

CITY OF KIRKLAND  
123 FIFTH AVENUE, KIRKLAND, WASHINGTON 98033-6189  
(425) 587-3225



**DETERMINATION OF NONSIGNIFICANCE (DNS) .**

CASE #: SEP09-00001

DATE ISSUED: 1/16/2009

DESCRIPTION OF PROPOSAL

**Change of Use Zoning Permit (ZON08-00020) to allow Northwest University to occupy the former Seattle Seahawks Facility for administrative and faculty offices, meeting rooms, and storage. No additions to the existing facility are being proposed. The former practice fields will be used exclusively by Northwest University athletic practices and intramural activities.**

PROPONENT: **STEVE SANKEY**

LOCATION OF PROPOSAL

**NORTHWEST UNIVERSITY CAMPUS, 11220 NE 53RD STREET**

LEAD AGENCY is **The City of Kirkland**

The lead agency for this proposal has determined that it does not have a probable significant adverse impact on the environment. An environmental impact statement (EIS) is not required under RCW 43.21.030 (2) (c). This decision was made after review of a completed environmental checklist and other information on file with the lead agency. This information is available to the public upon request.

There is no comment period for this DNS.

Responsible official:

1/14/09  
Date

Eric Shields, Director  
Department of Planning and Community Development  
425-587-3225

Address: City of Kirkland  
123 Fifth Avenue  
Kirkland, WA 98033-6189

**You may appeal this determination to the Planning Department at Kirkland City Hall, 123 Fifth Avenue, Kirkland, WA 98033 no later than 5:00 p.m., Friday, January 30, 2009 by WRITTEN NOTICE OF APPEAL.**

You should be prepared to make specific factual objections. Contact the Planning Department at 425-587-3225 to read or ask about the procedures for SEPA appeals.

Please reference case # SEP09-00001.

Distributed By:

Date:

1-15-2009



## **MEMORANDUM**

**To:** Eric R. Shields, AICP, Planning Director

**From:** Tony Leavitt, Associate Planner

**Date:** January 13, 2008

**File:** ZON08-00020, SEP09-00001

**Subject:** **ENVIRONMENTAL DETERMINATION FOR NORTHWEST UNIVERSITY CHANGE OF USE ZONING PERMIT**

## **PROPOSAL**

Northwest University has applied for a Change of Use Zoning Permit to allow the university to occupy the former Seattle Seahawks Facility at 11220 NE 53<sup>rd</sup> Street for administrative and faculty offices, meeting rooms, and storage (see Enclosures 1 and 2). No additions to the existing facility are being proposed as part of the application. The former practice fields on the property will be used exclusively by Northwest University athletic practices and intramural activities.

## **ENVIRONMENTAL ISSUES**

I have had an opportunity to visit the site and review the environmental checklist (see Enclosure 3) and the following related materials:

- Trip Generation Analysis for Concurrency prepared by William Popp Associates dated October 24, 2008 (Enclosure 4)
- Traffic Concurrency Review Memo from Thang Nguyen dated November 12, 2008 (Enclosure 5)
- Signal Warrant Analysis prepared by William Popp Associates dated November 14, 2008 (Enclosure 6)
- Signal Warrant Analysis Review from Thang Nguyen dated December 11, 2008 (Enclosure 7)

The main environmental issues related to this project are potential traffic impacts and the traffic signal requirement along 108<sup>th</sup> Avenue NE.

## **Traffic Impacts**

Public Works Department Staff reviewed the Trip Generation Analysis for Concurrency prepared by William Popp Associates and concluded that the project passed traffic concurrency. The project will be subject to the requirements outlined in the Traffic Concurrency Review Memo.

## **108<sup>th</sup> Avenue NE Traffic Signal Requirement**

As part of the Northwest College (University) Master Plan Approval, the following SEPA Mitigation Measure was incorporated:

A traffic signal along 108<sup>th</sup> Avenue NE (at one of three predetermined locations) shall be installed when both of the following occur:

1. Any one of the traffic signal warrants 1, 2, 9, or 11 at the intersection of 108<sup>th</sup> Avenue NE and NE 53<sup>rd</sup> Street is met.
2. The College generates 315 new trips per day through the intersection of NE 53<sup>rd</sup> Street and 108<sup>th</sup> Avenue NE. These numbers shall be total cumulative additional trips above the 1995 level of 1,946 trips on NE 53<sup>rd</sup> Street.

Public Works Department Staff reviewed the Signal Warrant Analysis prepared by William Popp Associates and concluded that the project does not meet the traffic signal installation requirements. As a result, the applicant is not required to install a traffic signal along 108<sup>th</sup> Avenue NE at this time.

## **CONCLUSIONS AND RECOMMENDATION**

It will be necessary to further analyze certain aspects of the proposal to determine if the project complies with all the applicable City codes and policies. That analysis is most appropriately addressed within the review of the Change of Use Zoning Permit application. In contrast, State law specifies that this environmental review under the State Environmental Policy Act (SEPA) is to focus only on potential significant impacts to the environment that could not be adequately mitigated through the Kirkland regulations and Comprehensive Plan.<sup>1</sup>

Based on my review of all available information, I have not identified any significant adverse environmental impacts. Therefore, I recommend that a Determination of Non-Significance be issued for this proposed action.

## **SEPA ENCLOSURES**

1. Vicinity Map
2. Project Plans
3. Environmental Checklist
4. Trip Generation Analysis for Concurrency prepared by William Popp Associates dated October 24, 2008
5. Traffic Concurrency Review Memo from Thang Nguyen dated November 12, 2008
6. Signal Warrant Analysis prepared by William Popp Associates dated November 14, 2008
7. Signal Warrant Analysis Review from Thang Nguyen dated December 11, 2008

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Review by Responsible Official:

I concur

I do not concur

Comments:

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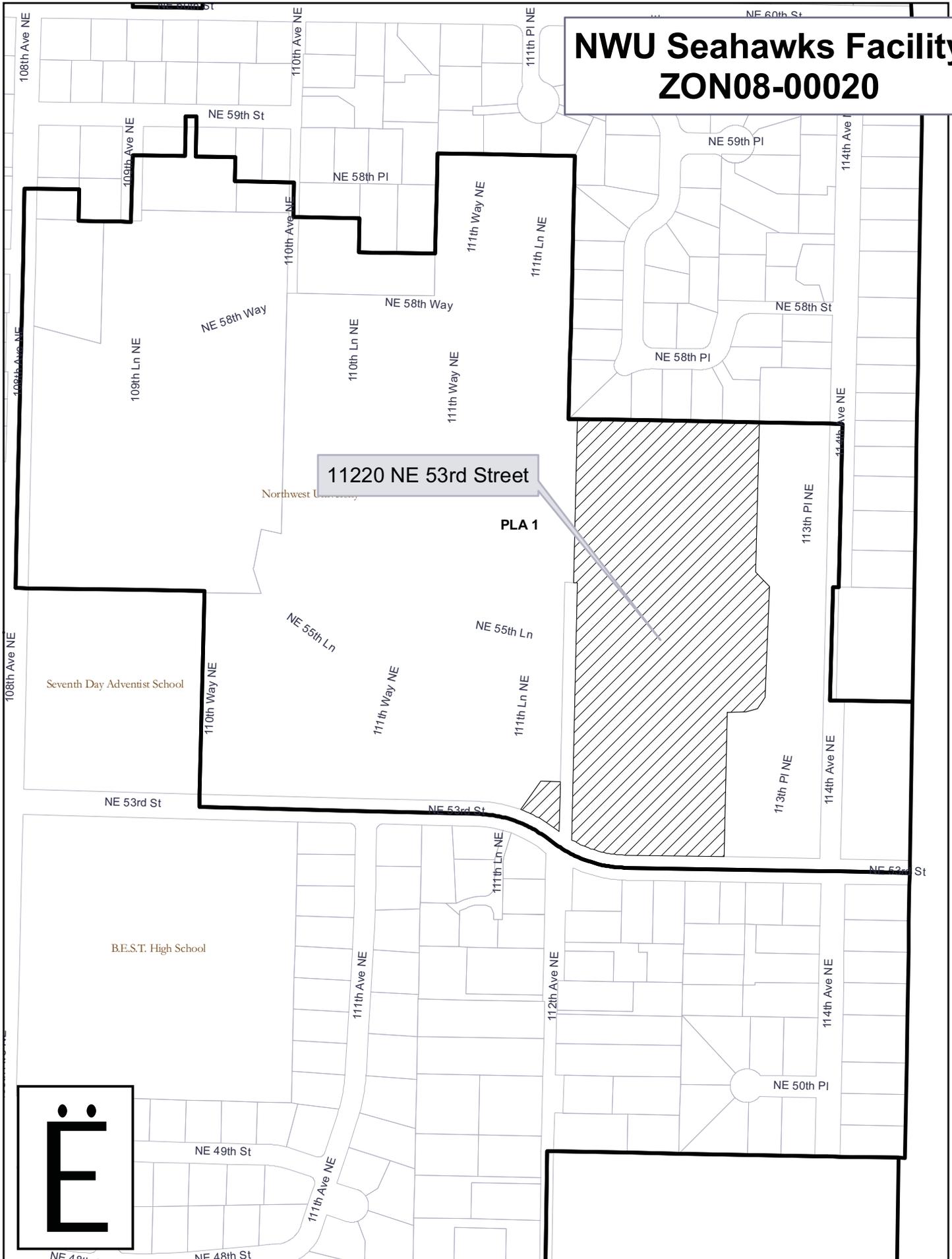
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Eric R. Shields, AICP  
Planning Director

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Date

# NWU Seahawks Facility ZON08-00020



SEPA Memorandum Enclosure 2

is the same as

Staff Advisory Report Attachment 3

# CITY OF KIRKLAND ENVIRONMENTAL CHECKLIST

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## Purpose of Checklist:

The State Environmental Policy Act (SEPA), Chapter 43.21C RCW, requires all governmental agencies to consider the environmental impacts of a proposal before making decisions. An environmental impact statement (EIS) must be prepared for all proposals with probable significant adverse impacts on the quality of the environment. The purpose of this checklist is to provide information to help you and the City identify impacts from your proposal, and to reduce or avoid impacts from the proposal, whenever possible

## Instructions for Applicants:

This environmental checklist asks you to describe some basic information about your proposal. Answer the questions briefly with the most precise information known, or give the best description you can.

You must answer each question accurately and carefully to the best of your knowledge. In most cases, you should be able to answer the questions from your own observations or project plans without the need to hire experts. If you really do not know the answer, or if a question does not apply to your proposal, write "do not know" or "does not apply." Complete answers to the questions now may avoid unnecessary delays later.

Some questions ask about governmental regulations, such as zoning, shoreline, and landmark designations. Answer these questions if you can. If you have problems, the City staff can assist you.

The checklist questions apply to all parts of your proposal, even if you plan to do them over a period of time or on different parcels of land. Attach any additional information that will help describe your proposal or its environmental effects. The City may ask you to explain your answers or provide additional information reasonably related to determining if there may be significant adverse impacts.

## Use of Checklist for Non-project Proposals:

Complete this checklist for non-project proposals also, even though questions may be answered "does not apply." IN ADDITION, complete the SUPPLEMENTAL SHEET FOR NON-PROJECT ACTIONS (Part D).

For non-project actions, the references in the checklist to the words "project," "applicant," and "property or site" should be read as "proposal," "proposer," and "affected geographic area," respectively.

## A. BACKGROUND

1. Name of proposed project, if applicable: ***Change of Use Zoning Permit***
2. Name of applicant: ***Northwest University***
3. Tax parcel number: ***1725059139***
4. Address and phone number of applicant and contact person: ***5520 108<sup>th</sup> Ave NE 425-822-8266 steve sankey***

5. Date checklist prepared: *10/28/08*
6. Agency requesting checklist: *City of Kirkland, Planning Dept*
7. Proposed timing or schedule (including phasing, if applicable):
8. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal?

*None to date*

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

*None*

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

*Yes - zoning change with City of Kirkland*

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

*None*

12. Give brief, complete description of your proposal, including the proposed uses, the size and scope of the project and site including dimensions and use of all proposed improvements. 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.

*Change of Use of existing building*

13. 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.

*11220 ne 53<sup>rd</sup> St - See A.1.1, A.1.1a of cooresponding application*



is completed? If any, generally describe and give approximate quantities, if known.

**No change from existing emissions from vehicle parking on site**

- b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.

**no**

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

**none**

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

**year round stream - Northwest College Creek - flows to the west to Lake Washington**

- 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 lie within a 100-year floodplain? 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**

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#### 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**

- 2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: Domestic sewage; industrial,

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5. ANIMALS

- a. Circle any birds and animals which have been observed on or near the site or are known to be on or near the site:

birds: hawk, heron, eagle, songbirds, other *Songbirds*  
mammals: deer, bear, elk, beaver, other  
fish: bass, salmon, trout, herring, shellfish, other

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- b. List any threatened or endangered species known to be on or near the site.  
*none*

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- c. Is the site part of a migration route? If so, explain.  
*no*

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- d. Proposed measures to preserve or enhance wildlife, if any:  
*DNA*

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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.

*electric and natural gas*

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

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- 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:  
*no change to existing conditions*

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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*

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- 1) Describe special emergency services that might be required.  
*dna*

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2) Proposed measures to reduce or control environmental health hazards, if any:  
*dna*

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b. Noise

1) What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)?

*dna*

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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.

*long term, no change to existing vehicle traffic noise during business and operation hours*

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

*dna*

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8. LAND AND SHORELINE USE

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

*professional football team headquarters and practice facility. Adjacent - Univeristy campus, and residential*

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b. Has the site been used for agriculture? If so, describe.

*no*

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c. Describe any structures on the site.

*45,000 sf office bld, 2,300 sf storage building*

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

*no*

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

*PLA-1*

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f. If applicable, what is the current shoreline master program designation of the site?

*dna*

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

*no*

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

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i. Approximately how many people would the completed project displace?  
*200*

j. Proposed measures to avoid or reduce displacement impacts, if any:  
*dna - former tenant relocated to Renton*

k. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:  
*no changes to use of the existing building for office and meeting spaces. no changes to existing use of field spaces for recreation and practice.*

9. HOUSING

a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.  
*dna*

b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.  
*dna*

c. Proposed measures to reduce or control housing impacts, if any:  
*dna*

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?  
*no change to existing conditions - buildings comply with PLA 1 zoning requirements*

b. What views in the immediate vicinity would be altered or obstructed?  
*none*

c. Proposed measures to reduce or control aesthetic impacts, if any:  
*increase plantings along North landscape buffer*

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11. LIGHT AND GLARE

a. What type of light or glare will the proposal produce? What time of day would it mainly occur?

*no change to existing levels of parking lot and exterior building lighting*

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b. Could light or glare from the finished project be a safety hazard or interfere with views?

*no*

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c. What existing off-site sources of light or glare may affect your proposal?

*none*

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

*no change to existing*

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12. RECREATION

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

*Bridal Trails St PK, Wilcox Park, NU, 7<sup>th</sup> Day Adventist school playground, BEST High School play fields*

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

*no*

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

*dna*

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13. HISTORICAL AND CULTURAL PRESERVATION

a. Are there any places or objects listed in, or proposed for, national, state, or local preservation registers known to be on or next to the site? If so, generally describe.

*no*

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b. Generally describe any landmarks or evidence of historic, archaeological, scientific, or cultural importance known to be on or next to the site.

*none*

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c. Proposed measures to reduce or control impacts, if any:

*dna*

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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 53<sup>rd</sup> Street; 108<sup>th</sup> Ave NE*
- b. Is site currently served by public transit? If not, what is the approximate distance to the nearest transit stop?  
*4 blocks*
- c. How many parking spaces would the completed project have? How many would the project eliminate?  
*no change to existing - 139 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*
- e. Will the project use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.  
*no*
- f. How many vehicular trips per day would be generated by the completed project? If know, indicate when peak volumes would occur.  
*see traffic report provided in cooresponding application*
- g. Proposed measures to reduce or control transportation impacts, if any:  
*encourage car pooling, reduced trips by parking on main University campus, reduced trips from 6710*

See Enclosure 4 of SEPA Memo

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 impacts on public services, if any.  
*dna*

16. UTILITIES





William Popp Associates

Transportation Engineers/Planners

(425) 401-1030  
FAX (425) 401-2125  
e-mail: info@wmpoppassoc.com

October 24, 2008

**To:** Thang Nguyen  
Transportation Engineer  
City of Kirkland

**From:** William Popp, Jr.  
William Popp Associates

**Subject:** Northwest University Building 17 Change in Use  
**Re:** Trip Generation Analysis for Concurrency

The following memorandum was prepared to identify the expected traffic generation for the subject development proposal as part of the City's concurrency process. This memo includes a discussion of the type of use proposed, floor area, and location of project.

### Existing and Proposed Use

Northwest University for just over 20 years has leased part of their campus to the Seattle Seahawks. The address for the Seahawk facility is 11220 NE 53<sup>rd</sup> St and the subject property encompasses 10.26 acres of land. The property includes:

- Seahawk Headquarters; 45,076 gsf including administrative offices, meeting rooms and training facilities. This building is identified as Building 17 of the Northwest University Master Plan.
- A 2,300 gsf storage shed.
- Three outdoor grass practice fields with one having a pneumatic seasonal cover.
- There are a total of 139 parking stalls on two separate parking lots. The lower lot includes 97 stalls and the upper lot has 42 stalls.

As of August 2008, the Seahawks have essentially vacated the site and have moved to their new facility in Renton.

Northwest University will be renovating the interior of Building 17 to accompany their needs however the intended use will remain essentially the same with office and meeting room type use. The parking and access will remain the same. The three football practice fields will revert back to use solely by the University. The proposed use of Building 17 will not make any direct use of the fields.

A site plan is attached as Attachment 1.

## **Trip Generation**

Trip generation estimates for the existing and proposed use of Building 17 were estimated based on local trip generation information gathered at selective sites including the new Seahawk facility and an off-site office building leased solely by NWU known as the 6710 Building on 108<sup>th</sup> Ave NE in Kirkland.

Since the Seahawks had vacated Building 17 on the NWU Campus, it was no longer viable to count the traffic from it. Therefore, with coordination and approval by the City, it was determined that the best representation of existing trips from Building 17 would be to conduct counts at the new Seahawk facility located in Renton. It was concluded that regardless of the differences of building areas between the old and new site, the Seahawk staff, players, media, and visitors would remain essentially the same. Traffic counts were counted on two different weekday days during the commute PM peak period and during the NFL season. Counts were conducted Wednesday October 8, 2008, and Thursday October 9, 2008. These counts were conducted mid-week prior to a regular season Sunday home game. The counts are attached as Attachment 2.

For the proposed change of use in Building 17, NWU currently leases the 6710 Building on 108<sup>th</sup> Ave NE north of campus. The 6710 Building is leased solely to NWU and according to NWU, it is fully utilized. The gross floor area of the 6710 Building is 33,192 gsf. The use of the building by NWU consists of office use and meeting facilities, which will all move to Building 17 on campus when complete. Therefore, similar to the Seahawk facility, a local site trip generation study was conducted that included two weekday PM peak period weekday counts; one Tuesday October 7, 2008 and one Wednesday October 16, 2008. The counts recorded the vehicle, pedestrian and bicycle activity to and from the building only. The counts are attached as Attachment 3.

Based on the vehicle trip findings from the 6710 Building, an estimate of trips was made for Building 17 on campus.

The results of the trip generation analysis are presented in Table 1.

**Table 1  
 PM Peak Hour Trip Generation Estimates**

Land Use	Rate/Type	Total	PM Peak	
			In	Out
<b>Existing Local Trip Generation</b>				
Seahawk Facility <sup>1</sup> Renton Site (one parking lot, two driveways)	Vehicles	101	13	88
6710 Building (NWU Leased) <sup>2</sup> 33,192 gsf; surface/covered parking, one driveway	Vehicles	64	36	28
	Peds/Bikes	10	6	4
	Vehicle Trip Rate	1.93	57%	43%
<b>Proposed Use Trip Generation</b>				
Building 17 on NWU Campus; Administrative Office <sup>3</sup> 45,076 gsf; two surface parking lots accessed separately	Vehicle Trip Rate	1.93	57%	43%
	Vehicles	87	49	38
<b>Net New Trips at Building 17 on NWU Campus <sup>4</sup></b>				
Change of Use from Seahawks Headquarters to NWU Administrative Office	Vehicles	-14	36	-50

<sup>1</sup> Vehicle counts represent an average for a two day PM peak period count. Trips assumed to be independent of facility size thus could in theory reflect trips that would have occurred at the NWU site.

<sup>2</sup> Vehicle counts represent an average for a two day PM peak period count conducted at a site/building leased solely to NWU for similar use. Thus, the determined rate could be utilized for the proposed use.

<sup>3</sup> PM peak hour trips estimated at Building 17 with the proposed change of use.

<sup>4</sup> This would reflect the estimated net new trips at the site assuming the fields are used exclusive for NWU use.

The Seahawk facility was found to generate 101 PM peak hour trips based on a 2-day average of 95 trips on Wednesday and 106 on Thursday. The directional orientation of trips is predominantly (88%) outbound during this time.

The existing 6710 Building that is leased solely by NWU for similar office/meeting room use as what is proposed in Building 17 on campus was found to generate 64 trips on average (a 2-day average, 65 trips on 1<sup>st</sup> count and 62 trips on 2<sup>nd</sup> count) thus reflecting a commute PM peak period trip rate of 1.93 trips per 1,000 gross square feet. This rate is slightly higher but very similar to the trip rate found in ITE of 1.73 per ksf for Single Tenant Office Building (LUC 715). The direction orientation of trips was found to be 57% inbound and 43% outbound which goes somewhat against the grain from typical office use. The pedestrian and bicycle activity was found to be about 14% of the total trips to and from the building during the PM peak hour. This is likely due to the relative close proximity of the building to the NWU campus. However, it is logical to assume

Mr. Thang Nguyen  
Northwest University Building 17  
Traffic Memorandum for Concurrency  
Page 4  
10/24/2008

that this percentage of pedestrians and bicycles would, if anything, increase with moving of those uses to the campus in Building 17.

Based on the trip rate determined at the 6710 Building, it was estimated that the new trips at Building 17 would be 87 commute PM peak hour trips, with 49 entering and 38 exiting.

Given the trip estimates for the Seahawk facility and those new proposed at Building 17, it is estimated the net new commute PM peak hour trips at the subject site will be a decrease of 14 trips overall. The orientation of trips will be slightly different resulting in an increase of 36 trips entering the site, and a decrease of 50 trips exiting the site. It is important to note that the Seahawk trip estimates reflect the entire site, whereas the proposed use reflects just the building. In theory, there is a surplus of 14 PM peak hour trips that could be applied to outside sources other than NWU utilizing strictly the fields from any approved regular athletic use. This may be something to consider in future permitting of the fields for such outside use.

I believe that this analysis should address all your needs pertaining to the trip generation at the subject site and is suitable information for your use in preparation of the concurrency analysis. This memorandum will be included with the Concurrency Management Review Application form. Please call me at (425) 401-2124 if you have any questions.

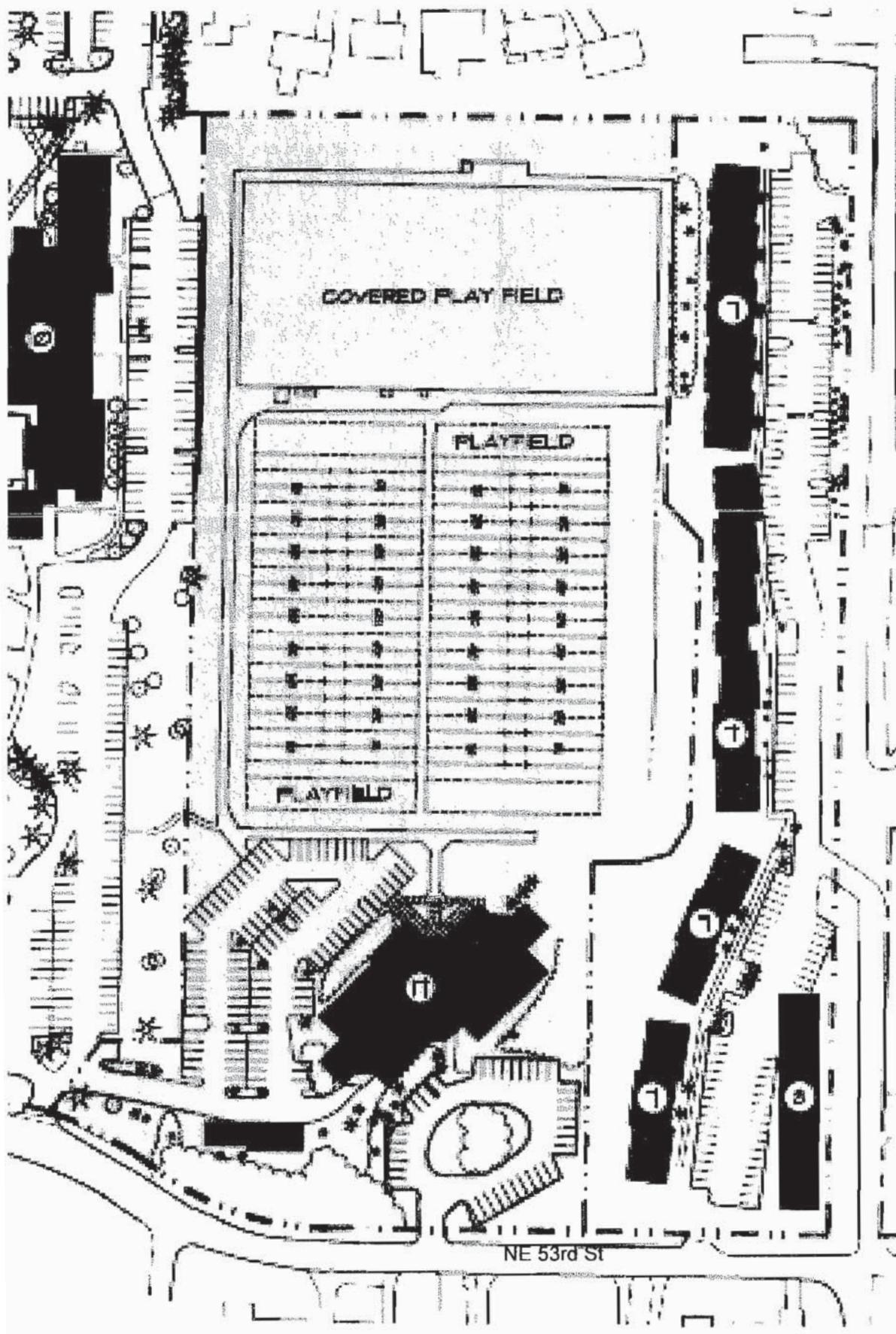
cc: Steve Sankey  
Northwest University

Eric Drivdahl  
Gelotte Hommas

Attachments –

1. Site Plan
2. Seahawk Counts
3. 6710 Building Counts

# ATTACHMENT 1: SITE PLAN



# ATTACHMENT 2

**Seahawks Headquarters  
Virginia Mason Athletic Center**

Date: Wednesday, Oct 8th, 2008

END TIME	DRIVEWAY 1		DRIVEWAY 2	
	IN	OUT	IN	OUT
4:15	5	6	0	4
4:30	4	16	0	4
4:45	2	21	0	0
5:00	3	13	0	2
5:15	4	15	0	11
5:30	0	8	0	5
5:45	3	8	0	11
6:00	1	9	0	11

Both Driveways	
IN	OUT
5	10
4	20
2	21
3	15
4	26
0	13
3	19
1	20

15-min Bothways	Hourly Totals
15	80
24	<b>95</b>
23	84
18	83
30	86
13	
22	
21	

Totals	22	96	0	48
Pk Hr	13	65	0	17

22	144
13	82

166	
95	4:15-5:15

Date: Thursday, Oct 9th, 2008

END TIME	DRIVEWAY 1		DRIVEWAY 2	
	IN	OUT	IN	OUT
4:15	1	3	0	1
4:30	4	5	1	5
4:45	0	14	1	4
5:00	7	14	0	3
5:15	3	22	1	10
5:30	1	14	0	7
5:45	0	9	0	11
6:00	4	11	4	9

Both Driveways	
IN	OUT
1	4
5	10
1	18
7	17
4	32
1	21
0	20
8	20

15-min Bothways	Hourly Totals
5	63
15	94
19	101
24	102
36	<b>106</b>
22	
20	
28	

Totals	20	92	7	50
Pk Hr	8	56	5	37

27	142
13	93

169	
106	5p to 6p

**2-Day Average PM Peak Period Summary**

	DRIVEWAY 1		DRIVEWAY 2	
	IN	OUT	IN	OUT
2-hr Totals	21	94	4	49
Pk Hr	11	61	3	27

Both Driveways	
IN	OUT
25	143
13	88

Totals	
168	
101	

# ATTACHMENT 3

**6710 Building - NW College Sole Tenant (fully occupied/leased)  
NW College off campus leased building**

Date: Tuesday, Oct 7th, 2008

END TIME	DRIVEWAY	
	IN	OUT
4:15	4	2
4:30	5	2
4:45	9	3
5:00	10	7
5:15	7	11
5:30	14	4
5:45	4	5
6:00	11	9

15-min Bothways	Hourly Totals
6	42
7	54
12	65
17	62
18	<b>65</b>
18	
9	
20	

Peds/Bikes			
In	Out	Bothways	Hour
1	0	1	5
0	1	1	8
1	1	2	10
1	0	1	10
3	1	4	9
1	2	3	
1	1	2	
0	0	0	

Totals	64	43
Pk Hr	36	29

107	
65	5p to 6p

8	6	14	
5	4	9	< veh pk hr

Date: Wednesday, Oct 16th, 2008

END TIME	DRIVEWAY	
	IN	OUT
4:15	8	10
4:30	2	7
4:45	7	9
5:00	2	4
5:15	7	14
5:30	9	5
5:45	11	4
6:00	9	3

15-min Bothways	Hourly Totals
18	49
9	52
16	57
6	56
21	<b>62</b>
14	
15	
12	

Peds/Bikes			
In	Out	Bothways	Hour
0	1	1	6
1	0	1	8
0	0	0	11
2	2	4	13
2	1	3	10
4	0	4	
0	2	2	
1	0	1	

Totals	55	56
Pk Hr	36	26

111	
62	5p to 6p

10	6	16	
7	3	10	< veh pk hr

**2-Day Average PM Peak Period Summary**

	DRIVEWAY	
	IN	OUT
Totals 2-hr	60	50
Pk Hr	36	28

Total
109
64

Peds/Bikes		
In	Out	Bothways
9	6	15
6	4	10



**CITY OF KIRKLAND**

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

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**DEPARTMENT OF PUBLIC WORKS  
MEMORANDUM**

**To:** Tony Leavitt, Planner

**From:** Thang Nguyen, Transportation Engineer

**Date:** November 12, 2008

**Subject:** NW University Expansion Concurrency Test Notice

The purpose of this memo is to inform you that the proposed NW University expansion into the former Seahawk training center has passed traffic concurrency.

**Project Description**

NW University proposed to use the vacated Seahawk Facility (also known as Building 17 on the NW University Master Plan) for administrative office. The building has a total of 45,076 square feet. Based on the trip generation information, the proposed use will generate less PM peak hour traffic than the former use.

The proposed project passed traffic concurrency. This memo will serve as the concurrency test notice for the proposed project. Per *Section 25.10.020 Procedures* of the KMC, this Concurrency Test Notice will expire in one year (November 12, 2009) 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. If you have any questions, please call me at x3869.

cc: Bill Popp Jr., William Popp Associates

file

William Popp Associates

Transportation Engineers/Planners

(425) 401-1030  
FAX (425) 401-2125  
e-mail: info@wmpoppassoc.com

November 14, 2008

**To:** Thang Nguyen  
Transportation Engineer  
City of Kirkland

**From:** William Popp Jr.   
William Popp Associates

**Subject:** Northwest College  
**Re:** Signal Warrant Analysis for Intersection of 108th Ave NE/NE 53rd St  
Response to Conditions of Approval, Mitigating Measures, Item 3b.

In accordance with the Northwest University 1995 Master Plan condition of approval, Northwest University is required to signalize the intersection of 108<sup>th</sup> Ave NE/NE 53<sup>rd</sup> Street when both of the following conditions occur:

1. Any one of the MUTCD Traffic Signal Warrants 1, 2, 9, or 11 at the intersection of 108<sup>th</sup> Ave NE and NE 53<sup>rd</sup> Street is met.
2. The University generates 315 new daily trips through the intersection of 108<sup>th</sup> Ave NE/NE 53<sup>rd</sup> Street. These numbers shall be total cumulative additional trips above the 1995 level of 1946 trips.

The two conditions noted above reflect Item 3b Conditions of Approval, Mitigating Measures. These conditions are required with any new building that the University is applying a development permit for on campus. Therefore, as part of the renovation of Building 17 which was formerly leased to the Seawhawks and is now proposed as an office type use for the University, this memorandum addresses the conditions noted above.

There are two parts to the condition of approval. One is meeting the signal warrant conditions identified in Item 1 and the other is identifying the new daily trips at the University. Since both must be met in order for intersection signalization, this analysis addresses the first condition (signal warrant check), and one or more of the warrants are met, the analysis would proceed to address the second condition.

Thus, the analysis summarized below addresses the first condition, the signal warrant findings.

## Intersection Volumes

Daily traffic counts were conducted on each approach leg of the NE 53rd St/108th Ave NE intersection as a part of the signal warrant check. The counts were conducted between Wednesday November 5, 2008 and Friday November 7, 2008. Counts were recorded by hour for each approach. It is important to note that the counts on Friday were between 4% and 7% less for all approaches than three day average thus for conservative purposes we elected to just use the data from Wednesday and Thursday.

The approach volumes are presented in Table 1 below and represent the 2-day average including counts conducted in previous years presented for comparison only.

**Table 1**  
**Traffic Volumes at 108th Ave NE/NE 53rd St (cast leg) <sup>a</sup>**

Roadway Approach	Year	Daily Volume	PM peak Volume <sup>b</sup>	AM Peak Volume <sup>c</sup>
108th Ave NE northbound	2008	5,530	838	285
	2001	5,664	855	294
	1995	5,540	885	271
108th Ave NE southbound	2008	5,791	393	762
	2001	5,129	304	676
	1995	6,054	444	816
NE 53rd St westbound	2008	1,093	70	83
	2001	1,451	103	155
	1995	1,868	169	138

a All volumes shown in table reflect a 2-day average (Wed Nov 5 and Thur Nov 6).

b PM peak volume represent the volume during the street peak hour between 4pm and 6pm.

c AM peak volumes represent the volume during the street peak hour between 7am and 9am.

As shown in Table 1, the average weekday daily volume on 108<sup>th</sup> Ave NE is approximately 11,300 vehicles per day (vpd), with a slight imbalance in favor of the southbound direction. The daily volume in 1995 was 11,600 vpd and 10,800 vpd in 2001, thus, the daily volume has been relatively constant over this period.

The daily volume on NE 53<sup>rd</sup> St is approximately 1,100 vehicles per day in the westbound direction. The daily volume for this approach decreased significantly from 1995 thru 2001 to 2008. The same is basically true for the street peak hours. One of the apparent conclusions for the decrease in traffic from 2001 to 2008 is most likely a result fo the Seahawks moving to their new facility in Renton. The likely decrease from 1995 to 2001 is the improvements on I-405.

All of the supporting hourly volumes are presented in the Technical Appendix.

**Signal Warrants (#1, #2, and #3)**

The Hearing Examiner Recommendation (File No. IV-III-95-30, page 5) states that one of the two requirements to be met for the installation of a signal at the NE 53rd St/108th Ave NE intersection is when any one of the MUTCD traffic Signal Warrants 1, 2, 9 or 11 is met.

Since then, the Manual on Uniform Traffic Control Devices (MUTCD) has been updated and elements of the manual have been revised. The MUTCD revised the warrant terminology where old Warrant 1 and 2 are now combined to be Warrant 1, old Warrant 9 is now Warrant 2, and old Warrant 11 is now Warrant 3.

The results of the warrant analysis are tabulated below in Table 3. A summary of the warrant calculations are attached in the Technical Appendix.

**Table 3**  
**Signal Warrant Analysis Summary**  
**108th Ave NE/NE 53rd St (Year 2008 conditions)**

Warrant #	Description	Warrant Met?	Comment
1A	Minimum Vehicular Volume	No	See Technical Appendix for results
1B	Interruption of Continuous Traffic	No	See Technical Appendix for results
1A & 1B	Reduced 1A and 1B conditions	No	both conditions must be satisfied at an 20% reduced threshold level.
2	Four Hour Warrant	No	See Technical Appendix for results
3	Peak Hour Volume Warrant	No	See Technical Appendix for results

As shown in Table 3, based on the latest traffic counts at the 108th Ave NE/NE 53rd St intersection, none of the signal warrants 1, 2 nor 3 are met.

Signal Warrant #1 is the Eight-Hour Vehicular Volume Warrant. It consists of three ‘sub-warrants’ where meeting one of these would satisfy the condition of Warrant 1; Condition A, Condition B, and and 80% level for Condition A and B where both conditions must be met to meet this sub-warrant. Assuming a single lane approach on the major street and a 2 lane approach on the side street none of the sub-warrants are met. The three sub-warrants are discussed below:

- For Warrant 1A, it requires that for any 8 hours of a given day, , the major street volume shall be equal to or exceed 500 vehicles both directions and the side street volume shall equal or exceed 200 vehicles for those same 8 hours. There are no hours that meet this criteria.
- Warrant 1B requires that for any 8 hours of a given day, the major street volume shall be equal to or exceed 750 vehicles both directions and the side street volume shall

equal or exceed 100 vehicles for those same 8 hours. There are no hours that meet this criteria.

- Combination of Warrant 1A and 1B. This combination considers Warrant 1 met if both warrant criteria of 1A and 1B are met at the 80% level. There are no hours that meet the Warrant 1A criteria, and 5 hours that meet the Warrant 1B criteria. Therefore, this combination warrant is not met.

Signal Warrant #2 is the Four-Hour Vehicular Volume Warrant. It requires that for any 4 hours of a given day, the major street volume and the minor street volume shall fall above the curve threshold. Volume criteria vary, however, the lower threshold for the minor street is 115 vehicles. There are no hours that meet or exceed this lower threshold volume, thus this warrant is not met.

Signal Warrant #3 is the Peak-Hour Vehicular Volume Warrant. It requires that for any 1 hour of a given day, the major street volume and the minor street volume shall fall above the curve threshold. Volume criteria vary, however, the lower threshold for the minor street is 150 vehicles. There are no hours that meet or exceed this lower threshold volume, thus this warrant is not met.

It should be noted that the MUTCD guidelines suggest utilizing engineering judgment for any minor street right-turn volume reductions, however the warrant analyses do not consider any reduction, thereby presenting a worst case scenario for minor street approach volumes on NE 53rd St. This right turn volume reduction factor may be something to consider in future analyses.

## **Conclusion**

The results indicate that the traffic volumes on 108th Ave NE and NE 53rd Street have decreased from previous levels. The Fall 2008 traffic volumes at the intersection of 108th Ave NE/NE 53rd St indicate that they are not significant enough to satisfy signal warrants 1, 2 or 3. It is assumed that since the signal warrants are not met the second item of the condition of approval would not be required.

cc: Steve Sankey  
NW University

Eric Drivdahl  
Gelloti Hommas

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(425) 401-1030  
FAX (425) 401-2125  
e-mail: [info@wmpoppassoc.com](mailto:info@wmpoppassoc.com)

## TECHNICAL APPENDIX

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Summary Roadway Counts; 108<sup>th</sup> Ave NE and NE 53<sup>rd</sup> St.

Signal Warrant Analysis for #1, #2, and #3

**108th Ave NE n/o NE 53rd St (east leg)**

**Northbound**

Time Begin	Tue 4-Nov	Wed 5-Nov	Thur 6-Nov	Fri 7-Nov	Wed-Fri Avg	Wed-Thur Avg
12:00 AM	-	17	22	37	25	20
1:00 AM	-	1	5	9	5	3
2:00 AM	-	1	4	8	4	3
3:00 AM	-	5	3	5	4	4
4:00 AM	-	3	3	3	3	3
5:00 AM	-	19	23	13	18	21
6:00 AM	-	58	64	59	60	61
7:00 AM	-	191	184	183	186	188
8:00 AM	-	290	280	251	274	285
9:00 AM	-	181	210	222	204	196
10:00 AM	-	201	208	229	213	205
11:00 AM	-	279	239	264	261	259
12:00 PM	330	353	322	295	323	338
1:00 PM	275	321	270	303	298	296
2:00 PM	323	342	382	319	348	362
3:00 PM	576	512	571	457	513	542
4:00 PM	647	696	734	661	697	715
5:00 PM	612	832	844	657	778	838
6:00 PM	582	595	506	346	482	551
7:00 PM	188	244	286	183	238	265
8:00 PM	118	131	139	121	130	135
9:00 PM	96	120	113	140	124	117
10:00 PM	68	79	74	90	81	77
11:00 PM	31	40	51	82	58	46
AM	0	1246	1245	1283	1258	1248
PM	3846	4265	4292	3654	4070	4282
Day	3846	5511	5537	4937	5328	5530
		103%	104%	93%		

**108th Ave NE n/o NE 53rd St (east leg)  
Southbound**

Time	Tue	Wed	Thur	Fri	Wed-Fri	Wed-Thur
Begin	4-Nov	5-Nov	6-Nov	7-Nov	Avg	Avg
12:00 AM	-	13	14	20	16	14
1:00 AM	-	3	6	5	5	5
2:00 AM	-	4	6	5	5	5
3:00 AM	-	4	2	5	4	3
4:00 AM	-	10	16	12	13	13
5:00 AM	-	46	55	46	49	51
6:00 AM	-	211	225	204	213	218
7:00 AM	-	728	680	600	669	704
8:00 AM	-	757	766	741	755	762
9:00 AM	-	457	527	495	493	492
10:00 AM	-	296	285	291	291	291
11:00 AM	-	332	299	279	303	316
12:00 PM	372	385	351	339	358	368
1:00 PM	417	341	313	293	316	327
2:00 PM	361	337	332	297	322	335
3:00 PM	436	300	334	347	327	317
4:00 PM	512	336	366	386	363	351
5:00 PM	458	382	404	332	373	393
6:00 PM	312	310	321	273	301	316
7:00 PM	159	162	173	147	161	168
8:00 PM	123	132	121	122	125	127
9:00 PM	97	124	120	92	112	122
10:00 PM	71	51	56	77	61	54
11:00 PM	31	27	50	48	42	39
AM	0	2861	2881	2703	2815	2874
PM	3349	2887	2941	2753	2860	2917
Day	3349	5748	5822	5456	5675	5791
		101%	103%	96%		

**NE 53rd St e/o 108th Ave NE  
Westbound**

Time Begin	Tue 4-Nov	Wed 5-Nov	Thur 6-Nov	Fri 7-Nov	Wed-Fri Avg	Wed-Thur Avg
12:00 AM	-	1	6	8	5	4
1:00 AM	-	3	1	4	3	2
2:00 AM	-	1	1	2	1	1
3:00 AM	-	1	4	2	2	3
4:00 AM	-	2	2	3	2	2
5:00 AM	-	11	11	8	10	11
6:00 AM	-	30	28	26	28	29
7:00 AM	-	56	68	57	60	62
8:00 AM	-	95	71	73	80	83
9:00 AM	-	78	65	62	68	72
10:00 AM	-	57	57	51	55	57
11:00 AM	-	89	64	76	76	77
12:00 PM	94	74	87	77	79	81
1:00 PM	90	97	92	62	84	95
2:00 PM	98	92	102	96	97	97
3:00 PM	95	82	90	65	79	86
4:00 PM	67	90	50	54	65	70
5:00 PM	68	46	53	52	50	50
6:00 PM	54	79	46	41	55	63
7:00 PM	38	48	49	36	44	49
8:00 PM	33	75	31	39	48	53
9:00 PM	32	22	24	44	30	23
10:00 PM	21	5	14	28	16	10
11:00 PM	7	11	14	16	14	13
AM	0	424	378	372	391	403
PM	697	721	652	610	661	690
Day	697	1145	1030	982	1052	1093
		109%	98%	93%		

**Daily Counts; Wed (11/5/08) and Thur (11/06/08) Average  
108th Ave NE and NE 53rd St (east leg)**

Interval Begin	108th Ave NE		NE 53rd St
	south of 53rd St Northbound	north of 53rd St Southbound	east of 108th Ave Westbound
12:00 AM	20	14	4
1:00 AM	3	5	2
2:00 AM	3	5	1
3:00 AM	4	3	3
4:00 AM	3	13	2
5:00 AM	21	51	11
6:00 AM	61	218	29
7:00 AM	188	704	62
8:00 AM	285	762	83
9:00 AM	196	492	72
10:00 AM	205	291	57
11:00 AM	259	316	77
12:00 PM	338	368	81
1:00 PM	296	327	95
2:00 PM	362	335	97
3:00 PM	542	317	86
4:00 PM	715	351	70
5:00 PM	838	393	50
6:00 PM	551	316	63
7:00 PM	265	168	49
8:00 PM	135	127	53
9:00 PM	117	122	23
10:00 PM	77	54	10
11:00 PM	46	39	13
Daily	5530	5791	1093
		11321	
AM St Pk start at	285 8:00 AM	762 8:00 AM	83 8:00 AM
PM St Pk at	838 5:00 PM	393 5:00 PM	70 4:00 PM

**NORTHWEST UNIVERSITY  
SIGNAL WARRANT 1 - EIGHT HOUR WARRANT**

<b>WARRANT 1; CONDITION A<sup>1</sup></b>			
Hour Begin	Major Street 108th Ave NE Yr 2008 Both Approaches NB/SB	Minor Street NE 53rd St Lefts plus all of rights exiting (out)	Major Street <sup>2</sup> ≥500? and Minor Street <sup>3</sup> ≥200?
0	34	4	NO
1	8	2	NO
2	8	1	NO
3	7	3	NO
4	16	2	NO
5	72	11	NO
6	279	29	NO
7	892	62	NO
8	1047	83	NO
9	688	72	NO
10	496	57	NO
11	575	77	NO
12	706	81	NO
13	623	95	NO
14	697	97	NO
15	859	86	NO
16	1066	70	NO
17	1231	50	NO
18	867	63	NO
19	433	49	NO
20	262	53	NO
21	239	23	NO
22	131	10	NO
23	85	13	NO

No. of hours when conditions met: 0  
≥8?

Warrant 1; Condition A met?

<b>WARRANT 1; CONDITION B<sup>1</sup></b>			
Hour Begin	Major Street 108th Ave NE Yr 2008 Both Approaches NB/SB	Minor Street NE 53rd St Lefts plus all of rights exiting (out)	Major Street <sup>2</sup> ≥750? and Minor Street <sup>3</sup> ≥100?
0	34	4	NO
1	8	2	NO
2	8	1	NO
3	7	3	NO
4	16	2	NO
5	72	11	NO
6	279	29	NO
7	892	62	NO
8	1047	83	NO
9	688	72	NO
10	496	57	NO
11	575	77	NO
12	706	81	NO
13	623	95	NO
14	697	97	NO
15	859	86	NO
16	1066	70	NO
17	1231	50	NO
18	867	63	NO
19	433	49	NO
20	262	53	NO
21	239	23	NO
22	131	10	NO
23	85	13	NO

No. of hours when conditions met: 0  
≥8?

Warrant 1; Condition B met?

<sup>1</sup> Assumes major street speed does not exceed 40 mph nor is the area within an isolated community with a population of less than 10,000

<sup>2</sup> Based on 1 lane approach for Major Street; 108th Ave NE

<sup>3</sup> Based on 2 lane approach for Minor Street; NE 53rd St

**NORTHWEST UNIVERSITY**  
**SIGNAL WARRANT 1 - EIGHT HOUR WARRANT** *continued*

**COMBINATION OF CONDITIONS OPTION**

WARRANT 1; CONDITION A <sup>1</sup>			
Hour Begin	Major Street 108th Ave NE Yr 2008 Both Approaches NB/SB	Minor Street NE 53rd St Lefts plus all of rights exiting (out)	Major Street <sup>2</sup> ≥400? and Minor Street <sup>3</sup> ≥160?
0	34	4	NO
1	8	2	NO
2	8	1	NO
3	7	3	NO
4	16	2	NO
5	72	11	NO
6	279	29	NO
7	892	62	NO
8	1047	83	NO
9	688	72	NO
10	496	57	NO
11	575	77	NO
12	706	81	NO
13	623	95	NO
14	697	97	NO
15	859	86	NO
16	1066	70	NO
17	1231	50	NO
18	867	63	NO
19	433	49	NO
20	262	53	NO
21	239	23	NO
22	131	10	NO
23	85	13	NO

No. of hours when conditions met: 0  
 ≥8?

Warrant 1; Condition A met?

WARRANT 1; CONDITION B <sup>1</sup>			
Hour Begin	Major Street 108th Ave NE Yr 2008 Both Approaches NB/SB	Minor Street NE 53rd St Lefts plus all of rights exiting (out)	Major Street <sup>2</sup> ≥600? and Minor Street <sup>3</sup> ≥80?
0	34	4	NO
1	8	2	NO
2	8	1	NO
3	7	3	NO
4	16	2	NO
5	72	11	NO
6	279	29	NO
7	892	62	NO
8	1047	83	YES
9	688	72	NO
10	496	57	NO
11	575	77	NO
12	706	81	YES
13	623	95	YES
14	697	97	YES
15	859	86	YES
16	1066	70	NO
17	1231	50	NO
18	867	63	NO
19	433	49	NO
20	262	53	NO
21	239	23	NO
22	131	10	NO
23	85	13	NO

No. of hours when conditions met: 5  
 ≥8?

Warrant 1; Condition B met?

Combination of Condition A and B met?

<sup>1</sup> Assumes major street speed does not exceed 40 mph nor is the area within an isolated community with a population of less than 10,000

<sup>2</sup> Based on 1 lane approach for Major Street; 108th Ave NE

<sup>3</sup> Based on 2 lane approach for Minor Street; NE 53rd St

**NORTHWEST UNIVERSITY  
SIGNAL WARRANT 2 - FOUR HOUR WARRANT**

Condition A: Major St peak volume				Condition B: Minor St peak volume			
Major Street <sup>a</sup>		Minor Street <sup>b</sup>		Major Street <sup>c</sup>		Minor Street <sup>d</sup>	
108th Ave NE		NE 53rd St		108th Ave NE		NE 53rd St	
Yr 2008		Lefts plus		Yr 2008		Lefts plus	
Hour	Both Approaches	all of rights	Minor St	Hour	Both Approaches	all of rights	Minor St
Begin	NB/SB	exiting (out)	≥115? Warrant <sup>e</sup>	Begin	NB/SB	exiting (out)	≥115? Warrant <sup>e</sup>
17	1231	50	No	14	697	97	No
16	1066	70	No	13	623	95	No
8	1047	83	No	15	859	86	No
7	892	62	No	8	1047	83	No
18	867	63		12	706	81	
15	859	86		11	575	77	
12	706	81		9	688	72	
14	697	97		16	1066	70	
9	688	72		18	867	63	
13	623	95		7	892	62	
11	575	77		10	496	57	
10	496	57		20	262	53	
19	433	49		17	1231	50	
6	279	29		19	433	49	
20	262	53		6	279	29	
21	239	23		21	239	23	
22	131	10		23	85	13	
23	85	13		5	72	11	
5	72	11		22	131	10	
0	34	4		0	34	4	
4	16	2		3	7	3	
1	8	2		1	8	2	
2	8	1		4	16	2	
3	7	3		2	8	1	
11321		1093		11321		1093	

<sup>a</sup> Major Street four highest hourly volumes

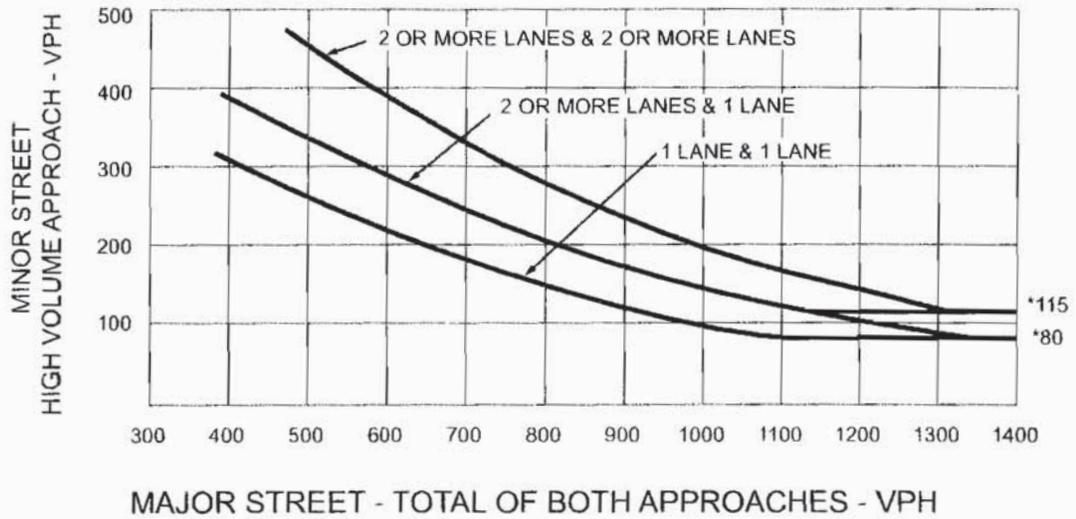
<sup>b</sup> Minor Street four hourly volumes for the same 4 hours as the Major Street four highest hourly volumes

<sup>c</sup> Minor Street four highest hourly volumes

<sup>d</sup> Major Street four hourly volumes for the same 4 hours as the Minor Street four highest hourly volumes

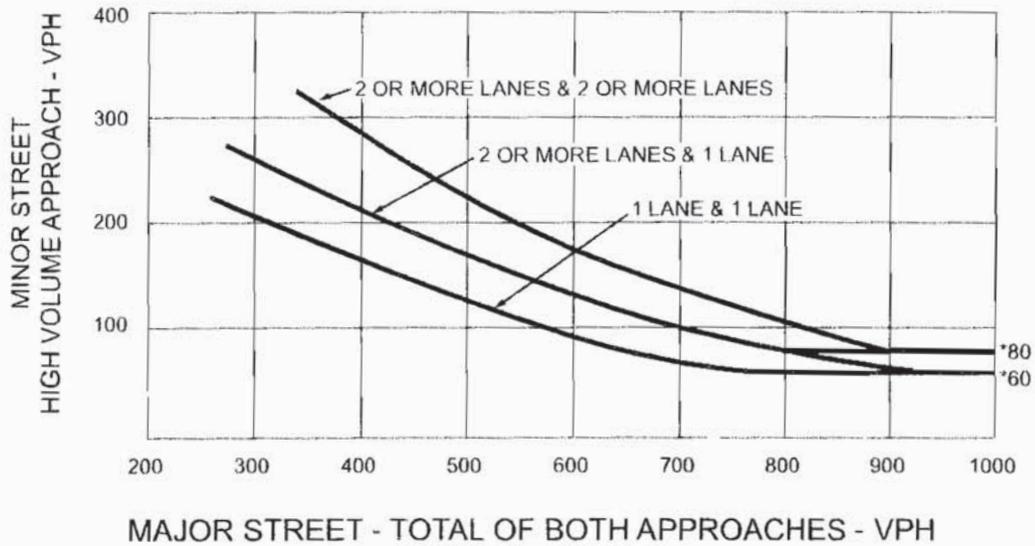
<sup>e</sup> Per Figure 4C-1 (assumes major street speed does not exceed 40 mph nor is the area within an isolated community with a population of less than 10,000) and based on 1 lane approach for Major Street; 108th Ave NE and 2 lane approach for Minor Street; NE 53rd St

**Figure 4C-1. Warrant 2 - Four-Hour Vehicular Volume**



\*Note: 115 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor street approach with one lane.

**Figure 4C-2. Warrant 2 - Four-Hour Vehicular Volume (70% Factor)**  
 (COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h (40 mph) ON MAJOR STREET)



\*Note: 80 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor street approach with one lane.

**NORTHWEST UNIVERSITY  
SIGNAL WARRANT 3 - PEAK HOUR WARRANT**

Condition A: Major St peak volume				Condition B: Minor St peak volume			
Major Street <sup>a</sup>		Minor Street <sup>b</sup>		Major Street <sup>c</sup>		Minor Street <sup>d</sup>	
108th Ave NE		NE 53rd St		108th Ave NE		NE 53rd St	
Yr 2008		Lefts plus		Yr 2008		Lefts plus	
Both Approaches		all of rights		Both Approaches		all of rights	
Hour	NB/SB	exiting (out)	Minor St ≥150? Warrant <sup>e</sup>	Hour	NB/SB	exiting (out)	Minor St ≥150? Warrant <sup>e</sup>
Begin			Met?	Begin			Met?
17	1231	50	No	14	697	97	No
16	1066	70		13	623	95	
8	1047	83		15	859	86	
7	892	62		8	1047	83	
18	867	63		12	706	81	
15	859	86		11	575	77	
12	706	81		9	688	72	
14	697	97		16	1066	70	
9	688	72		18	867	63	
13	623	95		7	892	62	
11	575	77		10	496	57	
10	496	57		20	262	53	
19	433	49		17	1231	50	
6	279	29		19	433	49	
20	262	53		6	279	29	
21	239	23		21	239	23	
22	131	10		23	85	13	
23	85	13		5	72	11	
5	72	11		22	131	10	
0	34	4		0	34	4	
4	16	2		3	7	3	
1	8	2		4	16	2	
2	8	1		1	8	2	
3	7	3		2	8	1	
11321		1093		11321		1093	

<sup>a</sup> Major Street peak hour volume

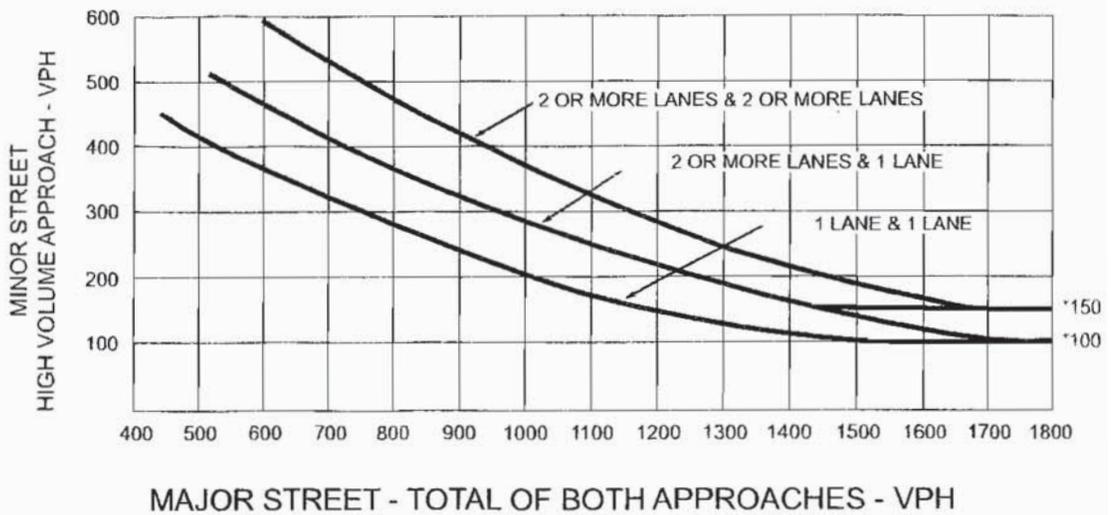
<sup>b</sup> Minor Street hourly volume at corresponding major street peak hour

<sup>c</sup> Major Street hourly volume at corresponding minor street peak hour

<sup>d</sup> Minor Street peak hour volume

<sup>e</sup> Per Figure 4C-3 (assumes major street speed does not exceed 40 mph nor is the area within an isolated community with a population of less than 10,000) and based on 1 lane approach for Major Street; 108th Ave NE and 2 lane approach for Minor Street; NE 53rd St

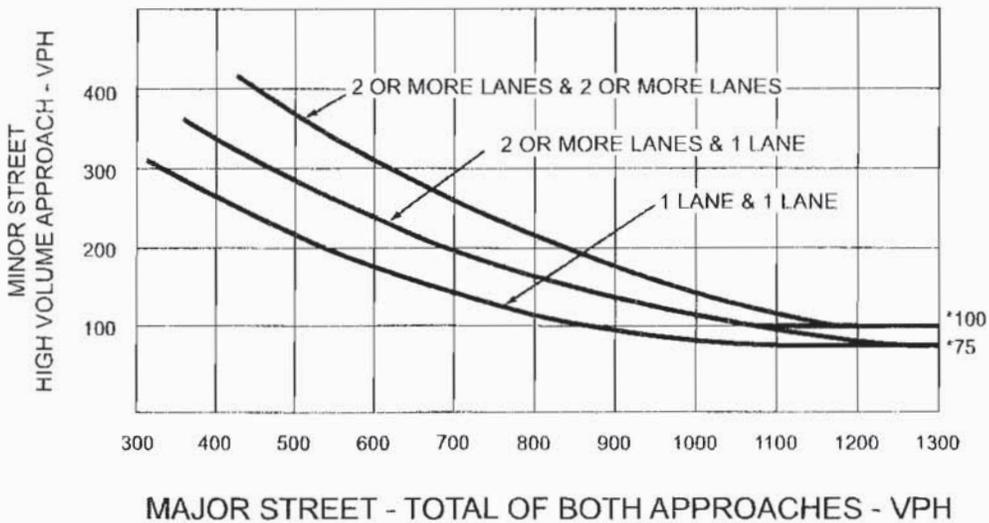
**Figure 4C-3. Warrant 3 - Peak Hour**



\*Note: 150 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor street approach with one lane.

**Figure 4C-4. Warrant 3 - Peak Hour (70% Factor)**

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h (40 mph) ON MAJOR STREET)



\*Note: 100 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor street approach with one lane.

