**From:** Jeffrey Delapena
**To:** "Heidi Pozzo"
**Cc:** Oliver Orjiako; Jose Alvarez; Rebecca Messinger
**Subject:** RE: Comp Plan: Anderson Dental traffic study
**Date:** Tuesday, September 22, 2026 4:03:00 PM
**Attachments:** 14 - Traffic Study Anderson Dental.pdf

---

Hello Heidi,

Thank you for providing this comment and attachment. Confirming these have all been received and will be added to the Comprehensive Plan Index of Record.

I am including Rebecca Messinger to share with the Council and include this in their own record.

Best,

Jeff Delapena
Program Assistant
COMMUNITY PLANNING

564.397.4558

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-----Original Message-----
From: Heidi Pozzo <hcpheidi@yahoo.com>
Sent: Tuesday, September 22, 2026 4:00 PM
To: Jeffrey Delapena <Jeffrey.Delapena@clark.wa.gov>
Cc: Oliver Orjiako <Oliver.Orjiako@clark.wa.gov>; Jose Alvarez <Jose.Alvarez@clark.wa.gov>
Subject: Comp Plan: Anderson Dental traffic study

EXTERNAL: This email originated from outside of Clark County. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Dear Jeff,

I've just uploaded the traffic study for Anderson Dental for submission to the Comp Plan Index of Record.

Thank you,

Heidi

lancaster mobley

# Andersen Dental Office

## Transportation Impact Study

## Clark County, Washington

10/27/2025




**Date:**
**October 27, 2025**

**Prepared for:**
**Dane Andersen**
**Andersen Dental Center**

**Prepared by:**
**Daniel Stumpf, PE**

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# Executive Summary

1. The proposed Andersen Dental Office project will include the development of a dental office use on a single property addressed at 2808 NE 179th Street in unincorporated Clark County, Washington. The proposal will include converting an existing single-family house into an approximately 3,492 square foot dental office. One other existing two-story residence (i.e., accessory dwelling unit, or ADU) will remain. Access to the site will be provided via one right-in/right-out driveway along NE 179th Street.
2. The trip generation calculations show that the proposed development is projected to generate an additional 11 AM peak hour trips, 13 PM peak hour trips, and 118 average weekday trips.
3. The intersection of NE 179th Street at NE 29th Avenue was found to be nearing a crash rate of 1.00 CMEV. The intersection is planned for reconstruction as a roundabout sometime between 2025 through 2028. According to WSDOT, roundabouts often reduce the overall number of recurring crashes at signalized and stop-controlled intersections. Therefore, the overall crash rate at the intersection is expected to decrease well below the 1.00 CMEV threshold after this intersection improvement has been implemented. No additional mitigation is necessary or recommended.

   No significant trends or crash patterns were identified at any of the other study intersections that are indicative of safety concerns. Accordingly, no crash-related mitigation is necessary or recommended as part of the Andersen Dental Office application.
4. Adequate intersection and stopping sight distances are available at the proposed site access intersection to allow for safe and efficient operation along NE 179th Street. No sight distance related mitigation is necessary or recommended.
5. All study intersections are currently operating acceptably per Clark County standards and are projected to continue operating acceptably through the 2028 buildout year of the site. Accordingly, no operational mitigation is necessary or recommended at the study intersections as part of the proposed development application.
6. Several roadway segments within the study area are projected to exceed Clark County's roadway v/c ratio threshold under year 2028 conditions. Although these roadway segments are projected to operate with v/c ratios in excess of 0.90 during the PM peak hour, no mitigation as part of the proposed development application is recommended for several reasons including, but not limited to, the following:
   a. Relevant study intersections along the higher demand roadway segments are projected to operate within acceptable Clark County LOS standards. Therefore, the increased v/c ratio on applicable roadway segments are not expected to create significant impacts to the operation or safety of the nearby transportation system.
   b. For relevant roadway segments, the high v/c ratios occur under year 2028 background conditions, without impacts from the proposed development. Therefore, the Andersen Dental Office project alone does not cause these roadway segment to exceed the 0.90 v/c ratio threshold.

c. For some roadway segments, the proposed development will add little to no additional peak hour trips to these roadway segments. In these cases, any increase in peak hour trips will be minor, can be considered as equivalent to daily fluctuations in traffic, and will minimally increase the roadway's single travel direction v/c ratios. Any additional mitigation to increase the vehicle carrying capacity of these roadway segments would be disproportionate to the impacts created by the proposed development.

All other relevant roadway segments are projected to operate acceptably per Clark County standards through the 2028 buildout year of the site during both the AM and PM peak hours. Accordingly, no roadway capacity related mitigation is necessary or recommended at these roadway segments as part of the proposed development application.

7. Block length and perimeter standards are currently not met for the existing block surrounding the project site. These standards can be met in the future provided other properties near the project site are redeveloped as higher density land uses. A road modification requesting a variance to this cross-circulation issue was prepared and submitted as part of the development application under a separate memorandum Assuming the road modification request is granted, no further mitigation or improvements to the transportation system with respect to cross-circulation standards are necessary or recommended as part of the proposed development application.

# Project Description

## Introduction

The proposed Andersen Dental Office project will include the development of a dental office use on a single property addressed at 2808 NE 179th Street in unincorporated Clark County, Washington. The proposal will include converting an existing single-family house into an approximately 3,492 square foot dental office. One other existing two-story residence (i.e., accessory dwelling unit, or ADU) will remain. Access to the site will be provided via one right-in/right-out driveway along NE 179th Street.

Based on correspondence with Clark County staff, this report conducts safety and capacity/level of service analyses at the following intersections:

1. NE 179th Street at NE 15th Avenue
2. Site Access at NE 179th Street
3. NE 179th Street at NE 29th Avenue

The purpose of this study is to determine whether the transportation system within the vicinity of the site is capable of safely and efficiently supporting the surrounding existing and proposed uses, and to determine any mitigation that may be necessary to do so. Detailed information on traffic counts, trip generation calculations, safety analyses, and level of service calculations is included in the appendix to this report.

## Location Description

The project site is located north of NE 179th Street, south of NE 189th Street, east of NE 10th Avenue, and west of NE 29th Avenue in unincorporated Clark County, Washington. The site consists of a single property (assessor parcel 181326000), which encompasses an approximate total of 3.69 acres. Located within a developing area of Clark County, the site is immediately surrounded by low-density residential uses in all directions, the exception being a higher density residential subdivision to the southwest. The in-process Four Creeks South Subdivision project is being constructed to the north of the project site. Notable land uses within an approximate one-mile distance of the site include the Clark County Fairgrounds and Amphitheatre to the southwest.

Figure 1 presents an aerial image of the nearby vicinity with the project site outlined in yellow.




Figure 1: Aerial Photo of Site Vicinity (Image from Google Earth)

### Vicinity Streets

The study area is composed of three roadways near the site. Table 1 provides a description of each vicinity roadway.

Table 1: Vicinity Roadway Descriptions

| Street Name | Jurisdiction | Functional Classification | Speed (MPH) | On-Street Parking | Curbs & Sidewalks | Bicycle Lanes |
|---|---|---|---|---|---|---|
| NE 179th Street | Clark County | Principal Arterial | 40/50 | Not Permitted | Partial Both Sides | None |
| NE 15th Avenue | Clark County | Minor Arterial | 40 | Not Permitted | Both Sides | Both Sides |
| NE 29th Avenue | Clark County | Minor Arterial | 35/40 | Not Permitted | Partial Both Sides | None |

*Table Notes: Functional classification based on Clark County MapsOnline GIS website.*

### Study Intersections

Based on correspondence with Clark County staff, an analysis of three existing nearby intersections of significance was conducted. A summarized description of these study intersections under their existing lane configurations is provided in Table 2.

**Table 2: Study Intersection Descriptions**

| Number | Intersection | Geometry | Traffic Control | Phasing/Stopped Approaches |
|---|---|---|---|---|
| 1 | NE 179th Street at NE 15th Avenue | Three-Legged | Traffic Signal | Permitted NB Left-turn Lane |
| 2 | Site Access at NE 179th Street | Three-Legged | Stop-Controlled | Stop-Controlled SB Approach |
| 3 | NE 179th Street at NE 29th Avenue | Four-Legged | Stop-Controlled | All-Way Stop-Controlled |

A vicinity map showing the project site, vicinity streets, and study intersection configurations are shown in Figure 2.

LEGEND

- STUDY INTERSECTION
- STOP SIGN
- TRAFFIC SIGNAL
- ROUNDABOUT/ TRAFFIC CIRCLE
- BIKE LANE
- PROJECT SITE
- ARTERIAL ROADWAY
- COLLECTOR ROADWAY
- FUTURE/PLANNED ROADWAY

NE 199th Street

NE 194th Street

NE 189th Street

NE 179th Street

NE 10th Avenue

NE 15th Avenue

NE 29th Avenue

NE 50th Avenue

Interstate 5

1 2 3

EXISTING INTERSECTION CONFIGURATIONS




PLANNED INTERSECTION CONFIGURATIONS




No Scale

Figure 2

Andersen Dental Office

10/27/2025

**VICINITY MAP**

lancaster mobley

# Site Trips

## Trip Generation

The proposed Andersen Dental Office project will include converting an existing single-family house into an approximately 3,492 square foot dental office while maintaining another existing two-story residence (i.e., an ADU). To estimate the number of trips that are and will be generated by the existing and proposed uses, trip rates from the *Trip Generation Manual, 11th Edition*[1] were used. Data from the following land use codes were used to estimate site trip generation under existing and proposed conditions:

- 210, *Single-Family Detached Housing*, based on the number of dwelling units.
- 720, *Medical-Dental Office Building*, based on the square footage of the gross building floor area.

As a proxy to estimate site trip generation of the existing ADU that will remain post-development of the dental office, trip generation data from ITE code 210 was used.

The trip generation calculations show that the proposed development is projected to generate an additional 11 AM peak hour trips, 13 PM peak hour trips, and 118 average weekday trips. The trip generation estimates are summarized in Table 3. Detailed trip generation calculations are included in the technical appendix.

**Table 3: Trip Generation Summary**

| ITE Land Use Code | | Size | AM Peak Hour | | | PM Peak Hour | | | Weekday Total |
|---|---|---|---|---|---|---|---|---|---|
| | | | Enter | Exit | Total | Enter | Exit | Total | |
| ***Existing Conditions*** | | | | | | | | | |
| 210 | Single-Family Detached Housing | 2 units | 0 | 1 | 1 | 1 | 1 | 2 | 18 |
| ***Proposed Conditions*** | | | | | | | | | |
| 210 | Single-Family Detached Housing | 1 unit | 0 | 1 | 1 | 1 | 0 | 1 | 10 |
| 720 | Medical-Dental Office Building | 3,492 SF | 9 | 2 | 11 | 4 | 10 | 14 | 126 |
| Total Trips | | | 9 | 3 | 12 | 5 | 10 | 15 | 136 |
| ***Net Change in Site Trip Generation*** | | | | | | | | | |
| **Net New Trips** | | | **9** | **2** | **11** | **4** | **9** | **13** | **118** |

[1] Institute of Transportation Engineers (ITE), *Trip Generation Manual*, 11th Edition, 2021.

## Trip Distribution

The trip distribution used for the proposed development was referenced from the *NE 29th Avenue Subdivision Transportation Impact Analysis* (TIA), dated October 2022, where the subdivision is located adjacent to the north of the project site. According to the 2022 TIA, the trip distribution was derived using the Southwest Washington Regional Transportation Council (RTC) transportation system model, where a select zone analysis was conducted for the nearby Transportation Analysis Zone (TAZ) #1982 (formerly #547).

Due to the left-turning movement restrictions at the proposed site access intersection, trips traveling to/from the project site may need to utilize alternative travel routes relative to those presented in the *NE 29th Avenue Subdivision TIA*. Assuming the planned NE 179th Street corridor improvements are in place (i.e., the re-alignment of NE 10th Avenue to a location opposite of NE 15th Avenue, and roundabouts constructed at the NE 15th Avenue and NE 29th Avenue intersections along NE 179th Street), the following trip distribution was assumed:

- Approximately 4% of site trips will travel to/from the west along NE 199th Street, west of NE 29th Avenue.
    - Site ingress trips will utilize NE 119th Street, and NE 29th Avenue.
    - Site egress trips will utilize NE 10th Avenue.
- Approximately 9% of site trips will travel to the north along NE 10th Avenue and from the north along NE 29th Avenue, at locations north of NE 119th Street.
- Approximately 5% of site trips will travel to/from the east along NE 199th Street, east of NE 29th Avenue.
    - Site ingress trips will utilize NE 29th Avenue.
    - Site egress trips will utilize NE 10th Avenue.
- Approximately 6% of site trips will travel to/from the west along NE 179th Street, west of Interstate 5 (I-5). Site ingress trips are assumed to conduct a U-turn at the intersection of NE 179th Street at NE 29th Avenue.
- Approximately 10% of site trips will travel to/from the north along I-5, north of NE 179th Street. Site ingress trips are assumed to conduct a U-turn at the intersection of NE 179th Street at NE 29th Avenue.
- Approximately 21% of site trips will travel to/from the south along I-5, south of NE 179th Street. Site ingress trips are assumed to conduct a U-turn at the intersection of NE 179th Street at NE 29th Avenue.
- Approximately 3% of site trips will travel to/from the south along NE 15th Avenue, south of NE 179th Street. Site ingress trips are assumed to conduct a U-turn at the intersection of NE 179th Street at NE 29th Avenue.
- Approximately 27% of additional site trips will travel to the south along NE 15th Avenue and from the south along NE 29th Avenue, at locations south of NE 179th Street.
- Approximately 13% of site trips will travel to/from the east along NE 179th Street, east of NE 50th Avenue. Site egress trips are assumed to conduct a U-turn at the intersection of NE 179th Street at NE 15th Avenue.

- Approximately 2% of site trips will travel to/from the south along NE 50th Avenue, south of NE 179th Street. Site egress trips are assumed to conduct a U-turn at the intersection of NE 179th Street at NE 15th Avenue.

Although within a one-mile radius of the site, several regionally significant intersections were determined as not requiring analysis based on limited site trip impacts. The following intersections were determined as not requiring analysis with explanation for removal provided:

**Clark County**

The following intersections will not be impacted by 5 or more peak hour trips. Therefore, no mitigation can be required as part of the application per Clark County Unified Development Code 40.350.020.G.1.c., not-with-standing safety improvements which may be necessary per section 40.350.030(B)(6).

A. NE 199th Street at NE 29th Avenue – 3 AM and 2 PM peak hour trip impact.

B. NE 194th Street at NE 29th Avenue – 3 AM and 2 PM peak hour trip impact.

C. NE 189th Street at NE 29th Avenue – 3 AM and 2 PM peak hour trip impact.

D. NE 189th Street at NE 10th Avenue – 0 AM and 1 PM peak hour trip impact.

G. NE 179th Street at NE 47th Avenue – 1 AM and 2 PM peak hour trip impact.

H. NE 179th Street at NE 50th Avenue – 1 AM and 2 PM peak hour trip impact.

I. NE 159th Street at NE 29th Avenue – 2 AM and 1 PM peak hour trip impact.

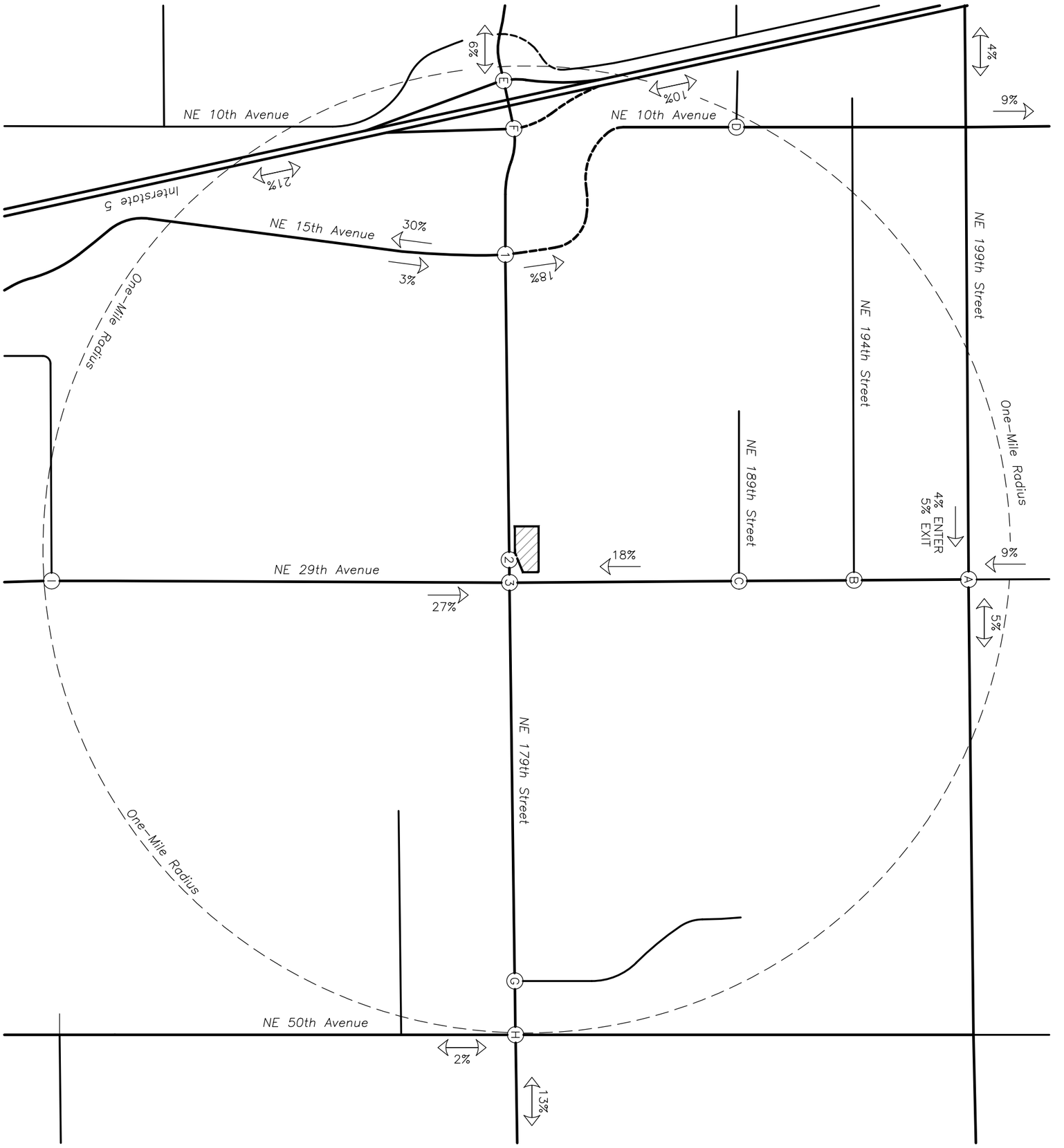
**WSDOT**

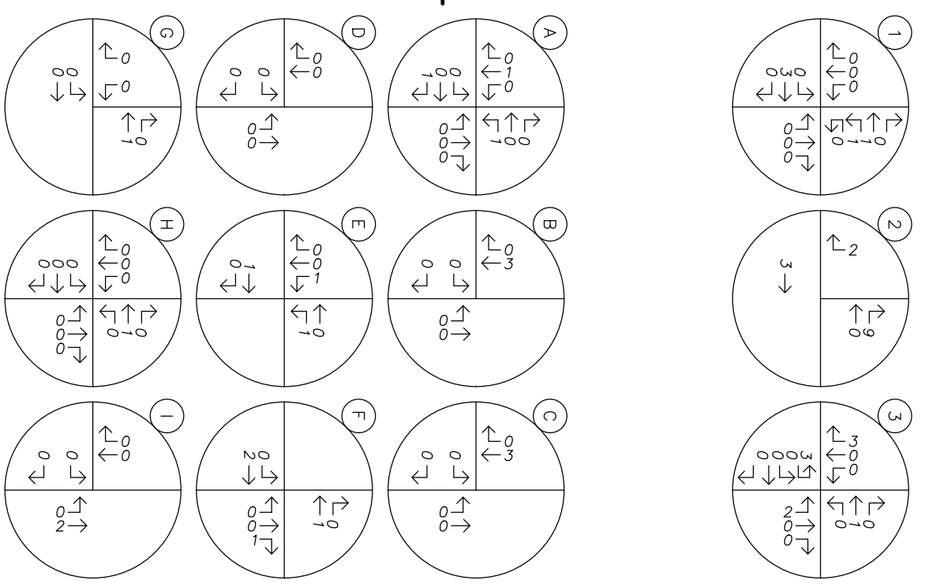
The two intersections listed below operate under the jurisdiction of WSDOT. WSDOT typically requires analysis of intersections impacted by 10 or more peak hour trips, where these two intersections will be impacted by less than 10 AM and PM peak hour trips.

E. Interstate 5 (I-5) Southbound Ramps at NE 179th Street – 3 AM and PM peak hour trip impact.

F. I-5 Northbound Ramps at NE 179th Street – 4 AM and 5 PM peak hour trip impact.

The trip distribution and assignment for the site trips generated during the AM and PM peak hours are shown in Figure 3 and Figure 4 for the AM and PM peak hours, respectively. Trip assignment is depicted for both the study intersections and the aforementioned intersections that do not require detailed capacity or safety analysis.



LEGEND

XX% PERCENT OF PROJECT TRIPS

| NET NEW TRIP GENERATION | | | |
|---|---|---|---|
| | IN | OUT | TOTAL |
| AM | 9 | 2 | 11 |

No Scale

**SITE TRIP DISTRIBUTION & ASSIGNMENT**

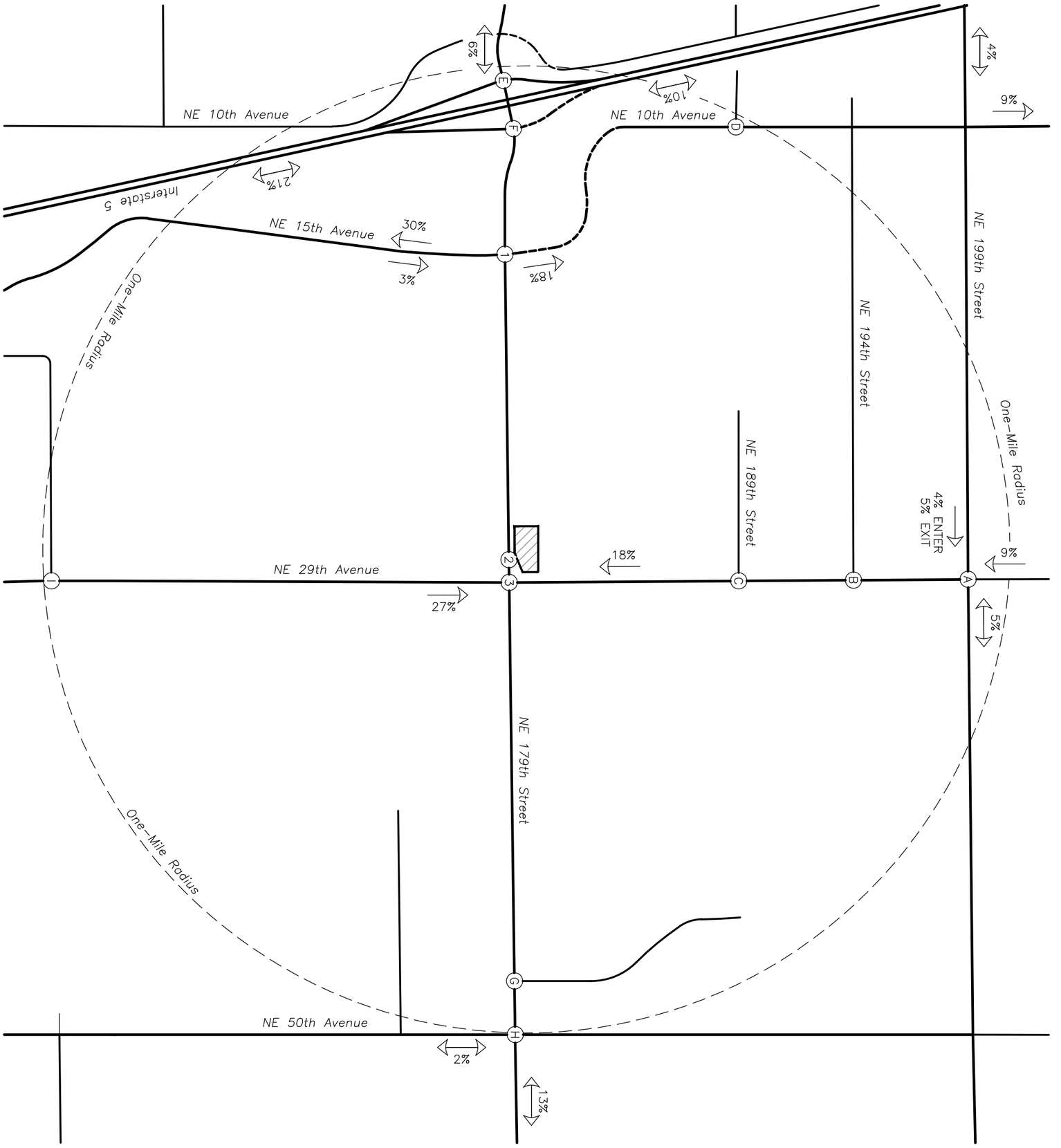
Proposed Development Plan - Site Trips

AM Peak Hour

Figure 3

Andersen Dental Office

10/27/2025




**SITE TRIP DISTRIBUTION & ASSIGNMENT**

Proposed Development Plan - Site Trips

PM Peak Hour

Figure 4

Andersen Dental Office

10/27/2025

# Traffic Volumes

## Existing Conditions

### Traffic Count Data Collection

Traffic counts were conducted at the study intersections on the following dates from 7:00 AM to 9:00 AM and from 4:00 PM to 6:00 PM:

- Wednesday, January 22, 2025
- Tuesday, August 5, 2025
- Wednesday, August 6, 2025

Data was used from each intersection's respective AM and PM peak hours.

### Site Access Intersection Volumes

To estimate traffic volumes at the site access intersection along NE 179th Street, the following methodology was considered:

- Minor-street turning movement volumes for the existing on-site single family house and ADU were added to the intersection based on the trip generation estimates presented in Table 3 of the *Trip Generation* section of the report. For the purposes of this analysis, all site trips were assumed to travel to/from the west of the project site toward the I-5 interchange.
- Major street traffic volumes at the proposed site access location along NE 179th Street were balanced with those recorded at the intersection of NE 179th Street at NE 29th Avenue.

Figure 5 shows the year 2025 existing traffic volumes at the study intersections during the AM and PM peak hours.

## Background Conditions

### Volume Growth

To provide analysis of the impact of the proposed development on the nearby transportation facilities, an estimate of future traffic volumes is required. In order to approximate the future year 2028 traffic volumes at the study intersections, a compounding growth rate of two percent per year for an assumed buildout condition of three years was applied to the year 2025 existing traffic volumes.

### In-Process Data

In addition to the traffic volume growth described above, there are several in-process developments that are currently approved/proposed for construction within the site vicinity that are expected to impact nearby study intersections. These in-process developments include the following:

- South Ridge Central Apartments
- Mountain View Ridge PUD
- Skyview Station Shopping Center (approximately 58% constructed and occupied)
- Skyview Station East
- Mill Creek Terrace
- Mill Creek Meadows
- Washington State University Master Plan
- Mountain Estates Cluster Subdivision
- Whipple Creek Village Subdivision (approximately 95% constructed and occupied)
- Three Creeks North Phase 1 & 2
- 179th Street Commercial Center Phase 1 & 2
- Woodbrook Subdivision (aka Mill Creek PUD, approximately 20% constructed and occupied)
- M&H Subdivision
- North Haven Subdivision (approximately 75% constructed and occupied)
- Trails at Whipple Creek Subdivision (approximately 20% constructed and occupied)
- DSHS NE 50th Clark County Behavioral Health
- Majestic Industrial Centre
- Martin's Meadow Subdivision (approximately 10% constructed and occupied)
- Four Creeks South Subdivision (aka NE 29th Avenue Subdivision)
- Viers Subdivision
- The Highlands at Whipple Creek
- Maletis Distribution Center
- Mt Vista Logistics

The in-process developments are not currently/fully contributing trips to the transportation system but may potentially be by the assumed 2028 buildout year of the site. Additional trips corresponding to each in-process development were added to the existing year traffic volumes in addition to the three years of traffic growth at each of the applicable study intersections. To maintain a conservative analysis of operation at the study intersections, all in-process developments were assumed to be constructed by year 2028.

Figure A in the technical appendix shows the in-process development trips at the study intersections during the AM and PM peak hours.

### Planned Transportation Infrastructure Revisions

Several planned transportation improvement projects were analyzed under future year traffic conditions. According to the Clark County's *Northeast 179th Street Corridor Improvements* project website[2], the Washington Department of Transportation's (WSDOT) *I-5 – 179th Street Interchange – Interchange Improvements* website[3] project, and the 2025-2030 Transportation Improvement Program (TIP), these projects include the following:

- The I-5 northbound on-ramp will be reconstructed opposite the existing I-5 off-ramp location along NE 179th Street.
- Reconstruct the I-5/NE 179th Street interchange as roundabouts at the ramp terminals. According to WSDOT, the interchange design phase will begin in Spring 2025, construction is expected to begin in 2028 and be completed by 2031.
- NE 10th Avenue, just north of NE 179th Street and opposite the I-5 northbound off-ramp, will be closed and reconstructed at a location opposite NE 15th Avenue along NE 179th Street (2025-2030 TIP Project C). Clark County's *179th Street Circulation and Access Management Plan*, dated July 2023, indicates the intersection of NE 15th Avenue at NE 179th Street will be reconstructed as a roundabout. The anticipated lane configuration of the intersection was referenced from a WSDOT concept design for the NE 179th Street interchange improvement project. Construction is estimated to occur between 2028 and 2030.
- The intersection of NE 179th Street at NE 29th Avenue will be reconstructed as a roundabout (2025-2030 TIP Project G). The initial design will include a single circulating lane but will be sized to be expandable as a multilane roundabout once NE 179th Street is widened to four lanes. The design phase of the project is currently ongoing, and construction is estimated to occur sometime between 2025 and 2028.
- NE 179th Street will be widened to accommodate two eastbound travel lanes, two westbound travel lanes, and a center median/turn lane. This roadway widening project will occur in phases
    - Between NE 10th Avenue and NE 15th Avenue (2025-2030 TIP Project A). The project will be constructed in collaboration with WSDOT as part of the I-5 interchange improvement project. Construction is estimated to occur sometime between 2028 and 2029.
    - Between NE 15th Avenue and NE 26th Avenue (2025-2030 TIP Project F). Construction is estimated to occur sometime between 2028 and 2030.
    - Between NE 29th Avenue and NE 50th Avenue (2025-2030 TIP Project 3). Construction is estimated to occur post-2030.

[2] "Northeast 179th Street Corridor Improvements | Clark County." Clark County, clark.wa.gov/public-works/northeast-179th-street-corridor-improvements.

[3] I-5 - 179th St. Interchange - Interchange Improvements | WSDOT. 17 June 2024, wsdot.wa.gov/construction-planning/search-projects/i-5-179th-st-interchange-interchange-improvements.

It is assumed that the future year 2028 conditions would reflect the aforementioned revisions to the transportation system, excluding the NE 179th Street widening project between NE 29th Avenue and NE 50th Avenue, which is estimated to occur well after development of the proposed dental office project.

Rerouted peak hour traffic volumes associated with the relocation of NE 10th Avenue to a location opposite NE 15th Avenue are shown in Figure B in the technical appendix. Traffic counts for the Interstate 5 northbound ramp intersections are included in the technical appendix for reference. Note that Figure B shows the rerouted 2028 volumes after applying the annual two percent per year growth rates over a three-year period.

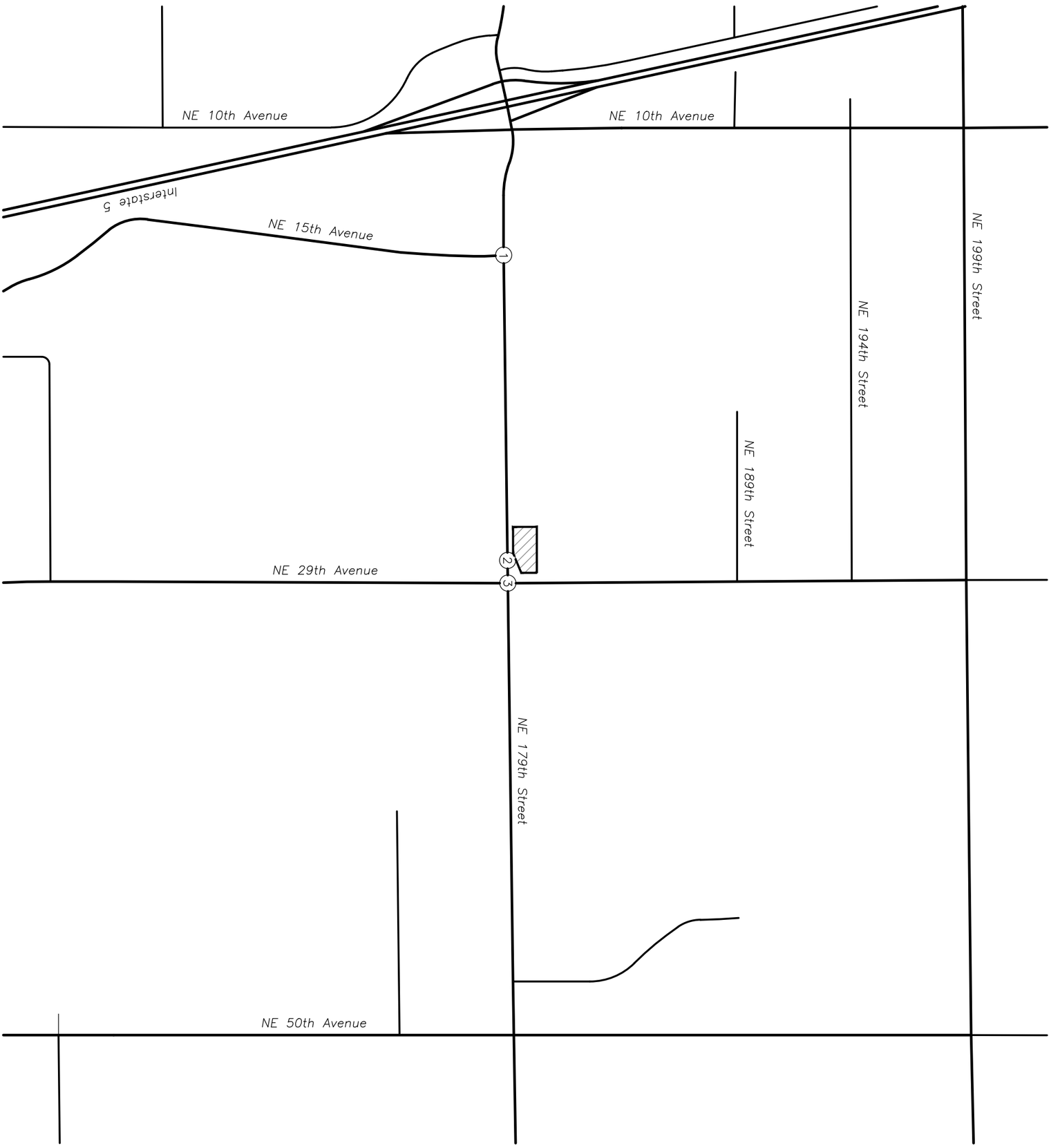
Figure 2 presents the future planned intersection configurations. Figure 6 shows the projected year 2028 background traffic volumes at the study intersections during the AM and PM peak hours.

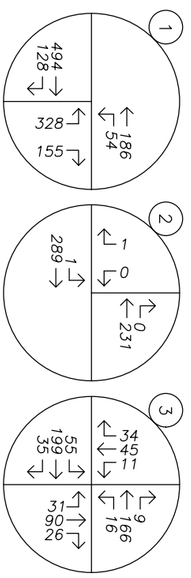
## Buildout Conditions

The net new peak hour trips calculated to be generated by the proposed development, as described earlier within the *Site Trips* section, were added to the projected year 2028 background traffic volumes to obtain the expected 2028 site buildout volumes.

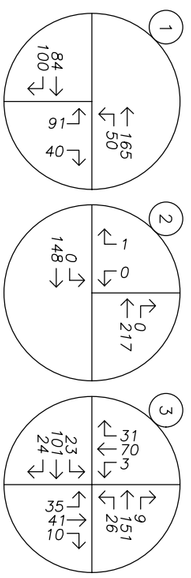
Specific to the proposed site access intersection along NE 179th Street, site trips generated by the existing single-family house and ADU were rerouted and assigned to the proposed access intersection in a manner consistent with the trip generation and distribution methodologies described in the *Site Trips* section. These trips are still assumed to travel to/from the I-5 interchange. Rerouted volumes associated with the restrictions to the site access intersection are depicted in Figure C in the appendix.

Figure 7 show the year 2028 buildout traffic volumes at the study intersections during the AM and PM peak hours.




PM PEAK HOUR




AM PEAK HOUR

No Scale

**TRAFFIC VOLUMES**

Year 2025 Existing Conditions

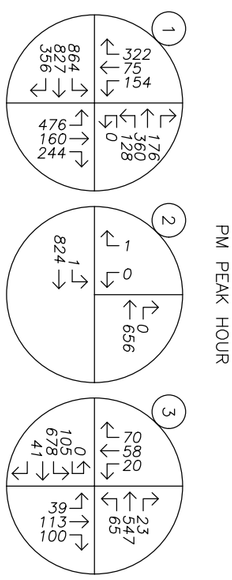
AM & PM Peak Hours

Figure 5

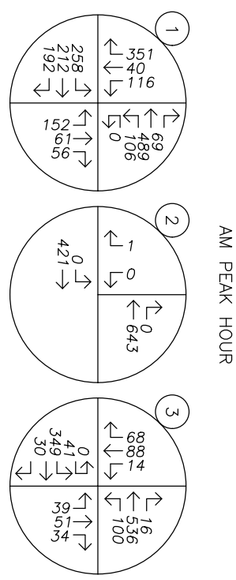
Andersen Dental Office

10/27/2025




PM PEAK HOUR




AM PEAK HOUR

No Scale

**TRAFFIC VOLUMES**

Year 2028 Background Conditions

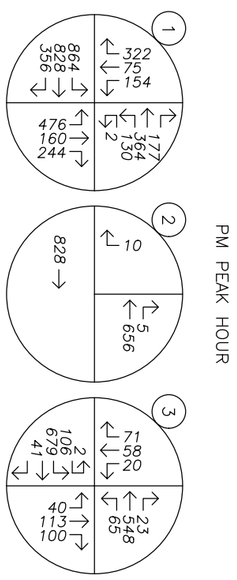
AM & PM Peak Hours

Figure 6

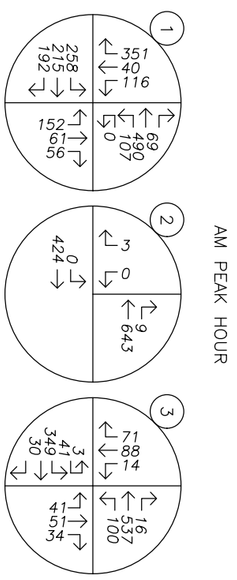
Andersen Dental Office

10/27/2025




PM PEAK HOUR




AM PEAK HOUR

No Scale

**TRAFFIC VOLUMES**

Year 2028 Buildout Conditions

AM & PM Peak Hours

Figure 7

Andersen Dental Office

10/27/2025

# Safety Analysis

## Crash History Review

Using data obtained from the Washington Department of Transportation (WSDOT) Crash Data and Reporting Branch, a review of the most recent available five years of crash history (January 2020 to December 2024) at the study intersections was performed. The crash data was evaluated based on the number of crashes, the type of collisions, the severity of the collisions, and the resulting crash rate for the intersection.

Crash rates provide the ability to compare safety risks at different intersections by accounting for both the number of crashes that have occurred during the study period and the number of vehicles that typically travel through the intersection. Crash rates were calculated using the common assumption that traffic counted during the PM peak hour represents approximately 10 percent of the annual average daily traffic (AADT) at the intersection. Crash rates in excess of 1.00 crashes per million entering vehicles (CMEV) may be indicative of design deficiencies and therefore require a need for further investigation and possible mitigation.

With regard to crash severity, WSDOT classifies crashes in the following categories:

- *No Apparent Injury* (NA);
- *Possible Injury* (P);
- *Suspected Minor Injury* (SM);
- *Suspected Serious Injury* (SS); and
- *Fatality* or *Fatal Injury*.

Table 4 provides a summary of crash types while Table 5 summarizes crash severities and rates for each of the applicable study intersections. Crash data is included in the technical appendix to this report.

**Table 4: Crash Type Summary**

| No. | Intersection | Crash Type | | | | | | | Total |
|---|---|---|---|---|---|---|---|---|---|
| | | Rear End | Turn | Angle | Fixed Object | Side swipe | Ped/ Bike | Other | |
| 1 | NE 179th Street at NE 15th Avenue | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 5 |
| 3 | NE 179th Street at NE 29th Avenue | 1 | 3 | 9 | 0 | 0 | 0 | 0 | 13 |

**Table 5: Crash Severity and Rate Summary**

| No. | Intersection | Crash Severity | | | | | Total Crashes | AADT | Crash Rate |
|---|---|---|---|---|---|---|---|---|---|
| | | NA | P | SM | SS | Unknown | | | |
| 1 | NE 179th Street at NE 15th Avenue | 4 | 1 | 0 | 0 | 0 | 5 | 13,450 | 0.19 |
| 3 | NE 179th Street at NE 29th Avenue | 8 | 4 | 1 | 0 | 0 | 13 | 7,170 | 0.90 |

Per Table 5, the intersection of NE 179th Street at NE 29th Avenue was found to be nearing a crash rate of 1.00 CMEV. All but one of the reported collisions at the intersection were either turning movement or angle type crashes. The intersection is planned for reconstruction as a roundabout sometime between 2025 through 2028. Per WSDOT's Traffic Safety Methods website[4] roundabouts often reduce the overall number of recurring crashes at signalized and stop-controlled intersections by approximately 37 percent. Therefore, the overall crash rate at the intersection is expected to decrease to approximately 0.57 CMEV after this intersection improvement has been implemented. No additional mitigation is necessary or recommended.

No significant trends or crash patterns were identified at any of the other study intersections that are indicative of safety concerns. Accordingly, no crash-related mitigation is necessary or recommended as part of the Andersen Dental Office application.

## Sight Distance Evaluation

### Sight Distance Definitions and Methodologies

Intersection and stopping sight distances were measured at the proposed right turn only site access intersection along NE 179th Street. Sight distances were measured and evaluated at the intersection in accordance with standards established in *A Policy of Geometric Design of Highways and Streets*[5], as well as per Clark County standards.

Intersection sight distance is an operational measure, intended to provide sufficient line of sight along the major-street so that a driver can enter the roadway without impeding the flow of through traffic. For intersection sight distance, the driver's eye is assumed to be 15 feet from the near edge of the nearest travel lane (or traveled way) of the intersecting street and at a height of 3.5 feet above the minor-street approach pavement. The oncoming vehicle driver's eye height along the major-street approach is assumed to be 3.5 feet above the cross-street pavement.

Stopping sight distance is considered the minimum requirement to ensure safe operation of an intersection with respect to sight lines. This distance allows the driver of a vehicle traveling on the major street to react to a turning vehicle or other object in the roadway and, if necessary, come to a complete stop to avoid a collision. To ensure safe operation, the extent of available intersection sight distance must at least equal the minimum required stopping sight distance. For stopping sight distance, the major street approaching driver's eye height is 3.5 feet while an object height of 2 feet above the street pavement is used.

According to Clark County Unified Development Code section 40.350.030.B.8, the minimum recommended intersection sight distance is based on ten times the posted/statutory speed of the roadway. However, alternative standards may be considered provided intersection sight distance cannot reasonably be met. Stopping sight distances were based on Table 40.350.030-7 of the County's code.

[4] Traffic Safety Methods | WSDOT. 1 August 2024, https://wsdot.wa.gov/travel/traffic-safety-methods.

[5] American Association of State Highway and Transportation Officials (AASHTO), *A Policy on Geometric Design of Highways and Streets*, 7th Edition, 2018.

Based on a posted speed of 40 mph along NE 179th Street, the following minimum intersection and stopping sight distances are applicable to the proposed site access intersection:

- Intersection Sight Distance: 400 feet to the east.
- Stopping Sight Distance: 340 feet to the east, considering the major-street downhill westbound approach grade of approximately 6.5% over a 350-foot distance.

Note that only sight distance to the east of the site access intersection is applicable to accommodate sight egressing right-turning vehicles. Left turns at the site access intersection will be restricted, whereby an evaluation of sight distance to the west of the access location is not applicable.

### Sight Distance Measurements

Field measurements were conducted at the proposed site access intersection on Sunday, August 17, 2025. Intersection and stopping sight distances to the east of the site access location were measured to be in excess of 400 feet. Accordingly, no sight distance related mitigation is necessary or recommended.

### Analysis Summary

Based on the sight distance analysis, adequate intersection and stopping sight distances are available at the proposed site access intersection to allow for safe and efficient operation along NE 179th Street. No sight distance related mitigation is necessary or recommended.

# Operational Analysis

## Intersection Capacity Analysis

A capacity and delay analysis were conducted for each of the study intersections per the signalized and unsignalized intersection analysis methodologies in the *Highway Capacity Manual* (HCM)[6]. Intersections are generally evaluated based on the average control delay experienced by vehicles and are assigned a grade according to their operation. The level of service (LOS) of an intersection can range from LOS A, which indicates very little or no delay experienced by vehicles, to LOS F, which indicates a high degree of congestion and delay. The volume-to-capacity (v/c) ratio is a measure that compares the traffic volumes (demand) against the available capacity of an intersection.

### Performance Standards

According to Clark County's Unified Development Code, Title 40.350 – *Transportation and Circulation*, Clark County's performance standards require unsignalized intersections to operate at LOS E or better unless traffic signal warrants are met. If traffic signal warrants are met, the intersection is required to operate at LOS D or better. Individual movements at signalized intersections of regional significance are to operate with average delays of less than two cycle lengths or 240 seconds, whichever is less.

### Delay & Capacity Analysis

The study intersections were analyzed utilizing methodologies and parameters detailed in the *WSDOT Synchro & SimTraffic Protocol* document. Of specific note, the following peak hour factors (PHF) were incorporated in the analysis models:

- For existing year conditions, a PHF of no less than 0.80 was applied to each study intersection.
- For future year conditions, for study intersections where count data recorded a PHF of 0.90 or greater, the PHF was increased to 1.0. In order to better avoid showing a future year scenario with lower delays than under existing conditions, in some cases for study intersections where count data recorded a PHF of 0.89 or less the PHF was increased only to 0.92.

Due to the lane configurations at the signalized study intersection of NE 179th Street at NE 15th Avenue (i.e. non-NEMA phasing), the HCM 7th Edition methodology utilizing Trafficware's Synchro 12 software does not provide capacity outputs for this intersection under existing conditions. Therefore, the reported results at this intersection are based on HCM 2000 methodologies.

For future year 2028 conditions, the following intersections were modeled as roundabouts.

1. NE 179th Street at NE 15th Avenue
2. NE 179th Street at NE 29th Avenue

Sidra software was used to model these intersections in accordance with the *WSDOT Synchro & SimTraffic Protocol* and *WSDOT Sidra Policy Settings* documents.

[6] Transportation Research Board, *Highway Capacity Manual 7th Edition*, 2022.

The LOS, delay, and v/c results of the capacity analysis are shown in Table 6 for the AM and PM peak hours. Detailed calculations as well as tables showing the relationship between delay and LOS are included in the appendix to this report.

**Table 6: Intersection Capacity Analysis Summary**

| Analysis Scenario | AM Peak Hour | | | PM Peak Hour | | |
|---|---|---|---|---|---|---|
| | LOS | Delay (s) | v/c | LOS | Delay (s) | v/c |
| ***1. NE 179th Street at NE 15th Avenue*** | | | | | | |
| 2025 Existing Conditions | A | 6 | 0.28 | B | 13 | 0.72 |
| 2028 Background Conditions[1] | A | 8 | 0.37 | C | 34 | >1.00 |
| 2028 Buildout Conditions[1] | A | 8 | 0.37 | C | 34 | >1.00 |
| ***2. Site Access at NE 179th Street*** | | | | | | |
| 2025 Existing Conditions | A | 10 | <0.01 | A | 10 | <0.01 |
| 2028 Background Conditions | B | 13 | <0.01 | B | 13 | <0.01 |
| 2028 Buildout Conditions | B | 13 | <0.01 | B | 14 | 0.03 |
| ***3. NE 179th Street at NE 29th Avenue*** | | | | | | |
| 2025 Existing Conditions | A | 9 | 0.29 | B | 11 | 0.46 |
| 2028 Background Conditions[1] | A | 7 | 0.65 | A | 9 | 0.80 |
| 2028 Buildout Conditions[1] | A | 7 | 0.66 | A | 9 | 0.80 |

*Table Notes:* [1] *Intersection analyzed as a roundabout.*

Based on the results of the operational analysis, all study intersections are currently operating acceptably per Clark County standards and are projected to continue operating acceptably through the 2028 buildout year of the site. Accordingly, no operational mitigation is necessary or recommended at the study intersections as part of the proposed development application.

## Roadway Capacity Analysis

In accordance with Clark County Code Section 40.350.020(G) – *Level of Service Standards*, a capacity analysis was conducted for roadway segments requested by Clark County staff. The code section requires all collector and arterial roadway segments located within the Vancouver Urban Growth Area, but outside Vancouver city limits, as well as state highways of regional significance to have a maximum v/c ratio no greater than 0.90, measured independently for each direction of travel. Roadway volumes were determined utilizing the year 2028 site buildout volumes during the AM and PM peak hours. Roadway capacities were determined per Table 40.350.020-1 of the Clark County code based on the County roadway designation and classification.

The results of the roadway capacity analysis for the projected year 2028 traffic conditions with buildout of the proposed development are shown in Table 7. The maximum calculated v/c ratio along each roadway segment is reported for both the AM and PM peak hours.

Table 7: Roadway Capacity Analysis Summary

| Roadway | From | To | Classification | Capacity (veh/hr) | Volume/Capacity | |
|---|---|---|---|---|---|---|
| | | | | | AM | PM |
| NE 179th Street | Interstate 5 | NE 15th Avenue | Pr-4cb | 1,800 | 0.552 | **1.138** |
| | NE 15th Avenue | NE 29th Avenue | Pr-4cb | 1,800 | 0.370 | 0.682 |
| | NE 29th Avenue | NE 50th Avenue | Pr-4cb | 1,800 | 0.363 | 0.444 |
| NE 10th Avenue | NE 189th Street | NE 179th Street | M-2cb | 900 | 0.563 | **1.334** |
| NE 15th Avenue | NE 179th Street | NE 174th Street | M-2cb | 900 | 0.377 | **0.978** |
| NE 29th Avenue | NE 189th Street | NE 179th Street | M-4cb | 1,800 | 0.096 | 0.134 |
| | NE 179th Street | NE 159th Street | M-2cb | 900 | 0.242 | 0.281 |

*Table Notes:* ***BOLDED*** *text indicates a roadway capacity in excess of 0.90.*

Based on the results of the roadway capacity analysis, there are several roadway segments that are projected to exceed Clark County's roadway segment v/c ratio threshold under year 2028 conditions. Although these roadway segments are projected to operate with a v/c ratio in excess of 0.90 during the PM peak hour, no mitigation as part of the proposed development application is recommended. These segments and reasons for not needing development specific mitigation include the following:

**NE 179th Street, between Interstate 5 and NE 15th Avenue**

- As part of Clark County's *Northeast 179th Street Corridor Improvements* project, WSDOT's *I-5 – 179th Street Interchange – Interchange Improvements* project, and the 2025-2030 TIP (Project A), roadway improvements are planned along NE 179th Street that are expected to increase the carrying capacity of these street segments near the I-5 interchange.
- This segment of NE 179th Street is projected to operate with v/c ratios above 0.90 under year 2028 background conditions, without impacts from the proposed development. Therefore, the proposed Andersen Dental Office project alone does not cause this roadway segment to exceed the 0.90 v/c ratio threshold.
- The study intersection of NE 179th Street at NE 15th Avenue is projected to operate at no lower than LOS C during the AM and PM peak hours under year 2028 buildout conditions. Therefore, the high roadway v/c ratio is not expected to create operational issues at the study intersection.

**NE 10th Avenue, between NE 189th Street and NE 179th Street**

- This segment of NE 10th Avenue is projected to operate with v/c ratios above 0.90 under year 2028 background conditions, without impacts from the proposed development. Therefore, the proposed Andersen Dental Office project alone does not cause this roadway segment to exceed the 0.90 v/c ratio threshold.
- The study intersection of NE 179th Street at NE 15th Avenue (i.e., the relocated roadway of NE 10th Avenue) is projected to operate at no lower than LOS C during the AM and PM peak hours under year 2028 buildout conditions. Therefore, the high roadway v/c ratio is not expected to create operational issues at the relevant/applicable study intersections.

**NE 15th Avenue, between NE 179th Street and NE 174th Street**

- This segment of NE 15th Avenue is projected to operate with v/c ratios above 0.90 under year 2028 background conditions, without impacts from the proposed development. Therefore, the proposed Andersen Dental Office project alone does not cause this roadway segment to exceed the 0.90 v/c ratio threshold.
- The intersection of NE 179th Street at NE 15th Avenue is projected to operate no less than LOS C during the AM and PM peak hours under year 2028 buildout conditions. Therefore, the high roadway v/c ratio is not expected to create operational issues at the relevant/applicable study intersection.

Additionally, the proposed development will add little to no additional peak hour trips to these roadway aforementioned road segments. Therefore, any increase in peak hour trips will be minor, can be considered as equivalent to daily fluctuations in traffic, and will minimally increase the roadway's single travel direction v/c ratios. Any additional mitigation to increase the vehicle carrying capacity of these roadway segments would be disproportionate to the impacts created by the proposed development.

All other relevant roadway segments are projected to operate acceptably per Clark County standards through the 2028 buildout year of the site. Accordingly, no additional roadway capacity related mitigation is necessary or recommended beyond currently planned improvement projects as part of the proposed development application.

## Circulation Plan

In accordance with Clark County's Unified Development Code section 40.350.030.B.2 *Circulation Plan*, a Circulation Plan was prepared to verify if the County's block length/perimeter standards can be met following buildout of the proposed development, and to evaluate the nearby transportation system/facilities within 600 feet of the site. Per Clark County's code, block lengths shall be between 100 feet to 800 feet, measured between the nearside right-of-way lines between public roadways. The block perimeter shall not exceed 3,200 feet unless an accessway(s) for pedestrian or bicycle circulation is provided where topographic or other physical constraints preclude meeting the perimeter standard.

Note that the in-process Four Creeks South Subdivision, located north and adjacent to the project site, currently plans to construct NE 182nd Street (an east/west roadway) from NE 29th Avenue to the west side of parcel 181223000. This planned street is located approximately 700 feet north of the future NE 179th Street at NE 29th Avenue roundabout.

The proposed development will take access to the transportation system by way of a right-turn only driveway along NE 179th Street. The following existing/planned roadways develop the existing block surrounding the project site:

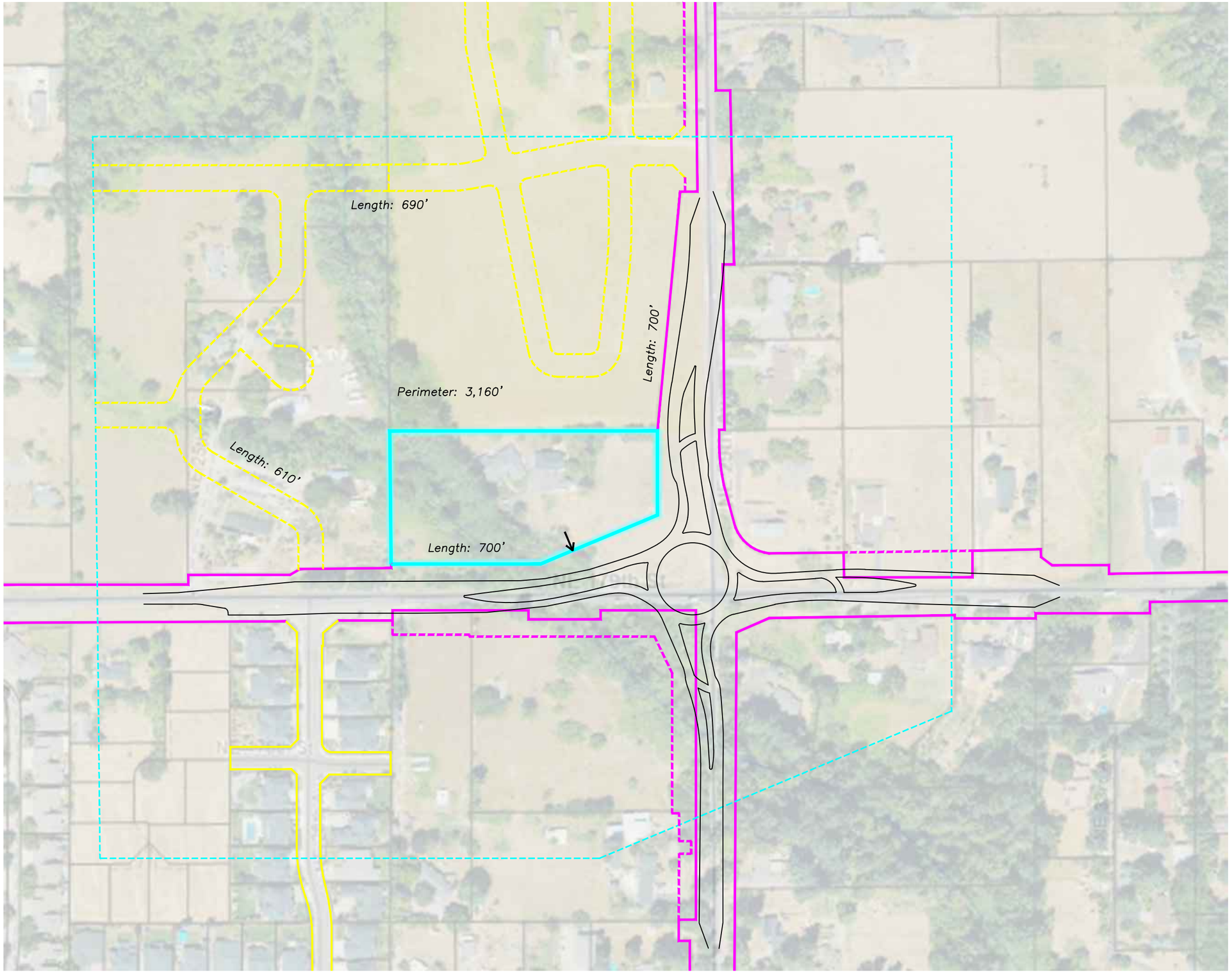
- NE 179th Street (Principal Arterial)
- NE 194th Street (Collector)
- NE 10th Avenue, realigned opposite NE 15th Avenue (Minor Arterial)
- NE 29th Avenue (Minor Arterial)

Upon reviewing the impacted block area, the current block perimeter was measured to be in excess of 3,200 feet. The current block lengths which compose this perimeter vary, but along the site frontages, lengths were measured to be as follows:

- NE 179th Street, between the realigned NE 10th Avenue and NE 29th Avenue: Approximately 3,600 feet.
- NE 29th Avenue, between NE 179th Street and the planned NE 182nd Street: Approximately 700 feet.

Although the block perimeter and length standards are currently not met under the existing street configuration, these standards could be met in the future by extending NE 26th Avenue north of NE 179th Street. Note that this potential street alignment would have to avoid steep slopes associated with a local creek and connect to planned streets within the Four Creeks South Subdivision. The potential block surrounding the project site could have block lengths ranging from approximately 600 feet to approximately 700 feet. The block perimeter would be approximately 3,160 feet. However, such a revision to the transportation system is contingent on the redevelopment of other properties near the project site that are not a part of this development application or under the control of the applicant.

Based on the above analysis, no circulation related mitigation is necessary or recommended as part of the proposed development. A circulation plan detailing the nearby transportation system to the project site is shown on the following page. A road modification requesting a variance to this cross-circulation issue was prepared and submitted as part of the development application under a separate memorandum.




LEGEND

- PROJECT SITE/ PROPOSED LOTS
- PROJECT BOUNDARY AREA (600')
- LOCAL ROADWAY
- PLANNED/POTENTIAL STREET CONFIGURATION
- ARTERIAL ROADWAY
- SITE ACCESS

0' 100' 200'

No Scale

Figure 8

Andersen Dental Office

10/27/2025

**CIRCULATION PLAN**

lancaster mobley

# Conclusions

The proposed Andersen Dental Office project will include the development of a dental office use on a single property addressed at 2808 NE 179th Street in unincorporated Clark County, Washington. The proposal will include converting an existing single-family house into an approximately 3,492 square foot dental office. One other existing two-story residence (i.e., accessory dwelling unit, or ADU) will remain. Access to the site will be provided via one right-in/right-out driveway along NE 179th Street.

The trip generation calculations show that the proposed development is projected to generate an additional 11 AM peak hour trips, 13 PM peak hour trips, and 118 average weekday trips.

The intersection of NE 179th Street at NE 29th Avenue was found to be nearing a crash rate of 1.00 CMEV. The intersection is planned for reconstruction as a roundabout sometime between 2025 through 2028. According to WSDOT, roundabouts often reduce the overall number of recurring crashes at signalized and stop-controlled intersections. Therefore, the overall crash rate at the intersection is expected to decrease well below the 1.00 CMEV threshold after this intersection improvement has been implemented. No additional mitigation is necessary or recommended.

No significant trends or crash patterns were identified at any of the other study intersections that are indicative of safety concerns. Accordingly, no crash-related mitigation is necessary or recommended as part of the Andersen Dental Office application.

Adequate intersection and stopping sight distances are available at the proposed site access intersection to allow for safe and efficient operation along NE 179th Street. No sight distance related mitigation is necessary or recommended.

All study intersections are currently operating acceptably per Clark County standards and are projected to continue operating acceptably through the 2028 buildout year of the site. Accordingly, no operational mitigation is necessary or recommended at the study intersections as part of the proposed development application.

Several roadway segments within the study area are projected to exceed Clark County's roadway v/c ratio threshold under year 2028 conditions. Although these roadway segments are projected to operate with v/c ratios in excess of 0.90 during the PM peak hour, no mitigation as part of the proposed development application is recommended for several reasons including, but not limited to, the following:

- Relevant study intersections along the higher demand roadway segments are projected to operate within acceptable Clark County LOS standards. Therefore, the increased v/c ratio on applicable roadway segments are not expected to create significant impacts to the operation or safety of the nearby transportation system.
- For relevant roadway segments, the high v/c ratios occur under year 2028 background conditions, without impacts from the proposed development. Therefore, the Andersen Dental Office project alone does not cause these roadway segment to exceed the 0.90 v/c ratio threshold.

- For some roadway segments, the proposed development will add little to no additional peak hour trips to these roadway segments. In these cases, any increase in peak hour trips will be minor, can be considered as equivalent to daily fluctuations in traffic, and will minimally increase the roadway's single travel direction v/c ratios. Any additional mitigation to increase the vehicle carrying capacity of these roadway segments would be disproportionate to the impacts created by the proposed development.

All other relevant roadway segments are projected to operate acceptably per Clark County standards through the 2028 buildout year of the site during both the AM and PM peak hours. Accordingly, no roadway capacity related mitigation is necessary or recommended at these roadway segments as part of the proposed development application.

Block length and perimeter standards are currently not met for the existing block surrounding the project site. These standards can be met in the future provided other properties near the project site are redeveloped as higher density land uses. A road modification requesting a variance to this cross-circulation issue was prepared and submitted as part of the development application under a separate memorandum Assuming the road modification request is granted, no further mitigation or improvements to the transportation system with respect to cross-circulation standards are necessary or recommended as part of the proposed development application.

# Appendix A – Scoping Materials

Scoping Memorandum

Clark County Response

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Portland, OR 97205
503.248.0313
lancastermobley.com

# Memorandum

To: **Craig Kathol, Clark County**
**David Jardin, Clark County**
**Jason Lugo, WSDOT**

From: **Daniel Stumpf, PE**

Date: **June 26, 2025**

Subject: **Andersen Dental Office**
**Scoping Memorandum**

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## Introduction

This memorandum details a proposed scope of work for a Transportation Impact Study (TIS) related to the *Andersen Dental Office* project. The project site is located on a single property (assessor parcel 181326000) addressed at 2808 NE 179th Street in unincorporated Clark County, Washington. The proposal will include converting an existing single-family house into an approximately 3,492 square foot dental office. One other existing two-story residence (i.e., accessory dwelling unit, or ADU) will remain. Access to the site will be provided via one right-in/right-out driveway along NE 179th Street.

## Trip Generation

To estimate the number of trips that will be generated by the proposed development, trip rates from the *Trip Generation Manual, 11th Edition*.[1] were used. Data from the following land use codes were used to estimate site trip generation under existing and proposed conditions:

- 210, *Single-Family Detached Housing*, based on the number of dwelling units.
- 720, *Medical-Dental Office Building*, based on the square footage of the gross building floor area.

As a proxy to estimate site trip generation of the existing ADU that will remain post-development of the dental office, trip generation data from ITE code 210 was used.

The trip generation calculations show that the proposed development is projected to generate an additional 11 AM peak hour trips, 13 PM peak hour trips, and 118 average weekday trips. The trip generation estimates are summarized in Table 1. Detailed trip generation calculations are included as an attachment to this memorandum.

[1] Institute of Transportation Engineers (ITE), *Trip Generation Manual*, 11th Edition, 2021.

Table 1: Trip Generation Summary

| ITE Land Use Code | | Size | AM Peak Hour | | | PM Peak Hour | | | Weekday Total |
|---|---|---|---|---|---|---|---|---|---|
| | | | Enter | Exit | Total | Enter | Exit | Total | |
| ***Existing Conditions*** | | | | | | | | | |
| 210 | Single-Family Detached Housing | 2 units | 0 | 1 | 1 | 1 | 1 | 2 | 18 |
| ***Proposed Conditions*** | | | | | | | | | |
| 210 | Single-Family Detached Housing | 1 unit | 0 | 1 | 1 | 1 | 0 | 1 | 10 |
| 720 | Medical-Dental Office Building | 3,492 SF | 9 | 2 | 11 | 4 | 10 | 14 | 126 |
| Total Trips | | | 9 | 3 | 12 | 5 | 10 | 15 | 136 |
| ***Net Change in Site Trip Generation*** | | | | | | | | | |
| **Net New Trips** | | | **9** | **2** | **11** | **4** | **9** | **13** | **118** |

## Trip Distribution

The trip distribution used for the proposed development was referenced from the *NE 29th Avenue Subdivision Transportation Impact Analysis* (TIA), dated October 2022, where the subdivision is located adjacent and to the north of the project site. According to the TIA, the trip distribution was derived using the Southwest Washington Regional Transportation Council (RTC) transportation system model, where a select zone analysis was conducted for the nearby Transportation Analysis Zone (TAZ) #1982 (formerly #547).

Due to the left-turning movement restrictions at the proposed site access intersection, trips traveling to/from the project site may need to utilize alternative travel routes relative to those presented in the *NE 29th Avenue Subdivision TIA*. Assuming the planned NE 179th Street corridor improvement projects are in place (i.e., the re-alignment of NE 10th Avenue to a location opposite of NE 15th Avenue, and roundabouts constructed at the NE 15th Avenue and NE 29th Avenue intersections along NE 179th Street), the following trip distribution was assumed:

- Approximately 4% of site trips will travel to/from the west along NE 199th Street, west of NE 29th Avenue.
    - Site ingress trips will utilize NE 119th Street, and NE 29th Avenue.
    - Site egress trips will utilize NE 10th Avenue.
- Approximately 9% of site trips will travel to the north along NE 10th Avenue and from the north along NE 29th Avenue, at locations north of NE 119th Street.
- Approximately 5% of site trips will travel to/from the east along NE 199th Street, east of NE 29th Avenue.
    - Site ingress trips will utilize NE 29th Avenue.

    - Site egress trips will utilize NE 10th Avenue.
- Approximately 6% of site trips will travel to/from the west along NE 179th Street, west of Interstate 5 (I-5). Site ingress trips are assumed to conduct a U-turn at the intersection of NE 179th Street at NE 29th Avenue.
- Approximately 10% of site trips will travel to/from the north along I-5, north of NE 179th Street. Site ingress trips are assumed to conduct a U-turn at the intersection of NE 179th Street at NE 29th Avenue.
- Approximately 21% of site trips will travel to/from the south along I-5, south of NE 179th Street. Site ingress trips are assumed to conduct a U-turn at the intersection of NE 179th Street at NE 29th Avenue.
- Approximately 3% of site trips will travel to/from the south along NE 15th Avenue, south of NE 179th Street. Site ingress trips are assumed to conduct a U-turn at the intersection of NE 179th Street at NE 29th Avenue.
- Approximately 27% of site trips will travel to the south along NE 15th Avenue and from the south along NE 29th Avenue, at locations south of NE 179th Street.
- Approximately 13% of site trips will travel to/from the east along NE 179th Street, east of NE 50th Avenue. Site egress trips are assumed to conduct a U-turn at the intersection of NE 179th Street at NE 15th Avenue.
- Approximately 2% of site trips will travel to/from the south along NE 50th Avenue, south of NE 179th Street. Site egress trips are assumed to conduct a U-turn at the intersection of NE 179th Street at NE 15th Avenue.

Figures A and B in the attachments depicts site trip assignment at the nearby vicinity intersections during the AM and PM peak hours, respectively.

## Proposed Study Intersections

According to the project's Pre-Application Final Report:

> *Any development generating 10 or more peak hour trips is required to complete a transportation impact study. A general outline is provided in the concurrency administrative manual. A traffic impact study shall analyze impacts according to the following:*
>
> *- 50 or less new peak hour trips; one mile from site*
>
> *- 51-250 new peak hour trips; two miles from the site*
>
> *- 251 or more new peak hour trips; three miles from the site*

Based on the projected trips generated, the preliminary trip distribution, and the anticipated impacts to the transportation system, the following study intersections are suggested for analysis (refer to Figures A and B for the numbering convention of listed intersections):

7. NE 179th Street at NE 15th Avenue – 5 AM and 10 PM peak hour trip impact.
8. Site Access at NE 179th Street – 14 AM and 16 PM peak hour trip impact.
9. NE 179th Street at NE 29th Avenue – 9 AM and 6 PM peak hour trip impact.

While considered higher classification intersections within a one-mile radius of the site, several regionally significant intersections are recommended for removal from analysis. These intersections, with explanations for removal from study, are provided below.

**Clark County**

The following intersections will not be impacted by 5 or more peak hour trips. Therefore, no mitigation can be required as part of the application per Clark County Unified Development Code 40.350.020.G.1.c., not-with-standing safety improvements which may be necessary per section 40.350.030(B)(6).

1. NE 199th Street at NE 29th Avenue – 3 AM and 2 PM peak hour trip impact.
2. NE 194th Street at NE 29th Avenue – 3 AM and 2 PM peak hour trip impact.
3. NE 189th Street at NE 29th Avenue – 3 AM and 2 PM peak hour trip impact.
4. NE 189th Street at NE 10th Avenue – 0 AM and 1 PM peak hour trip impact.
10. NE 179th Street at NE 47th Avenue – 1 AM and 2 PM peak hour trip impact.
11. NE 179th Street at NE 50th Avenue – 1 AM and 2 PM peak hour trip impact.
12. NE 159th Street at NE 29th Avenue – 2 AM and 1 PM peak hour trip impact.

**WSDOT**

The two intersections listed below operate under the jurisdiction of WSDOT. WSDOT typically requires analysis of intersections impacted by 10 or more peak hour trips, where these two intersections will be impacted by less than 10 AM and PM peak hour trips.

5. Interstate 5 (I-5) Southbound Ramps at NE 179th Street – 3 AM and PM peak hour trip impact.
6. I-5 Northbound Ramps at NE 179th Street – 4 AM and 5 PM peak hour trip impact.

## Other Considerations

**In-Process Development**

Please provide in-process development data which should be incorporated in the TIS. If available, the traffic studies for these projects are requested.

Lancaster Mobley currently has access to data for the following projects (please let me know if any of the following can be removed):

- South Ridge Central Apartments (PSR-2023-00158)
- Mountain View Ridge PUD (PLD-2023-00053)
- Skyview Station Shopping Center (approximately 58% constructed and occupied, located at/near 14007 NE 10th Avenue)
- Skyview Station East (PLD-2018-00034)
- Mill Creek Terrace (PLD-2024-00015)
- Mill Creek Meadows (PLD-2024-00092)
- Washington State University Master Plan (located at/near 14204 NE Salmon Creek Avenue)

- Mountain Estates Cluster Subdivision (PLD-2017-00046)
- Whipple Creek Village Subdivision (approximately 95% constructed and occupied, located at/near 17603 NE 17th Avenue)
- Three Creeks North Phase 1 & 2 (located at/near 18701 NE 10th Avenue)
- 179th Street Commercial Center Phase 1 & 2 (located at/near 17714 NE 14th Avenue)
- Woodbrook Subdivision (aka Mill Creek PUD, approximately 20% constructed and occupied, located at/near 4519 NE 183rd Street)
- M&H Subdivision (located at/near 3801 NE 174th Street)
- North Haven Subdivision (approximately 75% constructed and occupied, located at/near 807 NW 179th Street)
- Trails at Whipple Creek Subdivision (approximately 20% constructed and occupied, located at/near 1214 NW 166th Way)
- DSHS NE 50th Clark County Behavioral Health (PSR-2021-00183)
- Majestic Industrial Centre (located at/near 15017 NE 10th Avenue)
- Martin's Meadow Subdivision (approximately 10% constructed and occupied, located at/near 1114 NW 150th Street)
- NE 29th Avenue Subdivision (located at/near 18216 NE 29th Avenue)
- Viers Subdivision (assessor parcel 181682000)
- The Highlands at Whipple Creek (located at/near 818 NW 173re Circle)
- Maletis Distribution Center (located at/near 16101 NE 10th Avenue)
- Mt Vista Logistics (PSR-2023-00008)

**Road Modifications**

Could you provide input regarding what, if any, road modifications may be necessary as part of this development application. For context, the proposal will repurpose an existing single-family house as a dental office, construct surface parking for patients/employees, and restrict the existing access driveway along NE 179th Street to right-turns only.

Are any of the following road modifications necessary in order to gain County approval for this application:

- Addressing cross-circulation standards (i.e., block length and perimeter).
- Access/corner clearance spacing with the roundabout intersection of NE 179th Street at NE 29th Avenue.
- Access to NE 179th Street versus NE 29th Street, where NE 179th Street is a higher classified roadway.
- Medians and Channelization policy, where no access to NE 29th Street is proposed and the NE 179th Street corridor improvement plan intends to construct raised medians along NE 179th Street.

- Defer project site street frontage improvements, given the future planned roundabout at NE 179th Street at NE 29th Avenue and widening along NE 179th Street may include the construction of street frontage improvements.

Are there any other road modifications necessary for this application?

For reference, the site plan submitted as part of the pre-application package, with additional comments included, is attached to this scoping memorandum.

## Conclusions

Based on the projected trips generated, the preliminary trip distribution, and the anticipated impacts to the transportation system, the following study intersections are suggested for analysis:

7. NE 179th Street at NE 15th Avenue
8. Site Access at NE 179th Street
9. NE 179th Street at NE 29th Avenue.

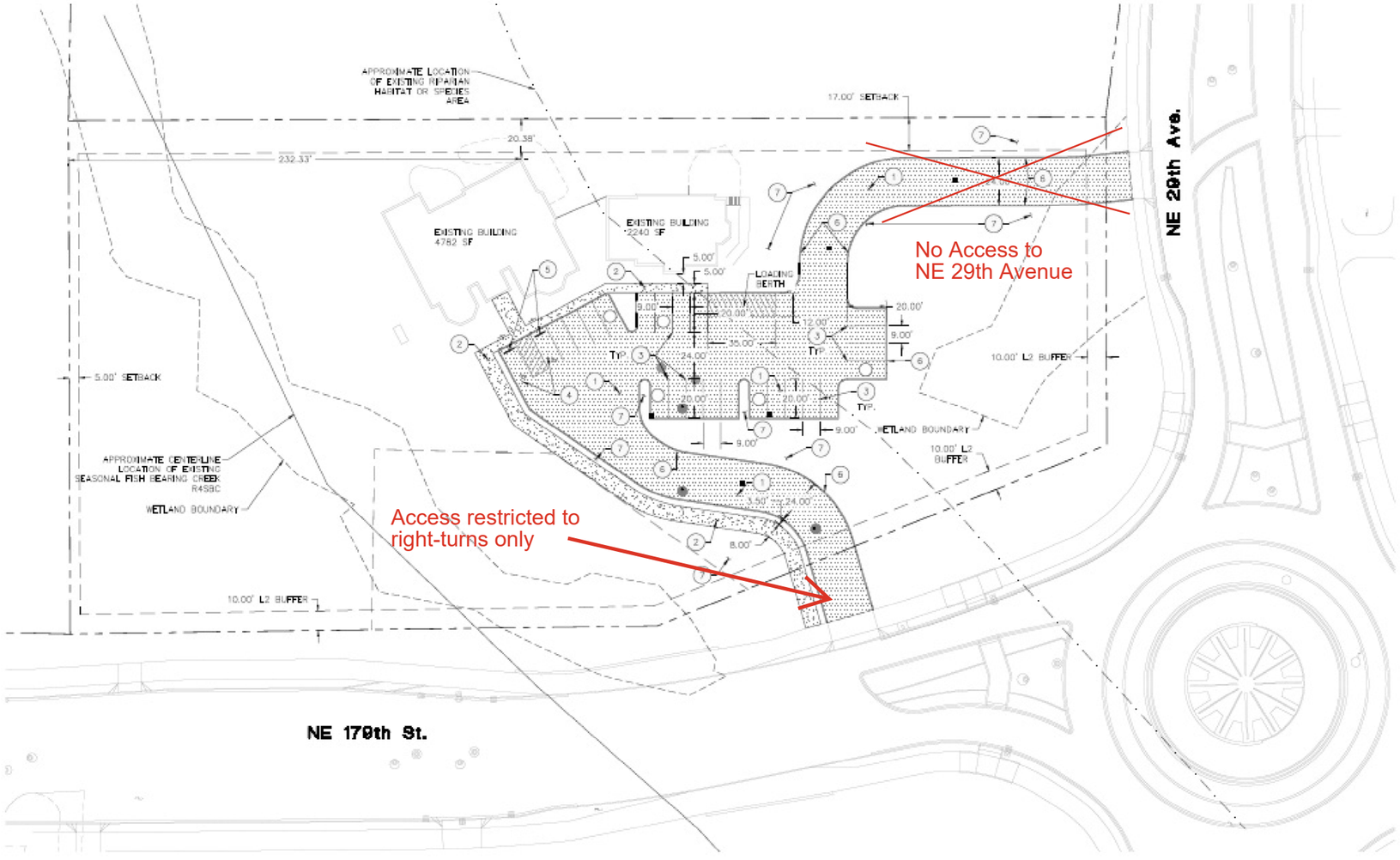
Please confirm if the above study area is sufficient for the TIS. Also, please confirm the following:

- In addition to those listed above, are there any other in-process development projects that should be incorporated in the TIS? If yes, could their traffic studies be provided?
- Are there any road modifications necessary for this project in order to gain County approval of the proposed development application?

If you have any questions regarding the preparation of this scoping memorandum, please don't hesitate to contact us.

## Attachments

- Pre-Application Site Plan with Comments
- Site Trip Assignment (Figures A and B)
- Trip Generation Calculations
- Trip Distribution Figure from the NE 29th Avenue Subdivision TIA




## CONSTRUCTION NOTES

1. INSTALL ASPHALT SURFACE
2. INSTALL CONCRETE SIDEWALK
3. INSTALL STRIPING
4. INSTALL ADA PARKING
5. INSTALL WHEELSTOP
6. INSTALL CURB
7. AREA TO BE LANDSCAPED

## LEGEND

PROPERTY LINE

CONCRETE SIDEWALK SURFACING

ASPHALT SURFACING

NOTE: EXISTING CONDITIONS ARE BASED ON GIS, NOT FIELD SURVEY, AND ARE PRELIMINARY FOR THIS SUBMITTAL

NOTE: PROPOSED OFFSITE CONDITIONS ARE BASED ON PRELIMINARY DESIGNS BY OTHERS, NOT FIELD SURVEY, AND ARE PRELIMINARY FOR THIS SUBMITTAL

NORTH

GRAPHIC SCALE

( IN FEET )
1 inch = 60 feet

04/18/25 – PRE APP

PRELIMINARY

AAI alpha associates, inc.
ENGINEERING
4875 SW Griffith Drive | Suite 100 | Beaverton, OR | 97005
503.627.0500 tel | 503.627.0505 fax | www.alpha-eng.com

ANDERSEN DENTAL

3808 NE 170TH ST
RIDGEFIELD, WA.

SHEET TITLE

HARDSCAPE PLAN

DATE 03/05/2025
DRAWN: AMW
CHECKED: NWS
REVISIONS:

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SHEET NUMBER

C1.0

JOB NUMBER: A25032.10

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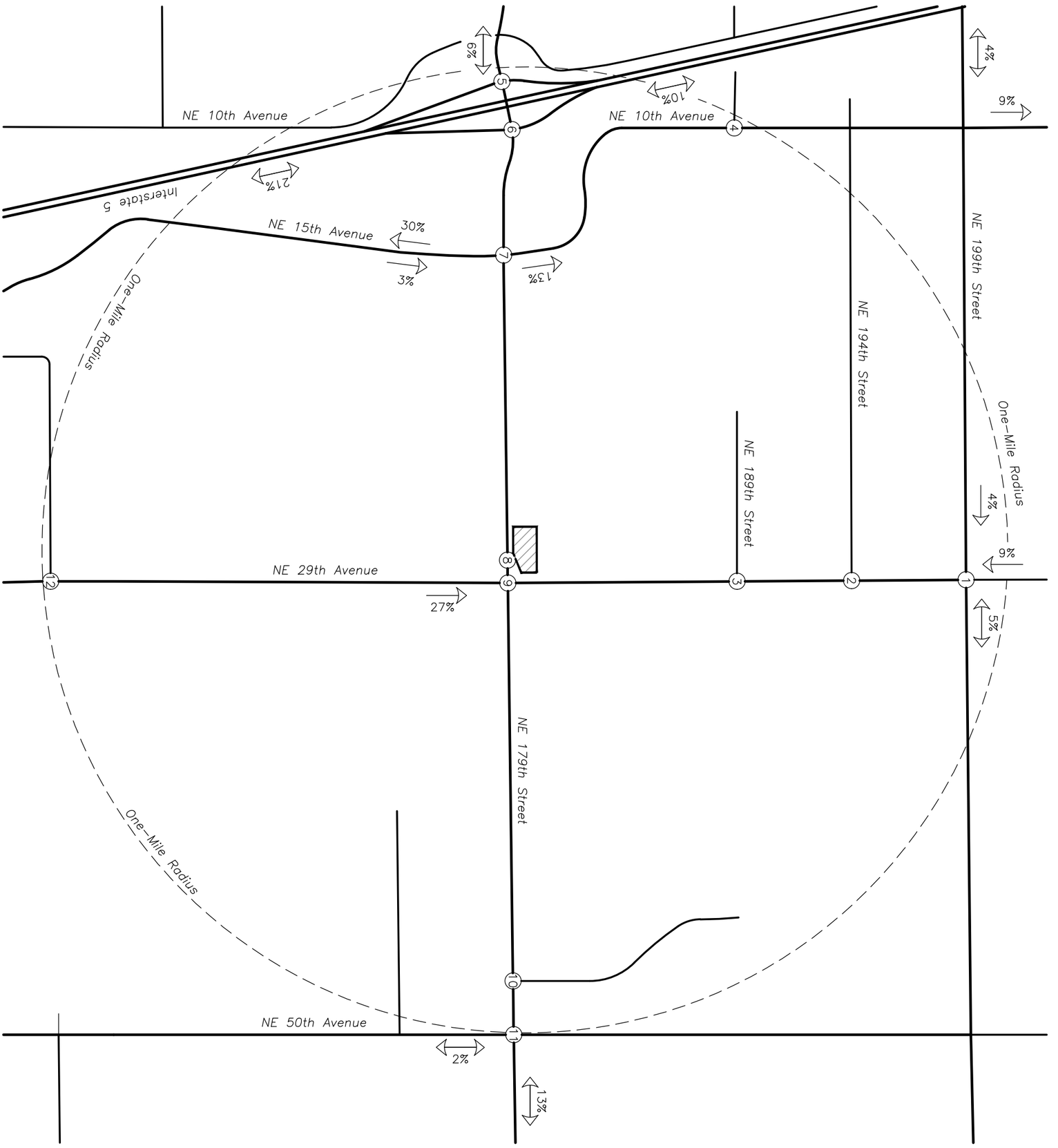
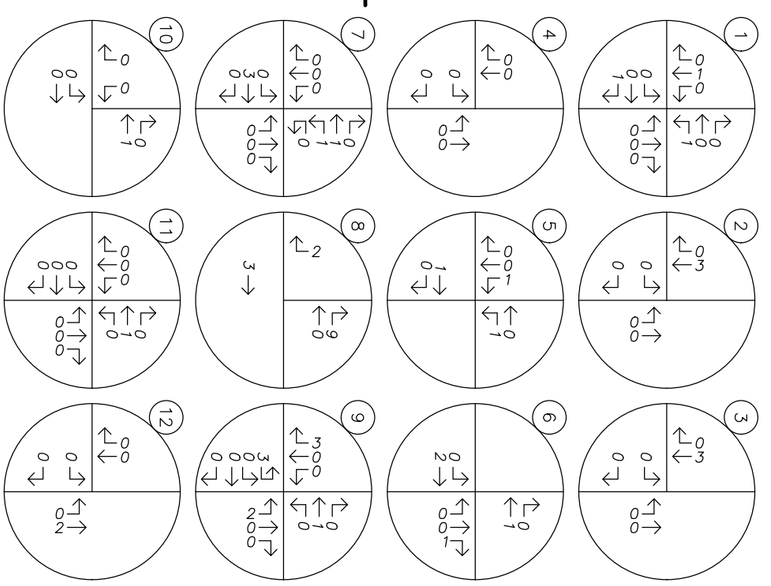


LEGEND

XX% PERCENT OF PROJECT TRIPS

| NET NEW TRIP GENERATION | | | |
|---|---|---|---|
| AM | IN | OUT | TOTAL |
| | 9 | 2 | 11 |

No Scale

**SITE TRIP DISTRIBUTION & ASSIGNMENT**

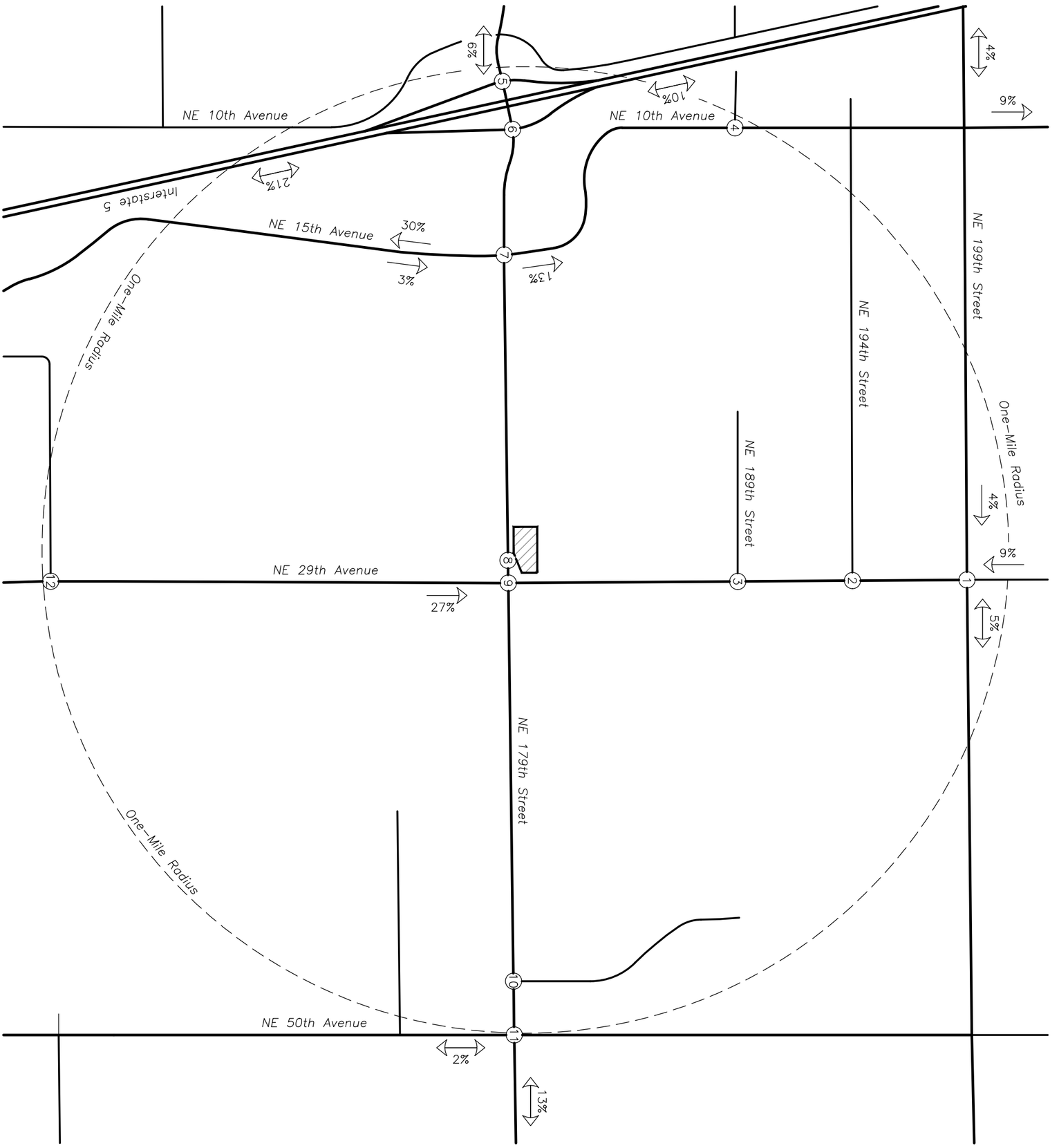
Proposed Development Plan - Site Trips

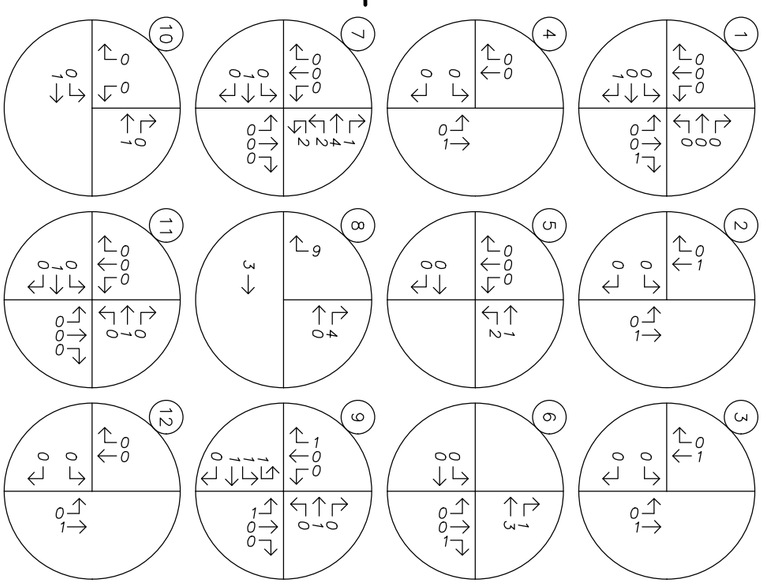
AM Peak Hour

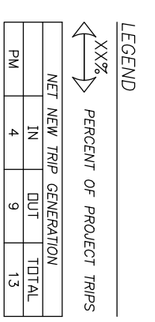
Figure A

Four Creeks North

6/26/2025






No Scale

**SITE TRIP DISTRIBUTION & ASSIGNMENT**

Proposed Development Plan - Site Trips

PM Peak Hour

Figure B

Four Creeks North

6/26/2025

TRIP GENERATION CALCULATIONS
Source: Trip Generation Manual, 11th Edition
Existing Conditions

| | |
|---|---|
| *Land Use:* | Single-Family Detached Housing |
| *Land Use Code:* | 210 |
| *Land Use Subcategory:* | All Sites |
| *Setting/Location* | General Urban/Suburban |
| *Variable:* | Dwelling Units |
| *Trip Type:* | Vehicle |
| *Formula Type:* | Rate |
| *Variable Quantity:* | 2 |

WARNING: Variable Quantity is less than Minimum Survey Size for Peak Hours

## AM PEAK HOUR

*Trip Rate:* 0.7

| | Enter | Exit | Total |
|---|---|---|---|
| Directional Split | 25% | 75% | |
| Trip Ends | 0 | 1 | 1 |

## PM PEAK HOUR

*Trip Rate:* 0.94

| | Enter | Exit | Total |
|---|---|---|---|
| Directional Split | 63% | 37% | |
| Trip Ends | 1 | 1 | 2 |

## WEEKDAY

*Trip Rate:* 9.43

| | Enter | Exit | Total |
|---|---|---|---|
| Directional Split | 50% | 50% | |
| Trip Ends | 9 | 9 | 18 |

## SATURDAY

*Trip Rate:* 9.48

| | Enter | Exit | Total |
|---|---|---|---|
| Directional Split | 50% | 50% | |
| Trip Ends | 9 | 9 | 18 |

Source: Trip Generation Manual, 11th Edition

TRIP GENERATION CALCULATIONS
Source: Trip Generation Manual, 11th Edition
Proposed Conditions

| | |
|---|---|
| *Land Use:* | Single-Family Detached Housing |
| *Land Use Code:* | 210 |
| *Land Use Subcategory:* | All Sites |
| *Setting/Location* | General Urban/Suburban |
| *Variable:* | Dwelling Units |
| *Trip Type:* | Vehicle |
| *Formula Type:* | Rate |
| *Variable Quantity:* | 1 |

WARNING: Variable Quantity is less than Minimum Survey Size for Peak Hours

## AM PEAK HOUR

*Trip Rate:* 0.7

| | Enter | Exit | Total |
|---|---|---|---|
| Directional Split | 25% | 75% | |
| Trip Ends | 0 | 1 | 1 |

## PM PEAK HOUR

*Trip Rate:* 0.94

| | Enter | Exit | Total |
|---|---|---|---|
| Directional Split | 63% | 37% | |
| Trip Ends | 1 | 0 | 1 |

## WEEKDAY

*Trip Rate:* 9.43

| | Enter | Exit | Total |
|---|---|---|---|
| Directional Split | 50% | 50% | |
| Trip Ends | 5 | 5 | 10 |

## SATURDAY

*Trip Rate:* 9.48

| | Enter | Exit | Total |
|---|---|---|---|
| Directional Split | 50% | 50% | |
| Trip Ends | 5 | 5 | 10 |

Source: Trip Generation Manual, 11th Edition

TRIP GENERATION CALCULATIONS
Source: Trip Generation Manual, 11th Edition

| | |
|---|---|
| *Land Use:* | Medical-Dental Office Building |
| *Land Use Code:* | 720 |
| *Land Use Subcategory:* | All Sites |
| *Setting/Location* | General Urban/Suburban |
| *Variable:* | 1000 SF GFA |
| *Trip Type:* | Vehicle |
| *Formula Type:* | Rate |
| *Variable Quantity:* | 3.492 |

## AM PEAK HOUR

*Trip Rate:* 3.1

| | Enter | Exit | Total |
|---|---|---|---|
| Directional Split | 79% | 21% | |
| Trip Ends | 9 | 2 | 11 |

## PM PEAK HOUR

*Trip Rate:* 3.93

| | Enter | Exit | Total |
|---|---|---|---|
| Directional Split | 30% | 70% | |
| Trip Ends | 4 | 10 | 14 |

## WEEKDAY

*Trip Rate:* 36

| | Enter | Exit | Total |
|---|---|---|---|
| Directional Split | 50% | 50% | |
| Trip Ends | 63 | 63 | 126 |

## SATURDAY

*Trip Rate:* 13.78

| | Enter | Exit | Total |
|---|---|---|---|
| Directional Split | 50% | 50% | |
| Trip Ends | 24 | 24 | 48 |

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Daniel Stumpf <daniel@lancastermobley.com>

# Andersen Dental Office (PAC-2025-00109) - Traffic Study Scoping

**Daniel Stumpf** <daniel@lancastermobley.com> Thu, Jun 26, 2025 at 3:00 PM
To: Craig Kathol <Craig.Kathol@clark.wa.gov>, "Lugo, Jason" <jason.lugo@wsdot.wa.gov>
Cc: "Jardin, David" <david.jardin@clark.wa.gov>

Good afternoon Craig and Jason,

I'm working on a traffic study for the proposed Andersen Dental Office (PAC-2025-00109), located at 2808 NE 179th Street (assessor parcel 181326000). The project will include converting an existing single-family house into an approximately 3,492 square foot dental office. One other existing two-story residence (i.e., accessory dwelling unit, or ADU) will remain. Access to the site will be provided via one right-in/right-out driveway along NE 179th Street.

I was wondering if you could provide input on the suggested study area and transportation analyses needed for this application.

Attached is a scoping memo for reference which includes a site plan (with comments), trip gen calcs, a referenced distribution figure from the NE 29th Avenue Subdivision traffic study, and trip assignment figures for the AM and PM peak hours. To summarize main points:

- Please confirm if the following study intersections is acceptable:
  - NE 179th Street at NE 15th Avenue
  - Site Access at NE 179th Street
  - NE 179th Street at NE 29th Avenue
- Are there any other nearby in-process development projects that should be included in the study that are not listed in the scoping memo? If yes, can their traffic studies be sent my way?
- I wasn't certain if this application would need to prepare any road modifications in order to gain approval by the County. Given the attached site plan (with comments included) and the description of the proposed development, are any road modifications listed in the scoping memo necessary?

Thanks, and let me know if you have any questions or need additional info.

Daniel

--
Daniel Stumpf, PE
**Senior Transportation Engineer**
lancaster mobley
300 W 15th Street, Suite 206 | Vancouver, WA 98660
Office: 360-284-2660 ext. 330
Website: lancastermobley.com
Offices: Portland, OR | Bend, OR | Vancouver, WA

**Andersen Dental Office Scoping Memo_062625.pdf**
2589K

lancaster mobley

Daniel Stumpf <daniel@lancastermobley.com>

# Andersen Dental Office (PAC-2025-00109) - Traffic Study Scoping

**Craig Kathol** <Craig.Kathol@clark.wa.gov> Mon, Jul 21, 2025 at 12:48 PM
To: Daniel Stumpf <daniel@lancastermobley.com>, "Lugo, Jason" <jason.lugo@wsdot.wa.gov>
Cc: David Jardin <David.Jardin@clark.wa.gov>

Good afternoon Daniel,

My apologies for getting to this so late. There were an unusually large number of traffic scoping memo's for me to review late June/early July so I appreciate your patience.

Concurrency has reviewed your scoping memo for Anderson Dental Office and generally agree with your findings. Please retain the following intersections for analysis:

NE179th Street/NE 15th Avenue

Site Access at NE 179th Street

NE 179th Street/NE 29th Avenue

For in-process projects, there aren't any new developments for me to share with you and all of the projects that you included in your memo are still in-process. Please retain them in your final TIA.

In reference to your question about Road Mods, the list of potential road modifications you listed in your memo seem appropriate. I cannot say for sure if they will all be necessary for this application, that would be a question for the Development Review Engineer. However, I do not believe there would be a need for any additional road modifications other than what you mentioned in the memo.

Please let me know if you have any additional questions.

Thank you,

**Craig Kathol, E.I.T.**
Transportation Concurrency Engineer
Clark County Public Works

Cell: 360.553.8247

**From:** Daniel Stumpf <daniel@lancastermobley.com>
**Sent:** Thursday, July 17, 2025 11:58 AM
**To:** Craig Kathol <Craig.Kathol@clark.wa.gov>; Lugo, Jason <jason.lugo@wsdot.wa.gov>
**Cc:** David Jardin <David.Jardin@clark.wa.gov>
**Subject:** Re: Andersen Dental Office (PAC-2025-00109) - Traffic Study Scoping

**EXTERNAL:** This email originated from outside of Clark County. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hi Craig,

My client has been asking me for a status update on this traffic study scoping request. When you have the opportunity, could you give me a quick update on when you expect to have your review/response ready?

Thanks,

Daniel

On Thu, Jun 26, 2025 at 3:00 PM Daniel Stumpf <daniel@lancastermobley.com> wrote:

> Good afternoon Craig and Jason,
>
> I'm working on a traffic study for the proposed Andersen Dental Office (PAC-2025-00109), located at 2808 NE 179th Street (assessor parcel 181326000). The project will include converting an existing single-family house into an approximately 3,492 square foot dental office. One other existing two-story residence (i.e., accessory dwelling unit, or ADU) will remain. Access to the site will be provided via one right-in/right-out driveway along NE 179th Street.
>
> I was wondering if you could provide input on the suggested study area and transportation analyses needed for this application.
>
> Attached is a scoping memo for reference which includes a site plan (with comments), trip gen calcs, a referenced distribution figure from the NE 29th Avenue Subdivision traffic study, and trip assignment figures for the AM and PM peak hours. To summarize main points:
>
> - Please confirm if the following study intersections is acceptable:
>   - NE 179th Street at NE 15th Avenue
>   - Site Access at NE 179th Street

- NE 179th Street at NE 29th Avenue

- Are there any other nearby in-process development projects that should be included in the study that are not listed in the scoping memo? If yes, can their traffic studies be sent my way?

- I wasn't certain if this application would need to prepare any road modifications in order to gain approval by the County. Given the attached site plan (with comments included) and the description of the proposed development, are any road modifications listed in the scoping memo necessary?

Thanks, and let me know if you have any questions or need additional info.

Daniel

--

Daniel Stumpf, PE

**Senior Transportation Engineer**

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Office: 360-284-2660 ext. 330
Website: lancastermobley.com

Offices: Portland, OR | Bend, OR | Vancouver, WA

--

Daniel Stumpf, PE

**Senior Transportation Engineer**

[Quoted text hidden]

# Appendix B – Site Plan

Site Plan

NE 179th St.
5.00' SETBACK
APPROXIMATE CENTERLINE LOCATION OF EXISTING SEASONAL FISH BEARING CREEK R4SBC
WETLAND BOUNDARY
10.00' L2 BUFFER
232.33'
APPROXIMATE LOCATION OF EXISTING RIPARIAN HABITAT OR SPECIES AREA
EXISTING BUILDING 3492 SF
20.38'
TYP
9.00'
EXISTING BUILDING
5.00'
5.00'
20.00'
24.00'
20.00'
24.00'
3.50'
8.00'
RIGHT-IN/RIGHT-OUT ONLY DRIVEWAY
WETLAND BOUNDARY
10.00' L2 BUFFER
MB
10.00' L2 BUFFER
17.00' SETBACK
NE 29th Ave.

# Appendix C – Trip Generation and Distribution

Trip Generation Calculations

1932 NE 179th Street Apartments – Trip Distribution Figure

TRIP GENERATION CALCULATIONS
Source: Trip Generation Manual, 11th Edition
Existing Conditions

| | |
|---|---|
| *Land Use:* | Single-Family Detached Housing |
| *Land Use Code:* | 210 |
| *Land Use Subcategory:* | All Sites |
| *Setting/Location* | General Urban/Suburban |
| *Variable:* | Dwelling Units |
| *Trip Type:* | Vehicle |
| *Formula Type:* | Rate |
| *Variable Quantity:* | 2 |

WARNING: Variable Quantity is less than Minimum Survey Size for Peak Hours

## AM PEAK HOUR

*Trip Rate:* 0.7

| | Enter | Exit | Total |
|---|---|---|---|
| Directional Split | 25% | 75% | |
| Trip Ends | 0 | 1 | 1 |

## PM PEAK HOUR

*Trip Rate:* 0.94

| | Enter | Exit | Total |
|---|---|---|---|
| Directional Split | 63% | 37% | |
| Trip Ends | 1 | 1 | 2 |

## WEEKDAY

*Trip Rate:* 9.43

| | Enter | Exit | Total |
|---|---|---|---|
| Directional Split | 50% | 50% | |
| Trip Ends | 9 | 9 | 18 |

## SATURDAY

*Trip Rate:* 9.48

| | Enter | Exit | Total |
|---|---|---|---|
| Directional Split | 50% | 50% | |
| Trip Ends | 9 | 9 | 18 |

Source: Trip Generation Manual, 11th Edition

TRIP GENERATION CALCULATIONS
Source: Trip Generation Manual, 11th Edition
Proposed Conditions

| | |
|---|---|
| *Land Use:* | Single-Family Detached Housing |
| *Land Use Code:* | 210 |
| *Land Use Subcategory:* | All Sites |
| *Setting/Location* | General Urban/Suburban |
| *Variable:* | Dwelling Units |
| *Trip Type:* | Vehicle |
| *Formula Type:* | Rate |
| *Variable Quantity:* | 1 |

WARNING: Variable Quantity is less than Minimum Survey Size for Peak Hours

## AM PEAK HOUR

*Trip Rate:* 0.7

| | Enter | Exit | Total |
|---|---|---|---|
| Directional Split | 25% | 75% | |
| Trip Ends | 0 | 1 | 1 |

## PM PEAK HOUR

*Trip Rate:* 0.94

| | Enter | Exit | Total |
|---|---|---|---|
| Directional Split | 63% | 37% | |
| Trip Ends | 1 | 0 | 1 |

## WEEKDAY

*Trip Rate:* 9.43

| | Enter | Exit | Total |
|---|---|---|---|
| Directional Split | 50% | 50% | |
| Trip Ends | 5 | 5 | 10 |

## SATURDAY

*Trip Rate:* 9.48

| | Enter | Exit | Total |
|---|---|---|---|
| Directional Split | 50% | 50% | |
| Trip Ends | 5 | 5 | 10 |

Source: Trip Generation Manual, 11th Edition

TRIP GENERATION CALCULATIONS
Source: Trip Generation Manual, 11th Edition

| | |
|---|---|
| *Land Use:* | Medical-Dental Office Building |
| *Land Use Code:* | 720 |
| *Land Use Subcategory:* | All Sites |
| *Setting/Location* | General Urban/Suburban |
| *Variable:* | 1000 SF GFA |
| *Trip Type:* | Vehicle |
| *Formula Type:* | Rate |
| *Variable Quantity:* | 3.492 |

## AM PEAK HOUR

*Trip Rate:* 3.1

| | Enter | Exit | Total |
|---|---|---|---|
| Directional Split | 79% | 21% | |
| Trip Ends | 9 | 2 | 11 |

## PM PEAK HOUR

*Trip Rate:* 3.93

| | Enter | Exit | Total |
|---|---|---|---|
| Directional Split | 30% | 70% | |
| Trip Ends | 4 | 10 | 14 |

## WEEKDAY

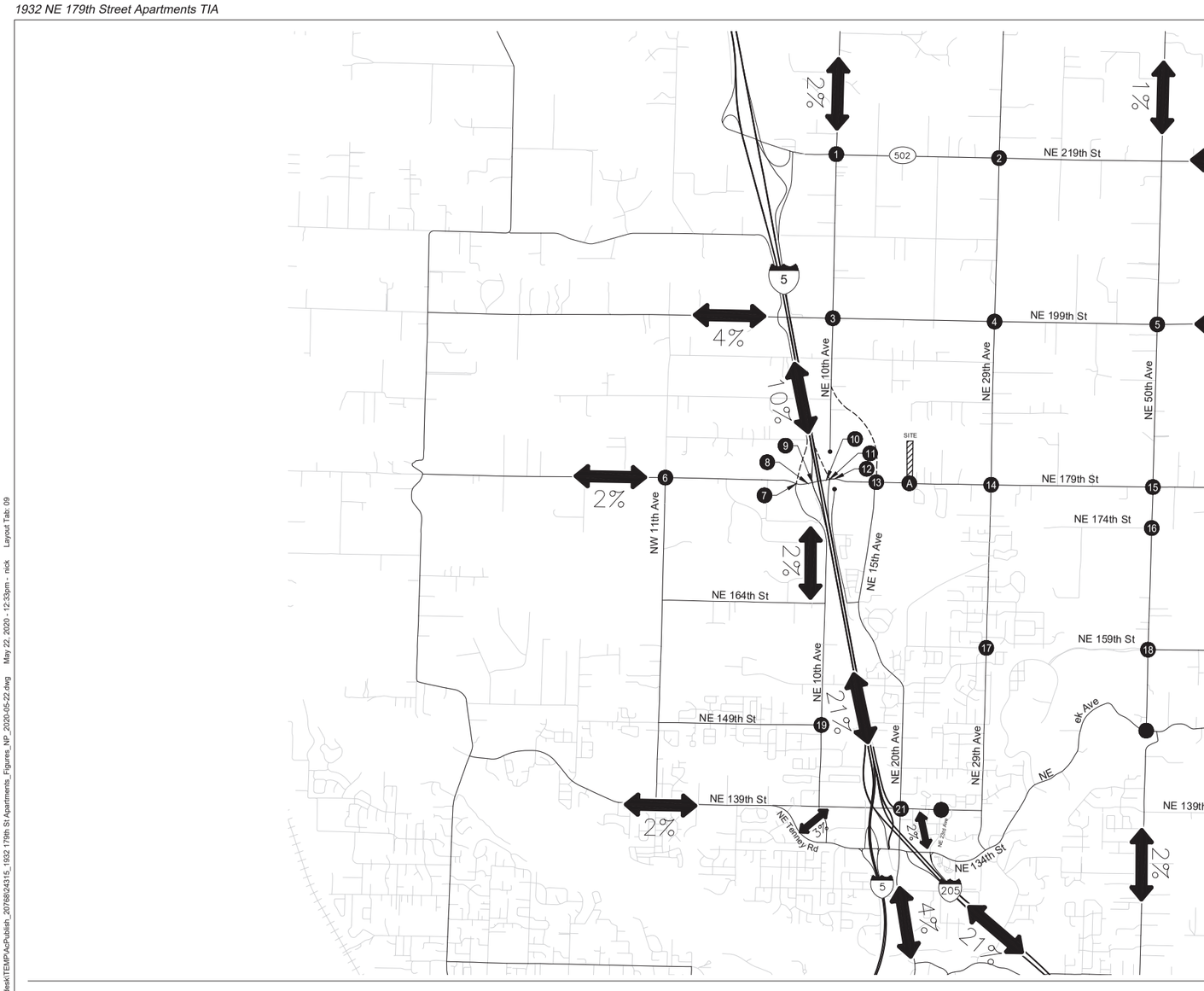
*Trip Rate:* 36

| | Enter | Exit | Total |
|---|---|---|---|
| Directional Split | 50% | 50% | |
| Trip Ends | 63 | 63 | 126 |

## SATURDAY

*Trip Rate:* 13.78

| | Enter | Exit | Total |
|---|---|---|---|
| Directional Split | 50% | 50% | |
| Trip Ends | 24 | 24 | 48 |




C:\KAI Applications\Autodesk\TEMP\AcPublish_20768\24315_1932 179th St Apartments_Figures_NP_2020-05-22.dwg May 22, 2020 - 12:33pm - nick Layout Tab: 09

KITTELSON & ASSOCIATES

# Appendix D – Traffic Volumes

Traffic Counts

Figure A – In-Process Trips

Figure B – Rerouted Volumes (I-5 NB Ramp)

Figure C – Rerouted Existing Site Trips

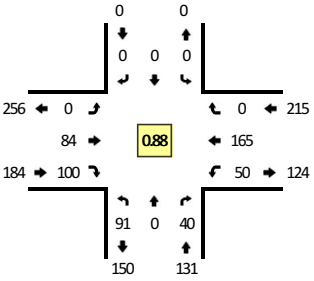
Type of peak hour being reported: Intersection Peak

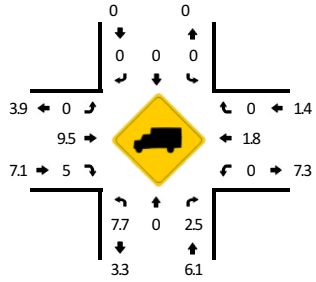
Method for determining peak hour: Total Entering Volume

**LOCATION:** NE 15th Avenue -- NE 179th Street
**CITY/STATE:** Mount Vista, WA

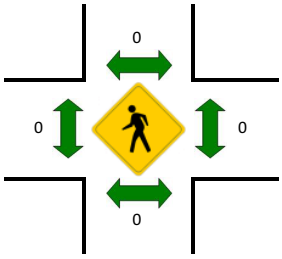
**QC JOB #:** 16889607
**DATE:** Wed, Jan 22 2025

**Peak-Hour: 7:25 AM -- 8:25 AM**
**Peak 15-Min: 7:25 AM -- 7:40 AM**

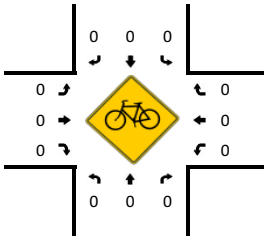


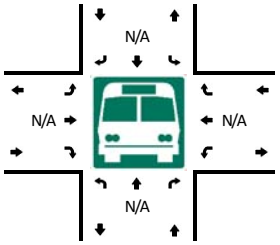




TRUE DATA TO IMPROVE MOBILITY

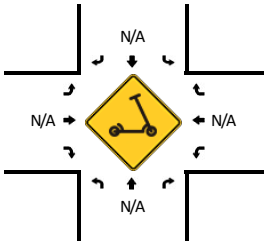







| 5-Min Count Period Beginning At | NE 15th Avenue (Northbound) | | | | NE 15th Avenue (Southbound) | | | | NE 179th Street (Eastbound) | | | | NE 179th Street (Westbound) | | | | Total | Hourly Totals |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | | |
| 7:00 AM | 11 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 2 | 0 | 3 | 15 | 0 | 0 | 43 | |
| 7:05 AM | 5 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 9 | 0 | 2 | 12 | 0 | 0 | 37 | |
| 7:10 AM | 6 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 5 | 0 | 2 | 15 | 0 | 0 | 37 | |
| 7:15 AM | 6 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 8 | 0 | 4 | 12 | 0 | 0 | 38 | |
| 7:20 AM | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 7 | 0 | 3 | 18 | 0 | 0 | 42 | |
| 7:25 AM | 5 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 11 | 0 | 2 | 14 | 0 | 0 | 46 | |
| 7:30 AM | 7 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 12 | 0 | 7 | 20 | 0 | 0 | 56 | |
| 7:35 AM | 8 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 6 | 0 | 6 | 19 | 0 | 0 | 49 | |
| 7:40 AM | 7 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 9 | 0 | 5 | 18 | 0 | 0 | 46 | |
| 7:45 AM | 6 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 5 | 0 | 6 | 12 | 0 | 0 | 45 | |
| 7:50 AM | 10 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 4 | 0 | 3 | 13 | 0 | 0 | 41 | |
| 7:55 AM | 9 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 9 | 0 | 3 | 10 | 0 | 0 | 46 | 526 |
| 8:00 AM | 7 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 9 | 0 | 3 | 9 | 0 | 0 | 35 | 518 |
| 8:05 AM | 4 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 7 | 0 | 1 | 10 | 0 | 0 | 31 | 512 |
| 8:10 AM | 7 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 7 | 0 | 6 | 14 | 0 | 0 | 42 | 517 |
| 8:15 AM | 9 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 13 | 0 | 3 | 13 | 0 | 0 | 45 | 524 |
| 8:20 AM | 12 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 8 | 0 | 5 | 13 | 0 | 0 | 48 | 530 |
| 8:25 AM | 6 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 4 | 0 | 3 | 19 | 0 | 0 | 38 | 522 |
| 8:30 AM | 11 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 5 | 0 | 4 | 13 | 0 | 0 | 41 | 507 |
| 8:35 AM | 8 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 4 | 0 | 2 | 12 | 0 | 0 | 31 | 489 |
| 8:40 AM | 5 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 6 | 0 | 4 | 12 | 0 | 0 | 35 | 478 |
| 8:45 AM | 8 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 4 | 0 | 6 | 10 | 0 | 0 | 47 | 480 |
| 8:50 AM | 7 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 8 | 0 | 4 | 9 | 0 | 0 | 37 | 476 |
| 8:55 AM | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 10 | 0 | 3 | 13 | 0 | 0 | 46 | 476 |

| 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 | 80 | 0 | 40 | 0 | 0 | 0 | 0 | 0 | 0 | 96 | 116 | 0 | 60 | 212 | 0 | 0 | 604 |
| Heavy Trucks | 4 | 0 | 0 | | 0 | 0 | 0 | | 0 | 12 | 0 | | 0 | 4 | 0 | | 20 |
| Buses | | | | | | | | | | | | | | | | | |
| Pedestrians | | 0 | | | | 0 | | | | 0 | | | | 0 | | | 0 |
| Bicycles | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 |
| Scooters | | | | | | | | | | | | | | | | | |

*Comments:*

Report generated on 1/29/2025 2:01 PM

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

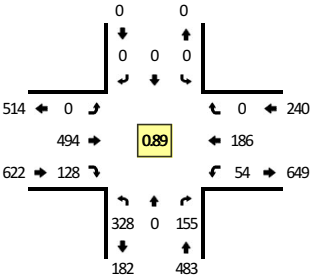
Type of peak hour being reported: Intersection Peak

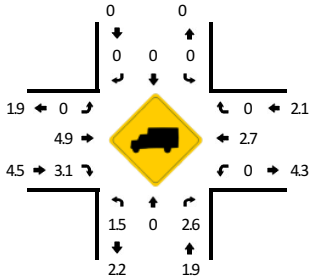
Method for determining peak hour: Total Entering Volume

**LOCATION:** NE 15th Avenue -- NE 179th Street
**CITY/STATE:** Mount Vista, WA

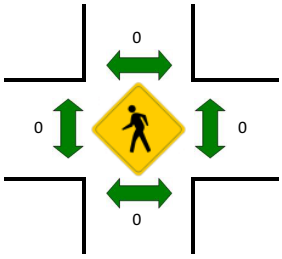
**QC JOB #:** 16889608
**DATE:** Wed, Jan 22 2025

**Peak-Hour: 4:55 PM -- 5:55 PM**
**Peak 15-Min: 5:30 PM -- 5:45 PM**

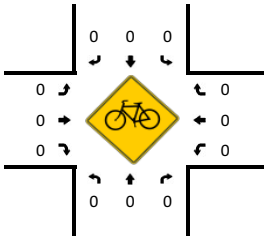


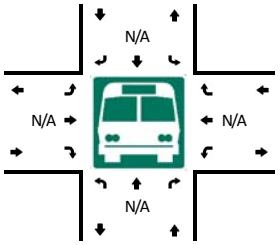




TRUE DATA TO IMPROVE MOBILITY

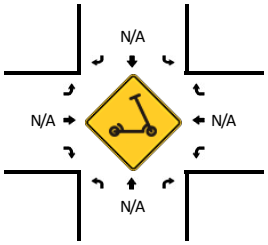







| 5-Min Count Period Beginning At | NE 15th Avenue (Northbound) | | | | NE 15th Avenue (Southbound) | | | | NE 179th Street (Eastbound) | | | | NE 179th Street (Westbound) | | | | Total | Hourly Totals |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | | |
| 4:00 PM | 13 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 12 | 0 | 6 | 16 | 0 | 0 | 63 | |
| 4:05 PM | 14 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | 13 | 0 | 2 | 13 | 0 | 0 | 62 | |
| 4:10 PM | 13 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 15 | 0 | 1 | 11 | 0 | 0 | 57 | |
| 4:15 PM | 11 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 19 | 0 | 2 | 14 | 0 | 0 | 64 | |
| 4:20 PM | 12 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 23 | 14 | 0 | 0 | 12 | 0 | 0 | 71 | |
| 4:25 PM | 11 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | 10 | 0 | 3 | 13 | 0 | 0 | 63 | |
| 4:30 PM | 12 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | 9 | 0 | 7 | 7 | 0 | 0 | 58 | |
| 4:35 PM | 6 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | 9 | 0 | 7 | 11 | 0 | 0 | 56 | |
| 4:40 PM | 11 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | 12 | 0 | 2 | 6 | 0 | 0 | 63 | |
| 4:45 PM | 25 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 21 | 13 | 0 | 5 | 7 | 0 | 0 | 79 | |
| 4:50 PM | 25 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 23 | 10 | 0 | 3 | 9 | 0 | 0 | 78 | |
| 4:55 PM | 29 | 0 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 38 | 9 | 0 | 5 | 8 | 0 | 0 | 101 | 815 |
| 5:00 PM | 20 | 0 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 67 | 6 | 0 | 4 | 10 | 0 | 0 | 120 | 872 |
| 5:05 PM | 15 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 59 | 12 | 0 | 5 | 16 | 0 | 0 | 117 | 927 |
| 5:10 PM | 21 | 0 | 21 | 0 | 0 | 0 | 0 | 0 | 0 | 54 | 13 | 0 | 3 | 12 | 0 | 0 | 124 | 994 |
| 5:15 PM | 19 | 0 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 52 | 8 | 0 | 4 | 9 | 0 | 0 | 105 | 1035 |
| 5:20 PM | 27 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 48 | 4 | 0 | 5 | 21 | 0 | 0 | 114 | 1078 |
| 5:25 PM | 28 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 35 | 14 | 0 | 6 | 15 | 0 | 0 | 106 | 1121 |
| 5:30 PM | 34 | 0 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 35 | 17 | 0 | 0 | 15 | 0 | 0 | 113 | 1176 |
| 5:35 PM | 49 | 0 | 17 | 0 | 0 | 0 | 0 | 0 | 0 | 39 | 13 | 0 | 4 | 11 | 0 | 0 | 133 | 1253 |
| 5:40 PM | 35 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 34 | 14 | 0 | 6 | 32 | 0 | 0 | 132 | 1322 |
| 5:45 PM | 26 | 0 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | 8 | 0 | 5 | 23 | 0 | 0 | 91 | 1334 |
| 5:50 PM | 25 | 0 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | 10 | 0 | 7 | 14 | 0 | 0 | 89 | 1345 |
| 5:55 PM | 21 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | 6 | 0 | 5 | 17 | 0 | 0 | 76 | 1320 |

| 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 | 472 | 0 | 160 | 0 | 0 | 0 | 0 | 0 | 0 | 432 | 176 | 0 | 40 | 232 | 0 | 0 | 1512 |
| Heavy Trucks | 8 | 0 | 8 | | 0 | 0 | 0 | | 0 | 32 | 0 | | 0 | 8 | 0 | | 56 |
| Buses | | | | | | | | | | | | | | | | | |
| Pedestrians | | 0 | | | | 0 | | | | 0 | | | | 0 | | | 0 |
| Bicycles | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 |
| Scooters | | | | | | | | | | | | | | | | | |

*Comments:*

Report generated on 1/29/2025 2:01 PM

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

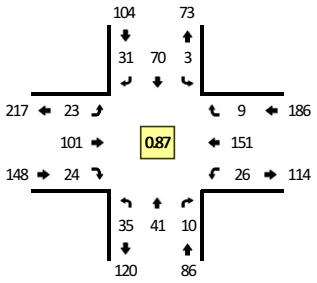
Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

**LOCATION:** NE 29th Ave -- NE 179th St
**CITY/STATE:** Vancouver, WA

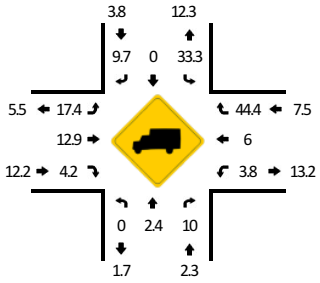
**QC JOB #:** 17179801
**DATE:** Wed, Aug 6 2025

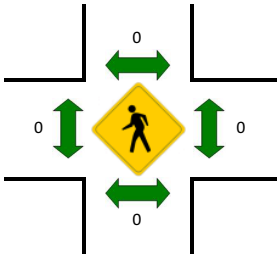
**Peak-Hour: 8:00 AM -- 9:00 AM**
**Peak 15-Min: 8:35 AM -- 8:50 AM**

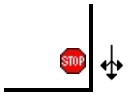


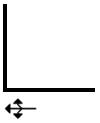


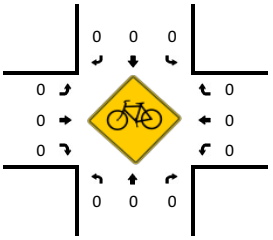


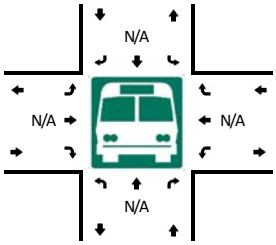


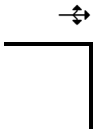



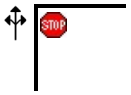



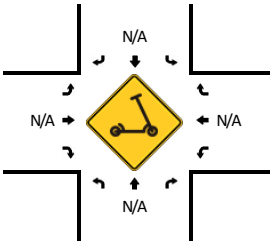








| 5-Min Count Period Beginning At | NE 29th Ave (Northbound) | | | | NE 29th Ave (Southbound) | | | | NE 179th St (Eastbound) | | | | NE 179th St (Westbound) | | | | Total | Hourly Totals |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | | |
| 7:00 AM | 1 | 1 | 1 | 0 | 0 | 3 | 3 | 0 | 2 | 7 | 2 | 0 | 3 | 6 | 0 | 0 | 29 | |
| 7:05 AM | 3 | 4 | 0 | 0 | 2 | 1 | 1 | 0 | 2 | 6 | 1 | 0 | 0 | 13 | 0 | 0 | 33 | |
| 7:10 AM | 0 | 4 | 0 | 0 | 0 | 10 | 1 | 0 | 2 | 10 | 0 | 0 | 1 | 6 | 0 | 0 | 34 | |
| 7:15 AM | 2 | 2 | 4 | 0 | 1 | 11 | 3 | 0 | 1 | 4 | 0 | 0 | 1 | 6 | 1 | 0 | 36 | |
| 7:20 AM | 0 | 3 | 2 | 0 | 0 | 6 | 4 | 0 | 3 | 11 | 1 | 0 | 3 | 18 | 0 | 0 | 51 | |
| 7:25 AM | 2 | 4 | 1 | 0 | 0 | 6 | 2 | 0 | 2 | 13 | 1 | 0 | 2 | 9 | 2 | 0 | 44 | |
| 7:30 AM | 1 | 1 | 3 | 0 | 0 | 7 | 2 | 0 | 0 | 2 | 2 | 0 | 1 | 14 | 0 | 0 | 33 | |
| 7:35 AM | 5 | 6 | 0 | 0 | 0 | 5 | 1 | 0 | 5 | 11 | 4 | 0 | 3 | 15 | 0 | 0 | 55 | |
| 7:40 AM | 1 | 2 | 4 | 0 | 0 | 10 | 3 | 0 | 2 | 5 | 0 | 0 | 0 | 11 | 0 | 0 | 38 | |
| 7:45 AM | 1 | 1 | 2 | 0 | 0 | 8 | 9 | 0 | 1 | 6 | 0 | 0 | 4 | 12 | 0 | 0 | 44 | |
| 7:50 AM | 2 | 4 | 0 | 0 | 0 | 11 | 0 | 0 | 5 | 5 | 1 | 0 | 0 | 19 | 0 | 0 | 47 | |
| 7:55 AM | 1 | 1 | 2 | 0 | 3 | 3 | 3 | 0 | 2 | 8 | 2 | 0 | 2 | 11 | 1 | 0 | 39 | 483 |
| 8:00 AM | 4 | 5 | 0 | 0 | 0 | 7 | 3 | 0 | 1 | 12 | 2 | 0 | 2 | 11 | 1 | 0 | 48 | 502 |
| 8:05 AM | 2 | 4 | 1 | 0 | 1 | 6 | 1 | 0 | 4 | 6 | 1 | 0 | 1 | 13 | 0 | 0 | 40 | 509 |
| 8:10 AM | 6 | 2 | 0 | 0 | 0 | 7 | 0 | 0 | 2 | 8 | 1 | 0 | 2 | 16 | 0 | 0 | 44 | 519 |
| 8:15 AM | 3 | 4 | 0 | 0 | 0 | 3 | 3 | 0 | 2 | 6 | 4 | 0 | 0 | 12 | 0 | 0 | 37 | 520 |
| 8:20 AM | 4 | 5 | 0 | 0 | 0 | 5 | 5 | 0 | 1 | 12 | 2 | 0 | 2 | 8 | 0 | 0 | 44 | 513 |
| 8:25 AM | 1 | 1 | 0 | 0 | 0 | 5 | 2 | 0 | 3 | 5 | 0 | 0 | 2 | 6 | 0 | 0 | 25 | 494 |
| 8:30 AM | 3 | 2 | 1 | 0 | 0 | 6 | 5 | 0 | 4 | 4 | 2 | 0 | 4 | 14 | 0 | 0 | 45 | 506 |
| 8:35 AM | 5 | 3 | 1 | 0 | 0 | 5 | 1 | 0 | 2 | 10 | 1 | 0 | 1 | 13 | 3 | 0 | 45 | 496 |
| 8:40 AM | 3 | 4 | 3 | 0 | 0 | 7 | 3 | 0 | 1 | 11 | 2 | 0 | 5 | 18 | 0 | 0 | 57 | 515 |
| 8:45 AM | 1 | 4 | 0 | 0 | 1 | 8 | 3 | 0 | 0 | 9 | 4 | 0 | 2 | 14 | 2 | 0 | 48 | 519 |
| 8:50 AM | 0 | 5 | 1 | 0 | 0 | 7 | 4 | 0 | 1 | 9 | 2 | 0 | 3 | 12 | 0 | 0 | 44 | 516 |
| 8:55 AM | 3 | 2 | 3 | 0 | 1 | 4 | 1 | 0 | 2 | 9 | 3 | 0 | 2 | 14 | 3 | 0 | 47 | 524 |

| 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 | 36 | 44 | 16 | 0 | 4 | 80 | 28 | 0 | 12 | 120 | 28 | 0 | 32 | 180 | 20 | 0 | 600 |
| Heavy Trucks | 0 | 0 | 0 | | 0 | 0 | 0 | | 4 | 12 | 0 | | 0 | 4 | 12 | | 32 |
| Buses | | | | | | | | | | | | | | | | | |
| Pedestrians | | 0 | | | | 0 | | | | 0 | | | | 0 | | | 0 |
| Bicycles | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 |
| Scooters | | | | | | | | | | | | | | | | | |

*Comments:*

Report generated on 8/12/2025 2:49 PM

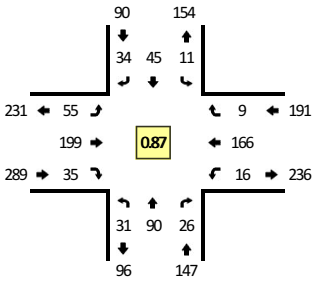
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

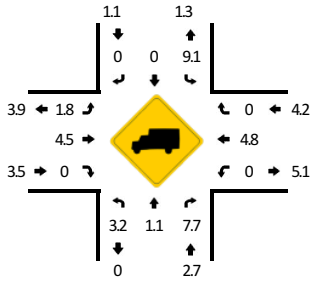
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

**LOCATION:** NE 29th Ave -- NE 179th St
**CITY/STATE:** Vancouver, WA

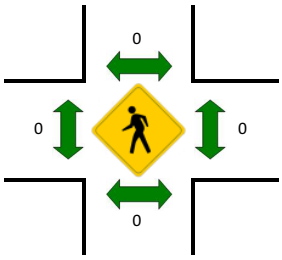
**QC JOB #:** 17179802
**DATE:** Tue, Aug 5 2025

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



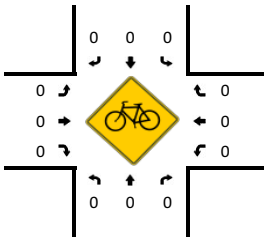



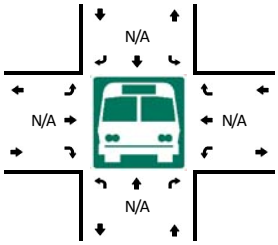

TRUE DATA TO IMPROVE MOBILITY





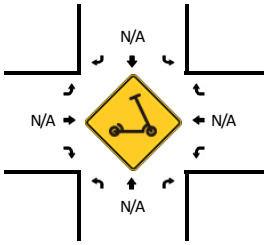











| 5-Min Count Period Beginning At | NE 29th Ave (Northbound) | | | | NE 29th Ave (Southbound) | | | | NE 179th St (Eastbound) | | | | NE 179th St (Westbound) | | | | Total | Hourly Totals |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | | |
| 4:00 PM | 2 | 6 | 3 | 0 | 1 | 5 | 3 | 0 | 5 | 17 | 5 | 0 | 0 | 12 | 2 | 0 | 61 | |
| 4:05 PM | 1 | 2 | 1 | 0 | 1 | 6 | 6 | 0 | 2 | 11 | 10 | 0 | 0 | 10 | 0 | 0 | 50 | |
| 4:10 PM | 1 | 2 | 2 | 0 | 2 | 6 | 3 | 0 | 5 | 12 | 2 | 0 | 3 | 15 | 1 | 0 | 54 | |
| 4:15 PM | 4 | 15 | 3 | 0 | 0 | 2 | 4 | 0 | 7 | 17 | 1 | 0 | 2 | 15 | 0 | 0 | 70 | |
| 4:20 PM | 0 | 7 | 1 | 0 | 0 | 2 | 7 | 0 | 7 | 25 | 2 | 0 | 2 | 19 | 0 | 0 | 72 | |
| 4:25 PM | 3 | 8 | 3 | 0 | 0 | 5 | 6 | 0 | 3 | 17 | 5 | 0 | 1 | 11 | 1 | 0 | 63 | |
| 4:30 PM | 1 | 7 | 4 | 0 | 1 | 3 | 3 | 0 | 5 | 21 | 3 | 0 | 3 | 7 | 0 | 0 | 58 | |
| 4:35 PM | 0 | 9 | 3 | 0 | 1 | 3 | 4 | 0 | 2 | 17 | 5 | 0 | 0 | 13 | 0 | 0 | 57 | |
| 4:40 PM | 5 | 7 | 1 | 0 | 0 | 7 | 1 | 0 | 5 | 11 | 2 | 0 | 0 | 15 | 0 | 0 | 54 | |
| 4:45 PM | 5 | 8 | 1 | 0 | 2 | 1 | 1 | 0 | 2 | 16 | 3 | 0 | 2 | 15 | 1 | 0 | 57 | |
| 4:50 PM | 3 | 8 | 1 | 0 | 1 | 4 | 3 | 0 | 5 | 15 | 4 | 0 | 2 | 14 | 0 | 0 | 60 | |
| 4:55 PM | 2 | 5 | 2 | 0 | 2 | 3 | 0 | 0 | 6 | 7 | 4 | 0 | 1 | 10 | 3 | 0 | 45 | 701 |
| 5:00 PM | 1 | 5 | 2 | 0 | 0 | 4 | 0 | 0 | 7 | 16 | 2 | 0 | 1 | 13 | 2 | 0 | 53 | 693 |
| 5:05 PM | 4 | 3 | 3 | 0 | 3 | 4 | 3 | 0 | 3 | 14 | 1 | 0 | 1 | 13 | 2 | 0 | 54 | 697 |
| 5:10 PM | 3 | 8 | 2 | 0 | 1 | 7 | 2 | 0 | 3 | 23 | 3 | 0 | 1 | 21 | 0 | 0 | 74 | 717 |
| 5:15 PM | 2 | 4 | 3 | 0 | 2 | 7 | 1 | 0 | 9 | 20 | 3 | 0 | 0 | 14 | 0 | 0 | 65 | 712 |
| 5:20 PM | 1 | 12 | 2 | 0 | 1 | 4 | 5 | 0 | 3 | 14 | 7 | 0 | 1 | 13 | 1 | 0 | 64 | 704 |
| 5:25 PM | 4 | 5 | 1 | 0 | 1 | 9 | 4 | 0 | 7 | 14 | 7 | 0 | 1 | 11 | 1 | 0 | 65 | 706 |
| 5:30 PM | 1 | 7 | 4 | 0 | 1 | 5 | 5 | 0 | 7 | 15 | 2 | 0 | 2 | 15 | 0 | 0 | 64 | 712 |
| 5:35 PM | 1 | 9 | 3 | 0 | 1 | 2 | 1 | 0 | 3 | 19 | 2 | 0 | 2 | 9 | 1 | 0 | 53 | 708 |
| 5:40 PM | 4 | 8 | 4 | 0 | 0 | 4 | 2 | 0 | 4 | 19 | 5 | 0 | 1 | 9 | 0 | 0 | 60 | 714 |
| 5:45 PM | 0 | 5 | 2 | 0 | 0 | 5 | 3 | 0 | 3 | 17 | 2 | 0 | 2 | 13 | 0 | 0 | 52 | 709 |
| 5:50 PM | 0 | 2 | 5 | 0 | 1 | 7 | 4 | 0 | 2 | 19 | 3 | 0 | 3 | 12 | 1 | 0 | 59 | 708 |
| 5:55 PM | 3 | 2 | 1 | 0 | 0 | 2 | 2 | 0 | 2 | 8 | 5 | 0 | 1 | 19 | 1 | 0 | 46 | 709 |

| 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 | 28 | 120 | 28 | 0 | 0 | 36 | 68 | 0 | 68 | 236 | 32 | 0 | 20 | 180 | 4 | 0 | 820 |
| Heavy Trucks | 4 | 0 | 0 | | 0 | 0 | 0 | | 0 | 12 | 0 | | 0 | 4 | 0 | | 20 |
| Buses | | | | | | | | | | | | | | | | | |
| Pedestrians | | 0 | | | | 0 | | | | 0 | | | | 0 | | | 0 |
| Bicycles | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 |
| Scooters | | | | | | | | | | | | | | | | | |

*Comments:*

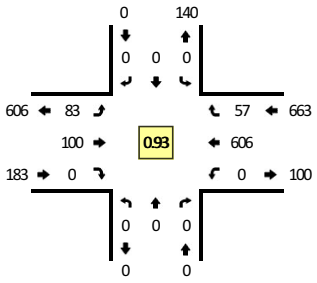
Report generated on 8/12/2025 2:49 PM

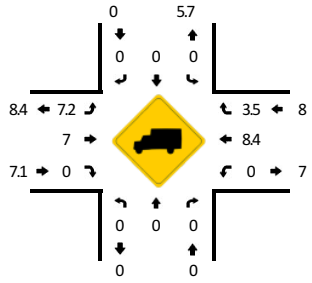
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

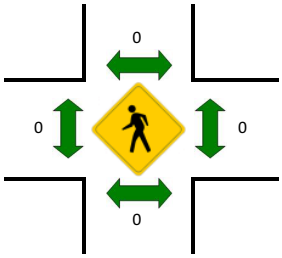
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

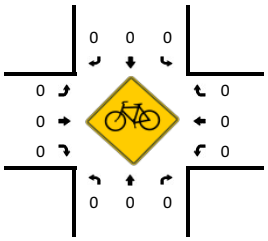
**LOCATION:** I-5 NB On-Ramp -- NE 179th Street | **QC JOB #:** 16889611
**CITY/STATE:** Clark, WA | **DATE:** Wed, Jan 22 2025

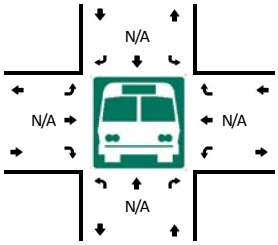
**Peak-Hour: 7:00 AM -- 8:00 AM**
**Peak 15-Min: 7:30 AM -- 7:45 AM**

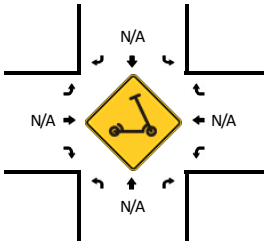



| 5-Min Count Period Beginning At | I-5 NB On-Ramp (Northbound) | | | | I-5 NB On-Ramp (Southbound) | | | | NE 179th Street (Eastbound) | | | | NE 179th Street (Westbound) | | | | Total | Hourly Totals |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | | |
| 7:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 11 | 0 | 0 | 0 | 39 | 9 | 0 | 63 | |
| 7:05 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 8 | 0 | 0 | 0 | 37 | 6 | 0 | 57 | |
| 7:10 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 6 | 0 | 0 | 0 | 55 | 3 | 0 | 68 | |
| 7:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 5 | 0 | 0 | 0 | 54 | 2 | 0 | 73 | |
| 7:20 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 9 | 0 | 0 | 0 | 62 | 3 | 0 | 77 | |
| 7:25 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 11 | 0 | 0 | 0 | 47 | 5 | 0 | 67 | |
| 7:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 13 | 0 | 0 | 0 | 54 | 5 | 0 | 80 | |
| 7:35 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 7 | 0 | 0 | 0 | 59 | 3 | 0 | 77 | |
| 7:40 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 8 | 0 | 0 | 0 | 51 | 7 | 0 | 70 | |
| 7:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 5 | 0 | 0 | 0 | 49 | 3 | 0 | 64 | |
| 7:50 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 5 | 0 | 0 | 0 | 49 | 7 | 0 | 74 | |
| 7:55 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 12 | 0 | 0 | 0 | 50 | 4 | 0 | 76 | 846 |
| 8:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 13 | 0 | 0 | 0 | 38 | 2 | 0 | 57 | 840 |
| 8:05 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 9 | 0 | 0 | 0 | 37 | 2 | 0 | 55 | 838 |
| 8:10 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 8 | 0 | 0 | 0 | 46 | 2 | 0 | 66 | 836 |
| 8:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 11 | 0 | 0 | 0 | 46 | 5 | 0 | 69 | 832 |
| 8:20 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 6 | 0 | 0 | 0 | 46 | 3 | 0 | 61 | 816 |
| 8:25 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 5 | 0 | 0 | 0 | 53 | 7 | 0 | 73 | 822 |
| 8:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 6 | 0 | 0 | 0 | 52 | 5 | 0 | 70 | 812 |
| 8:35 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 6 | 0 | 0 | 0 | 51 | 6 | 0 | 65 | 800 |
| 8:40 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 9 | 0 | 0 | 0 | 46 | 4 | 0 | 67 | 797 |
| 8:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 11 | 0 | 0 | 0 | 39 | 4 | 0 | 58 | 791 |
| 8:50 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 10 | 0 | 0 | 0 | 42 | 2 | 0 | 61 | 778 |
| 8:55 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 17 | 0 | 0 | 0 | 30 | 3 | 0 | 54 | 756 |

| 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 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 80 | 112 | 0 | 0 | 0 | 656 | 60 | 0 | 908 |
| Heavy Trucks | 0 | 0 | 0 | | 0 | 0 | 0 | | 4 | 4 | 0 | | 0 | 52 | 0 | | 60 |
| Buses | | | | | | | | | | | | | | | | | |
| Pedestrians | | 0 | | | | 0 | | | | 0 | | | | 0 | | | 0 |
| Bicycles | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 |
| Scooters | | | | | | | | | | | | | | | | | |

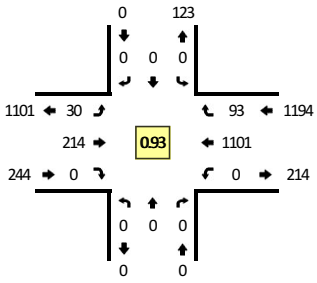
*Comments:*

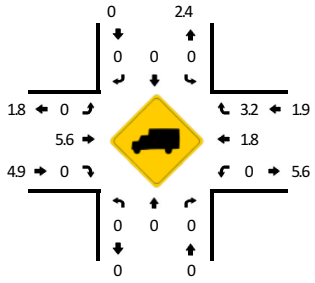
Report generated on 1/29/2025 2:01 PM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

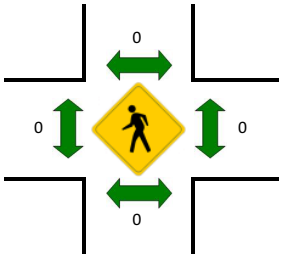
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

**LOCATION:** I-5 NB On-Ramp -- NE 179th Street | **QC JOB #:** 16889612
**CITY/STATE:** Clark, WA | **DATE:** Wed, Jan 22 2025

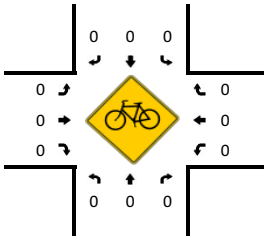
**Peak-Hour: 4:45 PM -- 5:45 PM**
**Peak 15-Min: 5:10 PM -- 5:25 PM**

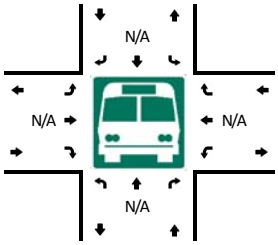


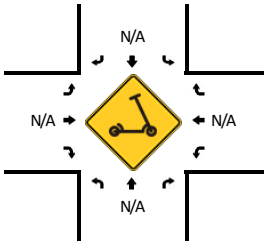








| 5-Min Count Period Beginning At | I-5 NB On-Ramp (Northbound) | | | | I-5 NB On-Ramp (Southbound) | | | | NE 179th Street (Eastbound) | | | | NE 179th Street (Westbound) | | | | Total | Hourly Totals |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | | |
| 4:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 12 | 0 | 0 | 0 | 59 | 3 | 0 | 81 | |
| 4:05 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 11 | 0 | 0 | 0 | 47 | 11 | 0 | 78 | |
| 4:10 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 14 | 0 | 0 | 0 | 53 | 4 | 0 | 79 | |
| 4:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 20 | 0 | 0 | 0 | 62 | 2 | 0 | 89 | |
| 4:20 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 14 | 0 | 0 | 0 | 70 | 2 | 0 | 91 | |
| 4:25 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 18 | 0 | 0 | 0 | 46 | 5 | 0 | 82 | |
| 4:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 14 | 0 | 0 | 0 | 58 | 6 | 0 | 83 | |
| 4:35 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 13 | 0 | 0 | 0 | 60 | 5 | 0 | 92 | |
| 4:40 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 15 | 0 | 0 | 0 | 52 | 2 | 0 | 81 | |
| 4:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 18 | 0 | 0 | 0 | 67 | 7 | 0 | 100 | |
| 4:50 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 19 | 0 | 0 | 0 | 85 | 5 | 0 | 113 | |
| 4:55 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 23 | 0 | 0 | 0 | 96 | 3 | 0 | 128 | 1097 |
| 5:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 23 | 0 | 0 | 0 | 105 | 3 | 0 | 132 | 1148 |
| 5:05 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | 0 | 0 | 0 | 79 | 2 | 0 | 100 | 1170 |
| 5:10 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 0 | 0 | 0 | 127 | 1 | 0 | 148 | 1239 |
| 5:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 13 | 0 | 0 | 0 | 97 | 6 | 0 | 118 | 1268 |
| 5:20 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 16 | 0 | 0 | 0 | 98 | 5 | 0 | 122 | 1299 |
| 5:25 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 17 | 0 | 0 | 0 | 90 | 17 | 0 | 127 | 1344 |
| 5:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 12 | 0 | 0 | 0 | 86 | 14 | 0 | 114 | 1375 |
| 5:35 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 20 | 0 | 0 | 0 | 90 | 20 | 0 | 131 | 1414 |
| 5:40 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 0 | 0 | 0 | 81 | 10 | 0 | 105 | 1438 |
| 5:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 16 | 0 | 0 | 0 | 68 | 9 | 0 | 96 | 1434 |
| 5:50 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 10 | 0 | 0 | 0 | 86 | 13 | 0 | 110 | 1431 |
| 5:55 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 11 | 0 | 0 | 0 | 58 | 6 | 0 | 79 | 1382 |

| 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 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 196 | 0 | 0 | 0 | 1288 | 48 | 0 | 1552 |
| Heavy Trucks | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 16 | 0 | | 0 | 28 | 4 | | 48 |
| Buses | | | | | | | | | | | | | | | | | |
| Pedestrians | | 0 | | | | 0 | | | | 0 | | | | 0 | | | 0 |
| Bicycles | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 |
| Scooters | | | | | | | | | | | | | | | | | |

*Comments:*

Report generated on 1/29/2025 2:01 PM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

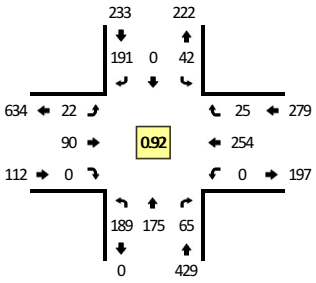
Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

**LOCATION:** NE 10th Avenue -- NE 179th Street
**CITY/STATE:** Clark, WA

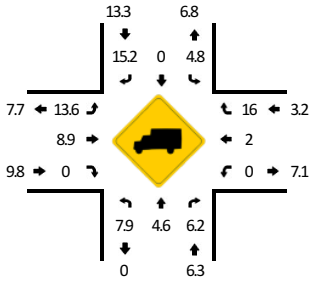
**QC JOB #:** 16889609
**DATE:** Wed, Jan 22 2025

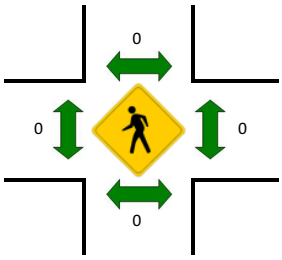
**Peak-Hour: 7:20 AM -- 8:20 AM**
**Peak 15-Min: 7:20 AM -- 7:35 AM**

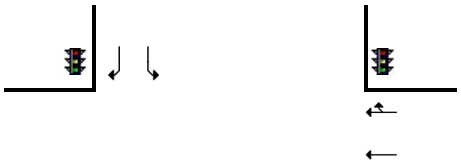


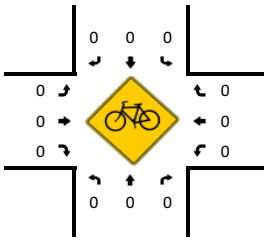


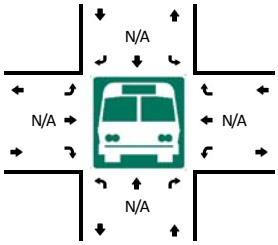


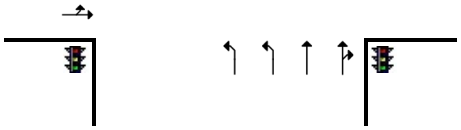


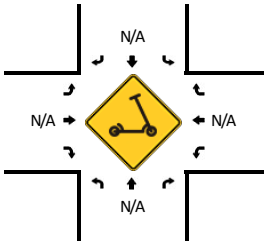








| 5-Min Count Period Beginning At | NE 10th Avenue (Northbound) | | | | NE 10th Avenue (Southbound) | | | | NE 179th Street (Eastbound) | | | | NE 179th Street (Westbound) | | | | Total | Hourly Totals |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | | |
| 7:00 AM | 8 | 10 | 3 | 0 | 0 | 0 | 15 | 0 | 2 | 10 | 0 | 0 | 0 | 25 | 1 | 0 | 74 | |
| 7:05 AM | 12 | 8 | 3 | 0 | 4 | 0 | 10 | 0 | 2 | 7 | 0 | 0 | 0 | 21 | 2 | 0 | 69 | |
| 7:10 AM | 21 | 12 | 5 | 0 | 2 | 0 | 18 | 0 | 2 | 4 | 0 | 0 | 0 | 19 | 3 | 0 | 86 | |
| 7:15 AM | 18 | 20 | 7 | 0 | 4 | 0 | 19 | 0 | 2 | 3 | 0 | 0 | 0 | 19 | 2 | 0 | 94 | |
| 7:20 AM | 20 | 14 | 8 | 0 | 1 | 0 | 27 | 0 | 2 | 7 | 0 | 0 | 0 | 19 | 1 | 0 | 99 | |
| 7:25 AM | 17 | 13 | 8 | 0 | 8 | 0 | 12 | 0 | 4 | 8 | 0 | 0 | 0 | 22 | 1 | 0 | 93 | |
| 7:30 AM | 16 | 14 | 5 | 0 | 2 | 0 | 14 | 0 | 1 | 12 | 0 | 0 | 0 | 29 | 1 | 0 | 94 | |
| 7:35 AM | 14 | 12 | 4 | 0 | 2 | 0 | 19 | 0 | 1 | 6 | 0 | 0 | 0 | 27 | 3 | 0 | 88 | |
| 7:40 AM | 19 | 9 | 6 | 0 | 4 | 0 | 12 | 0 | 1 | 6 | 0 | 0 | 0 | 27 | 0 | 0 | 84 | |
| 7:45 AM | 17 | 11 | 7 | 0 | 4 | 0 | 13 | 0 | 0 | 6 | 0 | 0 | 0 | 22 | 1 | 0 | 81 | |
| 7:50 AM | 18 | 9 | 6 | 0 | 1 | 0 | 18 | 0 | 2 | 4 | 0 | 0 | 0 | 20 | 5 | 0 | 83 | |
| 7:55 AM | 14 | 11 | 9 | 0 | 2 | 0 | 22 | 0 | 2 | 11 | 0 | 0 | 0 | 18 | 3 | 0 | 92 | 1037 |
| 8:00 AM | 14 | 13 | 4 | 0 | 4 | 0 | 15 | 0 | 1 | 10 | 0 | 0 | 0 | 11 | 2 | 0 | 74 | 1037 |
| 8:05 AM | 11 | 22 | 4 | 0 | 3 | 0 | 10 | 0 | 4 | 6 | 0 | 0 | 0 | 18 | 2 | 0 | 80 | 1048 |
| 8:10 AM | 18 | 23 | 2 | 0 | 6 | 0 | 12 | 0 | 1 | 6 | 0 | 0 | 0 | 19 | 2 | 0 | 89 | 1051 |
| 8:15 AM | 11 | 24 | 2 | 0 | 5 | 0 | 17 | 0 | 3 | 8 | 0 | 0 | 0 | 22 | 4 | 0 | 96 | 1053 |
| 8:20 AM | 7 | 14 | 5 | 0 | 2 | 0 | 23 | 0 | 0 | 6 | 0 | 0 | 0 | 18 | 5 | 0 | 80 | 1034 |
| 8:25 AM | 22 | 23 | 6 | 0 | 1 | 0 | 15 | 0 | 1 | 5 | 0 | 0 | 0 | 22 | 8 | 0 | 103 | 1044 |
| 8:30 AM | 17 | 12 | 8 | 0 | 3 | 0 | 18 | 0 | 2 | 4 | 0 | 0 | 0 | 22 | 3 | 0 | 89 | 1039 |
| 8:35 AM | 17 | 13 | 2 | 0 | 1 | 0 | 23 | 0 | 4 | 2 | 0 | 0 | 0 | 16 | 6 | 0 | 84 | 1035 |
| 8:40 AM | 12 | 16 | 9 | 0 | 3 | 0 | 21 | 0 | 3 | 4 | 0 | 0 | 0 | 18 | 4 | 0 | 90 | 1041 |
| 8:45 AM | 15 | 11 | 8 | 0 | 7 | 0 | 13 | 0 | 3 | 6 | 0 | 0 | 0 | 14 | 7 | 0 | 84 | 1044 |
| 8:50 AM | 20 | 16 | 3 | 0 | 4 | 0 | 7 | 0 | 1 | 11 | 0 | 0 | 0 | 17 | 2 | 0 | 81 | 1042 |
| 8:55 AM | 9 | 13 | 7 | 0 | 5 | 0 | 11 | 0 | 2 | 15 | 0 | 0 | 0 | 14 | 3 | 0 | 79 | 1029 |

| 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 | 212 | 164 | 84 | 0 | 44 | 0 | 212 | 0 | 28 | 108 | 0 | 0 | 0 | 280 | 12 | 0 | 1144 |
| Heavy Trucks | 20 | 8 | 12 | | 0 | 0 | 48 | | 12 | 0 | 0 | | 0 | 12 | 0 | | 112 |
| Buses | | | | | | | | | | | | | | | | | |
| Pedestrians | | 0 | | | | 0 | | | | 0 | | | | 0 | | | 0 |
| Bicycles | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 |
| Scooters | | | | | | | | | | | | | | | | | |

*Comments:*

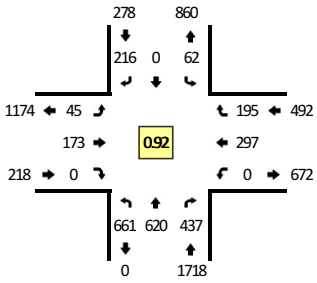
Report generated on 1/29/2025 2:01 PM

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

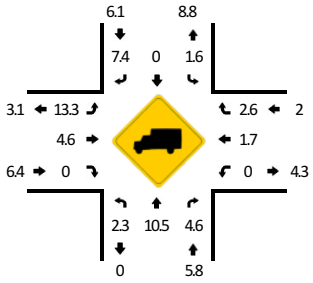
**LOCATION:** NE 10th Avenue -- NE 179th Street | **QC JOB #:** 16889610
**CITY/STATE:** Clark, WA | **DATE:** Wed, Jan 22 2025

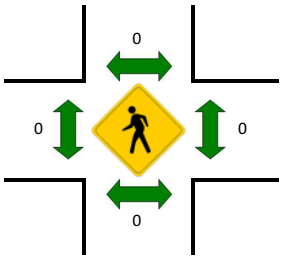
**Peak-Hour: 4:45 PM -- 5:45 PM**
**Peak 15-Min: 4:50 PM -- 5:05 PM**

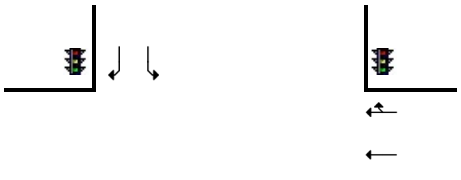


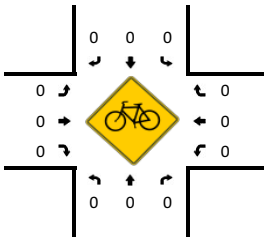


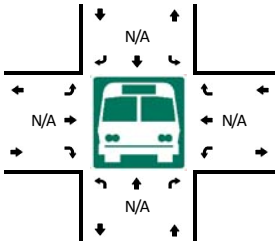


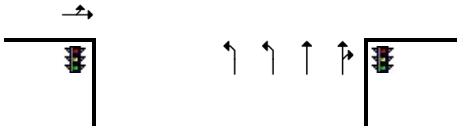


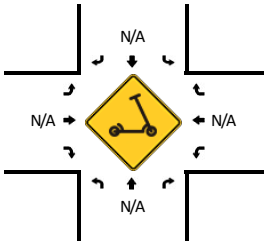







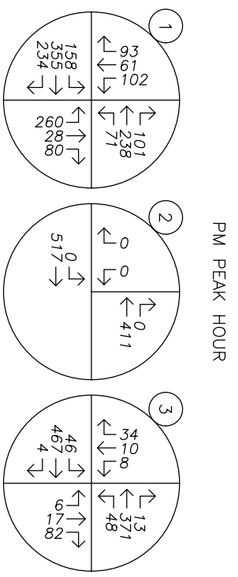

| 5-Min Count Period Beginning At | NE 10th Avenue (Northbound) | | | | NE 10th Avenue (Southbound) | | | | NE 179th Street (Eastbound) | | | | NE 179th Street (Westbound) | | | | Total | Hourly Totals |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | Left | Thru | Right | U | | |
| 4:00 PM | 24 | 25 | 10 | 0 | 7 | 0 | 15 | 0 | 1 | 11 | 0 | 0 | 0 | 24 | 6 | 0 | 123 | |
| 4:05 PM | 19 | 31 | 14 | 0 | 8 | 0 | 17 | 0 | 1 | 10 | 0 | 0 | 0 | 18 | 6 | 0 | 124 | |
| 4:10 PM | 21 | 26 | 10 | 0 | 7 | 0 | 19 | 0 | 0 | 14 | 0 | 0 | 0 | 17 | 8 | 0 | 122 | |
| 4:15 PM | 31 | 35 | 17 | 0 | 6 | 0 | 12 | 0 | 2 | 17 | 0 | 0 | 0 | 21 | 8 | 0 | 149 | |
| 4:20 PM | 38 | 43 | 16 | 0 | 9 | 0 | 17 | 0 | 2 | 13 | 0 | 0 | 0 | 14 | 8 | 0 | 160 | |
| 4:25 PM | 20 | 23 | 13 | 0 | 2 | 0 | 15 | 0 | 1 | 18 | 0 | 0 | 0 | 16 | 10 | 0 | 118 | |
| 4:30 PM | 24 | 29 | 14 | 0 | 5 | 0 | 26 | 0 | 3 | 10 | 0 | 0 | 0 | 13 | 6 | 0 | 130 | |
| 4:35 PM | 34 | 47 | 14 | 0 | 2 | 0 | 15 | 0 | 2 | 11 | 0 | 0 | 0 | 17 | 3 | 0 | 145 | |
| 4:40 PM | 34 | 73 | 19 | 0 | 5 | 0 | 12 | 0 | 1 | 15 | 0 | 0 | 0 | 6 | 7 | 0 | 172 | |
| 4:45 PM | 36 | 65 | 19 | 0 | 6 | 0 | 14 | 0 | 5 | 12 | 0 | 0 | 0 | 23 | 16 | 0 | 196 | |
| 4:50 PM | 57 | 95 | 14 | 0 | 5 | 0 | 13 | 0 | 9 | 13 | 0 | 0 | 0 | 21 | 18 | 0 | 245 | |
| 4:55 PM | 71 | 62 | 33 | 0 | 12 | 0 | 15 | 0 | 7 | 16 | 0 | 0 | 0 | 12 | 14 | 0 | 242 | 1926 |
| 5:00 PM | 58 | 63 | 47 | 0 | 3 | 0 | 17 | 0 | 2 | 21 | 0 | 0 | 0 | 26 | 13 | 0 | 250 | 2053 |
| 5:05 PM | 39 | 40 | 41 | 0 | 8 | 0 | 23 | 0 | 1 | 18 | 0 | 0 | 0 | 16 | 14 | 0 | 200 | 2129 |
| 5:10 PM | 80 | 52 | 65 | 0 | 4 | 0 | 22 | 0 | 3 | 17 | 0 | 0 | 0 | 27 | 9 | 0 | 279 | 2286 |
| 5:15 PM | 60 | 44 | 52 | 0 | 4 | 0 | 21 | 0 | 2 | 12 | 0 | 0 | 0 | 20 | 7 | 0 | 222 | 2359 |
| 5:20 PM | 54 | 27 | 48 | 0 | 4 | 0 | 18 | 0 | 3 | 12 | 0 | 0 | 0 | 30 | 16 | 0 | 212 | 2411 |
| 5:25 PM | 65 | 36 | 31 | 0 | 0 | 0 | 18 | 0 | 4 | 14 | 0 | 0 | 0 | 20 | 18 | 0 | 206 | 2499 |
| 5:30 PM | 54 | 52 | 39 | 0 | 9 | 0 | 10 | 0 | 4 | 9 | 0 | 0 | 0 | 34 | 19 | 0 | 230 | 2599 |
| 5:35 PM | 47 | 39 | 28 | 0 | 5 | 0 | 30 | 0 | 3 | 15 | 0 | 0 | 0 | 31 | 23 | 0 | 221 | 2675 |
| 5:40 PM | 40 | 45 | 20 | 0 | 2 | 0 | 15 | 0 | 2 | 14 | 0 | 0 | 0 | 37 | 28 | 0 | 203 | 2706 |
| 5:45 PM | 33 | 44 | 10 | 0 | 3 | 0 | 14 | 0 | 6 | 14 | 0 | 0 | 0 | 29 | 24 | 0 | 177 | 2687 |
| 5:50 PM | 47 | 55 | 17 | 0 | 3 | 0 | 19 | 0 | 0 | 10 | 0 | 0 | 0 | 33 | 26 | 0 | 210 | 2652 |
| 5:55 PM | 42 | 64 | 15 | 0 | 4 | 0 | 7 | 0 | 4 | 6 | 0 | 0 | 0 | 16 | 19 | 0 | 177 | 2587 |

| 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 | 744 | 880 | 376 | 0 | 80 | 0 | 180 | 0 | 72 | 200 | 0 | 0 | 0 | 236 | 180 | 0 | 2948 |
| Heavy Trucks | 8 | 96 | 12 | | 0 | 0 | 12 | | 12 | 8 | 0 | | 0 | 8 | 8 | | 164 |
| Buses | | | | | | | | | | | | | | | | | |
| Pedestrians | | 0 | | | | 0 | | | | 0 | | | | 0 | | | 0 |
| Bicycles | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 |
| Scooters | | | | | | | | | | | | | | | | | |

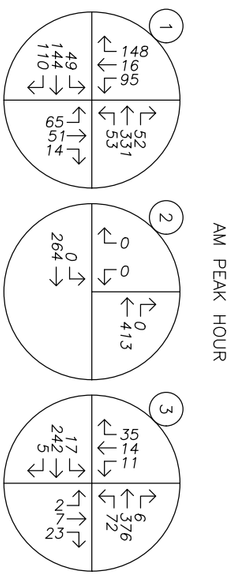
*Comments:*

Report generated on 1/29/2025 2:01 PM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212




PM PEAK HOUR




AM PEAK HOUR

No Scale

**TRAFFIC VOLUMES**

In-Process Development Trips

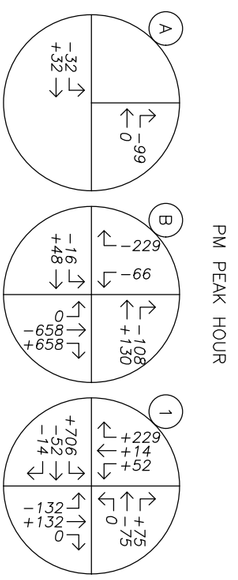
AM & PM Peak Hours

Figure A

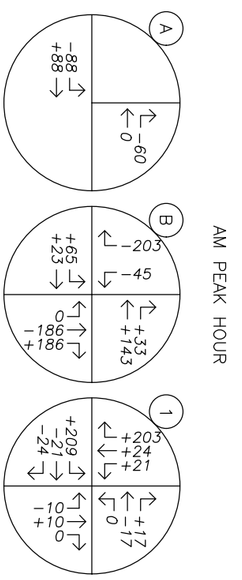
Andersen Dental Office

8/26/2025




PM PEAK HOUR




AM PEAK HOUR

No Scale

**TRAFFIC VOLUMES**

Rerouted Volumes - I-5 NB Ramp & 10th Ave (No In-Process Added)

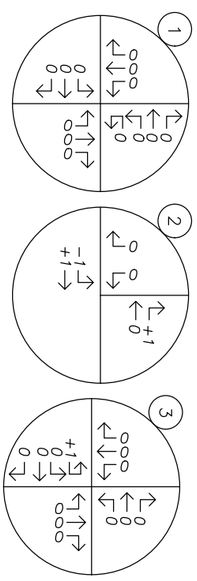
AM & PM Peak Hours

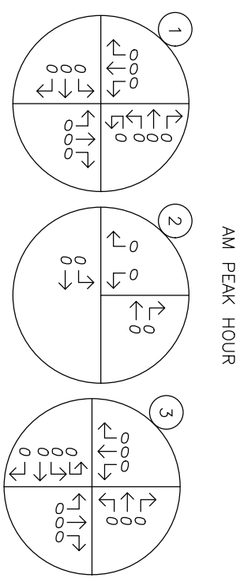
Figure B

Andersen Dental Office

8/26/2025




No Scale

**SITE TRIP DISTRIBUTION & ASSIGNMENT**

Proposed Development Plan - Rerouted Existing Site Trips

AM & PM Peak Hours

Figure C

Andersen Dental Office

8/26/2025

# Appendix E – Safety Analysis

## Crash History Data

OFFICER REPORTED CRASHES THAT OCCURRED AT MULTIPLE INTERSECTIONS IN CLARK COUNTY

**COUNTY ROAD INTERSECTIONS**

179th St ( Co Rd # 94360, mp 0.260 - 0.300 ) @ 15th Ave ( Co Rd # 43110, mp 2.490 - 2.510 )

**01/01/2020 - 12/31/2024** *See 2nd tab below for road info & interchange drawings*

*Under 23 U.S. Code § 148 and 23 U.S. Code § 407, safety data, reports, surveys, schedules, lists compiled or collected for the purpose of identifying, evaluating, or planning the safety enhancement of potential crash sites, hazardous roadway conditions, or railway-highway crossings are not 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.*

| JURISDICTION | COUNTY | CITY | PRIMARY TRAFFICWAY | BLOCK NUMBER | INTERSECTING TRAFFICWAY | CO ONLY INTERSECTING COUNTY ROAD MP | DIST FROM REF POINT | MI or FT | COMP DIR FROM REF POINT | REFERENCE POINT NAME | MILEPOST | A / B | SR ONLY HISTORY / SUSPENSE IND | REPORT NUMBER | DATE | TIME | MOST SEVERE INJURY TYPE | # INJ | # FAT | # VEH | # PEDS | # BIKES | VEHICLE 1 TYPE | VEHICLE 2 TYPE | JUNCTION RELATIONSHIP | WEATHER | ROADWAY SURFACE CONDITION | LIGHTING CONDITION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| County Road | Clark | | 94360 | | 43110 | 2.510 | | | | | 0.280 | | No | EC80219 | 08/15/2022 | 12:02 | No Apparent Injury | 0 | 0 | 2 | 0 | 0 | Truck (Flatbad,Van,etc) | Pickup,Panel Truck or Vanette under 10,000 lb | At Intersection and Related | Clear or Partly Cloudy | Dry | Daylight |
| County Road | Clark | | 94360 | | 43110 | 2.510 | | | | | 0.280 | | No | EE68818 | 03/23/2024 | 18:02 | No Apparent Injury | 0 | 0 | 2 | 0 | 0 | Passenger Car | Pickup,Panel Truck or Vanette under 10,000 lb | At Intersection and Related | Raining | Wet | Daylight |
| County Road | Clark | | 94360 | | 43110 | 2.510 | | | | | 0.280 | | No | EC07748 | 01/02/2022 | 12:41 | Possible Injury | 1 | 0 | 2 | 0 | 0 | Passenger Car | Passenger Car | At Intersection and Related | Overcast | Dry | Daylight |
| County Road | Clark | | 94360 | | 43110 | 2.510 | | | | | 0.280 | | No | ED88656 | 06/02/2023 | 07:30 | No Apparent Injury | 0 | 0 | 2 | 0 | 0 | Truck (Flatbad,Van,etc) | Passenger Car | At Intersection and Related | Clear or Partly Cloudy | Dry | Daylight |
| County Road | Clark | | 94360 | | 43110 | 2.510 | | | | | 0.280 | | No | EA75716 | 10/22/2020 | 16:34 | No Apparent Injury | 0 | 0 | 2 | 0 | 0 | Passenger Car | Pickup,Panel Truck or Vanette under 10,000 lb | At Intersection and Related | Clear or Partly Cloudy | Dry | Daylight |

OFFICER REPORTED CRASHES THAT OCCURRED AT MULTIPLE INTERSECTIONS IN CLARK COUNTY

**COUNTY ROAD INTERSECTIONS**

179th St ( Co Rd # 94360, mp 0.260 - 0.300 ) @ 15th Ave ( Co Rd # 43110, mp 2.490 - 2.510 )

**01/01/2020 - 12/31/2024** *See 2nd tab below for road info & interchange drawings*

*Under 23 U.S. Code § 148 and 23 U.S. Code § 407, safety data, reports, surveys, schedules, lists compiled or collected for the purpose of identifying, evaluating, or planning the safety enhancement of potential crash sites, hazardous roadway conditions, or railway-highway crossings are not 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.*

| FIRST COLLISION TYPE / OBJECT STRUCK | VEHICLE 1 ACTION | VEHICLE 2 ACTION | VEHICLE 1 COMPASS DIRECTION FROM | VEHICLE 1 COMPASS DIRECTION TO | VEHICLE 2 COMPASS DIRECTION FROM | VEHICLE 2 COMPASS DIRECTION TO | MV DRIVER CONTRIBUTING CIRCUMSTANCE 1 (UNIT 1) | MV DRIVER CONTRIBUTING CIRCUMSTANCE 2 (UNIT 1) | MV DRIVER CONTRIBUTING CIRCUMSTANCE 3 (UNIT 1) | MV DRIVER CONTRIBUTING CIRCUMSTANCE 1 (UNIT 2) | MV DRIVER CONTRIBUTING CIRCUMSTANCE 2 (UNIT 2) | MV DRIVER CONTRIBUTING CIRCUMSTANCE 3 (UNIT 2) | PEDESTRIAN CONTRIBUTING CIRCUMSTANCE 1 (UNIT 2) | PEDESTRIAN CONTRIBUTING CIRCUMSTANCE 2 (UNIT 2) | PEDESTRIAN CONTRIBUTING CIRCUMSTANCE 3 (UNIT 2) | FIRST IMPACT LOCATION (City, County & Misc Trafficways - 2010 forward) | WA STATE PLANE SOUTH - X 2010 - FORWARD | WA STATE PLANE SOUTH - Y 2010 - FORWARD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Entering at angle | Going Straight Ahead | Making Left Turn | West | East | South | West | Did Not Grant RW to Vehicle | | | None | | | | | | Lane of Primary Trafficway | 1090128.54 | 159720.94 |
| From opposite direction - one left turn - one straight | Making Left Turn | Going Straight Ahead | East | South | West | East | Other Distractions | | | None | | | | | | Lane of Primary Trafficway | 1090128.54 | 159720.94 |
| Entering at angle | Making Right Turn | Going Straight Ahead | South | East | East | West | Exceeding Reas. Safe Speed | | | None | | | | | | Lane of Primary Trafficway | 1090128.54 | 159720.94 |
| Entering at angle | Going Straight Ahead | Making Left Turn | West | East | South | West | Disregard Traffic Sign and Signals | | | None | | | | | | Lane of Primary Trafficway | 1090128.54 | 159720.94 |
| From opposite direction - one left turn - one straight | Making Left Turn | Going Straight Ahead | East | South | West | East | Did Not Grant RW to Vehicle | | | None | | | | | | Lane of Primary Trafficway | 1090128.54 | 159720.94 |

OFFICER REPORTED CRASHES THAT OCCURRED AT MULTIPLE INTERSECTIONS IN CLARK COUNTY

**COUNTY ROAD INTERSECTIONS**

179th St ( Co Rd # 94360, mp 0.970 - 1.010 ) @ 29th Ave ( Co Rd # 43330, mp 2.240 - 2.280 )

**01/01/2020 - 12/31/2023** *See 2nd tab below for road info & interchange drawings*

*Under 23 U.S. Code § 148 and 23 U.S. Code § 407, safety data, reports, surveys, schedules, lists compiled or collected for the purpose of identifying, evaluating, or planning the safety enhancement of potential crash sites, hazardous roadway conditions, or railway-highway crossings are not 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.*

| JURISDICTION | COUNTY | CITY | PRIMARY TRAFFICWAY | BLOCK NUMBER | INTERSECTING TRAFFICWAY | CO ONLY INTERSECTING COUNTY ROAD MP | DIST FROM REF POINT | MI or FT | COMP DIR FROM REF POINT | REFERENCE POINT NAME | MILEPOST | A / B | SR ONLY HISTORY / SUSPENSE IND | REPORT NUMBER | DATE | TIME | MOST SEVERE INJURY TYPE | # INJ | # FAT | # VEH | # PEDS | # BIKES | VEHICLE 1 TYPE | VEHICLE 2 TYPE | JUNCTION RELATIONSHIP | WEATHER | ROADWAY SURFACE CONDITION | LIGHTING CONDITION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| County Road | Clark | | 43330 | | 94360 | 0.990 | | | | | 2.260 | | No | ED16740 | 12/18/2022 | 14:53 | Suspected Minor 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 | Clear | Wet | Daylight |
| County Road | Clark | | 94360 | | 43330 | 2.260 | | | | | 0.990 | | No | EC37890 | 03/25/2022 | 15:22 | No Apparent Injury | 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 | Clear or Partly Cloudy | Dry | Daylight |
| County Road | Clark | | 94360 | | 43330 | 2.260 | | | | | 0.990 | | No | ED48528 | 03/28/2023 | 21:40 | No Apparent Injury | 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 | Raining | Wet | Dark-No Street Lights |
| County Road | Clark | | 94360 | | 43330 | 2.260 | | | | | 0.990 | | No | ED10607 | 11/28/2022 | 17:28 | Possible Injury | 1 | 0 | 3 | 0 | 0 | Pickup,Panel Truck or Vanette under 10,000 lb | Passenger Car | At Intersection and Related | Fog or Smog or Smoke | Wet | Dark-No Street Lights |
| County Road | Clark | | 94360 | | 43330 | 2.260 | | | | | 0.990 | | No | EB76046 | 09/10/2021 | 17:42 | Possible Injury | 2 | 0 | 2 | 0 | 0 | Passenger Car | Passenger Car | At Intersection and Related | Clear or Partly Cloudy | Dry | Daylight |
| County Road | Clark | | 94360 | | 43330 | 2.260 | | | | | 0.990 | | No | EA47114 | 07/07/2020 | 09:56 | No Apparent Injury | 0 | 0 | 2 | 0 | 0 | Passenger Car | Pickup,Panel Truck or Vanette under 10,000 lb | At Intersection and Related | Raining | Wet | Daylight |
| County Road | Clark | | 94360 | | 43330 | 2.260 | | | | | 0.990 | | No | EA78834 | 10/30/2020 | 13:00 | No Apparent Injury | 0 | 0 | 2 | 0 | 0 | Passenger Car | Pickup,Panel Truck or Vanette under 10,000 lb | At Intersection and Related | Clear or Partly Cloudy | Dry | Daylight |
| County Road | Clark | | 94360 | | 43330 | 2.260 | | | | | 0.990 | | No | EC53355 | 05/25/2022 | 19:43 | No Apparent Injury | 0 | 0 | 2 | 0 | 0 | Pickup,Panel Truck or Vanette under 10,000 lb | Pickup,Panel Truck or Vanette under 10,000 lb | Entering Roundabout | Clear | Dry | Daylight |
| County Road | Clark | | 94360 | | 43330 | 2.260 | | | | | 0.990 | | No | ED57928 | 05/02/2023 | 14:25 | Possible Injury | 1 | 0 | 2 | 0 | 0 | Passenger Car | Passenger Car | At Intersection and Related | Clear or Partly Cloudy | Dry | Daylight |
| County Road | Clark | | 94360 | | 43330 | 2.260 | | | | | 0.990 | | No | ED31158 | 01/23/2023 | 16:32 | No Apparent Injury | 0 | 0 | 2 | 0 | 0 | Passenger Car | Pickup,Panel Truck or Vanette under 10,000 lb | At Intersection and Related | Clear | Dry | Dusk |

OFFICER REPORTED CRASHES THAT OCCURRED AT MULTIPLE INTERSECTIONS IN CLARK COUNTY

**COUNTY ROAD INTERSECTIONS**

179th St ( Co Rd # 94360, mp 0.970 - 1.010 ) @ 29th Ave ( Co Rd # 43330, mp 2.240 - 2.280 )

**01/01/2020 - 12/31/2023** *See 2nd tab below for road info & interchange drawings*

*Under 23 U.S. Code § 148 and 23 U.S. Code § 407, safety data, reports, surveys, schedules, lists compiled or collected for the purpose of identifying, evaluating, or planning the safety enhancement of potential crash sites, hazardous roadway conditions, or railway-highway crossings are not 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.*

| FIRST COLLISION TYPE / OBJECT STRUCK | VEHICLE 1 ACTION | VEHICLE 2 ACTION | VEHICLE 1 COMPASS DIRECTION FROM | VEHICLE 1 COMPASS DIRECTION TO | VEHICLE 2 COMPASS DIRECTION FROM | VEHICLE 2 COMPASS DIRECTION TO | MV DRIVER CONTRIBUTING CIRCUMSTANCE 1 (UNIT 1) | MV DRIVER CONTRIBUTING CIRCUMSTANCE 2 (UNIT 1) | MV DRIVER CONTRIBUTING CIRCUMSTANCE 3 (UNIT 1) | MV DRIVER CONTRIBUTING CIRCUMSTANCE 1 (UNIT 2) | MV DRIVER CONTRIBUTING CIRCUMSTANCE 2 (UNIT 2) | MV DRIVER CONTRIBUTING CIRCUMSTANCE 3 (UNIT 2) | PEDESTRIAN CONTRIBUTING CIRCUMSTANCE 1 (UNIT 2) | PEDESTRIAN CONTRIBUTING CIRCUMSTANCE 2 (UNIT 2) | PEDESTRIAN CONTRIBUTING CIRCUMSTANCE 3 (UNIT 2) | FIRST IMPACT LOCATION (City, County & Misc Trafficways - 2010 forward) | WA STATE PLANE SOUTH - X 2010 - FORWARD | WA STATE PLANE SOUTH - Y 2010 - FORWARD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Entering at angle | Going Straight Ahead | Going Straight Ahead | West | East | North | South | Disregard Traffic Sign and Signals | | | None | | | | | | Lane of Primary Trafficway | 1093914.19 | 159640.78 |
| Entering at angle | Making Left Turn | Going Straight Ahead | East | South | South | Vehicle Stopped | Distracted by Adjusting Vehicle Cntrls | | | None | | | | | | Intersecting Trafficway | 1078172.95 | 159926.58 |
| Entering at angle | Going Straight Ahead | Starting in Traffic Lane | West | East | South | North | Disregard Traffic Sign and Signals | | | None | | | | | | Lane of Primary Trafficway | 1093914.19 | 159640.78 |
| Entering at angle | Going Straight Ahead | Going Straight Ahead | East | West | South | North | Disregard Traffic Sign and Signals | | | None | | | | | | Lane of Primary Trafficway | 1093914.19 | 159640.78 |
| From opposite direction - one left turn - one straight | Going Straight Ahead | Making Left Turn | West | East | East | South | Disregard Traffic Sign and Signals | | | None | | | | | | Lane of Primary Trafficway | 1093914.19 | 159640.78 |
| Entering at angle | Starting in Traffic Lane | Starting in Traffic Lane | East | West | North | South | Did Not Grant RW to Vehicle | | | None | | | | | | Lane of Primary Trafficway | 1093914.43 | 159639.32 |
| From same direction - both going straight - one stopped - rear-end | Going Straight Ahead | Stopped at Signal or Stop Sign | East | West | East | West | Unknown Distraction | | | None | | | | | | Lane of Primary Trafficway | 1093914.19 | 159640.78 |
| Entering at angle | Going Straight Ahead | Going Straight Ahead | East | West | North | South | Distracted by Other Occupant | | | None | | | | | | Lane of Primary Trafficway | 1131730.85 | 119503.08 |
| Entering at angle | Going Straight Ahead | Making Left Turn | West | East | North | South | Disregard Traffic Sign and Signals | | | None | | | | | | Lane of Primary Trafficway | 1093914.19 | 159640.78 |
| Entering at angle | Going Straight Ahead | Starting in Traffic Lane | West | East | South | North | Unknown Distraction | | | Unknown Distraction | | | | | | Lane of Primary Trafficway | 1093914.19 | 159640.78 |

OFFICER REPORTED CRASHES THAT OCCURRED AT MULTIPLE INTERSECTIONS IN CLARK COUNTY

**COUNTY ROAD INTERSECTIONS**

179th St ( Co Rd # 94360, mp 0.970 - 1.010 ) @ 29th Ave ( Co Rd # 43330, mp 2.240 - 2.280 )

**01/01/2020 - 12/31/2023** *See 2nd tab below for road info & interchange drawings*

*Under 23 U.S. Code § 148 and 23 U.S. Code § 407, safety data, reports, surveys, schedules, lists compiled or collected for the purpose of identifying, evaluating, or planning the safety enhancement of potential crash sites, hazardous roadway conditions, or railway-highway crossings are not 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.*

| JURISDICTION | COUNTY | CITY | PRIMARY TRAFFICWAY | BLOCK NUMBER | INTERSECTING TRAFFICWAY | CO ONLY INTERSECTING COUNTY ROAD MP | DIST FROM REF POINT | MI or FT | COMP DIR FROM REF POINT | REFERENCE POINT NAME | MILEPOST | A / B | SR ONLY HISTORY / SUSPENSE IND | REPORT NUMBER | DATE | TIME | MOST SEVERE INJURY TYPE | # INJ | # FAT | # VEH | # PEDS | # BIKES | VEHICLE 1 TYPE | VEHICLE 2 TYPE | JUNCTION RELATIONSHIP | WEATHER | ROADWAY SURFACE CONDITION | LIGHTING CONDITION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| County Road | Clark | | 94360 | | 43330 | 2.260 | | | | | 0.990 | | No | EC19856 | 02/07/2022 | 13:33 | Possible Injury | 1 | 0 | 2 | 0 | 0 | Truck (Flatbad,Van,etc) | Pickup,Panel Truck or Vanette under 10,000 lb | At Intersection and Related | Clear or Partly Cloudy | Dry | Daylight |
| County Road | Clark | | 94360 | | 43330 | 2.260 | | | | | 0.990 | | No | EE25446 | 10/31/2023 | 07:26 | No Apparent Injury | 0 | 0 | 2 | 0 | 0 | Pickup,Panel Truck or Vanette under 10,000 lb | Passenger Car | At Intersection and Related | Clear | Dry | Dark - Unknown Lightin |

OFFICER REPORTED CRASHES THAT OCCURRED AT MULTIPLE INTERSECTIONS IN CLARK COUNTY

**COUNTY ROAD INTERSECTIONS**

179th St ( Co Rd # 94360, mp 0.970 - 1.010 ) @ 29th Ave ( Co Rd # 43330, mp 2.240 - 2.280 )

**01/01/2020 - 12/31/2023** *See 2nd tab below for road info & interchange drawings*

*Under 23 U.S. Code § 148 and 23 U.S. Code § 407, safety data, reports, surveys, schedules, lists compiled or collected for the purpose of identifying, evaluating, or planning the safety enhancement of potential crash sites, hazardous roadway conditions, or railway-highway crossings are not 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.*

| FIRST COLLISION TYPE / OBJECT STRUCK | VEHICLE 1 ACTION | VEHICLE 2 ACTION | VEHICLE 1 COMPASS DIRECTION FROM | VEHICLE 1 COMPASS DIRECTION TO | VEHICLE 2 COMPASS DIRECTION FROM | VEHICLE 2 COMPASS DIRECTION TO | MV DRIVER CONTRIBUTING CIRCUMSTANCE 1 (UNIT 1) | MV DRIVER CONTRIBUTING CIRCUMSTANCE 2 (UNIT 1) | MV DRIVER CONTRIBUTING CIRCUMSTANCE 3 (UNIT 1) | MV DRIVER CONTRIBUTING CIRCUMSTANCE 1 (UNIT 2) | MV DRIVER CONTRIBUTING CIRCUMSTANCE 2 (UNIT 2) | MV DRIVER CONTRIBUTING CIRCUMSTANCE 3 (UNIT 2) | PEDESTRIAN CONTRIBUTING CIRCUMSTANCE 1 (UNIT 2) | PEDESTRIAN CONTRIBUTING CIRCUMSTANCE 2 (UNIT 2) | PEDESTRIAN CONTRIBUTING CIRCUMSTANCE 3 (UNIT 2) | FIRST IMPACT LOCATION (City, County & Misc Trafficways - 2010 forward) | WA STATE PLANE SOUTH - X 2010 - FORWARD | WA STATE PLANE SOUTH - Y 2010 - FORWARD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Entering at angle | Going Straight Ahead | Going Straight Ahead | East | West | South | North | Disregard Traffic Sign and Signals | | | None | | | | | | Lane of Primary Trafficway | 1093914.19 | 159640.78 |
| Entering at angle | Going Straight Ahead | Going Straight Ahead | South | North | West | East | Disregard Traffic Sign and Signals | | | None | | | | | | Lane of Primary Trafficway | 1093914.19 | 159640.78 |

OFFICER REPORTED CRASHES THAT OCCURRED AT MULTIPLE INTERSECTIONS IN CLARK COUNTY

**COUNTY ROADS**

179TH ST (CO RD #94360, MP 0.970 - 1.010) @ 29TH AVE (CO RD #43330, MP 2.240 - 2.280)

**01/01/2024 - 12/31/2024** *See 2nd tab below for road information & interchange drawing for reference*

*Under 23 U.S. Code § 148 and 23 U.S. Code § 407, safety data, reports, surveys, schedules, lists compiled or collected for the purpose of identifying, evaluating, or planning the safety enhancement of potential crash sites, hazardous roadway conditions, or railway-highway crossings are not 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.*

| JURISDICTION | COUNTY | CITY | PRIMARY TRAFFICWAY | MILEPOST | A / B | SR ONLY ACCUMULATIVE ROUTE MILEPOST (ARM) | BLOCK NUMBER | INTERSECTING TRAFFICWAY | CO ONLY Intersecting County Road MP | DIST FROM REF POINT | MI or FT | COMP DIR FROM REF POINT | REFERENCE POINT NAME | SR ONLY HISTORY / SUSPENSE IND | REPORT NUMBER | DATE | TIME | MOST SEVERE INJURY TYPE | # INJ | # FAT | # VEH | # PEDS | # BIKES | VEHICLE 1 TYPE | VEHICLE 2 TYPE | JUNCTION RELATIONSHIP | WEATHER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| County Road | Clark | | 94360 | 0.990 | | | | 43330 | 2.260 | | | | | No | EE95856 | 07/14/2024 | 22:23 | No Apparent Injury | 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 | Clear |

OFFICER REPORTED CRASHES THAT OCCURRED AT MULTIPLE INTERSECTIONS IN CLARK COUNTY

**COUNTY ROADS**

179TH ST (CO RD #94360, MP 0.970 - 1.010) @ 29TH AVE (CO RD #43330, MP 2.240 - 2.280)

**01/01/2024 - 12/31/2024** *See 2nd tab below for road information & interchange drawing for reference*

*Under 23 U.S. Code § 148 and 23 U.S. Code § 407, safety data, reports, surveys, schedules, lists compiled or collected for the purpose of identifying, evaluating, or planning the safety enhancement of potential crash sites, hazardous roadway conditions, or railway-highway crossings are not 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.*

| ROADWAY SURFACE CONDITION | LIGHTING CONDITION | FIRST COLLISION TYPE / OBJECT STRUCK | VEHICLE 1 ACTION | VEHICLE 2 ACTION | VEHICLE 1 COMPASS DIRECTION FROM | VEHICLE 1 COMPASS DIRECTION TO | VEHICLE 2 COMPASS DIRECTION FROM | VEHICLE 2 COMPASS DIRECTION TO | MV DRIVER CONTRIBUTING CIRCUMSTANCE 1 (UNIT 1) | MV DRIVER CONTRIBUTING CIRCUMSTANCE 2 (UNIT 1) | MV DRIVER CONTRIBUTING CIRCUMSTANCE 3 (UNIT 1) | MV DRIVER CONTRIBUTING CIRCUMSTANCE 1 (UNIT 2) | MV DRIVER CONTRIBUTING CIRCUMSTANCE 2 (UNIT 2) | MV DRIVER CONTRIBUTING CIRCUMSTANCE 3 (UNIT 2) | FIRST IMPACT LOCATION (City, County & Misc Trafficways - 2010 forward) | WA STATE PLANE SOUTH - X 2010 - FORWARD | WA STATE PLANE SOUTH - Y 2010 - FORWARD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Dry | Dark-No Street Lights | Entering at angle | Going Straight Ahead | Going Straight Ahead | South | North | West | East | Under Influence of Alcohol | Unknown Distraction | | None | | | Lane of Primary Trafficway | 1093914.19 | 159640.78 |

# Appendix F – Operation Analysis

Level of Service Descriptions

Synchro Capacity Reports

Sidra Capacity Reports

# *LEVEL OF SERVICE*

Level of service is used to describe the quality of traffic flow. Levels of service A to C are considered good, and rural roads are usually designed for level of service C. Urban streets and signalized intersections are typically designed for level of service D. Level of service E is considered to be the limit of acceptable delay. For unsignalized intersections, level of service E is generally considered acceptable. Here is a more complete description of levels of service:

*Level of service A:* Very low delay at intersections, with all traffic signal cycles clearing and no vehicles waiting through more than one signal cycle. On highways, low volume and high speeds, with speeds not restricted by other vehicles.

*Level of service B:* Operating speeds beginning to be affected by other traffic; short traffic delays at intersections. Higher average intersection delay than for level of service A resulting from more vehicles stopping.

*Level of service C:* Operating speeds and maneuverability closely controlled by other traffic; higher delays at intersections than for level of service B due to a significant number of vehicles stopping. Not all signal cycles clear the waiting vehicles. This is the recommended design standard for rural highways.

*Level of service D:* Tolerable operating speeds; long traffic delays occur at intersections. The influence of congestion is noticeable. At traffic signals many vehicles stop, and the proportion of vehicles not stopping declines. The number of signal cycle failures, for which vehicles must wait through more than one signal cycle, are noticeable. This is typically the design level for urban signalized intersections.

*Level of service E:* Restricted speeds, very long traffic delays at traffic signals, and traffic volumes near capacity. Flow is unstable so that any interruption, no matter how minor, will cause queues to form and service to deteriorate to level of service F. Traffic signal cycle failures are frequent occurrences. For unsignalized intersections, level of service E or better is generally considered acceptable.

*Level of service F:* Extreme delays, resulting in long queues which may interfere with other traffic movements. There may be stoppages of long duration, and speeds may drop to zero. There may be frequent signal cycle failures. Level of service F will typically result when vehicle arrival rates are greater than capacity. It is considered unacceptable by most drivers.

## *LEVEL OF SERVICE CRITERIA FOR SIGNALIZED INTERSECTIONS*

| LEVEL OF SERVICE | CONTROL DELAY PER VEHICLE (Seconds) |
|---|---|
| A | <10 |
| B | 10-20 |
| C | 20-35 |
| D | 35-55 |
| E | 55-80 |
| F | >80 |

## *LEVEL OF SERVICE CRITERIA FOR UNSIGNALIZED INTERSECTIONS*

| LEVEL OF SERVICE | CONTROL DELAY PER VEHICLE (Seconds) |
|---|---|
| A | <10 |
| B | 10-15 |
| C | 15-25 |
| D | 25-35 |
| E | 35-50 |
| F | >50 |



| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 84 | 100 | 50 | 165 | 91 | 40 |
| Future Volume (vph) | 84 | 100 | 50 | 165 | 91 | 40 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.0 | | | 4.0 | 4.0 | 4.0 |
| Lane Util. Factor | 1.00 | | | 1.00 | 1.00 | 1.00 |
| Frt | 0.93 | | | 1.00 | 1.00 | 0.85 |
| Flt Protected | 1.00 | | | 0.99 | 0.95 | 1.00 |
| Satd. Flow (prot) | 1645 | | | 1860 | 1703 | 1524 |
| Flt Permitted | 1.00 | | | 0.91 | 0.95 | 1.00 |
| Satd. Flow (perm) | 1645 | | | 1704 | 1703 | 1524 |
| Peak-hour factor, PHF | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Adj. Flow (vph) | 95 | 114 | 57 | 188 | 103 | 45 |
| RTOR Reduction (vph) | 52 | 0 | 0 | 0 | 0 | 36 |
| Lane Group Flow (vph) | 157 | 0 | 0 | 245 | 103 | 9 |
| Heavy Vehicles (%) | 7% | 7% | 1% | 1% | 6% | 6% |
| Turn Type | NA | | Perm | NA | Perm | Perm |
| Protected Phases | 4 | | | 8 | | |
| Permitted Phases | | | 8 | | 2 | 2 |
| Actuated Green, G (s) | 16.8 | | | 16.8 | 6.1 | 6.1 |
| Effective Green, g (s) | 16.8 | | | 16.8 | 6.1 | 6.1 |
| Actuated g/C Ratio | 0.54 | | | 0.54 | 0.20 | 0.20 |
| Clearance Time (s) | 4.0 | | | 4.0 | 4.0 | 4.0 |
| Vehicle Extension (s) | 3.0 | | | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | 894 | | | 926 | 336 | 300 |
| v/s Ratio Prot | 0.10 | | | | | |
| v/s Ratio Perm | | | | c0.14 | c0.06 | 0.01 |
| v/c Ratio | 0.18 | | | 0.26 | 0.31 | 0.03 |
| Uniform Delay, d1 | 3.6 | | | 3.8 | 10.6 | 10.0 |
| Progression Factor | 1.00 | | | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d2 | 0.1 | | | 0.2 | 0.5 | 0.0 |
| Delay (s) | 3.7 | | | 3.9 | 11.1 | 10.1 |
| Level of Service | A | | | A | B | B |
| Approach Delay (s/veh) | 3.7 | | | 3.9 | 10.8 | |
| Approach LOS | A | | | A | B | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay (s/veh) | 5.5 | HCM 2000 Level of Service | A |
| HCM 2000 Volume to Capacity ratio | 0.28 | | |
| Actuated Cycle Length (s) | 30.9 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 37.0% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 0 | 148 | 217 | 0 | 0 | 1 |
| Future Vol, veh/h | 0 | 148 | 217 | 0 | 0 | 1 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 87 | 87 | 87 | 87 | 87 | 87 |
| Heavy Vehicles, % | 12 | 12 | 6 | 6 | 2 | 2 |
| Mvmt Flow | 0 | 170 | 249 | 0 | 0 | 1 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 249 | 0 | - | 0 | 420 | 249 |
| Stage 1 | - | - | - | - | 249 | - |
| Stage 2 | - | - | - | - | 170 | - |
| Critical Hdwy | 4.22 | - | - | - | 6.42 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 | - |
| Follow-up Hdwy | 2.308 | - | - | - | 3.518 | 3.318 |
| Pot Cap-1 Maneuver | 1260 | - | - | - | 590 | 789 |
| Stage 1 | - | - | - | - | 792 | - |
| Stage 2 | - | - | - | - | 860 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 1260 | - | - | - | 590 | 789 |
| Mov Cap-2 Maneuver | - | - | - | - | 590 | - |
| Stage 1 | - | - | - | - | 792 | - |
| Stage 2 | - | - | - | - | 860 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Ctrl Dly, s/v | 0 | 0 | 9.57 |
| HCM LOS | | | A |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1260 | - | - | - | 789 |
| HCM Lane V/C Ratio | - | - | - | - | 0.001 |
| HCM Ctrl Dly (s/v) | 0 | - | - | - | 9.6 |
| HCM Lane LOS | A | - | - | - | A |
| HCM 95th %tile Q(veh) | 0 | - | - | - | 0 |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 9.3 |
| Intersection LOS | A |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 23 | 101 | 24 | 26 | 151 | 9 | 35 | 41 | 10 | 3 | 70 | 31 |
| Future Vol, veh/h | 23 | 101 | 24 | 26 | 151 | 9 | 35 | 41 | 10 | 3 | 70 | 31 |
| 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 |
| Heavy Vehicles, % | 12 | 12 | 12 | 8 | 8 | 8 | 2 | 2 | 2 | 4 | 4 | 4 |
| Mvmt Flow | 26 | 116 | 28 | 30 | 174 | 10 | 40 | 47 | 11 | 3 | 80 | 36 |
| Number of Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 1 | 1 | 1 | 1 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 1 | 1 | 1 | 1 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 1 | 1 | 1 | 1 |
| HCM Control Delay, s/veh | 9.3 | 9.7 | 8.9 | 8.8 |
| HCM LOS | A | A | A | A |

| Lane | NBLn1 | EBLn1 | WBLn1 | SBLn1 |
|---|---|---|---|---|
| Vol Left, % | 41% | 16% | 14% | 3% |
| Vol Thru, % | 48% | 68% | 81% | 67% |
| Vol Right, % | 12% | 16% | 5% | 30% |
| Sign Control | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 86 | 148 | 186 | 104 |
| LT Vol | 35 | 23 | 26 | 3 |
| Through Vol | 41 | 101 | 151 | 70 |
| RT Vol | 10 | 24 | 9 | 31 |
| Lane Flow Rate | 99 | 170 | 214 | 120 |
| Geometry Grp | 1 | 1 | 1 | 1 |
| Degree of Util (X) | 0.138 | 0.228 | 0.284 | 0.161 |
| Departure Headway (Hd) | 5.025 | 4.835 | 4.78 | 4.85 |
| Convergence, Y/N | Yes | Yes | Yes | Yes |
| Cap | 710 | 738 | 748 | 735 |
| Service Time | 3.085 | 2.889 | 2.831 | 2.907 |
| HCM Lane V/C Ratio | 0.139 | 0.23 | 0.286 | 0.163 |
| HCM Control Delay, s/veh | 8.9 | 9.3 | 9.7 | 8.8 |
| HCM Lane LOS | A | A | A | A |
| HCM 95th-tile Q | 0.5 | 0.9 | 1.2 | 0.6 |



| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 494 | 128 | 54 | 186 | 328 | 155 |
| Future Volume (vph) | 494 | 128 | 54 | 186 | 328 | 155 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.0 | | | 4.0 | 4.0 | 4.0 |
| Lane Util. Factor | 1.00 | | | 1.00 | 1.00 | 1.00 |
| Frt | 0.97 | | | 1.00 | 1.00 | 0.85 |
| Flt Protected | 1.00 | | | 0.99 | 0.95 | 1.00 |
| Satd. Flow (prot) | 1759 | | | 1842 | 1770 | 1583 |
| Flt Permitted | 1.00 | | | 0.70 | 0.95 | 1.00 |
| Satd. Flow (perm) | 1759 | | | 1311 | 1770 | 1583 |
| Peak-hour factor, PHF | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 |
| Adj. Flow (vph) | 555 | 144 | 61 | 209 | 369 | 174 |
| RTOR Reduction (vph) | 16 | 0 | 0 | 0 | 0 | 119 |
| Lane Group Flow (vph) | 683 | 0 | 0 | 270 | 369 | 56 |
| Heavy Vehicles (%) | 5% | 5% | 2% | 2% | 2% | 2% |
| Turn Type | NA | | Perm | NA | Perm | Perm |
| Protected Phases | 4 | | | 8 | | |
| Permitted Phases | | | 8 | | 2 | 2 |
| Actuated Green, G (s) | 23.6 | | | 23.6 | 14.8 | 14.8 |
| Effective Green, g (s) | 23.6 | | | 23.6 | 14.8 | 14.8 |
| Actuated g/C Ratio | 0.51 | | | 0.51 | 0.32 | 0.32 |
| Clearance Time (s) | 4.0 | | | 4.0 | 4.0 | 4.0 |
| Vehicle Extension (s) | 3.0 | | | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | 894 | | | 666 | 564 | 504 |
| v/s Ratio Prot | c0.39 | | | | | |
| v/s Ratio Perm | | | | 0.21 | c0.21 | 0.04 |
| v/c Ratio | 0.76 | | | 0.41 | 0.65 | 0.11 |
| Uniform Delay, d1 | 9.2 | | | 7.1 | 13.6 | 11.2 |
| Progression Factor | 1.00 | | | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d2 | 3.9 | | | 0.4 | 2.7 | 0.1 |
| Delay (s) | 13.1 | | | 7.5 | 16.3 | 11.2 |
| Level of Service | B | | | A | B | B |
| Approach Delay (s/veh) | 13.1 | | | 7.5 | 14.7 | |
| Approach LOS | B | | | A | B | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay (s/veh) | 12.7 | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | 0.72 | | |
| Actuated Cycle Length (s) | 46.4 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 74.7% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 1 | 289 | 231 | 0 | 0 | 1 |
| Future Vol, veh/h | 1 | 289 | 231 | 0 | 0 | 1 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 87 | 87 | 87 | 87 | 87 | 87 |
| Heavy Vehicles, % | 4 | 4 | 4 | 4 | 2 | 2 |
| Mvmt Flow | 1 | 332 | 266 | 0 | 0 | 1 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 266 | 0 | - | 0 | 600 | 266 |
| Stage 1 | - | - | - | - | 266 | - |
| Stage 2 | - | - | - | - | 334 | - |
| Critical Hdwy | 4.14 | - | - | - | 6.42 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 | - |
| Follow-up Hdwy | 2.236 | - | - | - | 3.518 | 3.318 |
| Pot Cap-1 Maneuver | 1287 | - | - | - | 464 | 773 |
| Stage 1 | - | - | - | - | 779 | - |
| Stage 2 | - | - | - | - | 725 | - |
| Platoon blocked, % | | | - | - | - | |
| Mov Cap-1 Maneuver | 1287 | - | - | - | 463 | 773 |
| Mov Cap-2 Maneuver | - | - | - | - | 463 | - |
| Stage 1 | - | - | - | - | 778 | - |
| Stage 2 | - | - | - | - | 725 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Ctrl Dly, s/v | 0.03 | 0 | 9.66 |
| HCM LOS | | | A |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 6 | - | - | - | 773 |
| HCM Lane V/C Ratio | 0.001 | - | - | - | 0.001 |
| HCM Ctrl Dly (s/v) | 7.8 | 0 | - | - | 9.7 |
| HCM Lane LOS | A | A | - | - | A |
| HCM 95th %tile Q(veh) | 0 | - | - | - | 0 |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 11.1 |
| Intersection LOS | B |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 55 | 199 | 35 | 16 | 166 | 9 | 31 | 90 | 26 | 11 | 45 | 34 |
| Future Vol, veh/h | 55 | 199 | 35 | 16 | 166 | 9 | 31 | 90 | 26 | 11 | 45 | 34 |
| 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 |
| Heavy Vehicles, % | 4 | 4 | 4 | 4 | 4 | 4 | 3 | 3 | 3 | 1 | 1 | 1 |
| Mvmt Flow | 63 | 229 | 40 | 18 | 191 | 10 | 36 | 103 | 30 | 13 | 52 | 39 |
| Number of Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 1 | 1 | 1 | 1 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 1 | 1 | 1 | 1 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 1 | 1 | 1 | 1 |
| HCM Control Delay, s/veh | 12.4 | 10.6 | 10.4 | 9.5 |
| HCM LOS | B | B | B | A |

| Lane | NBLn1 | EBLn1 | WBLn1 | SBLn1 |
|---|---|---|---|---|
| Vol Left, % | 21% | 19% | 8% | 12% |
| Vol Thru, % | 61% | 69% | 87% | 50% |
| Vol Right, % | 18% | 12% | 5% | 38% |
| Sign Control | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 147 | 289 | 191 | 90 |
| LT Vol | 31 | 55 | 16 | 11 |
| Through Vol | 90 | 199 | 166 | 45 |
| RT Vol | 26 | 35 | 9 | 34 |
| Lane Flow Rate | 169 | 332 | 220 | 103 |
| Geometry Grp | 1 | 1 | 1 | 1 |
| Degree of Util (X) | 0.258 | 0.466 | 0.317 | 0.156 |
| Departure Headway (Hd) | 5.488 | 5.051 | 5.2 | 5.442 |
| Convergence, Y/N | Yes | Yes | Yes | Yes |
| Cap | 654 | 718 | 692 | 658 |
| Service Time | 3.525 | 3.051 | 3.231 | 3.484 |
| HCM Lane V/C Ratio | 0.258 | 0.462 | 0.318 | 0.157 |
| HCM Control Delay, s/veh | 10.4 | 12.4 | 10.6 | 9.5 |
| HCM Lane LOS | B | B | B | A |
| HCM 95th-tile Q | 1 | 2.5 | 1.4 | 0.6 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 0 | 421 | 643 | 0 | 0 | 1 |
| Future Vol, veh/h | 0 | 421 | 643 | 0 | 0 | 1 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 12 | 12 | 6 | 6 | 2 | 2 |
| Mvmt Flow | 0 | 458 | 699 | 0 | 0 | 1 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 699 | 0 | - | 0 | 1157 | 699 |
| Stage 1 | - | - | - | - | 699 | - |
| Stage 2 | - | - | - | - | 458 | - |
| Critical Hdwy | 4.22 | - | - | - | 6.42 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 | - |
| Follow-up Hdwy | 2.308 | - | - | - | 3.518 | 3.318 |
| Pot Cap-1 Maneuver | 853 | - | - | - | 217 | 440 |
| Stage 1 | - | - | - | - | 493 | - |
| Stage 2 | - | - | - | - | 637 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 853 | - | - | - | 217 | 440 |
| Mov Cap-2 Maneuver | - | - | - | - | 217 | - |
| Stage 1 | - | - | - | - | 493 | - |
| Stage 2 | - | - | - | - | 637 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Ctrl Dly, s/v | 0 | 0 | 13.2 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 853 | - | - | - | 440 |
| HCM Lane V/C Ratio | - | - | - | - | 0.002 |
| HCM Ctrl Dly (s/v) | 0 | - | - | - | 13.2 |
| HCM Lane LOS | A | - | - | - | B |
| HCM 95th %tile Q(veh) | 0 | - | - | - | 0 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 1 | 824 | 656 | 0 | 0 | 1 |
| Future Vol, veh/h | 1 | 824 | 656 | 0 | 0 | 1 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 4 | 4 | 4 | 4 | 2 | 2 |
| Mvmt Flow | 1 | 896 | 713 | 0 | 0 | 1 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 713 | 0 | - | 0 | 1611 | 713 |
| Stage 1 | - | - | - | - | 713 | - |
| Stage 2 | - | - | - | - | 898 | - |
| Critical Hdwy | 4.14 | - | - | - | 6.42 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 | - |
| Follow-up Hdwy | 2.236 | - | - | - | 3.518 | 3.318 |
| Pot Cap-1 Maneuver | 878 | - | - | - | 115 | 432 |
| Stage 1 | - | - | - | - | 486 | - |
| Stage 2 | - | - | - | - | 398 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 878 | - | - | - | 115 | 432 |
| Mov Cap-2 Maneuver | - | - | - | - | 115 | - |
| Stage 1 | - | - | - | - | 484 | - |
| Stage 2 | - | - | - | - | 398 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Ctrl Dly, s/v | 0.01 | 0 | 13.36 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 2 | - | - | - | 432 |
| HCM Lane V/C Ratio | 0.001 | - | - | - | 0.003 |
| HCM Ctrl Dly (s/v) | 9.1 | 0 | - | - | 13.4 |
| HCM Lane LOS | A | A | - | - | B |
| HCM 95th %tile Q(veh) | 0 | - | - | - | 0 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 0 | 424 | 643 | 9 | 0 | 3 |
| Future Vol, veh/h | 0 | 424 | 643 | 9 | 0 | 3 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | - | 0 |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 12 | 12 | 6 | 6 | 2 | 2 |
| Mvmt Flow | 0 | 461 | 699 | 10 | 0 | 3 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | - | 0 | - | 0 | - | 704 |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |
| Critical Hdwy | - | - | - | - | - | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - |
| Follow-up Hdwy | - | - | - | - | - | 3.318 |
| Pot Cap-1 Maneuver | 0 | - | - | - | 0 | 437 |
| Stage 1 | 0 | - | - | - | 0 | - |
| Stage 2 | 0 | - | - | - | 0 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | - | - | - | - | - | 437 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Ctrl Dly, s/v | 0 | 0 | 13.3 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|
| Capacity (veh/h) | - | - | - | 437 |
| HCM Lane V/C Ratio | - | - | - | 0.007 |
| HCM Ctrl Dly (s/v) | - | - | - | 13.3 |
| HCM Lane LOS | - | - | - | B |
| HCM 95th %tile Q(veh) | - | - | - | 0 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.1 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 0 | 828 | 656 | 5 | 0 | 10 |
| Future Vol, veh/h | 0 | 828 | 656 | 5 | 0 | 10 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | - | 0 |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 4 | 4 | 4 | 4 | 2 | 2 |
| Mvmt Flow | 0 | 900 | 713 | 5 | 0 | 11 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | - | 0 | - | 0 | - | 716 |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |
| Critical Hdwy | - | - | - | - | - | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - |
| Follow-up Hdwy | - | - | - | - | - | 3.318 |
| Pot Cap-1 Maneuver | 0 | - | - | - | 0 | 430 |
| Stage 1 | 0 | - | - | - | 0 | - |
| Stage 2 | 0 | - | - | - | 0 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | - | - | - | - | - | 430 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Ctrl Dly, s/v | 0 | 0 | 13.58 |
| HCM LOS | | | B |

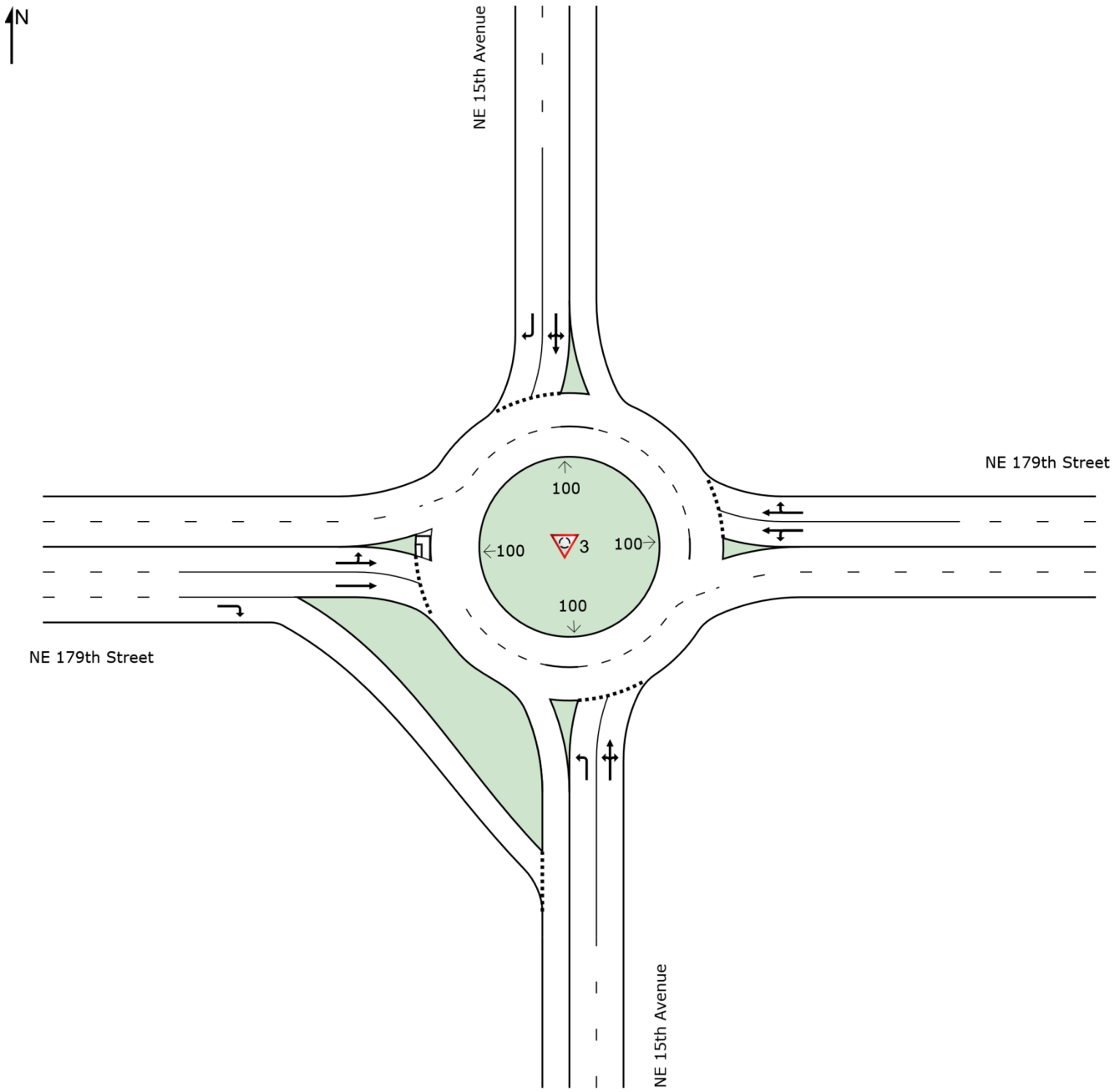
| Minor Lane/Major Mvmt | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|
| Capacity (veh/h) | - | - | - | 430 |
| HCM Lane V/C Ratio | - | - | - | 0.025 |
| HCM Ctrl Dly (s/v) | - | - | - | 13.6 |
| HCM Lane LOS | - | - | - | B |
| HCM 95th %tile Q(veh) | - | - | - | 0.1 |

# SITE LAYOUT

## Site: 3 [Int 1 BGAM (Site Folder: Int 1 - 179th&15th)]

NE 179th Street at NE 15th Avenue
Site Category: 2028 Background Conditions - AM Peak Hour
Roundabout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.

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# MOVEMENT SUMMARY

## Site: 3 [Int 1 BGAM (Site Folder: Int 1 - 179th&15th)]

NE 179th Street at NE 15th Avenue
Site Category: 2028 Background Conditions - AM Peak Hour
Roundabout

**Vehicle Movement Performance**

| Mov ID | Turn | INPUT VOLUMES [ Total veh/h | HV ] % | DEMAND FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] ft | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed mph |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: NE 15th Avenue | | | | | | | | | | | | | | |
| 3 | L2 | 152 | 6.1 | 165 | 6.1 | 0.164 | 11.8 | LOS B | 0.6 | 16.6 | 0.50 | 0.77 | 0.50 | 34.1 |
| 8 | T1 | 61 | 6.1 | 66 | 6.1 | 0.164 | 5.8 | LOS A | 0.6 | 16.6 | 0.50 | 0.64 | 0.50 | 36.0 |
| 18 | R2 | 56 | 6.1 | 61 | 6.1 | 0.164 | 5.9 | LOS A | 0.6 | 16.6 | 0.50 | 0.64 | 0.50 | 34.7 |
| Approach | | 269 | 6.1 | 292 | 6.1 | 0.164 | 9.2 | LOS A | 0.6 | 16.6 | 0.50 | 0.71 | 0.50 | 34.6 |
| East: NE 179th Street | | | | | | | | | | | | | | |
| 1 | L2 | 106 | 1.4 | 115 | 1.4 | 0.366 | 12.0 | LOS B | 1.7 | 43.1 | 0.55 | 0.67 | 0.55 | 35.5 |
| 6 | T1 | 489 | 1.4 | 532 | 1.4 | 0.366 | 6.1 | LOS A | 1.7 | 43.8 | 0.54 | 0.62 | 0.54 | 35.8 |
| 16 | R2 | 69 | 1.4 | 75 | 1.4 | 0.366 | 6.0 | LOS A | 1.7 | 43.8 | 0.54 | 0.58 | 0.54 | 35.0 |
| Approach | | 664 | 1.4 | 722 | 1.4 | 0.366 | 7.0 | LOS A | 1.7 | 43.8 | 0.54 | 0.62 | 0.54 | 35.7 |
| North: NE 15th Avenue | | | | | | | | | | | | | | |
| 7 | L2 | 116 | 13.3 | 126 | 13.3 | 0.362 | 13.2 | LOS B | 1.6 | 43.1 | 0.61 | 0.83 | 0.65 | 34.4 |
| 4 | T1 | 40 | 13.3 | 43 | 13.3 | 0.362 | 7.4 | LOS A | 1.6 | 43.1 | 0.61 | 0.83 | 0.65 | 34.5 |
| 14 | R2 | 351 | 13.3 | 382 | 13.3 | 0.362 | 7.1 | LOS A | 1.6 | 43.9 | 0.61 | 0.80 | 0.64 | 34.5 |
| Approach | | 507 | 13.3 | 551 | 13.3 | 0.362 | 8.5 | LOS A | 1.6 | 43.9 | 0.61 | 0.81 | 0.64 | 34.4 |
| West: NE 179th Street | | | | | | | | | | | | | | |
| 5 | L2 | 258 | 7.1 | 280 | 7.1 | 0.230 | 11.2 | LOS B | 1.3 | 35.5 | 0.48 | 0.68 | 0.48 | 33.8 |
| 2 | T1 | 212 | 7.1 | 230 | 7.1 | 0.223 | 5.7 | LOS A | 1.2 | 32.9 | 0.50 | 0.53 | 0.50 | 36.2 |
| 12 | R2 | 192 | 7.1 | 209 | 7.1 | 0.156 | 4.7 | LOS A | 0.8 | 22.2 | 0.33 | 0.49 | 0.33 | 35.8 |
| Approach | | 662 | 7.1 | 720 | 7.1 | 0.230 | 7.6 | LOS A | 1.3 | 35.5 | 0.44 | 0.58 | 0.44 | 35.1 |
| All Vehicles | | 2102 | 6.7 | 2285 | 6.7 | 0.366 | 7.8 | LOS A | 1.7 | 43.9 | 0.52 | 0.67 | 0.53 | 35.0 |

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
Intersection and Approach LOS values are based on average delay for all movements (v/c not used).
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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# MOVEMENT SUMMARY

## Site: 3 [Int 1 BGPM (Site Folder: Int 1 - 179th&15th)]

NE 179th Street at NE 15th Avenue
Site Category: 2028 Background Conditions - PM Peak Hour
Roundabout

**Vehicle Movement Performance**

| Mov ID | Turn | INPUT VOLUMES [ Total veh/h | HV ] % | DEMAND FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] ft | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed mph |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: NE 15th Avenue | | | | | | | | | | | | | | |
| 3 | L2 | 476 | 1.9 | 476 | 1.9 | 1.173 | 113.7 | LOS F | 34.4 | 872.0 | 1.00 | 2.20 | 5.00 | 13.7 |
| 8 | T1 | 160 | 1.9 | 160 | 1.9 | 1.173 | 105.2 | LOS F | 34.4 | 872.0 | 1.00 | 2.39 | 5.40 | 13.9 |
| 18 | R2 | 244 | 1.9 | 244 | 1.9 | 1.173 | 105.2 | LOS F | 34.4 | 872.0 | 1.00 | 2.39 | 5.40 | 13.8 |
| Approach | | 880 | 1.9 | 880 | 1.9 | 1.173 | 109.8 | LOS F | 34.4 | 872.0 | 1.00 | 2.29 | 5.18 | 13.7 |
| East: NE 179th Street | | | | | | | | | | | | | | |
| 1 | L2 | 128 | 2.1 | 128 | 2.1 | 0.699 | 25.7 | LOS C | 5.3 | 134.9 | 0.92 | 1.13 | 1.45 | 29.5 |
| 6 | T1 | 360 | 2.1 | 360 | 2.1 | 0.699 | 18.8 | LOS B | 6.0 | 151.6 | 0.94 | 1.14 | 1.46 | 30.2 |
| 16 | R2 | 176 | 2.1 | 176 | 2.1 | 0.699 | 17.8 | LOS B | 6.0 | 151.6 | 0.95 | 1.14 | 1.47 | 30.1 |
| Approach | | 664 | 2.1 | 664 | 2.1 | 0.699 | 19.8 | LOS B | 6.0 | 151.6 | 0.94 | 1.14 | 1.46 | 30.0 |
| North: NE 15th Avenue | | | | | | | | | | | | | | |
| 7 | L2 | 154 | 6.1 | 154 | 6.1 | 0.362 | 13.3 | LOS B | 1.7 | 43.4 | 0.65 | 0.84 | 0.69 | 34.2 |
| 4 | T1 | 75 | 6.1 | 75 | 6.1 | 0.362 | 7.5 | LOS A | 1.7 | 43.4 | 0.65 | 0.84 | 0.69 | 34.2 |
| 14 | R2 | 322 | 6.1 | 322 | 6.1 | 0.362 | 7.1 | LOS A | 1.7 | 44.9 | 0.65 | 0.81 | 0.68 | 34.7 |
| Approach | | 551 | 6.1 | 551 | 6.1 | 0.362 | 8.9 | LOS A | 1.7 | 44.9 | 0.65 | 0.82 | 0.68 | 34.5 |
| West: NE 179th Street | | | | | | | | | | | | | | |
| 5 | L2 | 864 | 4.5 | 864 | 4.5 | 0.769 | 15.4 | LOS B | 10.7 | 278.2 | 0.87 | 0.89 | 1.08 | 32.5 |
| 2 | T1 | 826 | 4.5 | 826 | 4.5 | 0.769 | 10.8 | LOS B | 10.7 | 278.2 | 0.89 | 0.92 | 1.15 | 34.2 |
| 12 | R2 | 356 | 4.5 | 356 | 4.5 | 0.269 | 5.0 | LOS A | 1.7 | 43.9 | 0.43 | 0.53 | 0.43 | 35.6 |
| Approach | | 2046 | 4.5 | 2046 | 4.5 | 0.769 | 11.7 | LOS B | 10.7 | 278.2 | 0.80 | 0.84 | 0.99 | 33.7 |
| All Vehicles | | 4141 | 3.8 | 4141 | 3.8 | 1.173 | 33.5 | LOS C | 34.4 | 872.0 | 0.85 | 1.20 | 1.92 | 25.4 |

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
Intersection and Approach LOS values are based on average delay for all movements (v/c not used).
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

# MOVEMENT SUMMARY

## Site: 3 [Int 1STAM (Site Folder: Int 1 - 179th&15th)]

NE 179th Street at NE 15th Avenue
Site Category: 2028 Buildout Conditions - AM Peak Hour
Roundabout

**Vehicle Movement Performance**

| Mov ID | Turn | INPUT VOLUMES [ Total veh/h | HV ] % | DEMAND FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] ft | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed mph |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: NE 15th Avenue | | | | | | | | | | | | | | |
| 3 | L2 | 152 | 6.1 | 165 | 6.1 | 0.165 | 11.8 | LOS B | 0.6 | 16.6 | 0.50 | 0.77 | 0.50 | 34.1 |
| 8 | T1 | 61 | 6.1 | 66 | 6.1 | 0.165 | 5.8 | LOS A | 0.6 | 16.6 | 0.50 | 0.64 | 0.50 | 35.9 |
| 18 | R2 | 56 | 6.1 | 61 | 6.1 | 0.165 | 5.9 | LOS A | 0.6 | 16.6 | 0.50 | 0.64 | 0.50 | 34.7 |
| Approach | | 269 | 6.1 | 292 | 6.1 | 0.165 | 9.3 | LOS A | 0.6 | 16.6 | 0.50 | 0.71 | 0.50 | 34.6 |
| East: NE 179th Street | | | | | | | | | | | | | | |
| 1 | L2 | 107 | 1.4 | 116 | 1.4 | 0.367 | 12.0 | LOS B | 1.7 | 43.3 | 0.55 | 0.67 | 0.55 | 35.4 |
| 6 | T1 | 490 | 1.4 | 533 | 1.4 | 0.367 | 6.1 | LOS A | 1.7 | 43.9 | 0.55 | 0.62 | 0.55 | 35.8 |
| 16 | R2 | 69 | 1.4 | 75 | 1.4 | 0.367 | 6.0 | LOS A | 1.7 | 43.9 | 0.54 | 0.58 | 0.54 | 35.0 |
| Approach | | 666 | 1.4 | 724 | 1.4 | 0.367 | 7.0 | LOS A | 1.7 | 43.9 | 0.55 | 0.63 | 0.55 | 35.7 |
| North: NE 15th Avenue | | | | | | | | | | | | | | |
| 7 | L2 | 116 | 13.3 | 126 | 13.3 | 0.362 | 13.2 | LOS B | 1.6 | 43.2 | 0.61 | 0.83 | 0.65 | 34.4 |
| 4 | T1 | 40 | 13.3 | 43 | 13.3 | 0.362 | 7.4 | LOS A | 1.6 | 43.2 | 0.61 | 0.83 | 0.65 | 34.5 |
| 14 | R2 | 351 | 13.3 | 382 | 13.3 | 0.362 | 7.1 | LOS A | 1.6 | 44.0 | 0.61 | 0.80 | 0.64 | 34.5 |
| Approach | | 507 | 13.3 | 551 | 13.3 | 0.362 | 8.5 | LOS A | 1.6 | 44.0 | 0.61 | 0.81 | 0.64 | 34.4 |
| West: NE 179th Street | | | | | | | | | | | | | | |
| 5 | L2 | 258 | 7.1 | 280 | 7.1 | 0.231 | 11.2 | LOS B | 1.3 | 35.6 | 0.48 | 0.68 | 0.48 | 33.8 |
| 2 | T1 | 215 | 7.1 | 234 | 7.1 | 0.226 | 5.7 | LOS A | 1.3 | 33.5 | 0.50 | 0.53 | 0.50 | 36.2 |
| 12 | R2 | 192 | 7.1 | 209 | 7.1 | 0.156 | 4.8 | LOS A | 0.8 | 22.3 | 0.34 | 0.49 | 0.34 | 35.8 |
| Approach | | 665 | 7.1 | 723 | 7.1 | 0.231 | 7.6 | LOS A | 1.3 | 35.6 | 0.44 | 0.58 | 0.44 | 35.1 |
| All Vehicles | | 2107 | 6.7 | 2290 | 6.7 | 0.367 | 7.8 | LOS A | 1.7 | 44.0 | 0.52 | 0.67 | 0.53 | 35.0 |

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
Intersection and Approach LOS values are based on average delay for all movements (v/c not used).
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

# MOVEMENT SUMMARY

## Site: 3 [Int 1 STPM (Site Folder: Int 1 - 179th&15th)]

NE 179th Street at NE 15th Avenue
Site Category: 2028 Buildout Conditions - PM Peak Hour
Roundabout

**Vehicle Movement Performance**

| Mov ID | Turn | INPUT VOLUMES [ Total veh/h | HV ] % | DEMAND FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] ft | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed mph |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: NE 15th Avenue | | | | | | | | | | | | | | |
| 3 | L2 | 476 | 1.9 | 476 | 1.9 | 1.182 | 117.0 | LOS F | 35.2 | 894.5 | 1.00 | 2.23 | 5.08 | 13.4 |
| 8 | T1 | 160 | 1.9 | 160 | 1.9 | 1.182 | 108.5 | LOS F | 35.2 | 894.5 | 1.00 | 2.42 | 5.49 | 13.7 |
| 18 | R2 | 244 | 1.9 | 244 | 1.9 | 1.182 | 108.6 | LOS F | 35.2 | 894.5 | 1.00 | 2.42 | 5.49 | 13.5 |
| Approach | | 880 | 1.9 | 880 | 1.9 | 1.182 | 113.2 | LOS F | 35.2 | 894.5 | 1.00 | 2.31 | 5.27 | 13.5 |
| East: NE 179th Street | | | | | | | | | | | | | | |
| 1u | U | 2 | 2.1 | 2 | 2.1 | 0.710 | 28.5 | LOS C | 5.5 | 138.8 | 0.93 | 1.14 | 1.47 | 29.9 |
| 1 | L2 | 130 | 2.1 | 130 | 2.1 | 0.710 | 26.0 | LOS C | 5.5 | 138.8 | 0.93 | 1.14 | 1.47 | 29.3 |
| 6 | T1 | 364 | 2.1 | 364 | 2.1 | 0.710 | 19.1 | LOS B | 6.1 | 156.1 | 0.94 | 1.15 | 1.48 | 30.1 |
| 16 | R2 | 177 | 2.1 | 177 | 2.1 | 0.710 | 18.2 | LOS B | 6.1 | 156.1 | 0.95 | 1.15 | 1.49 | 30.0 |
| Approach | | 673 | 2.1 | 673 | 2.1 | 0.710 | 20.2 | LOS C | 6.1 | 156.1 | 0.94 | 1.15 | 1.48 | 29.9 |
| North: NE 15th Avenue | | | | | | | | | | | | | | |
| 7 | L2 | 154 | 6.1 | 154 | 6.1 | 0.363 | 13.3 | LOS B | 1.7 | 43.8 | 0.66 | 0.85 | 0.69 | 34.2 |
| 4 | T1 | 75 | 6.1 | 75 | 6.1 | 0.363 | 7.5 | LOS A | 1.7 | 43.8 | 0.66 | 0.85 | 0.69 | 34.2 |
| 14 | R2 | 322 | 6.1 | 322 | 6.1 | 0.363 | 7.1 | LOS A | 1.7 | 45.3 | 0.65 | 0.81 | 0.68 | 34.7 |
| Approach | | 551 | 6.1 | 551 | 6.1 | 0.363 | 8.9 | LOS A | 1.7 | 45.3 | 0.66 | 0.83 | 0.69 | 34.5 |
| West: NE 179th Street | | | | | | | | | | | | | | |
| 5 | L2 | 864 | 4.5 | 864 | 4.5 | 0.772 | 15.5 | LOS B | 10.9 | 282.1 | 0.87 | 0.90 | 1.09 | 32.5 |
| 2 | T1 | 828 | 4.5 | 828 | 4.5 | 0.772 | 11.0 | LOS B | 10.9 | 282.1 | 0.90 | 0.93 | 1.16 | 34.1 |
| 12 | R2 | 356 | 4.5 | 356 | 4.5 | 0.270 | 5.0 | LOS A | 1.7 | 44.0 | 0.43 | 0.53 | 0.43 | 35.6 |
| Approach | | 2048 | 4.5 | 2048 | 4.5 | 0.772 | 11.9 | LOS B | 10.9 | 282.1 | 0.81 | 0.85 | 1.00 | 33.6 |
| All Vehicles | | 4152 | 3.8 | 4152 | 3.8 | 1.182 | 34.3 | LOS C | 35.2 | 894.5 | 0.85 | 1.21 | 1.94 | 25.2 |

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
Intersection and Approach LOS values are based on average delay for all movements (v/c not used).
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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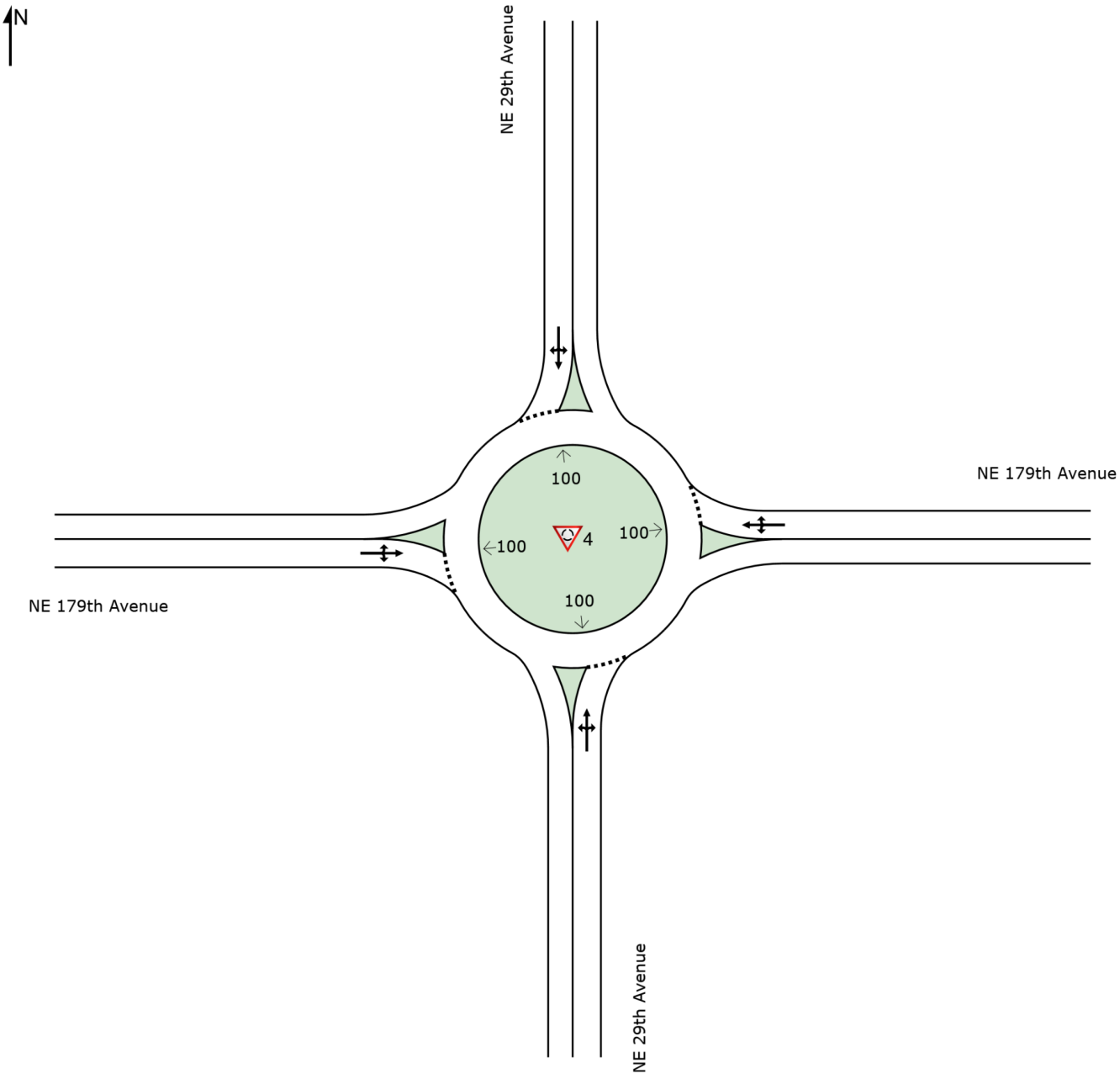
# SITE LAYOUT

## Site: 4 [Int 3 BGAM (Site Folder: Int 3 - 179th&29th)]

NE 179th Street at NE 29th Avenue
Site Category: 2028 Background Conditions - AM Peak Hour
Roundabout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.

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# MOVEMENT SUMMARY

## Site: 4 [Int 3 BGAM (Site Folder: Int 3 - 179th&29th)]

NE 179th Street at NE 29th Avenue
Site Category: 2028 Background Conditions - AM Peak Hour
Roundabout

**Vehicle Movement Performance**

| Mov ID | Turn | INPUT VOLUMES [ Total veh/h | HV ] % | DEMAND FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] ft | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed mph |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: NE 29th Avenue | | | | | | | | | | | | | | |
| 3 | L2 | 39 | 2.3 | 42 | 2.3 | 0.155 | 12.2 | LOS B | 0.8 | 21.3 | 0.59 | 0.68 | 0.59 | 35.4 |
| 8 | T1 | 51 | 2.3 | 55 | 2.3 | 0.155 | 6.2 | LOS A | 0.8 | 21.3 | 0.59 | 0.68 | 0.59 | 35.3 |
| 18 | R2 | 34 | 2.3 | 37 | 2.3 | 0.155 | 6.3 | LOS A | 0.8 | 21.3 | 0.59 | 0.68 | 0.59 | 34.3 |
| Approach | | 124 | 2.3 | 135 | 2.3 | 0.155 | 8.1 | LOS A | 0.8 | 21.3 | 0.59 | 0.68 | 0.59 | 35.1 |
| East: NE 179th Avenue | | | | | | | | | | | | | | |
| 1 | L2 | 100 | 7.5 | 109 | 7.5 | 0.653 | 11.4 | LOS B | 5.8 | 154.9 | 0.58 | 0.56 | 0.58 | 35.6 |
| 6 | T1 | 536 | 7.5 | 583 | 7.5 | 0.653 | 5.4 | LOS A | 5.8 | 154.9 | 0.58 | 0.56 | 0.58 | 35.6 |
| 16 | R2 | 16 | 7.5 | 17 | 7.5 | 0.653 | 5.5 | LOS A | 5.8 | 154.9 | 0.58 | 0.56 | 0.58 | 34.5 |
| Approach | | 652 | 7.5 | 709 | 7.5 | 0.653 | 6.3 | LOS A | 5.8 | 154.9 | 0.58 | 0.56 | 0.58 | 35.6 |
| North: NE 29th Avenue | | | | | | | | | | | | | | |
| 7 | L2 | 14 | 3.8 | 15 | 3.8 | 0.291 | 15.0 | LOS B | 1.8 | 47.3 | 0.80 | 0.84 | 0.80 | 34.9 |
| 4 | T1 | 88 | 3.8 | 96 | 3.8 | 0.291 | 9.0 | LOS A | 1.8 | 47.3 | 0.80 | 0.84 | 0.80 | 34.8 |
| 14 | R2 | 68 | 3.8 | 74 | 3.8 | 0.291 | 9.1 | LOS A | 1.8 | 47.3 | 0.80 | 0.84 | 0.80 | 33.8 |
| Approach | | 170 | 3.8 | 185 | 3.8 | 0.291 | 9.5 | LOS A | 1.8 | 47.3 | 0.80 | 0.84 | 0.80 | 34.4 |
| West: NE 179th Avenue | | | | | | | | | | | | | | |
| 5 | L2 | 41 | 12.2 | 45 | 12.2 | 0.473 | 11.7 | LOS B | 3.1 | 85.1 | 0.54 | 0.58 | 0.54 | 35.7 |
| 2 | T1 | 349 | 12.2 | 379 | 12.2 | 0.473 | 5.7 | LOS A | 3.1 | 85.1 | 0.54 | 0.58 | 0.54 | 35.8 |
| 12 | R2 | 30 | 12.2 | 33 | 12.2 | 0.473 | 5.8 | LOS A | 3.1 | 85.1 | 0.54 | 0.58 | 0.54 | 34.6 |
| Approach | | 420 | 12.2 | 457 | 12.2 | 0.473 | 6.3 | LOS A | 3.1 | 85.1 | 0.54 | 0.58 | 0.54 | 35.7 |
| All Vehicles | | 1366 | 8.0 | 1485 | 8.0 | 0.653 | 6.9 | LOS A | 5.8 | 154.9 | 0.60 | 0.61 | 0.60 | 35.4 |

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
Intersection and Approach LOS values are based on average delay for all movements (v/c not used).
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

# MOVEMENT SUMMARY

## Site: 4 [Int 3 BGPM (Site Folder: Int 3 - 179th&29th)]

NE 179th Street at NE 29th Avenue
Site Category: 2028 Background Conditions - PM Peak Hour
Roundabout

**Vehicle Movement Performance**

| Mov ID | Turn | INPUT VOLUMES [ Total veh/h | HV ] % | DEMAND FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] ft | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed mph |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: NE 29th Avenue | | | | | | | | | | | | | | |
| 3 | L2 | 39 | 2.7 | 42 | 2.7 | 0.555 | 20.5 | LOS C | 4.9 | 124.7 | 0.97 | 1.08 | 1.22 | 32.0 |
| 8 | T1 | 113 | 2.7 | 123 | 2.7 | 0.555 | 14.5 | LOS B | 4.9 | 124.7 | 0.97 | 1.08 | 1.22 | 31.9 |
| 18 | R2 | 110 | 2.7 | 120 | 2.7 | 0.555 | 14.6 | LOS B | 4.9 | 124.7 | 0.97 | 1.08 | 1.22 | 31.1 |
| Approach | | 262 | 2.7 | 285 | 2.7 | 0.555 | 15.5 | LOS B | 4.9 | 124.7 | 0.97 | 1.08 | 1.22 | 31.6 |
| East: NE 179th Avenue | | | | | | | | | | | | | | |
| 1 | L2 | 65 | 4.2 | 71 | 4.2 | 0.693 | 13.8 | LOS B | 7.4 | 191.1 | 0.77 | 0.77 | 0.87 | 35.1 |
| 6 | T1 | 547 | 4.2 | 595 | 4.2 | 0.693 | 7.8 | LOS A | 7.4 | 191.1 | 0.77 | 0.77 | 0.87 | 35.1 |
| 16 | R2 | 23 | 4.2 | 25 | 4.2 | 0.693 | 7.9 | LOS A | 7.4 | 191.1 | 0.77 | 0.77 | 0.87 | 34.0 |
| Approach | | 635 | 4.2 | 690 | 4.2 | 0.693 | 8.4 | LOS A | 7.4 | 191.1 | 0.77 | 0.77 | 0.87 | 35.0 |
| North: NE 29th Avenue | | | | | | | | | | | | | | |
| 7 | L2 | 20 | 1.1 | 22 | 1.1 | 0.244 | 14.1 | LOS B | 1.6 | 39.3 | 0.79 | 0.81 | 0.79 | 35.1 |
| 4 | T1 | 58 | 1.1 | 63 | 1.1 | 0.244 | 8.2 | LOS A | 1.6 | 39.3 | 0.79 | 0.81 | 0.79 | 35.0 |
| 14 | R2 | 70 | 1.1 | 76 | 1.1 | 0.244 | 8.2 | LOS A | 1.6 | 39.3 | 0.79 | 0.81 | 0.79 | 34.0 |
| Approach | | 148 | 1.1 | 161 | 1.1 | 0.244 | 9.0 | LOS A | 1.6 | 39.3 | 0.79 | 0.81 | 0.79 | 34.5 |
| West: NE 179th Avenue | | | | | | | | | | | | | | |
| 5 | L2 | 105 | 3.5 | 114 | 3.5 | 0.798 | 12.9 | LOS B | 11.0 | 282.1 | 0.78 | 0.65 | 0.83 | 35.1 |
| 2 | T1 | 678 | 3.5 | 737 | 3.5 | 0.798 | 6.9 | LOS A | 11.0 | 282.1 | 0.78 | 0.65 | 0.83 | 35.1 |
| 12 | R2 | 41 | 3.5 | 45 | 3.5 | 0.798 | 7.0 | LOS A | 11.0 | 282.1 | 0.78 | 0.65 | 0.83 | 34.0 |
| Approach | | 824 | 3.5 | 896 | 3.5 | 0.798 | 7.7 | LOS A | 11.0 | 282.1 | 0.78 | 0.65 | 0.83 | 35.0 |
| All Vehicles | | 1869 | 3.4 | 2032 | 3.4 | 0.798 | 9.1 | LOS A | 11.0 | 282.1 | 0.80 | 0.76 | 0.89 | 34.5 |

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
Intersection and Approach LOS values are based on average delay for all movements (v/c not used).
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

# MOVEMENT SUMMARY

## Site: 4 [Int 3 STAM (Site Folder: Int 3 - 179th&29th)]

NE 179th Street at NE 29th Avenue
Site Category: 2028 Buildout Conditions - AM Peak Hour
Roundabout

**Vehicle Movement Performance**

| Mov ID | Turn | INPUT VOLUMES [ Total veh/h | HV ] % | DEMAND FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] ft | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed mph |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: NE 29th Avenue | | | | | | | | | | | | | | |
| 3 | L2 | 41 | 2.3 | 45 | 2.3 | 0.159 | 12.2 | LOS B | 0.9 | 21.8 | 0.59 | 0.69 | 0.59 | 35.4 |
| 8 | T1 | 51 | 2.3 | 55 | 2.3 | 0.159 | 6.3 | LOS A | 0.9 | 21.8 | 0.59 | 0.69 | 0.59 | 35.3 |
| 18 | R2 | 34 | 2.3 | 37 | 2.3 | 0.159 | 6.3 | LOS A | 0.9 | 21.8 | 0.59 | 0.69 | 0.59 | 34.3 |
| Approach | | 126 | 2.3 | 137 | 2.3 | 0.159 | 8.2 | LOS A | 0.9 | 21.8 | 0.59 | 0.69 | 0.59 | 35.0 |
| East: NE 179th Avenue | | | | | | | | | | | | | | |
| 1 | L2 | 100 | 7.5 | 109 | 7.5 | 0.657 | 11.5 | LOS B | 5.9 | 156.0 | 0.59 | 0.57 | 0.59 | 35.6 |
| 6 | T1 | 537 | 7.5 | 584 | 7.5 | 0.657 | 5.5 | LOS A | 5.9 | 156.0 | 0.59 | 0.57 | 0.59 | 35.6 |
| 16 | R2 | 16 | 7.5 | 17 | 7.5 | 0.657 | 5.6 | LOS A | 5.9 | 156.0 | 0.59 | 0.57 | 0.59 | 34.5 |
| Approach | | 653 | 7.5 | 710 | 7.5 | 0.657 | 6.4 | LOS A | 5.9 | 156.0 | 0.59 | 0.57 | 0.59 | 35.5 |
| North: NE 29th Avenue | | | | | | | | | | | | | | |
| 7 | L2 | 14 | 3.8 | 15 | 3.8 | 0.299 | 15.1 | LOS B | 1.9 | 49.0 | 0.80 | 0.85 | 0.80 | 34.8 |
| 4 | T1 | 88 | 3.8 | 96 | 3.8 | 0.299 | 9.1 | LOS A | 1.9 | 49.0 | 0.80 | 0.85 | 0.80 | 34.8 |
| 14 | R2 | 71 | 3.8 | 77 | 3.8 | 0.299 | 9.2 | LOS A | 1.9 | 49.0 | 0.80 | 0.85 | 0.80 | 33.7 |
| Approach | | 173 | 3.8 | 188 | 3.8 | 0.299 | 9.6 | LOS A | 1.9 | 49.0 | 0.80 | 0.85 | 0.80 | 34.3 |
| West: NE 179th Avenue | | | | | | | | | | | | | | |
| 5u | U | 3 | 12.2 | 3 | 12.2 | 0.477 | 14.2 | LOS B | 3.1 | 86.2 | 0.55 | 0.59 | 0.55 | 36.5 |
| 5 | L2 | 41 | 12.2 | 45 | 12.2 | 0.477 | 11.7 | LOS B | 3.1 | 86.2 | 0.55 | 0.59 | 0.55 | 35.6 |
| 2 | T1 | 349 | 12.2 | 379 | 12.2 | 0.477 | 5.7 | LOS A | 3.1 | 86.2 | 0.55 | 0.59 | 0.55 | 35.7 |
| 12 | R2 | 30 | 12.2 | 33 | 12.2 | 0.477 | 5.8 | LOS A | 3.1 | 86.2 | 0.55 | 0.59 | 0.55 | 34.6 |
| Approach | | 423 | 12.2 | 460 | 12.2 | 0.477 | 6.4 | LOS A | 3.1 | 86.2 | 0.55 | 0.59 | 0.55 | 35.7 |
| All Vehicles | | 1375 | 8.0 | 1495 | 8.0 | 0.657 | 7.0 | LOS A | 5.9 | 156.0 | 0.61 | 0.62 | 0.61 | 35.4 |

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
Intersection and Approach LOS values are based on average delay for all movements (v/c not used).
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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# MOVEMENT SUMMARY

## Site: 4 [Int 3 STPM (Site Folder: Int 3 - 179th&29th)]

NE 179th Street at NE 29th Avenue
Site Category: 2028 Buildout Conditions - PM Peak Hour
Roundabout

**Vehicle Movement Performance**

| Mov ID | Turn | INPUT VOLUMES [ Total veh/h | HV ] % | DEMAND FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | 95% BACK OF QUEUE [ Veh. veh | Dist ] ft | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed mph |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: NE 29th Avenue | | | | | | | | | | | | | | |
| 3 | L2 | 40 | 2.7 | 43 | 2.7 | 0.562 | 20.8 | LOS C | 5.0 | 127.7 | 0.98 | 1.08 | 1.23 | 31.8 |
| 8 | T1 | 113 | 2.7 | 123 | 2.7 | 0.562 | 14.8 | LOS B | 5.0 | 127.7 | 0.98 | 1.08 | 1.23 | 31.8 |
| 18 | R2 | 110 | 2.7 | 120 | 2.7 | 0.562 | 14.9 | LOS B | 5.0 | 127.7 | 0.98 | 1.08 | 1.23 | 30.9 |
| Approach | | 263 | 2.7 | 286 | 2.7 | 0.562 | 15.8 | LOS B | 5.0 | 127.7 | 0.98 | 1.08 | 1.23 | 31.4 |
| East: NE 179th Avenue | | | | | | | | | | | | | | |
| 1 | L2 | 65 | 4.2 | 71 | 4.2 | 0.697 | 13.9 | LOS B | 7.5 | 193.8 | 0.77 | 0.78 | 0.88 | 35.1 |
| 6 | T1 | 548 | 4.2 | 596 | 4.2 | 0.697 | 7.9 | LOS A | 7.5 | 193.8 | 0.77 | 0.78 | 0.88 | 35.0 |
| 16 | R2 | 23 | 4.2 | 25 | 4.2 | 0.697 | 8.0 | LOS A | 7.5 | 193.8 | 0.77 | 0.78 | 0.88 | 34.0 |
| Approach | | 636 | 4.2 | 691 | 4.2 | 0.697 | 8.6 | LOS A | 7.5 | 193.8 | 0.77 | 0.78 | 0.88 | 35.0 |
| North: NE 29th Avenue | | | | | | | | | | | | | | |
| 7 | L2 | 20 | 1.1 | 22 | 1.1 | 0.247 | 14.2 | LOS B | 1.6 | 40.0 | 0.79 | 0.82 | 0.79 | 35.1 |
| 4 | T1 | 58 | 1.1 | 63 | 1.1 | 0.247 | 8.2 | LOS A | 1.6 | 40.0 | 0.79 | 0.82 | 0.79 | 35.0 |
| 14 | R2 | 71 | 1.1 | 77 | 1.1 | 0.247 | 8.3 | LOS A | 1.6 | 40.0 | 0.79 | 0.82 | 0.79 | 34.0 |
| Approach | | 149 | 1.1 | 162 | 1.1 | 0.247 | 9.0 | LOS A | 1.6 | 40.0 | 0.79 | 0.82 | 0.79 | 34.5 |
| West: NE 179th Avenue | | | | | | | | | | | | | | |
| 5u | U | 2 | 3.5 | 2 | 3.5 | 0.802 | 15.4 | LOS B | 11.2 | 287.9 | 0.79 | 0.66 | 0.84 | 35.9 |
| 5 | L2 | 106 | 3.5 | 115 | 3.5 | 0.802 | 13.0 | LOS B | 11.2 | 287.9 | 0.79 | 0.66 | 0.84 | 35.1 |
| 2 | T1 | 679 | 3.5 | 738 | 3.5 | 0.802 | 7.0 | LOS A | 11.2 | 287.9 | 0.79 | 0.66 | 0.84 | 35.0 |
| 12 | R2 | 41 | 3.5 | 45 | 3.5 | 0.802 | 7.1 | LOS A | 11.2 | 287.9 | 0.79 | 0.66 | 0.84 | 34.0 |
| Approach | | 828 | 3.5 | 900 | 3.5 | 0.802 | 7.8 | LOS A | 11.2 | 287.9 | 0.79 | 0.66 | 0.84 | 35.0 |
| All Vehicles | | 1876 | 3.4 | 2039 | 3.4 | 0.802 | 9.3 | LOS A | 11.2 | 287.9 | 0.81 | 0.77 | 0.91 | 34.4 |

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
Intersection and Approach LOS values are based on average delay for all movements (v/c not used).
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.