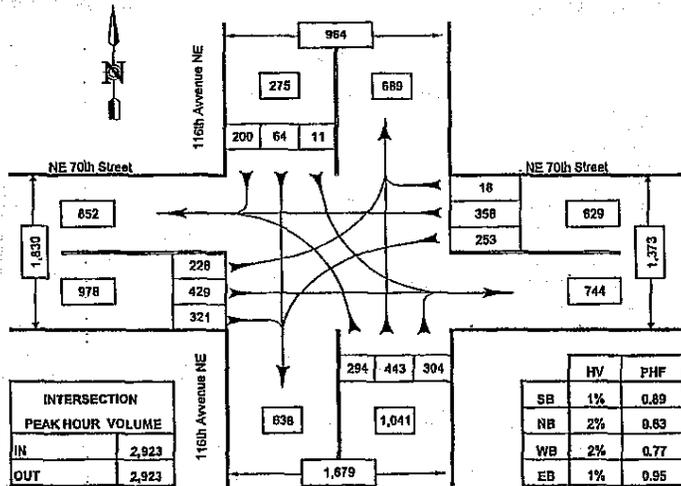
4:00 - 6:00 PM PEAK HOUR: 4:45 PM TO 5:45 PM

REDUCED BY: CN

DATE OF REDUCTION: 3/7/2007

TURNING MOVEMENTS DIAGRAM

4:00 - 6:00 PM PEAK HOUR: 5:00 PM TO 6:00 PM



NE 70th Pl @ 116th Ave NE
Kirkland, WA

COUNTED BY: RIH
REDUCED BY: CN
DATE: Wed, 3/7/07

DATE OF COUNT: Tue, 3/6/07
TIME OF COUNT: 4:00 - 6:00 PM
WEATHER: Sunny

INTERSECTION TURNING MOVEMENTS AND PEDESTRIAN REDUCTION SHEET

LOCATION: NE 70th Pl @ 116th Ave NE DATE OF COUNT: Tue, 3/6/07 COUNTED BY: RIH
Kirkland, WA TIME OF COUNT: 4:00 - 6:00 PM WEATHER: Sunny

TIME INTERVAL ENDING AT	FROM NORTH (SOUTHBOUND)				FROM SOUTH (NORTHBOUND)				FROM EAST (WESTBOUND)				FROM WEST (EASTBOUND)				INTERVAL TOTALS
	116th Avenue NE				116th Avenue NE				NE 70th Street				NE 70th Street				
	HV	Left	Thru	Right	HV	Left	Thru	Right	HV	Left	Thru	Right	HV	Left	Thru	Right	
04:15 PM	0	0	9	38	11	73	83	48	4	73	73	4	8	58	122	84	654
04:30 PM	4	5	24	38	4	84	89	70	1	49	81	1	4	50	81	83	691
04:45 PM	3	8	17	48	7	63	111	59	8	87	88	8	8	48	81	85	691
05:00 PM	2	3	20	51	16	74	97	48	3	62	81	3	3	47	84	84	654
05:15 PM	2	1	14	62	3	59	112	67	2	82	76	1	2	54	111	93	712
05:30 PM	0	3	21	53	5	67	102	70	3	75	120	8	5	47	90	75	740
05:45 PM	1	5	10	59	7	102	127	85	0	84	82	8	3	35	109	81	705
06:00 PM	1	2	19	35	5	68	102	82	8	62	80	1	4	72	119	72	705
PEAK HOUR TOTALS	4	11	84	209	20	384	445	304	19	253	358	18	14	228	439	321	INTERSECTION
ALL MOVEMENTS	275				1041				829				878				2923
% HV	1%				2%				2%				1%				2%
PEAK HOUR FACTOR	0.89				0.83				0.77				0.85				0.96

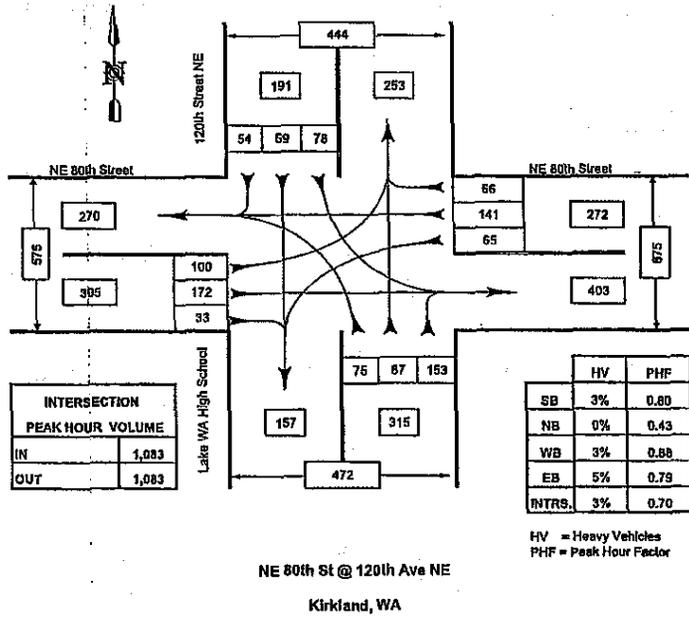
TIME INTERVAL ENDING AT	X-ing the North Leg on		X-ing the South Leg on		X-ing the East Leg on		X-ing the West Leg on		TOTAL
	116th Avenue NE	116th Avenue NE	NE 70th Street	NE 70th Street					
04:15 PM	2	0	4	2	8				
04:30 PM	0	0	0	3	3				
04:45 PM	0	0	0	0	0				
05:00 PM	0	3	0	0	3				
05:15 PM	2	15	0	0	17				
05:30 PM	0	8	1	0	7				
05:45 PM	0	0	0	0	0				
06:00 PM	1	1	0	0	2				

HV = Heavy Vehicles
PHF = Peak Hour Factor
4:00 - 6:00 PM PEAK HOUR: 5:00 PM TO 6:00 PM

REDUCED BY: CN DATE OF REDUCTION: 3/7/2007

TURNING MOVEMENTS DIAGRAM

1:30 - 3:30 PM PEAK HOUR: 2:15 PM TO 3:15 PM



COUNTED BY: JH
REDUCED BY: CN
DATE: Wed, 3/7/07

DATE OF COUNT: Tue, 3/6/07
TIME OF COUNT: 1:30 - 3:30 PM
WEATHER: Sunny

LOCATION: NE 80th St @ 120th Ave NE DATE OF COUNT: Tue, 3/6/07 COUNTED BY: JH
Kirkland, WA TIME OF COUNT: 1:30 - 3:30 PM WEATHER: Sunny

TIME INTERVAL ENDING AT	VEHICLE COUNT												INTERVAL TOTALS				
	FROM NORTH (SOUTHBOUND)				FROM SOUTH (NORTHBOUND)				FROM EAST (WESTBOUND)					FROM WEST (EASTBOUND)			
	120th Street NE				Lake WA High School				NE 80th Street					NE 66th Street			
	HV	Left	Thru	Right	HV	Left	Thru	Right	HV	Left	Thru	Right	HV	Left	Thru	Right	
01:45 PM	2	7	1	14	1	3	5	8	3	0	30	20	0	20	182	3	214
02:00 PM	3	17	1	2	0	3	2	3	2	2	24	5	0	15	25	0	85
02:15 PM	1	13	5	14	1	1	1	8	6	10	26	10	2	16	25	2	122
02:30 PM	0	13	10	13	0	3	5	8	1	22	27	7	2	21	35	5	187
02:45 PM	0	13	30	17	0	43	53	89	2	28	30	12	1	28	31	12	388
03:00 PM	8	30	13	12	0	22	20	42	5	7	39	22	2	18	46	10	281
03:15 PM	0	22	8	12	0	7	8	17	1	7	45	25	10	32	69	5	247
03:30 PM	0	10	3	9	0	2	2	3	1	2	35	14	3	22	50	1	154
PEAK HOUR TOTALS	8	78	23	24	0	75	87	153	8	65	141	88	15	100	172	33	INTERSECTION
ALL MOVEMENTS	191				315				272				305				1283
% HV	3%				0%				3%				5%				3%
PEAK HOUR FACTOR	0.89				0.43				0.88				0.79				0.70

TIME INTERVAL ENDING AT	PEDESTRIAN COUNT				TOTAL
	X-ing the North Leg on 120th Street NE	X-ing the South Leg on Lake WA High School	X-ing the East Leg on NE 80th Street	X-ing the West Leg on NE 80th Street	
01:45 PM	0	0	0	0	0
02:00 PM	0	0	0	0	0
02:15 PM	2	0	0	0	2
02:30 PM	0	0	5	0	5
02:45 PM	25	21	87	69	204
03:00 PM	6	0	6	21	32
03:15 PM	8	0	7	0	15
03:30 PM	12	0	2	0	14

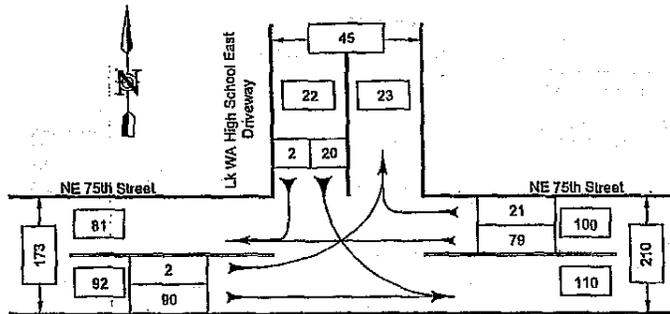
HV = Heavy Vehicles
PHF = Peak Hour Factor
1:30 - 3:30 PM PEAK HOUR: 2:15 PM TO 3:15 PM

REDUCED BY: CN DATE OF REDUCTION: 3/7/2007



TURNING MOVEMENTS DIAGRAM

1:30 - 3:30 PM PEAK HOUR: 2:30 PM TO 3:30 PM



INTERSECTION	
PEAK HOUR VOLUME	
IN	214
OUT	214

	HV	PHF
SB	0%	0.34
WB	2%	0.86
EB	0%	0.64
INTRS.	1%	0.72

HV = Heavy Vehicles
PHF = Peak Hour Factor

NE 75th St @ Lk WA High School East Drvwy
Kirkland, WA

COUNTED BY: TM DATE OF COUNT: Tue, 3/6/07
 REDUCED BY: CN TIME OF COUNT: 1:30 - 3:30 PM
 DATE OF REDUCTION: Fri, 3/9/07 WEATHER: Sunny



INTERSECTION TURNING MOVEMENTS AND PEDESTRIAN REDUCTION SHEET

LOCATION: NE 75th St @ Lk WA High School East Drvwy DATE OF COUNT: Tue, 3/6/07 COUNTED BY: TM
Kirkland, WA TIME OF COUNT: 1:30 - 3:30 PM WEATHER: Sunny

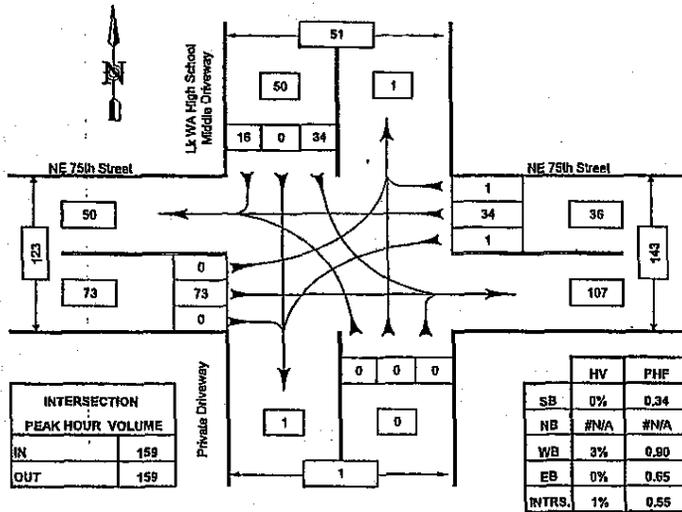
TIME INTERVAL ENDING AT	VEHICLE COUNT																INTERVAL TOTALS
	FROM NORTH (SOUTHBOUND)				FROM SOUTH (NORTHBOUND)				FROM EAST (WESTBOUND)				FROM WEST (EASTBOUND)				
	Lk WA High School East Driveway				0				NE 75th Street				NE 75th Street				
	HV	Left	Thru	Right	HV	Left	Thru	Right	HV	Left	Thru	Right	HV	Left	Thru	Right	
01:45 PM	0	0	0	0	0	0	0	0	0	0	6	3	0	0	12	0	21
02:00 PM	0	0	0	2	0	0	0	0	0	0	5	0	0	7	0	0	14
02:15 PM	0	0	0	0	0	0	0	0	0	0	14	0	1	0	12	0	28
02:30 PM	0	0	0	0	0	0	0	0	0	0	12	0	1	0	6	0	18
02:45 PM	0	14	0	2	0	0	0	0	1	0	9	13	0	1	33	0	74
03:00 PM	0	8	0	0	0	0	0	0	1	0	24	5	0	1	13	0	49
03:15 PM	0	0	0	0	0	0	0	0	0	0	22	3	0	0	16	0	41
03:30 PM	0	0	0	0	0	0	0	0	0	0	24	0	0	0	28	0	50
PEAK HOUR TOTALS	0	28	0	2	0	0	0	0	2	0	79	21	0	2	95	0	INTERSECTION
ALL MOVEMENTS	22				0				100				32				214
% HV	0%				#N/A				2%				6%				1%
PEAK HOUR FACTOR	0.34				#N/A				0.66				0.64				0.72

TIME INTERVAL ENDING AT	PEDESTRIAN COUNT				TOTAL
	X-ing the North Leg on Lk WA High School East Drvwy	X-ing the South Leg on 0	X-ing the East Leg on NE 75th Street	X-ing the West Leg on NE 75th Street	
01:45 PM	0	0	1	0	1
02:00 PM	2	0	0	0	2
02:15 PM	1	0	0	1	2
02:30 PM	0	0	0	0	0
02:45 PM	1	0	0	0	1
03:00 PM	3	0	0	1	4
03:15 PM	1	0	0	0	1
03:30 PM	0	0	0	0	0

HV = Heavy Vehicles
 PHF = Peak Hour Factor
 1:30 - 3:30 PM PEAK HOUR: 2:30 PM TO 3:30 PM
 REDUCED BY: CN DATE OF REDUCTION: 3/9/2007

TURNING MOVEMENTS DIAGRAM

1:30 - 3:30 PM PEAK HOUR: 2:30 PM TO 3:30 PM



INTERSECTION PEAK HOUR VOLUME	
IN	159
OUT	159

	HV	PHF
SB	0%	0.34
NB	#N/A	#N/A
WB	3%	0.90
EB	0%	0.65
INTRS.	1%	0.55

HV = Heavy Vehicles
PHF = Peak Hour Factor

NE 75th St @ Lk WA High School Middle Drvwy
Kirkland, WA

COUNTED BY: RH
REDUCED BY: CN
DATE: Fri. 3/9/07

DATE OF COUNT: Tue. 3/6/07
TIME OF COUNT: 1:30 - 3:30 PM
WEATHER: Sunny

INTERSECTION TURNING MOVEMENTS AND PEDESTRIAN REDUCTION SHEET

LOCATION: NE 75th St @ Lk WA High School Middle Drvwy DATE OF COUNT: Tue. 3/6/07 COUNTED BY: RH
Kirkland, WA TIME OF COUNT: 1:30 - 3:30 PM WEATHER: Sunny

TIME INTERVAL ENDING AT	VEHICLE COUNT																INTERVAL TOTALS
	FROM NORTH (SOUTHBOUND)				FROM SOUTH (NORTHBOUND)				FROM EAST (WESTBOUND)				FROM WEST (EASTBOUND)				
	Lk WA High School Middle Driveway	Private Driveway	NE 75th Street	NE 75th Street	Lk WA High School Middle Driveway	Private Driveway	NE 75th Street	NE 75th Street	NE 75th Street	NE 75th Street	NE 75th Street	NE 75th Street	NE 75th Street	NE 75th Street	NE 75th Street		
01:45 PM	0	0	0	1	0	0	0	0	0	0	2	0	0	0	14	0	20
02:00 PM	0	0	0	0	0	0	0	0	1	0	3	0	0	0	7	0	10
02:15 PM	0	0	0	0	0	1	0	0	0	0	1	0	1	0	6	0	10
02:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	3	0	0	13
02:45 PM	0	24	0	13	0	0	0	0	1	0	7	0	0	0	28	0	72
03:00 PM	0	5	0	2	0	0	0	0	0	1	0	0	0	10	0	0	27
03:15 PM	0	3	0	0	0	0	0	0	0	0	0	0	0	7	0	0	18
03:30 PM	0	3	0	1	0	0	0	0	0	0	0	1	0	0	25	0	42
PEAK HOUR TOTALS	0	34	0	16	0	0	0	0	1	1	34	1	0	0	72	0	INTERSECTION
ALL MOVEMENTS	59				0				36				73				168
% HV	0%				#N/A				3%				0%				1%
PEAK HOUR FACTOR	0.24				#N/A				0.30				0.65				0.55

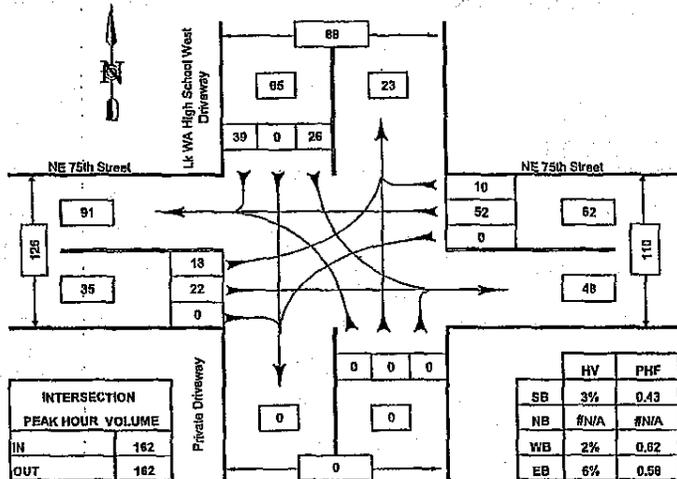
TIME INTERVAL ENDING AT	PEDESTRIAN COUNT				TOTAL
	X-ing the North Leg on Lk WA High School Middle Driveway	X-ing the South Leg on Private Driveway	X-ing the East Leg on NE 75th Street	X-ing the West Leg on NE 75th Street	
01:45 PM	0	0	1	0	1
02:00 PM	0	0	1	0	1
02:15 PM	0	0	1	0	1
02:30 PM	0	0	1	0	1
02:45 PM	7	0	3	0	10
03:00 PM	0	0	1	0	1
03:15 PM	0	0	0	0	0
03:30 PM	0	0	0	0	0

HV = Heavy Vehicles
PHF = Peak Hour Factor
1:30 - 3:30 PM PEAK HOUR: 2:30 PM TO 3:30 PM

REDUCED BY: CN DATE OF REDUCTION: 3/9/07

TURNING MOVEMENTS DIAGRAM

1:30 - 3:30 PM PEAK HOUR: 2:30 PM TO 3:30 PM



NE 75th St @ Lk WA High School W Drwy
Kirkland, WA

COUNTED BY: CN DATE OF COUNT: Tue, 3/6/07
 REDUCED BY: CN TIME OF COUNT: 1:30 - 3:30 PM
 DATE: Fri, 3/9/07 WEATHER: Sunny

INTERSECTION TURNING MOVEMENTS AND PEDESTRIAN REDUCTION SHEET

LOCATION: NE 75th St @ Lk WA High School W Drwy DATE OF COUNT: Tue, 3/6/07 COUNTED BY: CN
Kirkland, WA TIME OF COUNT: 1:30 - 3:30 PM WEATHER: Sunny

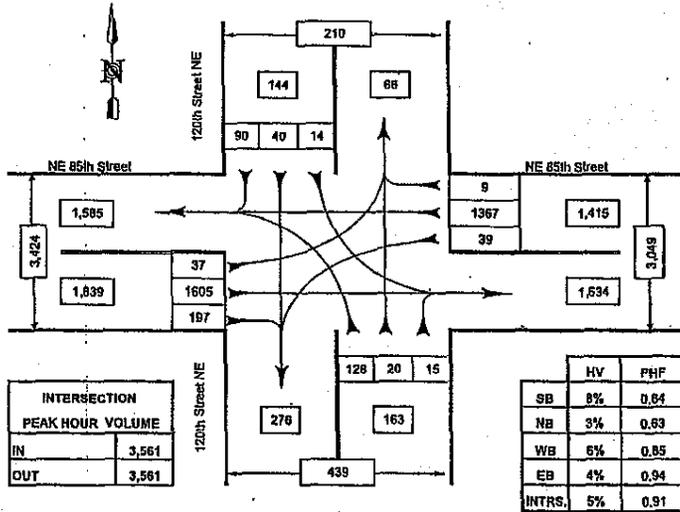
TIME INTERVAL ENDING AT	VEHICLE COUNT												INTERVAL TOTALS			
	FROM NORTH (SOUTHBOUND)			FROM SOUTH (NORTHBOUND)			FROM EAST (WESTBOUND)			FROM WEST (EASTBOUND)						
	Lk WA High School West Drwy	Private Drwy	NE 75th Street	Lk WA High School West Drwy	Private Drwy	NE 75th Street	NE 75th Street	NE 75th Street	NE 75th Street	NE 75th Street	NE 75th Street					
01:45 PM	0	10	0	1	0	0	0	0	0	1	2	0	1	0	0	15
02:00 PM	1	1	0	2	0	0	0	0	0	3	1	1	3	0	0	18
02:15 PM	0	3	0	3	0	0	0	0	0	3	0	1	1	2	0	12
02:30 PM	1	2	0	3	0	0	0	0	0	2	0	0	14	0	0	33
02:45 PM	1	17	0	21	0	0	0	0	1	0	13	5	1	0	0	71
03:00 PM	1	4	0	0	0	0	0	0	0	0	7	2	1	3	7	32
03:15 PM	0	4	0	0	0	0	0	0	0	7	3	0	0	4	0	24
03:30 PM	0	1	0	3	0	0	0	0	0	25	0	0	1	0	0	35
PEAK HOUR TOTALS	2	26	0	38	0	0	0	0	1	0	52	10	2	13	23	162
ALL MOVEMENTS	65			0			62			35			162			
% HV	3%			#N/A			2%			6%			3%			
PEAK HOUR FACTOR	0.43			#N/A			0.62			0.53			0.57			

TIME INTERVAL ENDING AT	PEDESTRIAN COUNT				TOTAL
	X-ing the North Leg on Lk WA High School West Drwy	X-ing the South Leg on Private Drwy	X-ing the East Leg on NE 75th Street	X-ing the West Leg on NE 75th Street	
01:45 PM	0	0	3	0	3
02:00 PM	0	0	0	0	0
02:15 PM	0	0	0	0	0
02:30 PM	0	0	0	0	0
02:45 PM	7	0	0	1	8
03:00 PM	0	0	0	0	0
03:15 PM	0	0	0	0	0
03:30 PM	2	0	0	0	2

HV = Heavy Vehicles
 PHF = Peak Hour Factor
 1:30 - 3:30 PM PEAK HOUR: 2:30 PM TO 3:30 PM
 REDUCED BY: CN DATE OF REDUCTION: 3/9/07

TURNING MOVEMENTS DIAGRAM

7:00 - 9:00 AM PEAK HOUR: 7:45 AM TO 8:45 AM



NE 85th St @ 120th Ave NE
Kirkland, WA

COUNTED BY: JHPB
REDUCED BY: CN
DATE: Wed. 3/7/07

DATE OF COUNT: Tue. 3/6/07
TIME OF COUNT: 7:00 - 9:00 AM
WEATHER: Sunny

INTERSECTION PEAK HOUR VOLUME	
IN	3,561
OUT	3,561

INTERSECTION TURNING MOVEMENTS AND PEDESTRIAN REDUCTION SHEET

LOCATION: NE 85th St @ 120th Ave NE DATE OF COUNT: Tue. 3/6/07 COUNTED BY: JHPB
Kirkland, WA TIME OF COUNT: 7:00 - 9:00 AM WEATHER: Sunny

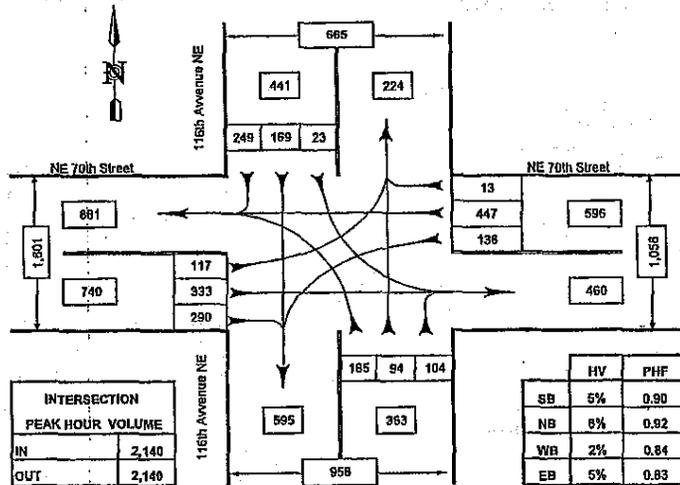
TIME INTERVAL ENDING AT	VEHICLE COUNT																INTERSECTION TOTALS
	FROM NORTH (SOUTHBOUND)				FROM SOUTH (NORTHBOUND)				FROM EAST (WESTBOUND)				FROM WEST (EASTBOUND)				
	120th Street NE				120th Street NE				NE 85th Street				NE 85th Street				
	HV	Left	Thru	Right	HV	Left	Thru	Right	HV	Left	Thru	Right	HV	Left	Thru	Right	
07:15 AM	2	0	8	7	0	17	0	1	17	8	27	2	13	5	300	25	543
07:30 AM	0	0	7	8	1	12	0	7	14	8	28	3	20	7	359	29	733
07:45 AM	3	1	12	25	1	33	2	1	22	12	297	1	21	2	338	68	780
08:00 AM	2	2	17	18	2	51	8	6	22	26	382	1	15	10	374	88	857
08:15 AM	3	1	10	22	1	30	7	1	28	1	411	2	20	5	440	38	878
08:30 AM	8	2	10	20	1	24	2	1	13	10	280	1	17	14	339	33	716
08:45 AM	1	8	3	20	1	23	5	5	20	8	344	5	23	9	452	28	810
09:00 AM	1	5	3	25	2	28	3	1	23	3	328	3	21	17	428	32	877
PEAK HOUR TOTALS	11	14	48	80	8	128	28	15	83	39	1367	8	75	37	1603	197	INTERSECTION
ALL MOVEMENTS	144				183				1419				1873				3551
% HV	8%				3%				8%				4%				5%
PEAK HOUR FACTOR	0.84				0.83				0.85				0.94				0.91

TIME INTERVAL ENDING AT	PEDESTRIAN COUNT				TOTAL
	X-ing the North Leg on 120th Street NE	X-ing the South Leg on 120th Street NE	X-ing the East Leg on NE 85th Street	X-ing the West Leg on NE 85th Street	
07:15 AM	1	0	1	0	2
07:30 AM	0	0	0	0	0
07:45 AM	0	2	1	2	5
08:00 AM	0	1	2	5	8
08:15 AM	0	0	0	0	0
08:30 AM	0	0	0	0	0
08:45 AM	0	0	0	0	0
09:00 AM	0	0	0	0	0

HV = Heavy Vehicles
PHF = Peak Hour Factor
7:00 - 9:00 AM PEAK HOUR: 7:45 AM TO 8:45 AM
REDUCED BY: CN DATE OF REDUCTION: 3/7/07

TURNING MOVEMENTS DIAGRAM

7:00 - 9:00 AM PEAK HOUR: 7:30 AM TO 8:30 AM



INTERSECTION PEAK HOUR VOLUME	
IN	2,140
OUT	2,140

	HV	PHF
SB	6%	0.90
NB	8%	0.92
WB	2%	0.84
INTRS.	5%	0.90

HV = Heavy Vehicles
PHF = Peak Hour Factor

NE 70th PI @ 116th Ave NE
Kirkland, WA

COUNTED BY: CN
REDUCED BY: CN
DATE: Wed. 3/7/07

DATE OF COUNT: Tue. 3/6/07
TIME OF COUNT: 7:00 - 9:00 AM
WEATHER: Sunny

INTERSECTION TURNING MOVEMENTS AND PEDESTRIAN REDUCTION SHEET

LOCATION: NE 70th PI @ 116th Ave NE DATE OF COUNT: Tue. 3/6/07 COUNTED BY: CN
Kirkland, WA TIME OF COUNT: 7:00 - 9:00 AM WEATHER: Sunny

TIME INTERVAL ENDING AT	VEHICLE COUNT																INTERVAL TOTALS
	FROM NORTH (SOUTHBOUND)				FROM SOUTH (NORTHBOUND)				FROM EAST (WESTBOUND)				FROM WEST (EASTBOUND)				
	116th Avenue NE				116th Avenue NE				NE 70th Street				NE 70th Street				
	HV	Left	Thru	Right	HV	Left	Thru	Right	HV	Left	Thru	Right	HV	Left	Thru	Right	
07:15 AM	3	2	30	48	7	51	12	14	0	30	82	2	3	8	50	55	383
07:30 AM	1	3	18	48	6	41	10	14	8	34	110	3	9	18	89	78	446
07:45 AM	3	10	34	57	3	44	25	24	4	38	133	6	8	29	79	80	553
08:00 AM	6	6	45	71	5	31	30	16	3	48	118	8	10	59	80	83	593
08:15 AM	6	3	42	58	7	45	22	24	0	15	95	0	7	15	68	83	481
08:30 AM	7	4	48	67	15	42	17	10	3	35	100	1	14	13	106	64	537
08:45 AM	5	1	53	65	10	33	14	24	3	42	123	3	12	16	78	83	525
09:00 AM	3	0	25	33	3	38	21	23	3	21	72	1	17	16	89	63	411
PEAK HOUR TOTALS	21	23	168	243	30	185	84	104	10	135	447	13	37	117	333	290	INTERSECTION
ALL MOVEMENTS	441				313				528				743				2140
% HV	5%				9%				2%				3%				5%
PEAK HOUR FACTOR	0.90				0.92				0.84				0.83				0.90

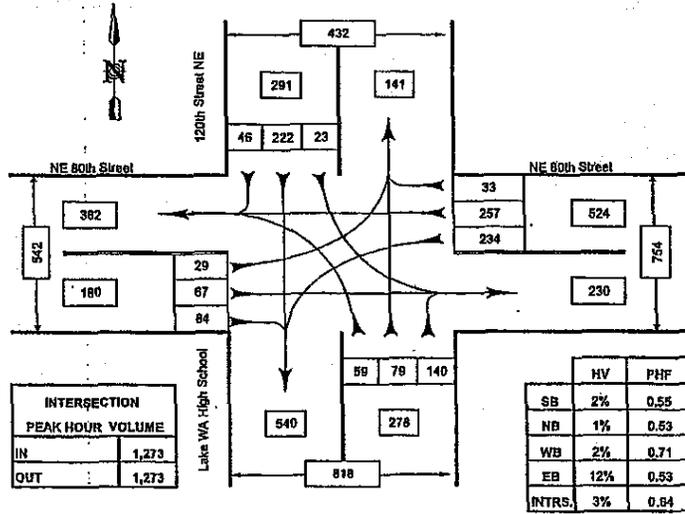
TIME INTERVAL ENDING AT	PEDESTRIAN COUNT				TOTAL
	X-ing the North Leg on 116th Avenue NE	X-ing the South Leg on 116th Avenue NE	X-ing the East Leg on NE 70th Street	X-ing the West Leg on NE 70th Street	
07:15 AM	0	1	1	0	2
07:30 AM	1	0	2	0	3
07:45 AM	4	1	1	0	6
08:00 AM	0	0	1	0	1
08:15 AM	1	0	0	0	1
08:30 AM	1	0	1	0	2
08:45 AM	1	0	0	0	1
09:00 AM	0	1	0	0	1

HV = Heavy Vehicles
PHF = Peak Hour Factor
7:00 - 9:00 AM PEAK HOUR: 7:30 AM TO 8:30 AM

REDUCED BY: CN DATE OF REDUCTION: 3/7/2007

TURNING MOVEMENTS DIAGRAM

7:00 - 9:00 AM PEAK HOUR: 7:00 AM TO 8:00 AM



NE 80th St @ 120th Ave NE
Kirkland, WA

COUNTED BY: ChrisN
REDUCED BY: CN
DATE: Wed. 3/7/07

DATE OF COUNT: Tue. 3/6/07
TIME OF COUNT: 7:00 - 9:00 AM
WEATHER: Sunny

INTERSECTION PEAK HOUR VOLUME	
IN	1,273
OUT	1,273

	HV	PHF
SB	2%	0.55
NB	1%	0.53
WB	2%	0.71
EB	12%	0.53
INTRS.	3%	0.64

HV = Heavy Vehicles
PHF = Peak Hour Factor

INTERSECTION TURNING MOVEMENTS AND PEDESTRIAN REDUCTION SHEET

LOCATION: NE 80th St @ 120th Ave NE DATE OF COUNT: Tue. 3/6/07 COUNTED BY: ChrisN
Kirkland, WA TIME OF COUNT: 7:00 - 9:00 AM WEATHER: Sunny

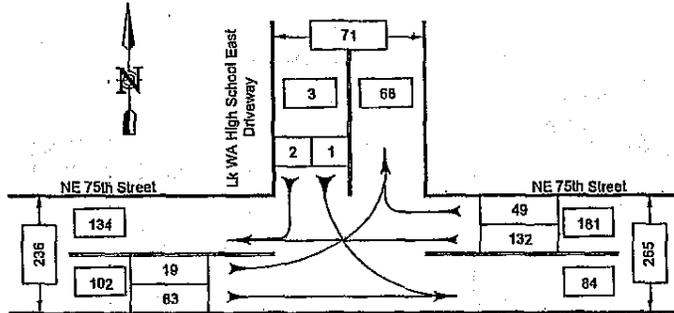
TIME INTERVAL ENDING AT	VEHICLE COUNT																INTERVAL TOTALS
	FROM NORTH (SOUTHBOUND)				FROM SOUTH (NORTHBOUND)				FROM EAST (WESTBOUND)				FROM WEST (EASTBOUND)				
	120th Street NE				Laka WA High School				NE 80th Street				NE 80th Street				
	HV	Left	Thru	Right	HV	Left	Thru	Right	HV	Left	Thru	Right	HV	Left	Thru	Right	
07:15 AM	0	0	28	8	0	16	7	18	1	22	87	8	0	8	10	12	214
07:30 AM	2	2	29	9	0	8	6	12	3	24	54	6	1	0	12	7	155
07:45 AM	2	7	78	9	2	21	70	43	1	89	81	15	5	8	21	22	408
08:00 AM	1	8	104	21	1	19	47	65	5	89	85	6	16	18	24	43	408
08:15 AM	0	8	14	9	0	9	12	15	0	13	58	8	2	8	25	3	178
08:30 AM	2	31	3	17	0	0	0	1	8	3	60	15	1	3	32	1	186
08:45 AM	0	20	6	13	0	1	2	3	7	5	72	15	3	7	27	0	185
09:00 AM	2	15	17	8	0	2	2	0	3	8	51	15	2	12	22	0	158
PEAK HOUR TOTALS	8	23	222	48	3	59	78	140	19	234	237	33	22	28	87	84	INTERSECTION
ALL MOVEMENTS	291				278				524				168				1273
% HV	2%				1%				3%				12%				3%
PEAK HOUR FACTOR	0.55				0.53				0.71				0.53				0.64

TIME INTERVAL ENDING AT	PEDESTRIAN COUNT				TOTAL
	X-ing the North Leg on 120th Street NE	X-ing the South Leg on Laka WA High School	X-ing the East Leg on NE 80th Street	X-ing the West Leg on NE 80th Street	
07:15 AM	12	0	2	1	15
07:30 AM	40	3	1	0	44
07:45 AM	21	0	0	2	23
08:00 AM	4	2	1	1	8
08:15 AM	0	0	1	1	2
08:30 AM	3	1	0	1	5
08:45 AM	1	0	1	1	3
09:00 AM	0	0	1	0	1

HV = Heavy Vehicles
PHF = Peak Hour Factor
7:00 - 9:00 AM PEAK HOUR: 7:00 AM TO 8:00 AM
REDUCED BY: CN DATE OF REDUCTION: 3/7/2007

TURNING MOVEMENTS DIAGRAM

7:00 - 9:00 AM PEAK HOUR: 7:30 AM TO 8:30 AM



INTERSECTION	
PEAK HOUR VOLUME	
IN	286
OUT	286

	HV	PHF
SB	0%	0.75
WB	2%	0.70
EB	0%	0.69
INTRS.	1%	0.69

HV = Heavy Vehicles
PHF = Peak Hour Factor
NE 75th St @ Lk WA High School East Drwy
Kirkland, WA

COUNTED BY: TM DATE OF COUNT: Tue, 3/6/07
REDUCED BY: CN TIME OF COUNT: 7:00 - 9:00 AM
DATE OF REDUCTION: Fri, 3/9/07 WEATHER: Sunny

INTERSECTION TURNING MOVEMENTS AND PEDESTRIAN REDUCTION SHEET

LOCATION: NE 75th St @ Lk WA High School East Drwy DATE OF COUNT: Tue, 3/6/07 COUNTED BY: TM
Kirkland, WA TIME OF COUNT: 7:00 - 9:00 AM WEATHER: Sunny

TIME INTERVAL ENDING AT	VEHICLE COUNT																INTERVAL TOTALS
	FROM NORTH (SOUTHBOUND)				FROM SOUTH (NORTHBOUND)				FROM EAST (WESTBOUND)				FROM WEST (EASTBOUND)				
	Lk WA High School East Drwy				0				NE 75th Street				NE 75th Street				
	HV	LtL	Thru	Right	HV	LtL	Thru	Right	HV	LtL	Thru	Right	HV	LtL	Thru	Right	
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	8	5	0	0	13
07:30 AM	0	0	0	0	0	0	0	0	1	0	14	2	1	1	3	0	20
07:45 AM	0	0	0	1	0	0	0	0	2	0	25	15	0	2	0	0	51
08:00 AM	0	1	0	0	0	0	0	0	0	0	35	39	0	15	22	0	103
08:15 AM	0	0	0	1	0	0	0	0	1	0	22	3	0	2	20	0	48
08:30 AM	0	0	0	0	0	0	0	0	0	0	50	1	0	0	33	0	84
08:45 AM	0	0	0	0	0	0	0	0	0	0	20	1	0	1	21	0	43
08:59 AM	0	0	0	0	0	0	0	0	0	0	8	2	0	0	3	0	13
PEAK HOUR TOTALS	0	1	0	2	0	0	0	0	3	0	132	49	0	18	83	0	INTERSECTION
ALL MOVEMENTS	3				0				181				192				265
% HV	0%				#N/A				2%				0%				1%
PEAK HOUR FACTOR	0.75				#N/A				0.70				0.69				0.69

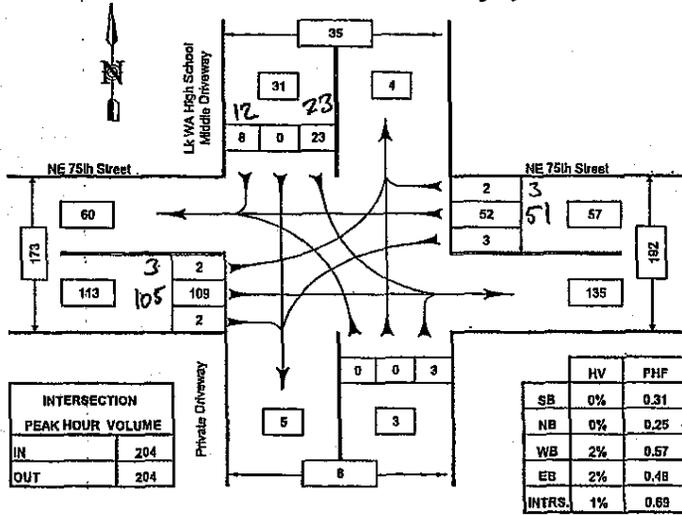
TIME INTERVAL ENDING AT	PEDESTRIAN COUNT							
	X-ing the North Leg on WA High School East Drwy	0		X-ing the East Leg on NE 75th Street		X-ing the West Leg on NE 75th Street		TOTAL
07:15 AM	0	0		0		0		0
07:30 AM	0	0		0		0		0
07:45 AM	1	0		0		0		1
08:00 AM	0	0		0		0		0
08:15 AM	0	0		0		0		0
08:30 AM	3	0		0		0		3
08:45 AM	1	0		0		0		1
08:59 AM	0	0		0		0		0

HV = Heavy Vehicles
PHF = Peak Hour Factor
7:00 - 9:00 AM PEAK HOUR: 7:30 AM TO 8:30 AM
REDUCED BY: CN DATE OF REDUCTION: 3/9/07

TURNING MOVEMENTS DIAGRAM

7:00 - 9:00 AM PEAK HOUR: 7:45 AM TO 8:45 AM

7:30 - 8:30



NE 75th St @ Lk WA High School Middle Drvwy
Kirkland, WA

COUNTED BY: RH
REDUCED BY: CN
DATE: Fri 3/8/07

DATE OF COUNT: Tue 3/6/07
TIME OF COUNT: 7:00 - 9:00 AM
WEATHER: Sunny

INTERSECTION TURNING MOVEMENTS AND PEDESTRIAN REDUCTION SHEET

LOCATION: NE 75th St @ Lk WA High School Middle Drvwy DATE OF COUNT: Tue 3/6/07 COUNTED BY: RH
Kirkland, WA TIME OF COUNT: 7:00 - 9:00 AM WEATHER: Sunny

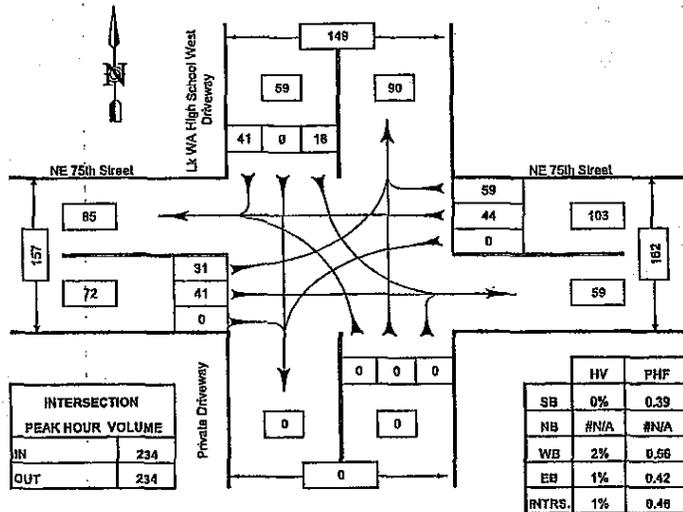
TIME INTERVAL ENDING AT	FROM NORTH (SOUTHBOUND)				FROM SOUTH (NORTHBOUND)				FROM EAST (WESTBOUND)				FROM WEST (EASTBOUND)				INTERVAL TOTAL
	Lk WA High School Middle Drvwy				Private Drvwy				NE 75th Street				NE 75th Street				
	HV	Left	Thru	Right	HV	Left	Thru	Right	HV	Left	Thru	Right	HV	Left	Thru	Right	
07:15 AM	0	2	0	0	0	0	0	0	0	1	7	0	0	0	0	0	10
07:30 AM	0	0	0	0	0	0	0	0	1	0	32	0	1	0	5	0	17
07:45 AM	0	0	0	0	0	0	0	0	1	0	14	1	0	1	10	0	31
08:00 AM	0	18	0	7	0	0	0	0	0	0	23	2	1	1	22	1	74
08:15 AM	0	5	0	0	0	0	0	0	1	0	8	0	0	0	45	0	28
08:30 AM	0	0	0	0	0	0	0	0	1	3	0	0	1	58	0	0	63
08:45 AM	0	0	0	1	0	0	0	3	0	2	15	0	1	0	14	1	38
09:00 AM	0	1	0	0	0	0	0	0	0	0	0	3	0	1	2	0	15
PEAK HOUR TOTALS	0	23	0	7	0	0	0	3	1	3	52	2	2	1	108	2	INTERSECTION
ALL MOVEMENTS	31				3				57				112				204
% HV	0%				0%				2%				2%				1%
PEAK HOUR FACTOR	0.31				0.23				0.57				0.48				0.69

TIME INTERVAL ENDING AT	PEDESTRIAN COUNT				TOTAL
	X-ing the North Leg on Lk WA High School Middle Drvwy	X-ing the South Leg on Private Drvwy	X-ing the East Leg on NE 75th Street	X-ing the West Leg on NE 75th Street	
07:15 AM	0	0	0	0	0
07:30 AM	0	0	0	0	0
07:45 AM	3	0	0	0	3
08:00 AM	4	0	0	0	4
08:15 AM	0	0	0	0	0
08:30 AM	1	0	0	0	1
08:45 AM	1	0	0	0	1
09:00 AM	0	0	0	0	0

HV = Heavy Vehicles
PHF = Peak Hour Factor
7:00 - 9:00 AM PEAK HOUR: 7:45 AM TO 8:45 AM
REDUCED BY: CN DATE OF REDUCTION: 3/8/2007

TURNING MOVEMENTS DIAGRAM

7:00 - 9:00 AM PEAK HOUR: 7:30 AM TO 8:30 AM



NE 75th St @ Lk WA High School West Drwy
Kirkland, WA

COUNTED BY: CL
REDUCED BY: CN
DATE: Fri. 3/9/07

DATE OF COUNT: Tue. 3/6/07
TIME OF COUNT: 7:00 - 9:00 AM
WEATHER: Sunny

INTERSECTION PEAK HOUR VOLUME	
IN	234
OUT	234

INTERSECTION TURNING MOVEMENTS AND PEDESTRIAN REDUCTION SHEET

LOCATION: NE 75th St @ Lk WA High School West Drwy DATE OF COUNT: Tue. 3/6/07 COUNTEE BY: CL
Kirkland, WA TIME OF COUNT: 7:00 - 9:00 AM WEATHER: Sunny

TIME INTERVAL ENDING AT	VEHICLE COUNT																INTERVAL TOTALS
	FROM NORTH (SOUTHBOUND)				FROM SOUTH (NORTHBOUND)				FROM EAST (WESTBOUND)				FROM WEST (EASTBOUND)				
	Lk WA High School West Drwy				Private Drwy				NE 75th Street				NE 75th Street				
	HV	Left	Thru	Right	HV	Left	Thru	Right	HV	Left	Thru	Right	HV	Left	Thru	Right	
07:15 AM	0	1	0	1	0	0	0	0	0	0	2	0	1	1	0	0	8
07:30 AM	1	0	0	1	0	0	0	0	1	0	10	7	1	3	8	0	27
07:45 AM	0	5	0	5	0	0	0	0	0	0	9	15	0	5	5	0	42
08:00 AM	0	8	0	39	0	0	0	0	1	0	8	38	1	23	20	0	127
08:15 AM	0	5	0	5	0	0	0	0	1	0	6	5	0	3	7	0	30
08:30 AM	0	0	0	1	0	0	0	0	0	0	22	3	0	0	0	0	25
08:45 AM	0	1	0	0	0	0	0	0	0	0	8	5	0	0	2	0	18
09:00 AM	0	0	0	7	0	0	0	0	0	0	2	7	0	0	2	0	12
PEAK HOUR TOTALS	0	18	0	41	0	0	0	0	2	0	44	59	1	31	41	0	INTERSECTION
ALL MOVEMENTS	53				0				133				72				234
% HV	0%				#N/A				2%				1%				1%
PEAK HOUR FACTOR	0.35				#N/A				0.56				0.42				0.46

TIME INTERVAL ENDING AT	PEDESTRIAN COUNT				TOTAL
	X-ing the North Leg on Lk WA High School West Drwy	X-ing the South Leg on Private Drwy	X-ing the East Leg on NE 75th Street	X-ing the West Leg on NE 75th Street	
07:15 AM	0	0	0	0	0
07:30 AM	2	0	1	0	3
07:45 AM	0	0	0	0	0
08:00 AM	0	0	3	3	6
08:15 AM	0	0	5	1	6
08:30 AM	0	0	0	0	0
08:45 AM	0	0	0	0	0
09:00 AM	0	0	0	1	1

HV = Heavy Vehicles
PHF = Peak Hour Factor
7:00 - 9:00 AM PEAK HOUR: 7:30 AM TO 8:30 AM
REDUCED BY: CN DATE OF REDUCTION: 3/9/2007

Lake WA High School Expansion
GTC #06-380

DRIVEWAY BREAKDOWN

AM

<u>North Access</u>		% of Trips	76%
IB	OB		
84	59		
222	79		
234	140		

<u>East Access</u>		% of Trips	7%
IB	OB		
19	1		
49	2		

<u>Middle Access</u>		% of Trips	3%
IB	OB		
2	8		
2	23		

<u>West Access</u>		% of Trips	14%
IB	OB		
31	41		
59	18		

<u>Total</u>			
IB	OB		
702	371	1073	

School PM

<u>North Access</u>		% of Trips	72%
IB	OB		
33	75		
59	87		
65	153		

<u>East Access</u>		% of Trips	7%
IB	OB		
21	20		
2	2		

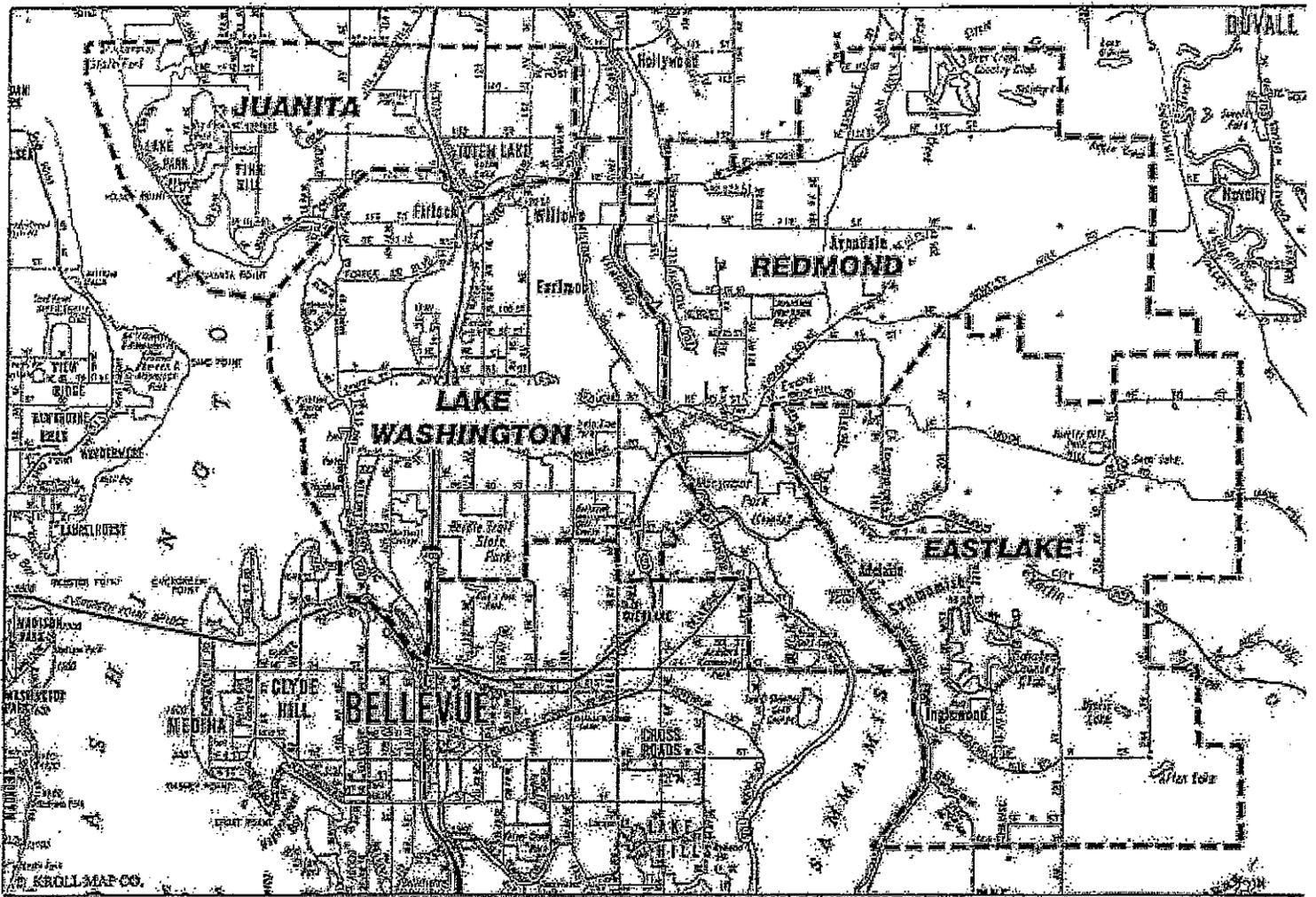
<u>Middle Access</u>		% of Trips	8%
IB	OB		
0	16		
1	34		

<u>West Access</u>		% of Trips	13%
IB	OB		
13	39		
10	26		

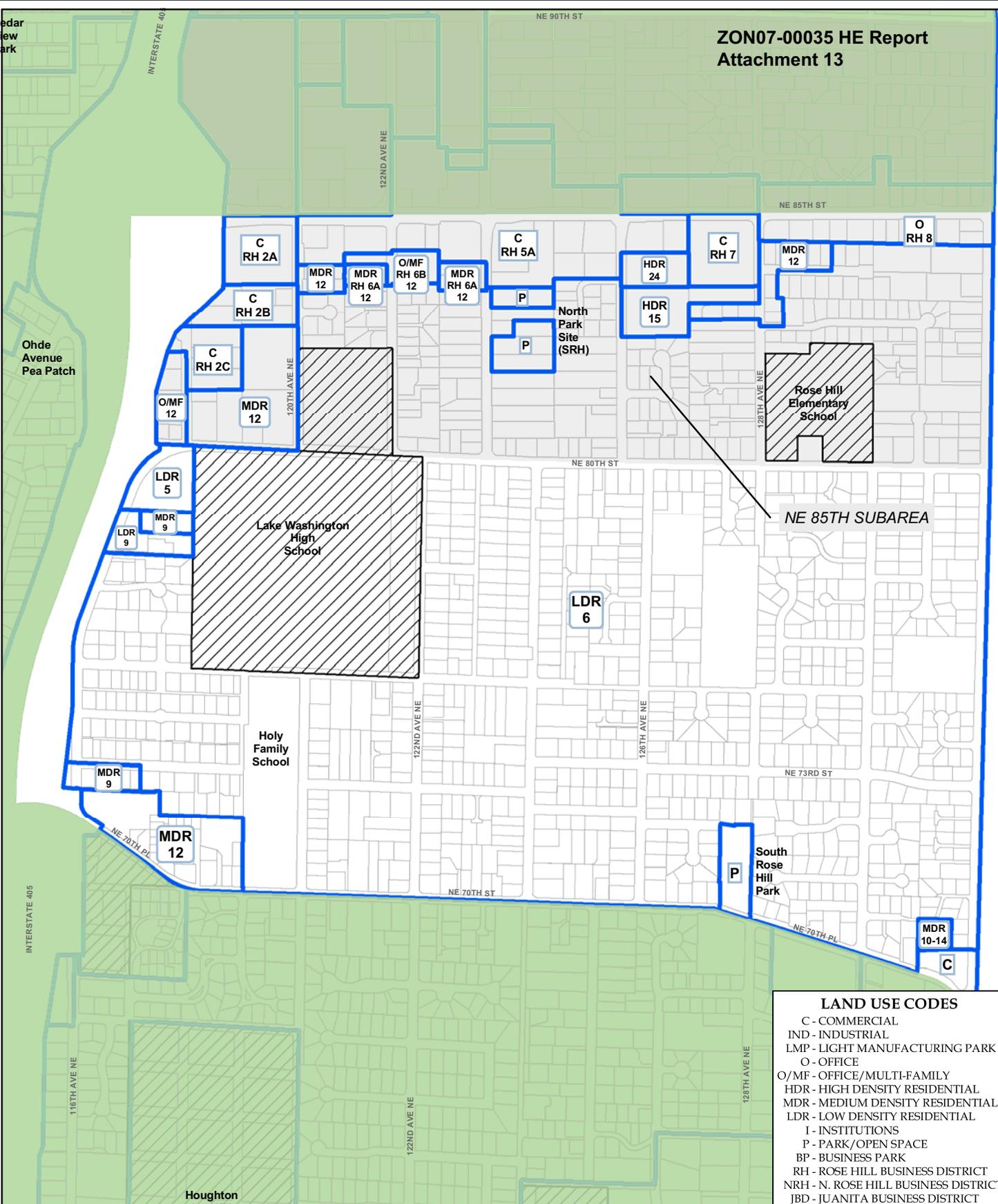
<u>Total</u>			
IB	OB		
204	452	656	

Average

North Access	74.09%
East Access	6.74%
Middle Access	5.52%
West Access	13.65%



Lake Washington School District - High Schools



LAND USE CODES

- C - COMMERCIAL
- IND - INDUSTRIAL
- LMP - LIGHT MANUFACTURING PARK
- O - OFFICE
- O/MF - OFFICE/MULTI-FAMILY
- HDR - HIGH DENSITY RESIDENTIAL
- MDR - MEDIUM DENSITY RESIDENTIAL
- LDR - LOW DENSITY RESIDENTIAL
- I - INSTITUTIONS
- P - PARK/OPEN SPACE
- BP - BUSINESS PARK
- RH - ROSE HILL BUSINESS DISTRICT
- NRH - N. ROSE HILL BUSINESS DISTRICT
- JBD - JUANITA BUSINESS DISTRICT

South Rose Hill Neighborhood Land Use Map

ORDINANCE NO. 3974
ADOPTED by the Kirkland City Council
December 14, 2004

LAND USE BOUNDARIES	PUBLIC FACILITIES
PLANNED AREA NUMBER	PARCEL BOUNDARIES
SUBAREA BOUNDARY	LAND USE CODE
TOTEM CENTER	DENSITY (UNITS/ACRE)

NOTE: WHERE NOT SHOWN, NO DENSITY SPECIFIED
* INDICATES CLUSTERED LOW DENSITY

0 250 500
Feet **131**

Maps produced March 10, 2005.
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