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July 26, 2016 Project #: 13911.8

David Jardin
Clark County Department of Public Works
1300 Franklin Street, 4th Floor
Vancouver, WA 98666-9810

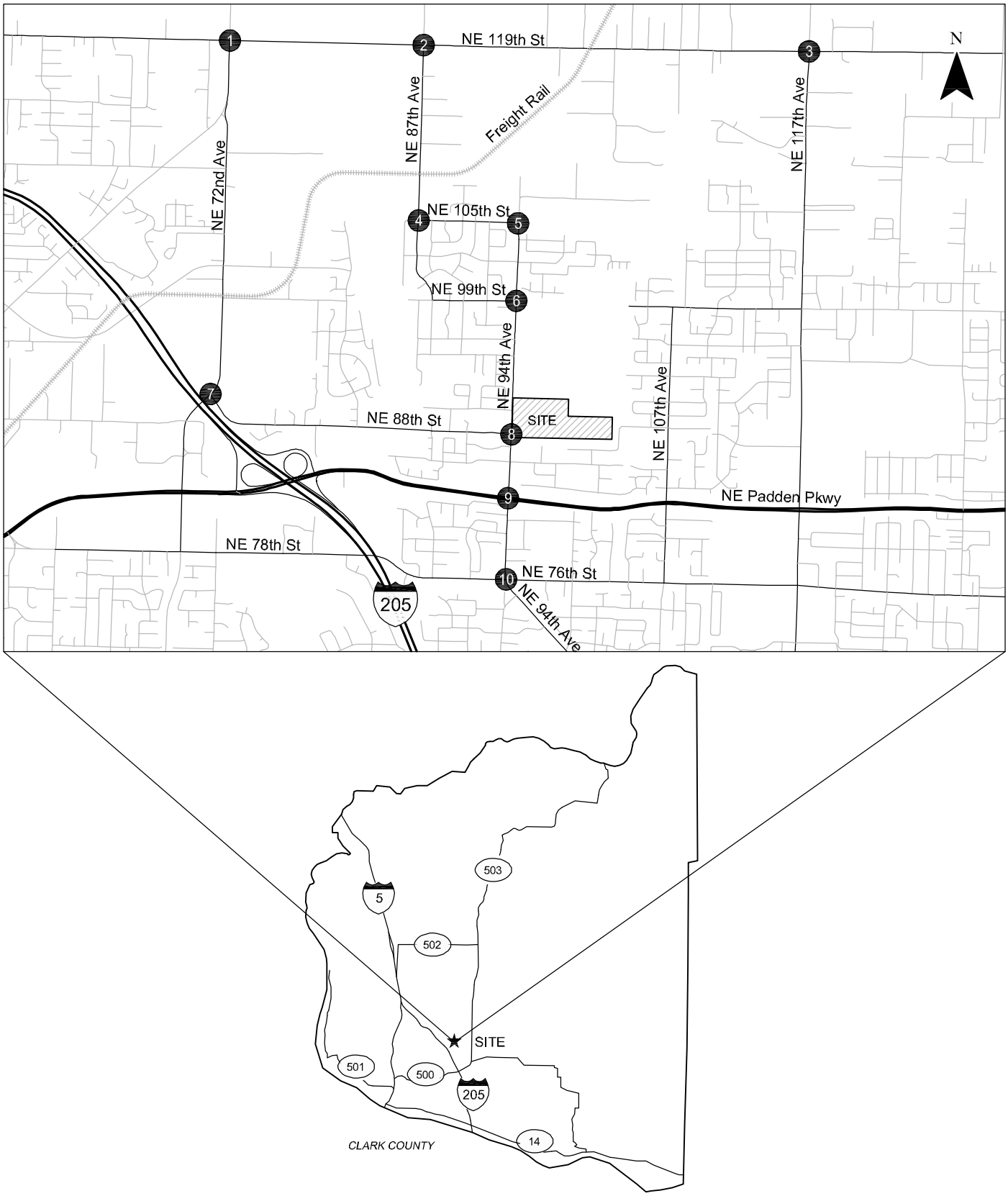
***RE: Transportation Impact Study for the Leichner Campus Master Plan - Clark County, Washington***

Dear David,

Clark County is proposing a master plan of four vacant parcels zoned light industrial and totaling 35.03 acres, part of a greater 128-acre Leichner Master Plan Development. The master plan site is located east of NE 94th Avenue and will be accessible via NE 88th Street when developed in the future. At this time, there are no specific plans for development but future uses are anticipated to be industrial in nature. Figure 1 illustrates the site vicinity.

This letter presents the results of a transportation impact study for the proposed master plan. This study concludes that the master plan site can be developed while maintaining acceptable traffic operations and safety at the study intersections. Based on the traffic analysis, any future site construction should include the following access-related improvements:

- NE 88th Street should be extended east of NE 94th Avenue into the master plan site and should be stop controlled at its approach to NE 94th Avenue. A stop sign should be installed on the private NE 88th Street (westbound) approach to NE 94th Avenue in accordance with Clark County standards and the *Manual on Uniform Traffic Control Devices*.
- A southbound left-turn lane should be provided on NE 94th Avenue at NE 88th Street to serve the new private roadway (if not already constructed in conjunction with Clark County's NE 94th Avenue improvement project).
- The eastbound and westbound approaches of the NE 88th Street/NE 94th Avenue intersection should be widened to provide separate left-turn and shared through/right-turn lanes if and when warranted by master plan site development.
- The need for signalization at the NE 88th Street/NE 94th Avenue intersection should be analyzed per the warrants included in the *Manual on Uniform Traffic Control Devices* as the site develops. A traffic signal should be installed if and when warranted by master plan site development or other nearby future development.




## - Study Intersections

Site Vicinity Map
Clark County, Washington

Figure
1

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- Site landscaping, signing and any aboveground utilities should be appropriately located to ensure that adequate sight distance is maintained after build out.

We recommend the appropriate incremental mitigation required at the NE 88th Street/NE 94th Avenue intersection be re-examined with future site development applications. Given the unknown nature of the site tenants, the above mitigations should be revisited at the time actual site tenants are identified. Land uses with lower trip generation (warehousing, for example) are unlikely to require initial turn lane and traffic signal improvements whereas higher trip generating uses in the light industrial land use range will necessitate mitigation sooner. The following sequence of improvements at the intersection could be followed, pending the site trip generation of incremental site buildout and the timing of site build-out:

- Initial construction: use existing single lane westbound approach along NE 88th Street.
  - Estimated to accommodate approximately 77 weekday PM peak hour site-generated trips (10 in/67 out); equivalent to approximately 30% of the total PM peak hour site-generated trips assumed in this study
- Improvement 1: widen westbound approach to provide shared through/left-turn lane and separate westbound right-turn lane
  - Estimated to accommodate approximately 86 weekday PM peak hour site-generated trips (12 in/74 out); equivalent to approximately 34% of the total PM peak hour site-generated trips assumed in this study Improvement
- Improvement 2: signalize the intersection
  - Estimated to be accommodate full buildout of the site, but with lengthy delays and queuing on the westbound intersection approach (weekday PM peak hour 95th percentile queues of approximately 350 feet assuming one percent heavy vehicles at the site – higher truck volumes will lead to longer queues)
- Ultimate Improvement: widen NE 88th Street eastbound approach to provide left-turn lane and separate shared/through right-turn lane and restripe westbound approach to provide left-turn lane and separate shared/through right-turn lane; operate intersection with a traffic signal
  - Estimated to fully accommodate site development

Additional details of the study methodology, findings, and recommendations are provided herein.

## INTRODUCTION

The master plan site is located at 9411 NE 94th Avenue and is currently owned by Clark County. The County proposes to master plan the 35.03-acre site for future development under the existing Light Industrial (IL) zoning. Although tenants at the site were not known at the time this report was

prepared, the zoning would allow for a mix of light industrial, warehouse, and/or support office or retail uses (retail is only allowed at a total of 10% of the total building area on site per Clark County Code 40.230.085-1).

Access to the site is proposed via a private roadway to be constructed beginning at NE 94th Avenue and traveling east through the site as an extension of NE 88th Street. No other future vehicular connections to NE 94th Avenue were identified or analyzed. The proposed private roadway will be aligned with the existing west approach to the NE 94th Avenue/NE 88th Street intersection and is proposed to terminate at a cul-de-sac near the east end of the master plan site. Future site development also expected to include a north-south private roadway tentatively identified as NE 96th Street that would be located approximately 500 feet east of NE 94th Avenue. NE 96th Avenue is proposed to terminate at a cul-de-sac near the north side of the development site. No vehicular connections are proposed to the adjacent residential lands to the south or east or to the future park to the north given the County's current desire to avoid mixing industrial and non-industrial traffic on the site.

## SCOPE OF THE REPORT

This analysis identifies the transportation-related impacts associated with the proposed master plan and was prepared in accordance with Clark County's transportation impact study requirements. The study scope and overall study area for this project were selected based on a review of the local transportation system and discussions with Clark County staff. As required under Clark County Code 40.350.020, Transportation Concurrency Management, the analysis was prepared to address the following transportation issues:

- Existing land use and transportation system conditions within the site vicinity;
- Existing traffic conditions during the weekday AM and PM peak hours;
- Planned developments and transportation improvements in the study area;
- Future year 2021 weekday AM and PM peak hour background traffic conditions (without site development);
- Trip generation and distribution estimates for the proposed master plan site, including assignment of weekday PM peak hour trips to key concurrency corridor intersections;
- Future year 2021 weekday AM and PM peak hour total traffic conditions (with master plan site development);
- Turn lane needs at the proposed NE 94th Avenue/NE 88th Street intersection; and
- Volume to capacity ratios for applicable concurrency segments.

### Study Intersections

Per County staff scoping direction, operational analyses were performed at the following intersections:

- NE 119th Street/NE 72nd Avenue;
- NE 119th Street/NE 87th Avenue;
- NE 119th Street/NE 117th Avenue (SR 503);
- NE 87th Avenue/NE 105th Street;
- NE 105th Street/NE 94th Avenue;
- NE 99th Street/NE 94th Avenue;
- NE 72nd Avenue/NE 88th Street;
- NE 94th Avenue/NE 88th Street;
- NE 94th Avenue/NE Padden Parkway; and
- NE 94th Avenue/NE 76th Street/NE Covington Road.

# ANALYSIS METHODOLOGY

## Intersection Performance Measures

All level-of-service analyses described in this report were performed in accordance with the procedures stated in the *2000 Highway Capacity Manual* (Reference 1). All intersection level-of-service analyses used the peak 15-minute flow rate that occurred during the weekday AM and PM peak hours. Using the peak 15-minute flow rate ensures that the analyses are based on a reasonable worst-case scenario. For this reason, the analyses reflect conditions that are only likely to occur for 15 minutes out of each average peak hour. The transportation system will likely operate under conditions better than those described in this report during other typical time periods.

The intersection operational analyses presented in this report were completed using the Synchro 9 software tool and/or SIDRA Intersection 7.0[1].

## Facility Performance Standards

Level of service analyses for signalized intersections in this report are based on the average control delay per vehicle entering the intersection. For two-way stop-controlled intersections, level of service is based on the intersection's ability to accommodate the most difficult, or critical, movement as overall intersection level of service is not defined by the *2010 Highway Capacity Manual*.

[1] SIDRA was used to assess stop controlled intersections at NE 87th Avenue/NE 105th Street and NE 105th Street/NE 94th Avenue

### *Clark County Operating Standards*

Clark County Code (CCC) Section 40.350.020.G defines the County's LOS standards for roadway segments as well as signalized and unsignalized intersections.

#### *Roadway Segments*

Per CCC Section 40.350.020.G.1.a: *"A maximum volume to capacity ratio for each roadway segment shall not exceed nine-tenths (0.9), when measured independently for each direction of travel. The capacity shall be based on the factors described in Table 40.350.020-1, Roadway Capacities."*

#### *Signalized Intersections*

Per CCC Section 40.350.020.G.1.b: *"Individual movements at each signalized intersection of regional significance in the unincorporated county shall not exceed an average of two (2) cycle lengths or two hundred forty (240) seconds of delay (whichever is less) per Section 40.350.020.G.1.b."*

#### *Unsignalized Intersections*

Per CCC Section 40.350.020.G.1.c: *"All unsignalized intersections of regional significance in the unincorporated county shall achieve LOS E standards or better (if warrants are not met). If warrants are met, unsignalized intersections of regional significance shall achieve LOS D standards or better. The signalization of unsignalized intersections shall be at the discretion of the Public Works Director and shall not obligate the County to meet this LOS standard. However, proposed developments shall not be required to mitigate their impacts in order to obtain a concurrency approval unless:*

*(1) The proposed development adds at least five (5) peak hour trips to a failing intersection approach;*
*(2) The projected volume to capacity (v/c) ratio for the worst lane movement on the approach with the highest delay exceeds nine-tenths (0.9) during the peak traffic hour; and,*
*(3) That same movement is worsened by the proposed development."*

### *WSDOT Operating Standards*

The NE 117th Avenue/NE 119th Street intersection is operated and maintained by the Washington State Department of Transportation (WSDOT). WSDOT provides a table of LOS standards for state highways of statewide significance (HSS) based on Revised Code of Washington (RCW) 47.06.140(2). Regional transportation planning organizations (RTPOs) and WSDOT jointly develop and establish LOS standards for regionally significant state highways based on RCW 47.80.030(1)(c). Table 1 presents the WSDOT standards for state facilities in Clark County.

**Table 1: WSDOT Level of Service Standards for Washington State Highways**

| Regional Organization/County | LOS for Non-HHS[1] | | LOS for HSS[1] | |
|---|---|---|---|---|
| | Urban | Rural | Urban | Rural |
| (RTC) Southwest Washington Regional Transportation Council – MA/MP/RTPO | E | C | D | C |

[1] HHS=Highway of Statewide Significance

NE 117th Avenue is designated "urban" per the WSDOT *2013 Urban Highway Log* and is a Non-HHS facility. As such, LOS "E" is the applicable WSDOT operating standard.

# EXISTING CONDITIONS

The existing conditions analysis identifies the site conditions and the current operational and geometric characteristics of roadways within the study area. The purpose of this section is to provide a basis for comparison to future conditions.

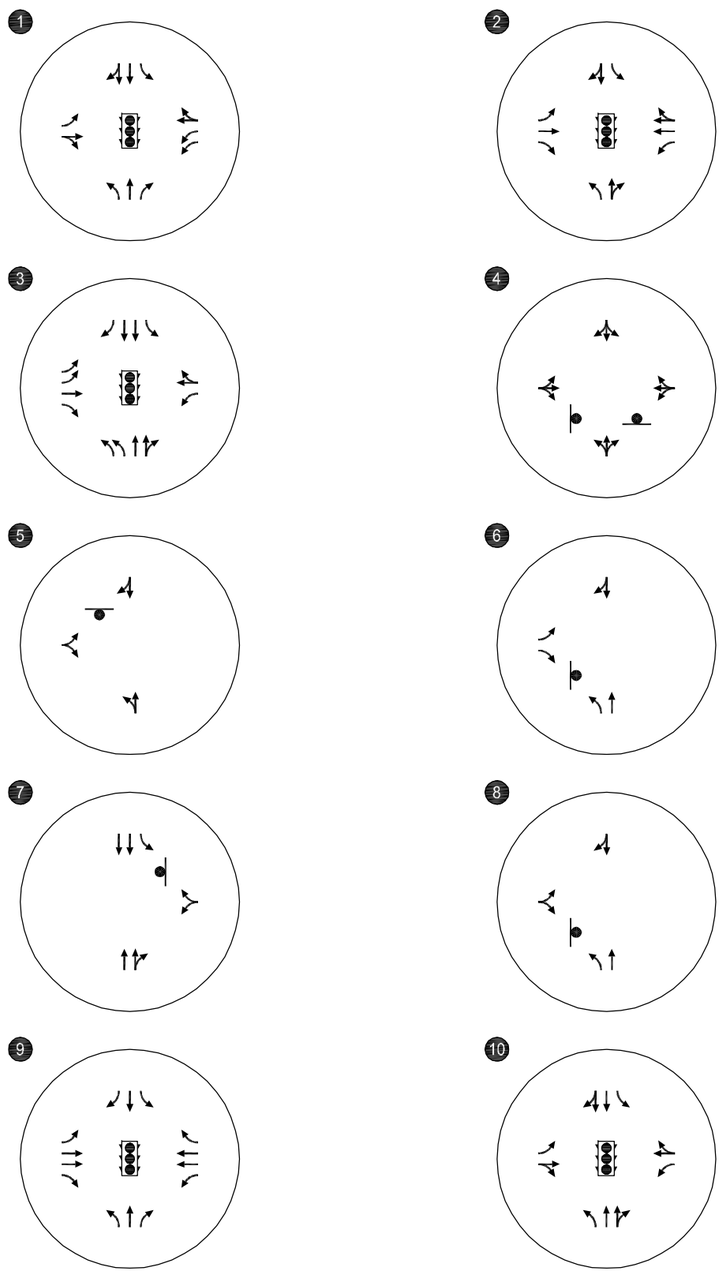
The site and surrounding study area was visited and inventoried in July 2016. At that time, information was collected regarding site conditions, adjacent land uses, existing traffic operations, and transportation facilities in the study area.

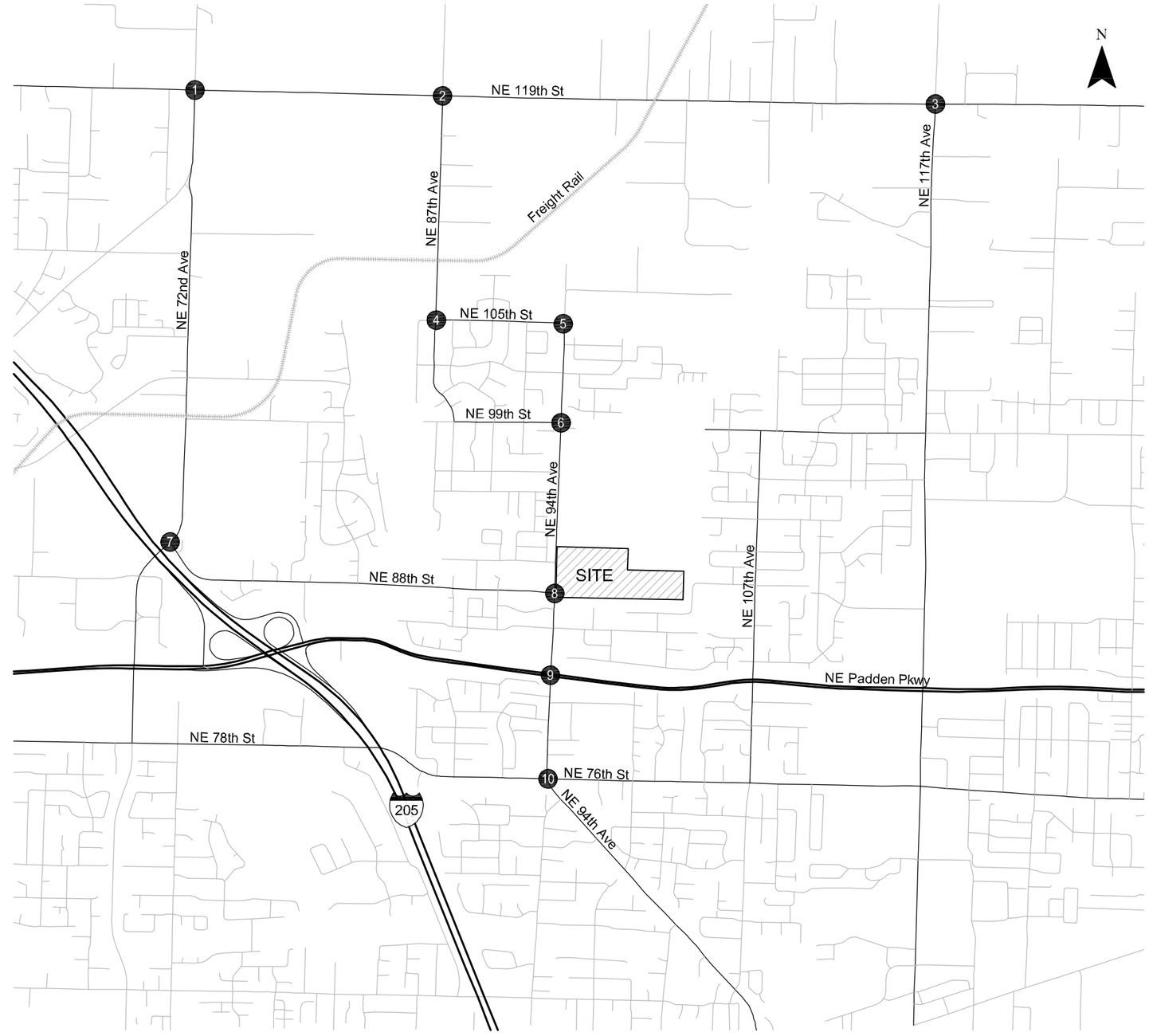
## Site Conditions and Adjacent Land Uses

The site is zoned light industrial (IL) and is currently vacant. The intersection of NE 94th Avenue/NE 88th Street extension was constructed in a manner that provides a sidewalk across the future private street serving the site and is stubbed for extension into the site. The site is bordered by NE 94th Avenue to the west, light industrial uses and a former landfill to the north, and residential homes to the east and south.

## Transportation Facilities

Figure 2 illustrates the location of the study intersections, as well as existing lane configurations and traffic control devices associated with these intersections. Table 2 summarizes key transportation facilities within the site vicinity.




- Stop Sign
- Traffic Signal

Existing Lane Configurations and Traffic Control Devices
Clark County, Washington

Figure
2

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**Table 2 - Existing Roadway Facilities**

| Roadway | Classification[1] | Cross Section | Speed Limit (mph) | Sidewalks? | Bicycle Lanes? | On-Street Parking? |
|---|---|---|---|---|---|---|
| NE Padden Parkway | Urban Principal Arterial (Pa-4cb) | 4 lane | 50 | No | No | No |
| NE 94th Avenue north of Padden Pkwy. | Minor Arterial (M-2cb) | 2 lane[2] | 35 | Partial[2] | Partial[2] | Partial[2] |
| NE 94th Avenue south of Padden Pkwy. | Minor Arterial (M-4cb) | 4 lane | 35 | Yes | Yes | No |
| NE 88th Street | Urban Collector (C-2) | 2 lane | 40 | No | No | No |
| NE 99th Street | Minor Arterial (M-2cb) | 2 lane | 25 | Partial[3] | No | Yes |
| NE 76th Street | Minor Arterial (M-2cb) | 3 lane | 40 | Yes | Yes | No |
| NE 105th Street | Urban Collector (C-2) | 2 lane | 35 | Partial[4] | No | Partial |
| NE 72nd Avenue | Urban Principal Arterial (Pr-4cb) | 4 lane | 25[5]-45 | Yes | Yes | No |
| NE 119th Street (west of NE 72nd Av.) | Urban Minor Arterial (M-2cb) | 2 lane | 40 | No | No | No |
| NE 119th Street (east of NE 72nd Av.) | Urban Minor Arterial (M-4cb) | 2 lane | 25 | No | No | No |

[1] Based on the Clark County *Arterial Atlas*, 2013 (Reference 2)
[2] At the time this report was prepared, NE 94th Avenue was being reconstructed between Padden Parkway and NE 99th Street. The reconstructed roadway will provide a three-lane cross section, pedestrian facilities on both sides, striped bicycle lanes, and will not allow on-street parking. The area north of NE 99th Street provides intermittent pedestrian facilities, has no bicycle lanes, and accommodates intermittent on-street parking.
[3] Sidewalk provided on the south side of the roadway between NE 94th Avenue and a point approximately 300 feet west of NE 92nd Avenue. Sidewalk provided on the north side of the roadway between a point approximately 135 feet east of NE 91st Avenue and NE 89th Avenue.
[4] Sidewalk provided on the south side of the roadway between NE 94th Avenue and a point approximately 125 feet west of NE 92nd Avenue, then intermittently along some residential home frontages.
[5] At the time this report was prepared, the NE 72nd Avenue speed limit was temporarily reduced from 45 to 25 mph north of St. Johns Road for construction.

### *Transit Facilities*

C-TRAN provides transit services within Clark County. There are no fixed-route public transit lines currently operating within a ¼ mile walk from the proposed site (Reference 3).

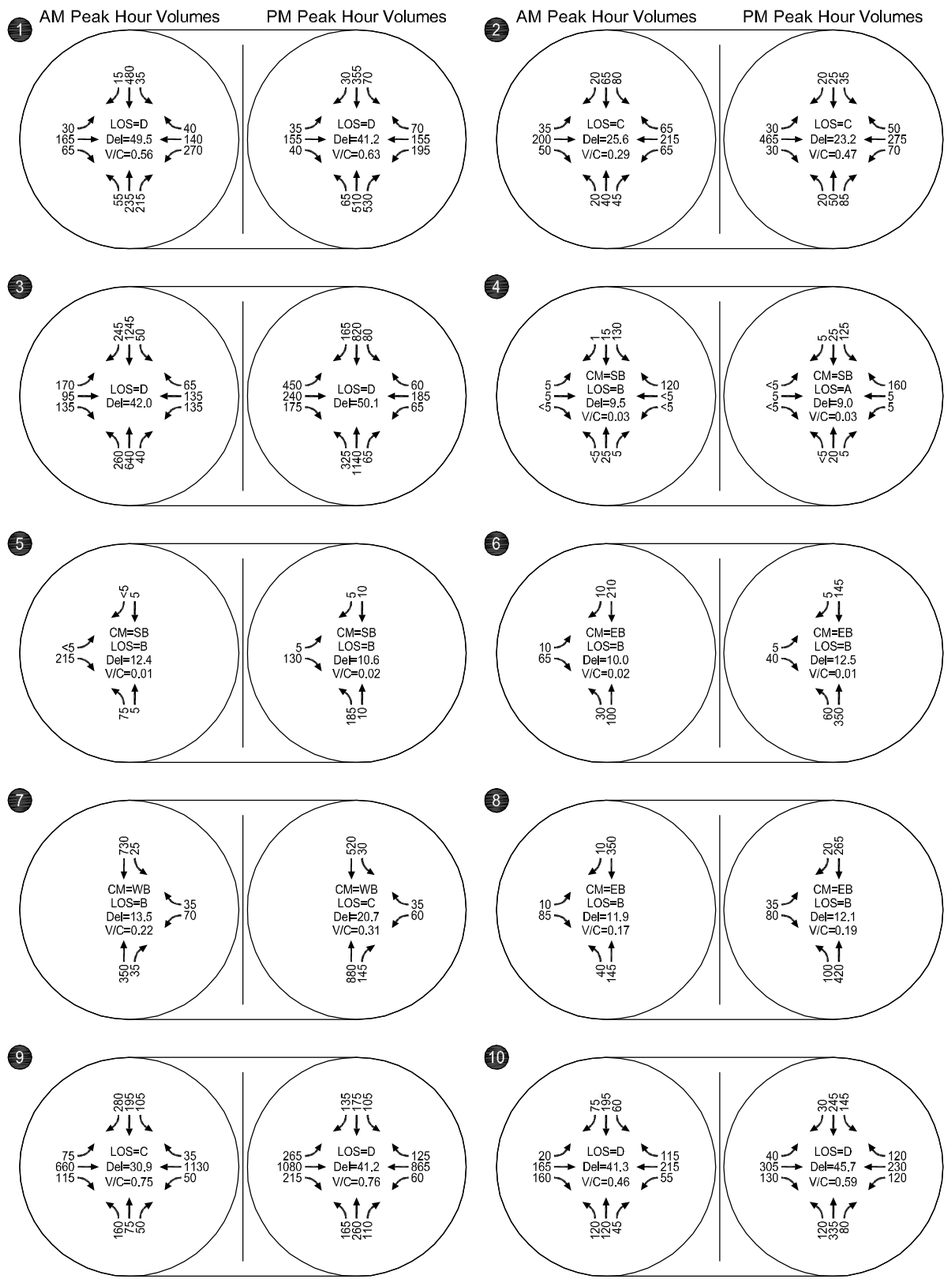
## TRAFFIC VOLUMES AND PEAK HOUR OPERATIONS

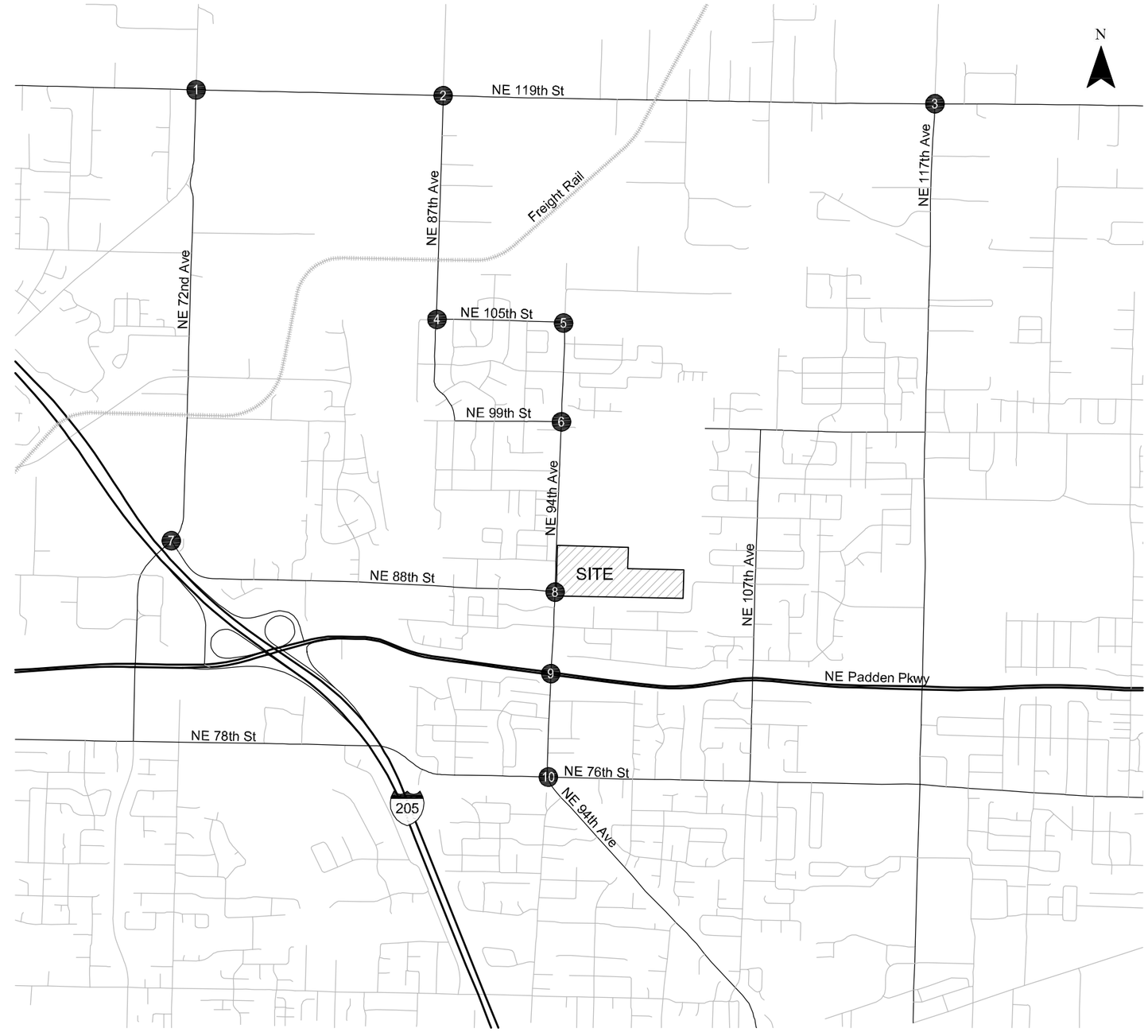
Turning movement counts were conducted at the study intersections on a mid-week day in June 2016 and September 2015 (depending on the location) while local schools were in session. These counts were conducted during the morning (7:00 to 9:00 AM) and evening (4:00 to 6:00 PM) peak hour periods.

The traffic counts taken in September 2015 were increased assuming a year of background growth at two percent. The June 2016 traffic counts were adjusted to account for the on-going construction of NE 94th Avenue based on historic counts at the study intersections (atypical increases in NE 88th Street traffic volumes and reductions in NE 94th Avenue traffic volumes were noted and attributed to diversions related to the roadway construction). *The traffic count sheets are included in Appendix "A".*

## Existing Intersection Operations

Figure 3 summarizes the level-of-service, delay, and capacity analysis results for the study intersections under existing traffic conditions during the weekday AM and PM peak hours. As shown in the figure, the results indicate that all of the study intersections currently operate acceptably during both peak hours per the County's adopted standards enumerated in CCC Section 40.350.020.G. and the related WSDOT standards. *Appendix "B" includes the existing conditions level-of-service worksheets.*

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Existing Traffic Conditions, Weekday AM and PM Peak Hours
Clark County, Washington

Figure 3

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# TRAFFIC SAFETY

The study intersection crash histories were reviewed in an effort to identify potential intersection safety issues. Crash records were obtained from Clark County's Department of Public Works for a five-year period from January 2011 to December 2015, and are summarized in Table 3[2]. *All crash data are provided in Appendix "C" of this report*.

Table 3 presents a summary of the crash rate experienced at the study intersections in terms of crashes per million entering vehicles (MEV) over the five and a half year period. Clark County generally considers a crash rate greater than 1.0 crashes/MEV to be an indicator that a potential geometric or operational issue may exist and that further evaluations should be considered.

**Table 3 - Intersection Crash History**

| Intersection | 5-Year MEV[1] | Crash Type | | | | | | | Crash Severity | | | | Total Crashes | Crash Rate[3] /MEV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Angle | Turn | Side-swipe | Rear End | Fixed Object | Ped / Bike | Other | PDO[2] | Injury | Fatal | Other | | |
| NE 119th Street/ NE 72nd Avenue | 40.28 | 1 | 12 | 1 | 4 | 2 | 0 | 2 | 14 | 8 | 0 | 0 | 22 | 0.55 |
| NE 88th Street/ NE 72nd Avenue | 30.50 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 2 | 0.07 |
| NE 119th Street/ NE 87th Avenue | 21.19 | 3 | 1 | 0 | 6 | 1 | 0 | 0 | 7 | 4 | 0 | 0 | 11 | 0.52 |
| NE 105th Street/ NE 87th Avenue | 6.08 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 1 | 0 | 0 | 1 | 2 | 0.33 |
| NE 105th Street/ NE 94th Avenue | 5.69 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 1 | 1 | 0 | 1 | 3 | 0.53 |
| NE 99h Street/ NE 94th Avenue | 11.06 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0.09 |
| NE 88th Street/ NE 94th Avenue | 16.81 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0.06 |
| NE Padden Pkwy./ NE 94th Avenue | 64.97 | 5 | 23 | 2 | 19 | 1 | 2 | 1 | 24 | 27 | 1 | 1 | 53 | 0.82 |
| NE 76th Street/ NE Covington Road | 34.60 | 13 | 17 | 1 | 7 | 1 | 1 | 0 | 18 | 19 | 0 | 3 | 40 | 1.16 |
| NE 119th Street/ NE 117th Avenue | 68.73 | 11 | 5 | 6 | 20 | 1 | 0 | 1 | 31 | 13 | 0 | 0 | 44 | 0.64 |

[1]5-Year Million Entering Vehicles = (Peak Hour Volume x 10 x 365 days/year x 5 years) / 1,000,000
[2]Property Damage Only
[3]Crash Rate = Total Crashes / 5.0 Year MEV

As shown in Table 3, all of the study intersections except NE 76th Street/NE Covington Road had a crash rate below 1.0 crashes/MEV during the analysis period. Clark County has programmed left-turn traffic signal changes at the NE 76th Street/NE Covington Road. The County should monitor the crash experience at this intersection once the modifications are in-place. Further, the study intersections

[2] The Washington State Department of Transportation provided crash data for the SR 503/NE 119th Street intersection for the five-year period from January 1, 2011 through June 1, 2016. Crashes presented in Table 3 at the intersection were recorded through December 2015. Seven additional crashes were reported in 2016.

along NE 94th Avenue at NE Padden Parkway, NE 88th Street, and NE 99th Street are currently being reconstructed and widened to accommodate additional turn lanes as will be described later in this report. As such, no potential safety issues requiring mitigation were identified on the basis of the crash rate comparison alone.

# TRANSPORTATION IMPACT STUDY

The Transportation Impact Study identifies how the study area's transportation system will operate in 2021, which corresponds to the assumed master plan build-out horizon year. The impact of traffic generated by future development of the site during typical weekday AM and PM peak hours was examined as follows:

- Planned developments and transportation improvements in the site vicinity were identified and reviewed;
- Year 2021 background traffic conditions (without master plan site development) at the study intersections were analyzed during the weekday AM and PM peak hours;
- Site-generated trips were estimated for the master plan site;
- A trip distribution pattern was developed for the master plan site;
- Year 2021 total traffic conditions (with full build-out and occupancy of the master plan site) were analyzed at the study intersections during the weekday AM and PM peak hours; and
- Link volumes were reviewed on applicable concurrency corridors.

## Year 2021 Background Traffic Conditions

The year 2021 background traffic conditions analysis identifies how the study area's transportation system will operate prior to master plan site development. This analysis includes traffic attributed to planned developments within the study area and to general growth in the region, but does not include traffic from the Leichner Master Plan Development site.

### *Planned Developments and Transportation Improvements*

Planned in-process weekday PM peak hour traffic volumes were obtained through the Clark County concurrency model (Clark County East Model), which was modified as directed by County staff[3].

Clark County is currently in the process of improving two roadways in the study area, NE 94th Avenue and NE 119th Street. The NE 94th Avenue corridor improvement project extends from NE Padden Parkway to NE 99th Street and includes reconstruction of the roadway to a two-lane urban minor

[3] Per conversations with Clark County staff, trips associated with developments that are already built were eliminated.

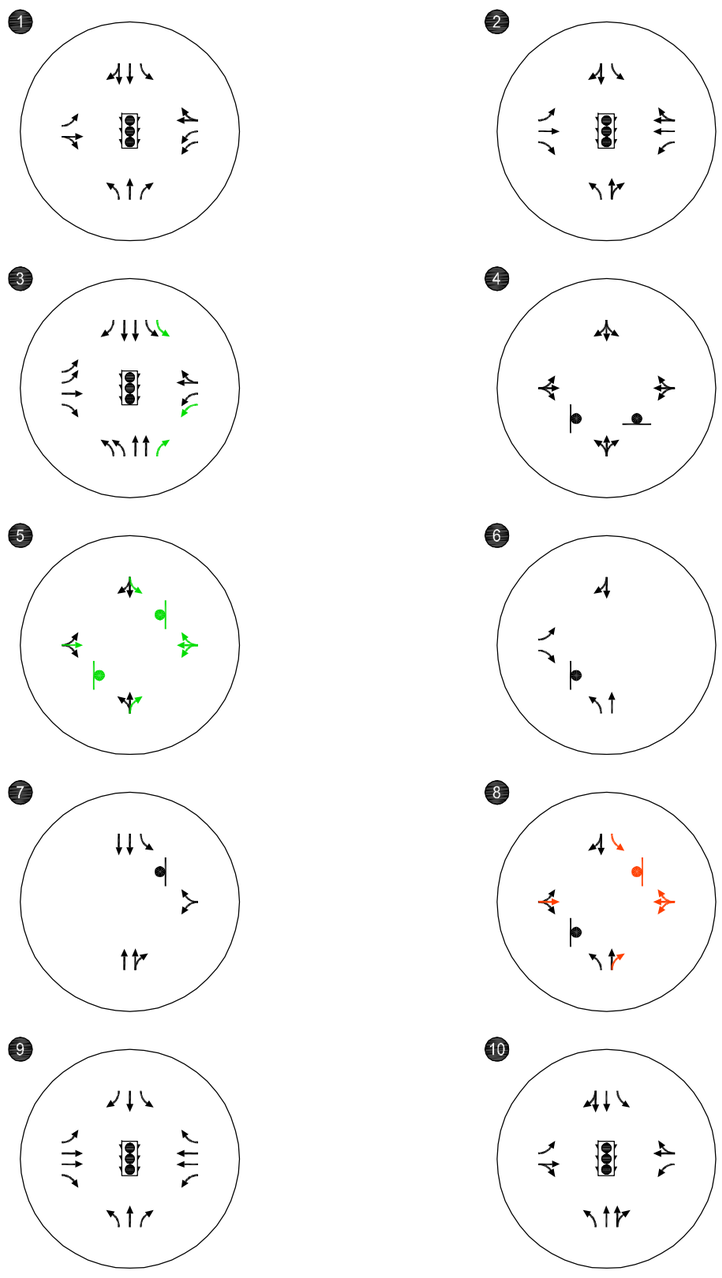
arterial with a center left-turn lane. The improved roadway will include bicycle lanes and sidewalk facilities as well as a stubbed street connection for the proposed NE 88th Street extension (private street) to serve the Leichner Master Plan Development site. The NE 119th Street project includes widening the roadway to a five-lane roadway between NE 72nd Avenue and NE 87th Avenue. The improvement project includes the construction of additional turning and through lanes at the study intersections along the corridor. Both roadway improvement projects are expected to be completed in 2016 and are assumed to be in place for year 2021 capacity analysis purposes.

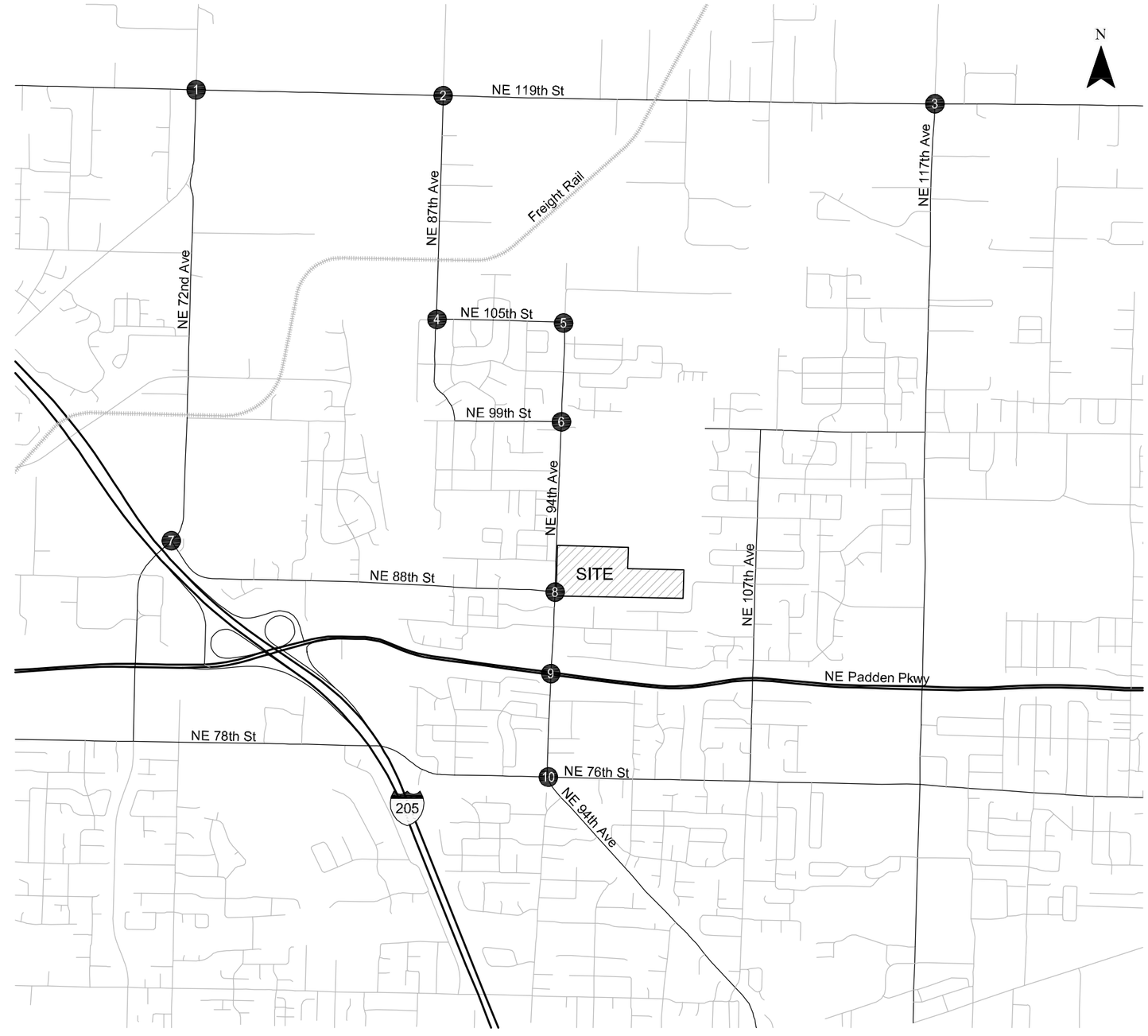
In addition to the two on-going County improvement projects, planned roadway improvements at the intersection of NE 117th Avenue/NE 119th Street were assumed as outlined in Clark County's concurrency model. Planned improvements at this intersection include:

- Addition of a second southbound left turn lane;
- Addition of a second westbound left turn lane; and
- Addition of a northbound right turn lane.

Finally, the current stop control in place at the intersection of NE 105th Street/NE 94th Avenue (southbound approach) will be re-configured and replaced with east-west stop control on NE 105th Street in conjunction with the approved Rivendell Subdivision located on the east side of the intersection.

Each of the above improvements were accounted for in the analysis of both year 2021 background and total conditions. Figure 4 illustrates the planned future lane configurations and traffic control devices associated with the study intersections.




- Stop Sign
- Traffic Signal
- Planned Improvement by Others
- Proposed Improvement with Site Development

Year 2021 Assumed Lane Configurations and Traffic Control Devices
Clark County, Washington

Figure 4

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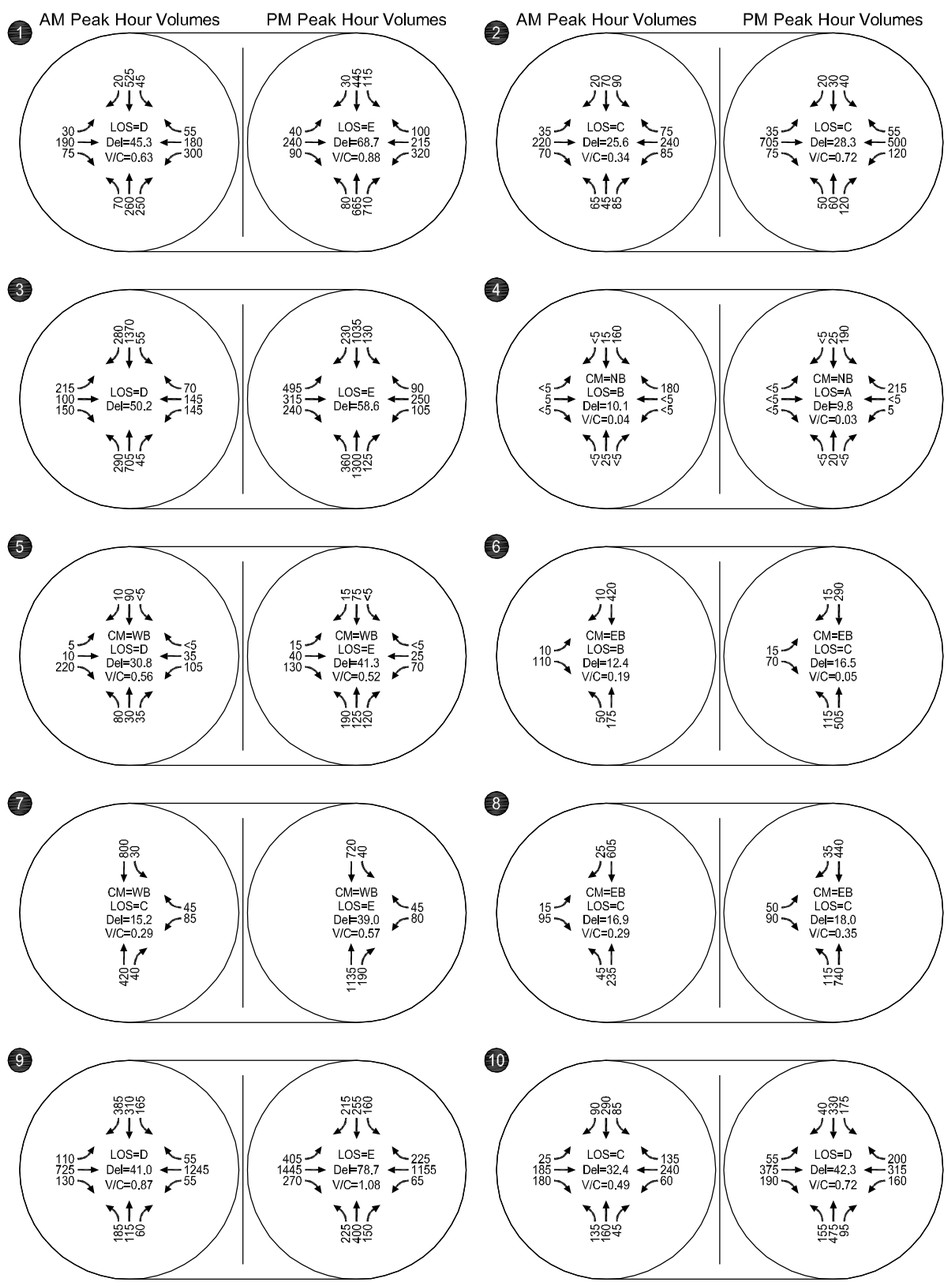
### Traffic Volumes

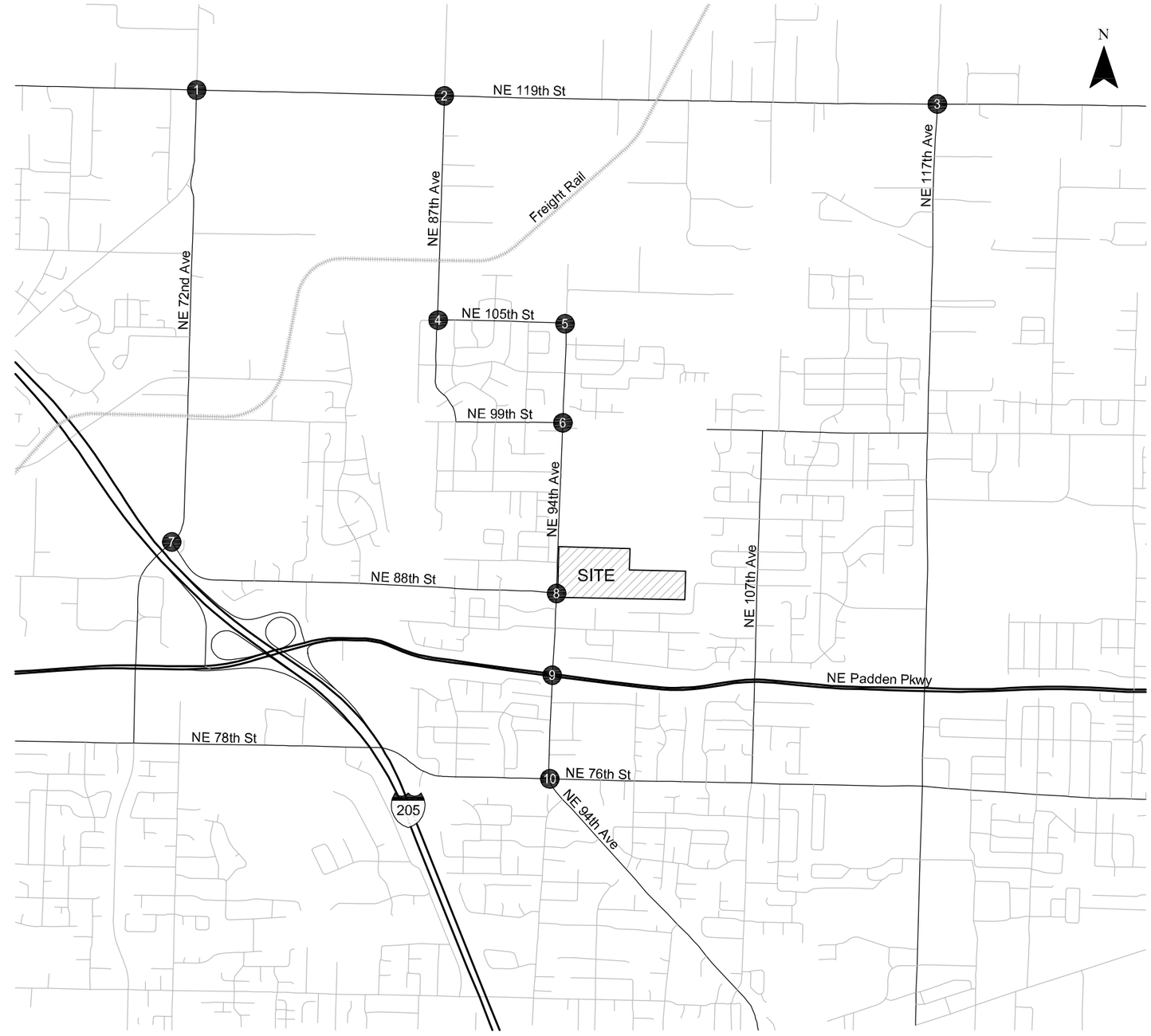
Year 2021[4] future traffic volumes were developed for the AM and PM peak hour conditions in consultation with Clark County staff. The weekday AM and PM peak hour volumes were developed by adjusting existing traffic volumes using a two percent annual growth rate and then adding the in-process trips from the County's modified concurrency model.

## Level-of-Service Analysis

Figure 5 summarizes the year 2021 background traffic operations analysis results at the study intersections for the weekday AM and PM peak hours. As shown, all of the study intersections are forecast to continue to operate acceptably with the planned improvements in-place. A*ppendix "D" contains the year 2021 background traffic level-of-service worksheets.*

[4] Weekday AM in-process trips were approximated using the PM peak East Concurrency Model given the lack of any in-process trip data for the AM peak hour.

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2021 Background Traffic Conditions, Weekday AM and PM Peak Hours
Clark County, Washington

Figure 5

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## Proposed Master Plan

Clark County is master planning the three parcels to facilitate future development by others. Future site development is expected to include one or more light industrial uses that will be accessible via new driveways along the extension of NE 88th Street. Future tenants at the site were not known at the time this report was prepared but could include a mix of light industrial, warehouse, and/or support office or retail uses per the zoning designation (retail is only allowed at a total of 10% of the total building area on site per Clark County Code 40.230.085-1).

Other than the NE 88th Street extension, no other vehicular connections to NE 94th Avenue are proposed. The proposed private roadway will be aligned with the existing west approach to the NE 94th Avenue/NE 88th Street intersection and is proposed to terminate at a cul-de-sac near the east end of the development site. The site is also expected to include a north-south private roadway tentatively identified as NE 96th Street that would be located approximately 500 feet east of NE 94th Avenue. NE 96th Avenue is proposed to terminate at a cul-de-sac near the north side of the master site. No vehicular connections are proposed to the adjacent residential lands to the south or east or to the future park to the north given the County's current desire to avoid mixing industrial and non-industrial traffic.

Completion of site construction and occupancy of the future development is anticipated by the year 2021.

## Trip Generation

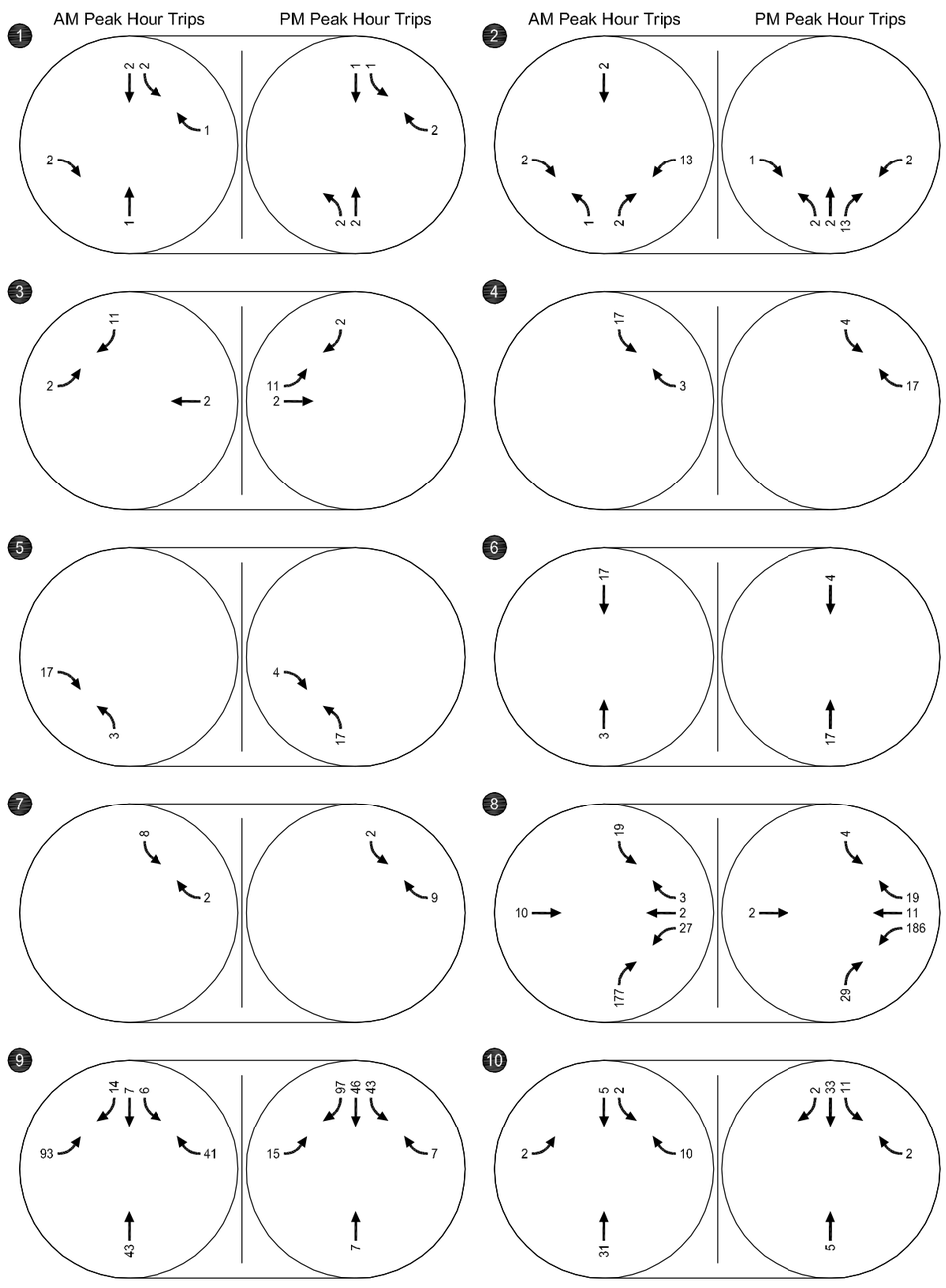
Trip generation estimates for the site were prepared based on information provided in the standard reference manual, *Trip Generation, 9th Edition*, published by the Institute of Transportation Engineers (ITE, Reference 4). Given that the specific uses were unknown at the time this report was prepared but could include industrial or warehousing uses as well as limited office or retail uses, the future tenants were assumed to be approximately 70 percent light industrial and 30 percent warehouse. The associated trip rates provided in *Trip Generation* were used to ensure a conservative analysis that accounts for potential future site trip generation. Table 4 summarizes the estimated site trip generation that was developed assuming 25% site building coverage of the 29.63-acres considered developable (5.4 acres of the site were deemed undevelopable).

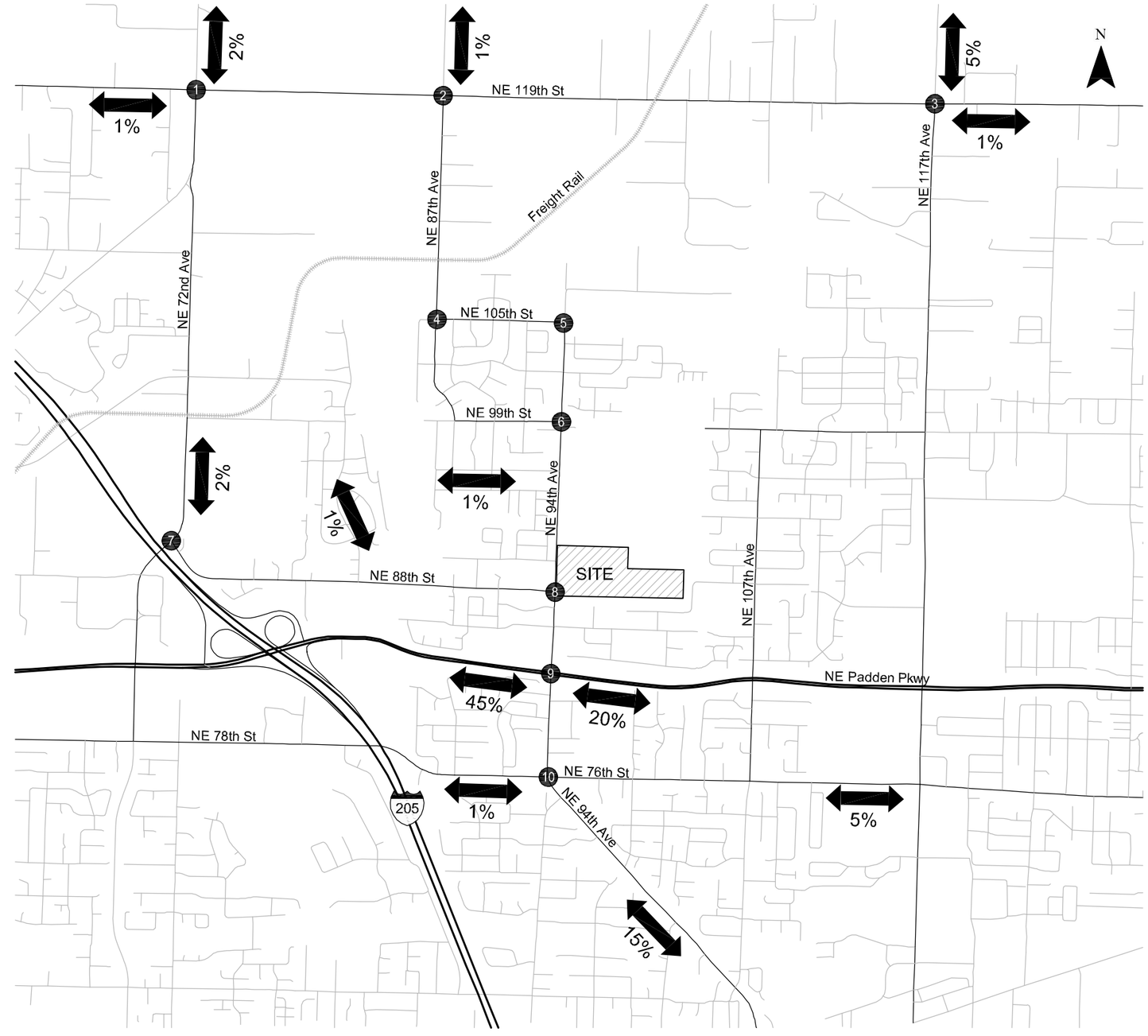
**Table 4 - Trip Generation Estimate**

| Land Use | ITE Land Use Code | Building Size | Daily Trips | Weekday AM Peak Hour | | | Weekday PM Peak Hour | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Total Trips | In | Out | Total Trips | In | Out |
| General Light Industrial | 110 | 225,000 square feet | 1,568 | 207 | 185 | 25 | 218 | 26 | 192 |
| Warehousing | 150 | 100,000 square feet | 356 | 30 | 24 | 6 | 32 | 8 | 24 |
| Total Net New Trips | | 325,000 square feet | 1,924 | 237 | 206 | 31 | 250 | 34 | 216 |

## Trip Distribution/Assignment

The site-generated trips shown in Table 4 were distributed onto the study area roadways based on a trip distribution pattern derived from the Southwest Washington Regional Transportation Council travel demand model (select zone analysis of Transportation Analysis Zone 347) as well as existing travel patterns in the site vicinity. Figure 6 illustrates the estimated trip distribution pattern and the assignment of site-generated trips at the study intersections during the weekday AM and PM peak hours.




Estimated Trip Distribution Pattern and Weekday AM and PM Peak Hour Site-generated Trip Assignment
Clark County, Washington

Figure 6

# YEAR 2021 TOTAL TRAFFIC CONDITIONS

The year 2021 total traffic conditions analysis forecasts how the study area's transportation system will operate with the traffic generated by the master plan uses. The year 2021 background traffic volumes for the weekday AM and PM peak hours (shown in Figure 5) were added to the site-generated traffic (shown in Figure 6) to arrive at the year 2021 total traffic volumes.

## Level-of-Service Analysis

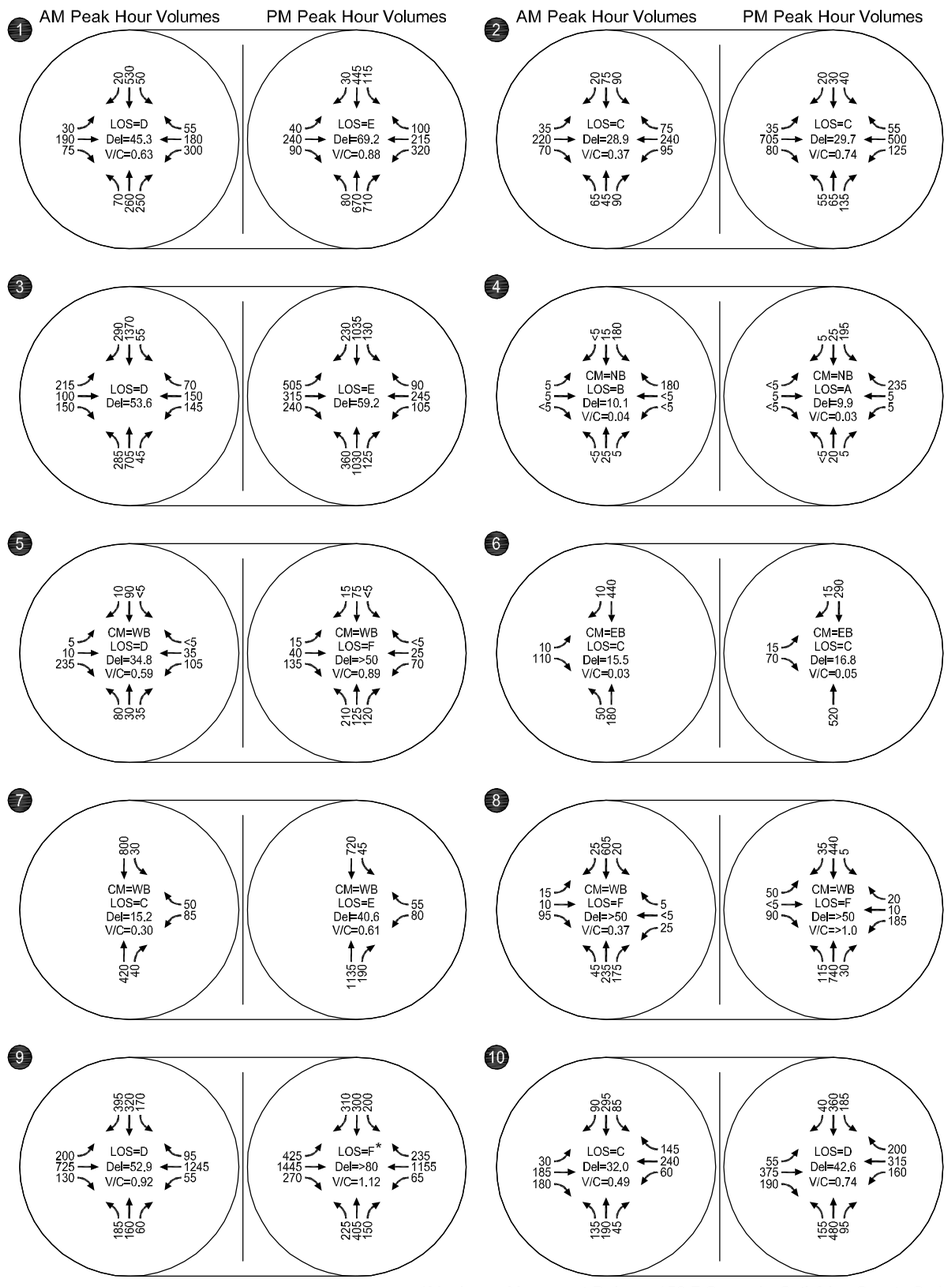
Figure 7 summarizes the year 2021 total traffic conditions at the study intersections for the weekday AM and PM peak hours. As shown in Figure 7, the unsignalized westbound approach at the NE 94$^{th}$ Avenue/NE 88$^{th}$ Street intersection is projected to over-capacity and at LOS F during the PM peak hour upon full site build-out.

Assuming full site development, the intersection operations can be mitigated with two improvements:

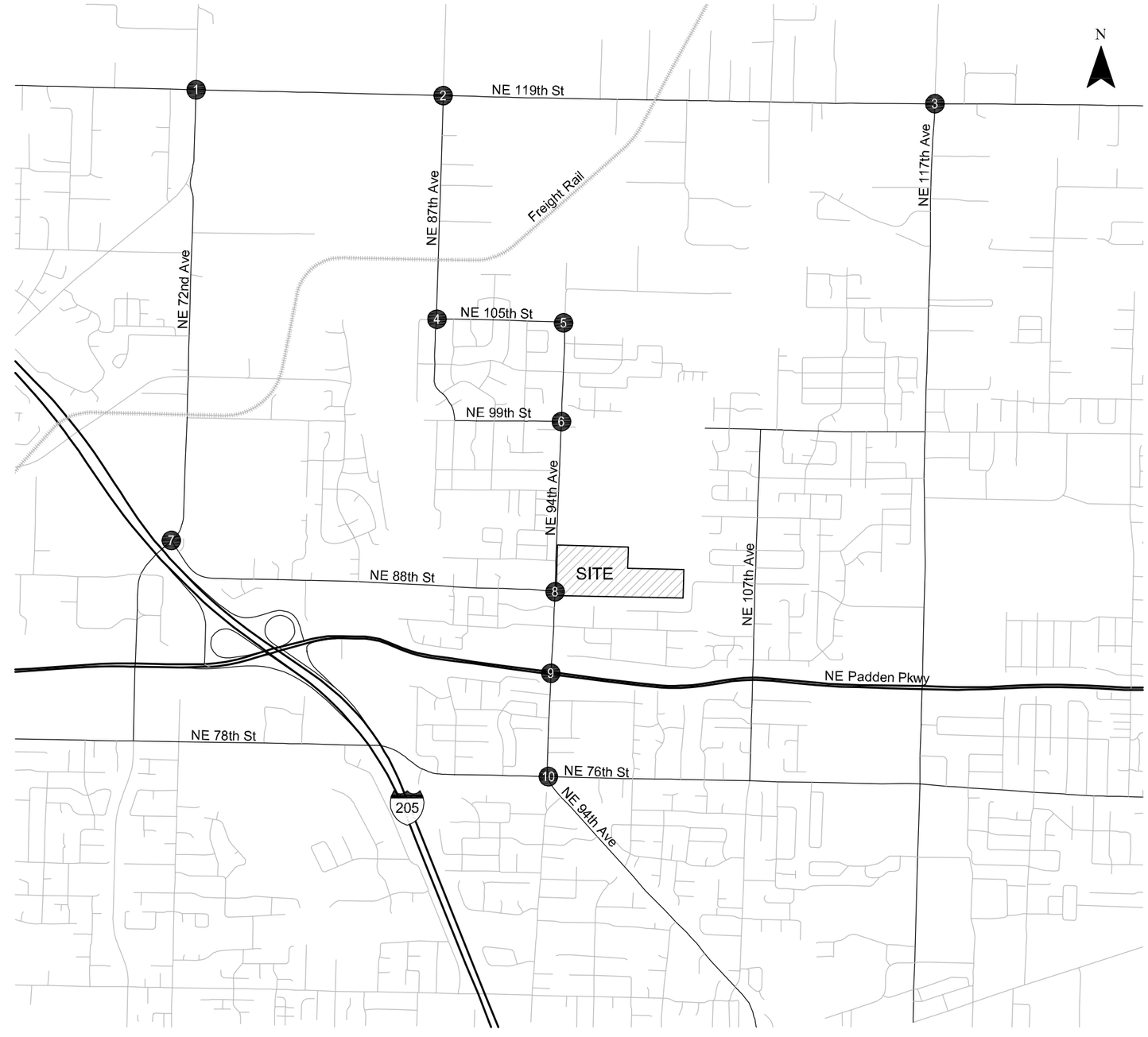
- The eastbound and westbound approaches of the NE 88$^{th}$ Street /NE 94$^{th}$ Avenue intersection can be widened to provide separate left-turn and shared through/right-turn lanes. This will increase the capacity of the intersection but will not accommodate full development of the master plan area site development at the trip generation intensity assumed.
- The NE 88$^{th}$ Street/NE 94$^{th}$ Avenue intersection can be signalized if and when warranted per the *Manual on Uniform Traffic Control Devices*.

Given the unknown nature of the site tenants, the above mitigations should be revisited at the time actual site tenants are identified. Land uses with lower trip generation (warehousing, for example) are unlikely to require initial turn lane and traffic signal improvements whereas higher trip generating uses will necessitate mitigation sooner. The following sequence of improvements at the intersection could be followed, pending the site trip generation associated with incremental site buildout and the timing of site build-out:

- Initial construction: use existing single lane westbound approach along NE 88$^{th}$ Street
    - Estimated to accommodate approximately 77 weekday PM peak hour site-generated trips (10 in/67 out); equivalent to approximately 30% of the total PM peak hour site-generated trips assumed in this study
        - Resultant performance metrics for the critical westbound approach are: LOS = F; volume-to-capacity ratio = 0.93; 95$^{th}$ percentile queue of approximately 125 feet




*Maximum Movement Delay = 158.7 Seconds, Satisfying County Code




CM = CRITICAL MOVEMENT (UNSIGNALIZED)
LOS = CRITICAL MOVEMENT LEVEL OF SERVICE (SIGNALIZED)/CRITICAL MOVEMENT LEVEL OF SERVICE (UNSIGNALIZED)
Del = INTERSECTION AVERAGE CONTROL DELAY (SIGNALIZED)/CRITICAL MOVEMENT CONTROL DELAY (UNSIGNALIZED)
V/C = CRITICAL CRITICAL VOLUME-TO-CAPACITY RATIO

2021 Total Traffic Conditions, Weekday AM and PM Peak Hours
Clark County, Washington

Figure 7

C:\Users\jsommerville\appdata\local\temp\AcPublish_13168\13911_Fig01.dwg Jul 26, 2016 - 11:35am - jsommerville Layout Tab: 07

- Improvement 1: widen westbound approach to provide shared through/left-turn lane and separate westbound right-turn lane
  - Estimated to accommodate approximately 86 weekday PM peak hour site-generated trips (12 in/74 out); equivalent to approximately 34% of the total PM peak hour site-generated trips assumed in this study Improvement
    - Resultant performance metrics for the critical westbound through/left movement are: LOS = F; volume-to-capacity ratio = 0.98; 95$^{th}$ percentile queue of approximately 125 feet
- Improvement 2: signalize the intersection
  - Estimated to be accommodate full buildout of the site, but with lengthy delays and queuing on the westbound intersection approach (weekday PM peak hour 95$^{th}$ percentile queues of approximately 350 feet assuming one percent heavy vehicles at the site – higher truck volumes will lead to longer queues)
    - Resultant performance metrics for the overall intersection are: LOS = C; volume-to-capacity ratio = 0.74; 95$^{th}$ percentile queue of approximately 350 feet in the critical shared westbound through/left-turn lane
- Ultimate Improvement: widen NE 88$^{th}$ Street eastbound approach to provide left-turn lane and separate shared/through right-turn lane and restripe westbound approach to provide left-turn lane and separate shared/through right-turn lane; operate intersection with a traffic signal
  - Estimated to fully accommodate site development
    - Resultant performance metrics for the intersection are: Level of Service = C; volume-to-capacity ratio = 0.70; 95$^{th}$ percentile queue of approximately 250 feet in the critical shared westbound left-turn lane, 50 feet in the shared through/right-turn lane

We recommend the appropriate incremental mitigation required at the NE 88$^{th}$ Street/NE 94$^{th}$ Avenue intersection be re-examined with future site development applications. This will allow for determination of improvements commensurate with then-current conditions. Further, the planned future extension of NE 99$^{th}$ Street between NE 94$^{th}$ Avenue and SR 503 to the east is expected to result in trip re-routing both along the NE 94$^{th}$ Avenue corridor as a whole as well as at the site driveway, likely improving conditions compared to those projected in this report without the future connection.

The remaining study intersections continue to satisfy WSDOT and Clark County's intersection operating criteria. *Appendix "E" contains the year 2021 total traffic level-of-service worksheets.*

### Site Driveway Queueing Analysis

A 95th percentile queuing analysis was completed at the proposed private roadway that will serve the site on NE 94th Avenue (aligned with NE 88th Street). The 95th percentile queues were found to be 250 feet or less under 2021 total traffic conditions for the AM and PM peak hours for the new westbound left-turn movement assuming signalization and provision of a separate left-turn lane. Accordingly, we recommend that the future on-site north-south street east of NE 94th Avenue be located at least 500 feet east of the signalized intersection to accommodate back-to-back queuing internal to the site. *Appendix "E" contains the 95th percentile queue worksheets.*

## CONCURRENCY CORRIDOR V/C RATIOS

Traffic volumes were compared with adopted Clark County capacity thresholds for corridor segments to assess compliance with concurrency requirements. Table 5 shows measured daily bi-direction traffic volumes and the single direction roadway capacity as specified under Clark County Code 40.350.020 Transportation Concurrency Management and table 40.350.020-1. For reference only, the ratio of the observed traffic volumes to the design volumes is also provided for each facility.

## Table 5 - Summary of Count Data and Roadway Capacities

| Count Location | Road Classification[1] | Single Direction Capacity/Hour | Maximum Volume (vph)[2] | V/C Ratio |
|---|---|---|---|---|
| ***NE 119th Street between:*** | | | | |
| West of NE 72nd Avenue (EB) | Urban Minor Arterial (M-2cb) | 800 | 687 | 0.86 |
| West of NE 72nd Avenue (WB) | | | 393 | 0.49 |
| NE 72nd Avenue and NE 94th Avenue (EB) | Urban Minor Arterial (M-4cb) | 1,800[3] | 687 | 0.38 |
| NE 72nd Avenue and NE 94th Avenue (WB) | | | 393 | 0.22 |
| NE 87th Avenue and NE 90th Street (EB) | | 900[4] | 683 | 0.76 |
| NE 87th Avenue and NE 90th Street (WB) | | | 417 | 0.46 |
| NE 108th Avenue and NE 111th Avenue (EB) | | 900[4] | 755 | 0.84 |
| NE 108th Avenue and NE 111th Avenue (WB) | | | 484 | 0.54 |
| ***NE 105th Street between:*** | | | | |
| NE 94th Avenue and NE 87th Avenue (EB) | Urban Collector (C-2) | 800 | 114 | 0.14 |
| NE 94th Avenue and NE 87th Avenue (WB) | | | 189 | 0.24 |
| ***NE 88th Street between:*** | | | | |
| NE 72nd Avenue and NE 94th Avenue (EB) | Urban Collector (C-2) | 600[5] | 101 | 0.17 |
| NE 72nd Avenue and NE 94th Avenue (WB) | | | 116 | 0.19 |
| ***NE Padden Parkway between:*** | | | | |
| NE 117th Avenue and NE 94th Avenue (EB) | Principal Arterial (Pa-4cb) | 2,000 | 1,112 | 0.56 |
| NE 117th Avenue and NE 94th Avenue (WB) | | | 1,125 | 0.56 |
| NE 94th Avenue and Interstate 205 NB On Ramp (EB) | Principal Arterial (Pa-4cb) | 2,000 | 1,478 | 0.74 |
| NE 94th Avenue and Interstate 205 NB On Ramp (WB) | | | 1,364 | 0.68 |
| ***NE 94th Avenue between:*** | | | | |
| NE 76th Street and NE Padden Parkway (NB) | Urban Minor Arterial (M-4cb) | 1,800 | 537[6] | 0.30 |
| NE 76th Street and NE Padden Parkway (SB) | | | 450[6] | 0.25 |
| NE Padden Parkway and NE 88th Street (NB) | Urban Minor Arterial (M-2cb) | 900 | 652[6] | 0.72 |
| NE Padden Parkway and NE 88th Street (SB) | | | 580[6] | 0.64 |
| NE 88th Street and NE 99th Street (NB) | | | 451[6] | 0.50 |
| NE 88th Street and NE 99th Street (SB) | | | 360[6] | 0.40 |
| NE 99th Street and NE 105th Street (NB) | Urban Minor Arterial (M-2cb) | 800 | 353[6] | 0.44 |
| NE 99th Street and NE 105th Street (SB) | | | 220[6] | 0.28 |

[1]Source: *Clark County Arterial Atlas, 2013* (Reference 2)
[2] vph: vehicles per hour
[3]1,800 based on assumed completion of current widening project to be completed in 2016.
[4] Based on existing 2-lane configuration
[5] Per Clark County Code: For roadways not fully built-out to county standards, the capacity shall be determined based on the current roadway condition. For roadways with lane widths twelve (12) feet and greater, and with paved shoulder widths two (2) feet and greater, the lane capacity shall be eight hundred (800) vehicles per hour. For roadways with lane widths between eleven (11) and twelve (12) feet and with paved shoulder widths two (2) feet and greater, the lane capacity shall be seven hundred (700) vehicles per hour. For roadways with lane widths less than eleven (11) feet, the lane capacity shall be six hundred (600) vehicles per hour.
[6] NE 94th Avenue volume reported based on historic peak hour turn movement count data due to on-going reconstruction of NE 94th Avenue.

As summarized in Table 5, all of the concurrency corridor segments studied are operating below a 0.90 V/C ratio based on the daily single direction capacity from the *County's Transportation Concurrency Management System. The 24-hour traffic volume count sheets are included in Appendix "A."*

# SUMMARY AND RECOMMENDATIONS

The results of this transportation impact study indicate that the proposed Leichner Campus Master Plan can be accommodated by the surrounding transportation system assuming provision of the recommended mitigation measures. The findings of this analysis are discussed below.

## Findings

- All of the study intersections operate acceptably during the weekday AM and PM peak hours under existing conditions and with future site development with the exception of the unsignalized westbound approach at the NE 88th Street/NE 94th Avenue intersection.
- Acceptable operations can be accommodated at the NE 88th Street/NE 94th Avenue intersection assuming provision of:
    - A southbound left-turn lane on NE 94th Avenue at NE 88th Street to serve the new private roadway;
    - Separate left-turn and shared through/right-turn lanes on the NE 88th Street approaches; and
    - Signalization when warranted.

## Recommendations

- NE 88th Street should be extended east of NE 94th Avenue into the master site and should be stop controlled at its approach to NE 94th Avenue. A stop sign should be installed on the private NE 88th Street (westbound) approach to NE 94th Avenue in conjunction with site development in accordance with Clark County standards and the *Manual on Uniform Traffic Control Devices*.
- A southbound left-turn lane should be provided on NE 94th Avenue at NE 88th Street to serve the new private roadway in conjunction with site development (if not already constructed in conjunction with Clark County's NE 94th Avenue improvement project).
- The eastbound and westbound approaches of the NE 88th Street /NE 94th Avenue intersection should be widened to provide separate left-turn and shared through/right-turn lanes.
- The NE 88th Street/NE 94th Avenue intersection should be signalized when warranted per the *Manual on Uniform Traffic Control Devices*.
- We recommend the appropriate incremental mitigation required at the NE 88th Street/NE 94th Avenue intersection be re-examined with future site development applications. Given the unknown nature of the site tenants, the above mitigations should be revisited at the time actual site tenants are identified. Land uses with lower trip generation (warehousing,

for example) are unlikely to require initial turn lane and traffic signal improvements whereas higher trip generating uses in the light industrial land use range will necessitate mitigation sooner. The following sequence of improvements at the intersection could be followed, pending the site trip generation of incremental site buildout and the timing of site build-out:

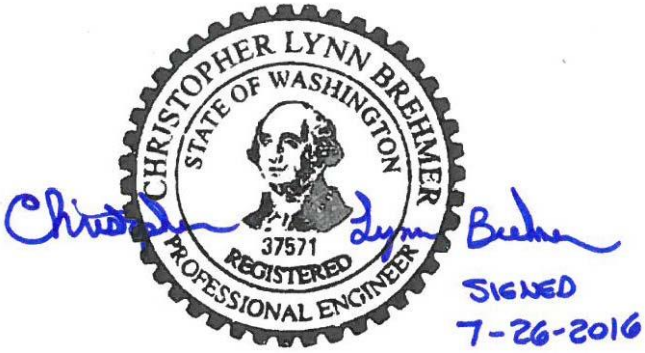
- Initial construction: use existing single lane westbound approach along NE 88th Street.
    - Estimated to accommodate approximately 77 weekday PM peak hour site-generated trips (10 in/67 out); equivalent to approximately 30% of the total PM peak hour site-generated trips assumed in this study
- Improvement 1: widen westbound approach to provide shared through/left-turn lane and separate westbound right-turn lane
    - Estimated to accommodate approximately 86 weekday PM peak hour site-generated trips (12 in/74 out); equivalent to approximately 34% of the total PM peak hour site-generated trips assumed in this study Improvement
- Improvement 2: signalize the intersection
    - Estimated to be accommodate full buildout of the site, but with lengthy delays and queuing on the westbound intersection approach (weekday PM peak hour 95th percentile queues of approximately 350 feet assuming one percent heavy vehicles at the site – higher truck volumes will lead to longer queues)
- Ultimate Improvement: widen NE 88th Street eastbound approach to provide left-turn lane and separate shared/through right-turn lane and restripe westbound approach to provide left-turn lane and separate shared/through right-turn lane; operate intersection with a traffic signal
    - Estimated to fully accommodate site development

- Site landscaping, signing and any aboveground utilities should be appropriately located to ensure that adequate sight distance is maintained after build out.

We trust this transportation impact study adequately addresses the traffic impacts associated with the proposed Leichner Campus Master Plan. Please contact us if you have any questions or comments regarding the contents of this report or the analyses performed.

Sincerely,
KITTELSON & ASSOCIATES, INC.

Chris Brehmer, PE
Principal Engineer




## REFERENCES

1. Transportation Research Board. *2010 Highway Capacity Manual*. 2010.
2. Clark County, Washington. *Arterial Atlas.* 2013.
3. C-Tran. *www.c-tran.com* accessed July 2016.
4. Institute of Transportation Engineers. *Trip Generation, 9th Edition*. 2012.

# Appendix A Traffic Count Worksheets

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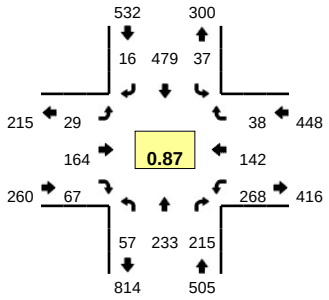
Type of peak hour being reported: Intersection Peak

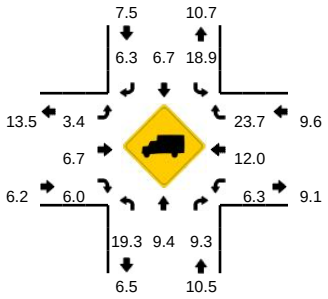
Method for determining peak hour: Total Entering Volume

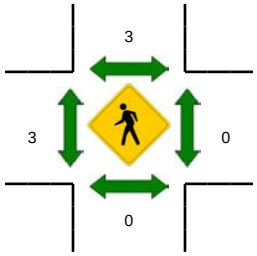
**LOCATION:** NE 72nd Ave -- NE 119th St
**CITY/STATE:** Vancouver, WA

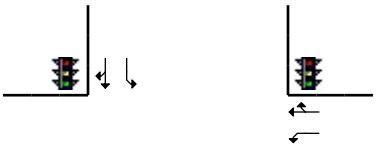
**QC JOB #:** 13790401
**DATE:** Tue, Jun 07 2016

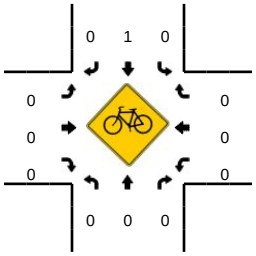
**Peak-Hour: 7:20 AM -- 8:20 AM**
**Peak 15-Min: 7:40 AM -- 7:55 AM**

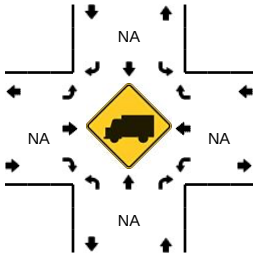


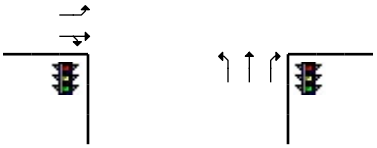



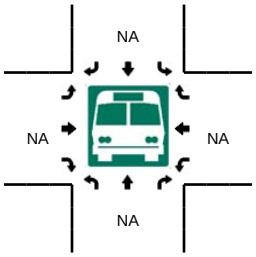








| 5-Min Count Period Beginning At | NE 72nd Ave (Northbound) | | | | NE 72nd Ave (Southbound) | | | | NE 119th St (Eastbound) | | | | NE 119th St (Westbound) | | | | Total | Hourly Totals |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | | |
| 7:00 AM | 4 | 11 | 14 | 0 | 4 | 36 | 5 | 0 | 1 | 6 | 3 | 0 | 25 | 13 | 1 | 0 | 123 | |
| 7:05 AM | 1 | 11 | 10 | 0 | 2 | 44 | 0 | 0 | 1 | 11 | 10 | 0 | 8 | 7 | 2 | 0 | 107 | |
| 7:10 AM | 2 | 21 | 9 | 0 | 1 | 34 | 2 | 0 | 1 | 9 | 7 | 0 | 18 | 9 | 5 | 0 | 118 | |
| 7:15 AM | 1 | 12 | 17 | 0 | 3 | 45 | 1 | 0 | 2 | 13 | 3 | 0 | 17 | 7 | 1 | 0 | 122 | |
| 7:20 AM | 2 | 14 | 14 | 0 | 2 | 43 | 2 | 0 | 5 | 16 | 4 | 0 | 29 | 16 | 6 | 0 | 153 | |
| 7:25 AM | 8 | 26 | 13 | 0 | 4 | 34 | 1 | 0 | 0 | 9 | 4 | 0 | 24 | 6 | 4 | 0 | 133 | |
| 7:30 AM | 2 | 10 | 21 | 0 | 4 | 35 | 3 | 0 | 4 | 15 | 3 | 0 | 13 | 10 | 1 | 0 | 121 | |
| 7:35 AM | 4 | 15 | 20 | 0 | 5 | 37 | 0 | 0 | 2 | 24 | 7 | 0 | 24 | 13 | 1 | 0 | 152 | |
| 7:40 AM | 8 | 27 | 27 | 0 | 1 | 44 | 1 | 0 | 5 | 13 | 8 | 0 | 25 | 12 | 3 | 0 | 174 | |
| 7:45 AM | 4 | 20 | 27 | 0 | 3 | 59 | 1 | 0 | 0 | 10 | 6 | 0 | 24 | 10 | 1 | 0 | 165 | |
| 7:50 AM | 6 | 26 | 19 | 0 | 2 | 41 | 1 | 0 | 1 | 21 | 7 | 0 | 26 | 12 | 2 | 0 | 164 | |
| 7:55 AM | 7 | 16 | 20 | 0 | 7 | 32 | 1 | 0 | 3 | 16 | 6 | 0 | 32 | 16 | 7 | 0 | 163 | 1695 |
| 8:00 AM | 5 | 14 | 11 | 0 | 1 | 47 | 0 | 0 | 1 | 12 | 6 | 0 | 20 | 11 | 2 | 0 | 130 | 1702 |
| 8:05 AM | 3 | 24 | 15 | 0 | 4 | 31 | 1 | 0 | 5 | 15 | 3 | 0 | 21 | 15 | 1 | 0 | 138 | 1733 |
| 8:10 AM | 5 | 11 | 13 | 0 | 4 | 41 | 1 | 0 | 3 | 6 | 8 | 0 | 16 | 16 | 5 | 0 | 129 | 1744 |
| 8:15 AM | 3 | 30 | 15 | 0 | 0 | 35 | 4 | 0 | 0 | 7 | 5 | 0 | 14 | 5 | 5 | 0 | 123 | 1745 |
| 8:20 AM | 4 | 14 | 18 | 0 | 3 | 29 | 1 | 0 | 0 | 12 | 7 | 0 | 12 | 12 | 3 | 0 | 115 | 1707 |
| 8:25 AM | 4 | 18 | 17 | 0 | 7 | 41 | 4 | 0 | 2 | 10 | 3 | 0 | 24 | 12 | 4 | 0 | 146 | 1720 |
| 8:30 AM | 6 | 21 | 9 | 0 | 6 | 38 | 2 | 0 | 5 | 6 | 3 | 0 | 12 | 10 | 1 | 0 | 119 | 1718 |
| 8:35 AM | 4 | 17 | 19 | 0 | 8 | 47 | 1 | 0 | 1 | 3 | 2 | 0 | 11 | 12 | 3 | 0 | 128 | 1694 |
| 8:40 AM | 3 | 18 | 19 | 0 | 5 | 34 | 2 | 0 | 1 | 9 | 6 | 0 | 23 | 12 | 1 | 0 | 133 | 1653 |
| 8:45 AM | 3 | 15 | 13 | 0 | 2 | 28 | 1 | 0 | 1 | 7 | 5 | 0 | 24 | 12 | 4 | 0 | 115 | 1603 |
| 8:50 AM | 2 | 25 | 15 | 0 | 5 | 42 | 1 | 0 | 1 | 13 | 4 | 0 | 8 | 9 | 2 | 0 | 127 | 1566 |
| 8:55 AM | 4 | 24 | 10 | 0 | 1 | 33 | 3 | 0 | 0 | 15 | 5 | 0 | 14 | 7 | 6 | 0 | 122 | 1525 |

| Peak 15-Min Flowrates | Northbound | | | | Southbound | | | | Eastbound | | | | Westbound | | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | |
| All Vehicles | 72 | 292 | 292 | 0 | 24 | 576 | 12 | 0 | 24 | 176 | 84 | 0 | 300 | 136 | 24 | 0 | 2012 |
| Heavy Trucks | 16 | 24 | 16 | | 4 | 40 | 0 | | 4 | 8 | 4 | | 24 | 16 | 12 | | 168 |
| Pedestrians | | 0 | | | | 0 | | | | 0 | | | | 0 | | | 0 |
| Bicycles | 0 | 0 | 0 | | 0 | 1 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 1 |
| Railroad | | | | | | | | | | | | | | | | | |
| Stopped Buses | | | | | | | | | | | | | | | | | |

*Comments:*

Report generated on 6/21/2016 3:29 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

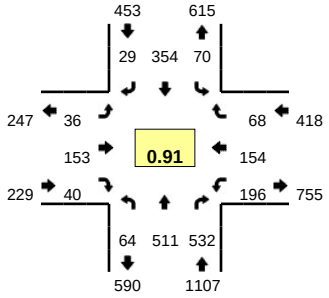
Type of peak hour being reported: Intersection Peak

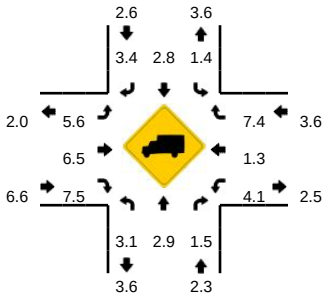
Method for determining peak hour: Total Entering Volume

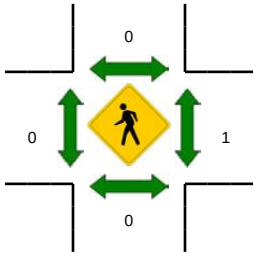
**LOCATION:** NE 72nd Ave -- NE 119th St
**CITY/STATE:** Vancouver, WA

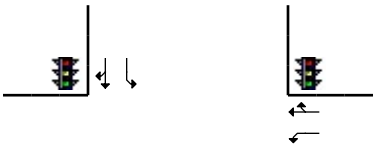
**QC JOB #:** 13790402
**DATE:** Tue, Jun 07 2016

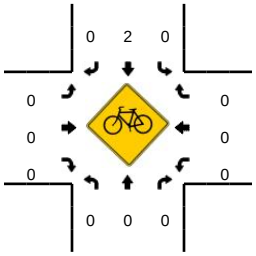
**Peak-Hour: 5:00 PM -- 6:00 PM**
**Peak 15-Min: 5:05 PM -- 5:20 PM**

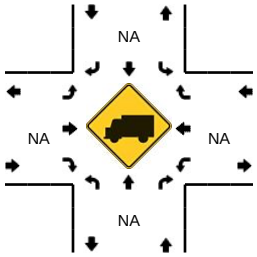


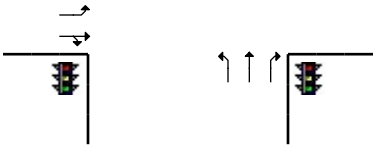



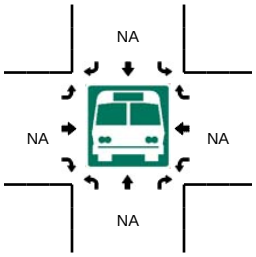








| 5-Min Count Period Beginning At | NE 72nd Ave (Northbound) | | | | NE 72nd Ave (Southbound) | | | | NE 119th St (Eastbound) | | | | NE 119th St (Westbound) | | | | Total | Hourly Totals |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | | |
| 4:00 PM | 4 | 56 | 28 | 0 | 6 | 16 | 1 | 0 | 0 | 13 | 2 | 0 | 14 | 8 | 6 | 0 | 154 | |
| 4:05 PM | 9 | 58 | 35 | 0 | 4 | 23 | 2 | 0 | 1 | 6 | 5 | 0 | 15 | 8 | 6 | 0 | 172 | |
| 4:10 PM | 5 | 29 | 26 | 0 | 4 | 28 | 2 | 0 | 6 | 21 | 5 | 0 | 20 | 13 | 3 | 0 | 162 | |
| 4:15 PM | 8 | 76 | 31 | 0 | 6 | 20 | 0 | 0 | 1 | 7 | 3 | 0 | 11 | 9 | 1 | 0 | 173 | |
| 4:20 PM | 5 | 38 | 26 | 0 | 3 | 19 | 2 | 0 | 6 | 9 | 1 | 0 | 22 | 22 | 9 | 0 | 162 | |
| 4:25 PM | 4 | 33 | 33 | 0 | 7 | 49 | 4 | 0 | 2 | 18 | 5 | 0 | 5 | 2 | 7 | 0 | 169 | |
| 4:30 PM | 4 | 67 | 27 | 0 | 1 | 29 | 0 | 0 | 2 | 6 | 3 | 0 | 13 | 11 | 3 | 0 | 166 | |
| 4:35 PM | 1 | 33 | 17 | 0 | 4 | 24 | 5 | 0 | 8 | 16 | 4 | 0 | 18 | 17 | 8 | 0 | 155 | |
| 4:40 PM | 14 | 59 | 37 | 0 | 2 | 30 | 3 | 0 | 3 | 10 | 3 | 0 | 14 | 18 | 3 | 0 | 196 | |
| 4:45 PM | 4 | 50 | 22 | 0 | 2 | 10 | 1 | 0 | 5 | 15 | 8 | 0 | 28 | 13 | 8 | 0 | 166 | |
| 4:50 PM | 6 | 44 | 23 | 0 | 4 | 38 | 1 | 0 | 1 | 7 | 2 | 0 | 15 | 13 | 7 | 0 | 161 | |
| 4:55 PM | 6 | 50 | 26 | 0 | 3 | 19 | 3 | 0 | 5 | 13 | 3 | 0 | 16 | 17 | 4 | 0 | 165 | 2001 |
| 5:00 PM | 5 | 34 | 40 | 0 | 6 | 47 | 3 | 0 | 3 | 20 | 6 | 0 | 11 | 11 | 6 | 0 | 192 | 2039 |
| 5:05 PM | 10 | 72 | 42 | 0 | 5 | 20 | 2 | 0 | 2 | 10 | 3 | 0 | 9 | 8 | 5 | 0 | 188 | 2055 |
| 5:10 PM | 5 | 31 | 47 | 0 | 12 | 34 | 4 | 0 | 2 | 12 | 6 | 0 | 22 | 21 | 6 | 0 | 202 | 2095 |
| 5:15 PM | 6 | 55 | 55 | 0 | 6 | 28 | 2 | 0 | 6 | 9 | 6 | 0 | 16 | 21 | 4 | 0 | 214 | 2136 |
| 5:20 PM | 1 | 28 | 58 | 0 | 4 | 31 | 4 | 0 | 4 | 16 | 0 | 0 | 20 | 16 | 4 | 0 | 186 | 2160 |
| 5:25 PM | 6 | 35 | 53 | 0 | 6 | 40 | 1 | 0 | 1 | 8 | 4 | 0 | 18 | 6 | 3 | 0 | 181 | 2172 |
| 5:30 PM | 5 | 56 | 49 | 0 | 2 | 14 | 1 | 0 | 3 | 9 | 3 | 0 | 23 | 7 | 7 | 0 | 179 | 2185 |
| 5:35 PM | 1 | 41 | 37 | 0 | 3 | 25 | 2 | 0 | 8 | 12 | 3 | 0 | 25 | 15 | 4 | 0 | 176 | 2206 |
| 5:40 PM | 10 | 42 | 41 | 0 | 11 | 26 | 1 | 0 | 2 | 12 | 3 | 0 | 10 | 13 | 4 | 0 | 175 | 2185 |
| 5:45 PM | 6 | 47 | 38 | 0 | 1 | 29 | 2 | 0 | 2 | 13 | 3 | 0 | 15 | 11 | 7 | 0 | 174 | 2193 |
| 5:50 PM | 6 | 33 | 28 | 0 | 5 | 26 | 3 | 0 | 3 | 19 | 2 | 0 | 11 | 7 | 7 | 0 | 150 | 2182 |
| 5:55 PM | 3 | 37 | 44 | 0 | 9 | 34 | 4 | 0 | 0 | 13 | 1 | 0 | 16 | 18 | 11 | 0 | 190 | 2207 |

| Peak 15-Min Flowrates | Northbound | | | | Southbound | | | | Eastbound | | | | Westbound | | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | |
| All Vehicles | 84 | 632 | 576 | 0 | 92 | 328 | 32 | 0 | 40 | 124 | 60 | 0 | 188 | 200 | 60 | 0 | 2416 |
| Heavy Trucks | 0 | 4 | 12 | | 0 | 8 | 0 | | 0 | 8 | 4 | | 12 | 4 | 8 | | 60 |
| Pedestrians | | 0 | | | | 0 | | | | 0 | | | | 0 | | | 0 |
| Bicycles | 0 | 0 | 0 | | 0 | 1 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 1 |
| Railroad | | | | | | | | | | | | | | | | | |
| Stopped Buses | | | | | | | | | | | | | | | | | |

*Comments:*

Report generated on 6/21/2016 3:29 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

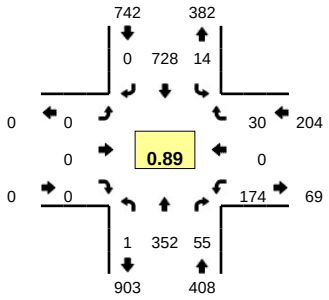
Type of peak hour being reported: Intersection Peak

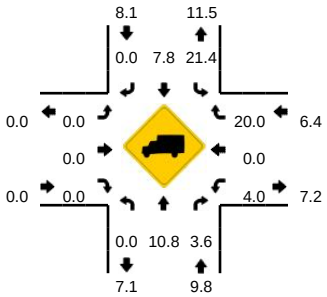
Method for determining peak hour: Total Entering Volume

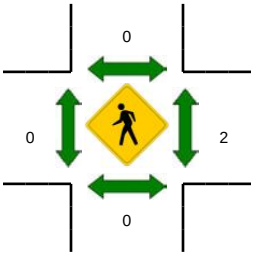
**LOCATION:** NE 72nd Ave -- NE 88th St
**CITY/STATE:** Vancouver, WA

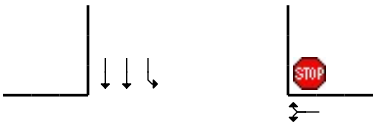
**QC JOB #:** 13790403
**DATE:** Tue, Jun 07 2016

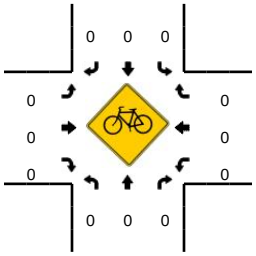
**Peak-Hour: 7:20 AM -- 8:20 AM**
**Peak 15-Min: 7:40 AM -- 7:55 AM**

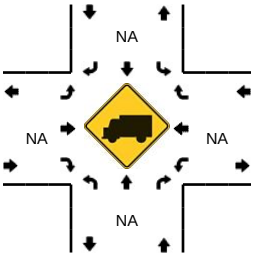


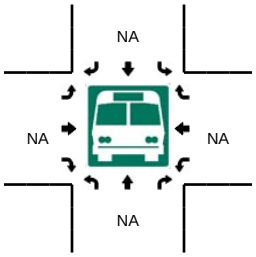






| 5-Min Count Period Beginning At | NE 72nd Ave (Northbound) | | | | NE 72nd Ave (Southbound) | | | | NE 88th St (Eastbound) | | | | NE 88th St (Westbound) | | | | Total | Hourly Totals |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | | |
| 7:00 AM | 0 | 24 | 2 | 0 | 0 | 62 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 1 | 0 | 93 | |
| 7:05 AM | 0 | 20 | 1 | 0 | 1 | 60 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 0 | 0 | 0 | 94 | |
| 7:10 AM | 0 | 18 | 1 | 0 | 0 | 56 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 2 | 0 | 84 | |
| 7:15 AM | 0 | 20 | 2 | 0 | 1 | 33 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 0 | 0 | 0 | 69 | |
| 7:20 AM | 0 | 31 | 3 | 0 | 0 | 72 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 2 | 0 | 119 | |
| 7:25 AM | 0 | 24 | 2 | 0 | 3 | 60 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 0 | 1 | 0 | 103 | |
| 7:30 AM | 0 | 25 | 5 | 0 | 0 | 44 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | 0 | 5 | 0 | 96 | |
| 7:35 AM | 0 | 22 | 7 | 0 | 2 | 58 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | 0 | 5 | 0 | 111 | |
| 7:40 AM | 0 | 29 | 4 | 0 | 0 | 70 | 0 | 0 | 0 | 0 | 0 | 0 | 21 | 0 | 4 | 0 | 128 | |
| 7:45 AM | 0 | 31 | 0 | 0 | 1 | 70 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | 0 | 4 | 0 | 122 | |
| 7:50 AM | 0 | 35 | 2 | 0 | 2 | 74 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | 0 | 2 | 0 | 132 | |
| 7:55 AM | 0 | 33 | 7 | 0 | 1 | 66 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 0 | 2 | 0 | 121 | 1272 |
| 8:00 AM | 0 | 28 | 3 | 1 | 3 | 57 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 3 | 0 | 105 | 1284 |
| 8:05 AM | 0 | 27 | 6 | 0 | 2 | 61 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 1 | 0 | 108 | 1298 |
| 8:10 AM | 0 | 32 | 9 | 0 | 0 | 42 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | 0 | 0 | 0 | 101 | 1315 |
| 8:15 AM | 0 | 35 | 7 | 0 | 0 | 54 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 1 | 0 | 108 | 1354 |
| 8:20 AM | 0 | 29 | 7 | 0 | 0 | 53 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 0 | 0 | 0 | 101 | 1336 |
| 8:25 AM | 0 | 31 | 7 | 0 | 1 | 46 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 2 | 0 | 93 | 1326 |
| 8:30 AM | 0 | 17 | 4 | 0 | 2 | 66 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 | 97 | 1327 |
| 8:35 AM | 0 | 27 | 2 | 0 | 1 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 0 | 3 | 0 | 96 | 1312 |
| 8:40 AM | 0 | 14 | 4 | 0 | 0 | 51 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 2 | 0 | 75 | 1259 |
| 8:45 AM | 0 | 22 | 3 | 0 | 2 | 43 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 2 | 0 | 81 | 1218 |
| 8:50 AM | 0 | 29 | 8 | 0 | 0 | 54 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 2 | 0 | 104 | 1190 |
| 8:55 AM | 0 | 19 | 1 | 0 | 1 | 59 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 1 | 0 | 91 | 1160 |

| Peak 15-Min Flowrates | Northbound | | | | Southbound | | | | Eastbound | | | | Westbound | | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | |
| All Vehicles | 0 | 380 | 24 | 0 | 12 | 856 | 0 | 0 | 0 | 0 | 0 | 0 | 216 | 0 | 40 | 0 | 1528 |
| Heavy Trucks | 0 | 44 | 4 | | 0 | 76 | 0 | | 0 | 0 | 0 | | 12 | 0 | 8 | | 144 |
| Pedestrians | | 0 | | | | 0 | | | | 0 | | | | 4 | | | 4 |
| Bicycles | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 |
| Railroad | | | | | | | | | | | | | | | | | |
| Stopped Buses | | | | | | | | | | | | | | | | | |

*Comments:*

Report generated on 6/21/2016 3:29 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

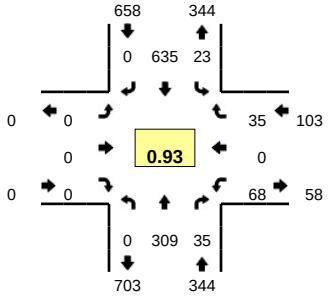
Type of peak hour being reported: Intersection Peak

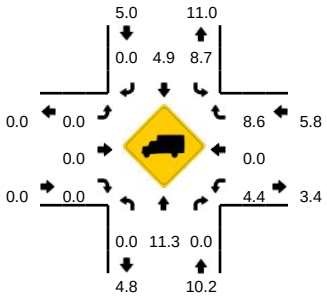
Method for determining peak hour: Total Entering Volume

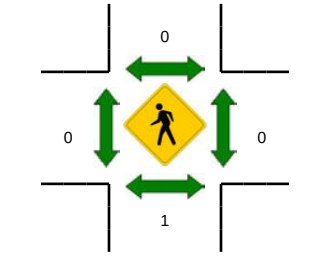
**LOCATION:** NE 72nd Ave -- NE 88th St
**CITY/STATE:** Vancouver, WA

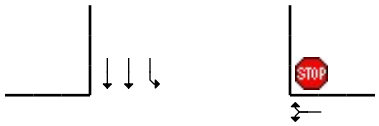
**QC JOB #:** 13593903
**DATE:** Tue, Sep 29 2015

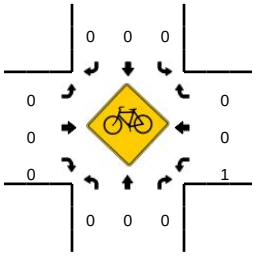
**Peak-Hour: 7:40 AM -- 8:40 AM**
**Peak 15-Min: 7:40 AM -- 7:55 AM**

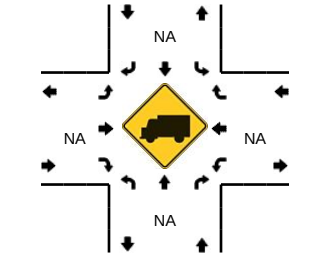


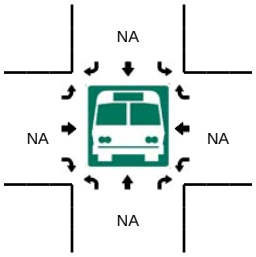






| 5-Min Count Period Beginning At | NE 72nd Ave (Northbound) | | | | NE 72nd Ave (Southbound) | | | | NE 88th St (Eastbound) | | | | NE 88th St (Westbound) | | | | Total | Hourly Totals |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | | |
| 7:00 AM | 0 | 14 | 4 | 0 | 5 | 66 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 96 | |
| 7:05 AM | 0 | 23 | 2 | 0 | 3 | 62 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 3 | 0 | 98 | |
| 7:10 AM | 0 | 23 | 2 | 0 | 3 | 55 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 | 91 | |
| 7:15 AM | 0 | 18 | 4 | 0 | 2 | 44 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 4 | 0 | 80 | |
| 7:20 AM | 0 | 27 | 2 | 0 | 7 | 57 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 6 | 0 | 102 | |
| 7:25 AM | 0 | 19 | 0 | 0 | 3 | 42 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 1 | 0 | 73 | |
| 7:30 AM | 0 | 20 | 2 | 0 | 3 | 39 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 4 | 0 | 70 | |
| 7:35 AM | 0 | 17 | 2 | 0 | 5 | 55 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 2 | 0 | 86 | |
| 7:40 AM | 0 | 24 | 2 | 0 | 3 | 62 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 7 | 0 | 102 | |
| 7:45 AM | 0 | 25 | 1 | 0 | 3 | 60 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 3 | 0 | 97 | |
| 7:50 AM | 0 | 23 | 4 | 0 | 1 | 57 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 7 | 0 | 98 | |
| 7:55 AM | 0 | 26 | 2 | 0 | 0 | 51 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 1 | 0 | 86 | 1079 |
| 8:00 AM | 0 | 23 | 1 | 0 | 5 | 59 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 3 | 0 | 95 | 1078 |
| 8:05 AM | 0 | 34 | 2 | 0 | 5 | 42 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 90 | 1070 |
| 8:10 AM | 0 | 31 | 4 | 0 | 1 | 66 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 2 | 0 | 109 | 1088 |
| 8:15 AM | 0 | 24 | 5 | 0 | 1 | 49 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 3 | 0 | 91 | 1099 |
| 8:20 AM | 0 | 21 | 0 | 0 | 1 | 52 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 2 | 0 | 79 | 1076 |
| 8:25 AM | 0 | 32 | 9 | 0 | 0 | 31 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 2 | 0 | 77 | 1080 |
| 8:30 AM | 0 | 18 | 3 | 0 | 1 | 54 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 2 | 0 | 82 | 1092 |
| 8:35 AM | 0 | 28 | 2 | 0 | 2 | 52 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 0 | 3 | 0 | 99 | 1105 |
| 8:40 AM | 0 | 29 | 1 | 0 | 0 | 38 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 | 76 | 1079 |
| 8:45 AM | 0 | 29 | 5 | 0 | 1 | 44 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 0 | 1 | 0 | 92 | 1074 |
| 8:50 AM | 0 | 38 | 4 | 0 | 1 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 1 | 0 | 74 | 1050 |
| 8:55 AM | 0 | 19 | 8 | 0 | 6 | 37 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 5 | 0 | 82 | 1046 |

| Peak 15-Min Flowrates | Northbound | | | | Southbound | | | | Eastbound | | | | Westbound | | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | |
| All Vehicles | 0 | 288 | 28 | 0 | 28 | 716 | 0 | 0 | 0 | 0 | 0 | 0 | 60 | 0 | 68 | 0 | 1188 |
| Heavy Trucks | 0 | 24 | 0 | | 4 | 12 | 0 | | 0 | 0 | 0 | | 8 | 0 | 4 | | 52 |
| Pedestrians | | 0 | | | | 0 | | | | 0 | | | | 0 | | | 0 |
| Bicycles | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 |
| Railroad | | | | | | | | | | | | | | | | | |
| Stopped Buses | | | | | | | | | | | | | | | | | |

*Comments:*

Report generated on 10/2/2015 3:54 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

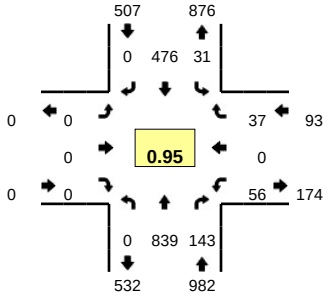
Type of peak hour being reported: Intersection Peak

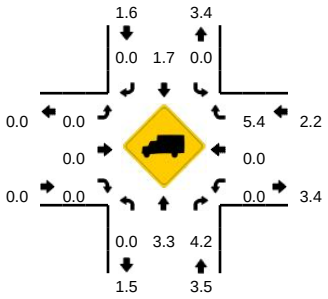
Method for determining peak hour: Total Entering Volume

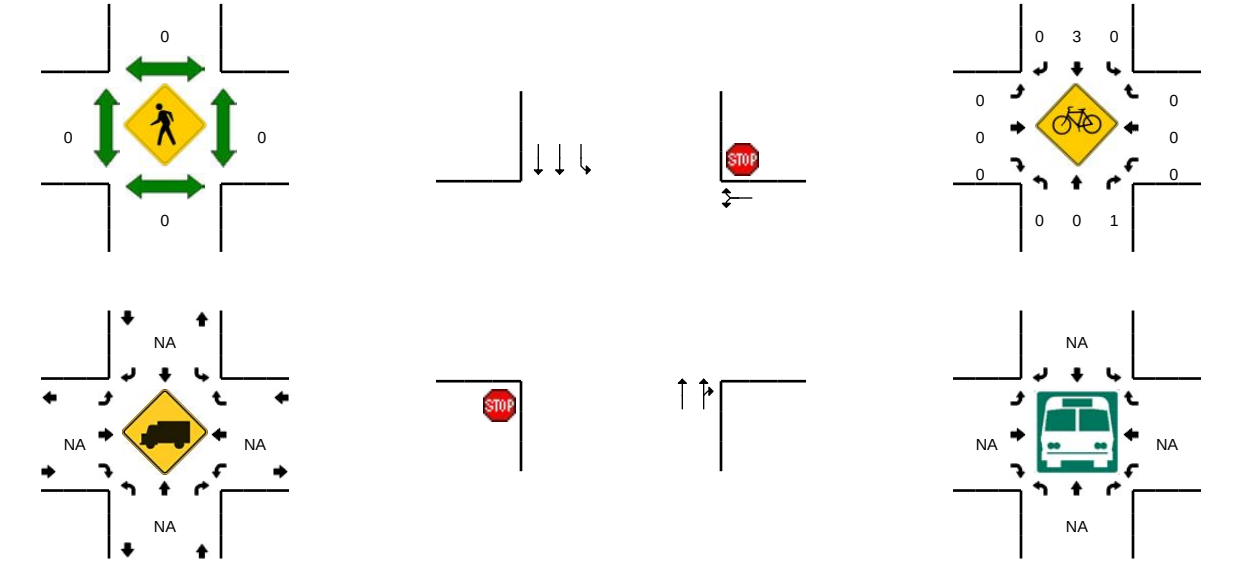
**LOCATION:** NE 72nd Ave -- NE 88th St
**CITY/STATE:** Vancouver, WA

**QC JOB #:** 13593911
**DATE:** Tue, Sep 29 2015

**Peak-Hour: 4:35 PM -- 5:35 PM**
**Peak 15-Min: 5:15 PM -- 5:30 PM**




| 5-Min Count Period Beginning At | NE 72nd Ave (Northbound) | | | | NE 72nd Ave (Southbound) | | | | NE 88th St (Eastbound) | | | | NE 88th St (Westbound) | | | | Total | Hourly Totals |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | | |
| 4:00 PM | 0 | 58 | 15 | 0 | 2 | 42 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 5 | 0 | 127 | |
| 4:05 PM | 0 | 62 | 8 | 0 | 3 | 42 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 120 | |
| 4:10 PM | 0 | 54 | 9 | 0 | 3 | 35 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 4 | 0 | 108 | |
| 4:15 PM | 0 | 66 | 13 | 0 | 3 | 39 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 4 | 0 | 132 | |
| 4:20 PM | 0 | 64 | 6 | 0 | 3 | 41 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 4 | 0 | 126 | |
| 4:25 PM | 0 | 63 | 13 | 0 | 3 | 31 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 7 | 0 | 122 | |
| 4:30 PM | 0 | 61 | 9 | 0 | 3 | 32 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 4 | 0 | 112 | |
| 4:35 PM | 0 | 67 | 13 | 0 | 1 | 48 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 1 | 0 | 134 | |
| 4:40 PM | 0 | 68 | 18 | 0 | 2 | 36 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 3 | 0 | 135 | |
| 4:45 PM | 0 | 73 | 8 | 0 | 4 | 46 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 3 | 0 | 140 | |
| 4:50 PM | 0 | 65 | 10 | 0 | 6 | 49 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 4 | 0 | 138 | |
| 4:55 PM | 0 | 57 | 11 | 0 | 4 | 29 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 3 | 0 | 107 | 1501 |
| 5:00 PM | 0 | 64 | 13 | 0 | 3 | 31 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 115 | 1489 |
| 5:05 PM | 0 | 65 | 7 | 0 | 0 | 46 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 6 | 0 | 130 | 1499 |
| 5:10 PM | 0 | 67 | 7 | 0 | 1 | 48 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 4 | 0 | 133 | 1524 |
| 5:15 PM | 0 | 78 | 13 | 0 | 5 | 38 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 4 | 0 | 142 | 1534 |
| 5:20 PM | 0 | 83 | 14 | 0 | 2 | 29 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 2 | 0 | 135 | 1543 |
| 5:25 PM | 0 | 75 | 14 | 0 | 3 | 42 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 2 | 0 | 139 | 1560 |
| 5:30 PM | 0 | 77 | 15 | 0 | 0 | 34 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 3 | 0 | 134 | 1582 |
| 5:35 PM | 0 | 57 | 16 | 0 | 4 | 36 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 3 | 0 | 122 | 1570 |
| 5:40 PM | 0 | 54 | 12 | 0 | 2 | 34 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 5 | 0 | 111 | 1546 |
| 5:45 PM | 0 | 57 | 11 | 0 | 2 | 35 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 5 | 0 | 118 | 1524 |
| 5:50 PM | 0 | 50 | 12 | 0 | 4 | 34 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 2 | 0 | 109 | 1495 |
| 5:55 PM | 0 | 45 | 8 | 0 | 3 | 34 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 1 | 0 | 96 | 1484 |

| Peak 15-Min Flowrates | Northbound | | | | Southbound | | | | Eastbound | | | | Westbound | | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | |
| All Vehicles | 0 | 944 | 164 | 0 | 40 | 436 | 0 | 0 | 0 | 0 | 0 | 0 | 48 | 0 | 32 | 0 | 1664 |
| Heavy Trucks | 0 | 36 | 12 | | 0 | 8 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 56 |
| Pedestrians | | 0 | | | | 0 | | | | 0 | | | | 0 | | | 0 |
| Bicycles | 0 | 0 | 1 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 1 |
| Railroad | | | | | | | | | | | | | | | | | |
| Stopped Buses | | | | | | | | | | | | | | | | | |

*Comments:*

Report generated on 10/2/2015 3:54 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

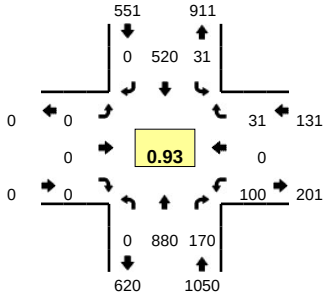
Type of peak hour being reported: Intersection Peak

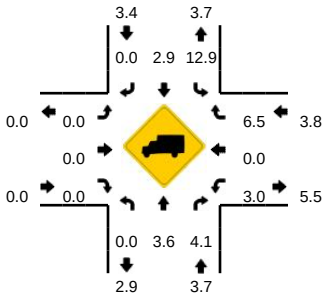
Method for determining peak hour: Total Entering Volume

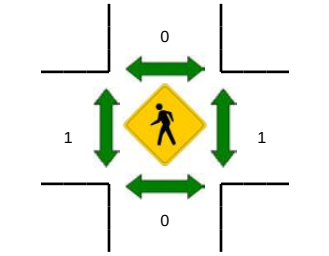
**LOCATION:** NE 72nd Ave -- NE 88th St
**CITY/STATE:** Vancouver, WA

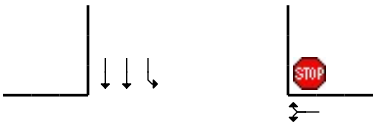
**QC JOB #:** 13790404
**DATE:** Tue, Jun 07 2016

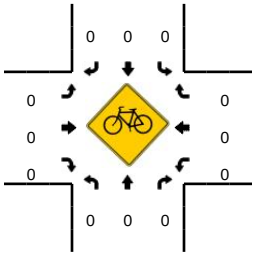
**Peak-Hour: 4:30 PM -- 5:30 PM**
**Peak 15-Min: 5:10 PM -- 5:25 PM**

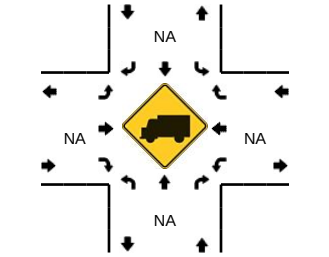


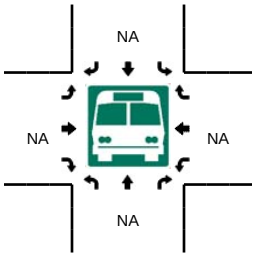






| 5-Min Count Period Beginning At | NE 72nd Ave (Northbound) | | | | NE 72nd Ave (Southbound) | | | | NE 88th St (Eastbound) | | | | NE 88th St (Westbound) | | | | Total | Hourly Totals |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | | |
| 4:00 PM | 0 | 72 | 4 | 0 | 0 | 41 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 3 | 0 | 130 | |
| 4:05 PM | 0 | 75 | 19 | 0 | 2 | 34 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 0 | 3 | 0 | 145 | |
| 4:10 PM | 0 | 71 | 15 | 0 | 1 | 49 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | 0 | 3 | 0 | 156 | |
| 4:15 PM | 0 | 68 | 11 | 0 | 0 | 45 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 5 | 0 | 137 | |
| 4:20 PM | 0 | 77 | 10 | 0 | 0 | 35 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 2 | 0 | 135 | |
| 4:25 PM | 0 | 69 | 10 | 0 | 2 | 30 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 116 | |
| 4:30 PM | 0 | 74 | 11 | 0 | 1 | 56 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 1 | 0 | 154 | |
| 4:35 PM | 0 | 80 | 15 | 0 | 2 | 37 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 2 | 0 | 145 | |
| 4:40 PM | 0 | 69 | 13 | 0 | 1 | 38 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 3 | 0 | 132 | |
| 4:45 PM | 0 | 60 | 18 | 0 | 3 | 34 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 2 | 0 | 127 | |
| 4:50 PM | 0 | 58 | 22 | 0 | 2 | 41 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 4 | 0 | 135 | |
| 4:55 PM | 0 | 64 | 12 | 0 | 2 | 54 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 4 | 0 | 140 | 1652 |
| 5:00 PM | 0 | 61 | 17 | 0 | 0 | 40 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 0 | 127 | 1649 |
| 5:05 PM | 0 | 77 | 10 | 0 | 3 | 47 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 1 | 0 | 146 | 1650 |
| 5:10 PM | 0 | 93 | 13 | 0 | 2 | 41 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 6 | 0 | 164 | 1658 |
| 5:15 PM | 0 | 80 | 9 | 0 | 12 | 31 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 1 | 0 | 144 | 1665 |
| 5:20 PM | 0 | 86 | 14 | 0 | 2 | 41 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 5 | 0 | 156 | 1686 |
| 5:25 PM | 0 | 78 | 16 | 0 | 1 | 60 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 2 | 0 | 162 | 1732 |
| 5:30 PM | 0 | 78 | 14 | 0 | 5 | 31 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 3 | 0 | 140 | 1718 |
| 5:35 PM | 0 | 67 | 10 | 0 | 3 | 42 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 1 | 0 | 127 | 1700 |
| 5:40 PM | 0 | 67 | 13 | 0 | 4 | 34 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 2 | 0 | 129 | 1697 |
| 5:45 PM | 0 | 74 | 11 | 0 | 2 | 26 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 6 | 0 | 126 | 1696 |
| 5:50 PM | 0 | 81 | 11 | 0 | 1 | 46 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 4 | 0 | 150 | 1711 |
| 5:55 PM | 0 | 58 | 10 | 0 | 2 | 47 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 1 | 0 | 123 | 1694 |

| Peak 15-Min Flowrates | Northbound | | | | Southbound | | | | Eastbound | | | | Westbound | | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | |
| All Vehicles | 0 | 1036 | 144 | 0 | 64 | 452 | 0 | 0 | 0 | 0 | 0 | 0 | 112 | 0 | 48 | 0 | 1856 |
| Heavy Trucks | 0 | 36 | 8 | | 12 | 8 | 0 | | 0 | 0 | 0 | | 0 | 0 | 8 | | 72 |
| Pedestrians | | 0 | | | | 0 | | | | 4 | | | | 0 | | | 4 |
| Bicycles | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 |
| Railroad | | | | | | | | | | | | | | | | | |
| Stopped Buses | | | | | | | | | | | | | | | | | |

*Comments:*

Report generated on 6/21/2016 3:30 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

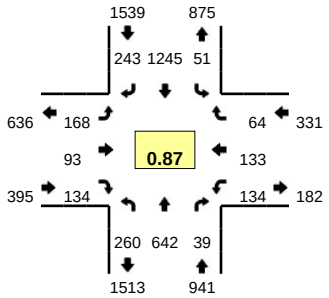
**LOCATION:** NE 117th Ave -- NE 119th St

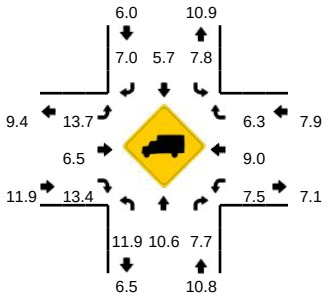
**CITY/STATE:** Vancouver, WA

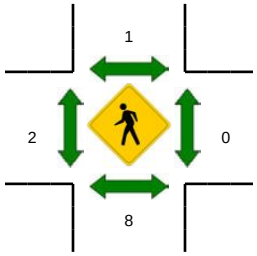
**QC JOB #:** 13790407

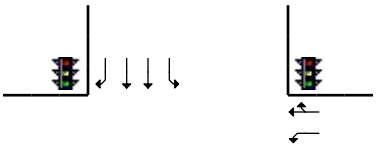
**DATE:** Tue, Jun 07 2016

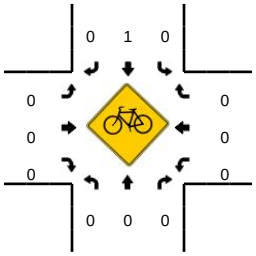
**Peak-Hour: 7:10 AM -- 8:10 AM**
**Peak 15-Min: 7:45 AM -- 8:00 AM**

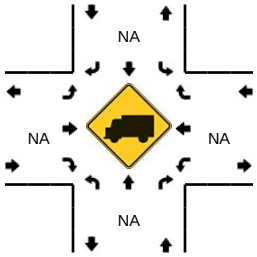


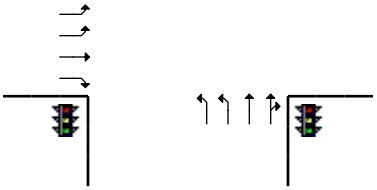



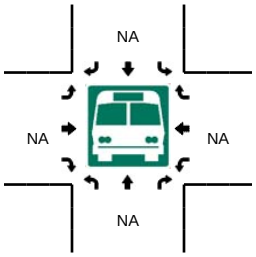








| 5-Min Count Period Beginning At | NE 117th Ave (Northbound) | | | | NE 117th Ave (Southbound) | | | | NE 119th St (Eastbound) | | | | NE 119th St (Westbound) | | | | Total | Hourly Totals |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | | |
| 7:00 AM | 11 | 29 | 1 | 0 | 3 | 100 | 13 | 0 | 7 | 6 | 1 | 0 | 3 | 11 | 4 | 0 | 189 | |
| 7:05 AM | 12 | 38 | 0 | 0 | 3 | 102 | 13 | 0 | 9 | 1 | 5 | 0 | 7 | 6 | 1 | 0 | 197 | |
| 7:10 AM | 17 | 45 | 3 | 0 | 7 | 117 | 12 | 0 | 10 | 7 | 13 | 0 | 7 | 8 | 1 | 0 | 247 | |
| 7:15 AM | 17 | 44 | 5 | 0 | 3 | 87 | 20 | 0 | 15 | 4 | 4 | 0 | 11 | 10 | 6 | 0 | 226 | |
| 7:20 AM | 9 | 53 | 5 | 0 | 2 | 83 | 18 | 0 | 6 | 11 | 10 | 0 | 10 | 15 | 9 | 0 | 231 | |
| 7:25 AM | 15 | 33 | 1 | 0 | 9 | 91 | 14 | 0 | 6 | 9 | 13 | 0 | 9 | 6 | 3 | 0 | 209 | |
| 7:30 AM | 19 | 48 | 4 | 0 | 5 | 127 | 22 | 0 | 7 | 8 | 8 | 0 | 7 | 12 | 4 | 0 | 271 | |
| 7:35 AM | 26 | 53 | 2 | 0 | 4 | 119 | 27 | 0 | 15 | 10 | 9 | 0 | 17 | 13 | 1 | 0 | 296 | |
| 7:40 AM | 27 | 51 | 4 | 0 | 2 | 87 | 28 | 0 | 15 | 6 | 16 | 0 | 12 | 15 | 5 | 0 | 268 | |
| 7:45 AM | 17 | 56 | 3 | 0 | 2 | 124 | 30 | 1 | 13 | 5 | 6 | 0 | 16 | 12 | 5 | 0 | 290 | |
| 7:50 AM | 37 | 77 | 6 | 0 | 5 | 125 | 26 | 0 | 22 | 6 | 11 | 0 | 22 | 10 | 9 | 0 | 356 | |
| 7:55 AM | 30 | 53 | 3 | 0 | 5 | 97 | 18 | 0 | 22 | 6 | 17 | 0 | 6 | 13 | 4 | 0 | 274 | 3054 |
| 8:00 AM | 19 | 66 | 2 | 0 | 3 | 109 | 17 | 0 | 14 | 12 | 15 | 0 | 7 | 11 | 7 | 0 | 282 | 3147 |
| 8:05 AM | 27 | 63 | 1 | 0 | 3 | 79 | 11 | 0 | 23 | 9 | 12 | 0 | 10 | 8 | 10 | 0 | 256 | 3206 |
| 8:10 AM | 8 | 48 | 1 | 0 | 5 | 80 | 5 | 0 | 14 | 9 | 11 | 0 | 2 | 17 | 6 | 0 | 206 | 3165 |
| 8:15 AM | 14 | 43 | 3 | 0 | 10 | 87 | 9 | 0 | 7 | 6 | 18 | 0 | 3 | 8 | 5 | 0 | 213 | 3152 |
| 8:20 AM | 13 | 63 | 1 | 0 | 3 | 126 | 11 | 0 | 6 | 5 | 15 | 0 | 2 | 9 | 3 | 0 | 257 | 3178 |
| 8:25 AM | 12 | 41 | 2 | 0 | 6 | 69 | 7 | 0 | 18 | 6 | 14 | 0 | 4 | 12 | 4 | 0 | 195 | 3164 |
| 8:30 AM | 17 | 61 | 3 | 0 | 2 | 121 | 10 | 0 | 8 | 5 | 6 | 0 | 4 | 7 | 3 | 0 | 247 | 3140 |
| 8:35 AM | 8 | 47 | 3 | 0 | 3 | 90 | 11 | 0 | 4 | 5 | 10 | 0 | 7 | 11 | 2 | 0 | 201 | 3045 |
| 8:40 AM | 10 | 46 | 6 | 0 | 2 | 71 | 21 | 0 | 13 | 8 | 16 | 0 | 5 | 15 | 6 | 0 | 219 | 2996 |
| 8:45 AM | 17 | 71 | 3 | 0 | 5 | 77 | 12 | 0 | 4 | 6 | 13 | 0 | 0 | 7 | 8 | 0 | 223 | 2929 |
| 8:50 AM | 11 | 41 | 2 | 0 | 8 | 90 | 15 | 0 | 11 | 3 | 6 | 0 | 5 | 10 | 7 | 0 | 209 | 2782 |
| 8:55 AM | 9 | 47 | 1 | 0 | 2 | 86 | 21 | 0 | 7 | 5 | 12 | 0 | 5 | 11 | 6 | 0 | 212 | 2720 |

| Peak 15-Min Flowrates | Northbound | | | | Southbound | | | | Eastbound | | | | Westbound | | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | |
| All Vehicles | 336 | 744 | 48 | 0 | 48 | 1384 | 296 | 4 | 228 | 68 | 136 | 0 | 176 | 140 | 72 | 0 | 3680 |
| Heavy Trucks | 28 | 104 | 4 | | 0 | 120 | 16 | | 28 | 4 | 20 | | 0 | 12 | 4 | | 340 |
| Pedestrians | | 20 | | | | 0 | | | | 0 | | | | 0 | | | 20 |
| Bicycles | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 |
| Railroad | | | | | | | | | | | | | | | | | |
| Stopped Buses | | | | | | | | | | | | | | | | | |

*Comments:*

Report generated on 6/21/2016 3:30 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

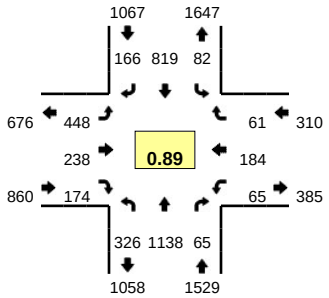
Type of peak hour being reported: Intersection Peak

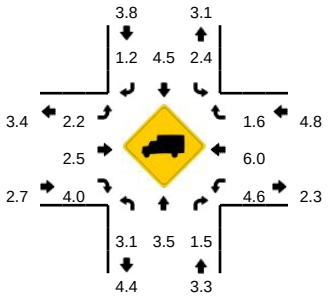
Method for determining peak hour: Total Entering Volume

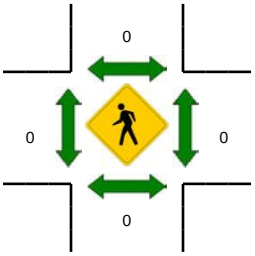
**LOCATION:** NE 117th Ave -- NE 119th St
**CITY/STATE:** Vancouver, WA

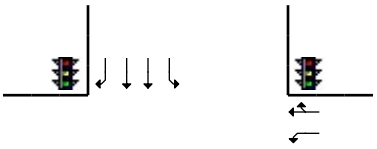
**QC JOB #:** 13790408
**DATE:** Tue, Jun 07 2016

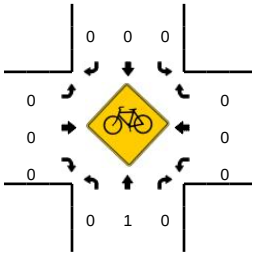
**Peak-Hour: 4:55 PM -- 5:55 PM**
**Peak 15-Min: 5:15 PM -- 5:30 PM**

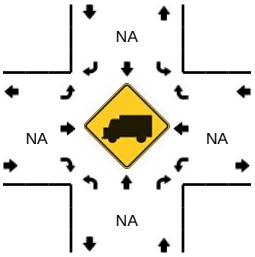


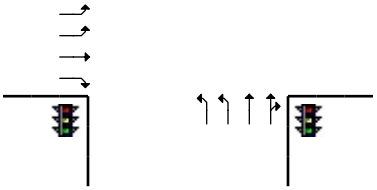



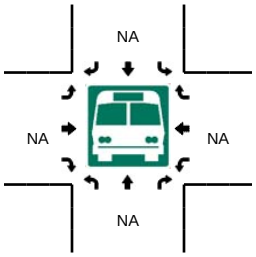








| 5-Min Count Period Beginning At | NE 117th Ave (Northbound) | | | | NE 117th Ave (Southbound) | | | | NE 119th St (Eastbound) | | | | NE 119th St (Westbound) | | | | Total | Hourly Totals |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | | |
| 4:00 PM | 25 | 107 | 10 | 0 | 8 | 74 | 9 | 0 | 19 | 14 | 19 | 0 | 4 | 12 | 7 | 0 | 308 | |
| 4:05 PM | 25 | 92 | 7 | 0 | 10 | 78 | 11 | 0 | 24 | 20 | 11 | 0 | 5 | 14 | 3 | 0 | 300 | |
| 4:10 PM | 20 | 94 | 4 | 0 | 9 | 74 | 6 | 0 | 33 | 20 | 20 | 0 | 4 | 16 | 4 | 0 | 304 | |
| 4:15 PM | 15 | 95 | 3 | 0 | 4 | 75 | 12 | 0 | 28 | 10 | 21 | 0 | 5 | 11 | 5 | 0 | 284 | |
| 4:20 PM | 21 | 103 | 6 | 0 | 7 | 76 | 11 | 0 | 36 | 11 | 15 | 0 | 5 | 1 | 2 | 0 | 294 | |
| 4:25 PM | 21 | 93 | 8 | 0 | 9 | 86 | 12 | 0 | 25 | 12 | 20 | 0 | 8 | 16 | 12 | 0 | 322 | |
| 4:30 PM | 12 | 78 | 6 | 0 | 7 | 55 | 17 | 0 | 30 | 13 | 21 | 0 | 4 | 9 | 2 | 0 | 254 | |
| 4:35 PM | 27 | 109 | 4 | 0 | 4 | 62 | 12 | 0 | 25 | 15 | 14 | 0 | 4 | 11 | 3 | 0 | 290 | |
| 4:40 PM | 21 | 93 | 4 | 0 | 9 | 76 | 11 | 0 | 23 | 18 | 14 | 0 | 2 | 14 | 2 | 0 | 287 | |
| 4:45 PM | 34 | 99 | 9 | 0 | 5 | 70 | 17 | 0 | 35 | 17 | 9 | 0 | 2 | 15 | 1 | 0 | 313 | |
| 4:50 PM | 18 | 92 | 9 | 0 | 9 | 69 | 12 | 0 | 21 | 16 | 8 | 0 | 1 | 7 | 2 | 0 | 264 | |
| 4:55 PM | 22 | 84 | 3 | 0 | 9 | 66 | 21 | 0 | 23 | 21 | 12 | 0 | 2 | 11 | 3 | 0 | 277 | 3497 |
| 5:00 PM | 24 | 88 | 9 | 0 | 6 | 51 | 9 | 0 | 39 | 14 | 24 | 0 | 6 | 22 | 8 | 0 | 300 | 3489 |
| 5:05 PM | 18 | 87 | 2 | 0 | 5 | 62 | 12 | 0 | 46 | 18 | 11 | 0 | 10 | 21 | 4 | 0 | 296 | 3485 |
| 5:10 PM | 31 | 101 | 3 | 0 | 11 | 80 | 11 | 0 | 44 | 21 | 21 | 0 | 8 | 10 | 2 | 0 | 343 | 3524 |
| 5:15 PM | 30 | 121 | 9 | 0 | 5 | 77 | 17 | 0 | 30 | 13 | 12 | 0 | 10 | 12 | 4 | 0 | 340 | 3580 |
| 5:20 PM | 38 | 114 | 5 | 0 | 11 | 90 | 18 | 0 | 32 | 28 | 13 | 0 | 3 | 11 | 5 | 0 | 368 | 3654 |
| 5:25 PM | 31 | 97 | 11 | 0 | 6 | 71 | 16 | 0 | 46 | 26 | 12 | 0 | 6 | 18 | 4 | 0 | 344 | 3676 |
| 5:30 PM | 28 | 81 | 1 | 0 | 10 | 67 | 13 | 0 | 44 | 23 | 15 | 0 | 4 | 14 | 6 | 0 | 306 | 3728 |
| 5:35 PM | 26 | 82 | 6 | 0 | 4 | 53 | 17 | 0 | 37 | 15 | 15 | 0 | 3 | 15 | 4 | 0 | 277 | 3715 |
| 5:40 PM | 23 | 70 | 8 | 0 | 7 | 66 | 12 | 0 | 39 | 22 | 14 | 0 | 5 | 19 | 8 | 0 | 293 | 3721 |
| 5:45 PM | 30 | 112 | 4 | 0 | 2 | 68 | 11 | 0 | 34 | 17 | 14 | 0 | 4 | 24 | 9 | 0 | 329 | 3737 |
| 5:50 PM | 25 | 101 | 4 | 0 | 6 | 68 | 9 | 0 | 34 | 20 | 11 | 0 | 4 | 7 | 4 | 0 | 293 | 3766 |
| 5:55 PM | 22 | 95 | 5 | 0 | 2 | 58 | 10 | 0 | 29 | 4 | 12 | 0 | 5 | 15 | 6 | 0 | 263 | 3752 |

| Peak 15-Min Flowrates | Northbound | | | | Southbound | | | | Eastbound | | | | Westbound | | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | |
| All Vehicles | 396 | 1328 | 100 | 0 | 88 | 952 | 204 | 0 | 432 | 268 | 148 | 0 | 76 | 164 | 52 | 0 | 4208 |
| Heavy Trucks | 12 | 28 | 0 | | 4 | 44 | 0 | | 8 | 0 | 4 | | 8 | 12 | 4 | | 124 |
| Pedestrians | | 0 | | | | 0 | | | | 0 | | | | 0 | | | 0 |
| Bicycles | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 |
| Railroad | | | | | | | | | | | | | | | | | |
| Stopped Buses | | | | | | | | | | | | | | | | | |

*Comments:*

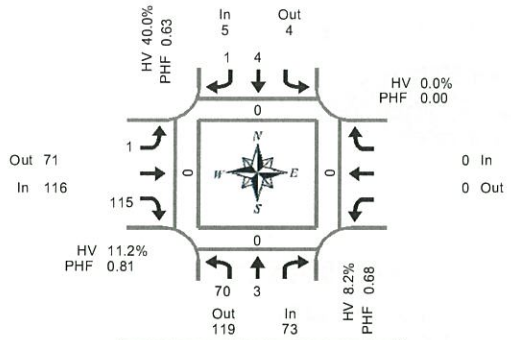
Report generated on 6/21/2016 3:30 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

# Total Vehicle Summary

All Traffic Data Services Inc.

Clay Carney
(503) 833-2740




## NE 94th Ave & NE 105th St

***Wednesday, September 30, 2015***
***7:00 AM to 9:00 AM***

### *5-Minute Interval Summary*
***7:00 AM to 9:00 AM***

| Interval Start Time | Northbound NE 94th Ave | | | Southbound NE 94th Ave | | | Eastbound NE 105th St | | | Westbound NE 105th St | | | Interval Total | Pedestrians Crosswalk | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | L | T | Bikes | T | R | Bikes | L | R | Bikes | | | Bikes | | North | South | East | West |
| 7:00 AM | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | | | 0 | 9 | 0 | 0 | 0 | 0 |
| 7:05 AM | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | | | 0 | 17 | 0 | 0 | 0 | 0 |
| 7:10 AM | 6 | 0 | 0 | 2 | 0 | 0 | 0 | 8 | 0 | | | 0 | 16 | 0 | 0 | 0 | 0 |
| 7:15 AM | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 9 | 0 | | | 0 | 12 | 0 | 0 | 0 | 0 |
| 7:20 AM | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | | | 0 | 11 | 0 | 0 | 0 | 0 |
| 7:25 AM | 6 | 0 | 0 | 0 | 1 | 0 | 0 | 13 | 0 | | | 0 | 20 | 0 | 0 | 0 | 0 |
| 7:30 AM | 6 | 0 | 0 | 1 | 0 | 0 | 1 | 10 | 0 | | | 0 | 18 | 0 | 0 | 0 | 0 |
| 7:35 AM | 10 | 1 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | | | 0 | 19 | 0 | 0 | 0 | 0 |
| 7:40 AM | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | | | 0 | 16 | 0 | 0 | 0 | 0 |
| 7:45 AM | 7 | 0 | 0 | 1 | 0 | 0 | 0 | 4 | 0 | | | 0 | 12 | 0 | 0 | 0 | 0 |
| 7:50 AM | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | | | 0 | 11 | 0 | 0 | 0 | 0 |
| 7:55 AM | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | | | 0 | 14 | 0 | 0 | 0 | 0 |
| 8:00 AM | 8 | 1 | 0 | 0 | 0 | 0 | 0 | 12 | 0 | | | 0 | 21 | 0 | 0 | 0 | 0 |
| 8:05 AM | 7 | 0 | 0 | 2 | 0 | 0 | 0 | 13 | 0 | | | 0 | 22 | 0 | 0 | 0 | 0 |
| 8:10 AM | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 11 | 0 | | | 0 | 15 | 0 | 0 | 0 | 0 |
| 8:15 AM | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 0 | | | 0 | 15 | 0 | 0 | 0 | 0 |
| 8:20 AM | 4 | 0 | 0 | 1 | 0 | 0 | 0 | 5 | 0 | | | 0 | 10 | 0 | 0 | 0 | 0 |
| 8:25 AM | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | | | 0 | 9 | 0 | 0 | 0 | 0 |
| 8:30 AM | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 7 | 0 | | | 0 | 9 | 0 | 0 | 0 | 0 |
| 8:35 AM | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | | | 0 | 13 | 0 | 0 | 0 | 0 |
| 8:40 AM | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | | | 0 | 9 | 0 | 0 | 0 | 0 |
| 8:45 AM | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | | | 0 | 15 | 0 | 0 | 0 | 0 |
| 8:50 AM | 11 | 0 | 0 | 2 | 0 | 0 | 0 | 8 | 0 | | | 0 | 21 | 0 | 0 | 0 | 0 |
| 8:55 AM | 6 | 0 | 0 | 0 | 1 | 0 | 1 | 5 | 0 | | | 0 | 13 | 0 | 0 | 0 | 0 |
| Total Survey | 133 | 4 | 0 | 11 | 2 | 0 | 2 | 195 | 0 | | | 0 | 347 | 0 | 0 | 0 | 0 |

### *15-Minute Interval Summary*
***7:00 AM to 9:00 AM***

| Interval Start Time | Northbound NE 94th Ave | | | Southbound NE 94th Ave | | | Eastbound NE 105th St | | | Westbound NE 105th St | | | Interval Total | Pedestrians Crosswalk | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | L | T | Bikes | T | R | Bikes | L | R | Bikes | | | Bikes | | North | South | East | West |
| 7:00 AM | 15 | 1 | 0 | 2 | 0 | 0 | 0 | 24 | 0 | | | 0 | 42 | 0 | 0 | 0 | 0 |
| 7:15 AM | 10 | 0 | 0 | 1 | 1 | 0 | 0 | 31 | 0 | | | 0 | 43 | 0 | 0 | 0 | 0 |
| 7:30 AM | 25 | 1 | 0 | 1 | 0 | 0 | 1 | 25 | 0 | | | 0 | 53 | 0 | 0 | 0 | 0 |
| 7:45 AM | 15 | 0 | 0 | 1 | 0 | 0 | 0 | 21 | 0 | | | 0 | 37 | 0 | 0 | 0 | 0 |
| 8:00 AM | 18 | 2 | 0 | 2 | 0 | 0 | 0 | 36 | 0 | | | 0 | 58 | 0 | 0 | 0 | 0 |
| 8:15 AM | 13 | 0 | 0 | 1 | 0 | 0 | 0 | 20 | 0 | | | 0 | 34 | 0 | 0 | 0 | 0 |
| 8:30 AM | 12 | 0 | 0 | 1 | 0 | 0 | 0 | 18 | 0 | | | 0 | 31 | 0 | 0 | 0 | 0 |
| 8:45 AM | 25 | 0 | 0 | 2 | 1 | 0 | 1 | 20 | 0 | | | 0 | 49 | 0 | 0 | 0 | 0 |
| Total Survey | 133 | 4 | 0 | 11 | 2 | 0 | 2 | 195 | 0 | | | 0 | 347 | 0 | 0 | 0 | 0 |

### *Peak Hour Summary*
***7:20 AM to 8:20 AM***

| By Approach | Northbound NE 94th Ave | | | | Southbound NE 94th Ave | | | | Eastbound NE 105th St | | | | Westbound NE 105th St | | | | Total | Pedestrians Crosswalk | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | In | Out | Total | Bikes | In | Out | Total | Bikes | In | Out | Total | Bikes | In | Out | Total | Bikes | | North | South | East | West |
| Volume | 73 | 119 | 192 | 0 | 5 | 4 | 9 | 0 | 116 | 71 | 187 | 0 | 0 | 0 | 0 | 0 | 194 | 0 | 0 | 0 | 0 |
| %HV | 8.2% | | | | 40.0% | | | | 11.2% | | | | 0.0% | | | | 10.8% | | | | |
| PHF | 0.68 | | | | 0.63 | | | | 0.81 | | | | 0.00 | | | | 0.84 | | | | |

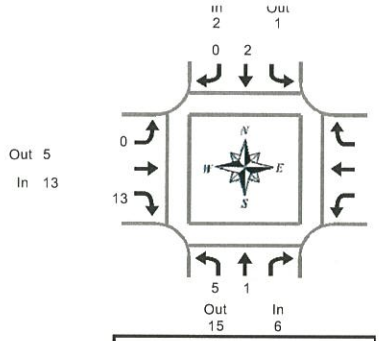
| By Movement | Northbound NE 94th Ave | | | | Southbound NE 94th Ave | | | Eastbound NE 105th St | | | Westbound NE 105th St | | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | L | T | | Total | T | R | Total | L | R | Total | | | | Total | |
| Volume | 70 | 3 | | 73 | 4 | 1 | 5 | 1 | 115 | 116 | | | | 0 | 194 |
| %HV | 7.1% | 33.3% | NA | 8.2% | NA | 50.0% | 0.0% | 40.0% | 0.0% | NA | 11.3% | 11.2% | NA | NA | NA | 0.0% | 10.8% |
| PHF | 0.67 | 0.38 | | 0.68 | | 0.50 | 0.25 | 0.63 | 0.25 | | 0.80 | 0.81 | | | | 0.00 | 0.84 |

### *Rolling Hour Summary*
***7:00 AM to 9:00 AM***

| Interval Start Time | Northbound NE 94th Ave | | | Southbound NE 94th Ave | | | Eastbound NE 105th St | | | Westbound NE 105th St | | | Interval Total | Pedestrians Crosswalk | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | L | T | Bikes | T | R | Bikes | L | R | Bikes | | | Bikes | | North | South | East | West |
| 7:00 AM | 65 | 2 | 0 | 5 | 1 | 0 | 1 | 101 | 0 | | | 0 | 175 | 0 | 0 | 0 | 0 |
| 7:15 AM | 68 | 3 | 0 | 5 | 1 | 0 | 1 | 113 | 0 | | | 0 | 191 | 0 | 0 | 0 | 0 |
| 7:30 AM | 71 | 3 | 0 | 5 | 0 | 0 | 1 | 102 | 0 | | | 0 | 182 | 0 | 0 | 0 | 0 |
| 7:45 AM | 58 | 2 | 0 | 5 | 0 | 0 | 0 | 95 | 0 | | | 0 | 160 | 0 | 0 | 0 | 0 |
| 8:00 AM | 68 | 2 | 0 | 6 | 1 | 0 | 1 | 94 | 0 | | | 0 | 172 | 0 | 0 | 0 | 0 |

## Heavy Vehicle Summary

All Traffic Data Services Inc.
Clay Carney
(503) 833-2740




# NE 94th Ave & NE 105th St

***Wednesday, September 30, 2015***
***7:00 AM to 9:00 AM***

***Peak Hour Summary***
***7:20 AM to 8:20 AM***

***Heavy Vehicle 5-Minute Interval Summary***
***7:00 AM to 9:00 AM***

| Interval Start Time | Northbound NE 94th Ave | | | Southbound NE 94th Ave | | | Eastbound NE 105th St | | | Westbound NE 105th St | | | Interval Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | L | T | Total | T | R | Total | L | R | Total | | | Total | |
| 7:00 AM | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | | | 0 | 2 |
| 7:05 AM | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 1 |
| 7:10 AM | 2 | 0 | 2 | 1 | 0 | 1 | 0 | 0 | 0 | | | 0 | 3 |
| 7:15 AM | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 1 |
| 7:20 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | | | 0 | 1 |
| 7:25 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | | | 0 | 3 |
| 7:30 AM | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 2 | 2 | | | 0 | 3 |
| 7:35 AM | 3 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 3 |
| 7:40 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | | | 0 | 1 |
| 7:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 0 |
| 7:50 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | | | 0 | 2 |
| 7:55 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 0 |
| 8:00 AM | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 1 | 1 | | | 0 | 3 |
| 8:05 AM | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | | | 0 | 2 |
| 8:10 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | | | 0 | 3 |
| 8:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 0 |
| 8:20 AM | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | | | 0 | 2 |
| 8:25 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | | | 0 | 2 |
| 8:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 0 |
| 8:35 AM | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 2 |
| 8:40 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | | | 0 | 1 |
| 8:45 AM | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 1 |
| 8:50 AM | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 1 |
| 8:55 AM | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | | | 0 | 2 |
| Total Survey | 15 | 2 | 17 | 3 | 0 | 3 | 0 | 19 | 19 | | | 0 | 39 |

***Heavy Vehicle 15-Minute Interval Summary***
***7:00 AM to 9:00 AM***

| Interval Start Time | Northbound NE 94th Ave | | | Southbound NE 94th Ave | | | Eastbound NE 105th St | | | Westbound NE 105th St | | | Interval Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | L | T | Total | T | R | Total | L | R | Total | | | Total | |
| 7:00 AM | 3 | 1 | 4 | 1 | 0 | 1 | 0 | 1 | 1 | | | 0 | 6 |
| 7:15 AM | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 4 | 4 | | | 0 | 5 |
| 7:30 AM | 3 | 0 | 3 | 1 | 0 | 1 | 0 | 3 | 3 | | | 0 | 7 |
| 7:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | | | 0 | 2 |
| 8:00 AM | 2 | 1 | 3 | 1 | 0 | 1 | 0 | 4 | 4 | | | 0 | 8 |
| 8:15 AM | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 3 | 3 | | | 0 | 4 |
| 8:30 AM | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 1 | 1 | | | 0 | 3 |
| 8:45 AM | 3 | 0 | 3 | 0 | 0 | 0 | 0 | 1 | 1 | | | 0 | 4 |
| Total Survey | 15 | 2 | 17 | 3 | 0 | 3 | 0 | 19 | 19 | | | 0 | 39 |

***Heavy Vehicle Peak Hour Summary***
***7:20 AM to 8:20 AM***

| By Approach | Northbound NE 94th Ave | | | Southbound NE 94th Ave | | | Eastbound NE 105th St | | | Westbound NE 105th St | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | In | Out | Total | In | Out | Total | In | Out | Total | In | Out | Total | |
| Volume | 6 | 15 | 21 | 2 | 1 | 3 | 13 | 5 | 18 | 0 | 0 | 0 | 21 |
| PHF | 0.50 | | | 0.50 | | | 0.54 | | | 0.00 | | | 0.58 |

| By Movement | Northbound NE 94th Ave | | | Southbound NE 94th Ave | | | Eastbound NE 105th St | | | Westbound NE 105th St | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | L | T | Total | T | R | Total | L | R | Total | | | Total | |
| Volume | 5 | 1 | 6 | 2 | 0 | 2 | 0 | 13 | 13 | | | 0 | 21 |
| PHF | 0.42 | 0.25 | 0.50 | 0.50 | 0.00 | 0.50 | 0.00 | 0.54 | 0.54 | | | 0.00 | 0.58 |

***Heavy Vehicle Rolling Hour Summary***
***7:00 AM to 9:00 AM***

| Interval Start Time | Northbound NE 94th Ave | | | Southbound NE 94th Ave | | | Eastbound NE 105th St | | | Westbound NE 105th St | | | Interval Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | L | T | Total | T | R | Total | L | R | Total | | | Total | |
| 7:00 AM | 7 | 1 | 8 | 2 | 0 | 2 | 0 | 10 | 10 | | | 0 | 20 |
| 7:15 AM | 6 | 1 | 7 | 2 | 0 | 2 | 0 | 13 | 13 | | | 0 | 22 |
| 7:30 AM | 6 | 1 | 7 | 2 | 0 | 2 | 0 | 12 | 12 | | | 0 | 21 |
| 7:45 AM | 5 | 1 | 6 | 1 | 0 | 1 | 0 | 10 | 10 | | | 0 | 17 |
| 8:00 AM | 8 | 1 | 9 | 1 | 0 | 1 | 0 | 9 | 9 | | | 0 | 19 |

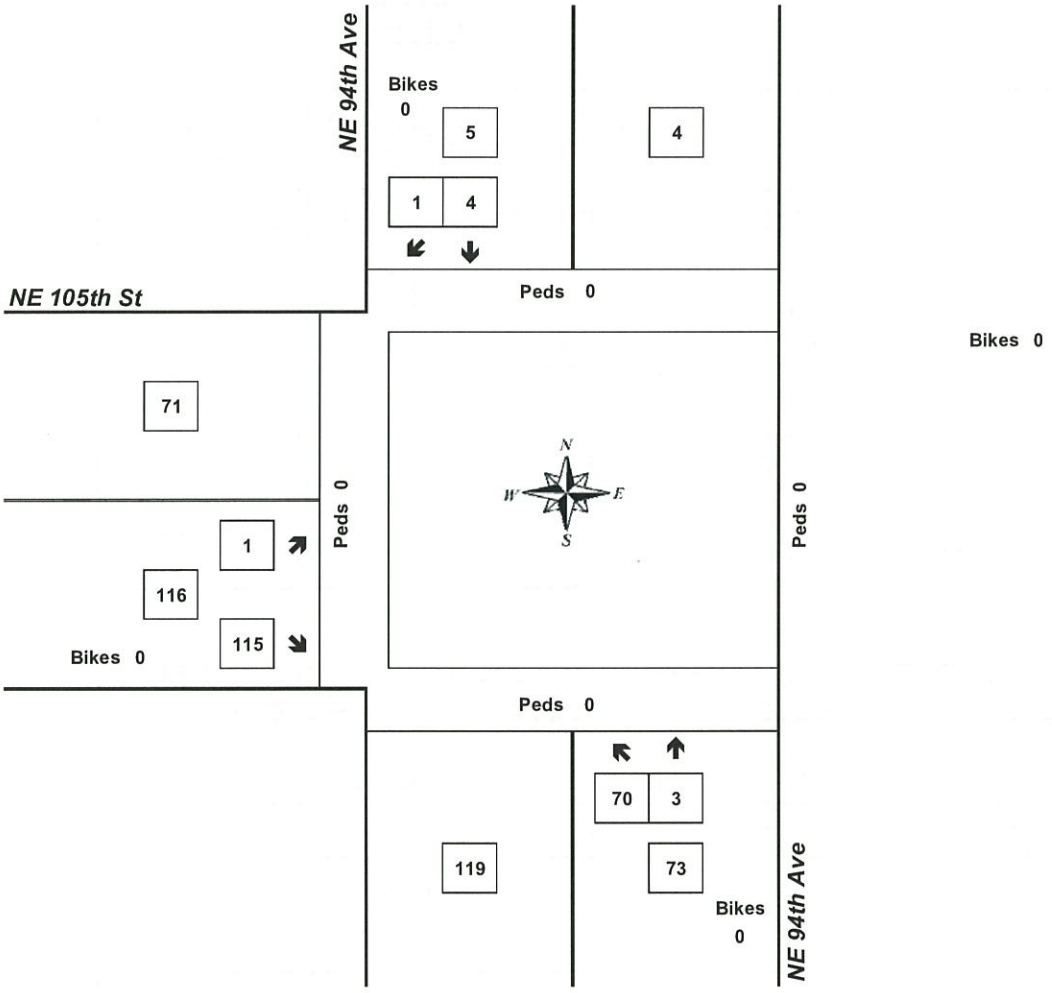
## Peak Hour Summary

All Traffic Data Services Inc.

Clay Carney
(503) 833-2740

# NE 94th Ave & NE 105th St

**7:20 AM to 8:20 AM**
**Wednesday, September 30, 2015**

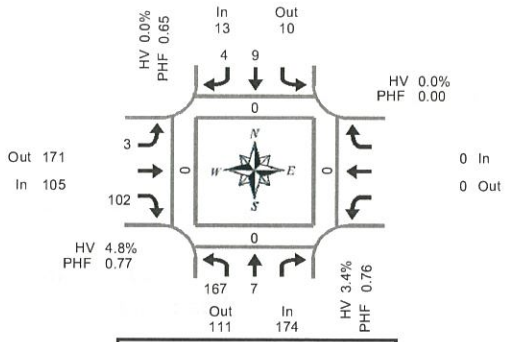



| Approach | PHF | HV% | Volume |
|---|---|---|---|
| EB | 0.81 | 11.2% | 116 |
| WB | 0.00 | 0.0% | 0 |
| NB | 0.68 | 8.2% | 73 |
| SB | 0.63 | 40.0% | 5 |
| Intersection | 0.84 | 10.8% | 194 |

Count Period: 7:00 AM to 9:00 AM

## Total Vehicle Summary

All Traffic Data Services Inc.
Clay Carney
(503) 833-2740




# NE 94th Ave & NE 105th St

***Tuesday, September 29, 2015***
***4:00 PM to 6:00 PM***

### *5-Minute Interval Summary*
***4:00 PM to 6:00 PM***

| Interval Start | Northbound NE 94th Ave | | | Southbound NE 94th Ave | | | Eastbound NE 105th St | | | Westbound NE 105th St | | | Interval | Pedestrians Crosswalk | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Time | L | T | Bikes | T | R | Bikes | L | R | Bikes | | | Bikes | Total | North | South | East | West |
| 4:00 PM | 10 | 0 | 0 | 0 | 0 | 1 | 0 | 7 | 0 | | | 0 | 17 | 0 | 0 | 0 | 1 |
| 4:05 PM | 11 | 1 | 0 | 1 | 0 | 0 | 0 | 4 | 0 | | | 0 | 17 | 0 | 0 | 0 | 0 |
| 4:10 PM | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | | | 0 | 15 | 0 | 0 | 0 | 0 |
| 4:15 PM | 16 | 0 | 0 | 1 | 0 | 0 | 0 | 9 | 0 | | | 0 | 26 | 0 | 0 | 0 | 0 |
| 4:20 PM | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | | | 0 | 14 | 0 | 0 | 0 | 0 |
| 4:25 PM | 9 | 0 | 0 | 0 | 0 | 0 | 1 | 8 | 0 | | | 0 | 18 | 0 | 0 | 0 | 0 |
| 4:30 PM | 8 | 1 | 0 | 1 | 1 | 0 | 1 | 9 | 0 | | | 0 | 21 | 0 | 0 | 0 | 0 |
| 4:35 PM | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | | | 0 | 21 | 0 | 0 | 0 | 0 |
| 4:40 PM | 11 | 0 | 0 | 2 | 1 | 0 | 0 | 7 | 0 | | | 0 | 21 | 0 | 0 | 0 | 0 |
| 4:45 PM | 10 | 0 | 0 | 0 | 1 | 0 | 0 | 9 | 0 | | | 0 | 20 | 0 | 0 | 0 | 0 |
| 4:50 PM | 13 | 1 | 0 | 1 | 0 | 0 | 0 | 4 | 0 | | | 0 | 19 | 0 | 0 | 0 | 0 |
| 4:55 PM | 17 | 0 | 0 | 1 | 0 | 0 | 0 | 8 | 0 | | | 0 | 26 | 0 | 0 | 0 | 0 |
| 5:00 PM | 15 | 1 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | | | 0 | 23 | 0 | 0 | 0 | 0 |
| 5:05 PM | 22 | 2 | 0 | 0 | 1 | 0 | 1 | 18 | 0 | | | 0 | 44 | 0 | 0 | 0 | 0 |
| 5:10 PM | 12 | 2 | 0 | 1 | 0 | 0 | 1 | 6 | 0 | | | 0 | 22 | 0 | 0 | 0 | 0 |
| 5:15 PM | 12 | 0 | 0 | 2 | 0 | 0 | 0 | 7 | 0 | | | 0 | 21 | 0 | 0 | 0 | 0 |
| 5:20 PM | 14 | 0 | 0 | 1 | 0 | 0 | 0 | 6 | 0 | | | 0 | 21 | 0 | 0 | 0 | 0 |
| 5:25 PM | 12 | 0 | 2 | 0 | 0 | 0 | 0 | 11 | 0 | | | 0 | 23 | 0 | 0 | 0 | 0 |
| 5:30 PM | 15 | 1 | 1 | 1 | 0 | 0 | 1 | 9 | 0 | | | 0 | 27 | 0 | 0 | 0 | 0 |
| 5:35 PM | 14 | 0 | 1 | 0 | 1 | 0 | 0 | 10 | 0 | | | 0 | 25 | 0 | 0 | 0 | 0 |
| 5:40 PM | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 0 | | | 0 | 21 | 0 | 0 | 0 | 0 |
| 5:45 PM | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | | | 0 | 17 | 0 | 0 | 0 | 2 |
| 5:50 PM | 6 | 1 | 0 | 0 | 0 | 2 | 0 | 4 | 0 | | | 0 | 11 | 0 | 0 | 0 | 1 |
| 5:55 PM | 15 | 0 | 1 | 0 | 0 | 0 | 0 | 8 | 0 | | | 0 | 23 | 0 | 0 | 0 | 0 |
| Total Survey | 291 | 10 | 5 | 12 | 5 | 3 | 5 | 190 | 0 | | | 0 | 513 | 0 | 0 | 0 | 4 |

### *15-Minute Interval Summary*
***4:00 PM to 6:00 PM***

| Interval Start | Northbound NE 94th Ave | | | Southbound NE 94th Ave | | | Eastbound NE 105th St | | | Westbound NE 105th St | | | Interval | Pedestrians Crosswalk | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Time | L | T | Bikes | T | R | Bikes | L | R | Bikes | | | Bikes | Total | North | South | East | West |
| 4:00 PM | 28 | 1 | 0 | 1 | 0 | 1 | 0 | 19 | 0 | | | 0 | 49 | 0 | 0 | 0 | 1 |
| 4:15 PM | 33 | 0 | 0 | 1 | 0 | 0 | 1 | 23 | 0 | | | 0 | 58 | 0 | 0 | 0 | 0 |
| 4:30 PM | 31 | 1 | 0 | 3 | 2 | 0 | 1 | 25 | 0 | | | 0 | 63 | 0 | 0 | 0 | 0 |
| 4:45 PM | 40 | 1 | 0 | 2 | 1 | 0 | 0 | 21 | 0 | | | 0 | 65 | 0 | 0 | 0 | 0 |
| 5:00 PM | 49 | 5 | 0 | 1 | 1 | 0 | 2 | 31 | 0 | | | 0 | 89 | 0 | 0 | 0 | 0 |
| 5:15 PM | 38 | 0 | 2 | 3 | 0 | 0 | 0 | 24 | 0 | | | 0 | 65 | 0 | 0 | 0 | 0 |
| 5:30 PM | 39 | 1 | 2 | 1 | 1 | 0 | 1 | 30 | 0 | | | 0 | 73 | 0 | 0 | 0 | 0 |
| 5:45 PM | 33 | 1 | 1 | 0 | 0 | 2 | 0 | 17 | 0 | | | 0 | 51 | 0 | 0 | 0 | 3 |
| Total Survey | 291 | 10 | 5 | 12 | 5 | 3 | 5 | 190 | 0 | | | 0 | 513 | 0 | 0 | 0 | 4 |

### *Peak Hour Summary*
***4:40 PM to 5:40 PM***

| By Approach | Northbound NE 94th Ave | | | | Southbound NE 94th Ave | | | | Eastbound NE 105th St | | | | Westbound NE 105th St | | | | Total | Pedestrians Crosswalk | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | In | Out | Total | Bikes | In | Out | Total | Bikes | In | Out | Total | Bikes | In | Out | Total | Bikes | | North | South | East | West |
| Volume | 174 | 111 | 285 | 4 | 13 | 10 | 23 | 0 | 105 | 171 | 276 | 0 | 0 | 0 | 0 | 0 | 292 | 0 | 0 | 0 | 0 |
| %HV | 3.4% | | | | 0.0% | | | | 4.8% | | | | 0.0% | | | | 3.8% | | | | |
| PHF | 0.76 | | | | 0.65 | | | | 0.77 | | | | 0.00 | | | | 0.78 | | | | |

| By Movement | Northbound NE 94th Ave | | | | Southbound NE 94th Ave | | | | Eastbound NE 105th St | | | | Westbound NE 105th St | | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | L | T | | Total | T | R | Total | | L | R | Total | | | | | Total | |
| Volume | 167 | 7 | | 174 | 9 | 4 | 13 | | 3 | 102 | 105 | | | | | 0 | 292 |
| %HV | 2.4% | 28.6% | NA | 3.4% | NA | 0.0% | 0.0% | 0.0% | 0.0% | NA | 4.9% | 4.8% | NA | NA | NA | 0.0% | 3.8% |
| PHF | 0.77 | 0.35 | | 0.76 | | 0.56 | 0.50 | 0.65 | 0.38 | | 0.77 | 0.77 | | | | 0.00 | 0.78 |

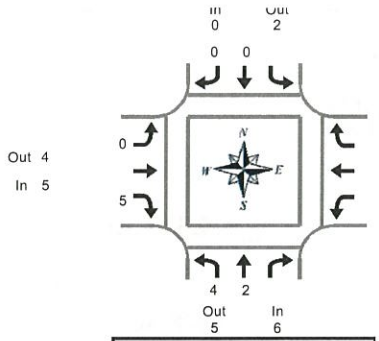
### *Rolling Hour Summary*
***4:00 PM to 6:00 PM***

| Interval Start | Northbound NE 94th Ave | | | Southbound NE 94th Ave | | | Eastbound NE 105th St | | | Westbound NE 105th St | | | Interval | Pedestrians Crosswalk | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Time | L | T | Bikes | T | R | Bikes | L | R | Bikes | | | Bikes | Total | North | South | East | West |
| 4:00 PM | 132 | 3 | 0 | 7 | 3 | 1 | 2 | 88 | 0 | | | 0 | 235 | 0 | 0 | 0 | 1 |
| 4:15 PM | 153 | 7 | 0 | 7 | 4 | 0 | 4 | 100 | 0 | | | 0 | 275 | 0 | 0 | 0 | 0 |
| 4:30 PM | 158 | 7 | 2 | 9 | 4 | 0 | 3 | 101 | 0 | | | 0 | 282 | 0 | 0 | 0 | 0 |
| 4:45 PM | 166 | 7 | 4 | 7 | 3 | 0 | 3 | 106 | 0 | | | 0 | 292 | 0 | 0 | 0 | 0 |
| 5:00 PM | 159 | 7 | 5 | 5 | 2 | 2 | 3 | 102 | 0 | | | 0 | 278 | 0 | 0 | 0 | 3 |

## Heavy Vehicle Summary

All Traffic Data Services Inc.

Clay Carney
(503) 833-2740




# NE 94th Ave & NE 105th St

***Tuesday, September 29, 2015***
***4:00 PM to 6:00 PM***

***Peak Hour Summary***
***4:40 PM to 5:40 PM***

### *Heavy Vehicle 5-Minute Interval Summary*
***4:00 PM to 6:00 PM***

| Interval Start Time | Northbound NE 94th Ave | | | Southbound NE 94th Ave | | | Eastbound NE 105th St | | | Westbound NE 105th St | | | Interval Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | L | T | Total | T | R | Total | L | R | Total | | | Total | |
| 4:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | | | 0 | 1 |
| 4:05 PM | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 1 | 1 | | | 0 | 3 |
| 4:10 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 0 |
| 4:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | | | 0 | 1 |
| 4:20 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 0 |
| 4:25 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 0 |
| 4:30 PM | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 2 | 2 | | | 0 | 3 |
| 4:35 PM | 3 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 3 |
| 4:40 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 0 |
| 4:45 PM | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | | | 0 | 2 |
| 4:50 PM | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 1 |
| 4:55 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 0 |
| 5:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | | | 0 | 3 |
| 5:05 PM | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 1 |
| 5:10 PM | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 1 |
| 5:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 0 |
| 5:20 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 0 |
| 5:25 PM | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 1 |
| 5:30 PM | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | | | 0 | 2 |
| 5:35 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 0 |
| 5:40 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 0 |
| 5:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 0 |
| 5:50 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 0 |
| 5:55 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 0 |
| Total Survey | 10 | 2 | 12 | 0 | 0 | 0 | 0 | 10 | 10 | | | 0 | 22 |

### *Heavy Vehicle 15-Minute Interval Summary*
***4:00 PM to 6:00 PM***

| Interval Start Time | Northbound NE 94th Ave | | | Southbound NE 94th Ave | | | Eastbound NE 105th St | | | Westbound NE 105th St | | | Interval Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | L | T | Total | T | R | Total | L | R | Total | | | Total | |
| 4:00 PM | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 2 | | | 0 | 4 |
| 4:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | | | 0 | 1 |
| 4:30 PM | 4 | 0 | 4 | 0 | 0 | 0 | 0 | 2 | 2 | | | 0 | 6 |
| 4:45 PM | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 1 | 1 | | | 0 | 3 |
| 5:00 PM | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 3 | 3 | | | 0 | 5 |
| 5:15 PM | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 1 |
| 5:30 PM | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | | | 0 | 2 |
| 5:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 0 |
| Total Survey | 10 | 2 | 12 | 0 | 0 | 0 | 0 | 10 | 10 | | | 0 | 22 |

### *Heavy Vehicle Peak Hour Summary*
***4:40 PM to 5:40 PM***

| By Approach | Northbound NE 94th Ave | | | Southbound NE 94th Ave | | | Eastbound NE 105th St | | | Westbound NE 105th St | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | In | Out | Total | In | Out | Total | In | Out | Total | In | Out | Total | |
| Volume | 6 | 5 | 11 | 0 | 2 | 2 | 5 | 4 | 9 | 0 | 0 | 0 | 11 |
| PHF | 0.75 | | | 0.00 | | | 0.42 | | | 0.00 | | | 0.55 |

| By Movement | Northbound NE 94th Ave | | | Southbound NE 94th Ave | | | Eastbound NE 105th St | | | Westbound NE 105th St | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | L | T | Total | T | R | Total | L | R | Total | | | Total | |
| Volume | 4 | 2 | 6 | 0 | 0 | 0 | 0 | 5 | 5 | | | 0 | 11 |
| PHF | 0.50 | 0.50 | 0.75 | 0.00 | 0.00 | 0.00 | 0.00 | 0.42 | 0.42 | | | 0.00 | 0.55 |

### *Heavy Vehicle Rolling Hour Summary*
***4:00 PM to 6:00 PM***

| Interval Start Time | Northbound NE 94th Ave | | | Southbound NE 94th Ave | | | Eastbound NE 105th St | | | Westbound NE 105th St | | | Interval Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | L | T | Total | T | R | Total | L | R | Total | | | Total | |
| 4:00 PM | 8 | 0 | 8 | 0 | 0 | 0 | 0 | 6 | 6 | | | 0 | 14 |
| 4:15 PM | 7 | 1 | 8 | 0 | 0 | 0 | 0 | 7 | 7 | | | 0 | 15 |
| 4:30 PM | 8 | 1 | 9 | 0 | 0 | 0 | 0 | 6 | 6 | | | 0 | 15 |
| 4:45 PM | 4 | 2 | 6 | 0 | 0 | 0 | 0 | 5 | 5 | | | 0 | 11 |
| 5:00 PM | 2 | 2 | 4 | 0 | 0 | 0 | 0 | 4 | 4 | | | 0 | 8 |

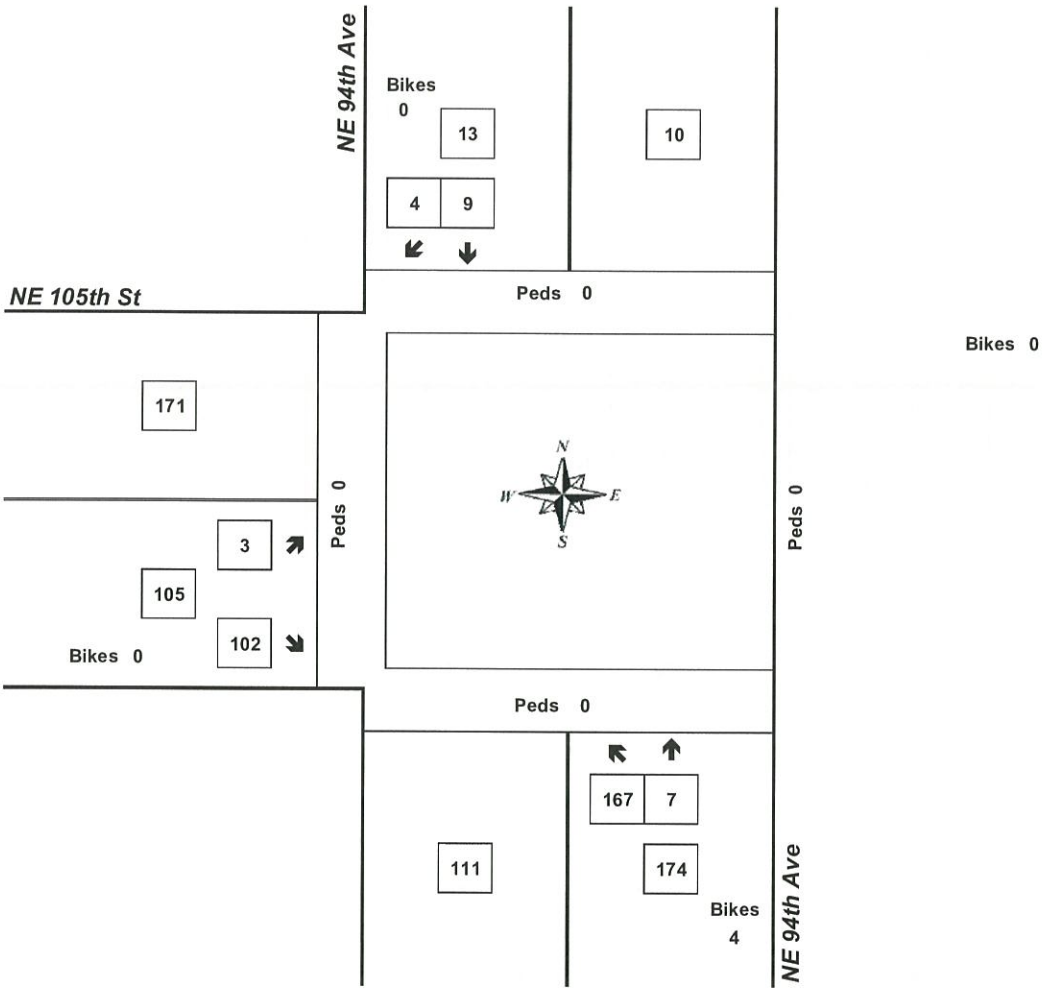
## Peak Hour Summary

All Traffic Data Services Inc.

Clay Carney
(503) 833-2740

# NE 94th Ave & NE 105th St

**4:40 PM to 5:40 PM**
**Tuesday, September 29, 2015**

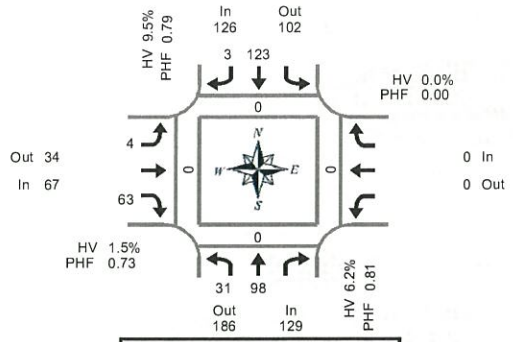



| Approach | PHF | HV% | Volume |
|---|---|---|---|
| EB | 0.77 | 4.8% | 105 |
| WB | 0.00 | 0.0% | 0 |
| NB | 0.76 | 3.4% | 174 |
| SB | 0.65 | 0.0% | 13 |
| Intersection | 0.78 | 3.8% | 292 |

Count Period: 4:00 PM to 6:00 PM

## Total Vehicle Summary

All Traffic Data Services Inc.
Clay Carney
(503) 833-2740




# NE 94th Ave & NE 99th St

***Wednesday, September 30, 2015***
***7:00 AM to 9:00 AM***

### *5-Minute Interval Summary*
***7:00 AM to 9:00 AM***

| Interval Start Time | Northbound NE 94th Ave L | T | Bikes | Southbound NE 94th Ave T | R | Bikes | Eastbound NE 99th St L | R | Bikes | Westbound NE 99th St | Bikes | Interval Total | Pedestrians Crosswalk North | South | East | West |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7:00 AM | 1 | 7 | 0 | 7 | 0 | 0 | 0 | 4 | 0 | | 0 | 19 | 0 | 0 | 0 | 0 |
| 7:05 AM | 2 | 2 | 0 | 6 | 0 | 0 | 0 | 5 | 0 | | 0 | 15 | 0 | 0 | 0 | 0 |
| 7:10 AM | 0 | 8 | 0 | 13 | 0 | 0 | 1 | 7 | 0 | | 0 | 29 | 0 | 0 | 0 | 2 |
| 7:15 AM | 1 | 5 | 0 | 7 | 0 | 0 | 0 | 8 | 0 | | 0 | 21 | 0 | 0 | 0 | 0 |
| 7:20 AM | 2 | 3 | 0 | 14 | 0 | 0 | 0 | 5 | 0 | | 0 | 24 | 0 | 0 | 0 | 0 |
| 7:25 AM | 0 | 4 | 0 | 13 | 0 | 0 | 1 | 6 | 0 | | 0 | 24 | 0 | 0 | 0 | 0 |
| 7:30 AM | 1 | 11 | 0 | 14 | 2 | 0 | 0 | 2 | 0 | | 0 | 30 | 0 | 0 | 0 | 0 |
| 7:35 AM | 2 | 8 | 0 | 7 | 0 | 0 | 0 | 5 | 0 | | 0 | 22 | 0 | 0 | 0 | 0 |
| 7:40 AM | 0 | 11 | 0 | 12 | 0 | 0 | 0 | 10 | 0 | | 0 | 33 | 0 | 0 | 0 | 0 |
| 7:45 AM | 3 | 9 | 0 | 9 | 0 | 0 | 0 | 8 | 0 | | 0 | 29 | 0 | 0 | 0 | 0 |
| 7:50 AM | 2 | 3 | 0 | 11 | 0 | 0 | 0 | 4 | 0 | | 0 | 20 | 0 | 0 | 0 | 1 |
| 7:55 AM | 4 | 8 | 0 | 12 | 0 | 0 | 0 | 2 | 0 | | 0 | 26 | 0 | 0 | 0 | 0 |
| 8:00 AM | 1 | 11 | 0 | 12 | 0 | 0 | 0 | 6 | 0 | | 0 | 30 | 0 | 0 | 0 | 0 |
| 8:05 AM | 2 | 8 | 0 | 15 | 0 | 0 | 1 | 2 | 0 | | 0 | 28 | 0 | 0 | 0 | 0 |
| 8:10 AM | 1 | 10 | 0 | 13 | 0 | 0 | 1 | 3 | 0 | | 0 | 28 | 0 | 0 | 0 | 0 |
| 8:15 AM | 0 | 6 | 0 | 7 | 1 | 0 | 0 | 5 | 0 | | 0 | 19 | 0 | 0 | 0 | 0 |
| 8:20 AM | 2 | 9 | 0 | 12 | 0 | 0 | 0 | 2 | 0 | | 0 | 25 | 0 | 0 | 0 | 0 |
| 8:25 AM | 3 | 4 | 0 | 10 | 0 | 0 | 0 | 5 | 0 | | 0 | 22 | 0 | 0 | 0 | 0 |
| 8:30 AM | 5 | 7 | 0 | 7 | 0 | 0 | 0 | 10 | 0 | | 0 | 29 | 0 | 0 | 0 | 0 |
| 8:35 AM | 4 | 4 | 0 | 11 | 2 | 0 | 0 | 8 | 0 | | 0 | 29 | 0 | 0 | 0 | 0 |
| 8:40 AM | 1 | 11 | 0 | 5 | 0 | 0 | 0 | 5 | 0 | | 0 | 22 | 0 | 0 | 0 | 0 |
| 8:45 AM | 2 | 9 | 0 | 12 | 0 | 0 | 0 | 9 | 0 | | 0 | 32 | 0 | 0 | 0 | 0 |
| 8:50 AM | 6 | 11 | 0 | 7 | 0 | 0 | 2 | 6 | 0 | | 0 | 32 | 0 | 0 | 0 | 0 |
| 8:55 AM | 3 | 7 | 0 | 9 | 0 | 0 | 0 | 3 | 0 | | 0 | 22 | 0 | 0 | 0 | 0 |
| Total Survey | 48 | 176 | 0 | 245 | 5 | 0 | 6 | 130 | 0 | | 0 | 610 | 0 | 0 | 0 | 3 |

### *15-Minute Interval Summary*
***7:00 AM to 9:00 AM***

| Interval Start Time | Northbound NE 94th Ave L | T | Bikes | Southbound NE 94th Ave T | R | Bikes | Eastbound NE 99th St L | R | Bikes | Westbound NE 99th St | Bikes | Interval Total | Pedestrians Crosswalk North | South | East | West |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7:00 AM | 3 | 17 | 0 | 26 | 0 | 0 | 1 | 16 | 0 | | 0 | 63 | 0 | 0 | 0 | 2 |
| 7:15 AM | 3 | 12 | 0 | 34 | 0 | 0 | 1 | 19 | 0 | | 0 | 69 | 0 | 0 | 0 | 0 |
| 7:30 AM | 3 | 30 | 0 | 33 | 2 | 0 | 0 | 17 | 0 | | 0 | 85 | 0 | 0 | 0 | 0 |
| 7:45 AM | 9 | 20 | 0 | 32 | 0 | 0 | 0 | 14 | 0 | | 0 | 75 | 0 | 0 | 0 | 1 |
| 8:00 AM | 4 | 29 | 0 | 40 | 0 | 0 | 2 | 11 | 0 | | 0 | 86 | 0 | 0 | 0 | 0 |
| 8:15 AM | 5 | 19 | 0 | 29 | 1 | 0 | 0 | 12 | 0 | | 0 | 66 | 0 | 0 | 0 | 0 |
| 8:30 AM | 10 | 22 | 0 | 23 | 2 | 0 | 0 | 23 | 0 | | 0 | 80 | 0 | 0 | 0 | 0 |
| 8:45 AM | 11 | 27 | 0 | 28 | 0 | 0 | 2 | 18 | 0 | | 0 | 86 | 0 | 0 | 0 | 0 |
| Total Survey | 48 | 176 | 0 | 245 | 5 | 0 | 6 | 130 | 0 | | 0 | 610 | 0 | 0 | 0 | 3 |

### *Peak Hour Summary*
***7:55 AM to 8:55 AM***

| By Approach | Northbound NE 94th Ave In | Out | Total | Bikes | Southbound NE 94th Ave In | Out | Total | Bikes | Eastbound NE 99th St In | Out | Total | Bikes | Westbound NE 99th St In | Out | Total | Bikes | Total | Pedestrians Crosswalk North | South | East | West |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Volume | 129 | 186 | 315 | 0 | 126 | 102 | 228 | 0 | 67 | 34 | 101 | 0 | 0 | 0 | 0 | 0 | 322 | 0 | 0 | 0 | 0 |
| %HV | 6.2% | | | | 9.5% | | | | 1.5% | | | | 0.0% | | | | 6.5% | | | | |
| PHF | 0.81 | | | | 0.79 | | | | 0.73 | | | | 0.00 | | | | 0.94 | | | | |

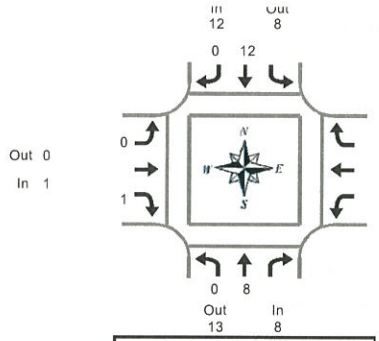
| By Movement | Northbound NE 94th Ave L | T | Total | Southbound NE 94th Ave T | R | Total | Eastbound NE 99th St L | R | Total | Westbound NE 99th St | | Total | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Volume | 31 | 98 | 129 | 123 | 3 | 126 | 4 | 63 | 67 | | | 0 | 322 |
| %HV | 0.0% | 8.2% | NA 6.2% | NA 9.8% | 0.0% | 9.5% | 0.0% NA | 1.6% | 1.5% | NA | NA NA | 0.0% | 6.5% |
| PHF | 0.65 | 0.79 | 0.81 | 0.77 | 0.38 | 0.79 | 0.50 | 0.68 | 0.73 | | | 0.00 | 0.94 |

### *Rolling Hour Summary*
***7:00 AM to 9:00 AM***

| Interval Start Time | Northbound NE 94th Ave L | T | Bikes | Southbound NE 94th Ave T | R | Bikes | Eastbound NE 99th St L | R | Bikes | Westbound NE 99th St | Bikes | Interval Total | Pedestrians Crosswalk North | South | East | West |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7:00 AM | 18 | 79 | 0 | 125 | 2 | 0 | 2 | 66 | 0 | | 0 | 292 | 0 | 0 | 0 | 3 |
| 7:15 AM | 19 | 91 | 0 | 139 | 2 | 0 | 3 | 61 | 0 | | 0 | 315 | 0 | 0 | 0 | 1 |
| 7:30 AM | 21 | 98 | 0 | 134 | 3 | 0 | 2 | 54 | 0 | | 0 | 312 | 0 | 0 | 0 | 1 |
| 7:45 AM | 28 | 90 | 0 | 124 | 3 | 0 | 2 | 60 | 0 | | 0 | 307 | 0 | 0 | 0 | 1 |
| 8:00 AM | 30 | 97 | 0 | 120 | 3 | 0 | 4 | 64 | 0 | | 0 | 318 | 0 | 0 | 0 | 0 |

## Heavy Vehicle Summary

All Traffic Data Services Inc.
Clay Carney
(503) 833-2740




**Peak Hour Summary**
***7:55 AM to 8:55 AM***

# NE 94th Ave & NE 99th St

***Wednesday, September 30, 2015***
***7:00 AM to 9:00 AM***

### *Heavy Vehicle 5-Minute Interval Summary*
***7:00 AM to 9:00 AM***

| Interval Start Time | Northbound NE 94th Ave | | | Southbound NE 94th Ave | | | Eastbound NE 99th St | | | Westbound NE 99th St | | | Interval Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | L | T | Total | T | R | Total | L | R | Total | | | Total | |
| 7:00 AM | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 1 |
| 7:05 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 0 |
| 7:10 AM | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | | | 0 | 2 |
| 7:15 AM | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | | | 0 | 2 |
| 7:20 AM | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | | | 0 | 1 |
| 7:25 AM | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | | | 0 | 2 |
| 7:30 AM | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 1 |
| 7:35 AM | 0 | 1 | 1 | 2 | 0 | 2 | 0 | 0 | 0 | | | 0 | 3 |
| 7:40 AM | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | | | 0 | 3 |
| 7:45 AM | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | | | 0 | 1 |
| 7:50 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 0 |
| 7:55 AM | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | | | 0 | 2 |
| 8:00 AM | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | | | 0 | 1 |
| 8:05 AM | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | | | 0 | 2 |
| 8:10 AM | 0 | 2 | 2 | 2 | 0 | 2 | 0 | 0 | 0 | | | 0 | 4 |
| 8:15 AM | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | | | 0 | 1 |
| 8:20 AM | 0 | 1 | 1 | 2 | 0 | 2 | 0 | 0 | 0 | | | 0 | 3 |
| 8:25 AM | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | | | 0 | 2 |
| 8:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 0 |
| 8:35 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 0 |
| 8:40 AM | 0 | 2 | 2 | 1 | 0 | 1 | 0 | 0 | 0 | | | 0 | 3 |
| 8:45 AM | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 1 |
| 8:50 AM | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | | | 0 | 2 |
| 8:55 AM | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 1 |
| Total Survey | 0 | 15 | 15 | 21 | 0 | 21 | 0 | 2 | 2 | | | 0 | 38 |

### *Heavy Vehicle 15-Minute Interval Summary*
***7:00 AM to 9:00 AM***

| Interval Start Time | Northbound NE 94th Ave | | | Southbound NE 94th Ave | | | Eastbound NE 99th St | | | Westbound NE 99th St | | | Interval Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | L | T | Total | T | R | Total | L | R | Total | | | Total | |
| 7:00 AM | 0 | 2 | 2 | 1 | 0 | 1 | 0 | 0 | 0 | | | 0 | 3 |
| 7:15 AM | 0 | 1 | 1 | 4 | 0 | 4 | 0 | 0 | 0 | | | 0 | 5 |
| 7:30 AM | 0 | 3 | 3 | 3 | 0 | 3 | 0 | 1 | 1 | | | 0 | 7 |
| 7:45 AM | 0 | 0 | 0 | 3 | 0 | 3 | 0 | 0 | 0 | | | 0 | 3 |
| 8:00 AM | 0 | 3 | 3 | 4 | 0 | 4 | 0 | 0 | 0 | | | 0 | 7 |
| 8:15 AM | 0 | 1 | 1 | 4 | 0 | 4 | 0 | 1 | 1 | | | 0 | 6 |
| 8:30 AM | 0 | 2 | 2 | 1 | 0 | 1 | 0 | 0 | 0 | | | 0 | 3 |
| 8:45 AM | 0 | 3 | 3 | 1 | 0 | 1 | 0 | 0 | 0 | | | 0 | 4 |
| Total Survey | 0 | 15 | 15 | 21 | 0 | 21 | 0 | 2 | 2 | | | 0 | 38 |

### *Heavy Vehicle Peak Hour Summary*
***7:55 AM to 8:55 AM***

| By Approach | Northbound NE 94th Ave | | | Southbound NE 94th Ave | | | Eastbound NE 99th St | | | Westbound NE 99th St | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | In | Out | Total | In | Out | Total | In | Out | Total | In | Out | Total | |
| Volume | 8 | 13 | 21 | 12 | 8 | 20 | 1 | 0 | 1 | 0 | 0 | 0 | 21 |
| PHF | 0.50 | | | 0.60 | | | 0.25 | | | 0.00 | | | 0.66 |

| By Movement | Northbound NE 94th Ave | | | Southbound NE 94th Ave | | | Eastbound NE 99th St | | | Westbound NE 99th St | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | L | T | Total | T | R | Total | L | R | Total | | | Total | |
| Volume | 0 | 8 | 8 | 12 | 0 | 12 | 0 | 1 | 1 | | | 0 | 21 |
| PHF | 0.00 | 0.50 | 0.50 | 0.60 | 0.00 | 0.60 | 0.00 | 0.25 | 0.25 | | | 0.00 | 0.66 |

### *Heavy Vehicle Rolling Hour Summary*
***7:00 AM to 9:00 AM***

| Interval Start Time | Northbound NE 94th Ave | | | Southbound NE 94th Ave | | | Eastbound NE 99th St | | | Westbound NE 99th St | | | Interval Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | L | T | Total | T | R | Total | L | R | Total | | | Total | |
| 7:00 AM | 0 | 6 | 6 | 11 | 0 | 11 | 0 | 1 | 1 | | | 0 | 18 |
| 7:15 AM | 0 | 7 | 7 | 14 | 0 | 14 | 0 | 1 | 1 | | | 0 | 22 |
| 7:30 AM | 0 | 7 | 7 | 14 | 0 | 14 | 0 | 2 | 2 | | | 0 | 23 |
| 7:45 AM | 0 | 6 | 6 | 12 | 0 | 12 | 0 | 1 | 1 | | | 0 | 19 |
| 8:00 AM | 0 | 9 | 9 | 10 | 0 | 10 | 0 | 1 | 1 | | | 0 | 20 |

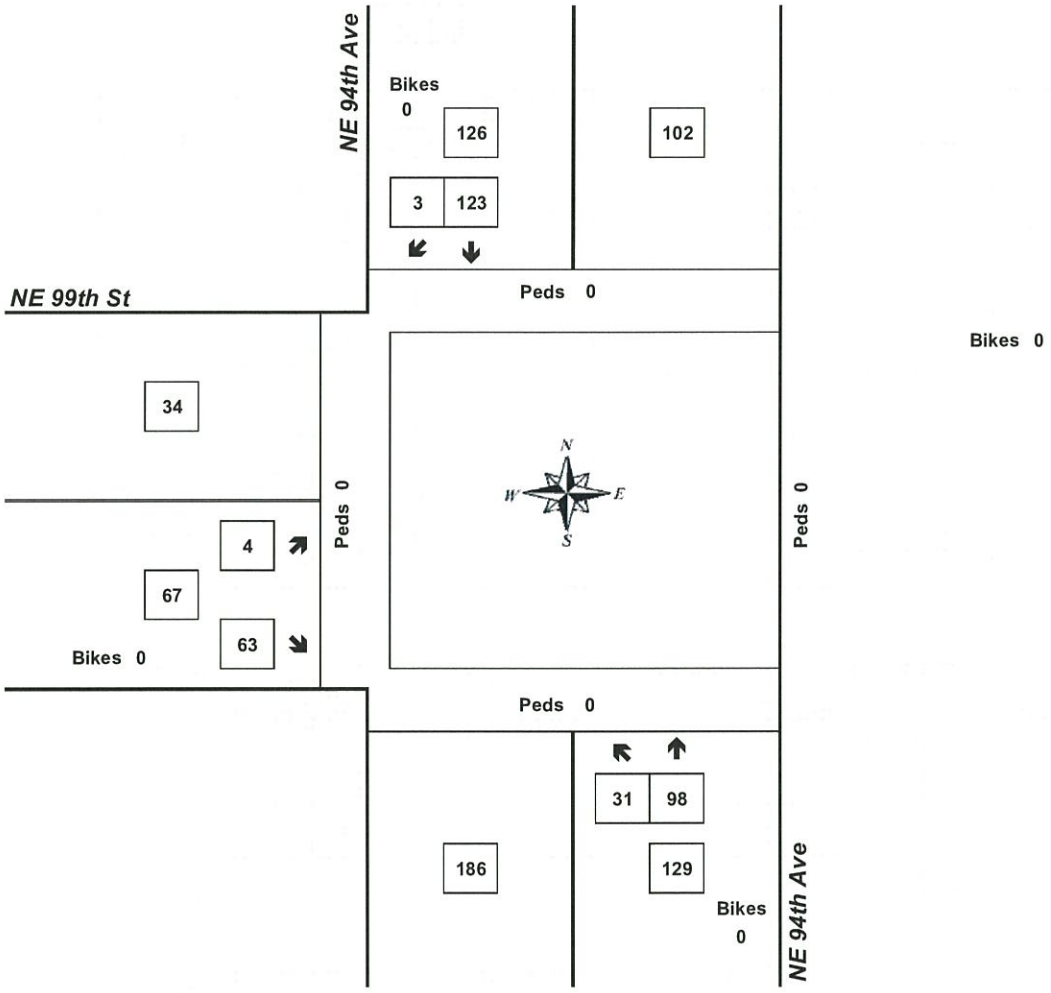
## Peak Hour Summary

All Traffic Data Services Inc.

Clay Carney
(503) 833-2740

# NE 94th Ave & NE 99th St

**7:55 AM to 8:55 AM**
**Wednesday, September 30, 2015**

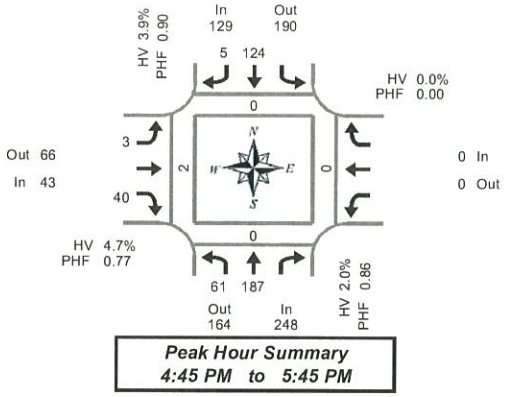



| Approach | PHF | HV% | Volume |
|---|---|---|---|
| EB | 0.73 | 1.5% | 67 |
| WB | 0.00 | 0.0% | 0 |
| NB | 0.81 | 6.2% | 129 |
| SB | 0.79 | 9.5% | 126 |
| Intersection | 0.94 | 6.5% | 322 |

Count Period: 7:00 AM to 9:00 AM

## Total Vehicle Summary

All Traffic Data Services Inc.
Clay Carney
(503) 833-2740




# NE 94th Ave & NE 99th St

***Tuesday, September 29, 2015***
***4:00 PM to 6:00 PM***

### *5-Minute Interval Summary*
***4:00 PM to 6:00 PM***

| Interval Start Time | Northbound NE 94th Ave | | | | Southbound NE 94th Ave | | | Eastbound NE 99th St | | | Westbound NE 99th St | | | Interval Total | Pedestrians Crosswalk | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | L | T | | Bikes | T | R | Bikes | L | | R | Bikes | | | Bikes | | North | South | East | West |
| 4:00 PM | 4 | 10 | | 0 | 9 | 0 | 0 | 0 | | 2 | 0 | | | 0 | 25 | 0 | 0 | 0 | 0 |
| 4:05 PM | 2 | 10 | | 0 | 11 | 0 | 0 | 0 | | 6 | 0 | | | 0 | 29 | 0 | 0 | 0 | 0 |
| 4:10 PM | 5 | 13 | | 0 | 7 | 0 | 0 | 0 | | 1 | 0 | | | 0 | 26 | 0 | 0 | 0 | 0 |
| 4:15 PM | 6 | 11 | | 0 | 12 | 0 | 0 | 0 | | 2 | 0 | | | 0 | 31 | 0 | 0 | 0 | 0 |
| 4:20 PM | 2 | 14 | | 0 | 6 | 1 | 0 | 1 | | 3 | 0 | | | 0 | 27 | 0 | 0 | 0 | 0 |
| 4:25 PM | 3 | 8 | | 0 | 10 | 0 | 0 | 0 | | 2 | 0 | | | 0 | 23 | 0 | 0 | 0 | 0 |
| 4:30 PM | 5 | 12 | | 0 | 13 | 0 | 0 | 0 | | 4 | 0 | | | 0 | 34 | 0 | 0 | 0 | 0 |
| 4:35 PM | 2 | 14 | | 0 | 9 | 0 | 0 | 0 | | 1 | 0 | | | 0 | 26 | 0 | 0 | 0 | 1 |
| 4:40 PM | 4 | 9 | | 0 | 11 | 0 | 0 | 1 | | 2 | 0 | | | 0 | 27 | 0 | 0 | 0 | 0 |
| 4:45 PM | 5 | 14 | | 0 | 10 | 0 | 0 | 1 | | 1 | 0 | | | 0 | 31 | 0 | 0 | 0 | 0 |
| 4:50 PM | 7 | 19 | | 0 | 11 | 1 | 0 | 0 | | 3 | 0 | | | 0 | 41 | 0 | 0 | 0 | 0 |
| 4:55 PM | 9 | 12 | | 0 | 8 | 0 | 0 | 0 | | 4 | 0 | | | 0 | 33 | 0 | 0 | 0 | 0 |
| 5:00 PM | 5 | 20 | | 0 | 13 | 1 | 0 | 1 | | 1 | 0 | | | 0 | 41 | 0 | 0 | 0 | 0 |
| 5:05 PM | 1 | 21 | | 0 | 10 | 2 | 0 | 0 | | 2 | 0 | | | 0 | 36 | 0 | 0 | 0 | 0 |
| 5:10 PM | 4 | 17 | | 0 | 8 | 0 | 0 | 0 | | 5 | 0 | | | 0 | 34 | 0 | 0 | 0 | 0 |
| 5:15 PM | 2 | 16 | | 0 | 12 | 0 | 0 | 0 | | 6 | 0 | | | 0 | 36 | 0 | 0 | 0 | 0 |
| 5:20 PM | 5 | 13 | | 0 | 11 | 0 | 0 | 0 | | 3 | 0 | | | 0 | 32 | 0 | 0 | 0 | 0 |
| 5:25 PM | 7 | 13 | | 0 | 11 | 0 | 0 | 0 | | 3 | 0 | | | 0 | 34 | 0 | 0 | 0 | 0 |
| 5:30 PM | 3 | 14 | | 0 | 13 | 1 | 0 | 1 | | 2 | 0 | | | 0 | 34 | 0 | 0 | 0 | 2 |
| 5:35 PM | 5 | 17 | | 0 | 11 | 0 | 0 | 0 | | 4 | 0 | | | 0 | 37 | 0 | 0 | 0 | 0 |
| 5:40 PM | 8 | 11 | | 2 | 6 | 0 | 0 | 0 | | 6 | 0 | | | 0 | 31 | 0 | 0 | 0 | 0 |
| 5:45 PM | 5 | 10 | | 0 | 13 | 0 | 0 | 0 | | 2 | 0 | | | 0 | 30 | 0 | 0 | 0 | 0 |
| 5:50 PM | 2 | 13 | | 0 | 7 | 0 | 0 | 0 | | 2 | 0 | | | 0 | 24 | 0 | 0 | 0 | 0 |
| 5:55 PM | 6 | 12 | | 0 | 10 | 0 | 0 | 0 | | 4 | 0 | | | 0 | 32 | 0 | 0 | 0 | 0 |
| Total Survey | 107 | 323 | | 2 | 242 | 6 | 0 | 5 | | 71 | 0 | | | 0 | 754 | 0 | 0 | 0 | 3 |

### *15-Minute Interval Summary*
***4:00 PM to 6:00 PM***

| Interval Start Time | Northbound NE 94th Ave | | | | Southbound NE 94th Ave | | | Eastbound NE 99th St | | | Westbound NE 99th St | | | Interval Total | Pedestrians Crosswalk | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | L | T | | Bikes | T | R | Bikes | L | | R | Bikes | | | Bikes | | North | South | East | West |
| 4:00 PM | 11 | 33 | | 0 | 27 | 0 | 0 | 0 | | 9 | 0 | | | 0 | 80 | 0 | 0 | 0 | 0 |
| 4:15 PM | 11 | 33 | | 0 | 28 | 1 | 0 | 1 | | 7 | 0 | | | 0 | 81 | 0 | 0 | 0 | 0 |
| 4:30 PM | 11 | 35 | | 0 | 33 | 0 | 0 | 1 | | 7 | 0 | | | 0 | 87 | 0 | 0 | 0 | 1 |
| 4:45 PM | 21 | 45 | | 0 | 29 | 1 | 0 | 1 | | 8 | 0 | | | 0 | 105 | 0 | 0 | 0 | 0 |
| 5:00 PM | 10 | 58 | | 0 | 31 | 3 | 0 | 1 | | 8 | 0 | | | 0 | 111 | 0 | 0 | 0 | 0 |
| 5:15 PM | 14 | 42 | | 0 | 34 | 0 | 0 | 0 | | 12 | 0 | | | 0 | 102 | 0 | 0 | 0 | 0 |
| 5:30 PM | 16 | 42 | | 2 | 30 | 1 | 0 | 1 | | 12 | 0 | | | 0 | 102 | 0 | 0 | 0 | 2 |
| 5:45 PM | 13 | 35 | | 0 | 30 | 0 | 0 | 0 | | 8 | 0 | | | 0 | 86 | 0 | 0 | 0 | 0 |
| Total Survey | 107 | 323 | | 2 | 242 | 6 | 0 | 5 | | 71 | 0 | | | 0 | 754 | 0 | 0 | 0 | 3 |

### *Peak Hour Summary*
***4:45 PM to 5:45 PM***

| By Approach | Northbound NE 94th Ave | | | | Southbound NE 94th Ave | | | | Eastbound NE 99th St | | | | Westbound NE 99th St | | | | Total | Pedestrians Crosswalk | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | In | Out | Total | Bikes | In | Out | Total | Bikes | In | Out | Total | Bikes | In | Out | Total | Bikes | | North | South | East | West |
| Volume | 248 | 164 | 412 | 2 | 129 | 190 | 319 | 0 | 43 | 66 | 109 | 0 | 0 | 0 | 0 | 0 | 420 | 0 | 0 | 0 | 2 |
| %HV | 2.0% | | | | 3.9% | | | | 4.7% | | | | 0.0% | | | | 2.9% | | | | |
| PHF | 0.86 | | | | 0.90 | | | | 0.77 | | | | 0.00 | | | | 0.91 | | | | |

| By Movement | Northbound NE 94th Ave | | | | Southbound NE 94th Ave | | | | Eastbound NE 99th St | | | | Westbound NE 99th St | | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | L | T | | Total | | T | R | Total | L | | R | Total | | | | Total | |
| Volume | 61 | 187 | | 248 | | 124 | 5 | 129 | 3 | | 40 | 43 | | | | 0 | 420 |
| %HV | 1.6% | 2.1% | NA | 2.0% | NA | 3.2% | 20.0% | 3.9% | 33.3% | NA | 2.5% | 4.7% | NA | NA | NA | 0.0% | 2.9% |
| PHF | 0.73 | 0.81 | | 0.86 | | 0.89 | 0.42 | 0.90 | 0.75 | | 0.71 | 0.77 | | | | 0.00 | 0.91 |

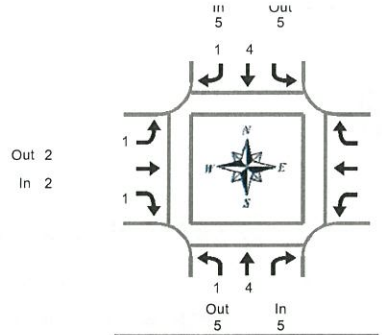
### *Rolling Hour Summary*
***4:00 PM to 6:00 PM***

| Interval Start Time | Northbound NE 94th Ave | | | | Southbound NE 94th Ave | | | Eastbound NE 99th St | | | Westbound NE 99th St | | | Interval Total | Pedestrians Crosswalk | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | L | T | | Bikes | T | R | Bikes | L | | R | Bikes | | | Bikes | | North | South | East | West |
| 4:00 PM | 54 | 146 | | 0 | 117 | 2 | 0 | 3 | | 31 | 0 | | | 0 | 353 | 0 | 0 | 0 | 1 |
| 4:15 PM | 53 | 171 | | 0 | 121 | 5 | 0 | 4 | | 30 | 0 | | | 0 | 384 | 0 | 0 | 0 | 1 |
| 4:30 PM | 56 | 180 | | 0 | 127 | 4 | 0 | 3 | | 35 | 0 | | | 0 | 405 | 0 | 0 | 0 | 1 |
| 4:45 PM | 61 | 187 | | 2 | 124 | 5 | 0 | 3 | | 40 | 0 | | | 0 | 420 | 0 | 0 | 0 | 2 |
| 5:00 PM | 53 | 177 | | 2 | 125 | 4 | 0 | 2 | | 40 | 0 | | | 0 | 401 | 0 | 0 | 0 | 2 |

## Heavy Vehicle Summary

All Traffic Data Services Inc.

Clay Carney
(503) 833-2740




**Peak Hour Summary**
***4:45 PM to 5:45 PM***

# NE 94th Ave & NE 99th St

***Tuesday, September 29, 2015***
***4:00 PM to 6:00 PM***

### *Heavy Vehicle 5-Minute Interval Summary*
***4:00 PM to 6:00 PM***

| Interval Start Time | Northbound NE 94th Ave | | | Southbound NE 94th Ave | | | Eastbound NE 99th St | | | Westbound NE 99th St | | | Interval Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | L | T | Total | T | R | Total | L | R | Total | | | Total | |
| 4:00 PM | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | | | 0 | 1 |
| 4:05 PM | 0 | 2 | 2 | 1 | 0 | 1 | 0 | 2 | 2 | | | 0 | 5 |
| 4:10 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 0 |
| 4:15 PM | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | | | 0 | 1 |
| 4:20 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 0 |
| 4:25 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 0 |
| 4:30 PM | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | | | 0 | 2 |
| 4:35 PM | 0 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 3 |
| 4:40 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 0 |
| 4:45 PM | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | | | 0 | 2 |
| 4:50 PM | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | | | 0 | 2 |
| 4:55 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 0 |
| 5:00 PM | 0 | 0 | 0 | 2 | 1 | 3 | 0 | 0 | 0 | | | 0 | 3 |
| 5:05 PM | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 1 |
| 5:10 PM | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 1 |
| 5:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 0 |
| 5:20 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 0 |
| 5:25 PM | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 1 |
| 5:30 PM | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | | | 0 | 2 |
| 5:35 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 0 |
| 5:40 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 0 |
| 5:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 0 |
| 5:50 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | | | 0 | 1 |
| 5:55 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 0 |
| Total Survey | 1 | 10 | 11 | 8 | 1 | 9 | 1 | 4 | 5 | | | 0 | 25 |

### *Heavy Vehicle 15-Minute Interval Summary*
***4:00 PM to 6:00 PM***

| Interval Start Time | Northbound NE 94th Ave | | | Southbound NE 94th Ave | | | Eastbound NE 99th St | | | Westbound NE 99th St | | | Interval Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | L | T | Total | T | R | Total | L | R | Total | | | Total | |
| 4:00 PM | 0 | 2 | 2 | 2 | 0 | 2 | 0 | 2 | 2 | | | 0 | 6 |
| 4:15 PM | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | | | 0 | 1 |
| 4:30 PM | 0 | 4 | 4 | 1 | 0 | 1 | 0 | 0 | 0 | | | 0 | 5 |
| 4:45 PM | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 2 | | | 0 | 4 |
| 5:00 PM | 0 | 2 | 2 | 2 | 1 | 3 | 0 | 0 | 0 | | | 0 | 5 |
| 5:15 PM | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 1 |
| 5:30 PM | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | | | 0 | 2 |
| 5:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | | | 0 | 1 |
| Total Survey | 1 | 10 | 11 | 8 | 1 | 9 | 1 | 4 | 5 | | | 0 | 25 |

### *Heavy Vehicle Peak Hour Summary*
***4:45 PM to 5:45 PM***

| By Approach | Northbound NE 94th Ave | | | Southbound NE 94th Ave | | | Eastbound NE 99th St | | | Westbound NE 99th St | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | In | Out | Total | In | Out | Total | In | Out | Total | In | Out | Total | |
| Volume | 5 | 5 | 10 | 5 | 5 | 10 | 2 | 2 | 4 | 0 | 0 | 0 | 12 |
| PHF | 0.63 | | | 0.42 | | | 0.25 | | | 0.00 | | | 0.60 |

| By Movement | Northbound NE 94th Ave | | | Southbound NE 94th Ave | | | Eastbound NE 99th St | | | Westbound NE 99th St | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | L | T | Total | T | R | Total | L | R | Total | | | Total | |
| Volume | 1 | 4 | 5 | 4 | 1 | 5 | 1 | 1 | 2 | | | 0 | 12 |
| PHF | 0.25 | 0.50 | 0.63 | 0.50 | 0.25 | 0.42 | 0.25 | 0.25 | 0.25 | | | 0.00 | 0.60 |

### *Heavy Vehicle Rolling Hour Summary*
***4:00 PM to 6:00 PM***

| Interval Start Time | Northbound NE 94th Ave | | | Southbound NE 94th Ave | | | Eastbound NE 99th St | | | Westbound NE 99th St | | | Interval Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | L | T | Total | T | R | Total | L | R | Total | | | Total | |
| 4:00 PM | 0 | 7 | 7 | 5 | 0 | 5 | 1 | 3 | 4 | | | 0 | 16 |
| 4:15 PM | 0 | 7 | 7 | 5 | 1 | 6 | 1 | 1 | 2 | | | 0 | 15 |
| 4:30 PM | 1 | 7 | 8 | 4 | 1 | 5 | 1 | 1 | 2 | | | 0 | 15 |
| 4:45 PM | 1 | 4 | 5 | 4 | 1 | 5 | 1 | 1 | 2 | | | 0 | 12 |
| 5:00 PM | 1 | 3 | 4 | 3 | 1 | 4 | 0 | 1 | 1 | | | 0 | 9 |

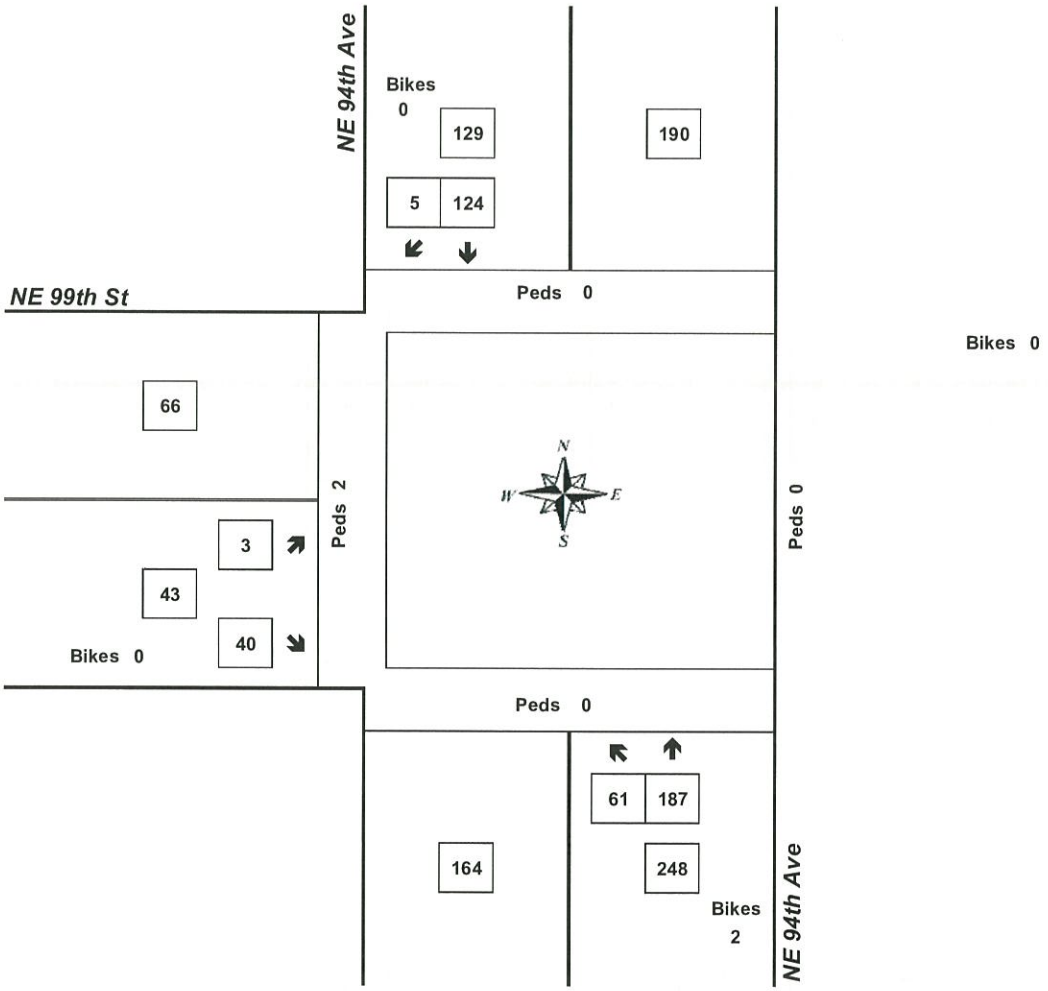
## Peak Hour Summary

All Traffic Data Services Inc.

Clay Carney
(503) 833-2740

# NE 94th Ave & NE 99th St

**4:45 PM to 5:45 PM**
**Tuesday, September 29, 2015**



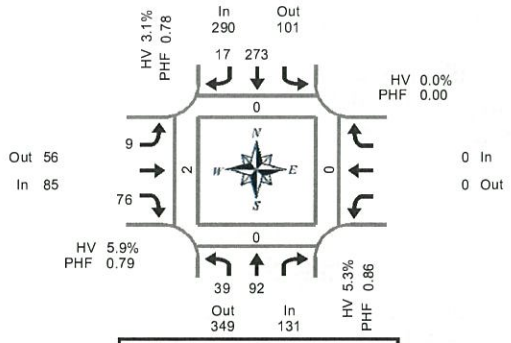

| Approach | PHF | HV% | Volume |
|---|---|---|---|
| EB | 0.77 | 4.7% | 43 |
| WB | 0.00 | 0.0% | 0 |
| NB | 0.86 | 2.0% | 248 |
| SB | 0.90 | 3.9% | 129 |
| Intersection | 0.91 | 2.9% | 420 |

Count Period: 4:00 PM to 6:00 PM

## Total Vehicle Summary

All Traffic Data Services Inc.

Clay Carney
(503) 833-2740




**Peak Hour Summary**
***7:25 AM to 8:25 AM***

# NE 94th Ave & NE 88th St

***Thursday, August 21, 2014***
***7:00 AM to 9:00 AM***

### *5-Minute Interval Summary*
***7:00 AM to 9:00 AM***

| Interval Start Time | Northbound NE 94th Ave | | | | Southbound NE 94th Ave | | | Eastbound NE 88th St | | | Westbound NE 88th St | | | Interval Total | Pedestrians Crosswalk | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | L | T | | Bikes | T | R | Bikes | L | R | Bikes | | | Bikes | | North | South | East | West |
| 7:00 AM | 0 | 9 | | 0 | 15 | 0 | 0 | 0 | 4 | 0 | | | 0 | 28 | 0 | 0 | 0 | 1 |
| 7:05 AM | 3 | 6 | | 0 | 20 | 0 | 0 | 0 | 7 | 0 | | | 0 | 36 | 0 | 0 | 0 | 0 |
| 7:10 AM | 1 | 2 | | 0 | 18 | 2 | 0 | 0 | 2 | 0 | | | 0 | 25 | 0 | 0 | 0 | 0 |
| 7:15 AM | 0 | 7 | | 0 | 28 | 2 | 0 | 0 | 4 | 0 | | | 0 | 41 | 0 | 0 | 0 | 0 |
| 7:20 AM | 3 | 3 | | 0 | 21 | 3 | 0 | 0 | 7 | 0 | | | 0 | 37 | 0 | 0 | 0 | 0 |
| 7:25 AM | 6 | 5 | | 0 | 25 | 2 | 0 | 0 | 6 | 0 | | | 0 | 44 | 0 | 0 | 0 | 0 |
| 7:30 AM | 5 | 11 | | 0 | 19 | 0 | 0 | 0 | 7 | 0 | | | 0 | 42 | 0 | 0 | 0 | 0 |
| 7:35 AM | 3 | 5 | | 0 | 36 | 4 | 0 | 0 | 10 | 0 | | | 0 | 58 | 0 | 0 | 0 | 1 |
| 7:40 AM | 3 | 3 | | 0 | 25 | 2 | 0 | 0 | 8 | 0 | | | 0 | 41 | 0 | 0 | 0 | 0 |
| 7:45 AM | 4 | 9 | | 0 | 25 | 1 | 0 | 1 | 6 | 0 | | | 0 | 46 | 0 | 0 | 0 | 1 |
| 7:50 AM | 3 | 10 | | 0 | 25 | 0 | 0 | 2 | 7 | 0 | | | 0 | 47 | 0 | 0 | 0 | 0 |
| 7:55 AM | 4 | 6 | | 0 | 20 | 2 | 0 | 1 | 3 | 0 | | | 0 | 36 | 0 | 0 | 0 | 0 |
| 8:00 AM | 3 | 7 | | 0 | 24 | 2 | 0 | 0 | 3 | 0 | | | 0 | 39 | 0 | 0 | 0 | 0 |
| 8:05 AM | 3 | 3 | | 0 | 16 | 1 | 0 | 1 | 3 | 0 | | | 0 | 27 | 0 | 0 | 0 | 0 |
| 8:10 AM | 0 | 7 | | 0 | 24 | 1 | 0 | 1 | 5 | 0 | | | 0 | 38 | 0 | 0 | 0 | 0 |
| 8:15 AM | 2 | 14 | | 0 | 20 | 1 | 0 | 0 | 12 | 0 | | | 0 | 49 | 0 | 0 | 0 | 0 |
| 8:20 AM | 3 | 12 | | 1 | 14 | 1 | 0 | 3 | 6 | 0 | | | 0 | 39 | 0 | 0 | 0 | 0 |
| 8:25 AM | 4 | 8 | | 0 | 18 | 1 | 0 | 0 | 4 | 0 | | | 0 | 35 | 0 | 0 | 0 | 0 |
| 8:30 AM | 6 | 6 | | 0 | 17 | 0 | 0 | 2 | 4 | 0 | | | 0 | 35 | 0 | 0 | 0 | 0 |
| 8:35 AM | 2 | 12 | | 0 | 17 | 1 | 0 | 1 | 3 | 0 | | | 0 | 36 | 0 | 0 | 0 | 0 |
| 8:40 AM | 2 | 9 | | 0 | 18 | 1 | 0 | 0 | 8 | 0 | | | 0 | 38 | 0 | 0 | 0 | 0 |
| 8:45 AM | 5 | 9 | | 0 | 17 | 1 | 0 | 0 | 9 | 0 | | | 0 | 41 | 0 | 0 | 0 | 0 |
| 8:50 AM | 1 | 7 | | 0 | 17 | 1 | 0 | 0 | 5 | 0 | | | 0 | 31 | 0 | 0 | 0 | 0 |
| 8:55 AM | 5 | 8 | | 0 | 14 | 2 | 0 | 1 | 8 | 0 | | | 0 | 38 | 0 | 0 | 0 | 0 |
| Total Survey | 71 | 178 | | 1 | 493 | 31 | 0 | 13 | 141 | 0 | | | 0 | 927 | 0 | 0 | 0 | 3 |

### *15-Minute Interval Summary*
***7:00 AM to 9:00 AM***

| Interval Start Time | Northbound NE 94th Ave | | | | Southbound NE 94th Ave | | | Eastbound NE 88th St | | | Westbound NE 88th St | | | Interval Total | Pedestrians Crosswalk | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | L | T | | Bikes | T | R | Bikes | L | R | Bikes | | | Bikes | | North | South | East | West |
| 7:00 AM | 4 | 17 | | 0 | 53 | 2 | 0 | 0 | 13 | 0 | | | 0 | 89 | 0 | 0 | 0 | 1 |
| 7:15 AM | 9 | 15 | | 0 | 74 | 7 | 0 | 0 | 17 | 0 | | | 0 | 122 | 0 | 0 | 0 | 0 |
| 7:30 AM | 11 | 19 | | 0 | 80 | 6 | 0 | 0 | 25 | 0 | | | 0 | 141 | 0 | 0 | 0 | 1 |
| 7:45 AM | 11 | 25 | | 0 | 70 | 3 | 0 | 4 | 16 | 0 | | | 0 | 129 | 0 | 0 | 0 | 1 |
| 8:00 AM | 6 | 17 | | 0 | 64 | 4 | 0 | 2 | 11 | 0 | | | 0 | 104 | 0 | 0 | 0 | 0 |
| 8:15 AM | 9 | 34 | | 1 | 52 | 3 | 0 | 3 | 22 | 0 | | | 0 | 123 | 0 | 0 | 0 | 0 |
| 8:30 AM | 10 | 27 | | 0 | 52 | 2 | 0 | 3 | 15 | 0 | | | 0 | 109 | 0 | 0 | 0 | 0 |
| 8:45 AM | 11 | 24 | | 0 | 48 | 4 | 0 | 1 | 22 | 0 | | | 0 | 110 | 0 | 0 | 0 | 0 |
| Total Survey | 71 | 178 | | 1 | 493 | 31 | 0 | 13 | 141 | 0 | | | 0 | 927 | 0 | 0 | 0 | 3 |

### *Peak Hour Summary*
***7:25 AM to 8:25 AM***

| By Approach | Northbound NE 94th Ave | | | | Southbound NE 94th Ave | | | | Eastbound NE 88th St | | | | Westbound NE 88th St | | | | Total | Pedestrians Crosswalk | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | In | Out | Total | Bikes | In | Out | Total | Bikes | In | Out | Total | Bikes | In | Out | Total | Bikes | | North | South | East | West |
| Volume | 131 | 349 | 480 | 1 | 290 | 101 | 391 | 0 | 85 | 56 | 141 | 0 | 0 | 0 | 0 | 0 | 506 | 0 | 0 | 0 | 2 |
| %HV | 5.3% | | | | 3.1% | | | | 5.9% | | | | 0.0% | | | | 4.2% | | | | |
| PHF | 0.86 | | | | 0.78 | | | | 0.79 | | | | 0.00 | | | | 0.87 | | | | |

| By Movement | Northbound NE 94th Ave | | | | Southbound NE 94th Ave | | | | Eastbound NE 88th St | | | | Westbound NE 88th St | | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | L | T | | Total | | T | R | Total | L | | R | Total | | | | Total | |
| Volume | 39 | 92 | | 131 | | 273 | 17 | 290 | 9 | | 76 | 85 | | | | 0 | 506 |
| %HV | 2.6% | 6.5% | NA | 5.3% | NA | 2.9% | 5.9% | 3.1% | 22.2% | NA | 3.9% | 5.9% | NA | NA | NA | 0.0% | 4.2% |
| PHF | 0.70 | 0.70 | | 0.86 | | 0.79 | 0.61 | 0.78 | 0.56 | | 0.76 | 0.79 | | | | 0.00 | 0.87 |

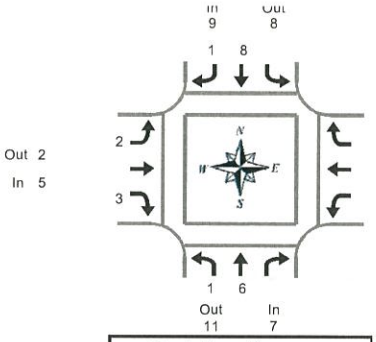
### *Rolling Hour Summary*
***7:00 AM to 9:00 AM***

| Interval Start Time | Northbound NE 94th Ave | | | | Southbound NE 94th Ave | | | Eastbound NE 88th St | | | Westbound NE 88th St | | | Interval Total | Pedestrians Crosswalk | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | L | T | | Bikes | T | R | Bikes | L | R | Bikes | | | Bikes | | North | South | East | West |
| 7:00 AM | 35 | 76 | | 0 | 277 | 18 | 0 | 4 | 71 | 0 | | | 0 | 481 | 0 | 0 | 0 | 3 |
| 7:15 AM | 37 | 76 | | 0 | 288 | 20 | 0 | 6 | 69 | 0 | | | 0 | 496 | 0 | 0 | 0 | 2 |
| 7:30 AM | 37 | 95 | | 1 | 266 | 16 | 0 | 9 | 74 | 0 | | | 0 | 497 | 0 | 0 | 0 | 2 |
| 7:45 AM | 36 | 103 | | 1 | 238 | 12 | 0 | 12 | 64 | 0 | | | 0 | 465 | 0 | 0 | 0 | 1 |
| 8:00 AM | 36 | 102 | | 1 | 216 | 13 | 0 | 9 | 70 | 0 | | | 0 | 446 | 0 | 0 | 0 | 0 |

## Heavy Vehicle Summary

All Traffic Data Services Inc.

Clay Carney
(503) 833-2740




**Peak Hour Summary**
***7:25 AM to 8:25 AM***

# NE 94th Ave & NE 88th St

***Thursday, August 21, 2014***
***7:00 AM to 9:00 AM***

### *Heavy Vehicle 5-Minute Interval Summary*
***7:00 AM to 9:00 AM***

| Interval Start Time | Northbound NE 94th Ave | | | Southbound NE 94th Ave | | | Eastbound NE 88th St | | | Westbound NE 88th St | | | Interval Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | L | T | Total | T | R | Total | L | R | Total | | | Total | |
| 7:00 AM | 0 | 0 | 0 | 3 | 0 | 3 | 0 | 1 | 1 | | | 0 | 4 |
| 7:05 AM | 0 | 1 | 1 | 3 | 0 | 3 | 0 | 0 | 0 | | | 0 | 4 |
| 7:10 AM | 0 | 0 | 0 | 3 | 0 | 3 | 0 | 0 | 0 | | | 0 | 3 |
| 7:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 0 |
| 7:20 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 0 |
| 7:25 AM | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 1 |
| 7:30 AM | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | | | 0 | 2 |
| 7:35 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | | | 0 | 1 |
| 7:40 AM | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | | | 0 | 1 |
| 7:45 AM | 0 | 2 | 2 | 0 | 1 | 1 | 0 | 0 | 0 | | | 0 | 3 |
| 7:50 AM | 1 | 2 | 3 | 0 | 0 | 0 | 1 | 0 | 1 | | | 0 | 4 |
| 7:55 AM | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | | | 0 | 2 |
| 8:00 AM | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | | | 0 | 1 |
| 8:05 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 0 |
| 8:10 AM | 0 | 0 | 0 | 3 | 0 | 3 | 0 | 1 | 1 | | | 0 | 4 |
| 8:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 0 |
| 8:20 AM | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | | | 0 | 2 |
| 8:25 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 0 |
| 8:30 AM | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 1 |
| 8:35 AM | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 1 |
| 8:40 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 0 |
| 8:45 AM | 1 | 0 | 1 | 2 | 1 | 3 | 0 | 0 | 0 | | | 0 | 4 |
| 8:50 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 0 |
| 8:55 AM | 0 | 3 | 3 | 0 | 0 | 0 | 0 | 1 | 1 | | | 0 | 4 |
| Total Survey | 3 | 11 | 14 | 19 | 2 | 21 | 2 | 5 | 7 | | | 0 | 42 |

### *Heavy Vehicle 15-Minute Interval Summary*
***7:00 AM to 9:00 AM***

| Interval Start Time | Northbound NE 94th Ave | | | Southbound NE 94th Ave | | | Eastbound NE 88th St | | | Westbound NE 88th St | | | Interval Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | L | T | Total | T | R | Total | L | R | Total | | | Total | |
| 7:00 AM | 0 | 1 | 1 | 9 | 0 | 9 | 0 | 1 | 1 | | | 0 | 11 |
| 7:15 AM | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 1 |
| 7:30 AM | 0 | 1 | 1 | 2 | 0 | 2 | 0 | 1 | 1 | | | 0 | 4 |
| 7:45 AM | 1 | 4 | 5 | 2 | 1 | 3 | 1 | 0 | 1 | | | 0 | 9 |
| 8:00 AM | 0 | 0 | 0 | 4 | 0 | 4 | 0 | 1 | 1 | | | 0 | 5 |
| 8:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | | | 0 | 2 |
| 8:30 AM | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 2 |
| 8:45 AM | 1 | 3 | 4 | 2 | 1 | 3 | 0 | 1 | 1 | | | 0 | 8 |
| Total Survey | 3 | 11 | 14 | 19 | 2 | 21 | 2 | 5 | 7 | | | 0 | 42 |

### *Heavy Vehicle Peak Hour Summary*
***7:25 AM to 8:25 AM***

| By Approach | Northbound NE 94th Ave | | | Southbound NE 94th Ave | | | Eastbound NE 88th St | | | Westbound NE 88th St | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | In | Out | Total | In | Out | Total | In | Out | Total | In | Out | Total | |
| Volume | 7 | 11 | 18 | 9 | 8 | 17 | 5 | 2 | 7 | 0 | 0 | 0 | 21 |
| PHF | 0.35 | | | 0.56 | | | 0.42 | | | 0.00 | | | 0.58 |

| By Movement | Northbound NE 94th Ave | | | Southbound NE 94th Ave | | | Eastbound NE 88th St | | | Westbound NE 88th St | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | L | T | Total | T | R | Total | L | R | Total | | | Total | |
| Volume | 1 | 6 | 7 | 8 | 1 | 9 | 2 | 3 | 5 | | | 0 | 21 |
| PHF | 0.25 | 0.38 | 0.35 | 0.50 | 0.25 | 0.56 | 0.50 | 0.38 | 0.42 | | | 0.00 | 0.58 |

### *Heavy Vehicle Rolling Hour Summary*
***7:00 AM to 9:00 AM***

| Interval Start Time | Northbound NE 94th Ave | | | Southbound NE 94th Ave | | | Eastbound NE 88th St | | | Westbound NE 88th St | | | Interval Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | L | T | Total | T | R | Total | L | R | Total | | | Total | |
| 7:00 AM | 1 | 7 | 8 | 13 | 1 | 14 | 1 | 2 | 3 | | | 0 | 25 |
| 7:15 AM | 1 | 6 | 7 | 8 | 1 | 9 | 1 | 2 | 3 | | | 0 | 19 |
| 7:30 AM | 1 | 5 | 6 | 8 | 1 | 9 | 2 | 3 | 5 | | | 0 | 20 |
| 7:45 AM | 2 | 5 | 7 | 6 | 1 | 7 | 2 | 2 | 4 | | | 0 | 18 |
| 8:00 AM | 2 | 4 | 6 | 6 | 1 | 7 | 1 | 3 | 4 | | | 0 | 17 |

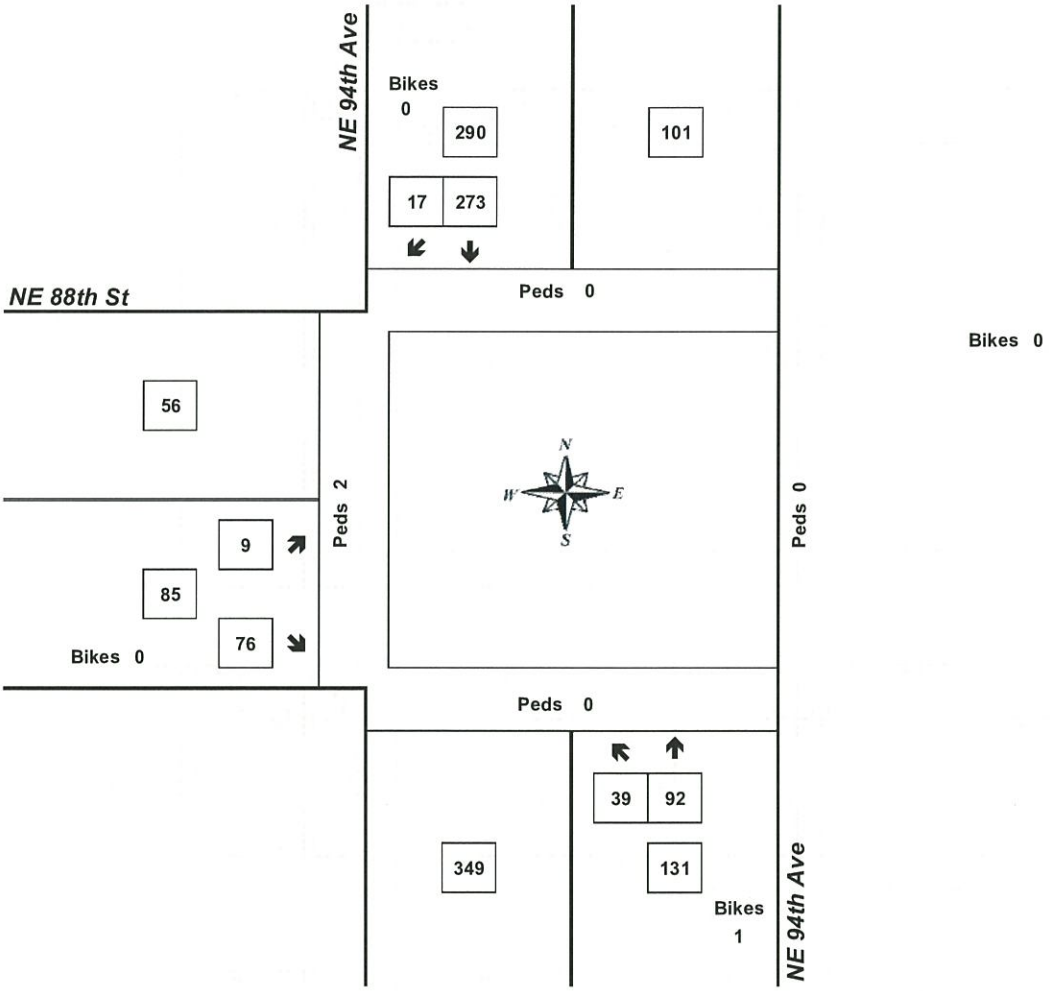
## Peak Hour Summary

All Traffic Data Services Inc.

Clay Carney
(503) 833-2740

# NE 94th Ave & NE 88th St

**7:25 AM to 8:25 AM**
**Thursday, August 21, 2014**

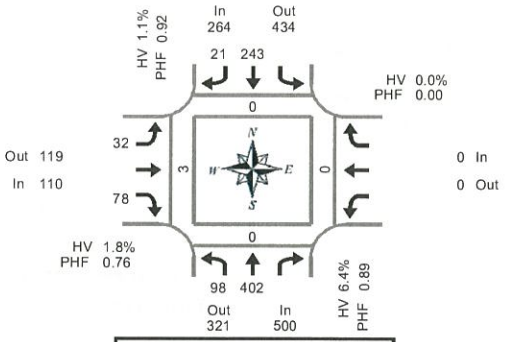



| Approach | PHF | HV% | Volume |
|---|---|---|---|
| EB | 0.79 | 5.9% | 85 |
| WB | 0.00 | 0.0% | 0 |
| NB | 0.86 | 5.3% | 131 |
| SB | 0.78 | 3.1% | 290 |
| Intersection | 0.87 | 4.2% | 506 |

Count Period: 7:00 AM to 9:00 AM

# Total Vehicle Summary

All Traffic Data Services Inc.
Clay Carney
(503) 833-2740




# NE 94th Ave & NE 88th St

***Thursday, August 21, 2014***
***4:00 PM to 6:00 PM***

### *5-Minute Interval Summary*
***4:00 PM to 6:00 PM***

| Interval Start Time | Northbound NE 94th Ave | | | | Southbound NE 94th Ave | | | Eastbound NE 88th St | | | Westbound NE 88th St | | | Interval Total | Pedestrians Crosswalk | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | L | T | | Bikes | T | R | Bikes | L | R | Bikes | | | Bikes | | North | South | East | West |
| 4:00 PM | 2 | 32 | | 1 | 18 | 1 | 1 | 2 | 3 | 0 | | | 0 | 58 | 0 | 0 | 0 | 0 |
| 4:05 PM | 9 | 18 | | 0 | 20 | 1 | 0 | 6 | 5 | 0 | | | 0 | 59 | 0 | 0 | 0 | 0 |
| 4:10 PM | 6 | 17 | | 0 | 28 | 2 | 0 | 1 | 7 | 0 | | | 0 | 61 | 0 | 0 | 0 | 1 |
| 4:15 PM | 6 | 24 | | 0 | 19 | 0 | 0 | 2 | 8 | 0 | | | 0 | 59 | 0 | 0 | 0 | 0 |
| 4:20 PM | 6 | 20 | | 0 | 23 | 2 | 0 | 4 | 7 | 0 | | | 0 | 62 | 0 | 0 | 0 | 2 |
| 4:25 PM | 4 | 33 | | 0 | 19 | 1 | 2 | 0 | 4 | 0 | | | 0 | 61 | 2 | 0 | 0 | 0 |
| 4:30 PM | 9 | 27 | | 0 | 19 | 1 | 0 | 3 | 10 | 0 | | | 0 | 69 | 0 | 0 | 0 | 0 |
| 4:35 PM | 8 | 31 | | 0 | 17 | 0 | 0 | 2 | 5 | 0 | | | 0 | 63 | 0 | 0 | 0 | 0 |
| 4:40 PM | 6 | 30 | | 0 | 29 | 0 | 0 | 4 | 7 | 0 | | | 0 | 76 | 0 | 0 | 0 | 0 |
| 4:45 PM | 8 | 29 | | 0 | 11 | 4 | 0 | 4 | 6 | 0 | | | 0 | 62 | 0 | 0 | 0 | 0 |
| 4:50 PM | 7 | 28 | | 0 | 21 | 4 | 2 | 4 | 6 | 0 | | | 0 | 70 | 0 | 0 | 0 | 2 |
| 4:55 PM | 8 | 36 | | 0 | 21 | 0 | 0 | 2 | 7 | 0 | | | 0 | 74 | 0 | 0 | 0 | 0 |
| 5:00 PM | 7 | 31 | | 0 | 19 | 1 | 2 | 1 | 4 | 0 | | | 0 | 63 | 0 | 0 | 0 | 0 |
| 5:05 PM | 14 | 39 | | 0 | 18 | 4 | 0 | 3 | 5 | 0 | | | 0 | 83 | 0 | 0 | 0 | 0 |
| 5:10 PM | 10 | 27 | | 0 | 24 | 2 | 0 | 2 | 7 | 0 | | | 0 | 72 | 0 | 0 | 0 | 0 |
| 5:15 PM | 10 | 32 | | 0 | 16 | 0 | 0 | 3 | 12 | 0 | | | 0 | 73 | 0 | 0 | 0 | 1 |
| 5:20 PM | 5 | 33 | | 2 | 26 | 4 | 0 | 3 | 9 | 0 | | | 0 | 80 | 0 | 0 | 0 | 0 |
| 5:25 PM | 6 | 41 | | 0 | 20 | 0 | 0 | 2 | 6 | 0 | | | 0 | 75 | 0 | 0 | 0 | 0 |
| 5:30 PM | 7 | 38 | | 0 | 16 | 1 | 2 | 3 | 7 | 0 | | | 0 | 72 | 0 | 0 | 0 | 0 |
| 5:35 PM | 10 | 38 | | 0 | 22 | 1 | 0 | 1 | 2 | 0 | | | 0 | 74 | 0 | 0 | 0 | 0 |
| 5:40 PM | 1 | 38 | | 0 | 17 | 1 | 0 | 0 | 8 | 0 | | | 0 | 65 | 0 | 0 | 0 | 0 |
| 5:45 PM | 3 | 32 | | 0 | 27 | 2 | 0 | 3 | 5 | 0 | | | 0 | 72 | 0 | 0 | 0 | 0 |
| 5:50 PM | 12 | 26 | | 0 | 24 | 0 | 0 | 4 | 4 | 0 | | | 0 | 70 | 0 | 0 | 0 | 0 |
| 5:55 PM | 3 | 27 | | 0 | 24 | 3 | 0 | 0 | 9 | 0 | | | 0 | 66 | 0 | 0 | 0 | 0 |
| Total Survey | 167 | 727 | | 3 | 498 | 35 | 9 | 59 | 153 | 0 | | | 0 | 1,639 | 2 | 0 | 0 | 6 |

### *15-Minute Interval Summary*
***4:00 PM to 6:00 PM***

| Interval Start Time | Northbound NE 94th Ave | | | | Southbound NE 94th Ave | | | Eastbound NE 88th St | | | Westbound NE 88th St | | | Interval Total | Pedestrians Crosswalk | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | L | T | | Bikes | T | R | Bikes | L | R | Bikes | | | Bikes | | North | South | East | West |
| 4:00 PM | 17 | 67 | | 1 | 66 | 4 | 1 | 9 | 15 | 0 | | | 0 | 178 | 0 | 0 | 0 | 1 |
| 4:15 PM | 16 | 77 | | 0 | 61 | 3 | 2 | 6 | 19 | 0 | | | 0 | 182 | 2 | 0 | 0 | 2 |
| 4:30 PM | 23 | 88 | | 0 | 65 | 1 | 0 | 9 | 22 | 0 | | | 0 | 208 | 0 | 0 | 0 | 0 |
| 4:45 PM | 23 | 93 | | 0 | 53 | 8 | 2 | 10 | 19 | 0 | | | 0 | 206 | 0 | 0 | 0 | 2 |
| 5:00 PM | 31 | 97 | | 0 | 61 | 7 | 2 | 6 | 16 | 0 | | | 0 | 218 | 0 | 0 | 0 | 0 |
| 5:15 PM | 21 | 106 | | 2 | 62 | 4 | 0 | 8 | 27 | 0 | | | 0 | 228 | 0 | 0 | 0 | 1 |
| 5:30 PM | 18 | 114 | | 0 | 55 | 3 | 2 | 4 | 17 | 0 | | | 0 | 211 | 0 | 0 | 0 | 0 |
| 5:45 PM | 18 | 85 | | 0 | 75 | 5 | 0 | 7 | 18 | 0 | | | 0 | 208 | 0 | 0 | 0 | 0 |
| Total Survey | 167 | 727 | | 3 | 498 | 35 | 9 | 59 | 153 | 0 | | | 0 | 1,639 | 2 | 0 | 0 | 6 |

### *Peak Hour Summary*
***4:40 PM to 5:40 PM***

| By Approach | Northbound NE 94th Ave | | | | Southbound NE 94th Ave | | | | Eastbound NE 88th St | | | | Westbound NE 88th St | | | | Total | Pedestrians Crosswalk | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | In | Out | Total | Bikes | In | Out | Total | Bikes | In | Out | Total | Bikes | In | Out | Total | Bikes | | North | South | East | West |
| Volume | 500 | 321 | 821 | 2 | 264 | 434 | 698 | 6 | 110 | 119 | 229 | 0 | 0 | 0 | 0 | 0 | 874 | 0 | 0 | 0 | 3 |
| %HV | 6.4% | | | | 1.1% | | | | 1.8% | | | | 0.0% | | | | 4.2% | | | | |
| PHF | 0.89 | | | | 0.92 | | | | 0.76 | | | | 0.00 | | | | 0.96 | | | | |

| By Movement | Northbound NE 94th Ave | | | | Southbound NE 94th Ave | | | Eastbound NE 88th St | | | | Westbound NE 88th St | | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | L | T | | Total | T | R | Total | L | | R | Total | | | | Total | |
| Volume | 98 | 402 | | 500 | 243 | 21 | 264 | 32 | | 78 | 110 | | | | 0 | 874 |
| %HV | 2.0% | 7.5% | NA | 6.4% | NA 1.2% | 0.0% | 1.1% | 3.1% | NA | 1.3% | 1.8% | NA | NA | NA | 0.0% | 4.2% |
| PHF | 0.72 | 0.86 | | 0.89 | 0.92 | 0.66 | 0.92 | 0.67 | | 0.70 | 0.76 | | | | 0.00 | 0.96 |

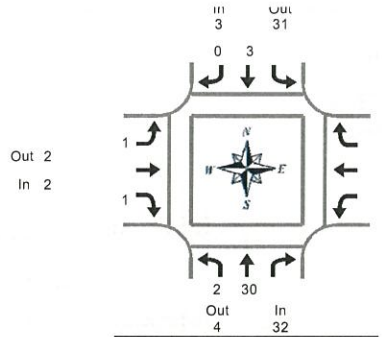
### *Rolling Hour Summary*
***4:00 PM to 6:00 PM***

| Interval Start Time | Northbound NE 94th Ave | | | | Southbound NE 94th Ave | | | Eastbound NE 88th St | | | Westbound NE 88th St | | | Interval Total | Pedestrians Crosswalk | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | L | T | | Bikes | T | R | Bikes | L | R | Bikes | | | Bikes | | North | South | East | West |
| 4:00 PM | 79 | 325 | | 1 | 245 | 16 | 5 | 34 | 75 | 0 | | | 0 | 774 | 2 | 0 | 0 | 5 |
| 4:15 PM | 93 | 355 | | 0 | 240 | 19 | 6 | 31 | 76 | 0 | | | 0 | 814 | 2 | 0 | 0 | 4 |
| 4:30 PM | 98 | 384 | | 2 | 241 | 20 | 4 | 33 | 84 | 0 | | | 0 | 860 | 0 | 0 | 0 | 3 |
| 4:45 PM | 93 | 410 | | 2 | 231 | 22 | 6 | 28 | 79 | 0 | | | 0 | 863 | 0 | 0 | 0 | 3 |
| 5:00 PM | 88 | 402 | | 2 | 253 | 19 | 4 | 25 | 78 | 0 | | | 0 | 865 | 0 | 0 | 0 | 1 |

## Heavy Vehicle Summary

All Traffic Data Services Inc.

Clay Carney
(503) 833-2740




**Peak Hour Summary**
***4:40 PM to 5:40 PM***

# NE 94th Ave & NE 88th St

***Thursday, August 21, 2014***
***4:00 PM to 6:00 PM***

### *Heavy Vehicle 5-Minute Interval Summary*
***4:00 PM to 6:00 PM***

| Interval Start Time | Northbound NE 94th Ave | | | Southbound NE 94th Ave | | | Eastbound NE 88th St | | | Westbound NE 88th St | | | Interval Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | L | T | Total | T | R | Total | L | R | Total | | | Total | |
| 4:00 PM | 0 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 3 |
| 4:05 PM | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | | | 0 | 2 |
| 4:10 PM | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | | | 0 | 1 |
| 4:15 PM | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 2 |
| 4:20 PM | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 2 |
| 4:25 PM | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 2 |
| 4:30 PM | 0 | 4 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 4 |
| 4:35 PM | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 2 |
| 4:40 PM | 0 | 2 | 2 | 1 | 0 | 1 | 1 | 1 | 2 | | | 0 | 5 |
| 4:45 PM | 0 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 3 |
| 4:50 PM | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 2 |
| 4:55 PM | 0 | 5 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 5 |
| 5:00 PM | 0 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 3 |
| 5:05 PM | 1 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 3 |
| 5:10 PM | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 2 |
| 5:15 PM | 1 | 4 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 5 |
| 5:20 PM | 0 | 2 | 2 | 1 | 0 | 1 | 0 | 0 | 0 | | | 0 | 3 |
| 5:25 PM | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 2 |
| 5:30 PM | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 2 |
| 5:35 PM | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | | | 0 | 2 |
| 5:40 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 0 |
| 5:45 PM | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 1 |
| 5:50 PM | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 1 |
| 5:55 PM | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | | | 0 | 2 |
| Total Survey | 4 | 47 | 51 | 5 | 1 | 6 | 1 | 1 | 2 | | | 0 | 59 |

### *Heavy Vehicle 15-Minute Interval Summary*
***4:00 PM to 6:00 PM***

| Interval Start Time | Northbound NE 94th Ave | | | Southbound NE 94th Ave | | | Eastbound NE 88th St | | | Westbound NE 88th St | | | Interval Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | L | T | Total | T | R | Total | L | R | Total | | | Total | |
| 4:00 PM | 0 | 4 | 4 | 2 | 0 | 2 | 0 | 0 | 0 | | | 0 | 6 |
| 4:15 PM | 1 | 5 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 6 |
| 4:30 PM | 0 | 8 | 8 | 1 | 0 | 1 | 1 | 1 | 2 | | | 0 | 11 |
| 4:45 PM | 0 | 10 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 10 |
| 5:00 PM | 1 | 7 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | 8 |
| 5:15 PM | 1 | 8 | 9 | 1 | 0 | 1 | 0 | 0 | 0 | | | 0 | 10 |
| 5:30 PM | 0 | 3 | 3 | 1 | 0 | 1 | 0 | 0 | 0 | | | 0 | 4 |
| 5:45 PM | 1 | 2 | 3 | 0 | 1 | 1 | 0 | 0 | 0 | | | 0 | 4 |
| Total Survey | 4 | 47 | 51 | 5 | 1 | 6 | 1 | 1 | 2 | | | 0 | 59 |

### *Heavy Vehicle Peak Hour Summary*
***4:40 PM to 5:40 PM***

| By Approach | Northbound NE 94th Ave | | | Southbound NE 94th Ave | | | Eastbound NE 88th St | | | Westbound NE 88th St | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | In | Out | Total | In | Out | Total | In | Out | Total | In | Out | Total | |
| Volume | 32 | 4 | 36 | 3 | 31 | 34 | 2 | 2 | 4 | 0 | 0 | 0 | 37 |
| PHF | 0.73 | | | 0.75 | | | 0.25 | | | 0.00 | | | 0.84 |

| By Movement | Northbound NE 94th Ave | | | Southbound NE 94th Ave | | | Eastbound NE 88th St | | | Westbound NE 88th St | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | L | T | Total | T | R | Total | L | R | Total | | | Total | |
| Volume | 2 | 30 | 32 | 3 | 0 | 3 | 1 | 1 | 2 | | | 0 | 37 |
| PHF | 0.25 | 0.75 | 0.73 | 0.75 | 0.00 | 0.75 | 0.25 | 0.25 | 0.25 | | | 0.00 | 0.84 |

### *Heavy Vehicle Rolling Hour Summary*
***4:00 PM to 6:00 PM***

| Interval Start Time | Northbound NE 94th Ave | | | Southbound NE 94th Ave | | | Eastbound NE 88th St | | | Westbound NE 88th St | | | Interval Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | L | T | Total | T | R | Total | L | R | Total | | | Total | |
| 4:00 PM | 1 | 27 | 28 | 3 | 0 | 3 | 1 | 1 | 2 | | | 0 | 33 |
| 4:15 PM | 2 | 30 | 32 | 1 | 0 | 1 | 1 | 1 | 2 | | | 0 | 35 |
| 4:30 PM | 2 | 33 | 35 | 2 | 0 | 2 | 1 | 1 | 2 | | | 0 | 39 |
| 4:45 PM | 2 | 28 | 30 | 2 | 0 | 2 | 0 | 0 | 0 | | | 0 | 32 |
| 5:00 PM | 3 | 20 | 23 | 2 | 1 | 3 | 0 | 0 | 0 | | | 0 | 26 |

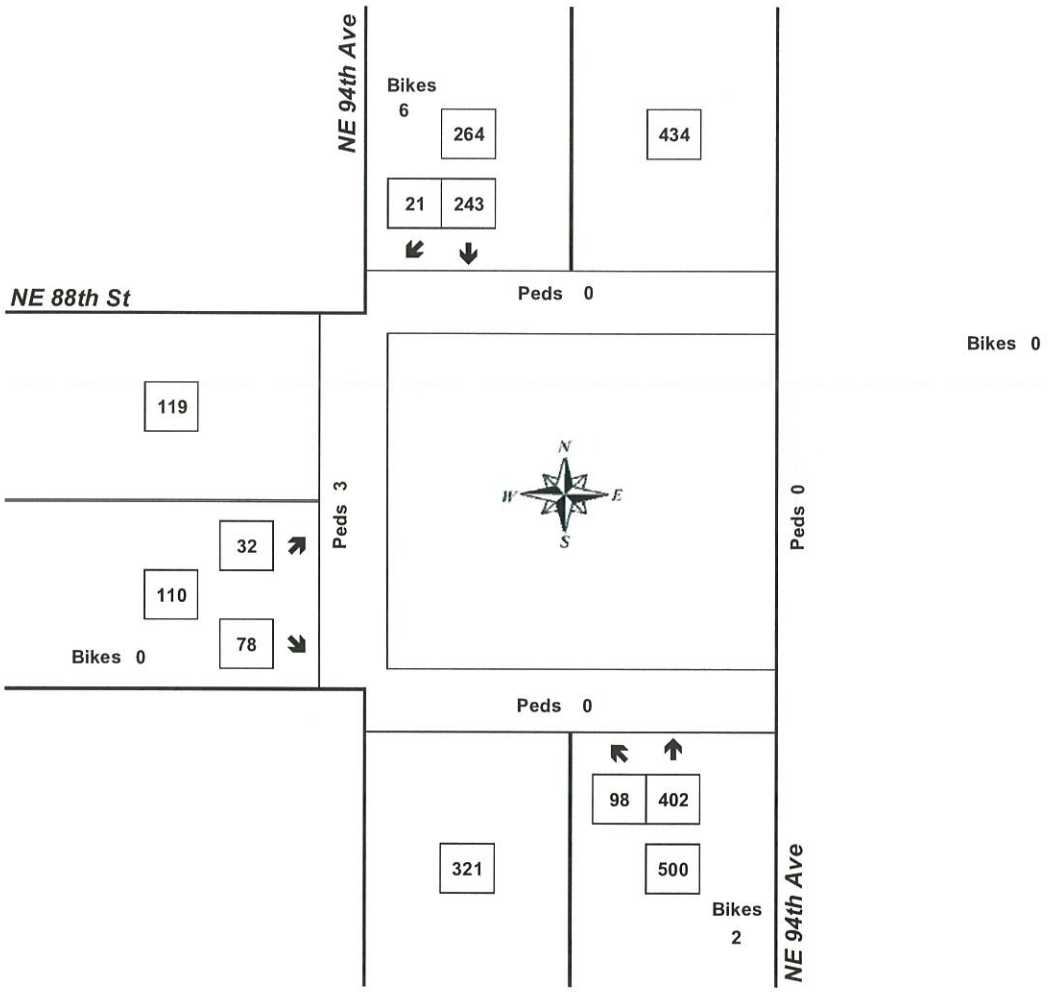
## Peak Hour Summary

All Traffic Data Services Inc.

Clay Carney
(503) 833-2740

# NE 94th Ave & NE 88th St

**4:40 PM to 5:40 PM**
**Thursday, August 21, 2014**




| Approach | PHF | HV% | Volume |
|---|---|---|---|
| EB | 0.76 | 1.8% | 110 |
| WB | 0.00 | 0.0% | 0 |
| NB | 0.89 | 6.4% | 500 |
| SB | 0.92 | 1.1% | 264 |
| Intersection | 0.96 | 4.2% | 874 |

Count Period: 4:00 PM to 6:00 PM

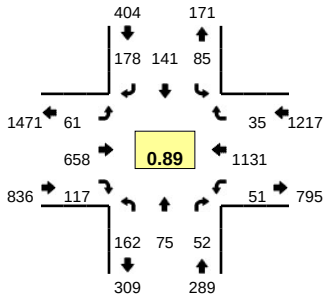
Type of peak hour being reported: Intersection Peak

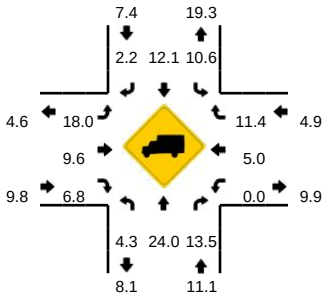
Method for determining peak hour: Total Entering Volume

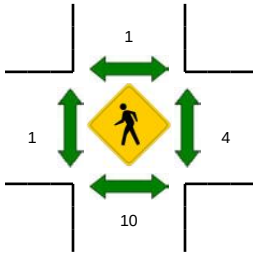
**LOCATION:** NE 94th Ave -- NE Padden Pkwy
**CITY/STATE:** Vancouver, WA

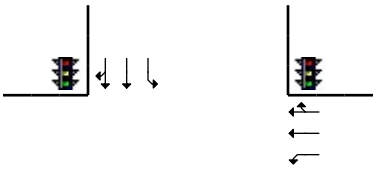
**QC JOB #:** 13790417
**DATE:** Tue, Jun 07 2016

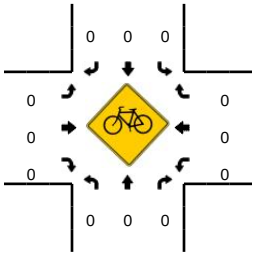
**Peak-Hour: 7:00 AM -- 8:00 AM**
**Peak 15-Min: 7:35 AM -- 7:50 AM**

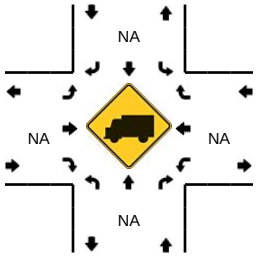


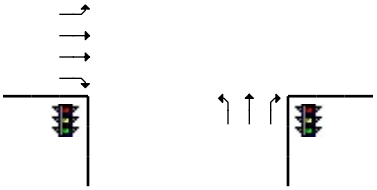



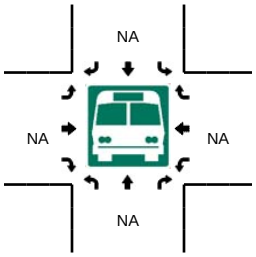








| 5-Min Count Period Beginning At | NE 94th Ave (Northbound) | | | | NE 94th Ave (Southbound) | | | | NE Padden Pkwy (Eastbound) | | | | NE Padden Pkwy (Westbound) | | | | Total | Hourly Totals |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | | |
| 7:00 AM | 15 | 6 | 4 | 0 | 8 | 10 | 15 | 0 | 4 | 45 | 4 | 0 | 4 | 104 | 1 | 0 | 220 | |
| 7:05 AM | 15 | 2 | 3 | 0 | 6 | 10 | 25 | 0 | 4 | 39 | 9 | 0 | 1 | 88 | 2 | 0 | 204 | |
| 7:10 AM | 13 | 3 | 3 | 0 | 5 | 8 | 13 | 0 | 8 | 64 | 8 | 0 | 6 | 91 | 2 | 0 | 224 | |
| 7:15 AM | 16 | 9 | 5 | 0 | 9 | 14 | 12 | 0 | 10 | 27 | 7 | 0 | 2 | 66 | 4 | 0 | 181 | |
| 7:20 AM | 18 | 6 | 1 | 0 | 12 | 5 | 9 | 0 | 4 | 58 | 8 | 0 | 3 | 109 | 3 | 0 | 236 | |
| 7:25 AM | 6 | 8 | 5 | 0 | 4 | 16 | 17 | 0 | 2 | 53 | 8 | 0 | 6 | 80 | 1 | 0 | 206 | |
| 7:30 AM | 11 | 6 | 6 | 0 | 10 | 12 | 10 | 0 | 3 | 63 | 12 | 0 | 6 | 119 | 2 | 0 | 260 | |
| 7:35 AM | 20 | 6 | 4 | 0 | 11 | 21 | 21 | 0 | 1 | 51 | 12 | 0 | 1 | 84 | 2 | 0 | 234 | |
| 7:40 AM | 16 | 6 | 5 | 0 | 3 | 9 | 12 | 0 | 5 | 61 | 14 | 0 | 4 | 95 | 3 | 0 | 233 | |
| 7:45 AM | 14 | 9 | 6 | 0 | 2 | 13 | 10 | 0 | 7 | 86 | 13 | 0 | 7 | 134 | 6 | 0 | 307 | |
| 7:50 AM | 9 | 7 | 5 | 0 | 8 | 14 | 22 | 0 | 5 | 58 | 9 | 0 | 4 | 84 | 4 | 0 | 229 | |
| 7:55 AM | 9 | 7 | 5 | 0 | 7 | 9 | 12 | 0 | 8 | 53 | 13 | 0 | 7 | 77 | 5 | 0 | 212 | 2746 |
| 8:00 AM | 13 | 11 | 4 | 0 | 8 | 14 | 5 | 0 | 4 | 35 | 8 | 0 | 5 | 88 | 6 | 0 | 201 | 2727 |
| 8:05 AM | 17 | 3 | 8 | 0 | 1 | 15 | 13 | 0 | 7 | 45 | 7 | 0 | 11 | 86 | 1 | 0 | 214 | 2737 |
| 8:10 AM | 16 | 5 | 3 | 0 | 6 | 9 | 8 | 0 | 12 | 51 | 11 | 0 | 3 | 89 | 5 | 0 | 218 | 2731 |
| 8:15 AM | 15 | 11 | 6 | 0 | 2 | 16 | 21 | 0 | 5 | 29 | 9 | 0 | 5 | 54 | 1 | 0 | 174 | 2724 |
| 8:20 AM | 11 | 8 | 3 | 0 | 1 | 9 | 15 | 0 | 6 | 56 | 9 | 0 | 10 | 85 | 5 | 0 | 218 | 2706 |
| 8:25 AM | 16 | 11 | 2 | 0 | 5 | 11 | 10 | 0 | 4 | 66 | 7 | 0 | 6 | 85 | 5 | 0 | 228 | 2728 |
| 8:30 AM | 5 | 5 | 4 | 0 | 11 | 9 | 17 | 0 | 5 | 46 | 10 | 0 | 6 | 68 | 5 | 0 | 191 | 2659 |
| 8:35 AM | 5 | 6 | 5 | 0 | 3 | 9 | 14 | 0 | 12 | 45 | 7 | 0 | 4 | 72 | 0 | 0 | 182 | 2607 |
| 8:40 AM | 21 | 17 | 3 | 0 | 14 | 12 | 20 | 0 | 3 | 46 | 12 | 0 | 2 | 62 | 7 | 0 | 219 | 2593 |
| 8:45 AM | 12 | 7 | 2 | 0 | 1 | 13 | 11 | 0 | 10 | 46 | 15 | 0 | 3 | 61 | 3 | 0 | 184 | 2470 |
| 8:50 AM | 7 | 12 | 1 | 0 | 14 | 12 | 13 | 0 | 7 | 59 | 6 | 0 | 6 | 89 | 5 | 0 | 231 | 2472 |
| 8:55 AM | 9 | 19 | 8 | 0 | 6 | 9 | 9 | 0 | 6 | 37 | 5 | 0 | 1 | 65 | 9 | 0 | 183 | 2443 |

| Peak 15-Min Flowrates | Northbound | | | | Southbound | | | | Eastbound | | | | Westbound | | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | |
| All Vehicles | 200 | 84 | 60 | 0 | 64 | 172 | 172 | 0 | 52 | 792 | 156 | 0 | 48 | 1252 | 44 | 0 | 3096 |
| Heavy Trucks | 8 | 20 | 16 | | 8 | 24 | 4 | | 4 | 56 | 4 | | 0 | 56 | 0 | | 200 |
| Pedestrians | | 12 | | | | 4 | | | | 0 | | | | 16 | | | 32 |
| Bicycles | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 |
| Railroad | | | | | | | | | | | | | | | | | |
| Stopped Buses | | | | | | | | | | | | | | | | | |

*Comments:*

Report generated on 6/21/2016 3:30 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

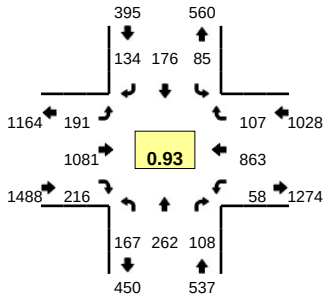
**LOCATION:** NE 94th Ave -- NE Padden Pkwy

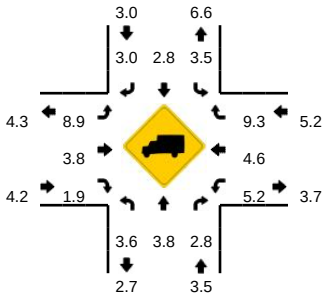
**CITY/STATE:** Vancouver, WA

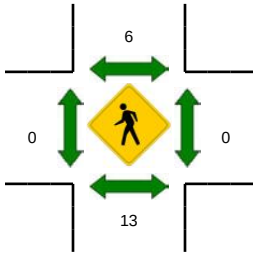
**QC JOB #:** 13790418

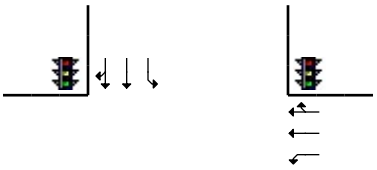
**DATE:** Tue, Jun 07 2016

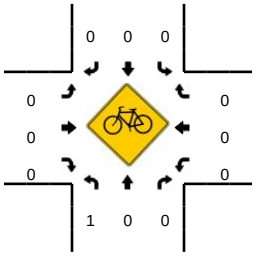
**Peak-Hour: 4:40 PM -- 5:40 PM**
**Peak 15-Min: 5:05 PM -- 5:20 PM**

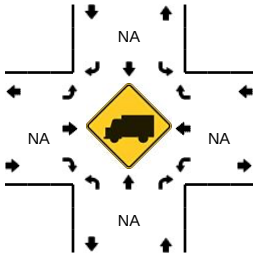


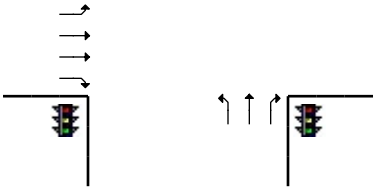



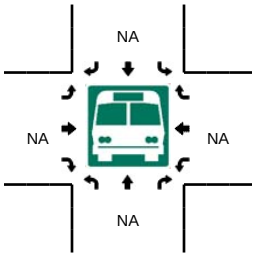








| 5-Min Count Period Beginning At | NE 94th Ave (Northbound) | | | | NE 94th Ave (Southbound) | | | | NE Padden Pkwy (Eastbound) | | | | NE Padden Pkwy (Westbound) | | | | Total | Hourly Totals |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | | |
| 4:00 PM | 11 | 15 | 2 | 0 | 6 | 18 | 9 | 0 | 21 | 72 | 19 | 0 | 5 | 76 | 2 | 0 | 256 | |
| 4:05 PM | 14 | 21 | 8 | 0 | 6 | 15 | 5 | 0 | 15 | 81 | 19 | 0 | 8 | 77 | 6 | 0 | 275 | |
| 4:10 PM | 13 | 18 | 13 | 0 | 10 | 22 | 4 | 0 | 7 | 91 | 19 | 0 | 6 | 82 | 11 | 0 | 296 | |
| 4:15 PM | 6 | 16 | 3 | 0 | 3 | 16 | 7 | 0 | 19 | 110 | 13 | 0 | 1 | 83 | 10 | 0 | 287 | |
| 4:20 PM | 19 | 13 | 8 | 0 | 12 | 15 | 4 | 0 | 13 | 91 | 13 | 0 | 3 | 58 | 8 | 0 | 257 | |
| 4:25 PM | 15 | 19 | 15 | 0 | 3 | 25 | 7 | 0 | 13 | 86 | 15 | 0 | 6 | 58 | 6 | 0 | 268 | |
| 4:30 PM | 21 | 22 | 7 | 0 | 4 | 13 | 10 | 0 | 22 | 80 | 21 | 0 | 11 | 55 | 4 | 0 | 270 | |
| 4:35 PM | 16 | 21 | 5 | 0 | 5 | 14 | 5 | 0 | 24 | 88 | 9 | 0 | 3 | 63 | 9 | 0 | 262 | |
| 4:40 PM | 14 | 14 | 10 | 0 | 3 | 12 | 10 | 0 | 8 | 78 | 18 | 0 | 5 | 93 | 6 | 0 | 271 | |
| 4:45 PM | 15 | 26 | 14 | 0 | 13 | 10 | 16 | 0 | 14 | 92 | 21 | 0 | 4 | 81 | 9 | 0 | 315 | |
| 4:50 PM | 12 | 18 | 17 | 0 | 7 | 15 | 10 | 0 | 19 | 112 | 17 | 0 | 2 | 74 | 5 | 0 | 308 | |
| 4:55 PM | 12 | 30 | 5 | 0 | 7 | 15 | 14 | 0 | 17 | 78 | 23 | 0 | 2 | 55 | 12 | 0 | 270 | 3335 |
| 5:00 PM | 11 | 15 | 8 | 0 | 8 | 15 | 9 | 0 | 23 | 87 | 13 | 0 | 10 | 52 | 10 | 0 | 261 | 3340 |
| 5:05 PM | 16 | 22 | 10 | 0 | 3 | 16 | 11 | 0 | 20 | 106 | 13 | 0 | 4 | 66 | 10 | 0 | 297 | 3362 |
| 5:10 PM | 15 | 16 | 10 | 0 | 5 | 13 | 12 | 0 | 19 | 87 | 14 | 0 | 9 | 74 | 7 | 0 | 281 | 3347 |
| 5:15 PM | 15 | 28 | 9 | 0 | 9 | 18 | 9 | 0 | 11 | 113 | 20 | 0 | 7 | 98 | 7 | 0 | 344 | 3404 |
| 5:20 PM | 12 | 19 | 7 | 0 | 12 | 10 | 7 | 0 | 15 | 87 | 21 | 0 | 6 | 71 | 10 | 0 | 277 | 3424 |
| 5:25 PM | 12 | 23 | 5 | 0 | 8 | 14 | 13 | 0 | 12 | 89 | 16 | 0 | 4 | 67 | 18 | 0 | 281 | 3437 |
| 5:30 PM | 15 | 35 | 6 | 0 | 4 | 23 | 11 | 0 | 20 | 67 | 23 | 0 | 3 | 63 | 7 | 0 | 277 | 3444 |
| 5:35 PM | 18 | 16 | 7 | 0 | 6 | 15 | 12 | 0 | 13 | 85 | 17 | 0 | 2 | 69 | 6 | 0 | 266 | 3448 |
| 5:40 PM | 13 | 19 | 9 | 0 | 6 | 11 | 12 | 0 | 19 | 89 | 15 | 0 | 3 | 67 | 6 | 0 | 269 | 3446 |
| 5:45 PM | 7 | 29 | 7 | 0 | 6 | 11 | 10 | 0 | 11 | 104 | 12 | 0 | 3 | 78 | 12 | 0 | 290 | 3421 |
| 5:50 PM | 7 | 16 | 8 | 0 | 6 | 21 | 5 | 0 | 21 | 74 | 13 | 0 | 6 | 50 | 7 | 0 | 234 | 3347 |
| 5:55 PM | 14 | 24 | 4 | 0 | 5 | 11 | 14 | 0 | 22 | 58 | 13 | 0 | 4 | 49 | 6 | 0 | 224 | 3301 |

| Peak 15-Min Flowrates | Northbound | | | | Southbound | | | | Eastbound | | | | Westbound | | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | |
| All Vehicles | 184 | 264 | 116 | 0 | 68 | 188 | 128 | 0 | 200 | 1224 | 188 | 0 | 80 | 952 | 96 | 0 | 3688 |
| Heavy Trucks | 12 | 8 | 8 | | 4 | 0 | 0 | | 12 | 52 | 4 | | 4 | 44 | 16 | | 164 |
| Pedestrians | | 28 | | | | 0 | | | | 0 | | | | 0 | | | 28 |
| Bicycles | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 |
| Railroad | | | | | | | | | | | | | | | | | |
| Stopped Buses | | | | | | | | | | | | | | | | | |

*Comments:*

Report generated on 6/21/2016 3:30 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

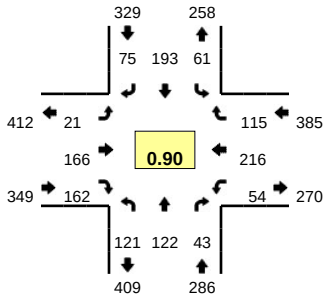
Type of peak hour being reported: Intersection Peak

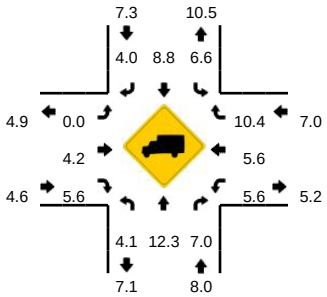
Method for determining peak hour: Total Entering Volume

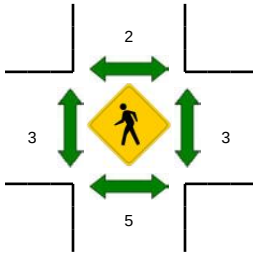
**LOCATION:** NE 94th Ave -- NE 76th St
**CITY/STATE:** Vancouver, WA

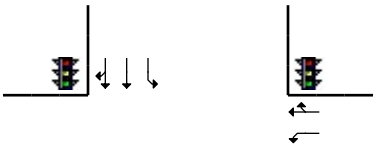
**QC JOB #:** 13790419
**DATE:** Tue, Jun 07 2016

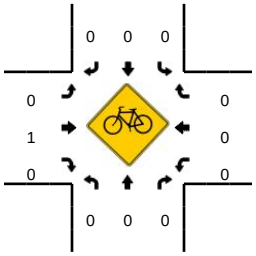
**Peak-Hour: 7:35 AM -- 8:35 AM**
**Peak 15-Min: 7:35 AM -- 7:50 AM**

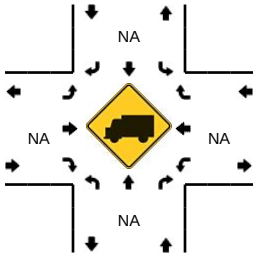


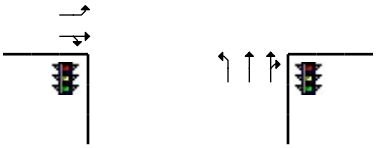



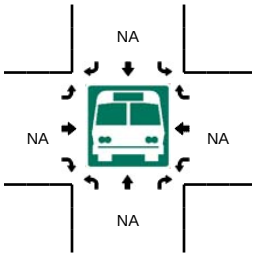








| 5-Min Count Period Beginning At | NE 94th Ave (Northbound) | | | | NE 94th Ave (Southbound) | | | | NE 76th St (Eastbound) | | | | NE 76th St (Westbound) | | | | Total | Hourly Totals |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | | |
| 7:00 AM | 5 | 11 | 1 | 0 | 4 | 11 | 4 | 0 | 2 | 11 | 6 | 0 | 6 | 17 | 7 | 0 | 85 | |
| 7:05 AM | 8 | 12 | 3 | 0 | 8 | 12 | 1 | 0 | 0 | 4 | 12 | 0 | 3 | 8 | 5 | 0 | 76 | |
| 7:10 AM | 5 | 12 | 1 | 0 | 2 | 16 | 2 | 0 | 0 | 9 | 14 | 0 | 2 | 15 | 8 | 0 | 86 | |
| 7:15 AM | 3 | 12 | 2 | 0 | 4 | 16 | 2 | 0 | 2 | 13 | 14 | 0 | 5 | 9 | 10 | 0 | 92 | |
| 7:20 AM | 5 | 13 | 5 | 0 | 4 | 14 | 0 | 0 | 2 | 17 | 10 | 0 | 1 | 11 | 9 | 0 | 91 | |
| 7:25 AM | 6 | 10 | 2 | 0 | 3 | 15 | 3 | 0 | 0 | 13 | 11 | 0 | 6 | 20 | 8 | 0 | 97 | |
| 7:30 AM | 9 | 19 | 6 | 0 | 3 | 28 | 3 | 0 | 0 | 13 | 5 | 0 | 1 | 12 | 4 | 0 | 103 | |
| 7:35 AM | 13 | 11 | 6 | 0 | 5 | 17 | 1 | 0 | 0 | 7 | 14 | 0 | 4 | 25 | 14 | 0 | 117 | |
| 7:40 AM | 7 | 15 | 5 | 0 | 11 | 20 | 3 | 0 | 1 | 15 | 17 | 0 | 7 | 21 | 12 | 0 | 134 | |
| 7:45 AM | 13 | 8 | 3 | 0 | 4 | 30 | 4 | 0 | 1 | 19 | 14 | 0 | 4 | 17 | 6 | 0 | 123 | |
| 7:50 AM | 4 | 7 | 2 | 0 | 1 | 14 | 4 | 0 | 4 | 11 | 19 | 0 | 6 | 23 | 8 | 0 | 103 | |
| 7:55 AM | 12 | 16 | 4 | 0 | 3 | 22 | 4 | 0 | 2 | 11 | 8 | 0 | 5 | 18 | 7 | 0 | 112 | 1219 |
| 8:00 AM | 8 | 5 | 4 | 0 | 7 | 14 | 5 | 0 | 1 | 10 | 12 | 0 | 6 | 26 | 10 | 0 | 108 | 1242 |
| 8:05 AM | 16 | 13 | 4 | 0 | 3 | 18 | 10 | 0 | 2 | 9 | 7 | 0 | 2 | 13 | 10 | 0 | 107 | 1273 |
| 8:10 AM | 9 | 9 | 2 | 0 | 5 | 11 | 11 | 0 | 1 | 11 | 16 | 0 | 2 | 20 | 11 | 0 | 108 | 1295 |
| 8:15 AM | 11 | 14 | 4 | 0 | 8 | 13 | 8 | 0 | 2 | 19 | 10 | 0 | 3 | 11 | 11 | 0 | 114 | 1317 |
| 8:20 AM | 8 | 5 | 4 | 0 | 3 | 11 | 10 | 0 | 2 | 13 | 18 | 0 | 4 | 17 | 13 | 0 | 108 | 1334 |
| 8:25 AM | 9 | 11 | 3 | 0 | 7 | 11 | 9 | 0 | 3 | 13 | 17 | 0 | 5 | 9 | 8 | 0 | 105 | 1342 |
| 8:30 AM | 11 | 8 | 2 | 0 | 4 | 12 | 6 | 0 | 2 | 28 | 10 | 0 | 6 | 16 | 5 | 0 | 110 | 1349 |
| 8:35 AM | 6 | 17 | 5 | 0 | 9 | 12 | 5 | 0 | 1 | 8 | 12 | 0 | 2 | 13 | 4 | 0 | 94 | 1326 |
| 8:40 AM | 9 | 12 | 3 | 0 | 10 | 10 | 3 | 0 | 3 | 16 | 5 | 0 | 2 | 19 | 16 | 0 | 108 | 1300 |
| 8:45 AM | 5 | 14 | 2 | 0 | 6 | 22 | 1 | 0 | 2 | 16 | 6 | 0 | 6 | 18 | 9 | 0 | 107 | 1284 |
| 8:50 AM | 8 | 6 | 3 | 0 | 6 | 9 | 3 | 0 | 0 | 7 | 8 | 0 | 5 | 15 | 9 | 0 | 79 | 1260 |
| 8:55 AM | 6 | 13 | 6 | 0 | 7 | 9 | 2 | 0 | 6 | 15 | 7 | 0 | 6 | 13 | 10 | 0 | 100 | 1248 |

| Peak 15-Min Flowrates | Northbound | | | | Southbound | | | | Eastbound | | | | Westbound | | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | |
| All Vehicles | 132 | 136 | 56 | 0 | 80 | 268 | 32 | 0 | 8 | 164 | 180 | 0 | 60 | 252 | 128 | 0 | 1496 |
| Heavy Trucks | 4 | 24 | 4 | | 0 | 16 | 0 | | 0 | 12 | 4 | | 0 | 8 | 16 | | 88 |
| Pedestrians | | 0 | | | | 0 | | | | 4 | | | | 0 | | | 4 |
| Bicycles | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 |
| Railroad | | | | | | | | | | | | | | | | | |
| Stopped Buses | | | | | | | | | | | | | | | | | |

*Comments:*

Report generated on 6/21/2016 3:30 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

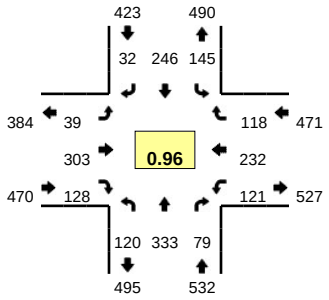
Type of peak hour being reported: Intersection Peak

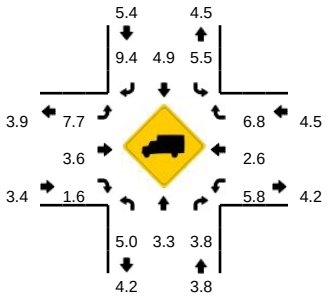
Method for determining peak hour: Total Entering Volume

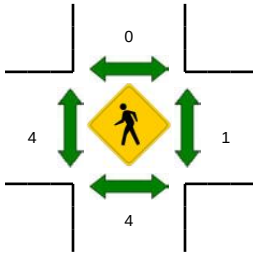
**LOCATION:** NE 94th Ave -- NE 76th St
**CITY/STATE:** Vancouver, WA

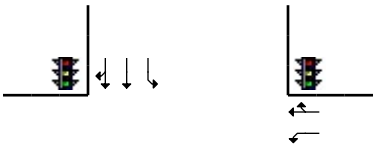
**QC JOB #:** 13790420
**DATE:** Tue, Jun 07 2016

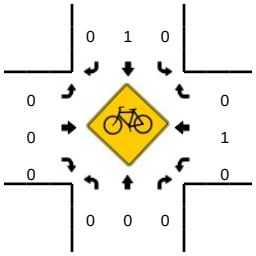
**Peak-Hour: 4:05 PM -- 5:05 PM**
**Peak 15-Min: 4:05 PM -- 4:20 PM**

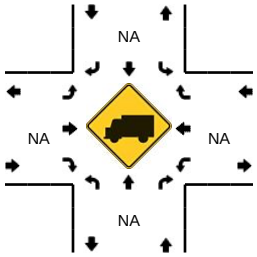


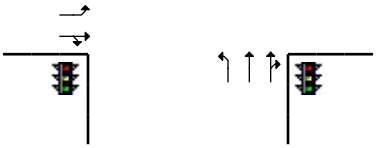



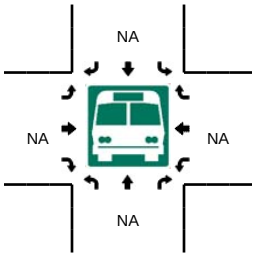








| 5-Min Count Period Beginning At | NE 94th Ave (Northbound) | | | | NE 94th Ave (Southbound) | | | | NE 76th St (Eastbound) | | | | NE 76th St (Westbound) | | | | Total | Hourly Totals |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | | |
| 4:00 PM | 9 | 24 | 6 | 0 | 10 | 20 | 2 | 0 | 1 | 20 | 6 | 0 | 6 | 18 | 11 | 0 | 133 | |
| 4:05 PM | 14 | 29 | 9 | 0 | 11 | 26 | 3 | 0 | 1 | 15 | 10 | 0 | 12 | 26 | 14 | 0 | 170 | |
| 4:10 PM | 8 | 22 | 6 | 0 | 15 | 18 | 1 | 0 | 2 | 36 | 9 | 0 | 13 | 23 | 8 | 0 | 161 | |
| 4:15 PM | 16 | 26 | 5 | 0 | 17 | 19 | 8 | 0 | 1 | 22 | 8 | 0 | 7 | 31 | 5 | 0 | 165 | |
| 4:20 PM | 11 | 28 | 5 | 0 | 3 | 24 | 4 | 0 | 3 | 28 | 12 | 0 | 10 | 16 | 7 | 0 | 151 | |
| 4:25 PM | 8 | 29 | 5 | 0 | 13 | 15 | 2 | 0 | 3 | 39 | 12 | 0 | 4 | 19 | 16 | 0 | 165 | |
| 4:30 PM | 8 | 34 | 11 | 0 | 16 | 25 | 2 | 0 | 4 | 21 | 12 | 0 | 15 | 15 | 9 | 0 | 172 | |
| 4:35 PM | 10 | 23 | 6 | 0 | 8 | 20 | 1 | 0 | 2 | 27 | 8 | 0 | 8 | 14 | 13 | 0 | 140 | |
| 4:40 PM | 12 | 34 | 6 | 0 | 14 | 24 | 3 | 0 | 4 | 20 | 11 | 0 | 7 | 18 | 8 | 0 | 161 | |
| 4:45 PM | 4 | 23 | 5 | 0 | 10 | 22 | 1 | 0 | 6 | 25 | 11 | 0 | 15 | 19 | 16 | 0 | 157 | |
| 4:50 PM | 9 | 30 | 6 | 0 | 14 | 15 | 2 | 0 | 5 | 27 | 10 | 0 | 11 | 10 | 9 | 0 | 148 | |
| 4:55 PM | 12 | 30 | 9 | 0 | 11 | 21 | 3 | 0 | 6 | 15 | 9 | 0 | 11 | 18 | 6 | 0 | 151 | 1874 |
| 5:00 PM | 8 | 25 | 6 | 0 | 13 | 17 | 2 | 0 | 2 | 28 | 16 | 0 | 8 | 23 | 7 | 0 | 155 | 1896 |
| 5:05 PM | 8 | 27 | 7 | 0 | 10 | 25 | 1 | 0 | 2 | 18 | 11 | 0 | 5 | 19 | 13 | 0 | 146 | 1872 |
| 5:10 PM | 19 | 37 | 4 | 0 | 9 | 21 | 4 | 0 | 4 | 16 | 9 | 0 | 7 | 17 | 5 | 0 | 152 | 1863 |
| 5:15 PM | 18 | 37 | 5 | 0 | 15 | 26 | 3 | 0 | 4 | 33 | 18 | 0 | 4 | 16 | 14 | 0 | 193 | 1891 |
| 5:20 PM | 12 | 27 | 7 | 0 | 15 | 24 | 2 | 0 | 0 | 26 | 10 | 0 | 7 | 17 | 7 | 0 | 154 | 1894 |
| 5:25 PM | 4 | 23 | 6 | 0 | 8 | 21 | 1 | 0 | 3 | 22 | 7 | 0 | 6 | 24 | 7 | 0 | 132 | 1861 |
| 5:30 PM | 14 | 45 | 10 | 0 | 20 | 26 | 1 | 0 | 2 | 17 | 7 | 0 | 6 | 5 | 11 | 0 | 164 | 1853 |
| 5:35 PM | 16 | 19 | 5 | 0 | 12 | 17 | 2 | 0 | 3 | 31 | 13 | 0 | 11 | 29 | 14 | 0 | 172 | 1885 |
| 5:40 PM | 12 | 33 | 3 | 0 | 11 | 24 | 3 | 0 | 4 | 12 | 10 | 0 | 4 | 15 | 8 | 0 | 139 | 1863 |
| 5:45 PM | 12 | 28 | 10 | 0 | 10 | 17 | 1 | 0 | 1 | 30 | 13 | 0 | 11 | 16 | 10 | 0 | 159 | 1865 |
| 5:50 PM | 10 | 22 | 7 | 0 | 6 | 23 | 4 | 0 | 3 | 21 | 16 | 0 | 6 | 23 | 7 | 0 | 148 | 1865 |
| 5:55 PM | 10 | 24 | 6 | 0 | 7 | 16 | 3 | 0 | 2 | 20 | 5 | 0 | 9 | 16 | 11 | 0 | 129 | 1843 |

| Peak 15-Min Flowrates | Northbound | | | | Southbound | | | | Eastbound | | | | Westbound | | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | |
| All Vehicles | 152 | 308 | 80 | 0 | 172 | 252 | 48 | 0 | 16 | 292 | 108 | 0 | 128 | 320 | 108 | 0 | 1984 |
| Heavy Trucks | 8 | 20 | 0 | | 16 | 24 | 8 | | 0 | 20 | 0 | | 8 | 12 | 12 | | 128 |
| Pedestrians | | 0 | | | | 0 | | | | 0 | | | | 0 | | | 0 |
| Bicycles | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 1 | 0 | | 1 |
| Railroad | | | | | | | | | | | | | | | | | |
| Stopped Buses | | | | | | | | | | | | | | | | | |

*Comments:*

Report generated on 6/21/2016 3:30 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

**LOCATION:** NE 105th St btwn 91st Ave & 92nd Ave
**SPECIFIC LOCATION:** NE 105th St btwn 91st Ave & 92nd Ave
**CITY/STATE:** Vancouver, WA

**QC JOB #:** 13790425
**DIRECTION:** EB
**DATE:** Jun 07 2016 - Jun 09 2016

| Start Time | Mon | Tue 07-Jun-16 | Wed 08-Jun-16 | Thu 09-Jun-16 | Fri | Average Weekday Hourly Traffic | Sat | Sun | Average Week Hourly Traffic | Average Week Profile |
|---|---|---|---|---|---|---|---|---|---|---|
| **12:00 AM** | | 4 | 14 | 11 | | 10 | | | 10 | |
| **1:00 AM** | | 2 | 8 | 4 | | 5 | | | 5 | |
| **2:00 AM** | | 6 | 4 | 4 | | 5 | | | 5 | |
| **3:00 AM** | | 3 | 5 | 4 | | 4 | | | 4 | |
| **4:00 AM** | | 8 | 6 | 13 | | 9 | | | 9 | |
| **5:00 AM** | | 47 | 42 | 43 | | 44 | | | 44 | |
| **6:00 AM** | | 50 | 65 | 49 | | 55 | | | 55 | |
| **7:00 AM** | | 81 | 83 | **87** | | **84** | | | **84** | |
| **8:00 AM** | | 84 | **84** | 75 | | 81 | | | 81 | |
| **9:00 AM** | | 73 | 67 | 76 | | 72 | | | 72 | |
| **10:00 AM** | | 63 | 0 | 61 | | 41 | | | 41 | |
| **11:00 AM** | | **89** | 0 | 69 | | 53 | | | 53 | |
| **12:00 PM** | | 74 | 0 | 63 | | 46 | | | 46 | |
| **1:00 PM** | | 72 | 0 | 72 | | 48 | | | 48 | |
| **2:00 PM** | | 84 | 99 | **108** | | 97 | | | 97 | |
| **3:00 PM** | | 96 | 109 | 94 | | 100 | | | 100 | |
| **4:00 PM** | | 104 | 103 | 99 | | 102 | | | 102 | |
| **5:00 PM** | | **114** | **112** | 97 | | **108** | | | **108** | |
| **6:00 PM** | | 71 | 85 | 72 | | 76 | | | 76 | |
| **7:00 PM** | | 61 | 71 | 49 | | 60 | | | 60 | |
| **8:00 PM** | | 77 | 69 | 68 | | 71 | | | 71 | |
| **9:00 PM** | | 51 | 53 | 50 | | 51 | | | 51 | |
| **10:00 PM** | | 42 | 35 | 37 | | 38 | | | 38 | |
| **11:00 PM** | | 18 | 17 | 16 | | 17 | | | 17 | |
| **Day Total** | | 1374 | 1131 | 1321 | | 1277 | | | 1277 | |
| % Weekday Average | | 107.6% | 88.6% | 103.4% | | | | | | |
| % Week Average | | 107.6% | 88.6% | 103.4% | | 100.0% | | | | |
| AM Peak Volume | | 11:00 AM 89 | 8:00 AM 84 | 7:00 AM 87 | | 7:00 AM 84 | | | 7:00 AM 84 | |
| PM Peak Volume | | 5:00 PM 114 | 5:00 PM 112 | 2:00 PM 108 | | 5:00 PM 108 | | | 5:00 PM 108 | |

*Comments:*

**LOCATION:** NE 105th St btwn 91st Ave & 92nd Ave
**SPECIFIC LOCATION:** NE 105th St btwn 91st Ave & 92nd Ave
**CITY/STATE:** Vancouver, WA

**QC JOB #:** 13790425
**DIRECTION:** WB
**DATE:** Jun 07 2016 - Jun 09 2016

| Start Time | Mon | Tue 07-Jun-16 | Wed 08-Jun-16 | Thu 09-Jun-16 | Fri | Average Weekday Hourly Traffic | Sat | Sun | Average Week Hourly Traffic | Average Week Profile |
|---|---|---|---|---|---|---|---|---|---|---|
| **12:00 AM** | | 10 | 8 | 8 | | 9 | | | 9 | |
| **1:00 AM** | | 3 | 5 | 4 | | 4 | | | 4 | |
| **2:00 AM** | | 4 | 6 | 5 | | 5 | | | 5 | |
| **3:00 AM** | | 2 | 3 | 4 | | 3 | | | 3 | |
| **4:00 AM** | | 6 | 4 | 5 | | 5 | | | 5 | |
| **5:00 AM** | | 8 | 5 | 6 | | 6 | | | 6 | |
| **6:00 AM** | | 41 | 46 | 29 | | 39 | | | 39 | |
| **7:00 AM** | | **88** | 78 | **97** | | **88** | | | **88** | |
| **8:00 AM** | | 81 | **95** | 73 | | 83 | | | 83 | |
| **9:00 AM** | | 66 | 44 | 64 | | 58 | | | 58 | |
| **10:00 AM** | | 69 | 0 | 62 | | 44 | | | 44 | |
| **11:00 AM** | | 74 | 0 | 64 | | 46 | | | 46 | |
| **12:00 PM** | | 92 | 0 | 78 | | 57 | | | 57 | |
| **1:00 PM** | | 92 | 0 | 77 | | 56 | | | 56 | |
| **2:00 PM** | | 82 | 95 | 97 | | 91 | | | 91 | |
| **3:00 PM** | | 121 | 110 | 133 | | 121 | | | 121 | |
| **4:00 PM** | | 125 | 143 | 149 | | 139 | | | 139 | |
| **5:00 PM** | | **183** | **177** | **189** | | **183** | | | **183** | |
| **6:00 PM** | | 124 | 162 | 118 | | 135 | | | 135 | |
| **7:00 PM** | | 87 | 74 | 95 | | 85 | | | 85 | |
| **8:00 PM** | | 69 | 76 | 53 | | 66 | | | 66 | |
| **9:00 PM** | | 48 | 54 | 54 | | 52 | | | 52 | |
| **10:00 PM** | | 28 | 31 | 34 | | 31 | | | 31 | |
| **11:00 PM** | | 20 | 16 | 18 | | 18 | | | 18 | |
| **Day Total** | | 1523 | 1232 | 1516 | | 1424 | | | 1424 | |
| % Weekday Average | | 107.0% | 86.5% | 106.5% | | | | | | |
| % Week Average | | 107.0% | 86.5% | 106.5% | | 100.0% | | | | |
| AM Peak Volume | | 7:00 AM 88 | 8:00 AM 95 | 7:00 AM 97 | | 7:00 AM 88 | | | 7:00 AM 88 | |
| PM Peak Volume | | 5:00 PM 183 | 5:00 PM 177 | 5:00 PM 189 | | 5:00 PM 183 | | | 5:00 PM 183 | |

*Comments:*

**LOCATION:** NE 88th St btwn 90th Ave & 91st Ave
**SPECIFIC LOCATION:** NE 88th St btwn 90th Ave & 91st Ave
**CITY/STATE:** Vancouver, WA

**QC JOB #:** 13790426
**DIRECTION:** EB
**DATE:** Jun 07 2016 - Jun 09 2016

| Start Time | Mon | Tue 07-Jun-16 | Wed 08-Jun-16 | Thu 09-Jun-16 | Fri | Average Weekday Hourly Traffic | Sat | Sun | Average Week Hourly Traffic | Average Week Profile |
|---|---|---|---|---|---|---|---|---|---|---|
| **12:00 AM** | | 4 | 6 | 3 | | 4 | | | 4 | |
| **1:00 AM** | | 4 | 1 | 3 | | 3 | | | 3 | |
| **2:00 AM** | | 2 | 4 | 1 | | 2 | | | 2 | |
| **3:00 AM** | | 3 | 1 | 1 | | 2 | | | 2 | |
| **4:00 AM** | | 8 | 8 | 7 | | 8 | | | 8 | |
| **5:00 AM** | | 17 | 17 | 19 | | 18 | | | 18 | |
| **6:00 AM** | | 41 | 35 | 36 | | 37 | | | 37 | |
| **7:00 AM** | | **65** | **69** | 54 | | **63** | | | **63** | |
| **8:00 AM** | | 48 | 63 | **64** | | 58 | | | 58 | |
| **9:00 AM** | | 44 | 49 | 45 | | 46 | | | 46 | |
| **10:00 AM** | | 58 | 0 | 54 | | 37 | | | 37 | |
| **11:00 AM** | | 48 | 0 | 62 | | 37 | | | 37 | |
| **12:00 PM** | | 51 | 0 | 73 | | 41 | | | 41 | |
| **1:00 PM** | | 53 | 0 | 62 | | 38 | | | 38 | |
| **2:00 PM** | | 60 | 63 | 84 | | 69 | | | 69 | |
| **3:00 PM** | | 86 | **93** | 85 | | 88 | | | 88 | |
| **4:00 PM** | | 70 | 82 | 86 | | 79 | | | 79 | |
| **5:00 PM** | | **101** | 84 | **96** | | **94** | | | **94** | |
| **6:00 PM** | | 76 | 92 | 84 | | 84 | | | 84 | |
| **7:00 PM** | | 43 | 57 | 48 | | 49 | | | 49 | |
| **8:00 PM** | | 51 | 51 | 45 | | 49 | | | 49 | |
| **9:00 PM** | | 30 | 46 | 41 | | 39 | | | 39 | |
| **10:00 PM** | | 20 | 18 | 14 | | 17 | | | 17 | |
| **11:00 PM** | | 11 | 8 | 11 | | 10 | | | 10 | |
| **Day Total** | | 994 | 847 | 1078 | | 972 | | | 972 | |
| % Weekday Average | | 102.3% | 87.1% | 110.9% | | | | | | |
| % Week Average | | 102.3% | 87.1% | 110.9% | | 100.0% | | | | |
| AM Peak Volume | | 7:00 AM 65 | 7:00 AM 69 | 8:00 AM 64 | | 7:00 AM 63 | | | 7:00 AM 63 | |
| PM Peak Volume | | 5:00 PM 101 | 3:00 PM 93 | 5:00 PM 96 | | 5:00 PM 94 | | | 5:00 PM 94 | |

*Comments:*

**LOCATION:** NE 88th St btwn 90th Ave & 91st Ave
**SPECIFIC LOCATION:** NE 88th St btwn 90th Ave & 91st Ave
**CITY/STATE:** Vancouver, WA

**QC JOB #:** 13790426
**DIRECTION:** WB
**DATE:** Jun 07 2016 - Jun 09 2016

| Start Time | Mon | Tue 07-Jun-16 | Wed 08-Jun-16 | Thu 09-Jun-16 | Fri | Average Weekday Hourly Traffic | Sat | Sun | Average Week Hourly Traffic | Average Week Profile |
|---|---|---|---|---|---|---|---|---|---|---|
| **12:00 AM** | | 4 | 7 | 3 | | 5 | | | 5 | |
| **1:00 AM** | | 0 | 1 | 2 | | 1 | | | 1 | |
| **2:00 AM** | | 1 | 2 | 5 | | 3 | | | 3 | |
| **3:00 AM** | | 3 | 3 | 0 | | 2 | | | 2 | |
| **4:00 AM** | | 5 | 7 | 6 | | 6 | | | 6 | |
| **5:00 AM** | | 17 | 10 | 13 | | 13 | | | 13 | |
| **6:00 AM** | | 61 | 77 | 64 | | 67 | | | 67 | |
| **7:00 AM** | | **83** | **89** | **71** | | **81** | | | **81** | |
| **8:00 AM** | | 53 | 60 | 62 | | 58 | | | 58 | |
| **9:00 AM** | | 61 | 42 | 63 | | 55 | | | 55 | |
| **10:00 AM** | | 39 | 0 | 56 | | 32 | | | 32 | |
| **11:00 AM** | | 47 | 0 | 63 | | 37 | | | 37 | |
| **12:00 PM** | | 61 | 0 | 61 | | 41 | | | 41 | |
| **1:00 PM** | | 55 | 0 | 80 | | 45 | | | 45 | |
| **2:00 PM** | | 63 | 65 | 63 | | 64 | | | 64 | |
| **3:00 PM** | | 89 | 82 | 102 | | 91 | | | 91 | |
| **4:00 PM** | | **101** | 82 | **116** | | 100 | | | 100 | |
| **5:00 PM** | | 100 | **116** | 95 | | **104** | | | **104** | |
| **6:00 PM** | | 72 | 70 | 72 | | 71 | | | 71 | |
| **7:00 PM** | | 66 | 47 | 62 | | 58 | | | 58 | |
| **8:00 PM** | | 52 | 64 | 56 | | 57 | | | 57 | |
| **9:00 PM** | | 36 | 39 | 36 | | 37 | | | 37 | |
| **10:00 PM** | | 26 | 26 | 30 | | 27 | | | 27 | |
| **11:00 PM** | | 11 | 7 | 9 | | 9 | | | 9 | |
| **Day Total** | | 1106 | 896 | 1190 | | 1064 | | | 1064 | |
| % Weekday Average | | 103.9% | 84.2% | 111.8% | | | | | | |
| % Week Average | | 103.9% | 84.2% | 111.8% | | 100.0% | | | | |
| AM Peak Volume | | 7:00 AM 83 | 7:00 AM 89 | 7:00 AM 71 | | 7:00 AM 81 | | | 7:00 AM 81 | |
| PM Peak Volume | | 4:00 PM 101 | 5:00 PM 116 | 4:00 PM 116 | | 5:00 PM 104 | | | 5:00 PM 104 | |

*Comments:*

**LOCATION:** NE 119th St west of 87th Ave
**SPECIFIC LOCATION:** NE 119th St west of 87th Ave
**CITY/STATE:** Vancouver, WA

**QC JOB #:** 13790427
**DIRECTION:** EB
**DATE:** Jun 14 2016 - Jun 15 2016

| Start Time | Mon | Tue 14-Jun-16 | Wed 15-Jun-16 | Thu | Fri | Average Weekday Hourly Traffic | Sat | Sun | Average Week Hourly Traffic | Average Week Profile |
|---|---|---|---|---|---|---|---|---|---|---|
| **12:00 AM** | | 26 | 21 | | | 24 | | | 24 | |
| **1:00 AM** | | 9 | 19 | | | 14 | | | 14 | |
| **2:00 AM** | | 10 | 7 | | | 9 | | | 9 | |
| **3:00 AM** | | 10 | 13 | | | 12 | | | 12 | |
| **4:00 AM** | | 17 | 22 | | | 20 | | | 20 | |
| **5:00 AM** | | 60 | 77 | | | 69 | | | 69 | |
| **6:00 AM** | | 128 | 122 | | | 125 | | | 125 | |
| **7:00 AM** | | **348** | 235 | | | 292 | | | 292 | |
| **8:00 AM** | | 337 | 237 | | | 287 | | | 287 | |
| **9:00 AM** | | 253 | 245 | | | 249 | | | 249 | |
| **10:00 AM** | | 278 | 284 | | | 281 | | | 281 | |
| **11:00 AM** | | 342 | **286** | | | **314** | | | **314** | |
| **12:00 PM** | | 350 | 337 | | | 344 | | | 344 | |
| **1:00 PM** | | 345 | 341 | | | 343 | | | 343 | |
| **2:00 PM** | | 398 | 430 | | | 414 | | | 414 | |
| **3:00 PM** | | 468 | 453 | | | 461 | | | 461 | |
| **4:00 PM** | | **589** | 590 | | | 590 | | | 590 | |
| **5:00 PM** | | 549 | **687** | | | **618** | | | **618** | |
| **6:00 PM** | | 419 | 361 | | | 390 | | | 390 | |
| **7:00 PM** | | 245 | 234 | | | 240 | | | 240 | |
| **8:00 PM** | | 204 | 229 | | | 217 | | | 217 | |
| **9:00 PM** | | 161 | 169 | | | 165 | | | 165 | |
| **10:00 PM** | | 85 | 90 | | | 88 | | | 88 | |
| **11:00 PM** | | 52 | 51 | | | 52 | | | 52 | |
| **Day Total** | | 5683 | 5540 | | | 5618 | | | 5618 | |
| % Weekday Average | | 101.2% | 98.6% | | | | | | | |
| % Week Average | | 101.2% | 98.6% | | | 100.0% | | | | |
| AM Peak Volume | | 7:00 AM 348 | 11:00 AM 286 | | | 11:00 AM 314 | | | 11:00 AM 314 | |
| PM Peak Volume | | 4:00 PM 589 | 5:00 PM 687 | | | 5:00 PM 618 | | | 5:00 PM 618 | |

*Comments:*

**LOCATION:** NE 119th St west of 87th Ave
**SPECIFIC LOCATION:** NE 119th St west of 87th Ave
**CITY/STATE:** Vancouver, WA

**QC JOB #:** 13790427
**DIRECTION:** WB
**DATE:** Jun 14 2016 - Jun 15 2016

| Start Time | Mon | Tue 14-Jun-16 | Wed 15-Jun-16 | Thu | Fri | Average Weekday Hourly Traffic | Sat | Sun | Average Week Hourly Traffic | Average Week Profile |
|---|---|---|---|---|---|---|---|---|---|---|
| **12:00 AM** | | 19 | 18 | | | 19 | | | 19 | |
| **1:00 AM** | | 13 | 7 | | | 10 | | | 10 | |
| **2:00 AM** | | 10 | 14 | | | 12 | | | 12 | |
| **3:00 AM** | | 17 | 18 | | | 18 | | | 18 | |
| **4:00 AM** | | 28 | 30 | | | 29 | | | 29 | |
| **5:00 AM** | | 141 | 131 | | | 136 | | | 136 | |
| **6:00 AM** | | 305 | 314 | | | 310 | | | 310 | |
| **7:00 AM** | | **393** | **355** | | | **374** | | | **374** | |
| **8:00 AM** | | 312 | 300 | | | 306 | | | 306 | |
| **9:00 AM** | | 230 | 243 | | | 237 | | | 237 | |
| **10:00 AM** | | 256 | 265 | | | 261 | | | 261 | |
| **11:00 AM** | | 385 | 268 | | | 327 | | | 327 | |
| **12:00 PM** | | **363** | 270 | | | 317 | | | 317 | |
| **1:00 PM** | | 313 | 289 | | | 301 | | | 301 | |
| **2:00 PM** | | 321 | 306 | | | 314 | | | 314 | |
| **3:00 PM** | | 325 | 309 | | | 317 | | | 317 | |
| **4:00 PM** | | 339 | 316 | | | 328 | | | 328 | |
| **5:00 PM** | | 342 | **384** | | | **363** | | | **363** | |
| **6:00 PM** | | 247 | 266 | | | 257 | | | 257 | |
| **7:00 PM** | | 205 | 230 | | | 218 | | | 218 | |
| **8:00 PM** | | 168 | 225 | | | 197 | | | 197 | |
| **9:00 PM** | | 110 | 134 | | | 122 | | | 122 | |
| **10:00 PM** | | 59 | 60 | | | 60 | | | 60 | |
| **11:00 PM** | | 39 | 42 | | | 41 | | | 41 | |
| **Day Total** | | 4940 | 4794 | | | 4874 | | | 4874 | |
| % Weekday Average | | 101.4% | 98.4% | | | | | | | |
| % Week Average | | 101.4% | 98.4% | | | 100.0% | | | | |
| AM Peak Volume | | 7:00 AM 393 | 7:00 AM 355 | | | 7:00 AM 374 | | | 7:00 AM 374 | |
| PM Peak Volume | | 12:00 PM 363 | 5:00 PM 384 | | | 5:00 PM 363 | | | 5:00 PM 363 | |

*Comments:*

**LOCATION:** NE 119th St east of 87th Ave
**SPECIFIC LOCATION:** NE 119th St east of 87th Ave
**CITY/STATE:** Vancouver, WA

**QC JOB #:** 13790428
**DIRECTION:** EB
**DATE:** Jun 14 2016 - Jun 15 2016

| Start Time | Mon | Tue 14-Jun-16 | Wed 15-Jun-16 | Thu | Fri | Average Weekday Hourly Traffic | Sat | Sun | Average Week Hourly Traffic | Average Week Profile |
|---|---|---|---|---|---|---|---|---|---|---|
| **12:00 AM** | | 34 | 24 | | | 29 | | | 29 | |
| **1:00 AM** | | 10 | 20 | | | 15 | | | 15 | |
| **2:00 AM** | | 11 | 7 | | | 9 | | | 9 | |
| **3:00 AM** | | 9 | 11 | | | 10 | | | 10 | |
| **4:00 AM** | | 20 | 22 | | | 21 | | | 21 | |
| **5:00 AM** | | 59 | 74 | | | 67 | | | 67 | |
| **6:00 AM** | | 144 | 136 | | | 140 | | | 140 | |
| **7:00 AM** | | **415** | 255 | | | **335** | | | **335** | |
| **8:00 AM** | | 327 | 247 | | | 287 | | | 287 | |
| **9:00 AM** | | 236 | 273 | | | 255 | | | 255 | |
| **10:00 AM** | | 250 | **280** | | | 265 | | | 265 | |
| **11:00 AM** | | 354 | 278 | | | 316 | | | 316 | |
| **12:00 PM** | | 365 | 347 | | | 356 | | | 356 | |
| **1:00 PM** | | 349 | 329 | | | 339 | | | 339 | |
| **2:00 PM** | | 383 | 441 | | | 412 | | | 412 | |
| **3:00 PM** | | 488 | 472 | | | 480 | | | 480 | |
| **4:00 PM** | | **629** | 631 | | | 630 | | | 630 | |
| **5:00 PM** | | 590 | **683** | | | **637** | | | **637** | |
| **6:00 PM** | | 438 | 401 | | | 420 | | | 420 | |
| **7:00 PM** | | 262 | 258 | | | 260 | | | 260 | |
| **8:00 PM** | | 214 | 233 | | | 224 | | | 224 | |
| **9:00 PM** | | 171 | 172 | | | 172 | | | 172 | |
| **10:00 PM** | | 91 | 99 | | | 95 | | | 95 | |
| **11:00 PM** | | 56 | 55 | | | 56 | | | 56 | |
| **Day Total** | | 5905 | 5748 | | | 5830 | | | 5830 | |
| % Weekday Average | | 101.3% | 98.6% | | | | | | | |
| % Week Average | | 101.3% | 98.6% | | | 100.0% | | | | |
| AM Peak Volume | | 7:00 AM 415 | 10:00 AM 280 | | | 7:00 AM 335 | | | 7:00 AM 335 | |
| PM Peak Volume | | 4:00 PM 629 | 5:00 PM 683 | | | 5:00 PM 637 | | | 5:00 PM 637 | |

*Comments:*

Quality Counts
TRANSPORTATION DATA COLLECTION

**LOCATION:** NE 119th St east of 87th Ave
**SPECIFIC LOCATION:** NE 119th St east of 87th Ave
**CITY/STATE:** Vancouver, WA

**QC JOB #:** 13790428
**DIRECTION:** WB
**DATE:** Jun 14 2016 - Jun 15 2016

| Start Time | Mon | Tue 14-Jun-16 | Wed 15-Jun-16 | Thu | Fri | Average Weekday Hourly Traffic | Sat | Sun | Average Week Hourly Traffic | Average Week Profile |
|---|---|---|---|---|---|---|---|---|---|---|
| **12:00 AM** | | 25 | 23 | | | 24 | | | 24 | |
| **1:00 AM** | | 17 | 14 | | | 16 | | | 16 | |
| **2:00 AM** | | 11 | 11 | | | 11 | | | 11 | |
| **3:00 AM** | | 20 | 16 | | | 18 | | | 18 | |
| **4:00 AM** | | 21 | 24 | | | 23 | | | 23 | |
| **5:00 AM** | | 151 | 139 | | | 145 | | | 145 | |
| **6:00 AM** | | 326 | **342** | | | 334 | | | 334 | |
| **7:00 AM** | | **400** | 341 | | | **371** | | | **371** | |
| **8:00 AM** | | 340 | 320 | | | 330 | | | 330 | |
| **9:00 AM** | | 240 | 239 | | | 240 | | | 240 | |
| **10:00 AM** | | 275 | 279 | | | 277 | | | 277 | |
| **11:00 AM** | | 400 | 263 | | | 332 | | | 332 | |
| **12:00 PM** | | 350 | 298 | | | 324 | | | 324 | |
| **1:00 PM** | | 345 | 325 | | | 335 | | | 335 | |
| **2:00 PM** | | 353 | 341 | | | 347 | | | 347 | |
| **3:00 PM** | | 346 | 355 | | | 351 | | | 351 | |
| **4:00 PM** | | 380 | 346 | | | 363 | | | 363 | |
| **5:00 PM** | | **397** | **417** | | | **407** | | | **407** | |
| **6:00 PM** | | 290 | 306 | | | 298 | | | 298 | |
| **7:00 PM** | | 234 | 269 | | | 252 | | | 252 | |
| **8:00 PM** | | 196 | 267 | | | 232 | | | 232 | |
| **9:00 PM** | | 138 | 161 | | | 150 | | | 150 | |
| **10:00 PM** | | 70 | 77 | | | 74 | | | 74 | |
| **11:00 PM** | | 43 | 50 | | | 47 | | | 47 | |
| **Day Total** | | 5368 | 5223 | | | 5301 | | | 5301 | |
| % Weekday Average | | 101.3% | 98.5% | | | | | | | |
| % Week Average | | 101.3% | 98.5% | | | 100.0% | | | | |
| AM Peak Volume | | 7:00 AM 400 | 6:00 AM 342 | | | 7:00 AM 371 | | | 7:00 AM 371 | |
| PM Peak Volume | | 5:00 PM 397 | 5:00 PM 417 | | | 5:00 PM 407 | | | 5:00 PM 407 | |

*Comments:*

**LOCATION:** NE 119th St btwn 108th Ave & 111th Ave
**SPECIFIC LOCATION:** NE 119th St btwn 108th Ave & 111th Ave
**CITY/STATE:** Vancouver, WA

**QC JOB #:** 13790429
**DIRECTION:** EB
**DATE:** Jun 07 2016 - Jun 09 2016

| Start Time | Mon | Tue 07-Jun-16 | Wed 08-Jun-16 | Thu 09-Jun-16 | Fri | Average Weekday Hourly Traffic | Sat | Sun | Average Week Hourly Traffic | Average Week Profile |
|---|---|---|---|---|---|---|---|---|---|---|
| **12:00 AM** | | 30 | 30 | 21 | | 27 | | | 27 | |
| **1:00 AM** | | 9 | 16 | 14 | | 13 | | | 13 | |
| **2:00 AM** | | 6 | 12 | 2 | | 7 | | | 7 | |
| **3:00 AM** | | 11 | 11 | 9 | | 10 | | | 10 | |
| **4:00 AM** | | 25 | 25 | 28 | | 26 | | | 26 | |
| **5:00 AM** | | 55 | 59 | 47 | | 54 | | | 54 | |
| **6:00 AM** | | 181 | 204 | 156 | | 180 | | | 180 | |
| **7:00 AM** | | **453** | **463** | **510** | | **475** | | | **475** | |
| **8:00 AM** | | 346 | 346 | 307 | | 333 | | | 333 | |
| **9:00 AM** | | 289 | 0 | 264 | | 184 | | | 184 | |
| **10:00 AM** | | 282 | 0 | 304 | | 195 | | | 195 | |
| **11:00 AM** | | 311 | 0 | 311 | | 207 | | | 207 | |
| **12:00 PM** | | 326 | 0 | 342 | | 223 | | | 223 | |
| **1:00 PM** | | 326 | 0 | 361 | | 229 | | | 229 | |
| **2:00 PM** | | 412 | 438 | 472 | | 441 | | | 441 | |
| **3:00 PM** | | 528 | 500 | 508 | | 512 | | | 512 | |
| **4:00 PM** | | 576 | 582 | 651 | | 603 | | | 603 | |
| **5:00 PM** | | **689** | **724** | **755** | | **723** | | | **723** | |
| **6:00 PM** | | 437 | 419 | 491 | | 449 | | | 449 | |
| **7:00 PM** | | 291 | 339 | 250 | | 293 | | | 293 | |
| **8:00 PM** | | 296 | 283 | 272 | | 284 | | | 284 | |
| **9:00 PM** | | 161 | 141 | 152 | | 151 | | | 151 | |
| **10:00 PM** | | 93 | 80 | 113 | | 95 | | | 95 | |
| **11:00 PM** | | 50 | 50 | 43 | | 48 | | | 48 | |
| **Day Total** | | 6183 | 4722 | 6383 | | 5762 | | | 5762 | |
| % Weekday Average | | 107.3% | 82.0% | 110.8% | | | | | | |
| % Week Average | | 107.3% | 82.0% | 110.8% | | 100.0% | | | | |
| AM Peak Volume | | 7:00 AM 453 | 7:00 AM 463 | 7:00 AM 510 | | 7:00 AM 475 | | | 7:00 AM 475 | |
| PM Peak Volume | | 5:00 PM 689 | 5:00 PM 724 | 5:00 PM 755 | | 5:00 PM 723 | | | 5:00 PM 723 | |

*Comments:*

**LOCATION:** NE 119th St btwn 108th Ave & 111th Ave
**SPECIFIC LOCATION:** NE 119th St btwn 108th Ave & 111th Ave
**CITY/STATE:** Vancouver, WA

**QC JOB #:** 13790429
**DIRECTION:** WB
**DATE:** Jun 07 2016 - Jun 09 2016

| Start Time | Mon | Tue 07-Jun-16 | Wed 08-Jun-16 | Thu 09-Jun-16 | Fri | Average Weekday Hourly Traffic | Sat | Sun | Average Week Hourly Traffic | Average Week Profile |
|---|---|---|---|---|---|---|---|---|---|---|
| **12:00 AM** | | 18 | 18 | 27 | | 21 | | | 21 | |
| **1:00 AM** | | 21 | 12 | 16 | | 16 | | | 16 | |
| **2:00 AM** | | 2 | 9 | 4 | | 5 | | | 5 | |
| **3:00 AM** | | 14 | 14 | 16 | | 15 | | | 15 | |
| **4:00 AM** | | 17 | 22 | 27 | | 22 | | | 22 | |
| **5:00 AM** | | 153 | 144 | 140 | | 146 | | | 146 | |
| **6:00 AM** | | 311 | 319 | 294 | | 308 | | | 308 | |
| **7:00 AM** | | **407** | **387** | 352 | | **382** | | | **382** | |
| **8:00 AM** | | 338 | 321 | **361** | | 340 | | | 340 | |
| **9:00 AM** | | 301 | 0 | 315 | | 205 | | | 205 | |
| **10:00 AM** | | 272 | 0 | 329 | | 200 | | | 200 | |
| **11:00 AM** | | 287 | 0 | 287 | | 191 | | | 191 | |
| **12:00 PM** | | 298 | 0 | 301 | | 200 | | | 200 | |
| **1:00 PM** | | 312 | 0 | 282 | | 198 | | | 198 | |
| **2:00 PM** | | 468 | 452 | **450** | | 457 | | | 457 | |
| **3:00 PM** | | 399 | 391 | 419 | | 403 | | | 403 | |
| **4:00 PM** | | 420 | 416 | 398 | | 411 | | | 411 | |
| **5:00 PM** | | **477** | **484** | 434 | | **465** | | | **465** | |
| **6:00 PM** | | 312 | 329 | 305 | | 315 | | | 315 | |
| **7:00 PM** | | 223 | 268 | 208 | | 233 | | | 233 | |
| **8:00 PM** | | 246 | 222 | 144 | | 204 | | | 204 | |
| **9:00 PM** | | 135 | 183 | 273 | | 197 | | | 197 | |
| **10:00 PM** | | 72 | 97 | 110 | | 93 | | | 93 | |
| **11:00 PM** | | 59 | 57 | 63 | | 60 | | | 60 | |
| **Day Total** | | 5562 | 4145 | 5555 | | 5087 | | | 5087 | |
| % Weekday Average | | 109.3% | 81.5% | 109.2% | | | | | | |
| % Week Average | | 109.3% | 81.5% | 109.2% | | 100.0% | | | | |
| AM Peak Volume | | 7:00 AM 407 | 7:00 AM 387 | 8:00 AM 361 | | 7:00 AM 382 | | | 7:00 AM 382 | |
| PM Peak Volume | | 5:00 PM 477 | 5:00 PM 484 | 2:00 PM 450 | | 5:00 PM 465 | | | 5:00 PM 465 | |

*Comments:*

**LOCATION:** NE Padden Pkwy west of 107th Ave
**SPECIFIC LOCATION:** NE Padden Pkwy west of 107th Ave
**CITY/STATE:** Vancouver, WA

**QC JOB #:** 13790430
**DIRECTION:** EB
**DATE:** Jun 07 2016 - Jun 09 2016

| Start Time | Mon | Tue 07-Jun-16 | Wed 08-Jun-16 | Thu 09-Jun-16 | Fri | Average Weekday Hourly Traffic | Sat | Sun | Average Week Hourly Traffic | Average Week Profile |
|---|---|---|---|---|---|---|---|---|---|---|
| **12:00 AM** | | 60 | 70 | 70 | | 67 | | | 67 | |
| **1:00 AM** | | 36 | 45 | 40 | | 40 | | | 40 | |
| **2:00 AM** | | 44 | 45 | 38 | | 42 | | | 42 | |
| **3:00 AM** | | 24 | 34 | 28 | | 29 | | | 29 | |
| **4:00 AM** | | 55 | 47 | 47 | | 50 | | | 50 | |
| **5:00 AM** | | 154 | 134 | 150 | | 146 | | | 146 | |
| **6:00 AM** | | 431 | 407 | 415 | | 418 | | | 418 | |
| **7:00 AM** | | **730** | **711** | **642** | | **694** | | | **694** | |
| **8:00 AM** | | 636 | 599 | 564 | | 600 | | | 600 | |
| **9:00 AM** | | 499 | 0 | 498 | | 332 | | | 332 | |
| **10:00 AM** | | 540 | 0 | 536 | | 359 | | | 359 | |
| **11:00 AM** | | 577 | 0 | 587 | | 388 | | | 388 | |
| **12:00 PM** | | 623 | 0 | 648 | | 424 | | | 424 | |
| **1:00 PM** | | 655 | 0 | 681 | | 445 | | | 445 | |
| **2:00 PM** | | 772 | 0 | 702 | | 491 | | | 491 | |
| **3:00 PM** | | 935 | 994 | 861 | | 930 | | | 930 | |
| **4:00 PM** | | **1112** | **1058** | 956 | | 1042 | | | 1042 | |
| **5:00 PM** | | 1073 | 1029 | **1092** | | **1065** | | | **1065** | |
| **6:00 PM** | | 813 | 793 | 760 | | 789 | | | 789 | |
| **7:00 PM** | | 550 | 542 | 595 | | 562 | | | 562 | |
| **8:00 PM** | | 439 | 452 | 459 | | 450 | | | 450 | |
| **9:00 PM** | | 360 | 378 | 336 | | 358 | | | 358 | |
| **10:00 PM** | | 232 | 232 | 238 | | 234 | | | 234 | |
| **11:00 PM** | | 144 | 126 | 162 | | 144 | | | 144 | |
| **Day Total** | | 11494 | 7696 | 11105 | | 10099 | | | 10099 | |
| % Weekday Average | | 113.8% | 76.2% | 110.0% | | | | | | |
| % Week Average | | 113.8% | 76.2% | 110.0% | | 100.0% | | | | |
| AM Peak Volume | | 7:00 AM 730 | 7:00 AM 711 | 7:00 AM 642 | | 7:00 AM 694 | | | 7:00 AM 694 | |
| PM Peak Volume | | 4:00 PM 1112 | 4:00 PM 1058 | 5:00 PM 1092 | | 5:00 PM 1065 | | | 5:00 PM 1065 | |

*Comments:*

**LOCATION:** NE Padden Pkwy west of 107th Ave
**SPECIFIC LOCATION:** NE Padden Pkwy west of 107th Ave
**CITY/STATE:** Vancouver, WA

**QC JOB #:** 13790430
**DIRECTION:** WB
**DATE:** Jun 07 2016 - Jun 09 2016

| Start Time | Mon | Tue 07-Jun-16 | Wed 08-Jun-16 | Thu 09-Jun-16 | Fri | Average Weekday Hourly Traffic | Sat | Sun | Average Week Hourly Traffic | Average Week Profile |
|---|---|---|---|---|---|---|---|---|---|---|
| **12:00 AM** | | 42 | 52 | 61 | | 52 | | | 52 | |
| **1:00 AM** | | 24 | 27 | 35 | | 29 | | | 29 | |
| **2:00 AM** | | 40 | 36 | 26 | | 34 | | | 34 | |
| **3:00 AM** | | 53 | 50 | 54 | | 52 | | | 52 | |
| **4:00 AM** | | 142 | 143 | 139 | | 141 | | | 141 | |
| **5:00 AM** | | 470 | 481 | 447 | | 466 | | | 466 | |
| **6:00 AM** | | 1058 | 1033 | **976** | | 1022 | | | 1022 | |
| **7:00 AM** | | **1125** | **1101** | 950 | | **1059** | | | **1059** | |
| **8:00 AM** | | 916 | 826 | 818 | | 853 | | | 853 | |
| **9:00 AM** | | 711 | 0 | 690 | | 467 | | | 467 | |
| **10:00 AM** | | 649 | 0 | 641 | | 430 | | | 430 | |
| **11:00 AM** | | 663 | 0 | 604 | | 422 | | | 422 | |
| **12:00 PM** | | 740 | 0 | 689 | | 476 | | | 476 | |
| **1:00 PM** | | 666 | 0 | 686 | | 451 | | | 451 | |
| **2:00 PM** | | 769 | 0 | 713 | | 494 | | | 494 | |
| **3:00 PM** | | 852 | 765 | 825 | | 814 | | | 814 | |
| **4:00 PM** | | 901 | **904** | 868 | | 891 | | | 891 | |
| **5:00 PM** | | **908** | 883 | **963** | | **918** | | | **918** | |
| **6:00 PM** | | 700 | 708 | 728 | | 712 | | | 712 | |
| **7:00 PM** | | 470 | 449 | 496 | | 472 | | | 472 | |
| **8:00 PM** | | 412 | 432 | 382 | | 409 | | | 409 | |
| **9:00 PM** | | 301 | 312 | 317 | | 310 | | | 310 | |
| **10:00 PM** | | 181 | 174 | 171 | | 175 | | | 175 | |
| **11:00 PM** | | 94 | 85 | 96 | | 92 | | | 92 | |
| **Day Total** | | 12887 | 8461 | 12375 | | 11241 | | | 11241 | |
| % Weekday Average | | 114.6% | 75.3% | 110.1% | | | | | | |
| % Week Average | | 114.6% | 75.3% | 110.1% | | 100.0% | | | | |
| AM Peak Volume | | 7:00 AM 1125 | 7:00 AM 1101 | 6:00 AM 976 | | 7:00 AM 1059 | | | 7:00 AM 1059 | |
| PM Peak Volume | | 5:00 PM 908 | 4:00 PM 904 | 5:00 PM 963 | | 5:00 PM 918 | | | 5:00 PM 918 | |

*Comments:*

**LOCATION:** NE Padden Pkwy west of 94th Ave
**SPECIFIC LOCATION:** NE Padden Pkwy west of 94th Ave
**CITY/STATE:** Vancouver, WA

**QC JOB #:** 13790431
**DIRECTION:** EB
**DATE:** Jun 07 2016 - Jun 09 2016

| Start Time | Mon | Tue 07-Jun-16 | Wed 08-Jun-16 | Thu 09-Jun-16 | Fri | Average Weekday Hourly Traffic | Sat | Sun | Average Week Hourly Traffic | Average Week Profile |
|---|---|---|---|---|---|---|---|---|---|---|
| **12:00 AM** | | 87 | 106 | 105 | | 99 | | | 99 | |
| **1:00 AM** | | 48 | 57 | 59 | | 55 | | | 55 | |
| **2:00 AM** | | 65 | 61 | 53 | | 60 | | | 60 | |
| **3:00 AM** | | 32 | 53 | 44 | | 43 | | | 43 | |
| **4:00 AM** | | 64 | 50 | 54 | | 56 | | | 56 | |
| **5:00 AM** | | 188 | 185 | 201 | | 191 | | | 191 | |
| **6:00 AM** | | 506 | 472 | 488 | | 489 | | | 489 | |
| **7:00 AM** | | **864** | **812** | **841** | | **839** | | | **839** | |
| **8:00 AM** | | 798 | 780 | 782 | | 787 | | | 787 | |
| **9:00 AM** | | 624 | 0 | 640 | | 421 | | | 421 | |
| **10:00 AM** | | 712 | 0 | 705 | | 472 | | | 472 | |
| **11:00 AM** | | 778 | 0 | 767 | | 515 | | | 515 | |
| **12:00 PM** | | 840 | 0 | 881 | | 574 | | | 574 | |
| **1:00 PM** | | 887 | 0 | 922 | | 603 | | | 603 | |
| **2:00 PM** | | 1068 | 1051 | 986 | | 1035 | | | 1035 | |
| **3:00 PM** | | 1312 | 1346 | 1298 | | 1319 | | | 1319 | |
| **4:00 PM** | | **1471** | **1478** | 1371 | | **1440** | | | **1440** | |
| **5:00 PM** | | 1424 | 1423 | **1409** | | 1419 | | | 1419 | |
| **6:00 PM** | | 1113 | 1097 | 1081 | | 1097 | | | 1097 | |
| **7:00 PM** | | 750 | 775 | 821 | | 782 | | | 782 | |
| **8:00 PM** | | 615 | 645 | 601 | | 620 | | | 620 | |
| **9:00 PM** | | 492 | 512 | 465 | | 490 | | | 490 | |
| **10:00 PM** | | 310 | 298 | 314 | | 307 | | | 307 | |
| **11:00 PM** | | 187 | 186 | 209 | | 194 | | | 194 | |
| **Day Total** | | 15235 | 11387 | 15097 | | 13907 | | | 13907 | |
| % Weekday Average | | 109.5% | 81.9% | 108.6% | | | | | | |
| % Week Average | | 109.5% | 81.9% | 108.6% | | 100.0% | | | | |
| AM Peak Volume | | 7:00 AM 864 | 7:00 AM 812 | 7:00 AM 841 | | 7:00 AM 839 | | | 7:00 AM 839 | |
| PM Peak Volume | | 4:00 PM 1471 | 4:00 PM 1478 | 5:00 PM 1409 | | 4:00 PM 1440 | | | 4:00 PM 1440 | |

*Comments:*

**LOCATION:** NE Padden Pkwy west of 94th Ave
**SPECIFIC LOCATION:** NE Padden Pkwy west of 94th Ave
**CITY/STATE:** Vancouver, WA

**QC JOB #:** 13790431
**DIRECTION:** WB
**DATE:** Jun 07 2016 - Jun 09 2016

| Start Time | Mon | Tue 07-Jun-16 | Wed 08-Jun-16 | Thu 09-Jun-16 | Fri | Average Weekday Hourly Traffic | Sat | Sun | Average Week Hourly Traffic | Average Week Profile |
|---|---|---|---|---|---|---|---|---|---|---|
| **12:00 AM** | | 50 | 51 | 66 | | 56 | | | 56 | |
| **1:00 AM** | | 28 | 30 | 35 | | 31 | | | 31 | |
| **2:00 AM** | | 47 | 38 | 39 | | 41 | | | 41 | |
| **3:00 AM** | | 85 | 77 | 81 | | 81 | | | 81 | |
| **4:00 AM** | | 217 | 223 | 226 | | 222 | | | 222 | |
| **5:00 AM** | | 637 | 611 | 619 | | 622 | | | 622 | |
| **6:00 AM** | | 1310 | 1264 | 1325 | | 1300 | | | 1300 | |
| **7:00 AM** | | **1350** | **1364** | **1326** | | **1347** | | | **1347** | |
| **8:00 AM** | | 1129 | 1121 | 1141 | | 1130 | | | 1130 | |
| **9:00 AM** | | 863 | 0 | 894 | | 586 | | | 586 | |
| **10:00 AM** | | 810 | 0 | 798 | | 536 | | | 536 | |
| **11:00 AM** | | 753 | 0 | 773 | | 509 | | | 509 | |
| **12:00 PM** | | 842 | 0 | 800 | | 547 | | | 547 | |
| **1:00 PM** | | 762 | 0 | 823 | | 528 | | | 528 | |
| **2:00 PM** | | 853 | 813 | 814 | | 827 | | | 827 | |
| **3:00 PM** | | 929 | 898 | 929 | | 919 | | | 919 | |
| **4:00 PM** | | **1045** | **1017** | 1016 | | 1026 | | | 1026 | |
| **5:00 PM** | | 1013 | 1004 | **1067** | | **1028** | | | **1028** | |
| **6:00 PM** | | 761 | 853 | 882 | | 832 | | | 832 | |
| **7:00 PM** | | 553 | 510 | 556 | | 540 | | | 540 | |
| **8:00 PM** | | 445 | 490 | 465 | | 467 | | | 467 | |
| **9:00 PM** | | 351 | 327 | 388 | | 355 | | | 355 | |
| **10:00 PM** | | 222 | 201 | 200 | | 208 | | | 208 | |
| **11:00 PM** | | 108 | 101 | 109 | | 106 | | | 106 | |
| **Day Total** | | 15163 | 10993 | 15372 | | 13844 | | | 13844 | |
| % Weekday Average | | 109.5% | 79.4% | 111.0% | | | | | | |
| % Week Average | | 109.5% | 79.4% | 111.0% | | 100.0% | | | | |
| AM Peak Volume | | 7:00 AM 1350 | 7:00 AM 1364 | 7:00 AM 1326 | | 7:00 AM 1347 | | | 7:00 AM 1347 | |
| PM Peak Volume | | 4:00 PM 1045 | 4:00 PM 1017 | 5:00 PM 1067 | | 5:00 PM 1028 | | | 5:00 PM 1028 | |

*Comments:*

# Appendix B Existing Operations Analysis Worksheets

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# HCM Signalized Intersection Capacity Analysis
## 1: NE 72nd Ave & NE 119th St

7/26/2016

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 29 | 164 | 67 | 268 | 142 | 38 | 57 | 233 | 215 | 37 | 479 | 16 |
| Future Volume (vph) | 29 | 164 | 67 | 268 | 142 | 38 | 57 | 233 | 215 | 37 | 479 | 16 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 5.4 | 6.1 | | 5.4 | 6.2 | | 5.4 | 6.1 | 5.4 | 5.4 | 6.1 | |
| Lane Util. Factor | 1.00 | 1.00 | | 0.97 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | |
| Frpb, ped/bikes | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | |
| Flpb, ped/bikes | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | |
| Frt | 1.00 | 0.96 | | 1.00 | 0.97 | | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1752 | 1703 | | 3303 | 1600 | | 1517 | 1743 | 1482 | 1517 | 3356 | |
| Flt Permitted | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | |
| Satd. Flow (perm) | 1752 | 1703 | | 3303 | 1600 | | 1517 | 1743 | 1482 | 1517 | 3356 | |
| Peak-hour factor, PHF | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 |
| Adj. Flow (vph) | 33 | 189 | 77 | 308 | 163 | 44 | 66 | 268 | 247 | 43 | 551 | 18 |
| RTOR Reduction (vph) | 0 | 8 | 0 | 0 | 5 | 0 | 0 | 0 | 167 | 0 | 2 | 0 |
| Lane Group Flow (vph) | 33 | 258 | 0 | 308 | 202 | 0 | 66 | 268 | 80 | 43 | 567 | 0 |
| Confl. Peds. (#/hr) | 3 | | | | | 3 | 3 | | | | | 3 |
| Confl. Bikes (#/hr) | | | | | | | | | | | | 1 |
| Heavy Vehicles (%) | 3% | 7% | 6% | 6% | 12% | 24% | 19% | 9% | 9% | 19% | 7% | 6% |
| Turn Type | Prot | NA | | Prot | NA | | Prot | NA | pm+ov | Prot | NA | |
| Protected Phases | 1 | 6 | | 5 | 2 | | 3 | 8 | 5 | 7 | 4 | |
| Permitted Phases | | | | | | | | | 8 | | | |
| Actuated Green, G (s) | 3.9 | 58.8 | | 14.9 | 69.7 | | 7.6 | 27.4 | 42.3 | 5.9 | 25.7 | |
| Effective Green, g (s) | 3.9 | 58.8 | | 14.9 | 69.7 | | 7.6 | 27.4 | 42.3 | 5.9 | 25.7 | |
| Actuated g/C Ratio | 0.03 | 0.45 | | 0.11 | 0.54 | | 0.06 | 0.21 | 0.33 | 0.05 | 0.20 | |
| Clearance Time (s) | 5.4 | 6.1 | | 5.4 | 6.2 | | 5.4 | 6.1 | 5.4 | 5.4 | 6.1 | |
| Vehicle Extension (s) | 0.2 | 0.2 | | 0.2 | 0.2 | | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | |
| Lane Grp Cap (vph) | 52 | 770 | | 378 | 857 | | 88 | 367 | 482 | 68 | 663 | |
| v/s Ratio Prot | 0.02 | c0.15 | | c0.09 | 0.13 | | c0.04 | 0.15 | 0.02 | 0.03 | c0.17 | |
| v/s Ratio Perm | | | | | | | | | 0.04 | | | |
| v/c Ratio | 0.63 | 0.33 | | 0.81 | 0.24 | | 0.75 | 0.73 | 0.17 | 0.63 | 0.86 | |
| Uniform Delay, d1 | 62.3 | 23.0 | | 56.2 | 16.0 | | 60.3 | 47.9 | 31.3 | 61.0 | 50.4 | |
| Progression Factor | 1.00 | 1.00 | | 1.05 | 0.93 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | |
| Incremental Delay, d2 | 17.1 | 0.1 | | 12.0 | 0.6 | | 26.8 | 6.3 | 0.1 | 13.2 | 10.2 | |
| Delay (s) | 79.4 | 23.1 | | 70.9 | 15.5 | | 87.0 | 54.2 | 31.3 | 74.2 | 60.5 | |
| Level of Service | E | C | | E | B | | F | D | C | E | E | |
| Approach Delay (s) | | 29.3 | | | 48.6 | | | 48.2 | | | 61.5 | |
| Approach LOS | | C | | | D | | | D | | | E | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 49.5 | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | 0.56 | | |
| Actuated Cycle Length (s) | 130.0 | Sum of lost time (s) | 23.1 |
| Intersection Capacity Utilization | 63.5% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 34 | 201 | 50 | 65 | 216 | 67 | 18 | 39 | 47 | 81 | 65 | 20 |
| Future Volume (vph) | 34 | 201 | 50 | 65 | 216 | 67 | 18 | 39 | 47 | 81 | 65 | 20 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 6.3 | 6.3 | 4.0 | 6.3 | 6.3 | | 6.3 | 6.3 | | 6.3 | 6.3 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 0.96 | | 1.00 | 0.92 | | 1.00 | 0.96 | |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1805 | 1759 | 1495 | 1687 | 3137 | | 1543 | 1641 | | 1597 | 1752 | |
| Flt Permitted | 0.54 | 1.00 | 1.00 | 0.55 | 1.00 | | 0.69 | 1.00 | | 0.46 | 1.00 | |
| Satd. Flow (perm) | 1030 | 1759 | 1495 | 977 | 3137 | | 1119 | 1641 | | 779 | 1752 | |
| Peak-hour factor, PHF | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 |
| Adj. Flow (vph) | 42 | 248 | 62 | 80 | 267 | 83 | 22 | 48 | 58 | 100 | 80 | 25 |
| RTOR Reduction (vph) | 0 | 0 | 62 | 0 | 14 | 0 | 0 | 38 | 0 | 0 | 9 | 0 |
| Lane Group Flow (vph) | 42 | 248 | 0 | 80 | 336 | 0 | 22 | 68 | 0 | 100 | 96 | 0 |
| Heavy Vehicles (%) | 0% | 8% | 8% | 7% | 11% | 11% | 17% | 3% | 9% | 13% | 6% | 0% |
| Turn Type | pm+pt | NA | NA | pm+pt | NA | | pm+pt | NA | | pm+pt | NA | |
| Protected Phases | 1 | 6 | | 5 | 2 | | 3 | 8 | | 7 | 4 | |
| Permitted Phases | 6 | | | 2 | | | 8 | | | 4 | | |
| Actuated Green, G (s) | 73.9 | 69.1 | 0.0 | 80.1 | 72.2 | | 20.1 | 15.6 | | 34.1 | 23.3 | |
| Effective Green, g (s) | 73.9 | 69.1 | 0.0 | 80.1 | 72.2 | | 20.1 | 15.6 | | 34.1 | 23.3 | |
| Actuated g/C Ratio | 0.57 | 0.53 | 0.00 | 0.62 | 0.56 | | 0.15 | 0.12 | | 0.26 | 0.18 | |
| Clearance Time (s) | 6.3 | 6.3 | | 6.3 | 6.3 | | 6.3 | 6.3 | | 6.3 | 6.3 | |
| Vehicle Extension (s) | 2.0 | 2.0 | | 3.0 | 2.0 | | 3.0 | 2.0 | | 3.0 | 2.0 | |
| Lane Grp Cap (vph) | 614 | 934 | 0 | 645 | 1742 | | 187 | 196 | | 281 | 314 | |
| v/s Ratio Prot | 0.00 | c0.14 | | c0.01 | c0.11 | | 0.00 | 0.04 | | c0.03 | 0.05 | |
| v/s Ratio Perm | 0.04 | | | 0.07 | | | 0.01 | | | c0.06 | | |
| v/c Ratio | 0.07 | 0.27 | 0.00 | 0.12 | 0.19 | | 0.12 | 0.35 | | 0.36 | 0.31 | |
| Uniform Delay, d1 | 12.4 | 16.6 | 65.0 | 10.2 | 14.4 | | 47.1 | 52.5 | | 38.0 | 46.3 | |
| Progression Factor | 0.95 | 0.86 | 1.00 | 1.00 | 1.00 | | 0.94 | 0.86 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | 0.0 | 0.1 | 0.0 | 0.1 | 0.2 | | 0.3 | 0.4 | | 0.8 | 0.2 | |
| Delay (s) | 11.8 | 14.4 | 65.0 | 10.3 | 14.6 | | 44.5 | 45.7 | | 38.7 | 46.5 | |
| Level of Service | B | B | E | B | B | | D | D | | D | D | |
| Approach Delay (s) | | 23.0 | | | 13.8 | | | 45.5 | | | 42.7 | |
| Approach LOS | | C | | | B | | | D | | | D | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 25.7 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.29 | | |
| Actuated Cycle Length (s) | 130.0 | Sum of lost time (s) | 25.2 |
| Intersection Capacity Utilization | 41.6% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 75 | 658 | 117 | 51 | 1131 | 35 | 162 | 75 | 52 | 105 | 195 | 280 |
| Future Volume (vph) | 75 | 658 | 117 | 51 | 1131 | 35 | 162 | 75 | 52 | 105 | 195 | 280 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 6.2 | 6.3 | 6.3 | 6.2 | 6.3 | 6.3 | 6.3 | 5.9 | 5.9 | 6.8 | 5.9 | 5.9 |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frpb, ped/bikes | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Flpb, ped/bikes | 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 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot) | 1530 | 3282 | 1509 | 1802 | 3438 | 1455 | 1735 | 1532 | 1429 | 1619 | 1696 | 1583 |
| Flt Permitted | 0.09 | 1.00 | 1.00 | 0.31 | 1.00 | 1.00 | 0.31 | 1.00 | 1.00 | 0.70 | 1.00 | 1.00 |
| Satd. Flow (perm) | 148 | 3282 | 1509 | 596 | 3438 | 1455 | 575 | 1532 | 1429 | 1197 | 1696 | 1583 |
| Peak-hour factor, PHF | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 |
| Adj. Flow (vph) | 84 | 739 | 131 | 57 | 1271 | 39 | 182 | 84 | 58 | 118 | 219 | 315 |
| RTOR Reduction (vph) | 0 | 0 | 46 | 0 | 0 | 15 | 0 | 0 | 42 | 0 | 0 | 106 |
| Lane Group Flow (vph) | 84 | 739 | 85 | 57 | 1271 | 24 | 182 | 84 | 16 | 118 | 219 | 209 |
| Confl. Peds. (#/hr) | 1 | | 10 | 10 | | 1 | 1 | | 4 | 4 | | 1 |
| Heavy Vehicles (%) | 18% | 10% | 7% | 0% | 5% | 11% | 4% | 24% | 13% | 11% | 12% | 2% |
| Turn Type | pm+pt | NA | pt+ov | pm+pt | NA | pt+ov | pm+pt | NA | pt+ov | pm+pt | NA | pt+ov |
| Protected Phases | 1 | 6 | 6 3 | 5 | 2 | 2 7 | 3 | 8 | 8 5 | 7 | 4 | 4 1 |
| Permitted Phases | 6 | | | 2 | | | 8 | | | 4 | | |
| Actuated Green, G (s) | 71.9 | 63.8 | 84.7 | 66.7 | 61.2 | 78.8 | 38.8 | 24.2 | 35.6 | 32.7 | 21.4 | 35.4 |
| Effective Green, g (s) | 71.9 | 63.8 | 84.7 | 66.7 | 61.2 | 78.8 | 38.8 | 24.2 | 35.6 | 32.7 | 21.4 | 35.4 |
| Actuated g/C Ratio | 0.55 | 0.49 | 0.65 | 0.51 | 0.47 | 0.61 | 0.30 | 0.19 | 0.27 | 0.25 | 0.16 | 0.27 |
| Clearance Time (s) | 6.2 | 6.3 | | 6.2 | 6.3 | | 6.3 | 5.9 | | 6.8 | 5.9 | |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lane Grp Cap (vph) | 167 | 1610 | 983 | 356 | 1618 | 881 | 301 | 285 | 391 | 337 | 279 | 431 |
| v/s Ratio Prot | 0.03 | 0.23 | 0.06 | 0.01 | c0.37 | 0.02 | c0.07 | 0.05 | 0.01 | 0.03 | c0.13 | c0.13 |
| v/s Ratio Perm | c0.25 | | | 0.08 | | | c0.11 | | | 0.06 | | |
| v/c Ratio | 0.50 | 0.46 | 0.09 | 0.16 | 0.79 | 0.03 | 0.60 | 0.29 | 0.04 | 0.35 | 0.78 | 0.48 |
| Uniform Delay, d1 | 20.7 | 21.8 | 8.4 | 16.3 | 28.9 | 10.2 | 36.4 | 45.6 | 34.7 | 39.3 | 52.1 | 39.6 |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.78 | 0.81 | 1.00 | 0.96 | 0.97 | 0.95 |
| Incremental Delay, d2 | 0.9 | 0.9 | 0.0 | 0.1 | 2.4 | 0.0 | 2.3 | 0.2 | 0.0 | 0.2 | 12.5 | 0.3 |
| Delay (s) | 21.5 | 22.7 | 8.4 | 16.4 | 31.3 | 10.3 | 30.8 | 37.0 | 34.7 | 38.1 | 63.1 | 38.1 |
| Level of Service | C | C | A | B | C | B | C | D | C | D | E | D |
| Approach Delay (s) | | 20.6 | | | 30.1 | | | 33.1 | | | 46.5 | |
| Approach LOS | | C | | | C | | | C | | | D | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 30.9 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.75 | | |
| Actuated Cycle Length (s) | 130.0 | Sum of lost time (s) | 25.2 |
| Intersection Capacity Utilization | 75.5% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 21 | 166 | 162 | 54 | 216 | 115 | 121 | 122 | 43 | 61 | 193 | 75 |
| Future Volume (vph) | 21 | 166 | 162 | 54 | 216 | 115 | 121 | 122 | 43 | 61 | 193 | 75 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Lane Util. Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 0.95 | | 1.00 | 0.95 | |
| Frpb, ped/bikes | 1.00 | 0.99 | | 1.00 | 0.99 | | 1.00 | 0.99 | | 1.00 | 0.99 | |
| Flpb, ped/bikes | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Frt | 1.00 | 0.93 | | 1.00 | 0.95 | | 1.00 | 0.96 | | 1.00 | 0.96 | |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1805 | 1660 | | 1702 | 1668 | | 1736 | 3111 | | 1687 | 3189 | |
| Flt Permitted | 0.28 | 1.00 | | 0.20 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (perm) | 524 | 1660 | | 367 | 1668 | | 1736 | 3111 | | 1687 | 3189 | |
| Peak-hour factor, PHF | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 23 | 184 | 180 | 60 | 240 | 128 | 134 | 136 | 48 | 68 | 214 | 83 |
| RTOR Reduction (vph) | 0 | 34 | 0 | 0 | 17 | 0 | 0 | 21 | 0 | 0 | 25 | 0 |
| Lane Group Flow (vph) | 23 | 330 | 0 | 60 | 351 | 0 | 134 | 163 | 0 | 68 | 272 | 0 |
| Confl. Peds. (#/hr) | 2 | | 5 | 5 | | 2 | 3 | | 3 | 3 | | 3 |
| Confl. Bikes (#/hr) | | | 1 | | | | | | | | | |
| Heavy Vehicles (%) | 0% | 4% | 6% | 6% | 6% | 10% | 4% | 12% | 7% | 7% | 9% | 4% |
| Turn Type | pm+pt | NA | | pm+pt | NA | | Prot | NA | | Prot | NA | |
| Protected Phases | 1 | 6 | | 5 | 2 | | 3 | 8 | | 7 | 4 | |
| Permitted Phases | 6 | | | 2 | | | | | | | | |
| Actuated Green, G (s) | 37.4 | 33.1 | | 43.2 | 36.0 | | 15.6 | 60.4 | | 9.3 | 54.1 | |
| Effective Green, g (s) | 37.4 | 33.1 | | 43.2 | 36.0 | | 15.6 | 60.4 | | 9.3 | 54.1 | |
| Actuated g/C Ratio | 0.29 | 0.25 | | 0.33 | 0.28 | | 0.12 | 0.46 | | 0.07 | 0.42 | |
| Clearance Time (s) | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | 193 | 422 | | 195 | 461 | | 208 | 1445 | | 120 | 1327 | |
| v/s Ratio Prot | 0.00 | 0.20 | | c0.02 | c0.21 | | c0.08 | 0.05 | | 0.04 | c0.09 | |
| v/s Ratio Perm | 0.03 | | | 0.08 | | | | | | | | |
| v/c Ratio | 0.12 | 0.78 | | 0.31 | 0.76 | | 0.64 | 0.11 | | 0.57 | 0.20 | |
| Uniform Delay, d1 | 34.4 | 45.1 | | 32.1 | 43.1 | | 54.6 | 19.7 | | 58.4 | 24.2 | |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.21 | 0.52 | |
| Incremental Delay, d2 | 0.3 | 9.2 | | 0.9 | 7.3 | | 6.7 | 0.2 | | 5.4 | 0.3 | |
| Delay (s) | 34.7 | 54.3 | | 33.0 | 50.3 | | 61.2 | 19.8 | | 76.3 | 12.9 | |
| Level of Service | C | D | | C | D | | E | B | | E | B | |
| Approach Delay (s) | | 53.1 | | | 47.9 | | | 37.3 | | | 24.7 | |
| Approach LOS | | D | | | D | | | D | | | C | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 41.3 | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | 0.46 | | |
| Actuated Cycle Length (s) | 130.0 | Sum of lost time (s) | 20.0 |
| Intersection Capacity Utilization | 68.2% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

# HCM 2010 Signalized Intersection Summary
## 3: NE 117th Ave & NE 119th St

7/26/2016

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 168 | 93 | 134 | 134 | 133 | 64 | 260 | 642 | 39 | 51 | 1245 | 243 |
| Future Volume (veh/h) | 168 | 93 | 134 | 134 | 133 | 64 | 260 | 642 | 39 | 51 | 1245 | 243 |
| Number | 1 | 6 | 16 | 5 | 2 | 12 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 0.99 | 1.00 | | 0.99 | 1.00 | | 1.00 | 1.00 | | 0.98 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1667 | 1792 | 1681 | 1776 | 1759 | 1900 | 1696 | 1714 | 1900 | 1759 | 1792 | 1776 |
| Adj Flow Rate, veh/h | 193 | 107 | 154 | 154 | 153 | 74 | 299 | 738 | 45 | 59 | 1431 | 279 |
| Adj No. of Lanes | 2 | 1 | 1 | 1 | 1 | 0 | 2 | 2 | 0 | 1 | 2 | 1 |
| Peak Hour Factor | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 |
| Percent Heavy Veh, % | 14 | 6 | 13 | 7 | 9 | 9 | 12 | 11 | 11 | 8 | 6 | 7 |
| Cap, veh/h | 245 | 312 | 309 | 171 | 218 | 105 | 317 | 1597 | 97 | 75 | 1551 | 824 |
| Arrive On Green | 0.08 | 0.17 | 0.17 | 0.10 | 0.20 | 0.20 | 0.10 | 0.51 | 0.51 | 0.04 | 0.46 | 0.46 |
| Sat Flow, veh/h | 3079 | 1792 | 1409 | 1691 | 1116 | 540 | 3134 | 3119 | 190 | 1675 | 3406 | 1475 |
| Grp Volume(v), veh/h | 193 | 107 | 154 | 154 | 0 | 227 | 299 | 385 | 398 | 59 | 1431 | 279 |
| Grp Sat Flow(s),veh/h/ln | 1540 | 1792 | 1409 | 1691 | 0 | 1656 | 1567 | 1629 | 1681 | 1675 | 1703 | 1475 |
| Q Serve(g_s), s | 7.3 | 6.2 | 11.4 | 10.7 | 0.0 | 15.2 | 11.3 | 17.9 | 18.0 | 4.1 | 46.8 | 12.3 |
| Cycle Q Clear(g_c), s | 7.3 | 6.2 | 11.4 | 10.7 | 0.0 | 15.2 | 11.3 | 17.9 | 18.0 | 4.1 | 46.8 | 12.3 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.33 | 1.00 | | 0.11 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 245 | 312 | 309 | 171 | 0 | 324 | 317 | 834 | 860 | 75 | 1551 | 824 |
| V/C Ratio(X) | 0.79 | 0.34 | 0.50 | 0.90 | 0.00 | 0.70 | 0.94 | 0.46 | 0.46 | 0.79 | 0.92 | 0.34 |
| Avail Cap(c_a), veh/h | 311 | 529 | 479 | 171 | 0 | 488 | 317 | 834 | 860 | 141 | 1607 | 848 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 53.6 | 43.1 | 40.7 | 52.8 | 0.0 | 44.5 | 53.0 | 18.5 | 18.5 | 56.2 | 30.4 | 14.4 |
| Incr Delay (d2), s/veh | 10.0 | 0.7 | 1.2 | 41.7 | 0.0 | 2.8 | 35.9 | 0.4 | 0.4 | 16.7 | 9.1 | 0.2 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 3.4 | 3.1 | 4.5 | 7.0 | 0.0 | 7.2 | 6.4 | 8.1 | 8.4 | 2.3 | 23.8 | 5.1 |
| LnGrp Delay(d),s/veh | 63.6 | 43.7 | 41.9 | 94.4 | 0.0 | 47.3 | 88.9 | 18.9 | 18.9 | 72.9 | 39.5 | 14.6 |
| LnGrp LOS | E | D | D | F | | D | F | B | B | E | D | B |
| Approach Vol, veh/h | | 454 | | | 381 | | | 1082 | | | 1769 | |
| Approach Delay, s/veh | | 51.6 | | | 66.3 | | | 38.2 | | | 36.7 | |
| Approach LOS | | D | | | E | | | D | | | D | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 14.4 | 28.2 | 17.0 | 59.0 | 17.0 | 25.6 | 10.3 | 65.8 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Max Green Setting (Gmax), s | 12.0 | 35.0 | 12.0 | 56.0 | 12.0 | 35.0 | 10.0 | 58.0 |
| Max Q Clear Time (g_c+I1), s | 9.3 | 17.2 | 13.3 | 48.8 | 12.7 | 13.4 | 6.1 | 20.0 |
| Green Ext Time (p_c), s | 0.2 | 2.4 | 0.0 | 5.2 | 0.0 | 2.5 | 0.0 | 26.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 42.0 |
| HCM 2010 LOS | D |

# HCM Unsignalized Intersection Capacity Analysis
## 6: NE 94th Ave & NE 99th St

7/26/2016

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 10 | 64 | 32 | 100 | 210 | 10 |
| Future Volume (Veh/h) | 10 | 64 | 32 | 100 | 210 | 10 |
| Sign Control | Stop | | | Free | Free | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Hourly flow rate (vph) | 11 | 68 | 34 | 106 | 223 | 11 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | TWLTL | None | |
| Median storage veh) | | | | 2 | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 402 | 228 | 234 | | | |
| vC1, stage 1 conf vol | 228 | | | | | |
| vC2, stage 2 conf vol | 174 | | | | | |
| vCu, unblocked vol | 402 | 228 | 234 | | | |
| tC, single (s) | 6.4 | 6.2 | 4.1 | | | |
| tC, 2 stage (s) | 5.4 | | | | | |
| tF (s) | 3.5 | 3.3 | 2.2 | | | |
| p0 queue free % | 98 | 92 | 97 | | | |
| cM capacity (veh/h) | 730 | 811 | 1345 | | | |

| Direction, Lane # | EB 1 | EB 2 | NB 1 | NB 2 | SB 1 |
|---|---|---|---|---|---|
| Volume Total | 11 | 68 | 34 | 106 | 234 |
| Volume Left | 11 | 0 | 34 | 0 | 0 |
| Volume Right | 0 | 68 | 0 | 0 | 11 |
| cSH | 730 | 811 | 1345 | 1700 | 1700 |
| Volume to Capacity | 0.02 | 0.08 | 0.03 | 0.06 | 0.14 |
| Queue Length 95th (ft) | 1 | 7 | 2 | 0 | 0 |
| Control Delay (s) | 10.0 | 9.8 | 7.7 | 0.0 | 0.0 |
| Lane LOS | B | A | A | | |
| Approach Delay (s) | 9.9 | | 1.9 | | 0.0 |
| Approach LOS | A | | | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 2.3 | | |
| Intersection Capacity Utilization | 28.3% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 70 | 35 | 352 | 35 | 25 | 728 |
| Future Volume (Veh/h) | 70 | 35 | 352 | 35 | 25 | 728 |
| Sign Control | Stop | | Free | | | Free |
| Grade | 0% | | 0% | | | 0% |
| Peak Hour Factor | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 |
| Hourly flow rate (vph) | 79 | 39 | 396 | 39 | 28 | 818 |
| Pedestrians | 2 | | | | | |
| Lane Width (ft) | 12.0 | | | | | |
| Walking Speed (ft/s) | 4.0 | | | | | |
| Percent Blockage | 0 | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | None | | | TWLTL |
| Median storage veh) | | | | | | 2 |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 882 | 220 | | | 437 | |
| vC1, stage 1 conf vol | 418 | | | | | |
| vC2, stage 2 conf vol | 465 | | | | | |
| vCu, unblocked vol | 882 | 220 | | | 437 | |
| tC, single (s) | 6.9 | 7.3 | | | 4.5 | |
| tC, 2 stage (s) | 5.9 | | | | | |
| tF (s) | 3.5 | 3.5 | | | 2.4 | |
| p0 queue free % | 83 | 95 | | | 97 | |
| cM capacity (veh/h) | 478 | 731 | | | 994 | |

| Direction, Lane # | WB 1 | NB 1 | NB 2 | SB 1 | SB 2 | SB 3 |
|---|---|---|---|---|---|---|
| Volume Total | 118 | 264 | 171 | 28 | 409 | 409 |
| Volume Left | 79 | 0 | 0 | 28 | 0 | 0 |
| Volume Right | 39 | 0 | 39 | 0 | 0 | 0 |
| cSH | 540 | 1700 | 1700 | 994 | 1700 | 1700 |
| Volume to Capacity | 0.22 | 0.16 | 0.10 | 0.03 | 0.24 | 0.24 |
| Queue Length 95th (ft) | 21 | 0 | 0 | 2 | 0 | 0 |
| Control Delay (s) | 13.5 | 0.0 | 0.0 | 8.7 | 0.0 | 0.0 |
| Lane LOS | B | | | A | | |
| Approach Delay (s) | 13.5 | 0.0 | | 0.3 | | |
| Approach LOS | B | | | | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 1.3 | | |
| Intersection Capacity Utilization | 32.8% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 9 | 85 | 41 | 145 | 350 | 10 |
| Future Volume (Veh/h) | 9 | 85 | 41 | 145 | 350 | 10 |
| Sign Control | Stop | | | Free | Free | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 |
| Hourly flow rate (vph) | 10 | 98 | 47 | 167 | 402 | 11 |
| Pedestrians | 2 | | | | | |
| Lane Width (ft) | 12.0 | | | | | |
| Walking Speed (ft/s) | 4.0 | | | | | |
| Percent Blockage | 0 | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | TWLTL | None | |
| Median storage veh) | | | | 2 | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 670 | 410 | 415 | | | |
| vC1, stage 1 conf vol | 410 | | | | | |
| vC2, stage 2 conf vol | 261 | | | | | |
| vCu, unblocked vol | 670 | 410 | 415 | | | |
| tC, single (s) | 6.6 | 6.2 | 4.1 | | | |
| tC, 2 stage (s) | 5.6 | | | | | |
| tF (s) | 3.7 | 3.3 | 2.2 | | | |
| p0 queue free % | 98 | 85 | 96 | | | |
| cM capacity (veh/h) | 552 | 637 | 1137 | | | |

| Direction, Lane # | EB 1 | NB 1 | NB 2 | SB 1 |
|---|---|---|---|---|
| Volume Total | 108 | 47 | 167 | 413 |
| Volume Left | 10 | 47 | 0 | 0 |
| Volume Right | 98 | 0 | 0 | 11 |
| cSH | 628 | 1137 | 1700 | 1700 |
| Volume to Capacity | 0.17 | 0.04 | 0.10 | 0.24 |
| Queue Length 95th (ft) | 15 | 3 | 0 | 0 |
| Control Delay (s) | 11.9 | 8.3 | 0.0 | 0.0 |
| Lane LOS | B | A | | |
| Approach Delay (s) | 11.9 | 1.8 | | 0.0 |
| Approach LOS | B | | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 2.3 | | |
| Intersection Capacity Utilization | 38.1% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

# MOVEMENT SUMMARY

## Site: 101 [NE 105 and NE 87]

New Site
Stop (Two-Way)

| Movement Performance - Vehicles | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Mov ID | OD Mov | Demand Flows Total veh/h | HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Distance m | Prop. Queued | Effective Stop Rate per veh | Average Speed km/h |
| South: NE 87 NB | | | | | | | | | | | |
| 1 | L2 | 1 | 0.0 | 0.033 | 7.6 | LOS A | 0.1 | 0.9 | 0.29 | 0.96 | 51.0 |
| 2 | T1 | 25 | 4.0 | 0.033 | 9.3 | LOS A | 0.1 | 0.9 | 0.29 | 0.96 | 51.1 |
| 3 | R2 | 3 | 67.0 | 0.033 | 11.8 | LOS B | 0.1 | 0.9 | 0.29 | 0.96 | 48.9 |
| Approach | | 29 | 10.6 | 0.033 | 9.5 | LOS A | 0.1 | 0.9 | 0.29 | 0.96 | 50.8 |
| East: NE 105 WB | | | | | | | | | | | |
| 4 | L2 | 1 | 0.0 | 0.071 | 5.9 | LOS A | 0.0 | 0.2 | 0.01 | 0.56 | 53.1 |
| 5 | T1 | 1 | 0.0 | 0.071 | 1.2 | LOS A | 0.0 | 0.2 | 0.01 | 0.56 | 55.0 |
| 6 | R2 | 120 | 10.0 | 0.071 | 5.7 | LOS A | 0.0 | 0.2 | 0.01 | 0.56 | 53.2 |
| Approach | | 122 | 9.8 | 0.071 | 5.6 | NA | 0.0 | 0.2 | 0.01 | 0.56 | 53.2 |
| North: NE 87 SB | | | | | | | | | | | |
| 7 | L2 | 132 | 15.0 | 0.087 | 8.1 | LOS A | 0.0 | 0.0 | 0.00 | 1.04 | 51.0 |
| 8 | T1 | 15 | 7.0 | 0.087 | 8.0 | LOS A | 0.0 | 0.0 | 0.00 | 1.04 | 51.6 |
| 9 | R2 | 1 | 0.0 | 0.087 | 8.0 | LOS A | 0.0 | 0.0 | 0.00 | 1.04 | 52.1 |
| Approach | | 147 | 14.1 | 0.087 | 8.1 | LOS A | 0.0 | 0.0 | 0.00 | 1.04 | 51.0 |
| West: NE 105 EB | | | | | | | | | | | |
| 10 | L2 | 3 | 0.0 | 0.009 | 6.4 | LOS A | 0.0 | 0.3 | 0.19 | 0.31 | 54.4 |
| 11 | T1 | 5 | 20.0 | 0.009 | 1.5 | LOS A | 0.0 | 0.3 | 0.19 | 0.31 | 56.4 |
| 12 | R2 | 1 | 0.0 | 0.009 | 5.6 | LOS A | 0.0 | 0.3 | 0.19 | 0.31 | 54.9 |
| Approach | | 9 | 11.1 | 0.009 | 3.6 | NA | 0.0 | 0.3 | 0.19 | 0.31 | 55.5 |
| All Vehicles | | 308 | 12.0 | 0.087 | 7.1 | NA | 0.1 | 0.9 | 0.04 | 0.82 | 52.0 |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

# MOVEMENT SUMMARY

## Site: 101 [NE 94th and NE 105]

New Site
Stop (Two-Way)

| Movement Performance - Vehicles | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Mov ID | OD Mov | Demand Flows Total veh/h | HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Distance ft | Prop. Queued | Effective Stop Rate per veh | Average Speed mph |
| South: NE 94th NB | | | | | | | | | | | |
| 3 | L2 | 77 | 7.0 | 0.048 | 0.0 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 34.5 |
| 8 | T1 | 3 | 33.0 | 0.048 | 0.0 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 36.3 |
| Approach | | 80 | 8.1 | 0.048 | 0.0 | NA | 0.0 | 0.0 | 0.00 | 0.00 | 34.6 |
| North: NE 94th SB | | | | | | | | | | | |
| 4 | T1 | 4 | 50.0 | 0.011 | 14.9 | LOS B | 0.0 | 1.1 | 0.33 | 0.19 | 27.3 |
| 14 | R2 | 1 | 0.0 | 0.011 | 2.4 | LOS A | 0.0 | 1.1 | 0.33 | 0.19 | 28.7 |
| Approach | | 5 | 40.0 | 0.011 | 12.4 | LOS B | 0.0 | 1.1 | 0.33 | 0.19 | 27.6 |
| West: NE 105 WB | | | | | | | | | | | |
| 5 | L2 | 1 | 0.0 | 0.150 | 304.1 | LOS F | 0.0 | 0.2 | 0.00 | 0.00 | 32.8 |
| 12 | R2 | 217 | 11.0 | 0.150 | 2.2 | LOS A | 0.0 | 0.2 | 0.00 | 0.00 | 32.6 |
| Approach | | 218 | 10.9 | 0.150 | 3.7 | NA | 0.0 | 0.2 | 0.00 | 0.00 | 32.6 |
| All Vehicles | | 304 | 10.7 | 0.150 | 2.9 | NA | 0.0 | 1.1 | 0.01 | 0.00 | 33.0 |

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

# HCM Signalized Intersection Capacity Analysis
## 1: NE 72nd Ave & NE 119th St

7/26/2016

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 36 | 153 | 40 | 196 | 154 | 68 | 64 | 511 | 532 | 70 | 354 | 29 |
| Future Volume (vph) | 36 | 153 | 40 | 196 | 154 | 68 | 64 | 511 | 532 | 70 | 354 | 29 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 5.4 | 6.1 | | 5.4 | 6.2 | | 5.4 | 6.1 | 5.4 | 5.4 | 6.1 | |
| Lane Util. Factor | 1.00 | 1.00 | | 0.97 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | |
| Frpb, ped/bikes | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | 0.99 | 1.00 | 1.00 | |
| Flpb, ped/bikes | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | |
| Frt | 1.00 | 0.97 | | 1.00 | 0.95 | | 1.00 | 1.00 | 0.85 | 1.00 | 0.99 | |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1703 | 1717 | | 3367 | 1762 | | 1752 | 1845 | 1565 | 1787 | 3459 | |
| Flt Permitted | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | |
| Satd. Flow (perm) | 1703 | 1717 | | 3367 | 1762 | | 1752 | 1845 | 1565 | 1787 | 3459 | |
| Peak-hour factor, PHF | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 |
| Adj. Flow (vph) | 40 | 168 | 44 | 215 | 169 | 75 | 70 | 562 | 585 | 77 | 389 | 32 |
| RTOR Reduction (vph) | 0 | 7 | 0 | 0 | 12 | 0 | 0 | 0 | 215 | 0 | 3 | 0 |
| Lane Group Flow (vph) | 40 | 205 | 0 | 215 | 232 | 0 | 70 | 562 | 370 | 77 | 418 | 0 |
| Confl. Peds. (#/hr) | | | | | | | | | 1 | 1 | | |
| Confl. Bikes (#/hr) | | | | | | | | | | | | 2 |
| Heavy Vehicles (%) | 6% | 7% | 8% | 4% | 1% | 7% | 3% | 3% | 2% | 1% | 3% | 3% |
| Turn Type | Prot | NA | | Prot | NA | | Prot | NA | pm+ov | Prot | NA | |
| Protected Phases | 1 | 6 | | 5 | 2 | | 3 | 8 | 5 | 7 | 4 | |
| Permitted Phases | | | | | | | | | 8 | | | |
| Actuated Green, G (s) | 5.7 | 38.9 | | 12.3 | 45.4 | | 7.9 | 66.6 | 78.9 | 9.2 | 67.9 | |
| Effective Green, g (s) | 5.7 | 38.9 | | 12.3 | 45.4 | | 7.9 | 66.6 | 78.9 | 9.2 | 67.9 | |
| Actuated g/C Ratio | 0.04 | 0.26 | | 0.08 | 0.30 | | 0.05 | 0.44 | 0.53 | 0.06 | 0.45 | |
| Clearance Time (s) | 5.4 | 6.1 | | 5.4 | 6.2 | | 5.4 | 6.1 | 5.4 | 5.4 | 6.1 | |
| Vehicle Extension (s) | 0.2 | 0.2 | | 0.2 | 0.2 | | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | |
| Lane Grp Cap (vph) | 64 | 445 | | 276 | 533 | | 92 | 819 | 823 | 109 | 1565 | |
| v/s Ratio Prot | 0.02 | 0.12 | | c0.06 | c0.13 | | 0.04 | c0.30 | 0.04 | c0.04 | 0.12 | |
| v/s Ratio Perm | | | | | | | | | 0.20 | | | |
| v/c Ratio | 0.62 | 0.46 | | 0.78 | 0.44 | | 0.76 | 0.69 | 0.45 | 0.71 | 0.27 | |
| Uniform Delay, d1 | 71.1 | 46.7 | | 67.5 | 42.0 | | 70.1 | 33.3 | 22.1 | 69.1 | 25.6 | |
| Progression Factor | 1.00 | 1.00 | | 1.25 | 0.81 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | |
| Incremental Delay, d2 | 12.9 | 0.3 | | 11.9 | 2.6 | | 27.7 | 1.9 | 0.1 | 15.6 | 0.0 | |
| Delay (s) | 84.0 | 47.0 | | 96.3 | 36.6 | | 97.8 | 35.3 | 22.2 | 84.7 | 25.6 | |
| Level of Service | F | D | | F | D | | F | D | C | F | C | |
| Approach Delay (s) | | 52.9 | | | 64.5 | | | 32.6 | | | 34.7 | |
| Approach LOS | | D | | | E | | | C | | | C | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 41.2 | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | 0.63 | | |
| Actuated Cycle Length (s) | 150.0 | Sum of lost time (s) | 23.1 |
| Intersection Capacity Utilization | 66.7% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

# HCM 2010 Signalized Intersection Summary
## 3: NE 117th Ave & NE 119th St

7/26/2016

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 448 | 238 | 174 | 65 | 184 | 61 | 326 | 1138 | 65 | 82 | 819 | 166 |
| Future Volume (veh/h) | 448 | 238 | 174 | 65 | 184 | 61 | 326 | 1138 | 65 | 82 | 819 | 166 |
| Number | 1 | 6 | 16 | 5 | 2 | 12 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.99 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1845 | 1827 | 1810 | 1810 | 1900 | 1845 | 1829 | 1900 | 1863 | 1810 | 1881 |
| Adj Flow Rate, veh/h | 503 | 267 | 196 | 73 | 207 | 69 | 366 | 1279 | 73 | 92 | 920 | 187 |
| Adj No. of Lanes | 2 | 1 | 1 | 1 | 1 | 0 | 2 | 2 | 0 | 1 | 2 | 1 |
| Peak Hour Factor | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 |
| Percent Heavy Veh, % | 2 | 3 | 4 | 5 | 6 | 6 | 3 | 4 | 4 | 2 | 5 | 1 |
| Cap, veh/h | 560 | 561 | 572 | 92 | 253 | 84 | 417 | 1418 | 81 | 114 | 1260 | 671 |
| Arrive On Green | 0.16 | 0.30 | 0.30 | 0.05 | 0.19 | 0.19 | 0.12 | 0.42 | 0.42 | 0.06 | 0.37 | 0.37 |
| Sat Flow, veh/h | 3442 | 1845 | 1553 | 1723 | 1300 | 433 | 3408 | 3339 | 190 | 1774 | 3438 | 1599 |
| Grp Volume(v), veh/h | 503 | 267 | 196 | 73 | 0 | 276 | 366 | 664 | 688 | 92 | 920 | 187 |
| Grp Sat Flow(s),veh/h/ln | 1721 | 1845 | 1553 | 1723 | 0 | 1733 | 1704 | 1737 | 1792 | 1774 | 1719 | 1599 |
| Q Serve(g_s), s | 18.6 | 15.3 | 11.9 | 5.4 | 0.0 | 19.8 | 13.7 | 46.3 | 46.6 | 6.7 | 30.1 | 10.0 |
| Cycle Q Clear(g_c), s | 18.6 | 15.3 | 11.9 | 5.4 | 0.0 | 19.8 | 13.7 | 46.3 | 46.6 | 6.7 | 30.1 | 10.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.25 | 1.00 | | 0.11 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 560 | 561 | 572 | 92 | 0 | 337 | 417 | 738 | 761 | 114 | 1260 | 671 |
| V/C Ratio(X) | 0.90 | 0.48 | 0.34 | 0.79 | 0.00 | 0.82 | 0.88 | 0.90 | 0.90 | 0.81 | 0.73 | 0.28 |
| Avail Cap(c_a), veh/h | 609 | 695 | 685 | 133 | 0 | 480 | 446 | 748 | 772 | 136 | 1296 | 688 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 53.4 | 36.8 | 29.7 | 60.8 | 0.0 | 50.1 | 56.1 | 34.9 | 34.9 | 60.0 | 35.6 | 24.8 |
| Incr Delay (d2), s/veh | 15.5 | 0.6 | 0.4 | 18.6 | 0.0 | 7.3 | 16.9 | 13.9 | 13.9 | 24.9 | 2.1 | 0.2 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 10.1 | 7.9 | 5.1 | 3.1 | 0.0 | 10.2 | 7.4 | 25.0 | 25.9 | 4.1 | 14.7 | 4.4 |
| LnGrp Delay(d),s/veh | 68.9 | 37.4 | 30.0 | 79.4 | 0.0 | 57.5 | 73.0 | 48.8 | 48.8 | 85.0 | 37.7 | 25.0 |
| LnGrp LOS | E | D | C | E | | E | E | D | D | F | D | C |
| Approach Vol, veh/h | | 966 | | | 349 | | | 1718 | | | 1199 | |
| Approach Delay, s/veh | | 52.3 | | | 62.1 | | | 54.0 | | | 39.4 | |
| Approach LOS | | D | | | E | | | D | | | D | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 26.1 | 30.3 | 20.9 | 52.6 | 11.9 | 44.5 | 13.4 | 60.2 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Max Green Setting (Gmax), s | 23.0 | 36.0 | 17.0 | 49.0 | 10.0 | 49.0 | 10.0 | 56.0 |
| Max Q Clear Time (g_c+I1), s | 20.6 | 21.8 | 15.7 | 32.1 | 7.4 | 17.3 | 8.7 | 48.6 |
| Green Ext Time (p_c), s | 0.5 | 3.5 | 0.2 | 13.8 | 0.0 | 4.4 | 0.0 | 6.6 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 50.1 |
| HCM 2010 LOS | D |

# HCM Unsignalized Intersection Capacity Analysis
## 6: NE 94th Ave & NE 99th St

7/26/2016

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 3 | 41 | 62 | 350 | 145 | 5 |
| Future Volume (Veh/h) | 3 | 41 | 62 | 350 | 145 | 5 |
| Sign Control | Stop | | | Free | Free | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 |
| Hourly flow rate (vph) | 3 | 45 | 68 | 385 | 159 | 5 |
| Pedestrians | 2 | | | | | |
| Lane Width (ft) | 12.0 | | | | | |
| Walking Speed (ft/s) | 4.0 | | | | | |
| Percent Blockage | 0 | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | TWLTL | None | |
| Median storage veh) | | | | 2 | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 684 | 164 | 166 | | | |
| vC1, stage 1 conf vol | 164 | | | | | |
| vC2, stage 2 conf vol | 521 | | | | | |
| vCu, unblocked vol | 684 | 164 | 166 | | | |
| tC, single (s) | 6.7 | 6.2 | 4.1 | | | |
| tC, 2 stage (s) | 5.7 | | | | | |
| tF (s) | 3.8 | 3.3 | 2.2 | | | |
| p0 queue free % | 99 | 95 | 95 | | | |
| cM capacity (veh/h) | 486 | 877 | 1410 | | | |

| Direction, Lane # | EB 1 | EB 2 | NB 1 | NB 2 | SB 1 |
|---|---|---|---|---|---|
| Volume Total | 3 | 45 | 68 | 385 | 164 |
| Volume Left | 3 | 0 | 68 | 0 | 0 |
| Volume Right | 0 | 45 | 0 | 0 | 5 |
| cSH | 486 | 877 | 1410 | 1700 | 1700 |
| Volume to Capacity | 0.01 | 0.05 | 0.05 | 0.23 | 0.10 |
| Queue Length 95th (ft) | 0 | 4 | 4 | 0 | 0 |
| Control Delay (s) | 12.5 | 9.3 | 7.7 | 0.0 | 0.0 |
| Lane LOS | B | A | A | | |
| Approach Delay (s) | 9.5 | | 1.2 | | 0.0 |
| Approach LOS | A | | | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 1.5 | | |
| Intersection Capacity Utilization | 28.4% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 60 | 35 | 880 | 145 | 31 | 520 |
| Future Volume (Veh/h) | 60 | 35 | 880 | 145 | 31 | 520 |
| Sign Control | Stop | | Free | | | Free |
| Grade | 0% | | 0% | | | 0% |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Hourly flow rate (vph) | 65 | 38 | 946 | 156 | 33 | 559 |
| Pedestrians | 1 | | | | | |
| Lane Width (ft) | 12.0 | | | | | |
| Walking Speed (ft/s) | 4.0 | | | | | |
| Percent Blockage | 0 | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | None | | | TWLTL |
| Median storage veh) | | | | | | 2 |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 1370 | 552 | | | 1103 | |
| vC1, stage 1 conf vol | 1025 | | | | | |
| vC2, stage 2 conf vol | 346 | | | | | |
| vCu, unblocked vol | 1370 | 552 | | | 1103 | |
| tC, single (s) | 6.9 | 7.0 | | | 4.4 | |
| tC, 2 stage (s) | 5.9 | | | | | |
| tF (s) | 3.5 | 3.4 | | | 2.3 | |
| p0 queue free % | 77 | 92 | | | 94 | |
| cM capacity (veh/h) | 284 | 467 | | | 568 | |

| Direction, Lane # | WB 1 | NB 1 | NB 2 | SB 1 | SB 2 | SB 3 |
|---|---|---|---|---|---|---|
| Volume Total | 103 | 631 | 471 | 33 | 280 | 280 |
| Volume Left | 65 | 0 | 0 | 33 | 0 | 0 |
| Volume Right | 38 | 0 | 156 | 0 | 0 | 0 |
| cSH | 332 | 1700 | 1700 | 568 | 1700 | 1700 |
| Volume to Capacity | 0.31 | 0.37 | 0.28 | 0.06 | 0.16 | 0.16 |
| Queue Length 95th (ft) | 32 | 0 | 0 | 5 | 0 | 0 |
| Control Delay (s) | 20.7 | 0.0 | 0.0 | 11.7 | 0.0 | 0.0 |
| Lane LOS | C | | | B | | |
| Approach Delay (s) | 20.7 | 0.0 | | 0.7 | | |
| Approach LOS | C | | | | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 1.4 | | |
| Intersection Capacity Utilization | 41.1% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 33 | 81 | 102 | 418 | 265 | 22 |
| Future Volume (Veh/h) | 33 | 81 | 102 | 418 | 265 | 22 |
| Sign Control | Stop | | | Free | Free | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Hourly flow rate (vph) | 34 | 84 | 106 | 435 | 276 | 23 |
| Pedestrians | 3 | | | | | |
| Lane Width (ft) | 12.0 | | | | | |
| Walking Speed (ft/s) | 4.0 | | | | | |
| Percent Blockage | 0 | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | TWLTL | None | |
| Median storage veh) | | | | 2 | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 938 | 290 | 302 | | | |
| vC1, stage 1 conf vol | 290 | | | | | |
| vC2, stage 2 conf vol | 647 | | | | | |
| vCu, unblocked vol | 938 | 290 | 302 | | | |
| tC, single (s) | 6.4 | 6.2 | 4.1 | | | |
| tC, 2 stage (s) | 5.4 | | | | | |
| tF (s) | 3.5 | 3.3 | 2.2 | | | |
| p0 queue free % | 92 | 89 | 92 | | | |
| cM capacity (veh/h) | 441 | 749 | 1256 | | | |

| Direction, Lane # | EB 1 | NB 1 | NB 2 | SB 1 |
|---|---|---|---|---|
| Volume Total | 118 | 106 | 435 | 299 |
| Volume Left | 34 | 106 | 0 | 0 |
| Volume Right | 84 | 0 | 0 | 23 |
| cSH | 624 | 1256 | 1700 | 1700 |
| Volume to Capacity | 0.19 | 0.08 | 0.26 | 0.18 |
| Queue Length 95th (ft) | 17 | 7 | 0 | 0 |
| Control Delay (s) | 12.1 | 8.1 | 0.0 | 0.0 |
| Lane LOS | B | A | | |
| Approach Delay (s) | 12.1 | 1.6 | | 0.0 |
| Approach LOS | B | | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 2.4 | | |
| Intersection Capacity Utilization | 37.8% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 32 | 466 | 30 | 71 | 275 | 50 | 20 | 51 | 85 | 35 | 25 | 20 |
| Future Volume (vph) | 32 | 466 | 30 | 71 | 275 | 50 | 20 | 51 | 85 | 35 | 25 | 20 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 6.3 | 6.3 | 6.3 | 6.3 | 6.3 | | 6.3 | 6.3 | | 6.3 | 6.3 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Frpb, ped/bikes | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 0.99 | |
| Flpb, ped/bikes | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 0.98 | | 1.00 | 0.91 | | 1.00 | 0.93 | |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1687 | 1845 | 1553 | 1805 | 3486 | | 1805 | 1709 | | 1805 | 1706 | |
| Flt Permitted | 0.52 | 1.00 | 1.00 | 0.35 | 1.00 | | 0.72 | 1.00 | | 0.36 | 1.00 | |
| Satd. Flow (perm) | 925 | 1845 | 1553 | 658 | 3486 | | 1371 | 1709 | | 683 | 1706 | |
| Peak-hour factor, PHF | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 |
| Adj. Flow (vph) | 39 | 561 | 36 | 86 | 331 | 60 | 24 | 61 | 102 | 42 | 30 | 24 |
| RTOR Reduction (vph) | 0 | 0 | 14 | 0 | 5 | 0 | 0 | 52 | 0 | 0 | 21 | 0 |
| Lane Group Flow (vph) | 39 | 561 | 22 | 86 | 386 | 0 | 24 | 111 | 0 | 42 | 33 | 0 |
| Confl. Bikes (#/hr) | | | | | | 1 | | | | | | 1 |
| Heavy Vehicles (%) | 7% | 3% | 4% | 0% | 1% | 0% | 0% | 2% | 0% | 0% | 6% | 0% |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | | pm+pt | NA | | pm+pt | NA | |
| Protected Phases | 1 | 6 | | 5 | 2 | | 3 | 8 | | 7 | 4 | |
| Permitted Phases | 6 | | 6 | 2 | | | 8 | | | 4 | | |
| Actuated Green, G (s) | 97.4 | 92.6 | 92.6 | 103.4 | 95.6 | | 22.4 | 17.7 | | 26.4 | 19.7 | |
| Effective Green, g (s) | 97.4 | 92.6 | 92.6 | 103.4 | 95.6 | | 22.4 | 17.7 | | 26.4 | 19.7 | |
| Actuated g/C Ratio | 0.65 | 0.62 | 0.62 | 0.69 | 0.64 | | 0.15 | 0.12 | | 0.18 | 0.13 | |
| Clearance Time (s) | 6.3 | 6.3 | 6.3 | 6.3 | 6.3 | | 6.3 | 6.3 | | 6.3 | 6.3 | |
| Vehicle Extension (s) | 2.0 | 2.0 | 2.0 | 3.0 | 2.0 | | 3.0 | 2.0 | | 3.0 | 2.0 | |
| Lane Grp Cap (vph) | 625 | 1138 | 958 | 513 | 2221 | | 218 | 201 | | 170 | 224 | |
| v/s Ratio Prot | 0.00 | c0.30 | | c0.01 | c0.11 | | 0.00 | c0.06 | | c0.01 | 0.02 | |
| v/s Ratio Perm | 0.04 | | 0.01 | 0.11 | | | 0.01 | | | 0.03 | | |
| v/c Ratio | 0.06 | 0.49 | 0.02 | 0.17 | 0.17 | | 0.11 | 0.55 | | 0.25 | 0.15 | |
| Uniform Delay, d1 | 9.4 | 15.8 | 11.1 | 9.5 | 11.1 | | 55.0 | 62.4 | | 52.4 | 57.7 | |
| Progression Factor | 1.08 | 0.91 | 1.00 | 1.00 | 1.00 | | 1.06 | 1.11 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | 0.0 | 0.1 | 0.0 | 0.2 | 0.2 | | 0.2 | 1.7 | | 0.8 | 0.1 | |
| Delay (s) | 10.2 | 14.4 | 11.1 | 9.7 | 11.3 | | 58.2 | 70.9 | | 53.2 | 57.8 | |
| Level of Service | B | B | B | A | B | | E | E | | D | E | |
| Approach Delay (s) | | 14.0 | | | 11.0 | | | 69.3 | | | 55.8 | |
| Approach LOS | | B | | | B | | | E | | | E | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 23.2 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.47 | | |
| Actuated Cycle Length (s) | 150.0 | Sum of lost time (s) | 25.2 |
| Intersection Capacity Utilization | 61.8% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 265 | 1081 | 216 | 58 | 863 | 125 | 167 | 262 | 108 | 105 | 176 | 134 |
| Future Volume (vph) | 265 | 1081 | 216 | 58 | 863 | 125 | 167 | 262 | 108 | 105 | 176 | 134 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 6.2 | 6.3 | 6.3 | 6.2 | 6.3 | 6.3 | 6.3 | 5.9 | 5.9 | 6.8 | 5.9 | 5.9 |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frpb, ped/bikes | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Flpb, ped/bikes | 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 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot) | 1656 | 3471 | 1583 | 1718 | 3438 | 1482 | 1736 | 1827 | 1568 | 1736 | 1845 | 1568 |
| Flt Permitted | 0.14 | 1.00 | 1.00 | 0.19 | 1.00 | 1.00 | 0.37 | 1.00 | 1.00 | 0.29 | 1.00 | 1.00 |
| Satd. Flow (perm) | 248 | 3471 | 1583 | 344 | 3438 | 1482 | 684 | 1827 | 1568 | 534 | 1845 | 1568 |
| Peak-hour factor, PHF | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Adj. Flow (vph) | 285 | 1162 | 232 | 62 | 928 | 134 | 180 | 282 | 116 | 113 | 189 | 144 |
| RTOR Reduction (vph) | 0 | 0 | 79 | 0 | 0 | 66 | 0 | 0 | 83 | 0 | 0 | 86 |
| Lane Group Flow (vph) | 285 | 1162 | 153 | 62 | 928 | 68 | 180 | 282 | 33 | 113 | 189 | 58 |
| Confl. Peds. (#/hr) | 6 | | 13 | 13 | | 6 | | | | | | |
| Heavy Vehicles (%) | 9% | 4% | 2% | 5% | 5% | 9% | 4% | 4% | 3% | 4% | 3% | 3% |
| Turn Type | pm+pt | NA | pt+ov | pm+pt | NA | pt+ov | pm+pt | NA | pt+ov | pm+pt | NA | pt+ov |
| Protected Phases | 1 | 6 | 6 3 | 5 | 2 | 2 7 | 3 | 8 | 8 5 | 7 | 4 | 4 1 |
| Permitted Phases | 6 | | | 2 | | | 8 | | | 4 | | |
| Actuated Green, G (s) | 89.7 | 76.5 | 98.7 | 64.6 | 57.6 | 75.8 | 45.3 | 29.4 | 42.3 | 37.8 | 25.9 | 57.7 |
| Effective Green, g (s) | 89.7 | 76.5 | 98.7 | 64.6 | 57.6 | 75.8 | 45.3 | 29.4 | 42.3 | 37.8 | 25.9 | 57.7 |
| Actuated g/C Ratio | 0.60 | 0.51 | 0.66 | 0.43 | 0.38 | 0.51 | 0.30 | 0.20 | 0.28 | 0.25 | 0.17 | 0.38 |
| Clearance Time (s) | 6.2 | 6.3 | | 6.2 | 6.3 | | 6.3 | 5.9 | | 6.8 | 5.9 | |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lane Grp Cap (vph) | 391 | 1770 | 1041 | 212 | 1320 | 748 | 318 | 358 | 442 | 229 | 318 | 603 |
| v/s Ratio Prot | c0.13 | 0.33 | 0.10 | 0.01 | 0.27 | 0.05 | c0.06 | c0.15 | 0.02 | 0.04 | 0.10 | 0.04 |
| v/s Ratio Perm | c0.31 | | | 0.11 | | | 0.11 | | | 0.08 | | |
| v/c Ratio | 0.73 | 0.66 | 0.15 | 0.29 | 0.70 | 0.09 | 0.57 | 0.79 | 0.07 | 0.49 | 0.59 | 0.10 |
| Uniform Delay, d1 | 26.8 | 27.1 | 9.7 | 25.8 | 39.0 | 19.2 | 41.4 | 57.3 | 39.5 | 45.5 | 57.2 | 29.5 |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.70 | 0.82 | 1.16 | 1.07 | 1.05 | 0.90 |
| Incremental Delay, d2 | 5.7 | 1.9 | 0.0 | 0.3 | 1.4 | 0.0 | 1.3 | 9.7 | 0.0 | 0.6 | 2.0 | 0.0 |
| Delay (s) | 32.5 | 29.0 | 9.7 | 26.1 | 40.4 | 19.3 | 30.2 | 56.7 | 45.8 | 49.3 | 61.9 | 26.4 |
| Level of Service | C | C | A | C | D | B | C | E | D | D | E | C |
| Approach Delay (s) | | 26.9 | | | 37.1 | | | 46.3 | | | 47.3 | |
| Approach LOS | | C | | | D | | | D | | | D | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 35.2 | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | 0.76 | | |
| Actuated Cycle Length (s) | 150.0 | Sum of lost time (s) | 25.2 |
| Intersection Capacity Utilization | 79.1% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 39 | 303 | 128 | 121 | 232 | 118 | 120 | 333 | 79 | 145 | 246 | 32 |
| Future Volume (vph) | 39 | 303 | 128 | 121 | 232 | 118 | 120 | 333 | 79 | 145 | 246 | 32 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Lane Util. Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 0.95 | | 1.00 | 0.95 | |
| Frpb, ped/bikes | 1.00 | 0.99 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Flpb, ped/bikes | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Frt | 1.00 | 0.96 | | 1.00 | 0.95 | | 1.00 | 0.97 | | 1.00 | 0.98 | |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1671 | 1746 | | 1703 | 1721 | | 1719 | 3383 | | 1703 | 3352 | |
| Flt Permitted | 0.34 | 1.00 | | 0.17 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (perm) | 596 | 1746 | | 305 | 1721 | | 1719 | 3383 | | 1703 | 3352 | |
| Peak-hour factor, PHF | 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) | 41 | 316 | 133 | 126 | 242 | 123 | 125 | 347 | 82 | 151 | 256 | 33 |
| RTOR Reduction (vph) | 0 | 13 | 0 | 0 | 15 | 0 | 0 | 13 | 0 | 0 | 6 | 0 |
| Lane Group Flow (vph) | 41 | 436 | 0 | 126 | 350 | 0 | 125 | 416 | 0 | 151 | 283 | 0 |
| Confl. Peds. (#/hr) | | | 4 | 4 | | | 4 | | 1 | 1 | | 4 |
| Confl. Bikes (#/hr) | | | | | | 1 | | | | | | 1 |
| Heavy Vehicles (%) | 8% | 4% | 2% | 6% | 3% | 7% | 5% | 3% | 4% | 6% | 5% | 9% |
| Turn Type | pm+pt | NA | | pm+pt | NA | | Prot | NA | | Prot | NA | |
| Protected Phases | 1 | 6 | | 5 | 2 | | 3 | 8 | | 7 | 4 | |
| Permitted Phases | 6 | | | 2 | | | | | | | | |
| Actuated Green, G (s) | 53.0 | 46.2 | | 59.4 | 49.4 | | 20.3 | 48.4 | | 25.4 | 53.5 | |
| Effective Green, g (s) | 53.0 | 46.2 | | 59.4 | 49.4 | | 20.3 | 48.4 | | 25.4 | 53.5 | |
| Actuated g/C Ratio | 0.35 | 0.31 | | 0.40 | 0.33 | | 0.14 | 0.32 | | 0.17 | 0.36 | |
| Clearance Time (s) | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | 259 | 537 | | 213 | 566 | | 232 | 1091 | | 288 | 1195 | |
| v/s Ratio Prot | 0.01 | c0.25 | | c0.04 | 0.20 | | 0.07 | c0.12 | | c0.09 | 0.08 | |
| v/s Ratio Perm | 0.05 | | | 0.19 | | | | | | | | |
| v/c Ratio | 0.16 | 0.81 | | 0.59 | 0.62 | | 0.54 | 0.38 | | 0.52 | 0.24 | |
| Uniform Delay, d1 | 33.2 | 47.9 | | 33.7 | 42.3 | | 60.5 | 39.2 | | 56.8 | 33.9 | |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.75 | 1.03 | |
| Incremental Delay, d2 | 0.3 | 9.1 | | 4.4 | 2.0 | | 2.4 | 1.0 | | 1.6 | 0.4 | |
| Delay (s) | 33.5 | 57.0 | | 38.0 | 44.4 | | 62.9 | 40.3 | | 44.4 | 35.3 | |
| Level of Service | C | E | | D | D | | E | D | | D | D | |
| Approach Delay (s) | | 55.0 | | | 42.7 | | | 45.4 | | | 38.4 | |
| Approach LOS | | E | | | D | | | D | | | D | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 45.6 | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | 0.58 | | |
| Actuated Cycle Length (s) | 150.0 | Sum of lost time (s) | 20.0 |
| Intersection Capacity Utilization | 76.2% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

# MOVEMENT SUMMARY

## Site: 101 [NE 105 and NE 87]

New Site
Stop (Two-Way)

| Movement Performance - Vehicles | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Mov ID | OD Mov | Demand Flows Total veh/h | HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Distance m | Prop. Queued | Effective Stop Rate per veh | Average Speed km/h |
| South: NE 87 NB | | | | | | | | | | | |
| 1 | L2 | 1 | 0.0 | 0.025 | 7.7 | LOS A | 0.1 | 0.6 | 0.29 | 0.94 | 51.0 |
| 2 | T1 | 19 | 0.0 | 0.025 | 9.2 | LOS A | 0.1 | 0.6 | 0.29 | 0.94 | 51.2 |
| 3 | R2 | 3 | 0.0 | 0.025 | 8.5 | LOS A | 0.1 | 0.6 | 0.29 | 0.94 | 51.5 |
| Approach | | 23 | 0.0 | 0.025 | 9.0 | LOS A | 0.1 | 0.6 | 0.29 | 0.94 | 51.2 |
| East: NE 105 WB | | | | | | | | | | | |
| 4 | L2 | 5 | 0.0 | 0.097 | 5.9 | LOS A | 0.1 | 0.7 | 0.04 | 0.54 | 53.1 |
| 5 | T1 | 4 | 0.0 | 0.097 | 1.2 | LOS A | 0.1 | 0.7 | 0.04 | 0.54 | 55.0 |
| 6 | R2 | 162 | 3.0 | 0.097 | 5.6 | LOS A | 0.1 | 0.7 | 0.04 | 0.54 | 53.5 |
| Approach | | 172 | 2.8 | 0.097 | 5.5 | NA | 0.1 | 0.7 | 0.04 | 0.54 | 53.5 |
| North: NE 87 SB | | | | | | | | | | | |
| 7 | L2 | 124 | 7.0 | 0.084 | 7.7 | LOS A | 0.0 | 0.0 | 0.00 | 1.03 | 51.3 |
| 8 | T1 | 23 | 0.0 | 0.084 | 7.7 | LOS A | 0.0 | 0.0 | 0.00 | 1.03 | 51.8 |
| 9 | R2 | 3 | 0.0 | 0.084 | 8.0 | LOS A | 0.0 | 0.0 | 0.00 | 1.03 | 52.1 |
| Approach | | 151 | 5.8 | 0.084 | 7.7 | LOS A | 0.0 | 0.0 | 0.00 | 1.03 | 51.4 |
| West: NE 105 EB | | | | | | | | | | | |
| 10 | L2 | 2 | 0.0 | 0.007 | 6.5 | LOS A | 0.0 | 0.2 | 0.21 | 0.30 | 54.8 |
| 11 | T1 | 4 | 0.0 | 0.007 | 1.2 | LOS A | 0.0 | 0.2 | 0.21 | 0.30 | 56.9 |
| 12 | R2 | 1 | 0.0 | 0.007 | 5.6 | LOS A | 0.0 | 0.2 | 0.21 | 0.30 | 55.4 |
| Approach | | 7 | 0.0 | 0.007 | 3.3 | NA | 0.0 | 0.2 | 0.21 | 0.30 | 56.1 |
| All Vehicles | | 353 | 3.8 | 0.097 | 6.7 | NA | 0.1 | 0.7 | 0.04 | 0.77 | 52.5 |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

# MOVEMENT SUMMARY

## Site: 101 [NE 94th and NE 105]

New Site
Stop (Two-Way)

| Movement Performance - Vehicles | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Mov ID | OD Mov | Demand Flows Total veh/h | HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Distance ft | Prop. Queued | Effective Stop Rate per veh | Average Speed mph |
| South: NE 94th NB | | | | | | | | | | | |
| 3 | L2 | 185 | 2.0 | 0.109 | 0.0 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 34.7 |
| 8 | T1 | 8 | 29.0 | 0.109 | 0.0 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 36.3 |
| Approach | | 192 | 3.1 | 0.109 | 0.0 | NA | 0.0 | 0.0 | 0.00 | 0.00 | 34.8 |
| North: NE 94th SB | | | | | | | | | | | |
| 4 | T1 | 10 | 0.0 | 0.021 | 12.5 | LOS B | 0.1 | 1.9 | 0.38 | 0.24 | 29.3 |
| 14 | R2 | 4 | 0.0 | 0.021 | 6.2 | LOS A | 0.1 | 1.9 | 0.38 | 0.24 | 29.4 |
| Approach | | 14 | 0.0 | 0.021 | 10.6 | LOS B | 0.1 | 1.9 | 0.38 | 0.24 | 29.4 |
| West: NE 105 EB | | | | | | | | | | | |
| 5 | L2 | 3 | 0.0 | 0.086 | 50.6 | LOS F | 0.0 | 0.6 | 0.02 | 0.00 | 33.1 |
| 12 | R2 | 128 | 5.0 | 0.086 | 1.8 | LOS A | 0.0 | 0.6 | 0.02 | 0.00 | 33.2 |
| Approach | | 132 | 4.9 | 0.086 | 3.0 | NA | 0.0 | 0.6 | 0.02 | 0.00 | 33.2 |
| All Vehicles | | 338 | 3.6 | 0.109 | 1.6 | NA | 0.1 | 1.9 | 0.02 | 0.01 | 33.9 |

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Minor Road Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

# Appendix C Crash Data

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Washington State
Department of Transportation

Transportation Data and GIS Office
7345 Linderson Way Sw, Fl 1
Tumwater, WA 98501

360-570-2464 / Fax 360-570-2449
TTY: 1-800-833-6388
www.wsdot.wa.gov

July 5, 2016

Ali Razmpa
Kittelson & Associates, Inc.
610 SW Alder St Suite 700
Portland OR 97205

Dear Ali Razmpa:

In accordance with the Public Records Act, RCW 42.56, this letter acknowledges receipt of your request for records dated June 27, 2016 (Request Number PDR-16-1955).

We have prepared a history of officer reported crashes that occurred on State Route 503 (aka 117th Ave, milepost 2.76 – 2.88) for the period of 1/1/2011 – *available 2016*.

Federal law 23 United States Code Section 409 governs use of the data you requested. Under this law, data maintained for purposes of evaluating potential highway safety enhancements:

" . . . *shall not be subject to discovery or admitted into evidence in a federal or state court proceeding or considered for other purposes in any action for damages arising from any occurrence at a location mentioned or addressed in such reports, surveys, schedules, lists, or data*." [Emphasis added.]

The Washington State Department of Transportation (WSDOT) is releasing this data to you with the understanding that you will not use this data contrary to the restrictions in Section 409, which means you will not use this data in discovery or as evidence at trial in any action for damages against the WSDOT, the State of Washington, or any other jurisdiction involved in the locations mentioned in the data. If you should attempt to use this data in an action for damages against WSDOT, the State of Washington, or any other jurisdiction involved in the locations mentioned in the data, these entities expressly reserve the right, under Section 409, to object to the use of the data, including any opinions drawn from the data.

With this package, your request for records is complete and closed.

If you have any further questions you may contact me at 360-570-2464.

Sincerely,

Julie Brown

Julie Brown
Transportation Planning Technician 3
Transportation Data and GIS Office

cc: w/enclosures
Stan Markuson & Robert Nova, WSDOT Southwest Region

OFFICER REPORTED CRASHES THAT OCCURRED ON STATE ROUTE 165 (aka 117th AVE, MP 2.76 - 2.88) AT 119th ST INTERSECTION
**1/1/2011 - 6/1/2016**

*UNDER 23 UNITED STATES CODE – SECTION 409, THIS DATA CANNOT BE USED IN DISCOVERY OR AS EVIDENCE*
*AT TRIAL IN ANY ACTION FOR DAMAGES AGAINST THE WSDOT, OR ANY JURISDICTIONS INVOLVED IN THE DATA*

| JURISDICTION | PRIMARY TRAFFICWAY | MILE POST | A/B | REPORT NUMBER | DATE | TIME | MOST SEVERE INJURY TYPE | Injury Level | # INJ | #FAT | #VEH | #PEDS | #PEDAL | VEHICLE 1 TYPE | VEHICLE 2 TYPE | JUNCTION RELATIONSHIP | ROADWAY SURFACE CONDITIONS | LIGHTING CONDITIONS | FIRST COLLISION TYPE / OBJECT STRUCK | Crash Type | VEH 1 ACTION | VEH 2 ACTION | MV DRIVER CONT CIRC 1 (UNIT 1) | MV DRIVER CONT CIRC 1 (UNIT 2) | VEH 1 COMP DIR FROM | VEH 1 COMP DIR TO | VEH 2 COMP DIR FROM | VEH 2 COMP DIR TO | IMPACT LOCATION (Effective for City, County & Misc 1/1/2010; SR's indefinite) | WA STATE PLANE SOUTH - X 2010 - FORWARD | WA STATE PLANE SOUTH - Y 2010 - FORWARD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| State Route | 503 | 2.81 | | 2739040 | 4/18/2011 | 7:16 | No Injury | PDO | 0 | 0 | 2 | 0 | 0 | Pickup,Panel Truck or Vanette under 10,000 lb | Pickup,Panel Truck or Vanette under 10,000 lb | At Intersection and Related | Dry | Daylight | From same direction - both going straight - one stopped - rear-end | rear-end | Stopped for Traffic | Going Straight Ahead | None | Follow Too Closely | North | Vehicle Stopped | North | South | Lane 1 Decreasing Milepost | 1,116,039.59 | 143,437.37 |
| State Route | 503 | 2.81 | | E285583 | 11/15/2013 | 17:52 | No Injury | PDO | 0 | 0 | 2 | 0 | 0 | Pickup,Panel Truck or Vanette under 10,000 lb | Pickup,Panel Truck or Vanette under 10,000 lb | At Intersection and Related | Wet | Dark-Street Lights On | From same direction - both going straight - both moving - rear-end | rear-end | Going Straight Ahead | Going Straight Ahead | Inattention | None | North | South | North | South | Lane 2 Decreasing Milepost | 1,116,039.59 | 143,437.37 |
| State Route | 503 | 2.81 | | E294102 | 12/19/2013 | 1:46 | No Injury | PDO | 0 | 0 | 1 | 0 | 0 | At Intersection and Related | | At Intersection and Not Related | Ice | Dark-Street Lights On | Tree or Stump (stationary) | fixed | Going Straight Ahead | | Under Influence of Alcohol | | North | South | | | Past Right Shoulder Increasing Milepost | 1,116,039.59 | 143,437.37 |
| State Route | 503 | 2.81 | | E301843 | 1/8/2014 | 13:38 | No Injury | PDO | 0 | 0 | 3 | | 0 | Passenger Car | Passenger Car | At Intersection and Related | Wet | Daylight | From same direction - both going straight - one stopped - rear-end | rear-end | Going Straight Ahead | Stopped at Signal or Stop Sign | Follow Too Closely | None | East | West | West | Vehicle Stopped | Lane 3 Decreasing Milepost | 1,116,039.59 | 143,437.37 |
| State Route | 503 | 2.81 | | E332273 | 6/1/2014 | 13:55 | No Injury | PDO | 0 | 0 | 2 | 0 | 0 | Passenger Car | Pickup,Panel Truck or Vanette under 10,000 lb | At Intersection and Related | Dry | Daylight | Entering at angle | angle | Making Right Turn | Going Straight Ahead | Inattention | None | West | South | North | South | Lane 2 Decreasing Milepost | 1,116,039.59 | 143,437.37 |
| State Route | 503 | 2.81 | | E352835 | 8/29/2014 | 10:42 | Possible Injury | Injury | 2 | 0 | 6 | 0 | 0 | Passenger Car | Passenger Car | At Intersection and Related | Dry | Daylight | From same direction - both going straight - one stopped - sideswipe | sideswipe | Going Straight Ahead | Stopped for Traffic | Inattention | None | South | North | South | Vehicle Stopped | Lane 2 Increasing Milepost | 1,116,039.85 | 143,445.63 |
| State Route | 503 | 2.81 | | E355772 | 9/10/2014 | 13:45 | No Injury | PDO | 0 | 0 | 3 | 0 | 0 | Pickup,Panel Truck or Vanette under 10,000 lb | Passenger Car | At Intersection and Not Related | Dry | Daylight | From same direction - both going straight - one stopped - rear-end | rear-end | Slowing | Stopped for Traffic | Inattention | Driver Not Distracted | South | North | Vehicle Stopped | Vehicle Stopped | Lane 1 Increasing Milepost | 1,116,039.59 | 143,437.37 |
| State Route | 503 | 2.81 | | E361952 | 9/29/2014 | 16:29 | No Injury | PDO | 0 | 0 | 3 | 0 | 0 | Passenger Car | Passenger Car | At Intersection and Related | Wet | Daylight | From same direction - both going straight - one stopped - rear-end | rear-end | Going Straight Ahead | Stopped for Traffic | Exceeding Reas. Safe Speed | None | North | South | Vehicle Stopped | Vehicle Stopped | Lane 2 Decreasing Milepost | 1,116,039.59 | 143,437.37 |
| State Route | 503 | 2.81 | | E393996 | 1/16/2015 | 8:07 | Possible Injury | Injury | 1 | 0 | 3 | 0 | 0 | Passenger Car | Passenger Car | At Intersection and Related | Wet | Daylight | From same direction - both going straight - one stopped - rear-end | rear-end | Going Straight Ahead | Stopped for Traffic | Inattention | None | South | North | South | Vehicle Stopped | Lane 2 Decreasing Milepost | 1,116,043.06 | 143,439.66 |
| State Route | 503 | 2.81 | | E285392 | 11/8/2013 | 17:24 | No Injury | PDO | 0 | 0 | 2 | 0 | 0 | Pickup,Panel Truck or Vanette under 10,000 lb | Passenger Car | At Intersection and Related | Wet | Dark-Street Lights On | From opposite direction - one left turn - one straight | turn | Making Left Turn | Going Straight Ahead | Disregard Stop and Go Light | None | North | East | North | South | Lane 2 Decreasing Milepost | 1,116,039.59 | 143,437.37 |
| State Route | 503 | 2.81 | | E394715 | 1/23/2015 | 9:16 | No Injury | PDO | 0 | 0 | 2 | 0 | 0 | Truck (Flatbad,Van,etc) | Pickup,Panel Truck or Vanette under 10,000 lb | At Intersection and Related | Dry | Daylight | From same direction - both going straight - one stopped - rear-end | rear-end | Going Straight Ahead | Stopped at Signal or Stop Sign | Inattention | None | South | North | South | Vehicle Stopped | Lane 2 Increasing Milepost | 1,116,039.59 | 143,437.37 |
| State Route | 503 | 2.81 | | E410979 | 3/19/2015 | 13:28 | Possible Injury | Injury | 1 | 0 | 2 | 0 | 0 | Pickup,Panel Truck or Vanette under 10,000 lb | Pickup,Panel Truck or Vanette under 10,000 lb | At Intersection and Related | Dry | Daylight | From same direction - both going straight - one stopped - rear-end | rear-end | Going Straight Ahead | Stopped for Traffic | Inattention | None | North | South | North | Vehicle Stopped | Lane 3 Decreasing Milepost | 1,116,041.24 | 143,458.47 |
| State Route | 503 | 2.81 | | E418554 | 4/21/2015 | 22:10 | No Injury | PDO | 0 | 0 | 2 | 0 | 0 | Passenger Car | Passenger Car | At Intersection and Related | Dry | Dark-Street Lights On | From opposite direction - one left turn - one straight | turn | Making Left Turn | Going Straight Ahead | Disregard Stop and Go Light | Driver Not Distracted | South | West | North | South | Lane 1 Decreasing Milepost | 1,116,039.59 | 143,437.37 |
| State Route | 503 | 2.81 | | E435163 | 6/9/2015 | 7:22 | No Injury | PDO | 0 | 0 | 2 | 0 | 0 | Passenger Car | Passenger Car | At Intersection and Related | Dry | Daylight | From same direction - one right turn - one straight | turn | Starting in Traffic Lane | Making Left Turn | Did Not Grant RW to Vehicle | None | Vehicle Stopped | West | South | West | Left Turn Lane Increasing Milepost | 1,116,039.59 | 143,437.37 |
| State Route | 503 | 2.81 | | E460499 | 9/3/2015 | 15:13 | No Injury | PDO | 0 | 0 | 2 | 0 | 0 | Passenger Car | Pickup,Panel Truck or Vanette under 10,000 lb | At Intersection and Related | Dry | Daylight | From same direction - both going straight - both moving - sideswipe | sidewipe | Changing Lanes | Going Straight Ahead | Did Not Grant RW to Vehicle | None | South | North | South | North | Lane 2 Increasing Milepost | 1,116,048.68 | 143,455.27 |
| State Route | 503 | 2.81 | | E469678 | 10/5/2015 | 12:08 | No Injury | PDO | 0 | 0 | 2 | 0 | 0 | Pickup,Panel Truck or Vanette under 10,000 lb | Passenger Car | At Intersection and Related | Dry | Daylight | Same direction -- both turning left -- both moving -- sideswipe | sidewipe | Making Left Turn | Making Left Turn | Did Not Grant RW to Vehicle | None | South | West | South | West | Left Turn Lane Increasing Milepost | 1,116,039.59 | 143,437.37 |
| State Route | 503 | 2.81 | | E480272 | 11/8/2015 | 18:32 | No Injury | PDO | 0 | 0 | 2 | 0 | 0 | Passenger Car | Passenger Car | At Intersection and Related | Wet | Dark-Street Lights On | Same direction -- both turning left -- both moving -- sideswipe | sidewipe | Making Left Turn | Making Left Turn | Did Not Grant RW to Vehicle | None | West | North | West | North | Lane 2 Increasing Milepost | 1,116,046.41 | 143,427.47 |
| State Route | 503 | 2.81 | | E482409 | 11/14/2015 | 15:47 | No Injury | PDO | 0 | 0 | 2 | 0 | 0 | Passenger Car | Pickup,Panel Truck or Vanette under 10,000 lb | At Intersection and Related | Dry | Daylight | Entering at angle | angle | Going Straight Ahead | Making Left Turn | Disregard Stop and Go Light | None | North | South | West | North | Lane 1 Decreasing Milepost | 1,116,039.80 | 143,438.18 |
| State Route | 503 | 2.81 | | E488242 | 11/24/2015 | 7:53 | No Injury | PDO | 0 | 0 | 2 | 0 | 0 | Not Stated | Passenger Car | At Intersection and Related | Wet | Daylight | Entering at angle | angle | Making Right Turn | Going Straight Ahead | Did Not Grant RW to Vehicle | None | West | South | North | South | Lane 1 Decreasing Milepost | 1,116,030.36 | 143,420.52 |
| State Route | 503 | 2.81 | | E406051 | 2/27/2015 | 16:59 | No Injury | PDO | 0 | 0 | 2 | 0 | 0 | Pickup,Panel Truck or Vanette under 10,000 lb | Passenger Car | At Intersection and Related | Wet | Daylight | From same direction - both going straight - one stopped - rear-end | rear-end | Going Straight Ahead | Stopped for Traffic | Follow Too Closely | None | South | North | South | Vehicle Stopped | Left Turn Lane Increasing Milepost | 1,116,046.19 | 143,438.30 |
| State Route | 503 | 2.81 | | E489514 | 11/30/2015 | 11:22 | No Injury | PDO | 0 | 0 | 2 | 0 | 0 | Passenger Car | Pickup,Panel Truck or Vanette under 10,000 lb | At Intersection and Related | Dry | Daylight | From same direction - both going straight - one stopped - rear-end | rear-end | Going Straight Ahead | Stopped for Traffic | Inattention | None | North | South | North | Vehicle Stopped | Lane 3 Decreasing Milepost | 1,116,042.91 | 143,450.95 |
| State Route | 503 | 2.81 | | E276634 | 10/7/2013 | 15:44 | No Injury | PDO | 0 | 0 | 2 | 0 | 0 | Passenger Car | Passenger Car | At Intersection and Related | Wet | Daylight | Entering at angle | angle | Making Right Turn | Going Straight Ahead | Inattention | None | West | South | North | South | Lane 1 Decreasing Milepost | 1,116,039.59 | 143,437.37 |
| State Route | 503 | 2.81 | | E262923 | 8/11/2013 | 22:21 | No Injury | PDO | 0 | 0 | 2 | 0 | 0 | Pickup,Panel Truck or Vanette under 10,000 lb | Passenger Car | At Driveway within Major Intersection | Dry | Dark-Street Lights On | Entering at angle | angle | Making Left Turn | Going Straight Ahead | Inattention | None | South | West | East | West | Intersecting Road Increasing Milepost | 1,116,039.59 | 143,437.37 |
| State Route | 503 | 2.81 | | 3254303 | 3/23/2012 | 12:55 | Possible Injury | Injury | 1 | 0 | 3 | 0 | 0 | Pickup,Panel Truck or Vanette under 10,000 lb | Pickup,Panel Truck or Vanette under 10,000 lb | At Intersection and Related | Dry | Daylight | From same direction - both going straight - one stopped - rear-end | rear-end | Going Straight Ahead | Stopped for Traffic | Did Not Grant RW to Vehicle | None | South | North | South | North | Vehicle Stopped | Lane 2 Decreasing Milepost | 1,116,039.59 | 143,437.37 |
| State Route | 503 | 2.81 | | 3254331 | 3/1/2012 | 11:25 | Possible Injury | Injury | 1 | 0 | 2 | 0 | 0 | Passenger Car | Passenger Car | At Intersection and Related | Dry | Daylight | From opposite direction - all others | others | Making U-Turn | Going Straight Ahead | Disregard Stop and Go Light | None | North | North | South | North | Lane 1 Increasing Milepost | 1,116,039.59 | 143,437.37 |
| State Route | 503 | 2.81 | | 3499729 | 2/10/2012 | 19:00 | No Injury | PDO | 0 | 0 | 2 | 0 | 0 | Passenger Car | Passenger Car | At Intersection and Related | Wet | Dark-Street Lights On | From same direction - both going straight - one stopped - rear-end | rear-end | Going Straight Ahead | Stopped for Traffic | Inattention | None | South | North | South | Vehicle Stopped | Lane 1 Increasing Milepost | 1,116,039.59 | 143,437.37 |
| State Route | 503 | 2.81 | | E103034 | 4/22/2011 | 14:45 | Evident Injury | Injury | 1 | 0 | 2 | 0 | 0 | Pickup,Panel Truck or Vanette under 10,000 lb | Passenger Car | At Intersection and Related | Dry | Daylight | Entering at angle | angle | Going Straight Ahead | Making Left Turn | Disregard Stop and Go Light | None | Northwest | Southeast | Southwest | Northwest | Left Turn Lane Increasing Milepost | 1,116,039.59 | 143,437.37 |
| State Route | 503 | 2.81 | | E115798 | 6/28/2011 | 12:35 | Possible Injury | Injury | 1 | 0 | 2 | 0 | 0 | Pickup,Panel Truck or Vanette under 10,000 lb | Passenger Car | At Intersection and Related | Dry | Daylight | Entering at angle | angle | Going Straight Ahead | Going Straight Ahead | Disregard Stop and Go Light | None | Southwest | Northeast | Northwest | Southeast | Lane 1 Increasing Milepost | 1,116,039.59 | 143,437.37 |
| State Route | 503 | 2.81 | | E131823 | 10/14/2011 | 20:18 | No Injury | PDO | 0 | 0 | 2 | 0 | 0 | Pickup,Panel Truck or Vanette under 10,000 lb | Pickup,Panel Truck or Vanette under 10,000 lb | At Intersection and Related | Wet | Dark-Street Lights On | From opposite direction - one left turn - one straight | turn | Making Left Turn | Going Straight Ahead | Disregard Stop and Go Light | None | North | East | South | North | Lane 2 Increasing Milepost | 1,116,039.59 | 143,437.37 |
| State Route | 503 | 2.81 | | E153288 | 2/1/2012 | 11:10 | No Injury | PDO | 0 | 0 | 2 | 0 | 0 | Passenger Car | Pickup,Panel Truck or Vanette under 10,000 lb | At Intersection and Related | Dry | Daylight | Entering at angle | angle | Going Straight Ahead | Going Straight Ahead | Disregard Stop and Go Light | None | South | North | East | West | Lane 1 Increasing Milepost | 1,116,039.59 | 143,437.37 |
| State Route | 503 | 2.81 | | E153294 | 2/3/2012 | 13:19 | No Injury | PDO | 0 | 0 | 3 | 0 | 0 | Pickup,Panel Truck or Vanette under 10,000 lb | Pickup,Panel Truck or Vanette under 10,000 lb | At Intersection and Related | Dry | Daylight | From same direction - both going straight - both moving - sideswipe | sidewipe | Going Straight Ahead | Going Straight Ahead | Did Not Grant RW to Vehicle | None | South | North | South | North | Lane 2 Decreasing Milepost | 1,116,039.59 | 143,437.37 |
| State Route | 503 | 2.81 | | E264228 | 8/2/2013 | 8:31 | No Injury | PDO | 0 | 0 | 2 | 0 | 0 | Passenger Car | Passenger Car | At Intersection and Not Related | Wet | Daylight | From same direction - both going straight - both moving - sideswipe | sidewipe | Changing Lanes | Going Straight Ahead | Other | None | South | North | South | North | Lane 3 Decreasing Milepost | 1,116,039.59 | 143,437.37 |
| State Route | 503 | 2.81 | | E157116 | 3/3/2012 | 10:12 | No Injury | PDO | 0 | 0 | 2 | 0 | 0 | Passenger Car | Pickup,Panel Truck or Vanette under 10,000 lb | At Intersection and Related | Wet | Daylight | From same direction - both going straight - one stopped - rear-end | rear-end | Going Straight Ahead | Stopped for Traffic | Follow Too Closely | None | North | South | North | Vehicle Stopped | Lane 2 Decreasing Milepost | 1,116,039.59 | 143,437.37 |
| State Route | 503 | 2.81 | | E174690 | 5/31/2012 | 17:05 | No Injury | PDO | 0 | 0 | 3 | 0 | 0 | Pickup,Panel Truck or Vanette under 10,000 lb | Pickup,Panel Truck or Vanette under 10,000 lb | At Intersection and Related | Dry | Daylight | From same direction - both going straight - one stopped - rear-end | rear-end | Going Straight Ahead | Stopped for Traffic | Follow Too Closely | None | South | North | South | Vehicle Stopped | Lane 2 Increasing Milepost | 1,116,039.59 | 143,437.37 |
| State Route | 503 | 2.81 | | E245994 | 5/20/2013 | 18:46 | No Injury | PDO | 0 | 0 | 3 | 0 | 0 | Passenger Car | Passenger Car | At Intersection and Related | Dry | Daylight | From same direction - both going straight - one stopped - rear-end | rear-end | Going Straight Ahead | Stopped for Traffic | Follow Too Closely | None | South | North | South | Vehicle Stopped | Lane 2 Increasing Milepost | 1,116,039.59 | 143,437.37 |
| State Route | 503 | 2.81 | | E231219 | 3/9/2013 | 5:35 | Evident Injury | Injury | 2 | 0 | 2 | 0 | 0 | Passenger Car | Pickup,Panel Truck or Vanette under 10,000 lb | At Intersection and Related | Dry | Dark-Street Lights On | Entering at angle | angle | Going Straight Ahead | Going Straight Ahead | Under Influence of Alcohol | None | West | East | North | South | Lane 1 Decreasing Milepost | 1,116,036.88 | 143,437.45 |
| State Route | 503 | 2.81 | | E222149 | 1/17/2013 | 20:24 | Evident Injury | Injury | 1 | 0 | 2 | 0 | 0 | Passenger Car | Pickup,Panel Truck or Vanette under 10,000 lb | At Driveway within Major Intersection | Dry | Dark-Street Lights On | From opposite direction - one left turn - one straight | turn | Making Left Turn | Going Straight Ahead | Driver Distractions Outside Vehicle | None | East | South | West | East | Intersecting Road Increasing Milepost | 1,116,039.24 | 143,425.19 |
| State Route | 503 | 2.81 | | E165360 | 4/13/2012 | 14:59 | Possible Injury | Injury | 3 | 0 | 2 | 0 | 0 | Pickup,Panel Truck or Vanette under 10,000 lb | Pickup,Panel Truck or Vanette under 10,000 lb | At Intersection and Related | Dry | Daylight | Entering at angle | angle | Making Left Turn | Going Straight Ahead | Disregard Stop and Go Light | None | East | South | South | North | Lane 1 Increasing Milepost | 1,116,039.59 | 143,437.37 |
| State Route | 503 | 2.81 | | E492780 | 12/7/2015 | 10:07 | Possible Injury | Injury | 2 | 0 | 2 | 0 | 0 | Passenger Car | Passenger Car | At Intersection and Related | Wet | Daylight | From same direction - both going straight - one stopped - rear-end | rear-end | Going Straight Ahead | Stopped at Signal or Stop Sign | Exceeding Reas. Safe Speed | None | South | North | South | Vehicle Stopped | Left Turn Lane Increasing Milepost | 1,116,039 | 143,433.48 |
| State Route | 503 | 2.81 | | E206386 | 11/10/2012 | 14:18 | Evident Injury | Injury | 2 | 0 | 2 | 0 | 0 | Passenger Car | Passenger Car | At Intersection and Related | Dry | Daylight | From same direction - both going straight - both moving - rear-end | rear-end | Starting in Traffic Lane | Starting in Traffic Lane | Follow Too Closely | None | South | North | South | North | Lane 1 Increasing Milepost | 1,116,039.59 | 143,437.37 |
| State Route | 503 | 2.81 | | E203684 | 10/31/2012 | 11:54 | No Injury | PDO | 0 | 0 | 2 | 0 | 0 | Passenger Car | Passenger Car | At Intersection and Related | Wet | Daylight | Entering at angle | angle | Making Right Turn | Going Straight Ahead | Inattention | None | West | South | North | South | Lane 2 Decreasing Milepost | 1,116,039.59 | 143,437.37 |
| State Route | 503 | 2.81 | | E180811 | 7/2/2012 | 11:46 | No Injury | PDO | 0 | 0 | 2 | 0 | 0 | Passenger Car | Passenger Car | At Intersection and Not Related | Dry | Daylight | From same direction - both going straight - both moving - rear-end | rear-end | Going Straight Ahead | Slowing | Follow Too Closely | None | South | North | South | North | Lane 1 Increasing Milepost | 1,116,039.59 | 143,437.37 |
| State Route | 503 | 2.81 | | E218410 | 12/7/2012 | 17:16 | No Injury | PDO | 0 | 0 | 2 | 0 | 0 | Pickup,Panel Truck or Vanette under 10,000 lb | Passenger Car | At Intersection and Related | Wet | Dark-Street Lights On | From same direction - both going straight - both moving - rear-end | rear-end | Going Straight Ahead | Slowing | Follow Too Closely | None | South | North | South | North | Lane 1 Increasing Milepost | 1,116,039.59 | 143,437.37 |
| State Route | 503 | 2.81 | | E511631 | 2/1/2016 | 17:05 | Possible Injury | Injury | 1 | 0 | 2 | 0 | 0 | Pickup,Panel Truck or Vanette under 10,000 lb | Passenger Car | At Intersection and Related | Wet | Dark-Street Lights On | From same direction - both going straight - one stopped - rear-end | rear-end | Starting in Traffic Lane | Stopped at Signal or Stop Sign | Inattention | None | East | West | Vehicle Stopped | Vehicle Stopped | Intersecting Road Increasing Milepost | 1,116,060.58 | 143,436.74 |
| State Route | 503 | 2.81 | | E515388 | 2/5/2016 | 8:15 | No Injury | PDO | 0 | 0 | 2 | 0 | 0 | Passenger Car | Pickup,Panel Truck or Vanette under 10,000 lb | At Intersection and Related | Dry | Daylight | Entering at angle | angle | Making Right Turn | Going Straight Ahead | Did Not Grant RW to Vehicle | None | West | South | North | South | Lane 1 Decreasing Milepost | 1,116,039.59 | 143,437.37 |
| State Route | 503 | 2.81 | | E518010 | 2/21/2016 | 19:54 | No Injury | PDO | 0 | 0 | 2 | 0 | 0 | Passenger Car | Pickup,Panel Truck or Vanette under 10,000 lb | At Intersection and Not Related | Dry | Dark-Street Lights On | From same direction - both going straight - both moving - rear-end | rear-end | Going Straight Ahead | Going Straight Ahead | Other | None | South | North | South | North | Lane 1 Increasing Milepost | 1,116,039.59 | 143,437.37 |
| State Route | 503 | 2.81 | | E536889 | 4/23/2016 | 20:42 | Possible Injury | Injury | 1 | 0 | 2 | 0 | 0 | Motorcycle | | At Intersection and Related | Wet | Dark-Street Lights On | Vehicle overturned | others | Making Left Turn | | None | | South | West | | | Left Turn Lane Increasing Milepost | 1,116,060.58 | 143,436.74 |
| State Route | 503 | 2.81 | | E538083 | 4/17/2016 | 7:49 | No Injury | PDO | 0 | 0 | 2 | 0 | 0 | Pickup,Panel Truck or Vanette under 10,000 lb | Pickup,Panel Truck or Vanette under 10,000 lb | At Intersection and Related | Dry | Daylight | Entering at angle | angle | Making Left Turn | Making Left Turn | Disregard Stop and Go Light | None | East | South | South | West | Left Turn Lane Increasing Milepost | 1,116,048.22 | 143,437.11 |
| State Route | 503 | 2.81 | | E549049 | 5/24/2016 | 14:42 | No Injury | PDO | 0 | 0 | 3 | 0 | 0 | Passenger Car | Pickup,Panel Truck or Vanette under 10,000 lb | At Intersection and Related | Dry | Daylight | From same direction - both going straight - both moving - sideswipe | sidewipe | Changing Lanes | Starting in Traffic Lane | Inattention | None | South | North | South | North | Left Turn Lane Increasing Milepost | 1,116,059.22 | 143,438.03 |
| State Route | 503 | 2.81 | | E553982 | 6/8/2016 | 19:02 | No Injury | PDO | 0 | 0 | 2 | 0 | 0 | Pickup,Panel Truck or Vanette under 10,000 lb | Passenger Car | At Intersection and Related | Dry | Daylight | From same direction - one left turn - one straight | turn | Going Straight Ahead | Stopped for Traffic | Follow Too Closely | None | South | North | South | North | Left Turn Lane Increasing Milepost | 1,116,059.22 | 143,438.03 |
| State Route | 503 | 2.85 | | E479037 | 11/4/2015 | 14:48 | Possible Injury | Injury | 1 | 0 | 5 | 0 | 0 | Pickup,Panel Truck or Vanette under 10,000 lb | Pickup,Panel Truck or Vanette under 10,000 lb | Not at Intersection and Not Related | Dry | Daylight | From same direction - both going straight - one stopped - rear-end | rear-end | Going Straight Ahead | Stopped for Traffic | Exceeding Reas. Safe Speed | None | South | North | South | Vehicle Stopped | Lane 1 Increasing Milepost | 1,116,045.85 | 143,641.47 |

## Clark County Collision Data

**Period: 5 year (1-1-11 to Present. 2016 Data if shown, is incomplete)**

Data is queried +/-0.02 mi (Aprox. 100 feet) from intersection unless specifiec

Use of this data in discovery or as evidence in a legal action is prohibited by 23 USC§ 49.

**NE 72nd Ave @ NE 119th St.**

**94100 @ 2.08** **NE 119th St**

**91250 @ 3.26** **NE 72nd Ave**

| Report No.1 | Date | Time | Fatalities | Injuries | Most Severe Injury | Road Numbe | Milepost | Int. Road | Int. MP | Federal Functional Class | Most Severe Sobriety | Collision Type | Crash Type | Collision Type | Weather | Roadway Surface | Lighting Condition | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| E104932 | 5/7/2011 | 2:11 PM | 0 | 1 | 7 - Possible Injury | 91250 | 3.26 | 94100 | 2.08 | Urban Other Principal Arte | 4 - Had NOT Been Drinking | 1 - From opposite direction - one left turn - one straigh | turn | Null - Null | 2 - Overcast | 1 - Dry | 1 - Daylight | S11-6056 |
| 3352086 | 7/11/2011 | 10:39 AM | 0 | 3 | 7 - Possible Injury | 91250 | 3.26 | 94100 | 2.08 | Urban Other Principal Arte | 4 - Had NOT Been Drinking | 1 - From opposite direction - one left turn - one straigh | turn | Null - Null | 1 - Clear or Partly Cloudy | 1 - Dry | 1 - Daylight | S11-9264 |
| E123161 | 8/27/2011 | 11:23 PM | 0 | 0 | 1 - No Injury | 91250 | 3.26 | 94100 | 2.08 | Urban Minor Arterial | 4 - Had NOT Been Drinking | 1 - From opposite direction - one left turn - one straigh | turn | Null - Null | 1 - Clear or Partly Cloudy | 1 - Dry | 4 - Dark-Street Lights On | S11-11724 |
| E123050 | 9/1/2011 | 9:01 PM | 0 | 1 | 6 - Evident Injury | 91250 | 3.26 | 94100 | 2.08 | Urban Minor Arterial | 4 - Had NOT Been Drinking | 1 - From opposite direction - one left turn - one straigh | turn | Null - Null | 1 - Clear or Partly Cloudy | 1 - Dry | 4 - Dark-Street Lights On | S11-11984 |
| 2738668 | 10/13/2011 | 2:24 PM | 0 | 0 | 1 - No Injury | 91250 | 3.26 | 94100 | 2.08 | Urban Minor Arterial | 4 - Had NOT Been Drinking | 1 - From opposite direction - one left turn - one straigh | turn | Null - Null | 3 - Raining | 2 - Wet | 1 - Daylight | S11-14001 |
| E136733 | 11/10/2011 | 5:43 PM | 0 | 0 | 1 - No Injury | 91250 | 3.26 | 94100 | 2.08 | Urban Other Principal Arte | 4 - Had NOT Been Drinking | 1 - From opposite direction - one left turn - one straigh | turn | Null - Null | 1 - Clear or Partly Cloudy | 1 - Dry | 4 - Dark-Street Lights On | S11-15342 |
| E150822 | 1/22/2012 | 10:08 PM | 0 | 0 | 1 - No Injury | 91250 | 3.26 | 94100 | 2.08 | Urban Other Principal Arte | 4 - Had NOT Been Drinking | 1 - From opposite direction - one left turn - one straigh | turn | Null - Null | 3 - Raining | 2 - Wet | 4 - Dark-Street Lights On | S12-1102 |
| E155840 | 2/18/2012 | 9:33 PM | 0 | 0 | 1 - No Injury | 91250 | 3.26 | 94100 | 2.08 | Urban Minor Arterial | 4 - Had NOT Been Drinking | 1 - Entering at angle | angle | Null - Null | 3 - Raining | 2 - Wet | 4 - Dark-Street Lights On | S12-2432 |
| E175248 | 6/14/2012 | 8:02 AM | 0 | 0 | 1 - No Injury | 91250 | 3.27 | Null | Null | Urban Minor Arterial | 4 - Had NOT Been Drinking | 11 - From same direction - both going straight - both moving - rear-enc | Rear-end | Null - Null | 1 - Clear or Partly Cloudy | 1 - Dry | 1 - Daylight | S12-8159 |
| E177282 | 6/19/2012 | 10:52 AM | 0 | 1 | 7 - Possible Injury | 91250 | 3.26 | 94100 | 2.08 | Urban Minor Arterial | 4 - Had NOT Been Drinking | 1 - From opposite direction - one left turn - one straigh | turn | Null - Null | 1 - Clear or Partly Cloudy | 1 - Dry | 1 - Daylight | S12-8418 |
| E182330 | 7/23/2012 | 1:36 PM | 0 | 1 | 6 - Evident Injury | 91250 | 3.26 | 94100 | 2.08 | Urban Minor Arterial | 4 - Had NOT Been Drinking | 1 - From opposite direction - one left turn - one straigh | turn | Null - Null | 1 - Clear or Partly Cloudy | 1 - Dry | 1 - Daylight | S12-10197 |
| E203695 | 11/3/2012 | 11:29 PM | 0 | 1 | 7 - Possible Injury | 91250 | 3.26 | 94100 | 2.08 | Urban Minor Arterial | 4 - Had NOT Been Drinking | 1 - From opposite direction - one left turn - one straigh | turn | Null - Null | 1 - Clear or Partly Cloudy | 2 - Wet | 4 - Dark-Street Lights On | S12-15296 |
| E220838 | 1/14/2013 | 5:20 PM | 0 | 0 | 1 - No Injury | 91250 | 3.26 | 94100 | 2.08 | Urban Minor Arterial | 4 - Had NOT Been Drinking | 1 - From opposite direction - one left turn - one straigh | turn | Null - Null | 3 - Raining | 2 - Wet | 4 - Dark-Street Lights On | 13-672 |
| E225596 | 2/6/2013 | 6:35 PM | 0 | 0 | 1 - No Injury | 91250 | 3.26 | 94100 | 2.08 | Urban Minor Arterial | 4 - Had NOT Been Drinking | 14 - From same direction - both going straight - both moving - sideswipe | Side-swip | Null - Null | 1 - Clear or Partly Cloudy | 2 - Wet | 4 - Dark-Street Lights On | S13-1725 |
| E239113 | 4/15/2013 | 12:47 PM | 0 | 0 | 1 - No Injury | 91250 | 3.26 | 94100 | 2.08 | Urban Minor Arterial | 4 - Had NOT Been Drinking | 1 - From opposite direction - one left turn - one straigh | turn | Null - Null | 2 - Overcast | 1 - Dry | 1 - Daylight | S13-4644 |
| E238722 | 4/17/2013 | 7:13 PM | 0 | 1 | 7 - Possible Injury | 91250 | 3.25 | Null | Null | Urban Minor Arterial | 4 - Had NOT Been Drinking | 4 - Fixed object | Fixed | 4 - Fixed object | 3 - Raining | 2 - Wet | 3 - Dusk | S13-4747 |
| E244757 | 5/1/2013 | 7:10 PM | 0 | 2 | 6 - Evident Injury | 91250 | 3.26 | 94100 | 2.08 | Urban Minor Arterial | 4 - Had NOT Been Drinking | 99 - From opposite direction - all others | Others | 5 - From opposite di | 1 - Clear or Partly Cloudy | 1 - Dry | 1 - Daylight | S13-5375 |
| E346101 | 8/1/2014 | 1:39 PM | 0 | 0 | 1 - No Injury | 91250 | 3.26 | 94100 | 2.08 | Urban Major Collector | 4 - Had NOT Been Drinking | 11 - From same direction - both going straight - both moving - rear-enc | Rear-end | Null - Null | 1 - Clear or Partly Cloudy | 1 - Dry | 1 - Daylight | S14-8576 |
| E352657 | 8/29/2014 | 9:22 AM | 0 | 0 | 1 - No Injury | 91250 | 3.26 | 94100 | 2.08 | Urban Minor Arterial | 4 - Had NOT Been Drinking | 11 - From same direction - both going straight - one stopped - rear-enc | Rear-end | Null - Null | 1 - Clear or Partly Cloudy | 1 - Dry | 1 - Daylight | S14-9734 |
| E394476 | 1/20/2015 | 1:07 PM | 0 | 0 | 1 - No Injury | 91250 | 3.26 | 94100 | 2.08 | Urban Major Collector | 4 - Had NOT Been Drinking | 12 - From same direction - all others | Others | Null - Null | 1 - Clear or Partly Cloudy | 1 - Dry | 1 - Daylight | S15-00794 |
| E400274 | 2/8/2015 | 6:35 AM | 0 | 0 | 1 - No Injury | 91250 | 3.26 | 94100 | 2.08 | Urban Minor Arterial | 4 - Had NOT Been Drinking | 4 - Fixed object | Fixed | Null - Null | 1 - Clear or Partly Cloudy | 2 - Wet | 4 - Dark-Street Lights On | S15-01567 |
| E426267 | 3/3/2015 | 7:33 AM | 0 | 0 | 1 - No Injury | 91250 | 3.26 | 94100 | 2.08 | Urban Minor Arterial | 4 - Had NOT Been Drinking | 11 - From same direction - both going straight - one stopped - rear-enc | Rear-end | Null - Null | 1 - Clear or Partly Cloudy | 1 - Dry | 1 - Daylight | S15-2512 |

**NE 72nd Ave(Andresen Rd) @ NE 88th St EB-leg**

**92190 @ 5.92** **NE Andresen Rd @ NE 88th St (EB Leg N of I-205)**

**21630 @ 1.22** **NE 88th St (EB Leg) @ NE Andresen Rd**

| Report No.2 | Date | Time | Fatalities | Injuries | Most Severe Injury | Road Numbe | Milepost | Int. Road | Int. MP | Federal Functional Class | Most Severe Sobriety | Collision Type | Crash Type | Collision Type | Weather | Roadway Surface | Lighting Condition | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| E328631 | 5/18/2014 | 3:00 PM | 0 | 0 | 1 - No Injury | 21630 | 1.2 | Null | Null | Urban Minor Arterial | 4 - Had NOT Been Drinking | 14 - From same direction - both going straight - both moving - sideswipe | Side-swip | Null - Null | 2 - Overcast | 2 - Wet | 1 - Daylight | S14-5553 |
| E372585 | 11/7/2014 | 6:30 PM | 0 | 1 | 7 - Possible Injury | 92190 | 5.92 | 21630 | 1.22 | Urban Minor Arterial | 4 - Had NOT Been Drinking | 10 - Vehicle going straight hits pedestrian | Ped/bike | Null - Null | 1 - Clear or Partly Cloudy | 1 - Dry | 6 - Dark-No Street Lights | S14-12610 |

**NE 87th Ave @ NE 119th St**

**50010 @ 0.00** **NE 87th Ave (N Leg)**

**94100 @ 2.84** **NE 119th St**

**23080 @ 1.07** **NE 87th Ave (S Leg)**

| Report No.3 | Full Date | Full Time | Number of | Number o | Most Severe Injury T | County Road | County Rnty Number | Milepost | Federal Functional Class | Most Severe Sobriety Type | First Collision Type | Crash type | Second Collision T | Weather Conditions Type | Roadway Surface C | Lighting Condition Type | Case Number |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3133203 | 2/5/2011 | 8:48 AM | 0 | 1 | 7 - Possible Injury | 94100 | 2.84 | 50010 | 0 Urban Major Collector | 4 - Had NOT Been Drinking | 1 - Entering at angle | angle | 4 - Fixed object | 3 - Raining | 2 - Wet | 1 - Daylight | S11-1712 |
| 3514419 | 9/7/2011 | 12:57 PM | 0 | 1 | 7 - Possible Injury | 94100 | 2.82 | 50010 | 0 Urban Major Collector | 4 - Had NOT Been Drinking | 1 - Entering at angle | angle | Null - Null | 1 - Clear or Partly Cloudy | 1 - Dry | 1 - Daylight | S11-12226 |
| E130711 | 9/30/2011 | 2:48 PM | 0 | 1 | 5 - Serious Injury | 94100 | 2.83 | Null | Null Urban Major Collector | 4 - Had NOT Been Drinking | 11 - From same direction - both going straight - both moving - rear-enc | rear-end | Null - Null | 1 - Clear or Partly Cloudy | 1 - Dry | 1 - Daylight | S11-13399 |
| E143383 | 12/15/2011 | 8:00 AM | 0 | 2 | 7 - Possible Injury | 94100 | 2.84 | 50010 | 0 Urban Major Collector | 4 - Had NOT Been Drinking | 11 - From same direction - both going straight - one stopped - rear-enc | rear-end | 11 - From same dire | 3 - Raining | 2 - Wet | 1 - Daylight | S11-16982 |
| E172612 | 5/9/2012 | 6:05 PM | 0 | 0 | 1 - No Injury | 94100 | 2.82 | Null | Null Urban Major Collector | 4 - Had NOT Been Drinking | 11 - From same direction - both going straight - one stopped - rear-enc | rear-end | Null - Null | 1 - Clear or Partly Cloudy | 1 - Dry | 1 - Daylight | S12-6313 |
| E203850 | 10/22/2012 | 4:12 PM | 0 | 0 | 1 - No Injury | 50010 | 0.02 | Null | Null Rural Minor Collector | 4 - Had NOT Been Drinking | 4 - Fixed object | fixed object | 4 - Fixed object | 2 - Overcast | 2 - Wet | 1 - Daylight | S12-14737 |
| E214756 | 12/19/2012 | 4:20 PM | 0 | 0 | 1 - No Injury | 94100 | 2.84 | 23080 | 1.07 Urban Major Collector | 4 - Had NOT Been Drinking | 1 - From opposite direction - one left turn - one straigh | turn | Null - Null | 3 - Raining | 2 - Wet | 3 - Dusk | S12-17432 |
| E240083 | 4/22/2013 | 6:11 PM | 0 | 0 | 1 - No Injury | 23080 | 1.05 | Null | Null Urban Major Collector | 4 - Had NOT Been Drinking | 11 - From same direction - both going straight - one stopped - rear-enc | rear-end | 11 - From same dire | 1 - Clear or Partly Cloudy | 1 - Dry | 1 - Daylight | S13-4948 |
| E331739 | 4/25/2014 | 12:05 PM | 0 | 0 | 1 - No Injury | 23080 | 1.07 | Null | Null Urban Major Collector | 4 - Had NOT Been Drinking | 11 - From same direction - both going straight - one stopped - rear-enc | rear-end | Null - Null | 1 - Clear or Partly Cloudy | 1 - Dry | 1 - Daylight | 14-4632 |
| E348355 | 8/4/2014 | 3:09 PM | 0 | 0 | 1 - No Injury | 94100 | 2.84 | 23080 | 1.07 Urban Major Collector | 4 - Had NOT Been Drinking | 11 - From same direction - both going straight - one stopped - rear-enc | rear-end | Null - Null | 1 - Clear or Partly Cloudy | 1 - Dry | 1 - Daylight | S14-08740 |
| E387656 | 12/21/2014 | 3:17 AM | 0 | 0 | 1 - No Injury | 23080 | 1.07 | 94100 | 2.84 Urban Major Collector | 1 - HBD - Ability Impaired | 1 - Entering at angle | angle | Null - Null | 3 - Raining | 2 - Wet | 4 - Dark-Street Lights On | S14-14323 |

**NE 117thAve@ NE 119th Street --State**

**State-controlled intersection. Request collision data from WSDOT:** **http://www.wsdot.wa.gov/mapsdata/tdgo_home.htm**

**NE 87th Ave @ NE 105th St.**

**23080 @ 0.39** **NE 87th Ave @NE 105th St (<0.39 is eastbound NE 105th St. >0.39 is northbound NE 87th Ave)**

**23081 @ 0.00** **NE 105th St (W Leg)**

**23030 @ 0.54** **NE 87th Ave (S Leg)**

| Report No.4 | Full Date | Full Time | Number of | Number o | Most Severe Injury T | County Road | County Rnty Number | Milepost | Federal Functional Class | Most Severe Sobriety Type | First Collision Type | Crash type | Second Collision T | Weather Conditions Type | Roadway Surface C | Lighting Condition Type | Case Number |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| E260809 | 7/25/2013 | 5:17 PM | 0 | 0 | 0 - Unknown | 23030 | 0.54 | 23080 | 0.39 Urban Major Collector | 9 - Unknown | 4 - Fixed object | fixed object | Null - Null | 1 - Clear or Partly Cloudy | 1 - Dry | 1 - Daylight | S13-9060 |
| E344141 | 7/13/2014 | 12:36 AM | 0 | 0 | 1 - No Injury | 23081 | 0 | 23080 | 0.39 Urban Major Collector | 9 - Unknown | 4 - Fixed object | fixed object | Null - Fixed object | 1 - Clear or Partly Cloudy | 1 - Dry | 4 - Dark-Street Lights On | S14-7796 |

**NE 94th Ave @ 105th St**

**23080 @ 0.00** **NE 105th St**

**22753 @ 1.39** **NE 94th Ave**

| Report No.5 | Full Date | Full Time | Number of | Number o | Most Severe Injury T | County Road | County Rnty Number | Milepost | Federal Functional Class | Most Severe Sobriety Type | First Collision Type | Second Collision T | Weather Conditions Type | Roadway Surface C | Lighting Condition Type | Case Number |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| E122007 | 8/25/2011 | 5:15 PM | 0 | 2 | 7 - Possible Injury | 22753 | 1.39 | 23080 | 0 Urban Major Collector | 4 - Had NOT Been Drinking | 11 - From same direction - both going straight - one stopped - rear-enc | Null - Null | 1 - Clear or Partly Cloudy | 1 - Dry | 1 - Daylight | S11-11598 |
| E252499 | 6/23/2013 | 2:13 AM | 0 | 0 | 0 - Unknown | 22753 | 1.39 | Null | Null Urban Major Collector | 9 - Unknown | 4 - Fixed object | Null - Null | 1 - Clear or Partly Cloudy | 1 - Dry | 4 - Dark-Street Lights On | 13-008826 |
| E372893 | 11/8/2014 | 3:43 AM | 0 | 0 | 1 - No Injury | 23080 | 0 | 22753 | 1.4 Urban Major Collector | 1 - HBD - Ability Impaired | 4 - Fixed object | Null - Fixed object | 5 - Fog or Smog or Smoke | 2 - Wet | 6 - Dark-No Street Lights | S14-12636 |

**NE 94th Ave @ 99th St**

**23320 @ 0.00** **NE 99th St**

**22753 @ 1.09** **NE 94th Ave**

| Report No.6 | Full Date | Full Time | Number of | Number o | Most Severe Injury T | County Road | County Rnty Number | Milepost | Federal Functional Class | Most Severe Sobriety Type | First Collision Type | Second Collision T | Weather Conditions Type | Roadway Surface C | Lighting Condition Type | Case Number |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| E272243 | 9/17/2013 | 10:37 PM | 0 | 0 | 1 - No Injury | 23320 | 0 | 22753 | 1.09 Urban Minor Arterial | 4 - Had NOT Been Drinking | 4 - Fixed object | Null - Null | 1 - Clear or Partly Cloudy | 1 - Dry | 6 - Dark-No Street Lights | S13011419 |

**NE 94th Ave @ 88th St**

**21630 @ 0.00** **NE 88th St**

**22753 @ 0.57** **NE 94th Ave**

| Report No.7 | Full Date | Full Time | Number of | Number o | Most Severe Injury T | County Road | County Rnty Number | Milepost | Federal Functional Class | Most Severe Sobriety Type | First Collision Type | Second Collision T | Weather Conditions Type | Roadway Surface C | Lighting Condition Type | Case Number |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3514611 | 1/16/2011 | 6:37 PM | 0 | 0 | 1 - No Injury | 22753 | 0.57 | 21630 | 0 Urban Major Collector | 4 - Had NOT Been Drinking | 1 - From opposite direction - one left turn - one straigh | 4 - Fixed object | 3 - Raining | 2 - Wet | 6 - Dark-No Street Lights | S11-733 |

**NE 94th Ave @ Padden Pkwy**

**22470 @ 1.27** **NE Padden Pkwy** (0.05 mi due to longer turn-lanes E & W]

**22753 @ 0.31** **NE 94th Ave**

| Report No.8 | Full Date | Full Time | Number of | Number o | Most Severe Injury T | County Road | County Rnty Number | Milepost | Federal Functional Class | Most Severe Sobriety Type | First Collision Type | Second Collision T | Weather Conditions Type | Roadway Surface C | Lighting Condition Type | Case Number |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2576974 | 1/16/2011 | 8:29 AM | 0 | 1 | 7 - Possible Injury | 22470 | 1.27 | 22753 | 0.31 Urban Other Principal Arte | 4 - Had NOT Been Drinking | 1 - Entering at angle | Null - Null | 3 - Raining | 2 - Wet | 1 - Daylight | S11-717 |
| 3169861 | 1/24/2011 | 5:30 AM | 0 | 1 | 7 - Possible Injury | 22470 | 1.27 | 22753 | 0.31 Urban Other Principal Arte | 4 - Had NOT Been Drinking | 14 - Same direction -- both turning right -- both moving -- sideswipe | side-swip | Null - Null | 5 - Fog or Smog or Smoke | 2 - Wet | 4 - Dark-Street Lights On | S11-110 |

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3516925 | 4/4/2011 | 12:12 PM | 0 | 1 | 6 - Evident Injury | 22470 | 1.27 | 22753 | 0.31 | Urban Other Principal Arte | 4 - Had NOT Been Drinking | 10 - Vehicle turning left hits pedestrian | ped/bike | Null - Null | 3 - Raining | 2 - Wet | 1 - Daylight | S11-4459 |
| E103036 | 5/2/2011 | 5:17 PM | 0 | 0 | 1 - No Injury | 22470 | 1.27 | 22753 | 0.31 | Urban Other Principal Arte | 4 - Had NOT Been Drinking | 1 - From opposite direction - one left turn - one straigh | turn | Null - Null | 2 - Overcast | 2 - Wet | 1 - Daylight | S11-5808 |
| 3253063 | 6/4/2011 | 1:18 PM | 0 | 3 | 6 - Evident Injury | 22470 | 1.27 | 22753 | 0.31 | Urban Other Principal Arte | 4 - Had NOT Been Drinking | 1 - From opposite direction - one left turn - one straigh | turn | Null - Null | 1 - Clear or Partly Cloudy | 1 - Dry | 1 - Daylight | S11-7478 |
| 2576097 | 6/6/2011 | 11:40 PM | 0 | 1 | 6 - Evident Injury | 22470 | 1.25 | Null | Null | Urban Other Principal Arte | 1 - HBD - Ability Impaired | 4 - Fixed object | fixed object | 7 - Vehicle overturn | 1 - Clear or Partly Cloudy | 1 - Dry | 4 - Dark-Street Lights On | S11-7589 |
| 3352083 | 7/2/2011 | 12:12 PM | 0 | 0 | 1 - No Injury | 22753 | 0.32 | Null | Null | Urban Minor Arterial | 4 - Had NOT Been Drinking | 11 - From same direction - both going straight - one stopped - rear-end | rear-end | Null - Null | 1 - Clear or Partly Cloudy | 1 - Dry | 1 - Daylight | S11-8892 |
| E120975 | 8/18/2011 | 1:12 PM | 0 | 0 | 1 - No Injury | 22470 | 1.27 | Null | Null | Urban Other Principal Arte | 4 - Had NOT Been Drinking | 11 - From same direction - both going straight - one stopped - rear-end | rear-end | Null - Null | 1 - Clear or Partly Cloudy | 1 - Dry | 1 - Daylight | S11-11224 |
| E125729 | 9/17/2011 | 1:20 PM | 0 | 0 | 1 - No Injury | 22470 | 1.27 | 22753 | 0.31 | Urban Other Principal Arte | 4 - Had NOT Been Drinking | 1 - From same direction - one left turn - one straigh | turn | Null - Null | 3 - Raining | 2 - Wet | 1 - Daylight | S11-12794 |
| 3169605 | 10/21/2011 | 10:00 PM | 0 | 3 | 6 - Evident Injury | 22470 | 1.27 | 22753 | 0.31 | Urban Other Principal Arte | 4 - Had NOT Been Drinking | 1 - From opposite direction - one left turn - one straigh | turn | Null - Null | 2 - Overcast | 2 - Wet | 4 - Dark-Street Lights On | S11-14389 |
| E132449 | 10/21/2011 | 8:09 AM | 0 | 0 | 1 - No Injury | 22470 | 1.27 | 22753 | 0.31 | Urban Other Principal Arte | 4 - Had NOT Been Drinking | 1 - From opposite direction - one left turn - one straigh | turn | Null - Null | 2 - Overcast | 1 - Dry | 1 - Daylight | S11-14343 |
| 3170218 | 11/1/2011 | 7:09 AM | 0 | 1 | 6 - Evident Injury | 22470 | 1.27 | 22753 | 0.31 | Urban Other Principal Arte | 4 - Had NOT Been Drinking | 1 - From opposite direction - one left turn - one straigh | turn | Null - Null | 1 - Clear or Partly Cloudy | 1 - Dry | 1 - Daylight | S11-14861 |
| E139071 | 11/21/2011 | 10:26 PM | 0 | 0 | 1 - No Injury | 22753 | 0.31 | 22470 | 1.27 | Urban Minor Arterial | 4 - Had NOT Been Drinking | 1 - From opposite direction - one left turn - one straigh | turn | Null - Null | 3 - Raining | 2 - Wet | 4 - Dark-Street Lights On | S11-15822 |
| E141609 | 12/7/2011 | 5:08 PM | 0 | 1 | 7 - Possible Injury | 22470 | 1.3 | Null | Null | Urban Other Principal Arte | 4 - Had NOT Been Drinking | 11 - From same direction - both going straight - one stopped - rear-end | rear-end | 11 - From same dire | 1 - Clear or Partly Cloudy | 1 - Dry | 6 - Dark-No Street Lights | S11-16597 |
| E147739 | 1/10/2012 | 8:08 AM | 0 | 1 | 7 - Possible Injury | 22470 | 1.27 | 22753 | 0.31 | Urban Other Principal Arte | 4 - Had NOT Been Drinking | 1 - From opposite direction - one left turn - one straigh | turn | Null - Null | 1 - Clear or Partly Cloudy | 2 - Wet | 1 - Daylight | S12-484 |
| E149746 | 1/20/2012 | 7:47 PM | 0 | 1 | 7 - Possible Injury | 22470 | 1.27 | 22753 | 0.31 | Urban Other Principal Arte | 4 - Had NOT Been Drinking | 1 - From opposite direction - one left turn - one straigh | turn | Null - Null | 3 - Raining | 2 - Wet | 4 - Dark-Street Lights On | S12-1024 |
| E149654 | 1/20/2012 | 12:47 PM | 0 | 2 | 6 - Evident Injury | 22470 | 1.27 | 22753 | 0.31 | Urban Other Principal Arte | 4 - Had NOT Been Drinking | 1 - Entering at angle | angle | Null - Null | 3 - Raining | 2 - Wet | 1 - Daylight | S12-997 |
| E151231 | 1/27/2012 | 5:40 PM | 0 | 0 | 0 - Unknown | 22470 | 1.27 | 22753 | 0.31 | Urban Other Principal Arte | 4 - Had NOT Been Drinking | 1 - From opposite direction - one left turn - one straigh | turn | Null - Null | 1 - Clear or Partly Cloudy | 1 - Dry | 4 - Dark-Street Lights On | S12-1380 |
| E159499 | 3/2/2012 | 6:33 PM | 0 | 1 | 7 - Possible Injury | 22753 | 0.31 | 22470 | 1.27 | Urban Minor Arterial | 4 - Had NOT Been Drinking | 1 - From opposite direction - one left turn - one straigh | turn | Null - Null | 1 - Clear or Partly Cloudy | 1 - Dry | 4 - Dark-Street Lights On | S12-3041 |
| E167673 | 4/24/2012 | 9:14 PM | 0 | 2 | 6 - Evident Injury | 22470 | 1.27 | 22753 | 0.31 | Urban Other Principal Arte | 4 - Had NOT Been Drinking | 1 - From opposite direction - one left turn - one straigh | turn | Null - Null | 1 - Clear or Partly Cloudy | 1 - Dry | 4 - Dark-Street Lights On | S12-5587 |
| E171781 | 5/24/2012 | 8:41 AM | 0 | 0 | 1 - No Injury | 22470 | 1.25 | Null | Null | Urban Other Principal Arte | 4 - Had NOT Been Drinking | 11 - From same direction - both going straight - both moving - rear-end | rear-end | Null - Null | 3 - Raining | 2 - Wet | 1 - Daylight | S12-7061 |
| E176000 | 6/10/2012 | 12:51 PM | 0 | 1 | 6 - Evident Injury | 22470 | 1.27 | 22753 | 0.31 | Urban Other Principal Arte | 4 - Had NOT Been Drinking | 1 - From opposite direction - one left turn - one straigh | turn | 99 - From opposite | 1 - Clear or Partly Cloudy | 1 - Dry | 1 - Daylight | S12-7954 |
| E196212 | 9/13/2012 | 4:53 PM | 0 | 0 | 1 - No Injury | 22470 | 1.28 | Null | Null | Urban Other Principal Arte | 4 - Had NOT Been Drinking | 11 - From same direction - both going straight - one stopped - rear-end | rear-end | Null - Null | 1 - Clear or Partly Cloudy | 1 - Dry | 1 - Daylight | S12-12824 |
| E196212 | 9/13/2012 | 4:53 PM | 0 | 0 | 1 - No Injury | 22470 | 1.28 | Null | Null | Urban Other Principal Arte | 4 - Had NOT Been Drinking | 11 - From same direction - both going straight - one stopped - rear-end | rear-end | Null - Null | 1 - Clear or Partly Cloudy | 1 - Dry | 1 - Daylight | S12-12824 |
| E199223 | 10/17/2012 | 5:33 PM | 0 | 0 | 1 - No Injury | 22470 | 1.27 | 22753 | 0.31 | Urban Other Principal Arte | 4 - Had NOT Been Drinking | 1 - From opposite direction - one left turn - one straigh | turn | Null - Null | 1 - Clear or Partly Cloudy | 1 - Dry | 1 - Daylight | S12-14482 |
| E199223 | 10/17/2012 | 5:33 PM | 0 | 0 | 1 - No Injury | 22470 | 1.27 | 22753 | 0.31 | Urban Other Principal Arte | 4 - Had NOT Been Drinking | 1 - From opposite direction - one left turn - one straigh | turn | Null - Null | 1 - Clear or Partly Cloudy | 1 - Dry | 1 - Daylight | S12-14482 |
| E206454 | 10/30/2012 | 7:35 PM | 0 | 0 | 1 - No Injury | 22753 | 0.31 | 22470 | 1.27 | Urban Minor Arterial | 4 - Had NOT Been Drinking | 1 - From opposite direction - one left turn - one straigh | turn | Null - Null | 3 - Raining | 2 - Wet | 4 - Dark-Street Lights On | S12-15100 |
| E203018 | 11/1/2012 | 1:13 PM | 0 | 0 | 1 - No Injury | 22470 | 1.27 | 22753 | 0.31 | Urban Other Principal Arte | 4 - Had NOT Been Drinking | 1 - From opposite direction - one left turn - one straigh | turn | Null - Null | 3 - Raining | 2 - Wet | 1 - Daylight | S12-15176 |
| E203198 | 11/2/2012 | 7:04 PM | 0 | 0 | 1 - No Injury | 22470 | 1.27 | 22753 | 0.31 | Urban Other Principal Arte | 4 - Had NOT Been Drinking | 1 - From opposite direction - one left turn - one straigh | turn | Null - Null | 3 - Raining | 2 - Wet | 4 - Dark-Street Lights On | S12-15237 |
| E206228 | 11/5/2012 | 2:24 PM | 0 | 1 | 7 - Possible Injury | 22470 | 1.29 | Null | Null | Urban Other Principal Arte | 4 - Had NOT Been Drinking | 11 - From same direction - both going straight - one stopped - rear-end | rear-end | Null - Null | 1 - Clear or Partly Cloudy | 1 - Dry | 1 - Daylight | S12-15375 |
| E206241 | 11/13/2012 | 8:42 AM | 0 | 0 | 1 - No Injury | 22470 | 1.31 | Null | Null | Urban Other Principal Arte | 4 - Had NOT Been Drinking | 11 - From same direction - both going straight - one stopped - rear-end | rear-end | 11 - From same dire | 2 - Overcast | 2 - Wet | 1 - Daylight | S12-15712 |
| E206240 | 11/16/2012 | 7:19 AM | 0 | 0 | 1 - No Injury | 22753 | 0.31 | 22470 | 1.27 | Urban Minor Arterial | 4 - Had NOT Been Drinking | 1 - From opposite direction - one left turn - one straigh | turn | Null - Null | 1 - Clear or Partly Cloudy | 1 - Dry | 1 - Daylight | S12-15847 |
| E217874 | 12/7/2012 | 2:48 PM | 0 | 0 | 1 - No Injury | 22470 | 1.27 | 22753 | 0.31 | Urban Other Principal Arte | 3 - HBD - Sobriety Unknown | 11 - From same direction - both going straight - both moving - rear-end | rear-end | Null - Null | 3 - Raining | 2 - Wet | 1 - Daylight | S12-16850 |
| E224295 | 2/1/2013 | 7:51 AM | 0 | 0 | 1 - No Injury | 22753 | 0.31 | 22470 | 1.27 | Urban Minor Arterial | 4 - Had NOT Been Drinking | 1 - From opposite direction - one left turn - one straigh | turn | Null - Null | 2 - Overcast | 2 - Wet | 1 - Daylight | S13-1456 |
| E232236 | 2/15/2013 | 4:08 PM | 0 | 1 | 7 - Possible Injury | 22470 | 1.29 | Null | Null | Urban Other Principal Arte | 4 - Had NOT Been Drinking | 11 - From same direction - both going straight - one stopped - rear-end | rear-end | Null - Null | 1 - Clear or Partly Cloudy | 1 - Dry | 1 - Daylight | S13-2108 |
| E233349 | 3/2/2013 | 7:55 AM | 0 | 0 | 1 - No Injury | 22753 | 0.31 | Null | Null | Urban Minor Arterial | 4 - Had NOT Been Drinking | 14 - Same direction -- both turning right -- both moving -- sideswipe | side-swip | Null - Null | 2 - Overcast | 1 - Dry | 1 - Daylight | S13-2771 |
| E232385 | 3/7/2013 | 9:05 AM | 0 | 2 | 7 - Possible Injury | 22470 | 1.27 | 22753 | 0.31 | Urban Other Principal Arte | 4 - Had NOT Been Drinking | 1 - From opposite direction - one left turn - one straigh | turn | Null - Null | 1 - Clear or Partly Cloudy | 1 - Dry | 1 - Daylight | S13-2933 |
| E231005 | 3/8/2013 | 9:30 AM | 0 | 1 | 6 - Evident Injury | 22753 | 0.31 | 22470 | 1.27 | Urban Minor Arterial | 4 - Had NOT Been Drinking | 11 - Same direction -- both turning right -- both moving -- rear end | rear-end | Null - Null | 1 - Clear or Partly Cloudy | 1 - Dry | 1 - Daylight | S13-3044 |
| E241362 | 5/1/2013 | 12:06 PM | 0 | 0 | 1 - No Injury | 22470 | 1.27 | 22753 | 0.31 | Urban Other Principal Arte | 4 - Had NOT Been Drinking | 1 - From opposite direction - one left turn - one straigh | turn | Null - Null | 1 - Clear or Partly Cloudy | 1 - Dry | 1 - Daylight | S13-5349 |
| E251078 | 6/17/2013 | 5:36 PM | 0 | 1 | 7 - Possible Injury | 22470 | 1.27 | 22753 | 0.31 | Urban Other Principal Arte | 4 - Had NOT Been Drinking | 11 - From same direction - both going straight - one stopped - rear-end | rear-end | Null - Null | 2 - Overcast | 1 - Dry | 1 - Daylight | S13-7451 |
| E273932 | 9/14/2013 | 1:03 PM | 0 | 0 | 1 - No Injury | 22470 | 1.27 | 22753 | 0.31 | Urban Other Principal Arte | 4 - Had NOT Been Drinking | 1 - Entering at angle | angle | Null - Null | 1 - Clear or Partly Cloudy | 1 - Dry | 1 - Daylight | S13-11267 |
| E304857 | 2/3/2014 | 3:37 PM | 0 | 1 | 7 - Possible Injury | 22753 | 0.32 | Null | Null | Urban Minor Arterial | 4 - Had NOT Been Drinking | 11 - From same direction - both going straight - one stopped - rear-end | rear-end | Null - Null | 1 - Clear or Partly Cloudy | 1 - Dry | 1 - Daylight | S14-1361 |
| E316833 | 3/26/2014 | 9:00 AM | 0 | 3 | 7 - Possible Injury | 22470 | 1.22 | Null | Null | Urban Other Freeway/Exp | 4 - Had NOT Been Drinking | 11 - From same direction - both going straight - one stopped - rear-end | rear-end | Null - From same di | 3 - Raining | 2 - Wet | 1 - Daylight | S14-3345 |
| E322424 | 4/14/2014 | 3:55 PM | 1 | 1 | 2 - Dead at Scene | 22470 | 1.27 | 22753 | 0.31 | Urban Other Principal Arte | 4 - Had NOT Been Drinking | 11 - From same direction - both going straight - one stopped - rear-end | rear-end | Null - From same di | 1 - Clear or Partly Cloudy | 1 - Dry | 1 - Daylight | S144131 |
| 3318074 | 7/1/2014 | 7:25 AM | 0 | 1 | 7 - Possible Injury | 22470 | 1.29 | Null | Null | Urban Other Principal Arte | 4 - Had NOT Been Drinking | 11 - From same direction - both going straight - both moving - rear-end | rear-end | Null - Null | 1 - Clear or Partly Cloudy | 1 - Dry | 1 - Daylight | 14-251 |
| E348358 | 8/10/2014 | 4:16 PM | 0 | 2 | 6 - Evident Injury | 22470 | 1.24 | Null | Null | Urban Other Principal Arte | 4 - Had NOT Been Drinking | 11 - From same direction - both going straight - one stopped - rear-end | rear-end | Null - From same di | 1 - Clear or Partly Cloudy | 1 - Dry | 1 - Daylight | S14-08966 |
| E356556 | 9/14/2014 | 1:54 PM | 0 | 2 | 7 - Possible Injury | 22470 | 1.24 | Null | Null | Urban Minor Arterial | 4 - Had NOT Been Drinking | 11 - From same direction - both going straight - one stopped - rear-end | rear-end | Null - Null | 1 - Clear or Partly Cloudy | 1 - Dry | 1 - Daylight | S14-10406 |
| E372590 | 10/27/2014 | 9:10 AM | 0 | 0 | 1 - No Injury | 22470 | 1.27 | 22753 | 0.31 | Urban Minor Arterial | 4 - Had NOT Been Drinking | 1 - Entering at angle | angle | Null - Null | 3 - Raining | 2 - Wet | 1 - Daylight | S14-12136 |
| E383421 | 12/5/2014 | 8:35 PM | 0 | 1 | 7 - Possible Injury | 22470 | 1.27 | 22753 | 0.31 | Urban Other Principal Arte | 4 - Had NOT Been Drinking | 1 - From opposite direction - one left turn - one straigh | turn | Null - Null | 3 - Raining | 2 - Wet | 4 - Dark-Street Lights On | S14-13683 |
| E393817 | 1/15/2015 | 6:00 AM | 0 | 0 | 1 - No Injury | 22470 | 1.28 | Null | Null | Urban Other Principal Arte | 4 - Had NOT Been Drinking | 12 - From same direction - all others | others | Null - Null | 1 - Clear or Partly Cloudy | 1 - Dry | 2 - Dawn | S15-604 |
| E427979 | 5/23/2015 | 10:29 PM | 0 | 1 | 6 - Evident Injury | 22470 | 1.27 | 22753 | 0.31 | Urban Minor Arterial | 3 - HBD - Sobriety Unknown | 9 - Vehicle - Pedalcyclist | ped/bike | Null - Null | 2 - Overcast | 1 - Dry | 4 - Dark-Street Lights On | 2.02E+08 |
| E428830 | 5/28/2015 | 4:41 PM | 0 | 1 | 7 - Possible Injury | 22470 | 1.23 | Null | Null | Urban Other Principal Arte | 4 - Had NOT Been Drinking | 11 - From same direction - both going straight - both moving - rear-end | rear-end | Null - Null | 1 - Clear or Partly Cloudy | 1 - Dry | 1 - Daylight | 20155808 |
| E428409 | 5/28/2015 | 7:17 PM | 0 | 0 | 1 - No Injury | 22470 | 1.27 | 22753 | 0.31 | Urban Other Principal Arte | 4 - Had NOT Been Drinking | 1 - Entering at angle | angle | Null - Null | 1 - Clear or Partly Cloudy | 1 - Dry | 1 - Daylight | 2015-5814 |

**NE 94th Ave @ NE 76th St/Covington Rd**

| | | |
|---|---|---|
| **22753 @ 0.00** | **NE 94th Ave** | |
| **91300 @ 8.35** | **NE 76th St** | |
| **23650 @ 1.13** | **NE Covington Rd** | |

| Report No.9 | Full Date | Full Time | Number of | Number o | Most Severe Injury T | County Road | County R | nty Number | Milepost | Federal Functional Class | Most Severe Sobriety Type | First Collision Type | | Second Collision T | Weather Conditions Type | Roadway Surface C | Lighting Condition Type | Case Number |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| E240938 | 4/24/2013 | 8:22 AM | 0 | 0 | 1 - No Injury | 22753 | 0 | 91300 | 8.35 | Urban Minor Arterial | 4 - Had NOT Been Drinking | 1 - Entering at angle | angle | Null - Null | 1 - Clear or Partly Cloudy | 1 - Dry | 1 - Daylight | S13-5020 |
| E260826 | 6/11/2013 | 10:00 PM | 0 | 0 | 0 - Unknown | 22753 | 0 | 91300 | 8.35 | Urban Minor Arterial | 1 - HBD - Ability Impaired | 1 - From opposite direction - one left turn - one straigh | turn | Null - Null | 1 - Clear or Partly Cloudy | 1 - Dry | 4 - Dark-Street Lights On | S13-7217 |
| E439966 | 7/4/2015 | 8:30 PM | 0 | 0 | 1 - No Injury | 22753 | 0 | 91300 | 8.35 | Urban Minor Arterial | 4 - Had NOT Been Drinking | 1 - Entering at angle | angle | Null - Null | 1 - Clear or Partly Cloudy | 1 - Dry | 1 - Daylight | 7120 |
| 3516804 | 7/5/2011 | 2:00 AM | 0 | 0 | 1 - No Injury | 22753 | 0.03 | Null | Null | Urban Minor Arterial | 9 - Unknown | 1 - From opposite direction - one left turn - one straigh | turn | Null - Null | 1 - Clear or Partly Cloudy | 1 - Dry | 4 - Dark-Street Lights On | S11-9009 |
| E222152 | 1/9/2013 | 1:25 AM | 0 | 0 | 0 - Unknown | 23650 | 1.13 | Null | Null | Urban Minor Arterial | 1 - HBD - Ability Impaired | 4 - Fixed object | fixed object | Null - Null | 1 - Clear or Partly Cloudy | 2 - Wet | 4 - Dark-Street Lights On | S13-376 |
| E237819 | 4/13/2013 | 9:23 PM | 0 | 0 | 1 - No Injury | 23650 | 1.13 | 91300 | 8.35 | Urban Minor Arterial | 4 - Had NOT Been Drinking | 1 - From opposite direction - one left turn - one right turr | turn | Null - Null | 1 - Clear or Partly Cloudy | 1 - Dry | 6 - Dark-No Street Lights | S13-4587 |
| E248570 | 6/5/2013 | 6:36 AM | 0 | 0 | 1 - No Injury | 23650 | 1.13 | 91300 | 8.35 | Urban Minor Arterial | 4 - Had NOT Been Drinking | 1 - Entering at angle | angle | Null - Null | 1 - Clear or Partly Cloudy | 1 - Dry | 1 - Daylight | S13-6919 |
| E261862 | 8/5/2013 | 10:15 PM | 0 | 0 | 1 - No Injury | 23650 | 1.13 | 91300 | 8.35 | Urban Minor Arterial | 4 - Had NOT Been Drinking | 1 - From opposite direction - one left turn - one straigh | turn | Null - Null | 1 - Clear or Partly Cloudy | 1 - Dry | 4 - Dark-Street Lights On | S13-9541 |
| E367488 | 8/25/2014 | 7:05 AM | 0 | 0 | 0 - Unknown | 23650 | 1.13 | 91300 | 8.35 | Urban Minor Arterial | 4 - Had NOT Been Drinking | 1 - Entering at angle | angle | Null - Null | 1 - Clear or Partly Cloudy | 4 - Ice | 1 - Daylight | S14-9545 |
| 3169576 | 2/17/2011 | 8:06 PM | 0 | 0 | 1 - No Injury | 91300 | 8.35 | 23650 | 1.13 | Urban Other Principal Arte | 4 - Had NOT Been Drinking | 1 - From opposite direction - one left turn - one straigh | turn | Null - Null | 1 - Clear or Partly Cloudy | 1 - Dry | 4 - Dark-Street Lights On | S11-2285 |
| 3516920 | 3/16/2011 | 11:13 AM | 0 | 1 | 5 - Serious Injury | 91300 | 8.35 | 22753 | 0 | Urban Other Principal Arte | 4 - Had NOT Been Drinking | 1 - Entering at angle | angle | Null - Null | 2 - Overcast | 2 - Wet | 1 - Daylight | S11-3483 |
| 3514403 | 4/27/2011 | 10:09 AM | 0 | 1 | 7 - Possible Injury | 91300 | 8.35 | 22753 | 0 | Urban Other Principal Arte | 4 - Had NOT Been Drinking | 11 - From same direction - both going straight - one stopped - rear-end | rear-end | Null - Null | 2 - Overcast | 1 - Dry | 1 - Daylight | S11-5547 |
| 3169535 | 9/2/2011 | 9:13 AM | 0 | 2 | 7 - Possible Injury | 91300 | 8.35 | 22753 | 0 | Urban Other Principal Arte | 4 - Had NOT Been Drinking | 1 - From opposite direction - one left turn - one straigh | turn | Null - Null | 1 - Clear or Partly Cloudy | 1 - Dry | 1 - Daylight | S11-11996 |
| E126887 | 9/23/2011 | 4:38 PM | 0 | 1 | 5 - Serious Injury | 91300 | 8.35 | 22753 | 0 | Urban Other Principal Arte | 4 - Had NOT Been Drinking | 10 - Vehicle turning left hits pedestrian | ped/bike | Null - Null | 1 - Clear or Partly Cloudy | 1 - Dry | 1 - Daylight | S11-13084 |
| 3514359 | 10/5/2011 | 12:53 PM | 0 | 0 | 1 - No Injury | 91300 | 8.35 | 23650 | 1.13 | Urban Other Principal Arte | 4 - Had NOT Been Drinking | 14 - From same direction - both going straight - both moving - sideswipe | side-swip | 12 - From same dire | 1 - Clear or Partly Cloudy | 1 - Dry | 1 - Daylight | S11 13623 |
| E148070 | 1/10/2012 | 6:44 PM | 0 | 2 | 7 - Possible Injury | 91300 | 8.35 | 22753 | 0 | Urban Minor Arterial | 4 - Had NOT Been Drinking | 1 - From opposite direction - one left turn - one straigh | turn | Null - Null | 1 - Clear or Partly Cloudy | 1 - Dry | 4 - Dark-Street Lights On | S12-529 |
| E164686 | 4/9/2012 | 5:54 PM | 0 | 1 | 7 - Possible Injury | 91300 | 8.35 | 23650 | 1.13 | Urban Minor Arterial | 4 - Had NOT Been Drinking | 1 - From opposite direction - one left turn - one straigh | turn | Null - Null | 1 - Clear or Partly Cloudy | 1 - Dry | 1 - Daylight | S12-4855 |
| E169511 | 5/10/2012 | 4:12 PM | 0 | 1 | 7 - Possible Injury | 91300 | 8.35 | 22753 | 0 | Urban Minor Arterial | 4 - Had NOT Been Drinking | 11 - From same direction - both going straight - both moving - rear-end | rear-end | 11 - From same dire | 1 - Clear or Partly Cloudy | 1 - Dry | 1 - Daylight | S12-6349 |
| E173668 | 6/3/2012 | 4:42 PM | 0 | 2 | 7 - Possible Injury | 91300 | 8.35 | 22753 | 0 | Urban Minor Arterial | 4 - Had NOT Been Drinking | 11 - From same direction - both going straight - one stopped - rear-end | rear-end | 11 - From same dire | 1 - Clear or Partly Cloudy | 1 - Dry | 1 - Daylight | S12-7582 |
| E184561 | 7/26/2012 | 4:51 PM | 0 | 1 | 7 - Possible Injury | 91300 | 8.35 | 23650 | 1.13 | Urban Minor Arterial | 4 - Had NOT Been Drinking | 11 - From same direction - both going straight - one stopped - rear-end | rear-end | 99 - From opposite | 1 - Clear or Partly Cloudy | 1 - Dry | 1 - Daylight | S12-10367 |
| E184423 | 7/30/2012 | 7:04 PM | 0 | 1 | 7 - Possible Injury | 91300 | 8.35 | 23650 | 1.13 | Urban Minor Arterial | 4 - Had NOT Been Drinking | 11 - From same direction - both going straight - one stopped - rear-end | rear-end | Null - Null | 1 - Clear or Partly Cloudy | 1 - Dry | 1 - Daylight | S12-10574 |
| E194222 | 9/24/2012 | 10:15 PM | 0 | 0 | 1 - No Injury | 91300 | 8.35 | 23650 | 1.13 | Urban Minor Arterial | 4 - Had NOT Been Drinking | 1 - From opposite direction - one left turn - one straigh | turn | Null - Null | 1 - Clear or Partly Cloudy | 1 - Dry | 4 - Dark-Street Lights On | S12-13387 |
| E194222 | 9/24/2012 | 10:15 PM | 0 | 0 | 1 - No Injury | 91300 | 8.35 | 23650 | 1.13 | Urban Minor Arterial | 4 - Had NOT Been Drinking | 1 - From opposite direction - one left turn - one straigh | turn | Null - Null | 1 - Clear or Partly Cloudy | 1 - Dry | 4 - Dark-Street Lights On | S12-13387 |
| E199843 | 10/19/2012 | 7:18 PM | 0 | 0 | 1 - No Injury | 91300 | 8.35 | 23650 | 1.13 | Urban Minor Arterial | 4 - Had NOT Been Drinking | 1 - Entering at angle | angle | Null - Null | 3 - Raining | 2 - Wet | 4 - Dark-Street Lights On | S12-14601 |
| E212218 | 12/5/2012 | 11:58 AM | 0 | 0 | 1 - No Injury | 91300 | 8.35 | 23650 | 1.13 | Urban Minor Arterial | 4 - Had NOT Been Drinking | 1 - Entering at angle | angle | Null - Null | 1 - Clear or Partly Cloudy | 2 - Wet | 1 - Daylight | S12-16749 |
| E273929 | 7/30/2013 | 3:25 PM | 0 | 3 | 6 - Evident Injury | 91300 | 8.35 | 23650 | 1.13 | Urban Minor Arterial | 4 - Had NOT Been Drinking | 1 - From opposite direction - one left turn - one straigh | turn | Null - Null | 1 - Clear or Partly Cloudy | 1 - Dry | 1 - Daylight | S13-9277 |
| E297824 | 1/3/2014 | 5:07 PM | 0 | 1 | 7 - Possible Injury | 91300 | 8.35 | 22753 | 0 | Urban Minor Arterial | 4 - Had NOT Been Drinking | 1 - Entering at angle | angle | Null - Null | 2 - Overcast | 2 - Wet | 3 - Dusk | S14-131 |
| E303885 | 1/30/2014 | 7:21 AM | 0 | 0 | 1 - No Injury | 91300 | 8.35 | 22753 | 0 | Urban Minor Arterial | 4 - Had NOT Been Drinking | 1 - Entering at angle | angle | Null - Null | 3 - Raining | 2 - Wet | 1 - Daylight | S14-1200 |
| E316840 | 3/10/2014 | 12:10 PM | 0 | 1 | 7 - Possible Injury | 91300 | 8.35 | 23650 | 1.13 | Urban Minor Arterial | 4 - Had NOT Been Drinking | 11 - From same direction - both going straight - one stopped - rear-end | rear-end | Null - Null | 1 - Clear or Partly Cloudy | 1 - Dry | 1 - Daylight | S14-2688 |
| E345410 | 7/29/2014 | 2:19 PM | 0 | 3 | 6 - Evident Injury | 91300 | 8.35 | 22753 | 0 | Urban Minor Arterial | 4 - Had NOT Been Drinking | 1 - Entering at angle | angle | Null - Null | 1 - Clear or Partly Cloudy | 1 - Dry | 1 - Daylight | S14-8438 |
| E376712 | 10/31/2014 | 10:08 PM | 0 | 0 | 1 - No Injury | 91300 | 8.35 | 22753 | 0 | Urban Minor Arterial | 4 - Had NOT Been Drinking | 1 - From opposite direction - one left turn - one straight | turn | Null - Null | 3 - Raining | 2 - Wet | 4 - Dark-Street Lights On | S14-12327 |
| E376827 | 11/20/2014 | 5:42 PM | 0 | 0 | 1 - No Injury | 91300 | 8.35 | 22753 | 0 | Urban Minor Arterial | 4 - Had NOT Been Drinking | 1 - From opposite direction - one left turn - one straight | turn | Null - Null | 2 - Overcast | 1 - Dry | 4 - Dark-Street Lights On | S14-13086 |
| E394481 | 1/21/2015 | 6:52 AM | 0 | 0 | 1 - No Injury | 91300 | 8.35 | 22753 | 0 | Urban Minor Arterial | 4 - Had NOT Been Drinking | 1 - From opposite direction - one left turn - one straight | turn | Null - Null | 1 - Clear or Partly Cloudy | 1 - Dry | 4 - Dark-Street Lights On | S15000823 |
| E397732 | 1/31/2015 | 4:11 PM | 0 | 2 | 7 - Possible Injury | 91300 | 8.35 | 23650 | 1.13 | Urban Minor Arterial | 4 - Had NOT Been Drinking | 1 - Entering at angle | angle | Null - Null | 1 - Clear or Partly Cloudy | 1 - Dry | 1 - Daylight | S15-1278 |
| E408051 | 3/15/2015 | 12:54 PM | 0 | 2 | 7 - Possible Injury | 91300 | 8.35 | Null | Null | Urban Minor Arterial | 4 - Had NOT Been Drinking | 11 - From same direction - both going straight - both moving - rear-end | rear-end | Null - Null | 2 - Overcast | 1 - Dry | 1 - Daylight | S15-3043 |
| E440928 | 7/7/2015 | 3:05 PM | 0 | 2 | 7 - Possible Injury | 91300 | 8.35 | 22753 | 0 | Urban Minor Arterial | 4 - Had NOT Been Drinking | 1 - From opposite direction - one left turn - one straight | turn | Null - Null | 1 - Clear or Partly Cloudy | 1 - Dry | 1 - Daylight | 7226 |
| E433556 | 6/14/2015 | 11:09 AM | 0 | 1 | 6 - Evident Injury | 91300 | 8.35 | 22753 | 1.13 | Urban Minor Arterial | 4 - Had NOT Been Drinking | 1 - From opposite direction - one left turn - one straight | turn | Null - Null | 1 - Clear or Partly Cloudy | 1 - Dry | 1 - Daylight | 6393 |
| E221744 | 1/14/2013 | 5:24 PM | 0 | 0 | 1 - No Injury | 91300 | 8.36 | Null | Null | Urban Minor Arterial | 4 - Had NOT Been Drinking | 1 - From opposite direction - one left turn - one straight | turn | Null - Null | 3 - Raining | 2 - Wet | 4 - Dark-Street Lights On | S13-673 |
| E126095 | 9/17/2011 | 5:19 PM | 0 | 1 | 7 - Possible Injury | 91300 | 8.37 | Null | Null | Urban Minor Arterial | 4 - Had NOT Been Drinking | 1 - Entering at angle | angle | Null - Null | 3 - Raining | 2 - Wet | 1 - Daylight | S11-12801 |
| E290967 | 11/30/2013 | 4:26 PM | 0 | 0 | 1 - No Injury | 91300 | 8.37 | Null | Null | Urban Minor Arterial | 4 - Had NOT Been Drinking | 1 - Entering at angle | angle | Null - Null | 1 - Clear or Partly Cloudy | 1 - Dry | 1 - Daylight | S13-14537 |

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# Appendix D 2021 Background Traffic Operations Analysis Worksheets

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# HCM Signalized Intersection Capacity Analysis
## 1: NE 72nd Ave & NE 119th St

7/26/2016

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 32 | 189 | 74 | 299 | 181 | 56 | 70 | 259 | 248 | 46 | 527 | 18 |
| Future Volume (vph) | 32 | 189 | 74 | 299 | 181 | 56 | 70 | 259 | 248 | 46 | 527 | 18 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 5.4 | 6.1 | | 5.4 | 6.2 | | 5.4 | 6.1 | 5.4 | 5.4 | 6.1 | |
| Lane Util. Factor | 1.00 | 1.00 | | 0.97 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | |
| Frpb, ped/bikes | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | |
| Flpb, ped/bikes | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | |
| Frt | 1.00 | 0.96 | | 1.00 | 0.96 | | 1.00 | 1.00 | 0.85 | 1.00 | 0.99 | |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1752 | 1705 | | 3303 | 1590 | | 1517 | 1743 | 1482 | 1517 | 3355 | |
| Flt Permitted | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | |
| Satd. Flow (perm) | 1752 | 1705 | | 3303 | 1590 | | 1517 | 1743 | 1482 | 1517 | 3355 | |
| Peak-hour factor, PHF | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 |
| Adj. Flow (vph) | 37 | 217 | 85 | 344 | 208 | 64 | 80 | 298 | 285 | 53 | 606 | 21 |
| RTOR Reduction (vph) | 0 | 9 | 0 | 0 | 6 | 0 | 0 | 0 | 174 | 0 | 2 | 0 |
| Lane Group Flow (vph) | 37 | 293 | 0 | 344 | 266 | 0 | 80 | 298 | 111 | 53 | 625 | 0 |
| Confl. Peds. (#/hr) | 3 | | | | | 3 | 3 | | | | | 3 |
| Confl. Bikes (#/hr) | | | | | | | | | | | | 1 |
| Heavy Vehicles (%) | 3% | 7% | 6% | 6% | 12% | 24% | 19% | 9% | 9% | 19% | 7% | 6% |
| Turn Type | Prot | NA | | Prot | NA | | Prot | NA | pm+ov | Prot | NA | |
| Protected Phases | 1 | 6 | | 5 | 2 | | 3 | 8 | 5 | 7 | 4 | |
| Permitted Phases | | | | | | | | | 8 | | | |
| Actuated Green, G (s) | 5.1 | 49.8 | | 16.3 | 60.9 | | 9.7 | 34.3 | 50.6 | 6.6 | 31.2 | |
| Effective Green, g (s) | 5.1 | 49.8 | | 16.3 | 60.9 | | 9.7 | 34.3 | 50.6 | 6.6 | 31.2 | |
| Actuated g/C Ratio | 0.04 | 0.38 | | 0.13 | 0.47 | | 0.07 | 0.26 | 0.39 | 0.05 | 0.24 | |
| Clearance Time (s) | 5.4 | 6.1 | | 5.4 | 6.2 | | 5.4 | 6.1 | 5.4 | 5.4 | 6.1 | |
| Vehicle Extension (s) | 0.2 | 0.2 | | 0.2 | 0.2 | | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | |
| Lane Grp Cap (vph) | 68 | 653 | | 414 | 744 | | 113 | 459 | 576 | 77 | 805 | |
| v/s Ratio Prot | 0.02 | c0.17 | | c0.10 | 0.17 | | c0.05 | c0.17 | 0.02 | 0.03 | c0.19 | |
| v/s Ratio Perm | | | | | | | | | 0.05 | | | |
| v/c Ratio | 0.54 | 0.45 | | 0.83 | 0.36 | | 0.71 | 0.65 | 0.19 | 0.69 | 0.78 | |
| Uniform Delay, d1 | 61.3 | 29.9 | | 55.5 | 22.1 | | 58.8 | 42.5 | 26.2 | 60.7 | 46.1 | |
| Progression Factor | 1.00 | 1.00 | | 1.04 | 0.90 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | |
| Incremental Delay, d2 | 4.7 | 0.2 | | 12.6 | 1.3 | | 15.2 | 2.4 | 0.1 | 18.4 | 4.3 | |
| Delay (s) | 66.0 | 30.1 | | 70.5 | 21.3 | | 74.0 | 44.9 | 26.3 | 79.1 | 50.5 | |
| Level of Service | E | C | | E | C | | E | D | C | E | D | |
| Approach Delay (s) | | 34.0 | | | 48.8 | | | 40.4 | | | 52.7 | |
| Approach LOS | | C | | | D | | | D | | | D | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 45.3 | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | 0.63 | | |
| Actuated Cycle Length (s) | 130.0 | Sum of lost time (s) | 23.1 |
| Intersection Capacity Utilization | 64.8% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 37 | 221 | 68 | 84 | 238 | 74 | 63 | 43 | 86 | 89 | 72 | 22 |
| Future Volume (vph) | 37 | 221 | 68 | 84 | 238 | 74 | 63 | 43 | 86 | 89 | 72 | 22 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 6.3 | 6.3 | 6.3 | 6.3 | 6.3 | | 6.3 | 6.3 | | 6.3 | 6.3 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 0.96 | | 1.00 | 0.90 | | 1.00 | 0.97 | |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1805 | 1759 | 1495 | 1687 | 3137 | | 1543 | 1598 | | 1597 | 1753 | |
| Flt Permitted | 0.52 | 1.00 | 1.00 | 0.52 | 1.00 | | 0.68 | 1.00 | | 0.37 | 1.00 | |
| Satd. Flow (perm) | 995 | 1759 | 1495 | 924 | 3137 | | 1108 | 1598 | | 625 | 1753 | |
| Peak-hour factor, PHF | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 |
| Adj. Flow (vph) | 46 | 273 | 84 | 104 | 294 | 91 | 78 | 53 | 106 | 110 | 89 | 27 |
| RTOR Reduction (vph) | 0 | 0 | 40 | 0 | 13 | 0 | 0 | 62 | 0 | 0 | 9 | 0 |
| Lane Group Flow (vph) | 46 | 273 | 44 | 104 | 372 | 0 | 78 | 97 | 0 | 110 | 107 | 0 |
| Heavy Vehicles (%) | 0% | 8% | 8% | 7% | 11% | 11% | 17% | 3% | 9% | 13% | 6% | 0% |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | | pm+pt | NA | | pm+pt | NA | |
| Protected Phases | 1 | 6 | | 5 | 2 | | 3 | 8 | | 7 | 4 | |
| Permitted Phases | 6 | | 6 | 2 | | | 8 | | | 4 | | |
| Actuated Green, G (s) | 72.8 | 67.8 | 67.8 | 80.4 | 71.6 | | 24.6 | 15.7 | | 31.8 | 19.3 | |
| Effective Green, g (s) | 72.8 | 67.8 | 67.8 | 80.4 | 71.6 | | 24.6 | 15.7 | | 31.8 | 19.3 | |
| Actuated g/C Ratio | 0.56 | 0.52 | 0.52 | 0.62 | 0.55 | | 0.19 | 0.12 | | 0.24 | 0.15 | |
| Clearance Time (s) | 6.3 | 6.3 | 6.3 | 6.3 | 6.3 | | 6.3 | 6.3 | | 6.3 | 6.3 | |
| Vehicle Extension (s) | 2.0 | 2.0 | 2.0 | 3.0 | 2.0 | | 3.0 | 2.0 | | 3.0 | 2.0 | |
| Lane Grp Cap (vph) | 588 | 917 | 779 | 623 | 1727 | | 239 | 192 | | 246 | 260 | |
| v/s Ratio Prot | 0.00 | c0.16 | | c0.01 | c0.12 | | 0.02 | 0.06 | | c0.04 | 0.06 | |
| v/s Ratio Perm | 0.04 | | 0.03 | 0.09 | | | 0.04 | | | c0.07 | | |
| v/c Ratio | 0.08 | 0.30 | 0.06 | 0.17 | 0.22 | | 0.33 | 0.50 | | 0.45 | 0.41 | |
| Uniform Delay, d1 | 12.9 | 17.6 | 15.3 | 10.4 | 14.9 | | 45.0 | 53.5 | | 40.1 | 50.2 | |
| Progression Factor | 0.96 | 0.88 | 1.26 | 1.00 | 1.00 | | 0.94 | 0.87 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | 0.0 | 0.1 | 0.0 | 0.1 | 0.3 | | 0.8 | 0.8 | | 1.3 | 0.4 | |
| Delay (s) | 12.4 | 15.5 | 19.4 | 10.5 | 15.2 | | 43.0 | 47.5 | | 41.4 | 50.6 | |
| Level of Service | B | B | B | B | B | | D | D | | D | D | |
| Approach Delay (s) | | 16.0 | | | 14.2 | | | 46.0 | | | 46.1 | |
| Approach LOS | | B | | | B | | | D | | | D | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 25.6 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.34 | | |
| Actuated Cycle Length (s) | 130.0 | Sum of lost time (s) | 25.2 |
| Intersection Capacity Utilization | 49.8% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 108 | 724 | 132 | 56 | 1244 | 55 | 185 | 116 | 58 | 163 | 311 | 383 |
| Future Volume (vph) | 108 | 724 | 132 | 56 | 1244 | 55 | 185 | 116 | 58 | 163 | 311 | 383 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 6.2 | 6.3 | 6.3 | 6.2 | 6.3 | 6.3 | 6.3 | 5.9 | 5.9 | 6.8 | 5.9 | 5.9 |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frpb, ped/bikes | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Flpb, ped/bikes | 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 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot) | 1719 | 3282 | 1509 | 1803 | 3438 | 1538 | 1735 | 1810 | 1429 | 1713 | 1810 | 1583 |
| Flt Permitted | 0.07 | 1.00 | 1.00 | 0.30 | 1.00 | 1.00 | 0.21 | 1.00 | 1.00 | 0.67 | 1.00 | 1.00 |
| Satd. Flow (perm) | 127 | 3282 | 1509 | 560 | 3438 | 1538 | 389 | 1810 | 1429 | 1208 | 1810 | 1583 |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 114 | 762 | 139 | 59 | 1309 | 58 | 195 | 122 | 61 | 172 | 327 | 403 |
| RTOR Reduction (vph) | 0 | 0 | 55 | 0 | 0 | 26 | 0 | 0 | 42 | 0 | 0 | 82 |
| Lane Group Flow (vph) | 114 | 762 | 84 | 59 | 1309 | 32 | 195 | 122 | 19 | 172 | 327 | 321 |
| Confl. Peds. (#/hr) | 1 | | 10 | 10 | | 1 | 1 | | 4 | 4 | | 1 |
| Heavy Vehicles (%) | 5% | 10% | 7% | 0% | 5% | 5% | 4% | 5% | 13% | 5% | 5% | 2% |
| Turn Type | pm+pt | NA | pt+ov | pm+pt | NA | pt+ov | pm+pt | NA | pt+ov | pm+pt | NA | pt+ov |
| Protected Phases | 1 | 6 | 6 3 | 5 | 2 | 2 7 | 3 | 8 | 8 5 | 7 | 4 | 4 1 |
| Permitted Phases | 6 | | | 2 | | | 8 | | | 4 | | |
| Actuated Green, G (s) | 67.5 | 56.9 | 78.3 | 57.5 | 51.9 | 71.7 | 43.9 | 28.8 | 40.3 | 41.2 | 27.7 | 44.2 |
| Effective Green, g (s) | 67.5 | 56.9 | 78.3 | 57.5 | 51.9 | 71.7 | 43.9 | 28.8 | 40.3 | 41.2 | 27.7 | 44.2 |
| Actuated g/C Ratio | 0.52 | 0.44 | 0.60 | 0.44 | 0.40 | 0.55 | 0.34 | 0.22 | 0.31 | 0.32 | 0.21 | 0.34 |
| Clearance Time (s) | 6.2 | 6.3 | | 6.2 | 6.3 | | 6.3 | 5.9 | | 6.8 | 5.9 | |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lane Grp Cap (vph) | 195 | 1436 | 908 | 301 | 1372 | 848 | 287 | 400 | 442 | 435 | 385 | 538 |
| v/s Ratio Prot | 0.05 | c0.23 | 0.06 | 0.01 | c0.38 | 0.02 | c0.08 | 0.07 | 0.01 | 0.04 | c0.18 | c0.20 |
| v/s Ratio Perm | 0.25 | | | 0.08 | | | 0.15 | | | 0.08 | | |
| v/c Ratio | 0.58 | 0.53 | 0.09 | 0.20 | 0.95 | 0.04 | 0.68 | 0.30 | 0.04 | 0.40 | 0.85 | 0.60 |
| Uniform Delay, d1 | 26.2 | 26.8 | 10.9 | 21.3 | 37.9 | 13.4 | 33.6 | 42.2 | 31.4 | 33.7 | 49.1 | 35.5 |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.98 | 0.89 | 1.00 | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d2 | 2.9 | 1.4 | 0.0 | 0.1 | 14.6 | 0.0 | 4.8 | 0.2 | 0.0 | 0.2 | 15.3 | 1.2 |
| Delay (s) | 29.1 | 28.2 | 10.9 | 21.4 | 52.4 | 13.4 | 37.9 | 37.9 | 31.4 | 33.9 | 64.5 | 36.7 |
| Level of Service | C | C | B | C | D | B | D | D | C | C | E | D |
| Approach Delay (s) | | 25.9 | | | 49.6 | | | 36.8 | | | 46.2 | |
| Approach LOS | | C | | | D | | | D | | | D | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 41.0 | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | 0.87 | | |
| Actuated Cycle Length (s) | 130.0 | Sum of lost time (s) | 25.2 |
| Intersection Capacity Utilization | 87.7% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 26 | 184 | 180 | 59 | 238 | 133 | 134 | 160 | 47 | 85 | 289 | 90 |
| Future Volume (vph) | 26 | 184 | 180 | 59 | 238 | 133 | 134 | 160 | 47 | 85 | 289 | 90 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Lane Util. Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 0.95 | | 1.00 | 0.95 | |
| Frpb, ped/bikes | 1.00 | 0.99 | | 1.00 | 0.99 | | 1.00 | 0.99 | | 1.00 | 0.99 | |
| Flpb, ped/bikes | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Frt | 1.00 | 0.93 | | 1.00 | 0.95 | | 1.00 | 0.97 | | 1.00 | 0.96 | |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1805 | 1659 | | 1702 | 1664 | | 1733 | 3126 | | 1681 | 3208 | |
| Flt Permitted | 0.25 | 1.00 | | 0.19 | 1.00 | | 0.44 | 1.00 | | 0.61 | 1.00 | |
| Satd. Flow (perm) | 466 | 1659 | | 341 | 1664 | | 800 | 3126 | | 1077 | 3208 | |
| Peak-hour factor, PHF | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 29 | 204 | 200 | 66 | 264 | 148 | 149 | 178 | 52 | 94 | 321 | 100 |
| RTOR Reduction (vph) | 0 | 32 | 0 | 0 | 18 | 0 | 0 | 17 | 0 | 0 | 18 | 0 |
| Lane Group Flow (vph) | 29 | 372 | 0 | 66 | 394 | 0 | 149 | 213 | 0 | 94 | 403 | 0 |
| Confl. Peds. (#/hr) | 2 | | 5 | 5 | | 2 | 3 | | 3 | 3 | | 3 |
| Confl. Bikes (#/hr) | | | 1 | | | | | | | | | |
| Heavy Vehicles (%) | 0% | 4% | 6% | 6% | 6% | 10% | 4% | 12% | 7% | 7% | 9% | 4% |
| Turn Type | pm+pt | NA | | pm+pt | NA | | pm+pt | NA | | pm+pt | NA | |
| Protected Phases | 1 | 6 | | 5 | 2 | | 3 | 8 | | 7 | 4 | |
| Permitted Phases | 6 | | | 2 | | | 8 | | | 4 | | |
| Actuated Green, G (s) | 40.8 | 36.3 | | 46.4 | 39.1 | | 68.5 | 57.2 | | 64.3 | 55.1 | |
| Effective Green, g (s) | 40.8 | 36.3 | | 46.4 | 39.1 | | 68.5 | 57.2 | | 64.3 | 55.1 | |
| Actuated g/C Ratio | 0.31 | 0.28 | | 0.36 | 0.30 | | 0.53 | 0.44 | | 0.49 | 0.42 | |
| Clearance Time (s) | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | 192 | 463 | | 198 | 500 | | 502 | 1375 | | 575 | 1359 | |
| v/s Ratio Prot | 0.01 | 0.22 | | c0.02 | c0.24 | | c0.03 | 0.07 | | 0.01 | 0.13 | |
| v/s Ratio Perm | 0.04 | | | 0.10 | | | c0.13 | | | 0.07 | | |
| v/c Ratio | 0.15 | 0.80 | | 0.33 | 0.79 | | 0.30 | 0.16 | | 0.16 | 0.30 | |
| Uniform Delay, d1 | 32.6 | 43.5 | | 30.5 | 41.6 | | 16.2 | 21.9 | | 17.6 | 24.7 | |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.56 | 0.46 | |
| Incremental Delay, d2 | 0.4 | 9.7 | | 1.0 | 8.0 | | 0.3 | 0.2 | | 0.1 | 0.5 | |
| Delay (s) | 32.9 | 53.2 | | 31.5 | 49.7 | | 16.5 | 22.1 | | 9.9 | 11.9 | |
| Level of Service | C | D | | C | D | | B | C | | A | B | |
| Approach Delay (s) | | 51.8 | | | 47.2 | | | 19.9 | | | 11.5 | |
| Approach LOS | | D | | | D | | | B | | | B | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 32.4 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.49 | | |
| Actuated Cycle Length (s) | 130.0 | Sum of lost time (s) | 20.0 |
| Intersection Capacity Utilization | 70.7% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 215 | 102 | 151 | 147 | 146 | 70 | 287 | 707 | 43 | 56 | 1370 | 277 |
| Future Volume (veh/h) | 215 | 102 | 151 | 147 | 146 | 70 | 287 | 707 | 43 | 56 | 1370 | 277 |
| Number | 1 | 6 | 16 | 5 | 2 | 12 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 0.99 | 1.00 | | 0.99 | 1.00 | | 1.00 | 1.00 | | 0.99 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1667 | 1792 | 1681 | 1776 | 1759 | 1900 | 1696 | 1712 | 1759 | 1759 | 1792 | 1776 |
| Adj Flow Rate, veh/h | 239 | 113 | 168 | 163 | 162 | 78 | 319 | 786 | 48 | 62 | 1522 | 308 |
| Adj No. of Lanes | 2 | 1 | 1 | 2 | 1 | 0 | 2 | 2 | 1 | 2 | 2 | 1 |
| 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 |
| Percent Heavy Veh, % | 14 | 6 | 13 | 7 | 9 | 9 | 12 | 11 | 8 | 8 | 6 | 7 |
| Cap, veh/h | 286 | 404 | 370 | 217 | 222 | 107 | 303 | 1665 | 765 | 115 | 1535 | 771 |
| Arrive On Green | 0.09 | 0.23 | 0.23 | 0.07 | 0.20 | 0.20 | 0.10 | 0.51 | 0.51 | 0.04 | 0.45 | 0.45 |
| Sat Flow, veh/h | 3079 | 1792 | 1414 | 3281 | 1118 | 538 | 3134 | 3252 | 1494 | 3250 | 3406 | 1489 |
| Grp Volume(v), veh/h | 239 | 113 | 168 | 163 | 0 | 240 | 319 | 786 | 48 | 62 | 1522 | 308 |
| Grp Sat Flow(s),veh/h/ln | 1540 | 1792 | 1414 | 1640 | 0 | 1656 | 1567 | 1626 | 1494 | 1625 | 1703 | 1489 |
| Q Serve(g_s), s | 9.5 | 6.5 | 12.4 | 6.1 | 0.0 | 16.9 | 12.0 | 19.3 | 2.0 | 2.3 | 55.1 | 15.7 |
| Cycle Q Clear(g_c), s | 9.5 | 6.5 | 12.4 | 6.1 | 0.0 | 16.9 | 12.0 | 19.3 | 2.0 | 2.3 | 55.1 | 15.7 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.32 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 286 | 404 | 370 | 217 | 0 | 329 | 303 | 1665 | 765 | 115 | 1535 | 771 |
| V/C Ratio(X) | 0.84 | 0.28 | 0.45 | 0.75 | 0.00 | 0.73 | 1.05 | 0.47 | 0.06 | 0.54 | 0.99 | 0.40 |
| Avail Cap(c_a), veh/h | 297 | 505 | 449 | 317 | 0 | 467 | 303 | 1665 | 765 | 262 | 1535 | 771 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 55.4 | 39.8 | 38.5 | 57.0 | 0.0 | 46.6 | 56.1 | 19.5 | 15.3 | 58.9 | 33.9 | 18.3 |
| Incr Delay (d2), s/veh | 17.9 | 0.4 | 0.9 | 5.7 | 0.0 | 3.4 | 66.5 | 0.2 | 0.0 | 3.8 | 20.8 | 0.3 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 4.8 | 3.2 | 4.9 | 2.9 | 0.0 | 8.0 | 8.0 | 8.7 | 0.8 | 1.1 | 30.2 | 6.5 |
| LnGrp Delay(d),s/veh | 73.3 | 40.1 | 39.4 | 62.7 | 0.0 | 50.0 | 122.6 | 19.7 | 15.3 | 62.7 | 54.7 | 18.6 |
| LnGrp LOS | E | D | D | E | | D | F | B | B | E | D | B |
| Approach Vol, veh/h | | 520 | | | 403 | | | 1153 | | | 1892 | |
| Approach Delay, s/veh | | 55.1 | | | 55.2 | | | 48.0 | | | 49.1 | |
| Approach LOS | | E | | | E | | | D | | | D | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 16.5 | 29.7 | 17.0 | 61.0 | 13.2 | 33.0 | 9.4 | 68.6 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Max Green Setting (Gmax), s | 12.0 | 35.0 | 12.0 | 56.0 | 12.0 | 35.0 | 10.0 | 58.0 |
| Max Q Clear Time (g_c+I1), s | 11.5 | 18.9 | 14.0 | 57.1 | 8.1 | 14.4 | 4.3 | 21.3 |
| Green Ext Time (p_c), s | 0.0 | 2.5 | 0.0 | 0.0 | 0.2 | 2.7 | 0.1 | 27.5 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 50.2 |
| HCM 2010 LOS | D |

# HCM Unsignalized Intersection Capacity Analysis
## 5: NE 94th Ave & NE 105th St

7/26/2016

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 4 | 12 | 220 | 106 | 35 | 0 | 79 | 32 | 36 | 0 | 89 | 10 |
| Future Volume (Veh/h) | 4 | 12 | 220 | 106 | 35 | 0 | 79 | 32 | 36 | 0 | 89 | 10 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.84 | 0.84 | 0.84 | 0.84 | 0.84 | 0.84 | 0.84 | 0.84 | 0.84 | 0.84 | 0.84 | 0.84 |
| Hourly flow rate (vph) | 5 | 14 | 262 | 126 | 42 | 0 | 94 | 38 | 43 | 0 | 106 | 12 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 380 | 381 | 112 | 628 | 366 | 60 | 118 | | | 81 | | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 380 | 381 | 112 | 628 | 366 | 60 | 118 | | | 81 | | |
| tC, single (s) | 7.1 | 6.5 | 6.3 | 7.1 | 6.5 | 6.2 | 4.2 | | | 4.1 | | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.4 | 3.5 | 4.0 | 3.3 | 2.3 | | | 2.2 | | |
| p0 queue free % | 99 | 97 | 71 | 52 | 92 | 100 | 93 | | | 100 | | |
| cM capacity (veh/h) | 519 | 519 | 917 | 265 | 529 | 1012 | 1440 | | | 1529 | | |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 281 | 168 | 175 | 118 |
| Volume Left | 5 | 126 | 94 | 0 |
| Volume Right | 262 | 0 | 43 | 12 |
| cSH | 872 | 302 | 1440 | 1529 |
| Volume to Capacity | 0.32 | 0.56 | 0.07 | 0.00 |
| Queue Length 95th (ft) | 35 | 79 | 5 | 0 |
| Control Delay (s) | 11.1 | 30.8 | 4.4 | 0.0 |
| Lane LOS | B | D | A | |
| Approach Delay (s) | 11.1 | 30.8 | 4.4 | 0.0 |
| Approach LOS | B | D | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 12.2 | | |
| Intersection Capacity Utilization | 47.1% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 11 | 111 | 49 | 175 | 422 | 11 |
| Future Volume (Veh/h) | 11 | 111 | 49 | 175 | 422 | 11 |
| Sign Control | Stop | | | Free | Free | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Hourly flow rate (vph) | 12 | 118 | 52 | 186 | 449 | 12 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | TWLTL | None | |
| Median storage veh) | | | | 2 | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 745 | 455 | 461 | | | |
| vC1, stage 1 conf vol | 455 | | | | | |
| vC2, stage 2 conf vol | 290 | | | | | |
| vCu, unblocked vol | 745 | 455 | 461 | | | |
| tC, single (s) | 6.4 | 6.2 | 4.1 | | | |
| tC, 2 stage (s) | 5.4 | | | | | |
| tF (s) | 3.5 | 3.3 | 2.2 | | | |
| p0 queue free % | 98 | 81 | 95 | | | |
| cM capacity (veh/h) | 561 | 605 | 1111 | | | |

| Direction, Lane # | EB 1 | EB 2 | NB 1 | NB 2 | SB 1 |
|---|---|---|---|---|---|
| Volume Total | 12 | 118 | 52 | 186 | 461 |
| Volume Left | 12 | 0 | 52 | 0 | 0 |
| Volume Right | 0 | 118 | 0 | 0 | 12 |
| cSH | 561 | 605 | 1111 | 1700 | 1700 |
| Volume to Capacity | 0.02 | 0.19 | 0.05 | 0.11 | 0.27 |
| Queue Length 95th (ft) | 2 | 18 | 4 | 0 | 0 |
| Control Delay (s) | 11.6 | 12.4 | 8.4 | 0.0 | 0.0 |
| Lane LOS | B | B | A | | |
| Approach Delay (s) | 12.3 | | 1.8 | | 0.0 |
| Approach LOS | B | | | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 2.5 | | |
| Intersection Capacity Utilization | 39.5% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 83 | 46 | 422 | 41 | 30 | 801 |
| Future Volume (Veh/h) | 83 | 46 | 422 | 41 | 30 | 801 |
| Sign Control | Stop | | Free | | | Free |
| Grade | 0% | | 0% | | | 0% |
| Peak Hour Factor | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 |
| Hourly flow rate (vph) | 93 | 52 | 474 | 46 | 34 | 900 |
| Pedestrians | 2 | | | | | |
| Lane Width (ft) | 12.0 | | | | | |
| Walking Speed (ft/s) | 4.0 | | | | | |
| Percent Blockage | 0 | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | None | | | TWLTL |
| Median storage veh) | | | | | | 2 |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 1017 | 262 | | | 522 | |
| vC1, stage 1 conf vol | 499 | | | | | |
| vC2, stage 2 conf vol | 518 | | | | | |
| vCu, unblocked vol | 1017 | 262 | | | 522 | |
| tC, single (s) | 6.9 | 7.3 | | | 4.5 | |
| tC, 2 stage (s) | 5.9 | | | | | |
| tF (s) | 3.5 | 3.5 | | | 2.4 | |
| p0 queue free % | 78 | 92 | | | 96 | |
| cM capacity (veh/h) | 431 | 684 | | | 917 | |

| Direction, Lane # | WB 1 | NB 1 | NB 2 | SB 1 | SB 2 | SB 3 |
|---|---|---|---|---|---|---|
| Volume Total | 145 | 316 | 204 | 34 | 450 | 450 |
| Volume Left | 93 | 0 | 0 | 34 | 0 | 0 |
| Volume Right | 52 | 0 | 46 | 0 | 0 | 0 |
| cSH | 497 | 1700 | 1700 | 917 | 1700 | 1700 |
| Volume to Capacity | 0.29 | 0.19 | 0.12 | 0.04 | 0.26 | 0.26 |
| Queue Length 95th (ft) | 30 | 0 | 0 | 3 | 0 | 0 |
| Control Delay (s) | 15.2 | 0.0 | 0.0 | 9.1 | 0.0 | 0.0 |
| Lane LOS | C | | | A | | |
| Approach Delay (s) | 15.2 | 0.0 | | 0.3 | | |
| Approach LOS | C | | | | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 1.6 | | |
| Intersection Capacity Utilization | 36.2% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 14 | 94 | 45 | 234 | 603 | 24 |
| Future Volume (Veh/h) | 14 | 94 | 45 | 234 | 603 | 24 |
| Sign Control | Stop | | | Free | Free | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 |
| Hourly flow rate (vph) | 16 | 108 | 52 | 269 | 693 | 28 |
| Pedestrians | 2 | | | | | |
| Lane Width (ft) | 12.0 | | | | | |
| Walking Speed (ft/s) | 4.0 | | | | | |
| Percent Blockage | 0 | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | TWLTL | None | |
| Median storage veh) | | | | 2 | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 1082 | 709 | 723 | | | |
| vC1, stage 1 conf vol | 709 | | | | | |
| vC2, stage 2 conf vol | 373 | | | | | |
| vCu, unblocked vol | 1082 | 709 | 723 | | | |
| tC, single (s) | 6.6 | 6.2 | 4.1 | | | |
| tC, 2 stage (s) | 5.6 | | | | | |
| tF (s) | 3.7 | 3.3 | 2.2 | | | |
| p0 queue free % | 96 | 75 | 94 | | | |
| cM capacity (veh/h) | 398 | 430 | 873 | | | |

| Direction, Lane # | EB 1 | NB 1 | NB 2 | SB 1 |
|---|---|---|---|---|
| Volume Total | 124 | 52 | 269 | 721 |
| Volume Left | 16 | 52 | 0 | 0 |
| Volume Right | 108 | 0 | 0 | 28 |
| cSH | 426 | 873 | 1700 | 1700 |
| Volume to Capacity | 0.29 | 0.06 | 0.16 | 0.42 |
| Queue Length 95th (ft) | 30 | 5 | 0 | 0 |
| Control Delay (s) | 16.9 | 9.4 | 0.0 | 0.0 |
| Lane LOS | C | A | | |
| Approach Delay (s) | 16.9 | 1.5 | | 0.0 |
| Approach LOS | C | | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 2.2 | | |
| Intersection Capacity Utilization | 50.6% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

# MOVEMENT SUMMARY

## Site: 101 [NE 105 and NE 87]

New Site
Stop (Two-Way)

| Movement Performance - Vehicles | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Mov ID | OD Mov | Demand Flows Total veh/h | HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Distance m | Prop. Queued | Effective Stop Rate per veh | Average Speed km/h |
| South: NE 87 NB | | | | | | | | | | | |
| 1 | L2 | 1 | 0.0 | 0.040 | 7.6 | LOS A | 0.1 | 1.1 | 0.33 | 0.97 | 50.7 |
| 2 | T1 | 27 | 4.0 | 0.040 | 9.9 | LOS A | 0.1 | 1.1 | 0.33 | 0.97 | 50.7 |
| 3 | R2 | 3 | 67.0 | 0.040 | 12.1 | LOS B | 0.1 | 1.1 | 0.33 | 0.97 | 48.6 |
| Approach | | 32 | 10.2 | 0.040 | 10.1 | LOS B | 0.1 | 1.1 | 0.33 | 0.97 | 50.5 |
| East: NE 105 WB | | | | | | | | | | | |
| 4 | L2 | 1 | 0.0 | 0.104 | 6.1 | LOS A | 0.0 | 0.2 | 0.01 | 0.57 | 53.1 |
| 5 | T1 | 1 | 0.0 | 0.104 | 1.5 | LOS A | 0.0 | 0.2 | 0.01 | 0.57 | 55.0 |
| 6 | R2 | 178 | 10.0 | 0.104 | 5.7 | LOS A | 0.0 | 0.2 | 0.01 | 0.57 | 53.2 |
| Approach | | 180 | 9.9 | 0.104 | 5.7 | NA | 0.0 | 0.2 | 0.01 | 0.57 | 53.2 |
| North: NE 87 SB | | | | | | | | | | | |
| 7 | L2 | 161 | 15.0 | 0.105 | 8.1 | LOS A | 0.0 | 0.0 | 0.00 | 1.04 | 51.0 |
| 8 | T1 | 16 | 7.0 | 0.105 | 8.0 | LOS A | 0.0 | 0.0 | 0.00 | 1.04 | 51.6 |
| 9 | R2 | 1 | 0.0 | 0.105 | 8.0 | LOS A | 0.0 | 0.0 | 0.00 | 1.04 | 52.1 |
| Approach | | 178 | 14.2 | 0.105 | 8.1 | LOS A | 0.0 | 0.0 | 0.00 | 1.04 | 51.0 |
| West: NE 105 EB | | | | | | | | | | | |
| 10 | L2 | 3 | 0.0 | 0.011 | 6.7 | LOS A | 0.0 | 0.4 | 0.22 | 0.30 | 54.3 |
| 11 | T1 | 6 | 20.0 | 0.011 | 1.9 | LOS A | 0.0 | 0.4 | 0.22 | 0.30 | 56.3 |
| 12 | R2 | 1 | 0.0 | 0.011 | 5.6 | LOS A | 0.0 | 0.4 | 0.22 | 0.30 | 54.8 |
| Approach | | 11 | 12.0 | 0.011 | 3.7 | NA | 0.0 | 0.4 | 0.22 | 0.30 | 55.5 |
| All Vehicles | | 400 | 11.9 | 0.105 | 7.0 | NA | 0.1 | 1.1 | 0.04 | 0.80 | 52.1 |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

# HCM Signalized Intersection Capacity Analysis
## 1: NE 72nd Ave & NE 119th St

7/26/2016

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 40 | 240 | 90 | 319 | 216 | 100 | 78 | 665 | 710 | 115 | 443 | 32 |
| Future Volume (vph) | 40 | 240 | 90 | 319 | 216 | 100 | 78 | 665 | 710 | 115 | 443 | 32 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 5.4 | 6.1 | | 5.4 | 6.2 | | 5.4 | 6.1 | 5.4 | 5.4 | 6.1 | |
| Lane Util. Factor | 1.00 | 1.00 | | 0.97 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | |
| Frpb, ped/bikes | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | 0.99 | 1.00 | 1.00 | |
| Flpb, ped/bikes | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | |
| Frt | 1.00 | 0.96 | | 1.00 | 0.95 | | 1.00 | 1.00 | 0.85 | 1.00 | 0.99 | |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1736 | 1752 | | 3367 | 1775 | | 1752 | 1845 | 1568 | 1787 | 3464 | |
| Flt Permitted | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | |
| Satd. Flow (perm) | 1736 | 1752 | | 3367 | 1775 | | 1752 | 1845 | 1568 | 1787 | 3464 | |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 42 | 253 | 95 | 336 | 227 | 105 | 82 | 700 | 747 | 121 | 466 | 34 |
| RTOR Reduction (vph) | 0 | 9 | 0 | 0 | 10 | 0 | 0 | 0 | 205 | 0 | 3 | 0 |
| Lane Group Flow (vph) | 42 | 339 | 0 | 336 | 322 | 0 | 82 | 700 | 542 | 121 | 497 | 0 |
| Confl. Peds. (#/hr) | | | | | | | | | 1 | 1 | | |
| Confl. Bikes (#/hr) | | | | | | | | | | | | 2 |
| Heavy Vehicles (%) | 4% | 4% | 4% | 4% | 1% | 4% | 3% | 3% | 2% | 1% | 3% | 3% |
| Turn Type | Prot | NA | | Prot | NA | | Prot | NA | pm+ov | Prot | NA | |
| Protected Phases | 1 | 6 | | 5 | 2 | | 3 | 8 | 5 | 7 | 4 | |
| Permitted Phases | | | | | | | | | 8 | | | |
| Actuated Green, G (s) | 5.8 | 45.1 | | 19.5 | 58.7 | | 9.7 | 49.5 | 69.0 | 12.9 | 52.7 | |
| Effective Green, g (s) | 5.8 | 45.1 | | 19.5 | 58.7 | | 9.7 | 49.5 | 69.0 | 12.9 | 52.7 | |
| Actuated g/C Ratio | 0.04 | 0.30 | | 0.13 | 0.39 | | 0.06 | 0.33 | 0.46 | 0.09 | 0.35 | |
| Clearance Time (s) | 5.4 | 6.1 | | 5.4 | 6.2 | | 5.4 | 6.1 | 5.4 | 5.4 | 6.1 | |
| Vehicle Extension (s) | 0.2 | 0.2 | | 0.2 | 0.2 | | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | |
| Lane Grp Cap (vph) | 67 | 526 | | 437 | 694 | | 113 | 608 | 721 | 153 | 1217 | |
| v/s Ratio Prot | 0.02 | c0.19 | | c0.10 | 0.18 | | 0.05 | c0.38 | 0.10 | c0.07 | c0.14 | |
| v/s Ratio Perm | | | | | | | | | 0.25 | | | |
| v/c Ratio | 0.63 | 0.64 | | 0.77 | 0.46 | | 0.73 | 1.15 | 0.75 | 0.79 | 0.41 | |
| Uniform Delay, d1 | 71.0 | 45.5 | | 63.1 | 33.9 | | 68.8 | 50.2 | 33.4 | 67.2 | 36.8 | |
| Progression Factor | 1.00 | 1.00 | | 1.39 | 0.72 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | |
| Incremental Delay, d2 | 12.4 | 2.0 | | 7.0 | 2.2 | | 17.7 | 85.9 | 4.0 | 22.3 | 0.1 | |
| Delay (s) | 83.5 | 47.5 | | 94.7 | 26.7 | | 86.5 | 136.2 | 37.4 | 89.5 | 36.9 | |
| Level of Service | F | D | | F | C | | F | F | D | F | D | |
| Approach Delay (s) | | 51.4 | | | 60.9 | | | 85.3 | | | 47.2 | |
| Approach LOS | | D | | | E | | | F | | | D | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 68.7 | HCM 2000 Level of Service | E |
| HCM 2000 Volume to Capacity ratio | 0.88 | | |
| Actuated Cycle Length (s) | 150.0 | Sum of lost time (s) | 23.1 |
| Intersection Capacity Utilization | 87.7% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 35 | 703 | 77 | 121 | 500 | 55 | 50 | 61 | 122 | 38 | 30 | 22 |
| Future Volume (vph) | 35 | 703 | 77 | 121 | 500 | 55 | 50 | 61 | 122 | 38 | 30 | 22 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 6.3 | 6.3 | 6.3 | 6.3 | 6.3 | | 6.3 | 6.3 | | 6.3 | 6.3 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Frpb, ped/bikes | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 0.99 | |
| Flpb, ped/bikes | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 0.99 | | 1.00 | 0.90 | | 1.00 | 0.94 | |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1687 | 1845 | 1553 | 1805 | 3518 | | 1805 | 1698 | | 1805 | 1709 | |
| Flt Permitted | 0.39 | 1.00 | 1.00 | 0.15 | 1.00 | | 0.71 | 1.00 | | 0.25 | 1.00 | |
| Satd. Flow (perm) | 686 | 1845 | 1553 | 285 | 3518 | | 1346 | 1698 | | 475 | 1709 | |
| Peak-hour factor, PHF | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 |
| Adj. Flow (vph) | 42 | 847 | 93 | 146 | 602 | 66 | 60 | 73 | 147 | 46 | 36 | 27 |
| RTOR Reduction (vph) | 0 | 0 | 38 | 0 | 3 | 0 | 0 | 63 | 0 | 0 | 23 | 0 |
| Lane Group Flow (vph) | 42 | 847 | 55 | 146 | 665 | 0 | 60 | 157 | 0 | 46 | 40 | 0 |
| Confl. Bikes (#/hr) | | | | | | 1 | | | | | | 1 |
| Heavy Vehicles (%) | 7% | 3% | 4% | 0% | 1% | 0% | 0% | 2% | 0% | 0% | 6% | 0% |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | | pm+pt | NA | | pm+pt | NA | |
| Protected Phases | 1 | 6 | | 5 | 2 | | 3 | 8 | | 7 | 4 | |
| Permitted Phases | 6 | | 6 | 2 | | | 8 | | | 4 | | |
| Actuated Green, G (s) | 93.5 | 88.6 | 88.6 | 103.3 | 93.5 | | 26.6 | 19.7 | | 26.2 | 19.5 | |
| Effective Green, g (s) | 93.5 | 88.6 | 88.6 | 103.3 | 93.5 | | 26.6 | 19.7 | | 26.2 | 19.5 | |
| Actuated g/C Ratio | 0.62 | 0.59 | 0.59 | 0.69 | 0.62 | | 0.18 | 0.13 | | 0.17 | 0.13 | |
| Clearance Time (s) | 6.3 | 6.3 | 6.3 | 6.3 | 6.3 | | 6.3 | 6.3 | | 6.3 | 6.3 | |
| Vehicle Extension (s) | 2.0 | 2.0 | 2.0 | 3.0 | 2.0 | | 3.0 | 2.0 | | 3.0 | 2.0 | |
| Lane Grp Cap (vph) | 460 | 1089 | 917 | 295 | 2192 | | 259 | 223 | | 142 | 222 | |
| v/s Ratio Prot | 0.00 | c0.46 | | c0.03 | 0.19 | | 0.01 | c0.09 | | c0.01 | 0.02 | |
| v/s Ratio Perm | 0.05 | | 0.04 | 0.31 | | | 0.03 | | | 0.04 | | |
| v/c Ratio | 0.09 | 0.78 | 0.06 | 0.49 | 0.30 | | 0.23 | 0.71 | | 0.32 | 0.18 | |
| Uniform Delay, d1 | 10.9 | 23.2 | 13.0 | 20.0 | 13.1 | | 52.5 | 62.4 | | 52.9 | 58.1 | |
| Progression Factor | 1.10 | 1.09 | 1.54 | 1.00 | 1.00 | | 0.96 | 0.97 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | 0.0 | 2.4 | 0.0 | 1.3 | 0.4 | | 0.4 | 6.7 | | 1.3 | 0.1 | |
| Delay (s) | 12.1 | 27.7 | 20.1 | 21.3 | 13.5 | | 51.0 | 67.0 | | 54.2 | 58.3 | |
| Level of Service | B | C | C | C | B | | D | E | | D | E | |
| Approach Delay (s) | | 26.3 | | | 14.9 | | | 63.6 | | | 56.6 | |
| Approach LOS | | C | | | B | | | E | | | E | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 28.3 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.72 | | |
| Actuated Cycle Length (s) | 150.0 | Sum of lost time (s) | 25.2 |
| Intersection Capacity Utilization | 79.6% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 407 | 1444 | 268 | 66 | 1154 | 226 | 223 | 400 | 150 | 158 | 256 | 215 |
| Future Volume (vph) | 407 | 1444 | 268 | 66 | 1154 | 226 | 223 | 400 | 150 | 158 | 256 | 215 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 6.2 | 6.3 | 6.3 | 6.2 | 6.3 | 6.3 | 6.3 | 5.9 | 5.9 | 6.8 | 5.9 | 5.9 |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frpb, ped/bikes | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Flpb, ped/bikes | 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 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot) | 1719 | 3471 | 1583 | 1719 | 3438 | 1538 | 1736 | 1827 | 1568 | 1736 | 1845 | 1568 |
| Flt Permitted | 0.08 | 1.00 | 1.00 | 0.09 | 1.00 | 1.00 | 0.25 | 1.00 | 1.00 | 0.14 | 1.00 | 1.00 |
| Satd. Flow (perm) | 145 | 3471 | 1583 | 166 | 3438 | 1538 | 450 | 1827 | 1568 | 255 | 1845 | 1568 |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 428 | 1520 | 282 | 69 | 1215 | 238 | 235 | 421 | 158 | 166 | 269 | 226 |
| RTOR Reduction (vph) | 0 | 0 | 94 | 0 | 0 | 63 | 0 | 0 | 83 | 0 | 0 | 45 |
| Lane Group Flow (vph) | 428 | 1520 | 188 | 69 | 1215 | 175 | 235 | 421 | 75 | 166 | 269 | 181 |
| Confl. Peds. (#/hr) | 6 | | 13 | 13 | | 6 | | | | | | |
| Heavy Vehicles (%) | 5% | 4% | 2% | 5% | 5% | 5% | 4% | 4% | 3% | 4% | 3% | 3% |
| Turn Type | pm+pt | NA | pt+ov | pm+pt | NA | pt+ov | pm+pt | NA | pt+ov | pm+pt | NA | pt+ov |
| Protected Phases | 1 | 6 | 6 3 | 5 | 2 | 2 7 | 3 | 8 | 8 5 | 7 | 4 | 4 1 |
| Permitted Phases | 6 | | | 2 | | | 8 | | | 4 | | |
| Actuated Green, G (s) | 83.7 | 70.0 | 95.4 | 51.2 | 43.7 | 65.3 | 51.1 | 32.0 | 45.4 | 44.0 | 28.7 | 68.4 |
| Effective Green, g (s) | 83.7 | 70.0 | 95.4 | 51.2 | 43.7 | 65.3 | 51.1 | 32.0 | 45.4 | 44.0 | 28.7 | 68.4 |
| Actuated g/C Ratio | 0.56 | 0.47 | 0.64 | 0.34 | 0.29 | 0.44 | 0.34 | 0.21 | 0.30 | 0.29 | 0.19 | 0.46 |
| Clearance Time (s) | 6.2 | 6.3 | | 6.2 | 6.3 | | 6.3 | 5.9 | | 6.8 | 5.9 | |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lane Grp Cap (vph) | 435 | 1619 | 1006 | 134 | 1001 | 669 | 317 | 389 | 474 | 225 | 353 | 715 |
| v/s Ratio Prot | c0.22 | 0.44 | 0.12 | 0.03 | c0.35 | 0.11 | c0.09 | c0.23 | 0.05 | 0.07 | 0.15 | 0.12 |
| v/s Ratio Perm | 0.33 | | | 0.15 | | | 0.16 | | | 0.14 | | |
| v/c Ratio | 0.98 | 0.94 | 0.19 | 0.51 | 1.21 | 0.26 | 0.74 | 1.08 | 0.16 | 0.74 | 0.76 | 0.25 |
| Uniform Delay, d1 | 48.2 | 38.0 | 11.3 | 37.6 | 53.1 | 27.0 | 39.2 | 59.0 | 38.3 | 43.7 | 57.4 | 25.1 |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.72 | 0.82 | 0.75 | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d2 | 38.6 | 11.9 | 0.0 | 1.4 | 105.5 | 0.1 | 7.0 | 66.6 | 0.0 | 10.3 | 8.5 | 0.1 |
| Delay (s) | 86.8 | 49.9 | 11.3 | 39.0 | 158.7 | 27.1 | 35.4 | 114.7 | 28.6 | 54.0 | 65.9 | 25.2 |
| Level of Service | F | D | B | D | F | C | D | F | C | D | E | C |
| Approach Delay (s) | | 52.1 | | | 132.7 | | | 75.1 | | | 49.0 | |
| Approach LOS | | D | | | F | | | E | | | D | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 78.7 | HCM 2000 Level of Service | E |
| HCM 2000 Volume to Capacity ratio | 1.08 | | |
| Actuated Cycle Length (s) | 150.0 | Sum of lost time (s) | 25.2 |
| Intersection Capacity Utilization | 105.3% | ICU Level of Service | G |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 55 | 377 | 191 | 158 | 314 | 200 | 157 | 476 | 93 | 175 | 329 | 38 |
| Future Volume (vph) | 55 | 377 | 191 | 158 | 314 | 200 | 157 | 476 | 93 | 175 | 329 | 38 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Lane Util. Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 0.95 | | 1.00 | 0.95 | |
| Frpb, ped/bikes | 1.00 | 0.99 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Flpb, ped/bikes | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Frt | 1.00 | 0.95 | | 1.00 | 0.94 | | 1.00 | 0.98 | | 1.00 | 0.98 | |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1671 | 1736 | | 1703 | 1703 | | 1715 | 3401 | | 1702 | 3359 | |
| Flt Permitted | 0.23 | 1.00 | | 0.14 | 1.00 | | 0.45 | 1.00 | | 0.27 | 1.00 | |
| Satd. Flow (perm) | 410 | 1736 | | 244 | 1703 | | 817 | 3401 | | 489 | 3359 | |
| Peak-hour factor, PHF | 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) | 57 | 393 | 199 | 165 | 327 | 208 | 164 | 496 | 97 | 182 | 343 | 40 |
| RTOR Reduction (vph) | 0 | 14 | 0 | 0 | 17 | 0 | 0 | 10 | 0 | 0 | 5 | 0 |
| Lane Group Flow (vph) | 57 | 578 | 0 | 165 | 518 | 0 | 164 | 583 | 0 | 182 | 378 | 0 |
| Confl. Peds. (#/hr) | | | 4 | 4 | | | 4 | | 1 | 1 | | 4 |
| Confl. Bikes (#/hr) | | | | | | 1 | | | | | | 1 |
| Heavy Vehicles (%) | 8% | 4% | 2% | 6% | 3% | 7% | 5% | 3% | 4% | 6% | 5% | 9% |
| Turn Type | pm+pt | NA | | pm+pt | NA | | pm+pt | NA | | pm+pt | NA | |
| Protected Phases | 1 | 6 | | 5 | 2 | | 3 | 8 | | 7 | 4 | |
| Permitted Phases | 6 | | | 2 | | | 8 | | | 4 | | |
| Actuated Green, G (s) | 65.8 | 58.8 | | 71.8 | 61.8 | | 60.0 | 47.6 | | 62.4 | 48.8 | |
| Effective Green, g (s) | 65.8 | 58.8 | | 71.8 | 61.8 | | 60.0 | 47.6 | | 62.4 | 48.8 | |
| Actuated g/C Ratio | 0.44 | 0.39 | | 0.48 | 0.41 | | 0.40 | 0.32 | | 0.42 | 0.33 | |
| Clearance Time (s) | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | 238 | 680 | | 214 | 701 | | 401 | 1079 | | 313 | 1092 | |
| v/s Ratio Prot | 0.01 | c0.33 | | c0.05 | 0.30 | | 0.03 | 0.17 | | c0.05 | 0.11 | |
| v/s Ratio Perm | 0.09 | | | 0.32 | | | 0.13 | | | c0.19 | | |
| v/c Ratio | 0.24 | 0.85 | | 0.77 | 0.74 | | 0.41 | 0.54 | | 0.58 | 0.35 | |
| Uniform Delay, d1 | 27.5 | 41.6 | | 30.2 | 37.3 | | 30.0 | 42.2 | | 30.0 | 38.5 | |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.91 | 0.97 | |
| Incremental Delay, d2 | 0.5 | 9.9 | | 15.7 | 4.1 | | 0.7 | 1.9 | | 2.5 | 0.8 | |
| Delay (s) | 28.1 | 51.5 | | 45.9 | 41.4 | | 30.7 | 44.1 | | 29.8 | 38.3 | |
| Level of Service | C | D | | D | D | | C | D | | C | D | |
| Approach Delay (s) | | 49.5 | | | 42.4 | | | 41.2 | | | 35.5 | |
| Approach LOS | | D | | | D | | | D | | | D | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 42.3 | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | 0.72 | | |
| Actuated Cycle Length (s) | 150.0 | Sum of lost time (s) | 20.0 |
| Intersection Capacity Utilization | 87.6% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

# HCM 2010 Signalized Intersection Summary
## 3: NE 117th Ave & NE 119th St

7/26/2016

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 493 | 314 | 239 | 107 | 247 | 92 | 359 | 1301 | 126 | 130 | 1033 | 230 |
| Future Volume (veh/h) | 493 | 314 | 239 | 107 | 247 | 92 | 359 | 1301 | 126 | 130 | 1033 | 230 |
| Number | 1 | 6 | 16 | 5 | 2 | 12 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.99 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1845 | 1827 | 1810 | 1811 | 1900 | 1845 | 1827 | 1863 | 1863 | 1810 | 1881 |
| Adj Flow Rate, veh/h | 519 | 331 | 252 | 113 | 260 | 97 | 378 | 1369 | 133 | 137 | 1087 | 242 |
| Adj No. of Lanes | 2 | 1 | 1 | 2 | 1 | 0 | 2 | 2 | 1 | 2 | 2 | 1 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 3 | 4 | 5 | 6 | 6 | 3 | 4 | 2 | 2 | 5 | 1 |
| Cap, veh/h | 562 | 643 | 625 | 159 | 293 | 109 | 414 | 1413 | 637 | 185 | 1168 | 619 |
| Arrive On Green | 0.16 | 0.35 | 0.35 | 0.05 | 0.23 | 0.23 | 0.12 | 0.41 | 0.41 | 0.05 | 0.34 | 0.34 |
| Sat Flow, veh/h | 3442 | 1845 | 1553 | 3343 | 1259 | 470 | 3408 | 3471 | 1563 | 3442 | 3438 | 1599 |
| Grp Volume(v), veh/h | 519 | 331 | 252 | 113 | 0 | 357 | 378 | 1369 | 133 | 137 | 1087 | 242 |
| Grp Sat Flow(s),veh/h/ln | 1721 | 1845 | 1553 | 1672 | 0 | 1728 | 1704 | 1736 | 1563 | 1721 | 1719 | 1599 |
| Q Serve(g_s), s | 20.8 | 20.0 | 16.2 | 4.7 | 0.0 | 28.0 | 15.4 | 54.1 | 7.7 | 5.5 | 42.8 | 15.3 |
| Cycle Q Clear(g_c), s | 20.8 | 20.0 | 16.2 | 4.7 | 0.0 | 28.0 | 15.4 | 54.1 | 7.7 | 5.5 | 42.8 | 15.3 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.27 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 562 | 643 | 625 | 159 | 0 | 403 | 414 | 1413 | 637 | 185 | 1168 | 619 |
| V/C Ratio(X) | 0.92 | 0.51 | 0.40 | 0.71 | 0.00 | 0.89 | 0.91 | 0.97 | 0.21 | 0.74 | 0.93 | 0.39 |
| Avail Cap(c_a), veh/h | 565 | 645 | 627 | 239 | 0 | 444 | 414 | 1413 | 637 | 246 | 1202 | 635 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 57.8 | 36.2 | 29.9 | 65.8 | 0.0 | 51.9 | 60.8 | 40.7 | 26.9 | 65.3 | 44.7 | 31.0 |
| Incr Delay (d2), s/veh | 21.0 | 0.7 | 0.4 | 5.7 | 0.0 | 17.9 | 24.5 | 17.0 | 0.2 | 7.9 | 12.6 | 0.4 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 11.5 | 10.3 | 7.1 | 2.3 | 0.0 | 15.4 | 8.7 | 29.2 | 3.4 | 2.8 | 22.3 | 6.8 |
| LnGrp Delay(d),s/veh | 78.8 | 36.9 | 30.3 | 71.5 | 0.0 | 69.8 | 85.3 | 57.7 | 27.1 | 73.2 | 57.2 | 31.4 |
| LnGrp LOS | E | D | C | E | | E | F | E | C | E | E | C |
| Approach Vol, veh/h | | 1102 | | | 470 | | | 1880 | | | 1466 | |
| Approach Delay, s/veh | | 55.1 | | | 70.2 | | | 61.1 | | | 54.5 | |
| Approach LOS | | E | | | E | | | E | | | D | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 27.9 | 37.7 | 22.0 | 52.6 | 11.7 | 53.8 | 12.5 | 62.0 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Max Green Setting (Gmax), s | 23.0 | 36.0 | 17.0 | 49.0 | 10.0 | 49.0 | 10.0 | 56.0 |
| Max Q Clear Time (g_c+I1), s | 22.8 | 30.0 | 17.4 | 44.8 | 6.7 | 22.0 | 7.5 | 56.1 |
| Green Ext Time (p_c), s | 0.0 | 2.7 | 0.0 | 2.8 | 0.1 | 5.7 | 0.1 | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 58.6 |
| HCM 2010 LOS | E |

# HCM Unsignalized Intersection Capacity Analysis
## 5: NE 94th Ave & NE 105th St

7/26/2016

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 14 | 39 | 132 | 69 | 23 | 0 | 192 | 125 | 119 | 0 | 75 | 13 |
| Future Volume (Veh/h) | 14 | 39 | 132 | 69 | 23 | 0 | 192 | 125 | 119 | 0 | 75 | 13 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| 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 |
| Hourly flow rate (vph) | 16 | 43 | 147 | 77 | 26 | 0 | 213 | 139 | 132 | 0 | 83 | 14 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 734 | 787 | 90 | 890 | 728 | 205 | 97 | | | 271 | | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 734 | 787 | 90 | 890 | 728 | 205 | 97 | | | 271 | | |
| tC, single (s) | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 | 4.1 | | | 4.1 | | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | | | 2.2 | | |
| p0 queue free % | 94 | 85 | 85 | 57 | 91 | 100 | 86 | | | 100 | | |
| cM capacity (veh/h) | 282 | 280 | 960 | 177 | 302 | 841 | 1496 | | | 1304 | | |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 206 | 103 | 484 | 97 |
| Volume Left | 16 | 77 | 213 | 0 |
| Volume Right | 147 | 0 | 132 | 14 |
| cSH | 566 | 198 | 1496 | 1304 |
| Volume to Capacity | 0.36 | 0.52 | 0.14 | 0.00 |
| Queue Length 95th (ft) | 41 | 66 | 12 | 0 |
| Control Delay (s) | 14.9 | 41.3 | 4.2 | 0.0 |
| Lane LOS | B | E | A | |
| Approach Delay (s) | 14.9 | 41.3 | 4.2 | 0.0 |
| Approach LOS | B | E | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 10.5 | | |
| Intersection Capacity Utilization | 57.1% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 15 | 71 | 114 | 504 | 288 | 14 |
| Future Volume (Veh/h) | 15 | 71 | 114 | 504 | 288 | 14 |
| Sign Control | Stop | | | Free | Free | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 |
| Hourly flow rate (vph) | 16 | 78 | 125 | 554 | 316 | 15 |
| Pedestrians | 2 | | | | | |
| Lane Width (ft) | 12.0 | | | | | |
| Walking Speed (ft/s) | 4.0 | | | | | |
| Percent Blockage | 0 | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | TWLTL | None | |
| Median storage veh) | | | | 2 | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 1130 | 326 | 333 | | | |
| vC1, stage 1 conf vol | 326 | | | | | |
| vC2, stage 2 conf vol | 804 | | | | | |
| vCu, unblocked vol | 1130 | 326 | 333 | | | |
| tC, single (s) | 6.7 | 6.2 | 4.1 | | | |
| tC, 2 stage (s) | 5.7 | | | | | |
| tF (s) | 3.8 | 3.3 | 2.2 | | | |
| p0 queue free % | 95 | 89 | 90 | | | |
| cM capacity (veh/h) | 328 | 712 | 1224 | | | |

| Direction, Lane # | EB 1 | EB 2 | NB 1 | NB 2 | SB 1 |
|---|---|---|---|---|---|
| Volume Total | 16 | 78 | 125 | 554 | 331 |
| Volume Left | 16 | 0 | 125 | 0 | 0 |
| Volume Right | 0 | 78 | 0 | 0 | 15 |
| cSH | 328 | 712 | 1224 | 1700 | 1700 |
| Volume to Capacity | 0.05 | 0.11 | 0.10 | 0.33 | 0.19 |
| Queue Length 95th (ft) | 4 | 9 | 9 | 0 | 0 |
| Control Delay (s) | 16.5 | 10.7 | 8.3 | 0.0 | 0.0 |
| Lane LOS | C | B | A | | |
| Approach Delay (s) | 11.7 | | 1.5 | | 0.0 |
| Approach LOS | B | | | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 1.9 | | |
| Intersection Capacity Utilization | 36.5% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 81 | 43 | 1135 | 188 | 41 | 720 |
| Future Volume (Veh/h) | 81 | 43 | 1135 | 188 | 41 | 720 |
| Sign Control | Stop | | Free | | | Free |
| Grade | 0% | | 0% | | | 0% |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Hourly flow rate (vph) | 87 | 46 | 1220 | 202 | 44 | 774 |
| Pedestrians | 1 | | | | | |
| Lane Width (ft) | 12.0 | | | | | |
| Walking Speed (ft/s) | 4.0 | | | | | |
| Percent Blockage | 0 | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | TWLTL | | | TWLTL |
| Median storage veh) | | | 2 | | | 2 |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 1797 | 712 | | | 1423 | |
| vC1, stage 1 conf vol | 1322 | | | | | |
| vC2, stage 2 conf vol | 475 | | | | | |
| vCu, unblocked vol | 1797 | 712 | | | 1423 | |
| tC, single (s) | 6.9 | 7.0 | | | 4.4 | |
| tC, 2 stage (s) | 5.9 | | | | | |
| tF (s) | 3.5 | 3.4 | | | 2.3 | |
| p0 queue free % | 56 | 87 | | | 90 | |
| cM capacity (veh/h) | 196 | 366 | | | 422 | |

| Direction, Lane # | WB 1 | NB 1 | NB 2 | SB 1 | SB 2 | SB 3 |
|---|---|---|---|---|---|---|
| Volume Total | 133 | 813 | 609 | 44 | 387 | 387 |
| Volume Left | 87 | 0 | 0 | 44 | 0 | 0 |
| Volume Right | 46 | 0 | 202 | 0 | 0 | 0 |
| cSH | 233 | 1700 | 1700 | 422 | 1700 | 1700 |
| Volume to Capacity | 0.57 | 0.48 | 0.36 | 0.10 | 0.23 | 0.23 |
| Queue Length 95th (ft) | 79 | 0 | 0 | 9 | 0 | 0 |
| Control Delay (s) | 39.0 | 0.0 | 0.0 | 14.5 | 0.0 | 0.0 |
| Lane LOS | E | | | B | | |
| Approach Delay (s) | 39.0 | 0.0 | | 0.8 | | |
| Approach LOS | E | | | | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 2.5 | | |
| Intersection Capacity Utilization | 51.2% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 52 | 92 | 115 | 742 | 442 | 33 |
| Future Volume (Veh/h) | 52 | 92 | 115 | 742 | 442 | 33 |
| Sign Control | Stop | | | Free | Free | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Hourly flow rate (vph) | 54 | 96 | 120 | 773 | 460 | 34 |
| Pedestrians | 3 | | | | | |
| Lane Width (ft) | 12.0 | | | | | |
| Walking Speed (ft/s) | 4.0 | | | | | |
| Percent Blockage | 0 | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | TWLTL | None | |
| Median storage veh) | | | | 2 | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 1493 | 480 | 497 | | | |
| vC1, stage 1 conf vol | 480 | | | | | |
| vC2, stage 2 conf vol | 1013 | | | | | |
| vCu, unblocked vol | 1493 | 480 | 497 | | | |
| tC, single (s) | 6.4 | 6.2 | 4.1 | | | |
| tC, 2 stage (s) | 5.4 | | | | | |
| tF (s) | 3.5 | 3.3 | 2.2 | | | |
| p0 queue free % | 81 | 84 | 89 | | | |
| cM capacity (veh/h) | 285 | 586 | 1064 | | | |

| Direction, Lane # | EB 1 | NB 1 | NB 2 | SB 1 |
|---|---|---|---|---|
| Volume Total | 150 | 120 | 773 | 494 |
| Volume Left | 54 | 120 | 0 | 0 |
| Volume Right | 96 | 0 | 0 | 34 |
| cSH | 425 | 1064 | 1700 | 1700 |
| Volume to Capacity | 0.35 | 0.11 | 0.45 | 0.29 |
| Queue Length 95th (ft) | 39 | 10 | 0 | 0 |
| Control Delay (s) | 18.0 | 8.8 | 0.0 | 0.0 |
| Lane LOS | C | A | | |
| Approach Delay (s) | 18.0 | 1.2 | | 0.0 |
| Approach LOS | C | | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 2.4 | | |
| Intersection Capacity Utilization | 54.3% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

# MOVEMENT SUMMARY

## Site: 101 [NE 105 and NE 87]

New Site
Stop (Two-Way)

| Movement Performance - Vehicles | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Mov ID | OD Mov | Demand Flows Total veh/h | HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Distance m | Prop. Queued | Effective Stop Rate per veh | Average Speed km/h |
| South: NE 87 NB | | | | | | | | | | | |
| 1 | L2 | 1 | 0.0 | 0.032 | 7.7 | LOS A | 0.1 | 0.8 | 0.36 | 0.94 | 50.5 |
| 2 | T1 | 21 | 0.0 | 0.032 | 10.0 | LOS B | 0.1 | 0.8 | 0.36 | 0.94 | 50.8 |
| 3 | R2 | 3 | 0.0 | 0.032 | 8.8 | LOS A | 0.1 | 0.8 | 0.36 | 0.94 | 51.0 |
| Approach | | 25 | 0.0 | 0.032 | 9.8 | LOS A | 0.1 | 0.8 | 0.36 | 0.94 | 50.8 |
| East: NE 105 WB | | | | | | | | | | | |
| 4 | L2 | 6 | 0.0 | 0.128 | 6.3 | LOS A | 0.1 | 0.8 | 0.05 | 0.54 | 53.0 |
| 5 | T1 | 4 | 0.0 | 0.128 | 1.9 | LOS A | 0.1 | 0.8 | 0.05 | 0.54 | 54.9 |
| 6 | R2 | 217 | 3.0 | 0.128 | 5.7 | LOS A | 0.1 | 0.8 | 0.05 | 0.54 | 53.4 |
| Approach | | 227 | 2.9 | 0.128 | 5.6 | NA | 0.1 | 0.8 | 0.05 | 0.54 | 53.4 |
| North: NE 87 SB | | | | | | | | | | | |
| 7 | L2 | 192 | 7.0 | 0.123 | 7.7 | LOS A | 0.0 | 0.0 | 0.00 | 1.02 | 51.3 |
| 8 | T1 | 25 | 0.0 | 0.123 | 7.7 | LOS A | 0.0 | 0.0 | 0.00 | 1.02 | 51.8 |
| 9 | R2 | 3 | 0.0 | 0.123 | 8.0 | LOS A | 0.0 | 0.0 | 0.00 | 1.02 | 52.1 |
| Approach | | 220 | 6.1 | 0.123 | 7.7 | LOS A | 0.0 | 0.0 | 0.00 | 1.02 | 51.4 |
| West: NE 105 EB | | | | | | | | | | | |
| 10 | L2 | 2 | 0.0 | 0.008 | 7.0 | LOS A | 0.0 | 0.2 | 0.24 | 0.32 | 54.4 |
| 11 | T1 | 4 | 0.0 | 0.008 | 1.8 | LOS A | 0.0 | 0.2 | 0.24 | 0.32 | 56.4 |
| 12 | R2 | 1 | 0.0 | 0.008 | 5.6 | LOS A | 0.0 | 0.2 | 0.24 | 0.32 | 55.0 |
| Approach | | 7 | 0.0 | 0.008 | 3.8 | NA | 0.0 | 0.2 | 0.24 | 0.32 | 55.6 |
| All Vehicles | | 480 | 4.1 | 0.128 | 6.8 | NA | 0.1 | 0.8 | 0.04 | 0.78 | 52.4 |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

# Appendix E 2021 Total Traffic Operations Analysis Worksheets

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# HCM Signalized Intersection Capacity Analysis
## 1: NE 72nd Ave & NE 119th St

7/26/2016

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 32 | 189 | 76 | 299 | 181 | 57 | 70 | 260 | 248 | 48 | 529 | 18 |
| Future Volume (vph) | 32 | 189 | 76 | 299 | 181 | 57 | 70 | 260 | 248 | 48 | 529 | 18 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 5.4 | 6.1 | | 5.4 | 6.2 | | 5.4 | 6.1 | 5.4 | 5.4 | 6.1 | |
| Lane Util. Factor | 1.00 | 1.00 | | 0.97 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | |
| Frpb, ped/bikes | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | |
| Flpb, ped/bikes | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | |
| Frt | 1.00 | 0.96 | | 1.00 | 0.96 | | 1.00 | 1.00 | 0.85 | 1.00 | 0.99 | |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1752 | 1704 | | 3303 | 1588 | | 1517 | 1743 | 1482 | 1517 | 3355 | |
| Flt Permitted | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | |
| Satd. Flow (perm) | 1752 | 1704 | | 3303 | 1588 | | 1517 | 1743 | 1482 | 1517 | 3355 | |
| Peak-hour factor, PHF | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 |
| Adj. Flow (vph) | 37 | 217 | 87 | 344 | 208 | 66 | 80 | 299 | 285 | 55 | 608 | 21 |
| RTOR Reduction (vph) | 0 | 9 | 0 | 0 | 7 | 0 | 0 | 0 | 174 | 0 | 2 | 0 |
| Lane Group Flow (vph) | 37 | 295 | 0 | 344 | 267 | 0 | 80 | 299 | 111 | 55 | 627 | 0 |
| Confl. Peds. (#/hr) | 3 | | | | | 3 | 3 | | | | | 3 |
| Confl. Bikes (#/hr) | | | | | | | | | | | | 1 |
| Heavy Vehicles (%) | 3% | 7% | 6% | 6% | 12% | 24% | 19% | 9% | 9% | 19% | 7% | 6% |
| Turn Type | Prot | NA | | Prot | NA | | Prot | NA | pm+ov | Prot | NA | |
| Protected Phases | 1 | 6 | | 5 | 2 | | 3 | 8 | 5 | 7 | 4 | |
| Permitted Phases | | | | | | | | | 8 | | | |
| Actuated Green, G (s) | 5.1 | 49.6 | | 16.3 | 60.7 | | 9.7 | 34.3 | 50.6 | 6.8 | 31.4 | |
| Effective Green, g (s) | 5.1 | 49.6 | | 16.3 | 60.7 | | 9.7 | 34.3 | 50.6 | 6.8 | 31.4 | |
| Actuated g/C Ratio | 0.04 | 0.38 | | 0.13 | 0.47 | | 0.07 | 0.26 | 0.39 | 0.05 | 0.24 | |
| Clearance Time (s) | 5.4 | 6.1 | | 5.4 | 6.2 | | 5.4 | 6.1 | 5.4 | 5.4 | 6.1 | |
| Vehicle Extension (s) | 0.2 | 0.2 | | 0.2 | 0.2 | | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | |
| Lane Grp Cap (vph) | 68 | 650 | | 414 | 741 | | 113 | 459 | 576 | 79 | 810 | |
| v/s Ratio Prot | 0.02 | c0.17 | | c0.10 | 0.17 | | c0.05 | c0.17 | 0.02 | 0.04 | c0.19 | |
| v/s Ratio Perm | | | | | | | | | 0.05 | | | |
| v/c Ratio | 0.54 | 0.45 | | 0.83 | 0.36 | | 0.71 | 0.65 | 0.19 | 0.70 | 0.77 | |
| Uniform Delay, d1 | 61.3 | 30.1 | | 55.5 | 22.2 | | 58.8 | 42.5 | 26.2 | 60.6 | 46.0 | |
| Progression Factor | 1.00 | 1.00 | | 1.03 | 0.89 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | |
| Incremental Delay, d2 | 4.7 | 0.2 | | 12.6 | 1.4 | | 15.2 | 2.5 | 0.1 | 19.3 | 4.3 | |
| Delay (s) | 66.0 | 30.3 | | 70.0 | 21.2 | | 74.0 | 45.1 | 26.3 | 79.9 | 50.3 | |
| Level of Service | E | C | | E | C | | E | D | C | E | D | |
| Approach Delay (s) | | 34.1 | | | 48.3 | | | 40.5 | | | 52.6 | |
| Approach LOS | | C | | | D | | | D | | | D | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 45.3 | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | 0.63 | | |
| Actuated Cycle Length (s) | 130.0 | Sum of lost time (s) | 23.1 |
| Intersection Capacity Utilization | 64.8% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 37 | 221 | 70 | 97 | 238 | 74 | 64 | 43 | 88 | 89 | 74 | 22 |
| Future Volume (vph) | 37 | 221 | 70 | 97 | 238 | 74 | 64 | 43 | 88 | 89 | 74 | 22 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 6.3 | 6.3 | 6.3 | 6.3 | 6.3 | | 6.3 | 6.3 | | 6.3 | 6.3 | |
| Lane Util. Factor | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 0.96 | | 1.00 | 0.90 | | 1.00 | 0.97 | |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1805 | 1663 | 1421 | 1687 | 3137 | | 1543 | 1596 | | 1597 | 1754 | |
| Flt Permitted | 0.52 | 1.00 | 1.00 | 0.50 | 1.00 | | 0.68 | 1.00 | | 0.37 | 1.00 | |
| Satd. Flow (perm) | 995 | 1663 | 1421 | 879 | 3137 | | 1106 | 1596 | | 620 | 1754 | |
| Peak-hour factor, PHF | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 |
| Adj. Flow (vph) | 46 | 273 | 86 | 120 | 294 | 91 | 79 | 53 | 109 | 110 | 91 | 27 |
| RTOR Reduction (vph) | 0 | 0 | 37 | 0 | 13 | 0 | 0 | 64 | 0 | 0 | 9 | 0 |
| Lane Group Flow (vph) | 46 | 282 | 40 | 120 | 372 | 0 | 79 | 98 | 0 | 110 | 109 | 0 |
| Heavy Vehicles (%) | 0% | 8% | 8% | 7% | 11% | 11% | 17% | 3% | 9% | 13% | 6% | 0% |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | | pm+pt | NA | | pm+pt | NA | |
| Protected Phases | 1 | 6 | | 5 | 2 | | 3 | 8 | | 7 | 4 | |
| Permitted Phases | 6 | | 6 | 2 | | | 8 | | | 4 | | |
| Actuated Green, G (s) | 72.6 | 67.7 | 67.7 | 81.4 | 72.1 | | 24.6 | 15.6 | | 31.0 | 18.8 | |
| Effective Green, g (s) | 72.6 | 67.7 | 67.7 | 81.4 | 72.1 | | 24.6 | 15.6 | | 31.0 | 18.8 | |
| Actuated g/C Ratio | 0.56 | 0.52 | 0.52 | 0.63 | 0.55 | | 0.19 | 0.12 | | 0.24 | 0.14 | |
| Clearance Time (s) | 6.3 | 6.3 | 6.3 | 6.3 | 6.3 | | 6.3 | 6.3 | | 6.3 | 6.3 | |
| Vehicle Extension (s) | 2.0 | 2.0 | 2.0 | 3.0 | 2.0 | | 3.0 | 2.0 | | 3.0 | 2.0 | |
| Lane Grp Cap (vph) | 586 | 866 | 740 | 608 | 1739 | | 239 | 191 | | 239 | 253 | |
| v/s Ratio Prot | 0.00 | c0.17 | | c0.01 | c0.12 | | 0.02 | 0.06 | | c0.04 | 0.06 | |
| v/s Ratio Perm | 0.04 | | 0.03 | 0.11 | | | 0.04 | | | c0.07 | | |
| v/c Ratio | 0.08 | 0.33 | 0.05 | 0.20 | 0.21 | | 0.33 | 0.51 | | 0.46 | 0.43 | |
| Uniform Delay, d1 | 13.0 | 18.0 | 15.4 | 10.3 | 14.6 | | 45.0 | 53.6 | | 40.8 | 50.7 | |
| Progression Factor | 0.95 | 0.87 | 4.13 | 1.00 | 1.00 | | 1.01 | 0.98 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | 0.0 | 0.1 | 0.0 | 0.2 | 0.3 | | 0.8 | 1.0 | | 1.4 | 0.4 | |
| Delay (s) | 12.3 | 15.6 | 63.4 | 10.4 | 14.9 | | 46.5 | 53.8 | | 42.2 | 51.1 | |
| Level of Service | B | B | E | B | B | | D | D | | D | D | |
| Approach Delay (s) | | 24.3 | | | 13.8 | | | 51.4 | | | 46.8 | |
| Approach LOS | | C | | | B | | | D | | | D | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 28.9 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.37 | | |
| Actuated Cycle Length (s) | 130.0 | Sum of lost time (s) | 25.2 |
| Intersection Capacity Utilization | 52.0% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 201 | 724 | 132 | 56 | 1244 | 96 | 185 | 159 | 58 | 169 | 318 | 397 |
| Future Volume (vph) | 201 | 724 | 132 | 56 | 1244 | 96 | 185 | 159 | 58 | 169 | 318 | 397 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 6.2 | 6.3 | 6.3 | 6.2 | 6.3 | 6.3 | 6.3 | 5.9 | 5.9 | 6.8 | 5.9 | 5.9 |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frpb, ped/bikes | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Flpb, ped/bikes | 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 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot) | 1719 | 3282 | 1509 | 1802 | 3438 | 1538 | 1735 | 1810 | 1429 | 1714 | 1810 | 1583 |
| Flt Permitted | 0.08 | 1.00 | 1.00 | 0.33 | 1.00 | 1.00 | 0.20 | 1.00 | 1.00 | 0.56 | 1.00 | 1.00 |
| Satd. Flow (perm) | 137 | 3282 | 1509 | 624 | 3438 | 1538 | 366 | 1810 | 1429 | 1019 | 1810 | 1583 |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 212 | 762 | 139 | 59 | 1309 | 101 | 195 | 167 | 61 | 178 | 335 | 418 |
| RTOR Reduction (vph) | 0 | 0 | 55 | 0 | 0 | 49 | 0 | 0 | 42 | 0 | 0 | 76 |
| Lane Group Flow (vph) | 212 | 762 | 84 | 59 | 1309 | 52 | 195 | 167 | 19 | 178 | 335 | 342 |
| Confl. Peds. (#/hr) | 1 | | 10 | 10 | | 1 | 1 | | 4 | 4 | | 1 |
| Heavy Vehicles (%) | 5% | 10% | 7% | 0% | 5% | 5% | 4% | 5% | 13% | 5% | 5% | 2% |
| Turn Type | pm+pt | NA | pt+ov | pm+pt | NA | pt+ov | pm+pt | NA | pt+ov | pm+pt | NA | pt+ov |
| Protected Phases | 1 | 6 | 6 3 | 5 | 2 | 2 7 | 3 | 8 | 8 5 | 7 | 4 | 4 1 |
| Permitted Phases | 6 | | | 2 | | | 8 | | | 4 | | |
| Actuated Green, G (s) | 68.7 | 56.9 | 78.3 | 52.2 | 46.6 | 66.7 | 43.6 | 28.5 | 40.0 | 41.5 | 27.7 | 49.5 |
| Effective Green, g (s) | 68.7 | 56.9 | 78.3 | 52.2 | 46.6 | 66.7 | 43.6 | 28.5 | 40.0 | 41.5 | 27.7 | 49.5 |
| Actuated g/C Ratio | 0.53 | 0.44 | 0.60 | 0.40 | 0.36 | 0.51 | 0.34 | 0.22 | 0.31 | 0.32 | 0.21 | 0.38 |
| Clearance Time (s) | 6.2 | 6.3 | | 6.2 | 6.3 | | 6.3 | 5.9 | | 6.8 | 5.9 | |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lane Grp Cap (vph) | 265 | 1436 | 908 | 301 | 1232 | 789 | 281 | 396 | 439 | 399 | 385 | 602 |
| v/s Ratio Prot | c0.10 | 0.23 | 0.06 | 0.01 | c0.38 | 0.03 | c0.08 | 0.09 | 0.01 | 0.05 | c0.19 | 0.22 |
| v/s Ratio Perm | 0.32 | | | 0.07 | | | 0.15 | | | 0.09 | | |
| v/c Ratio | 0.80 | 0.53 | 0.09 | 0.20 | 1.06 | 0.07 | 0.69 | 0.42 | 0.04 | 0.45 | 0.87 | 0.57 |
| Uniform Delay, d1 | 36.9 | 26.8 | 10.9 | 24.1 | 41.7 | 15.9 | 33.9 | 43.7 | 31.6 | 33.7 | 49.4 | 31.8 |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.03 | 0.92 | 1.00 | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d2 | 14.9 | 1.4 | 0.0 | 0.1 | 44.0 | 0.0 | 5.6 | 0.3 | 0.0 | 0.3 | 18.3 | 0.7 |
| Delay (s) | 51.8 | 28.2 | 10.9 | 24.3 | 85.7 | 16.0 | 40.6 | 40.6 | 31.6 | 34.0 | 67.7 | 32.6 |
| Level of Service | D | C | B | C | F | B | D | D | C | C | E | C |
| Approach Delay (s) | | 30.5 | | | 78.4 | | | 39.3 | | | 45.5 | |
| Approach LOS | | C | | | E | | | D | | | D | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 52.9 | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | 0.92 | | |
| Actuated Cycle Length (s) | 130.0 | Sum of lost time (s) | 25.2 |
| Intersection Capacity Utilization | 93.2% | ICU Level of Service | F |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 28 | 184 | 180 | 59 | 238 | 143 | 134 | 191 | 47 | 87 | 294 | 90 |
| Future Volume (vph) | 28 | 184 | 180 | 59 | 238 | 143 | 134 | 191 | 47 | 87 | 294 | 90 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Lane Util. Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 0.95 | | 1.00 | 0.95 | |
| Frpb, ped/bikes | 1.00 | 0.99 | | 1.00 | 0.99 | | 1.00 | 0.99 | | 1.00 | 0.99 | |
| Flpb, ped/bikes | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Frt | 1.00 | 0.93 | | 1.00 | 0.94 | | 1.00 | 0.97 | | 1.00 | 0.96 | |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1805 | 1659 | | 1702 | 1659 | | 1733 | 3139 | | 1682 | 3209 | |
| Flt Permitted | 0.24 | 1.00 | | 0.20 | 1.00 | | 0.43 | 1.00 | | 0.59 | 1.00 | |
| Satd. Flow (perm) | 451 | 1659 | | 359 | 1659 | | 789 | 3139 | | 1042 | 3209 | |
| Peak-hour factor, PHF | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 31 | 204 | 200 | 66 | 264 | 159 | 149 | 212 | 52 | 97 | 327 | 100 |
| RTOR Reduction (vph) | 0 | 32 | 0 | 0 | 19 | 0 | 0 | 14 | 0 | 0 | 17 | 0 |
| Lane Group Flow (vph) | 31 | 372 | 0 | 66 | 404 | 0 | 149 | 250 | 0 | 97 | 410 | 0 |
| Confl. Peds. (#/hr) | 2 | | 5 | 5 | | 2 | 3 | | 3 | 3 | | 3 |
| Confl. Bikes (#/hr) | | | 1 | | | | | | | | | |
| Heavy Vehicles (%) | 0% | 4% | 6% | 6% | 6% | 10% | 4% | 12% | 7% | 7% | 9% | 4% |
| Turn Type | pm+pt | NA | | pm+pt | NA | | pm+pt | NA | | pm+pt | NA | |
| Protected Phases | 1 | 6 | | 5 | 2 | | 3 | 8 | | 7 | 4 | |
| Permitted Phases | 6 | | | 2 | | | 8 | | | 4 | | |
| Actuated Green, G (s) | 41.7 | 37.1 | | 47.1 | 39.8 | | 67.7 | 56.3 | | 63.5 | 54.2 | |
| Effective Green, g (s) | 41.7 | 37.1 | | 47.1 | 39.8 | | 67.7 | 56.3 | | 63.5 | 54.2 | |
| Actuated g/C Ratio | 0.32 | 0.29 | | 0.36 | 0.31 | | 0.52 | 0.43 | | 0.49 | 0.42 | |
| Clearance Time (s) | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | 192 | 473 | | 205 | 507 | | 493 | 1359 | | 554 | 1337 | |
| v/s Ratio Prot | 0.01 | 0.22 | | c0.02 | c0.24 | | c0.03 | 0.08 | | 0.01 | 0.13 | |
| v/s Ratio Perm | 0.05 | | | 0.10 | | | c0.13 | | | 0.07 | | |
| v/c Ratio | 0.16 | 0.79 | | 0.32 | 0.80 | | 0.30 | 0.18 | | 0.18 | 0.31 | |
| Uniform Delay, d1 | 32.1 | 42.8 | | 30.0 | 41.4 | | 16.6 | 22.7 | | 18.0 | 25.3 | |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.54 | 0.45 | |
| Incremental Delay, d2 | 0.4 | 8.4 | | 0.9 | 8.5 | | 0.3 | 0.3 | | 0.1 | 0.5 | |
| Delay (s) | 32.5 | 51.2 | | 30.9 | 49.9 | | 17.0 | 23.0 | | 10.0 | 12.0 | |
| Level of Service | C | D | | C | D | | B | C | | A | B | |
| Approach Delay (s) | | 49.9 | | | 47.3 | | | 20.8 | | | 11.6 | |
| Approach LOS | | D | | | D | | | C | | | B | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 32.0 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.49 | | |
| Actuated Cycle Length (s) | 130.0 | Sum of lost time (s) | 20.0 |
| Intersection Capacity Utilization | 70.7% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 217 | 102 | 151 | 147 | 148 | 70 | 287 | 707 | 43 | 56 | 1370 | 288 |
| Future Volume (veh/h) | 217 | 102 | 151 | 147 | 148 | 70 | 287 | 707 | 43 | 56 | 1370 | 288 |
| Number | 1 | 6 | 16 | 5 | 2 | 12 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 0.99 | 1.00 | | 0.99 | 1.00 | | 1.00 | 1.00 | | 0.98 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1667 | 1792 | 1681 | 1776 | 1759 | 1900 | 1696 | 1714 | 1900 | 1759 | 1792 | 1776 |
| Adj Flow Rate, veh/h | 241 | 113 | 168 | 163 | 164 | 78 | 319 | 786 | 48 | 62 | 1522 | 320 |
| Adj No. of Lanes | 2 | 1 | 1 | 1 | 1 | 0 | 2 | 2 | 0 | 1 | 2 | 1 |
| 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 |
| Percent Heavy Veh, % | 14 | 6 | 13 | 7 | 9 | 9 | 12 | 11 | 11 | 8 | 6 | 7 |
| Cap, veh/h | 287 | 352 | 344 | 163 | 224 | 107 | 302 | 1559 | 95 | 78 | 1533 | 809 |
| Arrive On Green | 0.09 | 0.20 | 0.20 | 0.10 | 0.20 | 0.20 | 0.10 | 0.50 | 0.50 | 0.05 | 0.45 | 0.45 |
| Sat Flow, veh/h | 3079 | 1792 | 1412 | 1691 | 1123 | 534 | 3134 | 3119 | 190 | 1675 | 3406 | 1475 |
| Grp Volume(v), veh/h | 241 | 113 | 168 | 163 | 0 | 242 | 319 | 410 | 424 | 62 | 1522 | 320 |
| Grp Sat Flow(s),veh/h/ln | 1540 | 1792 | 1412 | 1691 | 0 | 1657 | 1567 | 1629 | 1681 | 1675 | 1703 | 1475 |
| Q Serve(g_s), s | 9.6 | 6.7 | 12.7 | 12.0 | 0.0 | 17.0 | 12.0 | 21.0 | 21.0 | 4.6 | 55.3 | 15.6 |
| Cycle Q Clear(g_c), s | 9.6 | 6.7 | 12.7 | 12.0 | 0.0 | 17.0 | 12.0 | 21.0 | 21.0 | 4.6 | 55.3 | 15.6 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.32 | 1.00 | | 0.11 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 287 | 352 | 344 | 163 | 0 | 331 | 302 | 814 | 840 | 78 | 1533 | 809 |
| V/C Ratio(X) | 0.84 | 0.32 | 0.49 | 1.00 | 0.00 | 0.73 | 1.06 | 0.50 | 0.50 | 0.79 | 0.99 | 0.40 |
| Avail Cap(c_a), veh/h | 297 | 504 | 464 | 163 | 0 | 466 | 302 | 814 | 840 | 135 | 1533 | 809 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 55.5 | 42.9 | 40.5 | 56.2 | 0.0 | 46.7 | 56.2 | 20.8 | 20.8 | 58.7 | 34.0 | 16.3 |
| Incr Delay (d2), s/veh | 18.3 | 0.5 | 1.1 | 70.3 | 0.0 | 3.6 | 67.1 | 0.5 | 0.5 | 16.1 | 21.3 | 0.3 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 4.8 | 3.4 | 5.1 | 8.8 | 0.0 | 8.1 | 8.0 | 9.5 | 9.8 | 2.5 | 30.5 | 6.4 |
| LnGrp Delay(d),s/veh | 73.8 | 43.4 | 41.5 | 126.5 | 0.0 | 50.3 | 123.3 | 21.3 | 21.3 | 74.8 | 55.3 | 16.7 |
| LnGrp LOS | E | D | D | F | | D | F | C | C | E | E | B |
| Approach Vol, veh/h | | 522 | | | 405 | | | 1153 | | | 1904 | |
| Approach Delay, s/veh | | 56.8 | | | 81.0 | | | 49.5 | | | 49.4 | |
| Approach LOS | | E | | | F | | | D | | | D | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 16.6 | 29.8 | 17.0 | 61.0 | 17.0 | 29.4 | 10.8 | 67.2 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Max Green Setting (Gmax), s | 12.0 | 35.0 | 12.0 | 56.0 | 12.0 | 35.0 | 10.0 | 58.0 |
| Max Q Clear Time (g_c+I1), s | 11.6 | 19.0 | 14.0 | 57.3 | 14.0 | 14.7 | 6.6 | 23.0 |
| Green Ext Time (p_c), s | 0.0 | 2.5 | 0.0 | 0.0 | 0.0 | 2.7 | 0.0 | 26.3 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 53.6 |
| HCM 2010 LOS | D |

# HCM Unsignalized Intersection Capacity Analysis
## 5: NE 94th Ave & NE 105th St

7/26/2016

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 4 | 12 | 237 | 106 | 35 | 0 | 82 | 32 | 36 | 0 | 89 | 10 |
| Future Volume (Veh/h) | 4 | 12 | 237 | 106 | 35 | 0 | 82 | 32 | 36 | 0 | 89 | 10 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.84 | 0.84 | 0.84 | 0.84 | 0.84 | 0.84 | 0.84 | 0.84 | 0.84 | 0.84 | 0.84 | 0.84 |
| Hourly flow rate (vph) | 5 | 14 | 282 | 126 | 42 | 0 | 98 | 38 | 43 | 0 | 106 | 12 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 388 | 389 | 112 | 656 | 374 | 60 | 118 | | | 81 | | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 388 | 389 | 112 | 656 | 374 | 60 | 118 | | | 81 | | |
| tC, single (s) | 7.1 | 6.5 | 6.3 | 7.1 | 6.5 | 6.2 | 4.2 | | | 4.1 | | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.4 | 3.5 | 4.0 | 3.3 | 2.3 | | | 2.2 | | |
| p0 queue free % | 99 | 97 | 69 | 49 | 92 | 100 | 93 | | | 100 | | |
| cM capacity (veh/h) | 511 | 512 | 917 | 245 | 522 | 1012 | 1440 | | | 1529 | | |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 301 | 168 | 179 | 118 |
| Volume Left | 5 | 126 | 98 | 0 |
| Volume Right | 282 | 0 | 43 | 12 |
| cSH | 873 | 283 | 1440 | 1529 |
| Volume to Capacity | 0.34 | 0.59 | 0.07 | 0.00 |
| Queue Length 95th (ft) | 39 | 88 | 5 | 0 |
| Control Delay (s) | 11.3 | 34.8 | 4.5 | 0.0 |
| Lane LOS | B | D | A | |
| Approach Delay (s) | 11.3 | 34.8 | 4.5 | 0.0 |
| Approach LOS | B | D | | |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 13.1 | | | |
| Intersection Capacity Utilization | 48.3% | ICU Level of Service | A | |
| Analysis Period (min) | 15 | | | |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 11 | 111 | 49 | 178 | 439 | 11 |
| Future Volume (Veh/h) | 11 | 111 | 49 | 178 | 439 | 11 |
| Sign Control | Stop | | | Free | Free | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Hourly flow rate (vph) | 12 | 118 | 52 | 189 | 467 | 12 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | None | None | |
| Median storage veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 766 | 473 | 479 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 766 | 473 | 479 | | | |
| tC, single (s) | 6.4 | 6.2 | 4.1 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | 2.2 | | | |
| p0 queue free % | 97 | 80 | 95 | | | |
| cM capacity (veh/h) | 356 | 591 | 1094 | | | |

| Direction, Lane # | EB 1 | EB 2 | NB 1 | NB 2 | SB 1 |
|---|---|---|---|---|---|
| Volume Total | 12 | 118 | 52 | 189 | 479 |
| Volume Left | 12 | 0 | 52 | 0 | 0 |
| Volume Right | 0 | 118 | 0 | 0 | 12 |
| cSH | 356 | 591 | 1094 | 1700 | 1700 |
| Volume to Capacity | 0.03 | 0.20 | 0.05 | 0.11 | 0.28 |
| Queue Length 95th (ft) | 3 | 18 | 4 | 0 | 0 |
| Control Delay (s) | 15.5 | 12.6 | 8.5 | 0.0 | 0.0 |
| Lane LOS | C | B | A | | |
| Approach Delay (s) | 12.9 | | 1.8 | | 0.0 |
| Approach LOS | B | | | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 2.5 | | |
| Intersection Capacity Utilization | 40.4% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 83 | 49 | 422 | 41 | 30 | 801 |
| Future Volume (Veh/h) | 83 | 49 | 422 | 41 | 30 | 801 |
| Sign Control | Stop | | Free | | | Free |
| Grade | 0% | | 0% | | | 0% |
| Peak Hour Factor | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 |
| Hourly flow rate (vph) | 93 | 55 | 474 | 46 | 34 | 900 |
| Pedestrians | 2 | | | | | |
| Lane Width (ft) | 12.0 | | | | | |
| Walking Speed (ft/s) | 4.0 | | | | | |
| Percent Blockage | 0 | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | None | | | TWLTL |
| Median storage veh) | | | | | | 2 |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 1017 | 262 | | | 522 | |
| vC1, stage 1 conf vol | 499 | | | | | |
| vC2, stage 2 conf vol | 518 | | | | | |
| vCu, unblocked vol | 1017 | 262 | | | 522 | |
| tC, single (s) | 6.9 | 7.3 | | | 4.5 | |
| tC, 2 stage (s) | 5.9 | | | | | |
| tF (s) | 3.5 | 3.5 | | | 2.4 | |
| p0 queue free % | 78 | 92 | | | 96 | |
| cM capacity (veh/h) | 431 | 684 | | | 917 | |

| Direction, Lane # | WB 1 | NB 1 | NB 2 | SB 1 | SB 2 | SB 3 |
|---|---|---|---|---|---|---|
| Volume Total | 148 | 316 | 204 | 34 | 450 | 450 |
| Volume Left | 93 | 0 | 0 | 34 | 0 | 0 |
| Volume Right | 55 | 0 | 46 | 0 | 0 | 0 |
| cSH | 500 | 1700 | 1700 | 917 | 1700 | 1700 |
| Volume to Capacity | 0.30 | 0.19 | 0.12 | 0.04 | 0.26 | 0.26 |
| Queue Length 95th (ft) | 31 | 0 | 0 | 3 | 0 | 0 |
| Control Delay (s) | 15.2 | 0.0 | 0.0 | 9.1 | 0.0 | 0.0 |
| Lane LOS | C | | | A | | |
| Approach Delay (s) | 15.2 | 0.0 | | 0.3 | | |
| Approach LOS | C | | | | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 1.6 | | |
| Intersection Capacity Utilization | 36.4% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 14 | 10 | 94 | 27 | 2 | 3 | 45 | 234 | 177 | 19 | 603 | 24 |
| Future Volume (Veh/h) | 14 | 10 | 94 | 27 | 2 | 3 | 45 | 234 | 177 | 19 | 603 | 24 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 | 0.87 |
| Hourly flow rate (vph) | 16 | 11 | 108 | 31 | 2 | 3 | 52 | 269 | 203 | 22 | 693 | 28 |
| Pedestrians | | 2 | | | | | | | | | | |
| Lane Width (ft) | | 12.0 | | | | | | | | | | |
| Walking Speed (ft/s) | | 4.0 | | | | | | | | | | |
| Percent Blockage | | 0 | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 1130 | 1329 | 709 | 1325 | 1242 | 370 | 723 | | | 472 | | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 1130 | 1329 | 709 | 1325 | 1242 | 370 | 723 | | | 472 | | |
| tC, single (s) | 7.3 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 | 4.1 | | | 4.1 | | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.7 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | | | 2.2 | | |
| p0 queue free % | 90 | 92 | 75 | 65 | 99 | 100 | 94 | | | 98 | | |
| cM capacity (veh/h) | 153 | 143 | 430 | 88 | 161 | 675 | 873 | | | 1090 | | |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | NB 2 | SB 1 | SB 2 |
|---|---|---|---|---|---|---|
| Volume Total | 135 | 36 | 52 | 472 | 22 | 721 |
| Volume Left | 16 | 31 | 52 | 0 | 22 | 0 |
| Volume Right | 108 | 3 | 0 | 203 | 0 | 28 |
| cSH | 312 | 97 | 873 | 1700 | 1090 | 1700 |
| Volume to Capacity | 0.43 | 0.37 | 0.06 | 0.28 | 0.02 | 0.42 |
| Queue Length 95th (ft) | 52 | 37 | 5 | 0 | 2 | 0 |
| Control Delay (s) | 25.1 | 62.1 | 9.4 | 0.0 | 8.4 | 0.0 |
| Lane LOS | D | F | A | | A | |
| Approach Delay (s) | 25.1 | 62.1 | 0.9 | | 0.2 | |
| Approach LOS | D | F | | | | |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 4.4 | | | |
| Intersection Capacity Utilization | 52.4% | ICU Level of Service | | A |
| Analysis Period (min) | 15 | | | |

# MOVEMENT SUMMARY

## Site: 101 [NE 105 and NE 87]

New Site
Stop (Two-Way)

| Movement Performance - Vehicles | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Mov ID | OD Mov | Demand Flows Total veh/h | HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Distance m | Prop. Queued | Effective Stop Rate per veh | Average Speed km/h |
| South: NE 87 NB | | | | | | | | | | | |
| 1 | L2 | 1 | 0.0 | 0.041 | 7.6 | LOS A | 0.1 | 1.1 | 0.34 | 0.97 | 50.6 |
| 2 | T1 | 27 | 4.0 | 0.041 | 10.1 | LOS B | 0.1 | 1.1 | 0.34 | 0.97 | 50.6 |
| 3 | R2 | 3 | 67.0 | 0.041 | 12.3 | LOS B | 0.1 | 1.1 | 0.34 | 0.97 | 48.6 |
| Approach | | 32 | 10.2 | 0.041 | 10.2 | LOS B | 0.1 | 1.1 | 0.34 | 0.97 | 50.4 |
| East: NE 105 WB | | | | | | | | | | | |
| 4 | L2 | 1 | 0.0 | 0.106 | 6.2 | LOS A | 0.0 | 0.2 | 0.01 | 0.57 | 53.1 |
| 5 | T1 | 1 | 0.0 | 0.106 | 1.7 | LOS A | 0.0 | 0.2 | 0.01 | 0.57 | 55.0 |
| 6 | R2 | 181 | 10.0 | 0.106 | 5.7 | LOS A | 0.0 | 0.2 | 0.01 | 0.57 | 53.2 |
| Approach | | 183 | 9.9 | 0.106 | 5.7 | NA | 0.0 | 0.2 | 0.01 | 0.57 | 53.2 |
| North: NE 87 SB | | | | | | | | | | | |
| 7 | L2 | 179 | 15.0 | 0.116 | 8.1 | LOS A | 0.0 | 0.0 | 0.00 | 1.04 | 51.0 |
| 8 | T1 | 16 | 7.0 | 0.116 | 8.0 | LOS A | 0.0 | 0.0 | 0.00 | 1.04 | 51.6 |
| 9 | R2 | 1 | 0.0 | 0.116 | 8.0 | LOS A | 0.0 | 0.0 | 0.00 | 1.04 | 52.1 |
| Approach | | 196 | 14.3 | 0.116 | 8.1 | LOS A | 0.0 | 0.0 | 0.00 | 1.04 | 51.0 |
| West: NE 105 EB | | | | | | | | | | | |
| 10 | L2 | 3 | 0.0 | 0.012 | 6.8 | LOS A | 0.0 | 0.4 | 0.22 | 0.31 | 54.2 |
| 11 | T1 | 6 | 20.0 | 0.012 | 2.1 | LOS A | 0.0 | 0.4 | 0.22 | 0.31 | 56.2 |
| 12 | R2 | 1 | 0.0 | 0.012 | 5.6 | LOS A | 0.0 | 0.4 | 0.22 | 0.31 | 54.7 |
| Approach | | 11 | 12.0 | 0.012 | 3.9 | NA | 0.0 | 0.4 | 0.22 | 0.31 | 55.4 |
| All Vehicles | | 421 | 12.0 | 0.116 | 7.1 | NA | 0.1 | 1.1 | 0.04 | 0.81 | 52.0 |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

# HCM Signalized Intersection Capacity Analysis
## 1: NE 72nd Ave & NE 119th St

7/26/2016

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 40 | 240 | 90 | 319 | 216 | 102 | 80 | 668 | 710 | 116 | 444 | 32 |
| Future Volume (vph) | 40 | 240 | 90 | 319 | 216 | 102 | 80 | 668 | 710 | 116 | 444 | 32 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 5.4 | 6.1 | | 5.4 | 6.2 | | 5.4 | 6.1 | 5.4 | 5.4 | 6.1 | |
| Lane Util. Factor | 1.00 | 1.00 | | 0.97 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | |
| Frpb, ped/bikes | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | 0.99 | 1.00 | 1.00 | |
| Flpb, ped/bikes | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | |
| Frt | 1.00 | 0.96 | | 1.00 | 0.95 | | 1.00 | 1.00 | 0.85 | 1.00 | 0.99 | |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1736 | 1752 | | 3367 | 1774 | | 1752 | 1845 | 1568 | 1787 | 3464 | |
| Flt Permitted | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | |
| Satd. Flow (perm) | 1736 | 1752 | | 3367 | 1774 | | 1752 | 1845 | 1568 | 1787 | 3464 | |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 42 | 253 | 95 | 336 | 227 | 107 | 84 | 703 | 747 | 122 | 467 | 34 |
| RTOR Reduction (vph) | 0 | 9 | 0 | 0 | 11 | 0 | 0 | 0 | 204 | 0 | 3 | 0 |
| Lane Group Flow (vph) | 42 | 339 | 0 | 336 | 323 | 0 | 84 | 703 | 543 | 122 | 498 | 0 |
| Confl. Peds. (#/hr) | | | | | | | | | 1 | 1 | | |
| Confl. Bikes (#/hr) | | | | | | | | | | | | 2 |
| Heavy Vehicles (%) | 4% | 4% | 4% | 4% | 1% | 4% | 3% | 3% | 2% | 1% | 3% | 3% |
| Turn Type | Prot | NA | | Prot | NA | | Prot | NA | pm+ov | Prot | NA | |
| Protected Phases | 1 | 6 | | 5 | 2 | | 3 | 8 | 5 | 7 | 4 | |
| Permitted Phases | | | | | | | | | 8 | | | |
| Actuated Green, G (s) | 5.8 | 45.1 | | 19.5 | 58.7 | | 9.9 | 49.5 | 69.0 | 12.9 | 52.5 | |
| Effective Green, g (s) | 5.8 | 45.1 | | 19.5 | 58.7 | | 9.9 | 49.5 | 69.0 | 12.9 | 52.5 | |
| Actuated g/C Ratio | 0.04 | 0.30 | | 0.13 | 0.39 | | 0.07 | 0.33 | 0.46 | 0.09 | 0.35 | |
| Clearance Time (s) | 5.4 | 6.1 | | 5.4 | 6.2 | | 5.4 | 6.1 | 5.4 | 5.4 | 6.1 | |
| Vehicle Extension (s) | 0.2 | 0.2 | | 0.2 | 0.2 | | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | |
| Lane Grp Cap (vph) | 67 | 526 | | 437 | 694 | | 115 | 608 | 721 | 153 | 1212 | |
| v/s Ratio Prot | 0.02 | c0.19 | | c0.10 | 0.18 | | 0.05 | c0.38 | 0.10 | c0.07 | c0.14 | |
| v/s Ratio Perm | | | | | | | | | 0.25 | | | |
| v/c Ratio | 0.63 | 0.64 | | 0.77 | 0.47 | | 0.73 | 1.16 | 0.75 | 0.80 | 0.41 | |
| Uniform Delay, d1 | 71.0 | 45.5 | | 63.1 | 34.0 | | 68.7 | 50.2 | 33.5 | 67.3 | 37.0 | |
| Progression Factor | 1.00 | 1.00 | | 1.38 | 0.72 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | |
| Incremental Delay, d2 | 12.4 | 2.0 | | 7.0 | 2.2 | | 18.4 | 87.8 | 4.0 | 22.9 | 0.1 | |
| Delay (s) | 83.5 | 47.5 | | 93.9 | 26.7 | | 87.2 | 138.1 | 37.4 | 90.2 | 37.1 | |
| Level of Service | F | D | | F | C | | F | F | D | F | D | |
| Approach Delay (s) | | 51.4 | | | 60.4 | | | 86.3 | | | 47.5 | |
| Approach LOS | | D | | | E | | | F | | | D | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 69.2 | HCM 2000 Level of Service | E |
| HCM 2000 Volume to Capacity ratio | 0.88 | | |
| Actuated Cycle Length (s) | 150.0 | Sum of lost time (s) | 23.1 |
| Intersection Capacity Utilization | 88.0% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 35 | 703 | 78 | 123 | 500 | 55 | 53 | 63 | 135 | 38 | 30 | 22 |
| Future Volume (vph) | 35 | 703 | 78 | 123 | 500 | 55 | 53 | 63 | 135 | 38 | 30 | 22 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 6.3 | 6.3 | 6.3 | 6.3 | 6.3 | | 6.3 | 6.3 | | 6.3 | 6.3 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Frpb, ped/bikes | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 0.99 | |
| Flpb, ped/bikes | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 0.99 | | 1.00 | 0.90 | | 1.00 | 0.94 | |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1687 | 1845 | 1553 | 1805 | 3518 | | 1805 | 1695 | | 1805 | 1709 | |
| Flt Permitted | 0.39 | 1.00 | 1.00 | 0.14 | 1.00 | | 0.71 | 1.00 | | 0.21 | 1.00 | |
| Satd. Flow (perm) | 686 | 1845 | 1553 | 272 | 3518 | | 1347 | 1695 | | 407 | 1709 | |
| Peak-hour factor, PHF | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 |
| Adj. Flow (vph) | 42 | 847 | 94 | 148 | 602 | 66 | 64 | 76 | 163 | 46 | 36 | 27 |
| RTOR Reduction (vph) | 0 | 0 | 39 | 0 | 3 | 0 | 0 | 66 | 0 | 0 | 23 | 0 |
| Lane Group Flow (vph) | 42 | 847 | 55 | 148 | 665 | 0 | 64 | 173 | 0 | 46 | 40 | 0 |
| Confl. Bikes (#/hr) | | | | | | 1 | | | | | | 1 |
| Heavy Vehicles (%) | 7% | 3% | 4% | 0% | 1% | 0% | 0% | 2% | 0% | 0% | 6% | 0% |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | | pm+pt | NA | | pm+pt | NA | |
| Protected Phases | 1 | 6 | | 5 | 2 | | 3 | 8 | | 7 | 4 | |
| Permitted Phases | 6 | | 6 | 2 | | | 8 | | | 4 | | |
| Actuated Green, G (s) | 92.3 | 87.4 | 87.4 | 102.5 | 92.5 | | 27.6 | 20.7 | | 27.2 | 20.5 | |
| Effective Green, g (s) | 92.3 | 87.4 | 87.4 | 102.5 | 92.5 | | 27.6 | 20.7 | | 27.2 | 20.5 | |
| Actuated g/C Ratio | 0.62 | 0.58 | 0.58 | 0.68 | 0.62 | | 0.18 | 0.14 | | 0.18 | 0.14 | |
| Clearance Time (s) | 6.3 | 6.3 | 6.3 | 6.3 | 6.3 | | 6.3 | 6.3 | | 6.3 | 6.3 | |
| Vehicle Extension (s) | 2.0 | 2.0 | 2.0 | 3.0 | 2.0 | | 3.0 | 2.0 | | 3.0 | 2.0 | |
| Lane Grp Cap (vph) | 454 | 1075 | 904 | 288 | 2169 | | 268 | 233 | | 136 | 233 | |
| v/s Ratio Prot | 0.00 | c0.46 | | c0.03 | 0.19 | | 0.01 | c0.10 | | c0.02 | 0.02 | |
| v/s Ratio Perm | 0.05 | | 0.04 | 0.32 | | | 0.03 | | | 0.05 | | |
| v/c Ratio | 0.09 | 0.79 | 0.06 | 0.51 | 0.31 | | 0.24 | 0.74 | | 0.34 | 0.17 | |
| Uniform Delay, d1 | 11.4 | 24.1 | 13.5 | 20.9 | 13.6 | | 51.8 | 62.1 | | 52.2 | 57.2 | |
| Progression Factor | 1.10 | 1.09 | 1.54 | 1.00 | 1.00 | | 0.96 | 0.97 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | 0.0 | 2.7 | 0.0 | 1.5 | 0.4 | | 0.4 | 9.3 | | 1.5 | 0.1 | |
| Delay (s) | 12.6 | 28.9 | 20.8 | 22.5 | 14.0 | | 50.4 | 69.6 | | 53.7 | 57.4 | |
| Level of Service | B | C | C | C | B | | D | E | | D | E | |
| Approach Delay (s) | | 27.4 | | | 15.5 | | | 65.5 | | | 55.8 | |
| Approach LOS | | C | | | B | | | E | | | E | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 29.7 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.74 | | |
| Actuated Cycle Length (s) | 150.0 | Sum of lost time (s) | 25.2 |
| Intersection Capacity Utilization | 80.6% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 423 | 1444 | 268 | 66 | 1154 | 233 | 223 | 407 | 150 | 201 | 302 | 312 |
| Future Volume (vph) | 423 | 1444 | 268 | 66 | 1154 | 233 | 223 | 407 | 150 | 201 | 302 | 312 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 6.2 | 6.3 | 6.3 | 6.2 | 6.3 | 6.3 | 6.3 | 5.9 | 5.9 | 6.8 | 5.9 | 5.9 |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frpb, ped/bikes | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Flpb, ped/bikes | 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 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot) | 1719 | 3471 | 1583 | 1719 | 3438 | 1538 | 1736 | 1827 | 1568 | 1736 | 1845 | 1568 |
| Flt Permitted | 0.08 | 1.00 | 1.00 | 0.09 | 1.00 | 1.00 | 0.16 | 1.00 | 1.00 | 0.14 | 1.00 | 1.00 |
| Satd. Flow (perm) | 145 | 3471 | 1583 | 166 | 3438 | 1538 | 289 | 1827 | 1568 | 257 | 1845 | 1568 |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 445 | 1520 | 282 | 69 | 1215 | 245 | 235 | 428 | 158 | 212 | 318 | 328 |
| RTOR Reduction (vph) | 0 | 0 | 94 | 0 | 0 | 61 | 0 | 0 | 85 | 0 | 0 | 40 |
| Lane Group Flow (vph) | 445 | 1520 | 188 | 69 | 1215 | 184 | 235 | 428 | 73 | 212 | 318 | 288 |
| Confl. Peds. (#/hr) | 6 | | 13 | 13 | | 6 | | | | | | |
| Heavy Vehicles (%) | 5% | 4% | 2% | 5% | 5% | 5% | 4% | 4% | 3% | 4% | 3% | 3% |
| Turn Type | pm+pt | NA | pt+ov | pm+pt | NA | pt+ov | pm+pt | NA | pt+ov | pm+pt | NA | pt+ov |
| Protected Phases | 1 | 6 | 6 3 | 5 | 2 | 2 7 | 3 | 8 | 8 5 | 7 | 4 | 4 1 |
| Permitted Phases | 6 | | | 2 | | | 8 | | | 4 | | |
| Actuated Green, G (s) | 83.7 | 70.0 | 95.7 | 51.2 | 43.7 | 67.9 | 48.8 | 29.4 | 42.8 | 46.3 | 28.4 | 68.1 |
| Effective Green, g (s) | 83.7 | 70.0 | 95.7 | 51.2 | 43.7 | 67.9 | 48.8 | 29.4 | 42.8 | 46.3 | 28.4 | 68.1 |
| Actuated g/C Ratio | 0.56 | 0.47 | 0.64 | 0.34 | 0.29 | 0.45 | 0.33 | 0.20 | 0.29 | 0.31 | 0.19 | 0.45 |
| Clearance Time (s) | 6.2 | 6.3 | | 6.2 | 6.3 | | 6.3 | 5.9 | | 6.8 | 5.9 | |
| Vehicle Extension (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lane Grp Cap (vph) | 435 | 1619 | 1009 | 134 | 1001 | 696 | 281 | 358 | 447 | 255 | 349 | 711 |
| v/s Ratio Prot | c0.23 | 0.44 | 0.12 | 0.03 | c0.35 | 0.12 | c0.11 | c0.23 | 0.05 | 0.10 | 0.17 | 0.18 |
| v/s Ratio Perm | 0.34 | | | 0.15 | | | 0.16 | | | 0.16 | | |
| v/c Ratio | 1.02 | 0.94 | 0.19 | 0.51 | 1.21 | 0.26 | 0.84 | 1.20 | 0.16 | 0.83 | 0.91 | 0.41 |
| Uniform Delay, d1 | 48.6 | 38.0 | 11.2 | 37.6 | 53.1 | 25.5 | 41.4 | 60.3 | 40.2 | 43.1 | 59.6 | 27.4 |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.80 | 0.82 | 0.78 | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d2 | 49.1 | 11.9 | 0.0 | 1.4 | 105.5 | 0.1 | 16.1 | 109.4 | 0.1 | 19.3 | 26.6 | 0.1 |
| Delay (s) | 97.7 | 49.9 | 11.2 | 39.0 | 158.7 | 25.6 | 49.4 | 158.6 | 31.3 | 62.3 | 86.2 | 27.5 |
| Level of Service | F | D | B | D | F | C | D | F | C | E | F | C |
| Approach Delay (s) | | 54.5 | | | 131.9 | | | 102.9 | | | 57.9 | |
| Approach LOS | | D | | | F | | | F | | | E | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 84.0 | HCM 2000 Level of Service | F |
| HCM 2000 Volume to Capacity ratio | 1.12 | | |
| Actuated Cycle Length (s) | 150.0 | Sum of lost time (s) | 25.2 |
| Intersection Capacity Utilization | 108.9% | ICU Level of Service | G |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 55 | 377 | 191 | 158 | 314 | 202 | 157 | 481 | 93 | 186 | 362 | 40 |
| Future Volume (vph) | 55 | 377 | 191 | 158 | 314 | 202 | 157 | 481 | 93 | 186 | 362 | 40 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Lane Util. Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 0.95 | | 1.00 | 0.95 | |
| Frpb, ped/bikes | 1.00 | 0.99 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Flpb, ped/bikes | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Frt | 1.00 | 0.95 | | 1.00 | 0.94 | | 1.00 | 0.98 | | 1.00 | 0.98 | |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1671 | 1736 | | 1703 | 1702 | | 1715 | 3401 | | 1703 | 3362 | |
| Flt Permitted | 0.23 | 1.00 | | 0.14 | 1.00 | | 0.43 | 1.00 | | 0.26 | 1.00 | |
| Satd. Flow (perm) | 407 | 1736 | | 244 | 1702 | | 779 | 3401 | | 464 | 3362 | |
| Peak-hour factor, PHF | 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) | 57 | 393 | 199 | 165 | 327 | 210 | 164 | 501 | 97 | 194 | 377 | 42 |
| RTOR Reduction (vph) | 0 | 14 | 0 | 0 | 17 | 0 | 0 | 10 | 0 | 0 | 5 | 0 |
| Lane Group Flow (vph) | 57 | 578 | 0 | 165 | 520 | 0 | 164 | 588 | 0 | 194 | 414 | 0 |
| Confl. Peds. (#/hr) | | | 4 | 4 | | | 4 | | 1 | 1 | | 4 |
| Confl. Bikes (#/hr) | | | | | | 1 | | | | | | 1 |
| Heavy Vehicles (%) | 8% | 4% | 2% | 6% | 3% | 7% | 5% | 3% | 4% | 6% | 5% | 9% |
| Turn Type | pm+pt | NA | | pm+pt | NA | | pm+pt | NA | | pm+pt | NA | |
| Protected Phases | 1 | 6 | | 5 | 2 | | 3 | 8 | | 7 | 4 | |
| Permitted Phases | 6 | | | 2 | | | 8 | | | 4 | | |
| Actuated Green, G (s) | 65.8 | 58.8 | | 71.8 | 61.8 | | 59.0 | 46.6 | | 63.4 | 48.8 | |
| Effective Green, g (s) | 65.8 | 58.8 | | 71.8 | 61.8 | | 59.0 | 46.6 | | 63.4 | 48.8 | |
| Actuated g/C Ratio | 0.44 | 0.39 | | 0.48 | 0.41 | | 0.39 | 0.31 | | 0.42 | 0.33 | |
| Clearance Time (s) | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | 237 | 680 | | 214 | 701 | | 383 | 1056 | | 316 | 1093 | |
| v/s Ratio Prot | 0.01 | c0.33 | | c0.05 | 0.31 | | 0.04 | 0.17 | | c0.06 | 0.12 | |
| v/s Ratio Perm | 0.09 | | | 0.32 | | | 0.13 | | | c0.20 | | |
| v/c Ratio | 0.24 | 0.85 | | 0.77 | 0.74 | | 0.43 | 0.56 | | 0.61 | 0.38 | |
| Uniform Delay, d1 | 27.6 | 41.6 | | 30.2 | 37.3 | | 30.7 | 43.1 | | 29.8 | 38.9 | |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.90 | 0.97 | |
| Incremental Delay, d2 | 0.5 | 9.9 | | 15.7 | 4.2 | | 0.8 | 2.1 | | 3.0 | 0.8 | |
| Delay (s) | 28.1 | 51.5 | | 45.9 | 41.6 | | 31.5 | 45.2 | | 29.8 | 38.7 | |
| Level of Service | C | D | | D | D | | C | D | | C | D | |
| Approach Delay (s) | | 49.5 | | | 42.6 | | | 42.3 | | | 35.9 | |
| Approach LOS | | D | | | D | | | D | | | D | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 42.6 | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | 0.74 | | |
| Actuated Cycle Length (s) | 150.0 | Sum of lost time (s) | 20.0 |
| Intersection Capacity Utilization | 88.2% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

# HCM 2010 Signalized Intersection Summary
## 3: NE 117th Ave & NE 119th St

7/26/2016

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 504 | 316 | 239 | 107 | 247 | 92 | 359 | 1301 | 126 | 130 | 1033 | 232 |
| Future Volume (veh/h) | 504 | 316 | 239 | 107 | 247 | 92 | 359 | 1301 | 126 | 130 | 1033 | 232 |
| Number | 1 | 6 | 16 | 5 | 2 | 12 | 3 | 8 | 18 | 7 | 4 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.99 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1845 | 1827 | 1810 | 1811 | 1900 | 1845 | 1827 | 1863 | 1863 | 1810 | 1881 |
| Adj Flow Rate, veh/h | 531 | 333 | 252 | 113 | 260 | 97 | 378 | 1369 | 133 | 137 | 1087 | 244 |
| Adj No. of Lanes | 2 | 1 | 1 | 2 | 1 | 0 | 2 | 2 | 1 | 2 | 2 | 1 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 3 | 4 | 5 | 6 | 6 | 3 | 4 | 2 | 2 | 5 | 1 |
| Cap, veh/h | 564 | 644 | 626 | 159 | 293 | 109 | 413 | 1411 | 636 | 185 | 1166 | 619 |
| Arrive On Green | 0.16 | 0.35 | 0.35 | 0.05 | 0.23 | 0.23 | 0.12 | 0.41 | 0.41 | 0.05 | 0.34 | 0.34 |
| Sat Flow, veh/h | 3442 | 1845 | 1553 | 3343 | 1259 | 470 | 3408 | 3471 | 1563 | 3442 | 3438 | 1599 |
| Grp Volume(v), veh/h | 531 | 333 | 252 | 113 | 0 | 357 | 378 | 1369 | 133 | 137 | 1087 | 244 |
| Grp Sat Flow(s),veh/h/ln | 1721 | 1845 | 1553 | 1672 | 0 | 1728 | 1704 | 1736 | 1563 | 1721 | 1719 | 1599 |
| Q Serve(g_s), s | 21.4 | 20.1 | 16.2 | 4.7 | 0.0 | 28.0 | 15.4 | 54.2 | 7.7 | 5.5 | 42.8 | 15.5 |
| Cycle Q Clear(g_c), s | 21.4 | 20.1 | 16.2 | 4.7 | 0.0 | 28.0 | 15.4 | 54.2 | 7.7 | 5.5 | 42.8 | 15.5 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.27 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 564 | 644 | 626 | 159 | 0 | 403 | 413 | 1411 | 636 | 185 | 1166 | 619 |
| V/C Ratio(X) | 0.94 | 0.52 | 0.40 | 0.71 | 0.00 | 0.89 | 0.92 | 0.97 | 0.21 | 0.74 | 0.93 | 0.39 |
| Avail Cap(c_a), veh/h | 564 | 644 | 626 | 238 | 0 | 444 | 413 | 1411 | 636 | 245 | 1201 | 635 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 58.0 | 36.2 | 29.8 | 65.8 | 0.0 | 52.0 | 60.9 | 40.8 | 27.0 | 65.4 | 44.8 | 31.1 |
| Incr Delay (d2), s/veh | 24.2 | 0.7 | 0.4 | 5.7 | 0.0 | 18.0 | 24.7 | 17.2 | 0.2 | 7.9 | 12.7 | 0.4 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 12.1 | 10.4 | 7.1 | 2.3 | 0.0 | 15.4 | 8.7 | 29.2 | 3.4 | 2.8 | 22.4 | 6.9 |
| LnGrp Delay(d),s/veh | 82.1 | 37.0 | 30.2 | 71.6 | 0.0 | 70.0 | 85.6 | 58.0 | 27.2 | 73.3 | 57.5 | 31.5 |
| LnGrp LOS | F | D | C | E | | E | F | E | C | E | E | C |
| Approach Vol, veh/h | | 1116 | | | 470 | | | 1880 | | | 1468 | |
| Approach Delay, s/veh | | 56.9 | | | 70.4 | | | 61.4 | | | 54.6 | |
| Approach LOS | | E | | | E | | | E | | | D | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 28.0 | 37.7 | 22.0 | 52.6 | 11.7 | 54.0 | 12.6 | 62.0 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Max Green Setting (Gmax), s | 23.0 | 36.0 | 17.0 | 49.0 | 10.0 | 49.0 | 10.0 | 56.0 |
| Max Q Clear Time (g_c+I1), s | 23.4 | 30.0 | 17.4 | 44.8 | 6.7 | 22.1 | 7.5 | 56.2 |
| Green Ext Time (p_c), s | 0.0 | 2.7 | 0.0 | 2.7 | 0.1 | 5.7 | 0.1 | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 59.2 |
| HCM 2010 LOS | E |

# HCM Unsignalized Intersection Capacity Analysis
## 5: NE 94th Ave & NE 105th St

7/26/2016

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 14 | 39 | 134 | 69 | 23 | 0 | 210 | 125 | 119 | 0 | 75 | 13 |
| Future Volume (Veh/h) | 14 | 39 | 134 | 69 | 23 | 0 | 210 | 125 | 119 | 0 | 75 | 13 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.78 | 0.78 | 0.78 | 0.78 | 0.78 | 0.78 | 0.78 | 0.78 | 0.78 | 0.78 | 0.78 | 0.78 |
| Hourly flow rate (vph) | 18 | 50 | 172 | 88 | 29 | 0 | 269 | 160 | 153 | 0 | 96 | 17 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 894 | 956 | 104 | 1076 | 888 | 236 | 113 | | | 313 | | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 894 | 956 | 104 | 1076 | 888 | 236 | 113 | | | 313 | | |
| tC, single (s) | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 | 4.1 | | | 4.1 | | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | | | 2.2 | | |
| p0 queue free % | 91 | 77 | 82 | 24 | 88 | 100 | 82 | | | 100 | | |
| cM capacity (veh/h) | 206 | 213 | 942 | 115 | 233 | 807 | 1476 | | | 1259 | | |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 240 | 117 | 582 | 113 |
| Volume Left | 18 | 88 | 269 | 0 |
| Volume Right | 172 | 0 | 153 | 17 |
| cSH | 475 | 132 | 1476 | 1259 |
| Volume to Capacity | 0.50 | 0.89 | 0.18 | 0.00 |
| Queue Length 95th (ft) | 70 | 144 | 17 | 0 |
| Control Delay (s) | 20.0 | 114.9 | 4.6 | 0.0 |
| Lane LOS | C | F | A | |
| Approach Delay (s) | 20.0 | 114.9 | 4.6 | 0.0 |
| Approach LOS | C | F | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 19.9 | | |
| Intersection Capacity Utilization | 58.2% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 15 | 71 | 114 | 522 | 290 | 14 |
| Future Volume (Veh/h) | 15 | 71 | 114 | 522 | 290 | 14 |
| Sign Control | Stop | | | Free | Free | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 |
| Hourly flow rate (vph) | 16 | 78 | 125 | 574 | 319 | 15 |
| Pedestrians | 2 | | | | | |
| Lane Width (ft) | 12.0 | | | | | |
| Walking Speed (ft/s) | 4.0 | | | | | |
| Percent Blockage | 0 | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | TWLTL | None | |
| Median storage veh) | | | | 2 | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 1152 | 328 | 336 | | | |
| vC1, stage 1 conf vol | 328 | | | | | |
| vC2, stage 2 conf vol | 824 | | | | | |
| vCu, unblocked vol | 1152 | 328 | 336 | | | |
| tC, single (s) | 6.7 | 6.2 | 4.1 | | | |
| tC, 2 stage (s) | 5.7 | | | | | |
| tF (s) | 3.8 | 3.3 | 2.2 | | | |
| p0 queue free % | 95 | 89 | 90 | | | |
| cM capacity (veh/h) | 321 | 709 | 1221 | | | |

| Direction, Lane # | EB 1 | EB 2 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 16 | 78 | 699 | 334 |
| Volume Left | 16 | 0 | 125 | 0 |
| Volume Right | 0 | 78 | 0 | 15 |
| cSH | 321 | 709 | 1221 | 1700 |
| Volume to Capacity | 0.05 | 0.11 | 0.10 | 0.20 |
| Queue Length 95th (ft) | 4 | 9 | 9 | 0 |
| Control Delay (s) | 16.8 | 10.7 | 2.5 | 0.0 |
| Lane LOS | C | B | A | |
| Approach Delay (s) | 11.7 | | 2.5 | 0.0 |
| Approach LOS | B | | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 2.5 | | |
| Intersection Capacity Utilization | 63.2% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 81 | 55 | 1135 | 188 | 45 | 720 |
| Future Volume (Veh/h) | 81 | 55 | 1135 | 188 | 45 | 720 |
| Sign Control | Stop | | Free | | | Free |
| Grade | 0% | | 0% | | | 0% |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Hourly flow rate (vph) | 87 | 59 | 1220 | 202 | 48 | 774 |
| Pedestrians | 1 | | | | | |
| Lane Width (ft) | 12.0 | | | | | |
| Walking Speed (ft/s) | 4.0 | | | | | |
| Percent Blockage | 0 | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | TWLTL | | | TWLTL |
| Median storage veh) | | | 2 | | | 2 |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 1805 | 712 | | | 1423 | |
| vC1, stage 1 conf vol | 1322 | | | | | |
| vC2, stage 2 conf vol | 483 | | | | | |
| vCu, unblocked vol | 1805 | 712 | | | 1423 | |
| tC, single (s) | 6.9 | 7.0 | | | 4.4 | |
| tC, 2 stage (s) | 5.9 | | | | | |
| tF (s) | 3.5 | 3.4 | | | 2.3 | |
| p0 queue free % | 55 | 84 | | | 89 | |
| cM capacity (veh/h) | 195 | 366 | | | 422 | |

| Direction, Lane # | WB 1 | NB 1 | NB 2 | SB 1 | SB 2 | SB 3 |
|---|---|---|---|---|---|---|
| Volume Total | 146 | 813 | 609 | 48 | 387 | 387 |
| Volume Left | 87 | 0 | 0 | 48 | 0 | 0 |
| Volume Right | 59 | 0 | 202 | 0 | 0 | 0 |
| cSH | 241 | 1700 | 1700 | 422 | 1700 | 1700 |
| Volume to Capacity | 0.61 | 0.48 | 0.36 | 0.11 | 0.23 | 0.23 |
| Queue Length 95th (ft) | 89 | 0 | 0 | 10 | 0 | 0 |
| Control Delay (s) | 40.6 | 0.0 | 0.0 | 14.6 | 0.0 | 0.0 |
| Lane LOS | E | | | B | | |
| Approach Delay (s) | 40.6 | 0.0 | | 0.9 | | |
| Approach LOS | E | | | | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 2.8 | | |
| Intersection Capacity Utilization | 51.9% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 52 | 2 | 92 | 186 | 11 | 20 | 115 | 742 | 30 | 3 | 442 | 33 |
| Future Volume (Veh/h) | 52 | 2 | 92 | 186 | 11 | 20 | 115 | 742 | 30 | 3 | 442 | 33 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| 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 |
| Hourly flow rate (vph) | 54 | 2 | 96 | 194 | 11 | 21 | 120 | 773 | 31 | 3 | 460 | 34 |
| Pedestrians | | 3 | | | | | | | | | | |
| Lane Width (ft) | | 12.0 | | | | | | | | | | |
| Walking Speed (ft/s) | | 4.0 | | | | | | | | | | |
| Percent Blockage | | 0 | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | TWLTL | | | TWLTL | |
| Median storage veh) | | | | | | | | 2 | | | 2 | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 1526 | 1530 | 480 | 1592 | 1532 | 788 | 497 | | | 804 | | |
| vC1, stage 1 conf vol | 486 | 486 | | 1028 | 1028 | | | | | | | |
| vC2, stage 2 conf vol | 1040 | 1044 | | 563 | 503 | | | | | | | |
| vCu, unblocked vol | 1526 | 1530 | 480 | 1592 | 1532 | 788 | 497 | | | 804 | | |
| tC, single (s) | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 | 4.1 | | | 4.1 | | |
| tC, 2 stage (s) | 6.1 | 5.5 | | 6.1 | 5.5 | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | | | 2.2 | | |
| p0 queue free % | 74 | 99 | 84 | 2 | 95 | 95 | 89 | | | 100 | | |
| cM capacity (veh/h) | 207 | 248 | 586 | 199 | 242 | 391 | 1064 | | | 820 | | |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | NB 2 | SB 1 | SB 2 |
|---|---|---|---|---|---|---|
| Volume Total | 152 | 226 | 120 | 804 | 3 | 494 |
| Volume Left | 54 | 194 | 120 | 0 | 3 | 0 |
| Volume Right | 96 | 21 | 0 | 31 | 0 | 34 |
| cSH | 351 | 210 | 1064 | 1700 | 820 | 1700 |
| Volume to Capacity | 0.43 | 1.07 | 0.11 | 0.47 | 0.00 | 0.29 |
| Queue Length 95th (ft) | 53 | 256 | 10 | 0 | 0 | 0 |
| Control Delay (s) | 22.9 | 131.4 | 8.8 | 0.0 | 9.4 | 0.0 |
| Lane LOS | C | F | A | | A | |
| Approach Delay (s) | 22.9 | 131.4 | 1.1 | | 0.1 | |
| Approach LOS | C | F | | | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 19.0 | | |
| Intersection Capacity Utilization | 73.0% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |

# MOVEMENT SUMMARY

## Site: 101 [NE 105 and NE 87]

New Site
Stop (Two-Way)

| Movement Performance - Vehicles | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Mov ID | OD Mov | Demand Flows Total veh/h | HV % | Deg. Satn v/c | Average Delay sec | Level of Service | 95% Back of Queue Vehicles veh | Distance m | Prop. Queued | Effective Stop Rate per veh | Average Speed km/h |
| South: NE 87 NB | | | | | | | | | | | |
| 1 | L2 | 1 | 0.0 | 0.033 | 7.7 | LOS A | 0.1 | 0.8 | 0.36 | 0.95 | 50.5 |
| 2 | T1 | 21 | 0.0 | 0.033 | 10.2 | LOS B | 0.1 | 0.8 | 0.36 | 0.95 | 50.7 |
| 3 | R2 | 3 | 0.0 | 0.033 | 8.8 | LOS A | 0.1 | 0.8 | 0.36 | 0.95 | 50.9 |
| Approach | | 25 | 0.0 | 0.033 | 9.9 | LOS A | 0.1 | 0.8 | 0.36 | 0.95 | 50.7 |
| East: NE 105 WB | | | | | | | | | | | |
| 4 | L2 | 6 | 0.0 | 0.138 | 6.3 | LOS A | 0.1 | 0.8 | 0.04 | 0.54 | 53.0 |
| 5 | T1 | 4 | 0.0 | 0.138 | 2.0 | LOS A | 0.1 | 0.8 | 0.04 | 0.54 | 54.9 |
| 6 | R2 | 235 | 3.0 | 0.138 | 5.7 | LOS A | 0.1 | 0.8 | 0.04 | 0.54 | 53.4 |
| Approach | | 245 | 2.9 | 0.138 | 5.6 | NA | 0.1 | 0.8 | 0.04 | 0.54 | 53.4 |
| North: NE 87 SB | | | | | | | | | | | |
| 7 | L2 | 195 | 7.0 | 0.125 | 7.7 | LOS A | 0.0 | 0.0 | 0.00 | 1.02 | 51.3 |
| 8 | T1 | 25 | 0.0 | 0.125 | 7.7 | LOS A | 0.0 | 0.0 | 0.00 | 1.02 | 51.8 |
| 9 | R2 | 3 | 0.0 | 0.125 | 8.0 | LOS A | 0.0 | 0.0 | 0.00 | 1.02 | 52.1 |
| Approach | | 223 | 6.1 | 0.125 | 7.7 | LOS A | 0.0 | 0.0 | 0.00 | 1.02 | 51.4 |
| West: NE 105 EB | | | | | | | | | | | |
| 10 | L2 | 2 | 0.0 | 0.008 | 7.1 | LOS A | 0.0 | 0.2 | 0.24 | 0.32 | 54.4 |
| 11 | T1 | 4 | 0.0 | 0.008 | 1.8 | LOS A | 0.0 | 0.2 | 0.24 | 0.32 | 56.4 |
| 12 | R2 | 1 | 0.0 | 0.008 | 5.6 | LOS A | 0.0 | 0.2 | 0.24 | 0.32 | 54.9 |
| Approach | | 7 | 0.0 | 0.008 | 3.9 | NA | 0.0 | 0.2 | 0.24 | 0.32 | 55.6 |
| All Vehicles | | 501 | 4.1 | 0.138 | 6.8 | NA | 0.1 | 0.8 | 0.04 | 0.77 | 52.4 |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Mitigated NE 88th Street/NE 94th Avenue Intersection Worksheets

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# HCM Unsignalized Intersection Capacity Analysis
## 8: NE 94th Ave & NE 88th St

7/25/2016

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 52 | 0 | 92 | 57 | 4 | 7 | 115 | 742 | 9 | 1 | 442 | 33 |
| Future Volume (Veh/h) | 52 | 0 | 92 | 57 | 4 | 7 | 115 | 742 | 9 | 1 | 442 | 33 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| 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 |
| Hourly flow rate (vph) | 54 | 0 | 96 | 59 | 4 | 7 | 120 | 773 | 9 | 1 | 460 | 34 |
| Pedestrians | | 3 | | | | | | | | | | |
| Lane Width (ft) | | 12.0 | | | | | | | | | | |
| Walking Speed (ft/s) | | 4.0 | | | | | | | | | | |
| Percent Blockage | | 0 | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 1504 | 1504 | 480 | 1576 | 1516 | 778 | 497 | | | 782 | | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 1504 | 1504 | 480 | 1576 | 1516 | 778 | 497 | | | 782 | | |
| tC, single (s) | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 | 4.1 | | | 4.1 | | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | | | 2.2 | | |
| p0 queue free % | 37 | 100 | 84 | 13 | 96 | 98 | 89 | | | 100 | | |
| cM capacity (veh/h) | 86 | 108 | 586 | 68 | 105 | 397 | 1064 | | | 836 | | |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | NB 2 | SB 1 | SB 2 |
|---|---|---|---|---|---|---|
| Volume Total | 150 | 70 | 120 | 782 | 1 | 494 |
| Volume Left | 54 | 59 | 120 | 0 | 1 | 0 |
| Volume Right | 96 | 7 | 0 | 9 | 0 | 34 |
| cSH | 190 | 76 | 1064 | 1700 | 836 | 1700 |
| Volume to Capacity | 0.79 | 0.93 | 0.11 | 0.46 | 0.00 | 0.29 |
| Queue Length 95th (ft) | 136 | 120 | 10 | 0 | 0 | 0 |
| Control Delay (s) | 71.7 | 178.0 | 8.8 | 0.0 | 9.3 | 0.0 |
| Lane LOS | F | F | A | | A | |
| Approach Delay (s) | 71.7 | 178.0 | 1.2 | | 0.0 | |
| Approach LOS | F | F | | | | |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 15.0 | | | |
| Intersection Capacity Utilization | 61.0% | ICU Level of Service | B | |
| Analysis Period (min) | 15 | | | |

MITIGATION:
->LIMIT SITE TO 10 TRIPS IN/67 TRIPS OUT (77 WEEKDAY PM PEAK HOUR TRIPS)

# HCM Unsignalized Intersection Capacity Analysis
## 8: NE 94th Ave & NE 88th St

7/25/2016

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 52 | 0 | 92 | 61 | 4 | 7 | 115 | 742 | 10 | 1 | 442 | 33 |
| Future Volume (Veh/h) | 52 | 0 | 92 | 61 | 4 | 7 | 115 | 742 | 10 | 1 | 442 | 33 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| 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 |
| Hourly flow rate (vph) | 54 | 0 | 96 | 64 | 4 | 7 | 120 | 773 | 10 | 1 | 460 | 34 |
| Pedestrians | | 3 | | | | | | | | | | |
| Lane Width (ft) | | 12.0 | | | | | | | | | | |
| Walking Speed (ft/s) | | 4.0 | | | | | | | | | | |
| Percent Blockage | | 0 | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 1504 | 1505 | 480 | 1576 | 1517 | 778 | 497 | | | 783 | | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 1504 | 1505 | 480 | 1576 | 1517 | 778 | 497 | | | 783 | | |
| tC, single (s) | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 | 4.1 | | | 4.1 | | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | | | 2.2 | | |
| p0 queue free % | 37 | 100 | 84 | 5 | 96 | 98 | 89 | | | 100 | | |
| cM capacity (veh/h) | 86 | 108 | 586 | 68 | 105 | 396 | 1064 | | | 835 | | |

| Direction, Lane # | EB 1 | WB 1 | WB 2 | NB 1 | NB 2 | SB 1 | SB 2 |
|---|---|---|---|---|---|---|---|
| Volume Total | 150 | 68 | 7 | 120 | 783 | 1 | 494 |
| Volume Left | 54 | 64 | 0 | 120 | 0 | 1 | 0 |
| Volume Right | 96 | 0 | 7 | 0 | 10 | 0 | 34 |
| cSH | 190 | 69 | 396 | 1064 | 1700 | 835 | 1700 |
| Volume to Capacity | 0.79 | 0.98 | 0.02 | 0.11 | 0.46 | 0.00 | 0.29 |
| Queue Length 95th (ft) | 136 | 124 | 1 | 10 | 0 | 0 | 0 |
| Control Delay (s) | 71.7 | 205.1 | 14.2 | 8.8 | 0.0 | 9.3 | 0.0 |
| Lane LOS | F | F | B | A | | A | |
| Approach Delay (s) | 71.7 | 187.3 | | 1.2 | | 0.0 | |
| Approach LOS | F | F | | | | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 15.9 | | |
| Intersection Capacity Utilization | 68.2% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |

MITIGATION:
->ADD WESTBOUND RIGHT-TURN LANE &
->LIMIT SITE TO 11 TRIPS IN/71 TRIPS OUT (86 WEEKDAY PM PEAK HOUR TRIPS)

# HCM Signalized Intersection Capacity Analysis
## 8: NE 94th Ave & NE 88th St

7/25/2016

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 52 | 2 | 92 | 186 | 11 | 20 | 115 | 742 | 30 | 3 | 442 | 33 |
| Future Volume (vph) | 52 | 2 | 92 | 186 | 11 | 20 | 115 | 742 | 30 | 3 | 442 | 33 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 5.0 | | | 5.0 | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Lane Util. Factor | | 1.00 | | | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Frpb, ped/bikes | | 1.00 | | | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Flpb, ped/bikes | | 1.00 | | | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Frt | | 0.91 | | | 1.00 | 0.85 | 1.00 | 0.99 | | 1.00 | 0.99 | |
| Flt Protected | | 0.98 | | | 0.95 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | | 1679 | | | 1779 | 1583 | 1770 | 1751 | | 1770 | 1858 | |
| Flt Permitted | | 0.63 | | | 0.56 | 1.00 | 0.38 | 1.00 | | 0.26 | 1.00 | |
| Satd. Flow (perm) | | 1081 | | | 1041 | 1583 | 703 | 1751 | | 484 | 1858 | |
| Peak-hour factor, PHF | 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) | 54 | 2 | 96 | 194 | 11 | 21 | 120 | 773 | 31 | 3 | 460 | 34 |
| RTOR Reduction (vph) | 0 | 46 | 0 | 0 | 0 | 17 | 0 | 1 | 0 | 0 | 2 | 0 |
| Lane Group Flow (vph) | 0 | 106 | 0 | 0 | 205 | 4 | 120 | 803 | 0 | 3 | 492 | 0 |
| Confl. Peds. (#/hr) | | | | | | | 3 | | | | | 3 |
| Confl. Bikes (#/hr) | | | | | | | | | 2 | | | 6 |
| Heavy Vehicles (%) | 3% | 1% | 1% | 2% | 2% | 2% | 2% | 8% | 2% | 2% | 1% | 0% |
| Turn Type | Perm | NA | | Perm | NA | Perm | pm+pt | NA | | pm+pt | NA | |
| Protected Phases | | 6 | | | 2 | | 3 | 8 | | 7 | 4 | |
| Permitted Phases | 6 | | | 2 | | 2 | 8 | | | 4 | | |
| Actuated Green, G (s) | | 28.0 | | | 28.0 | 28.0 | 97.0 | 90.8 | | 84.9 | 83.7 | |
| Effective Green, g (s) | | 28.0 | | | 28.0 | 28.0 | 97.0 | 90.8 | | 84.9 | 83.7 | |
| Actuated g/C Ratio | | 0.21 | | | 0.21 | 0.21 | 0.72 | 0.67 | | 0.63 | 0.62 | |
| Clearance Time (s) | | 5.0 | | | 5.0 | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Vehicle Extension (s) | | 3.0 | | | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | | 224 | | | 215 | 328 | 570 | 1177 | | 315 | 1151 | |
| v/s Ratio Prot | | | | | | | c0.01 | c0.46 | | 0.00 | 0.26 | |
| v/s Ratio Perm | | 0.10 | | | c0.20 | 0.00 | 0.14 | | | 0.01 | | |
| v/c Ratio | | 0.47 | | | 0.95 | 0.01 | 0.21 | 0.68 | | 0.01 | 0.43 | |
| Uniform Delay, d1 | | 47.0 | | | 52.9 | 42.5 | 7.3 | 13.4 | | 11.4 | 13.3 | |
| Progression Factor | | 1.00 | | | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | | 1.6 | | | 48.0 | 0.0 | 0.2 | 3.2 | | 0.0 | 1.2 | |
| Delay (s) | | 48.6 | | | 100.8 | 42.5 | 7.5 | 16.6 | | 11.4 | 14.4 | |
| Level of Service | | D | | | F | D | A | B | | B | B | |
| Approach Delay (s) | | 48.6 | | | 95.4 | | | 15.4 | | | 14.4 | |
| Approach LOS | | D | | | F | | | B | | | B | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 28.0 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.74 | | |
| Actuated Cycle Length (s) | 135.0 | Sum of lost time (s) | 15.0 |
| Intersection Capacity Utilization | 75.1% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |

c Critical Lane Group



MITIGATION:
->ADD SEPARATE WESTBOUND RIGHT-TURN LANE & SIGNALIZE

| Lane Group | EBT | WBT | WBR | NBL | NBT | SBL | SBT |
|---|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 152 | 205 | 21 | 120 | 804 | 3 | 494 |
| v/c Ratio | 0.56 | 0.95 | 0.06 | 0.21 | 0.65 | 0.01 | 0.43 |
| Control Delay | 37.8 | 102.5 | 0.3 | 6.9 | 15.2 | 6.0 | 14.9 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 37.8 | 102.5 | 0.3 | 6.9 | 15.2 | 6.0 | 14.9 |
| Queue Length 50th (ft) | 73 | 177 | 0 | 30 | 340 | 1 | 214 |
| Queue Length 95th (ft) | 150 | #332 | 0 | 49 | 618 | 4 | 304 |
| Internal Link Dist (ft) | 5526 | 1263 | | | 1251 | | 2658 |
| Turn Bay Length (ft) | | | | 100 | | 100 | |
| Base Capacity (vph) | 277 | 223 | 384 | 581 | 1231 | 431 | 1154 |
| 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 | 0.55 | 0.92 | 0.05 | 0.21 | 0.65 | 0.01 | 0.43 |

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

MITIGATION:
->ADD SEPARATE WESTBOUND RIGHT-TURN LANE & SIGNALIZE

# HCM Signalized Intersection Capacity Analysis
## 8: NE 94th Ave & NE 88th St

7/25/2016

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 52 | 2 | 92 | 186 | 11 | 20 | 115 | 742 | 30 | 3 | 442 | 33 |
| Future Volume (vph) | 52 | 2 | 92 | 186 | 11 | 20 | 115 | 742 | 30 | 3 | 442 | 33 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Lane Util. Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Frpb, ped/bikes | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Flpb, ped/bikes | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Frt | 1.00 | 0.85 | | 1.00 | 0.90 | | 1.00 | 0.99 | | 1.00 | 0.99 | |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1752 | 1605 | | 1770 | 1679 | | 1770 | 1751 | | 1770 | 1858 | |
| Flt Permitted | 0.74 | 1.00 | | 0.30 | 1.00 | | 0.38 | 1.00 | | 0.25 | 1.00 | |
| Satd. Flow (perm) | 1358 | 1605 | | 556 | 1679 | | 701 | 1751 | | 474 | 1858 | |
| Peak-hour factor, PHF | 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) | 54 | 2 | 96 | 194 | 11 | 21 | 120 | 773 | 31 | 3 | 460 | 34 |
| RTOR Reduction (vph) | 0 | 91 | 0 | 0 | 18 | 0 | 0 | 1 | 0 | 0 | 2 | 0 |
| Lane Group Flow (vph) | 54 | 7 | 0 | 194 | 14 | 0 | 120 | 803 | 0 | 3 | 492 | 0 |
| Confl. Peds. (#/hr) | | | | | | | 3 | | | | | 3 |
| Confl. Bikes (#/hr) | | | | | | | | | 2 | | | 6 |
| Heavy Vehicles (%) | 3% | 1% | 1% | 2% | 2% | 2% | 2% | 8% | 2% | 2% | 1% | 0% |
| Turn Type | pm+pt | NA | | pm+pt | NA | | pm+pt | NA | | pm+pt | NA | |
| Protected Phases | 1 | 6 | | 5 | 2 | | 3 | 8 | | 7 | 4 | |
| Permitted Phases | 6 | | | 2 | | | 8 | | | 4 | | |
| Actuated Green, G (s) | 15.9 | 8.4 | | 33.4 | 20.9 | | 106.6 | 100.4 | | 94.1 | 92.9 | |
| Effective Green, g (s) | 15.9 | 8.4 | | 33.4 | 20.9 | | 106.6 | 100.4 | | 94.1 | 92.9 | |
| Actuated g/C Ratio | 0.11 | 0.06 | | 0.22 | 0.14 | | 0.71 | 0.67 | | 0.63 | 0.62 | |
| Clearance Time (s) | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | 163 | 89 | | 285 | 233 | | 560 | 1172 | | 307 | 1150 | |
| v/s Ratio Prot | 0.02 | 0.00 | | c0.09 | 0.01 | | c0.01 | c0.46 | | 0.00 | 0.27 | |
| v/s Ratio Perm | 0.02 | | | c0.06 | | | 0.14 | | | 0.01 | | |
| v/c Ratio | 0.33 | 0.08 | | 0.68 | 0.06 | | 0.21 | 0.69 | | 0.01 | 0.43 | |
| Uniform Delay, d1 | 61.8 | 67.1 | | 51.2 | 56.0 | | 8.5 | 15.2 | | 13.0 | 14.8 | |
| Progression Factor | 1.10 | 1.33 | | 1.00 | 1.00 | | 1.52 | 1.31 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | 1.2 | 0.4 | | 6.5 | 0.1 | | 0.1 | 1.2 | | 0.0 | 1.2 | |
| Delay (s) | 69.0 | 89.5 | | 57.7 | 56.1 | | 13.1 | 21.1 | | 13.0 | 16.0 | |
| Level of Service | E | F | | E | E | | B | C | | B | B | |
| Approach Delay (s) | | 82.2 | | | 57.5 | | | 20.0 | | | 15.9 | |
| Approach LOS | | F | | | E | | | C | | | B | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 28.9 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.70 | | |
| Actuated Cycle Length (s) | 150.0 | Sum of lost time (s) | 20.0 |
| Intersection Capacity Utilization | 74.5% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |



MITIGATION:
->SIGNALIZE INTERSECTION AND ADD SEPARATE EASTBOUND & WESTBOUND LEFT-TURN LANES & SHARED THROUGH/RIGHT-TURN LANES

| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | SBL | SBT |
|---|---|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 54 | 98 | 194 | 32 | 120 | 804 | 3 | 494 |
| v/c Ratio | 0.32 | 0.58 | 0.69 | 0.13 | 0.21 | 0.65 | 0.01 | 0.42 |
| Control Delay | 56.4 | 30.7 | 64.0 | 29.3 | 11.3 | 20.1 | 8.0 | 16.7 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 56.4 | 30.7 | 64.0 | 29.3 | 11.3 | 20.1 | 8.0 | 16.7 |
| Queue Length 50th (ft) | 44 | 4 | 170 | 10 | 47 | 383 | 1 | 230 |
| Queue Length 95th (ft) | m83 | m62 | 236 | 42 | m55 | m402 | 5 | 373 |
| Internal Link Dist (ft) | | 5526 | | 1263 | | 1251 | | 2658 |
| Turn Bay Length (ft) | 100 | | 100 | | 100 | | 100 | |
| Base Capacity (vph) | 182 | 256 | 305 | 341 | 576 | 1232 | 415 | 1165 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.30 | 0.38 | 0.64 | 0.09 | 0.21 | 0.65 | 0.01 | 0.42 |

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

MITIGATION:
->SIGNALIZE INTERSECTION AND ADD SEPARATE EASTBOUND & WESTBOUND LEFT-TURN LANES & SHARED THROUGH/RIGHT-TURN LANES