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Kendall Subaru Traffic Impact Analysis

Jurisdiction: City of Marysville

August 2022



090222176

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1. DEVELOPMENT IDENTIFICATION

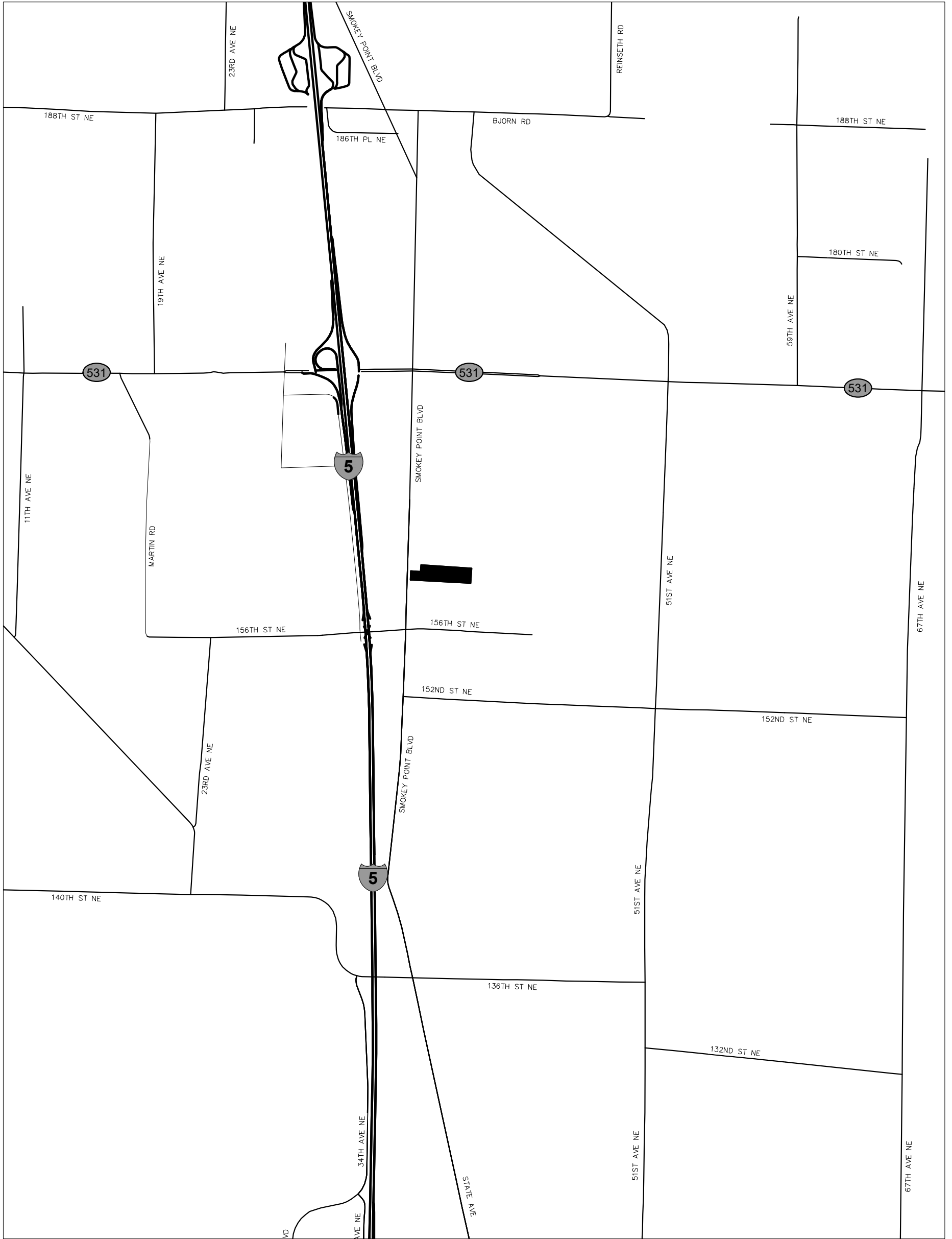
Kimley-Horn and Associates, Inc. has been retained to provide a traffic impact analysis for the proposed Kendall Subaru development. This report is intended to provide the City of Marysville, Snohomish County, and the Washington State Department of Transportation (WSDOT) with the necessary trip generation, trip distribution and level of service information to facilitate their reviews of the development. The Kendall Subaru development is located along the east side of Smokey Point Boulevard, north of 156th Street NE. A site vicinity map is included in Figure 1. The development is proposed to consist of 67,546 square-foot (SF) automobile sales and service.

Brad Lincoln, responsible for this report and traffic analysis, is a licensed professional engineer (Civil) in the State of Washington and member of the Washington State section of ITE.

2. METHODOLOGY

The analysis contained in this report is based on the City of Marysville traffic impact analysis guidelines, which requires the analysis of intersections impacted with 25 or more PM peak-hour trips. The trip generation calculations are based on average trip generation rates published in the Institute of Transportation Engineers (ITE) *Trip Generation Manual, 11th Edition (2021)*. The trip distribution is based on the approved distributions provided by the City of Marysville for the *MIC South* area. The trip generation, trip distribution and scope of analysis was identified during the scoping process for the development.

The level of service analysis at the study intersections has been performed in accordance with the *Highway Capacity Manual (HCM) 6th Edition*. Congestion is generally measured in terms of level of service (LOS). Road facilities and intersections are rated between LOS A and LOS F, with LOS A being free flow and LOS F being forced flow or over-capacity conditions. A summary of the level of service criteria is included in Table 1.



KENDALL SUBARU

CITY OF MARYSVILLE

LEGEND



DEVELOPMENT SITE



STUDY INTERSECTION

FIGURE 1
SITE VICINITY MAP

Table 1: Level of Service Criteria

| Level of ¹ Service | Expected Delay | Intersection Control Delay (Seconds per Vehicle) | |
|-------------------------------|-----------------------------|--|--------------------------|
| | | Unsignalized Intersections | Signalized Intersections |
| A | Little/No Delay | ≤10 | ≤10 |
| B | Short Delays | >10 and ≤15 | >10 and ≤20 |
| C | Average Delays | >15 and ≤25 | >20 and ≤35 |
| D | Long Delays | >25 and ≤35 | >35 and ≤55 |
| E | Very Long Delays | >35 and ≤50 | >55 and ≤80 |
| F | Extreme Delays ² | >50 | >80 |

The level of service at two-way stop-controlled intersections is based on the average delay for the stop approach with the highest delay. The level of service at all-way stop-controlled intersections, roundabouts, and signalized intersections is based on the average delay for all vehicles. The level of service analysis has been performed utilizing the *Synchro 11.1, Build 1* software for signalized and stop-controlled intersections. The City of Marysville identifies acceptable level of service as LOS E for stop-controlled and signalized intersections along the Smokey Point Boulevard corridor. Other intersections have a level of service threshold of LOS D.

3. TRIP GENERATION

The trip generation calculations for the Kendall Subaru development are based on data published by the Institute of Transportation Engineers (ITE) in the *Trip Generation Manual, 11th Edition (2021)*. The average trip generation rates for ITE Land Use Code 840, Automobile Sales (New), were used for the trip generation calculations. The weekday trip generation calculations for the Kendall Subaru development are summarized in Table 2.

¹ **Source:** *Highway Capacity Manual 6th Edition*.

LOS A: Free-flow traffic conditions, with minimal delay to stopped vehicles (no vehicle is delayed longer than one cycle at signalized intersection).

LOS B: Generally stable traffic flow conditions.

LOS C: Occasional back-ups may develop, but delay to vehicles is short term and still tolerable.

LOS D: During short periods of the peak hour, delays to approaching vehicles may be substantial but are tolerable during times of less demand (i.e. vehicles delayed one cycle or less at signal).

LOS E: Intersections operate at or near capacity, with long queues developing on all approaches and long delays.

LOS F: Jammed conditions on all approaches with excessively long delays and vehicles unable to move at times.

² When demand volume exceeds the capacity of the lane, extreme delays will be encountered with queuing which may cause severe congestion affecting other traffic movements in the intersection.

Table 2: Trip Generation Summary - Weekday

| 67,546 SF Automobile Sales (New) | Average Daily Trips | | | AM Peak-Hour Trips | | | PM Peak-Hour Trips | | |
|--|-------------------------|--------|----------|------------------------|-------|--------|------------------------|----------|--------|
| | In | Out | Total | Inbound | In | Out | Total | Outbound | In |
| Generation Rate | 27.84 trips per 1000 SF | | | 1.86 trips per 1000 SF | | | 2.42 trips per 1000 SF | | |
| Splits | 50% | 50% | 100% | Splits | 50% | 50% | 100% | Splits | 50% |
| Trips | 940.24 | 940.24 | 1,880.48 | 91.72 | 33.92 | 125.64 | 65.38 | 98.08 | 163.46 |

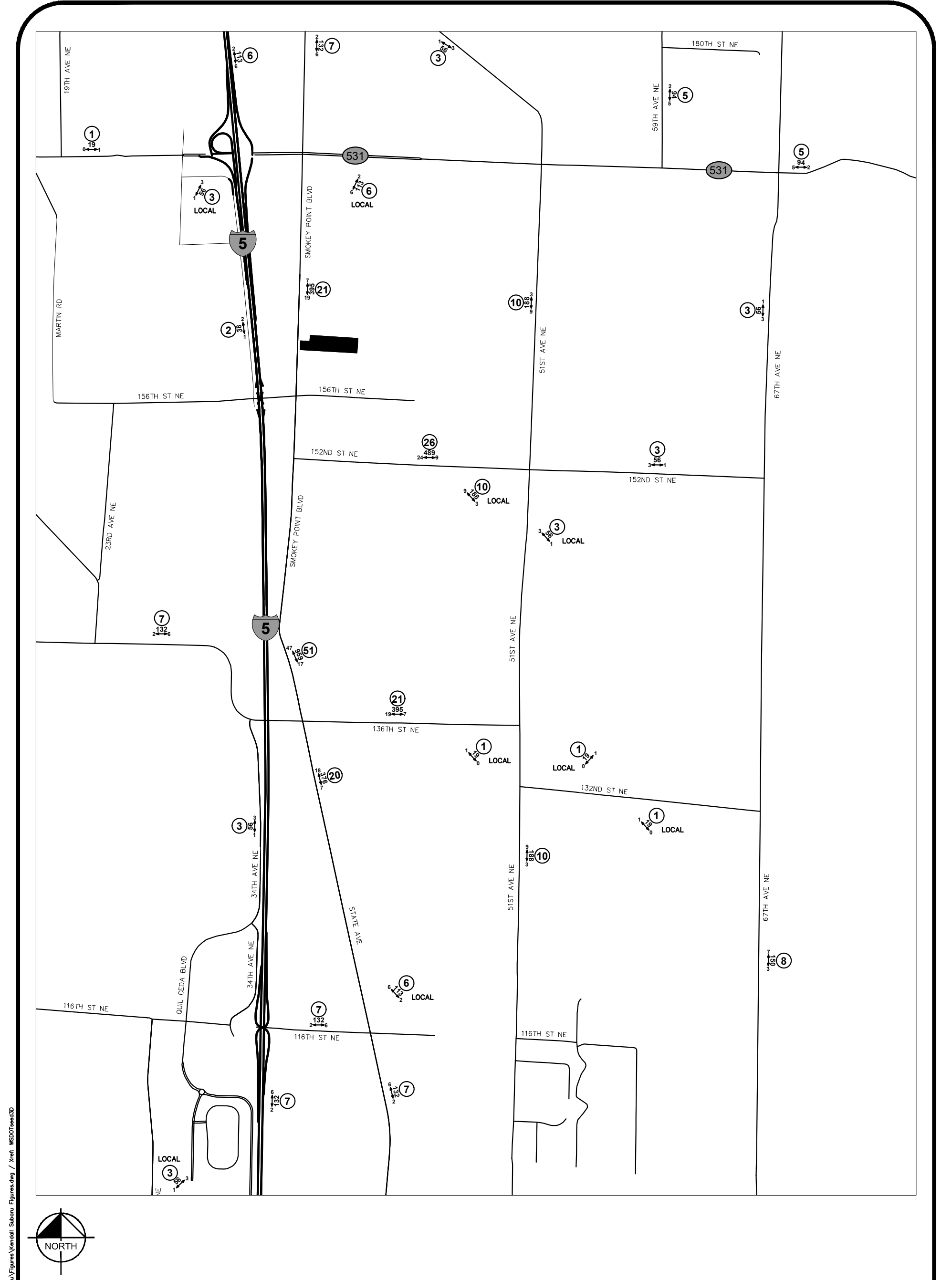
The Kendall Subaru development is anticipated to generate approximately 1,880 average daily trips with 126 AM peak-hour trips and 163 PM peak-hour trips. It is important to note that the trip generation calculations do not account for a 25% pass-by reduction, which is allowable under City of Marysville *Traffic Impact Analysis Guidelines*. This reduction is discussed in further detail as part of the traffic impact fee calculations.

4. TRIP DISTRIBUTION

The trip distribution for the Quality Auto Center development is based on distributions provided by the City of Marysville for new developments in the site vicinity based on the *MIC South* distribution. The trip distribution has been evaluated for the 2025 Opening Year conditions and the 2031 Horizon Year conditions.

4.1 2025 Opening Year

The opening year trip distribution is based on the existing roadway network. It is anticipated that 72% of the trips generated by the development will travel along Smokey Point Boulevard, twenty-one percent to and from the north and fifty-one percent to and from the south. Approximately 26% of the trips generated by the development will travel to and from the east along 152nd Street NE. The remaining 2% of the trips generated by the development will travel to and from local retail areas along Twin Lakes Avenue. Detailed trip distributions are shown in Figure 2 and Figure 3 for the weekday AM and PM peak-hours, respectively.



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KENDALL SUBARU

LEGEND

AWDT
AM ← PEAK
(XX)

NEW DAILY TRAFFIC
NEW AM PEAK-HOUR TRIPS
TRIP DISTRIBUTION %

FIGURE 2

OPENING YEAR
TRIP DISTRIBUTION
AM PEAK-HOUR

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CITY OF MARYSVILLE

LEGEND

AWDT
PM ← PEAK



NEW DAILY TRAFFIC
NEW PM PEAK-HOUR TRIPS
TRIP DISTRIBUTION %

FIGURE 3

OPENING YEAR
TRIP DISTRIBUTION
PM PEAK-HOUR

4.2 2031 Horizon Year

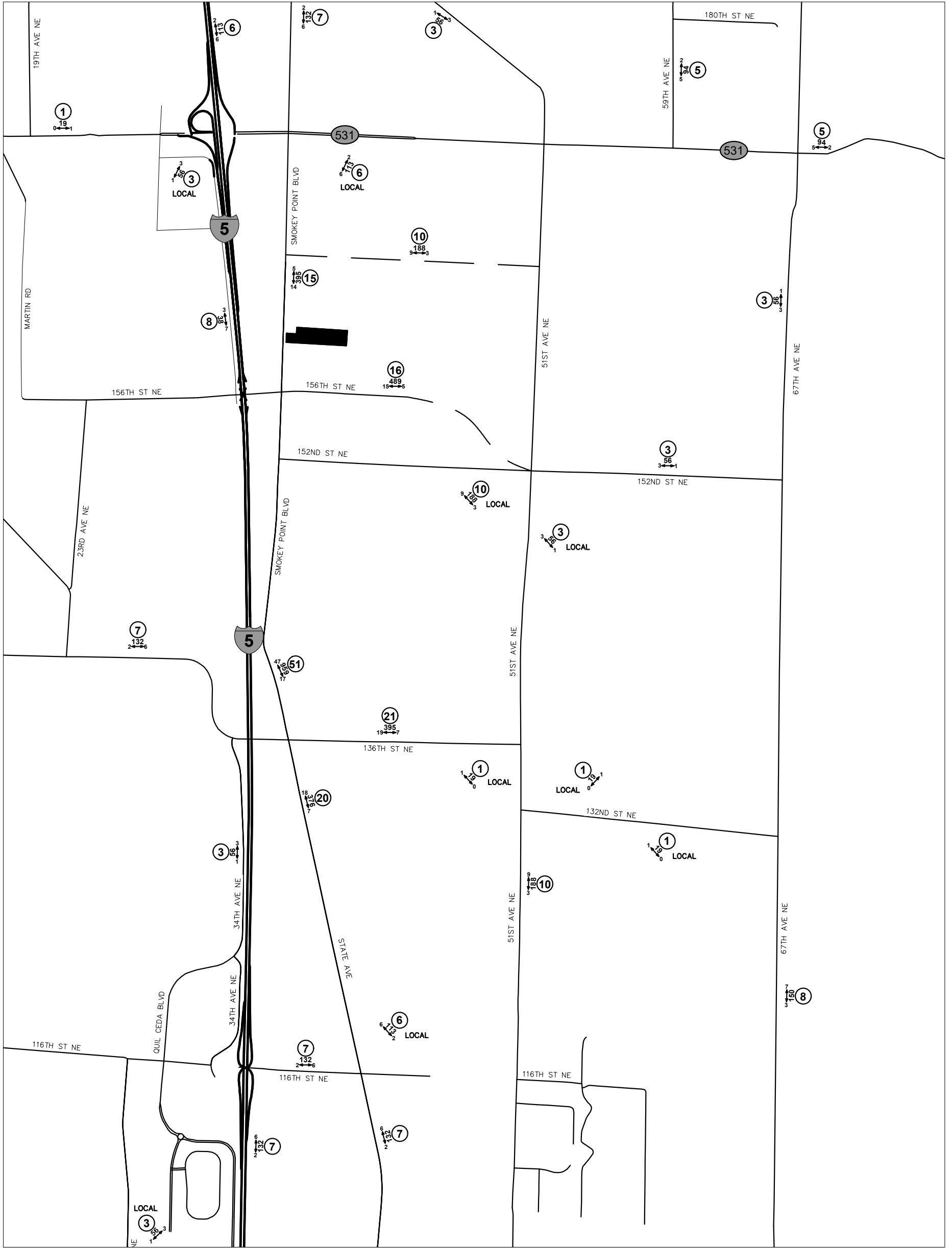
The horizon year distribution considers future roadway improvements, particularly the future interchange with Interstate-5 interchange with 156th Street NE and roadways east of Smokey Point Boulevard. These new roadways and the Interstate-5 interchange are anticipated to cause trips to divert from Smokey Point Boulevard and 152nd Street NE. It is anticipated that 66% of the trips generated by the development will travel along Smokey Point Boulevard, fifteen percent to and from the north and fifty-one percent to and from the south. Approximately 26% of the trips generated by the development will travel to and from the east, sixteen percent along 152nd Street NE and ten percent along 160th Street NE. It is estimated that 6% of the trips generated by the development will travel to and from the north along Interstate-5. The remaining 2% of the trips generated by the development will travel to and from local retail areas along Twin Lakes Avenue. The horizon year trip distributions for the weekday AM and PM peak-hours are shown in Figure 4 and Figure 5, respectively.

5. INTERSECTION LEVEL OF SERVICE ANALYSIS

The City of Marysville typically requires analysis at intersections impacted with 25 peak-hour trips. Intersection analysis has been performed at the following intersections:

1. 156th Street NE at Smokey Point Boulevard – Signalized
2. 152nd Street NE at Smokey Point Boulevard – Signalized
3. 152nd Street NE at 51st Avenue NE – All-Way Stop-Control
4. 136th Street NE at Smokey Point Boulevard – Signalized
5. 136th Street NE at 51st Avenue NE – Signalized
6. 128th Street NE at State Avenue - Signalized
7. Site Access at Smokey Point Boulevard – Two-Way Stop-Control

The study intersections have been analyzed for the 2022 existing conditions, the 2025 Opening Year conditions, and the 2031 Horizon Year conditions during the weekday PM peak- hour. The 2031 Horizon Year accounts for a 6-year period beyond the opening date, which is anticipated to occur in 2025. The study intersection locations are shown in Figure 6.



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AWDT
AM ← PEAK



NEW DAILY TRAFFIC
NEW AM PEAK-HOUR TRIPS
TRIP DISTRIBUTION %

FIGURE 4

HORIZON YEAR
TRIP DISTRIBUTION
AM PEAK-HOUR

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LEGEND

AWDT
 PM ←→ PEAK



NEW DAILY TRAFFIC
 NEW PM PEAK-HOUR TRIPS
 TRIP DISTRIBUTION %

FIGURE 5

HORIZON YEAR
 TRIP DISTRIBUTION
 PM PEAK-HOUR



LEGEND

(XX) STUDY INTERSECTION

FIGURE 6
STUDY INTERSECTIONS

KENDALL SUBARU

CITY OF MARYSVILLE

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5.1 Turning Movement Calculations

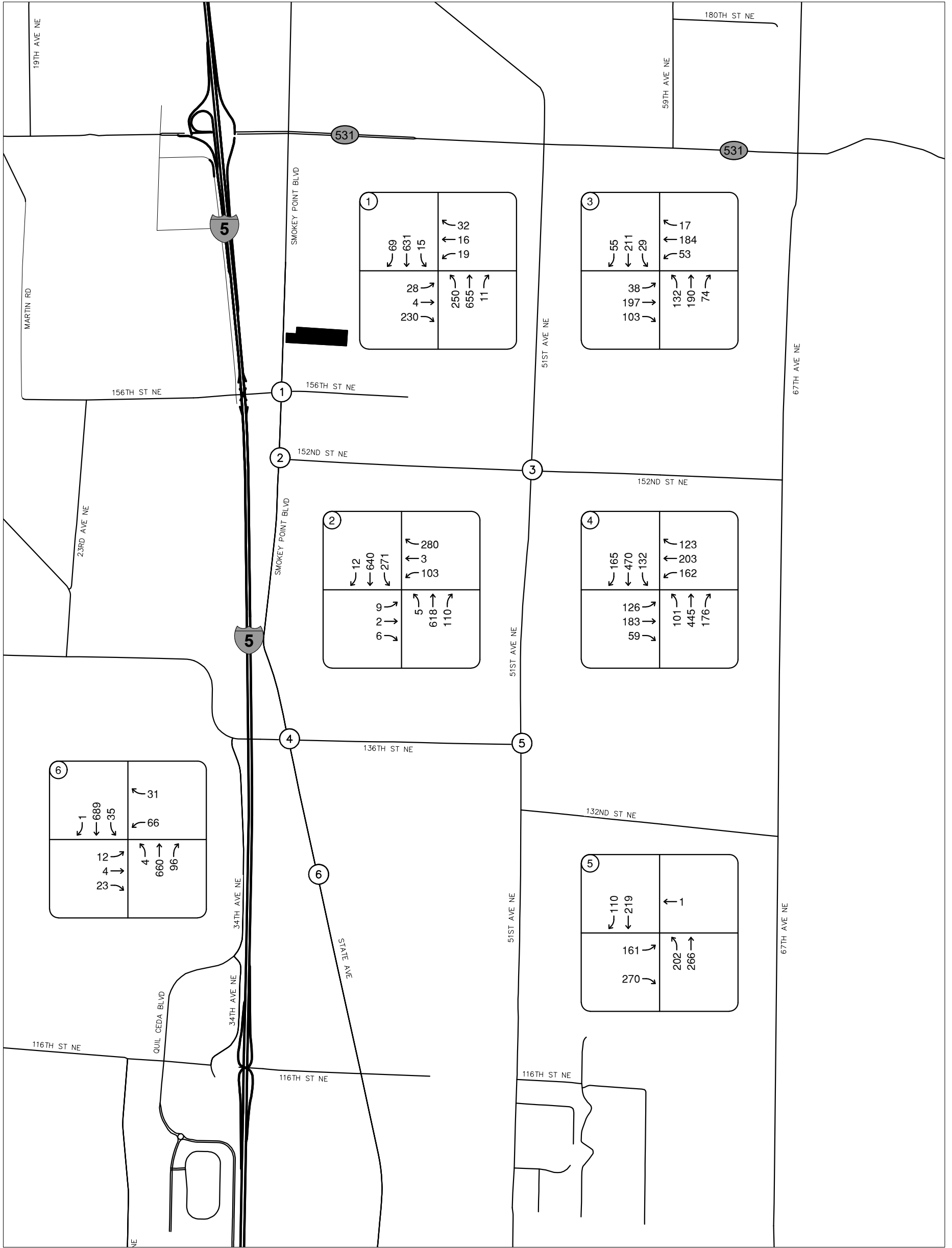
The existing weekday PM peak-hour (occurring between 4:00 and 6:00 PM) turning movements at the study intersections were collected by the independent count firm Traffic Data Gathering (TDG) in August 2022.

The 2025 and 2031 baseline turning movements at the study intersections have been calculated by applying a 3% annually compounding growth rate to the existing turning movements. The 2025 and 2031 future with development turning movements at the study intersections have been calculated by adding the trips generated by the development to the 2025 and 2031 baseline turning movements. The turning movement calculations, including detailed distributions of the trips generated by the development, are shown in the attachments. The following figures identify the turning movements for each scenario:

- Figure 7: Existing Turning Movements
- Figure 8: 2025 Baseline Turning Movements
- Figure 9: 2025 Opening Year Turning Movements
- Figure 10: 2031 Baseline Turning Movements
- Figure 11: 2031 Horizon Year Turning Movements

5.2 Level of Service Calculations

The level of service calculations have been performed utilizing the existing channelization, existing intersection control, heavy vehicle factors, and peak-hour factors from the turning movement counts. The parameters have been used for the existing, 2025 opening year, and 2031 horizon year conditions. The intersection level of service analysis for the existing and 2025 opening year conditions is summarized in Table 3.



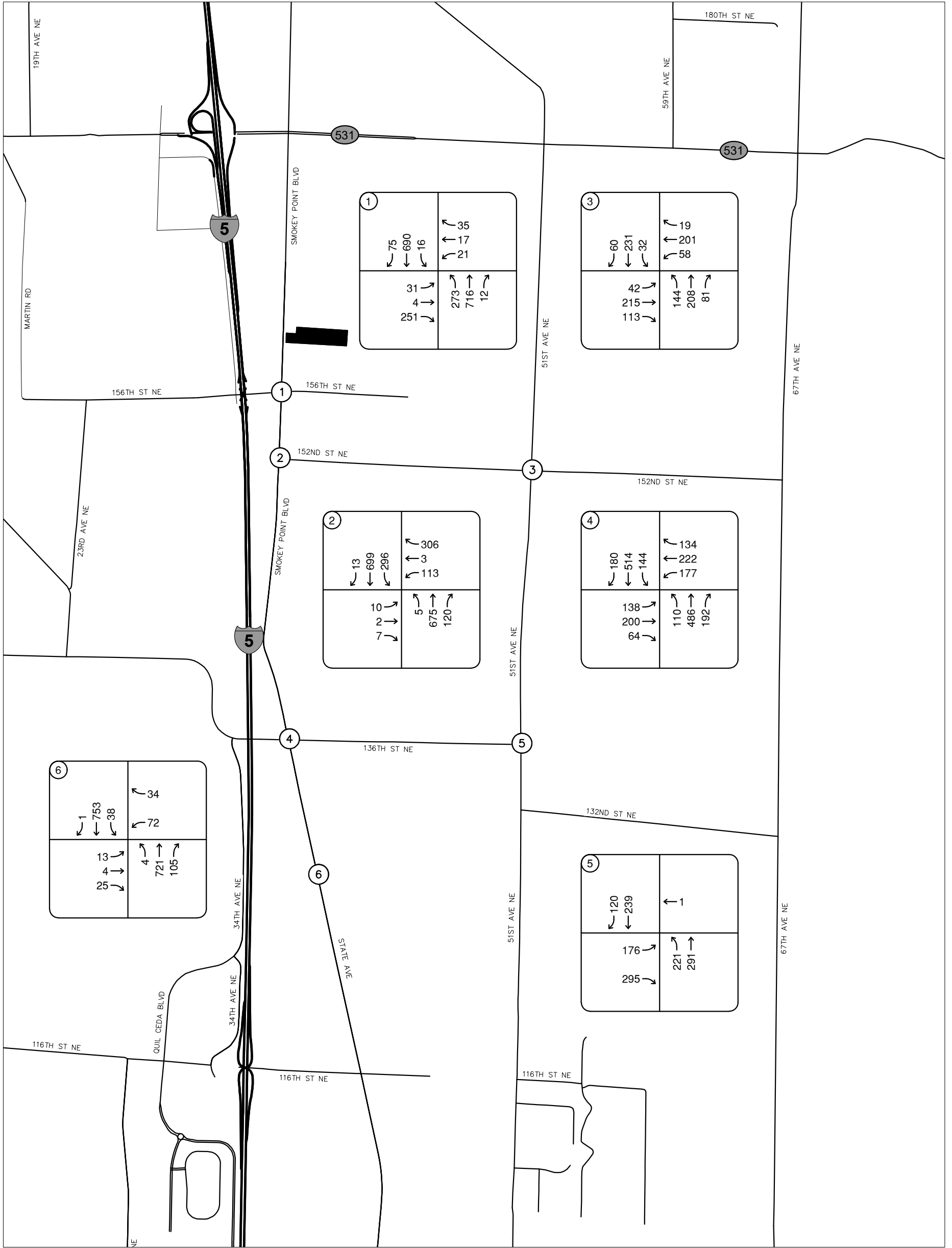
LEGEND

- XXX → PEAK-HOUR TURNING MOVEMENT VOLUME
- (XX) STUDY INTERSECTION

FIGURE 7
 EXISTING TURNING MOVEMENTS

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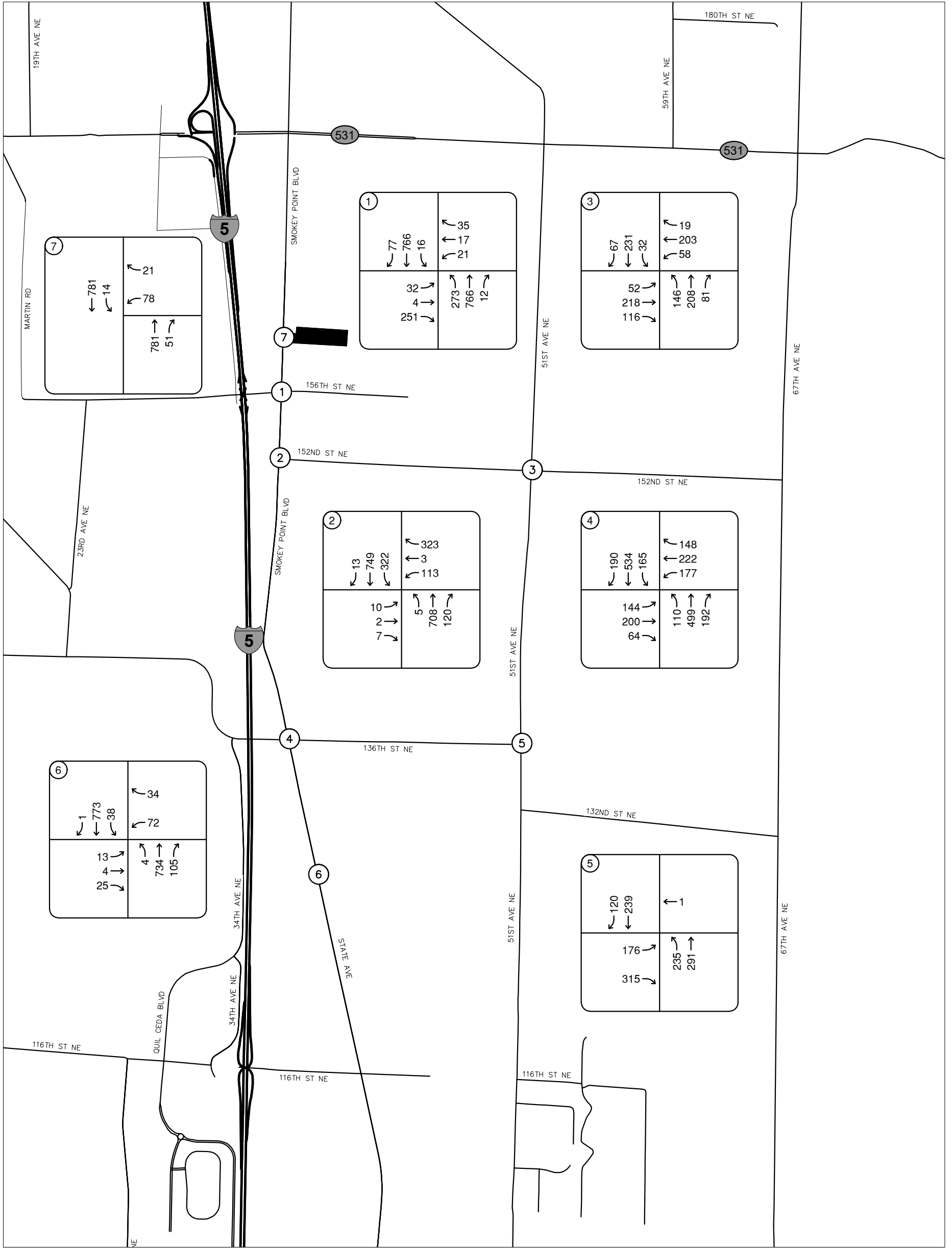
KENDALL SUBARU

LEGEND

- XXX → PEAK-HOUR TURNING MOVEMENT VOLUME
- (XX) STUDY INTERSECTION

FIGURE 8
 2025 BASELINE
 TURNING MOVEMENTS

CITY OF MARYSVILLE



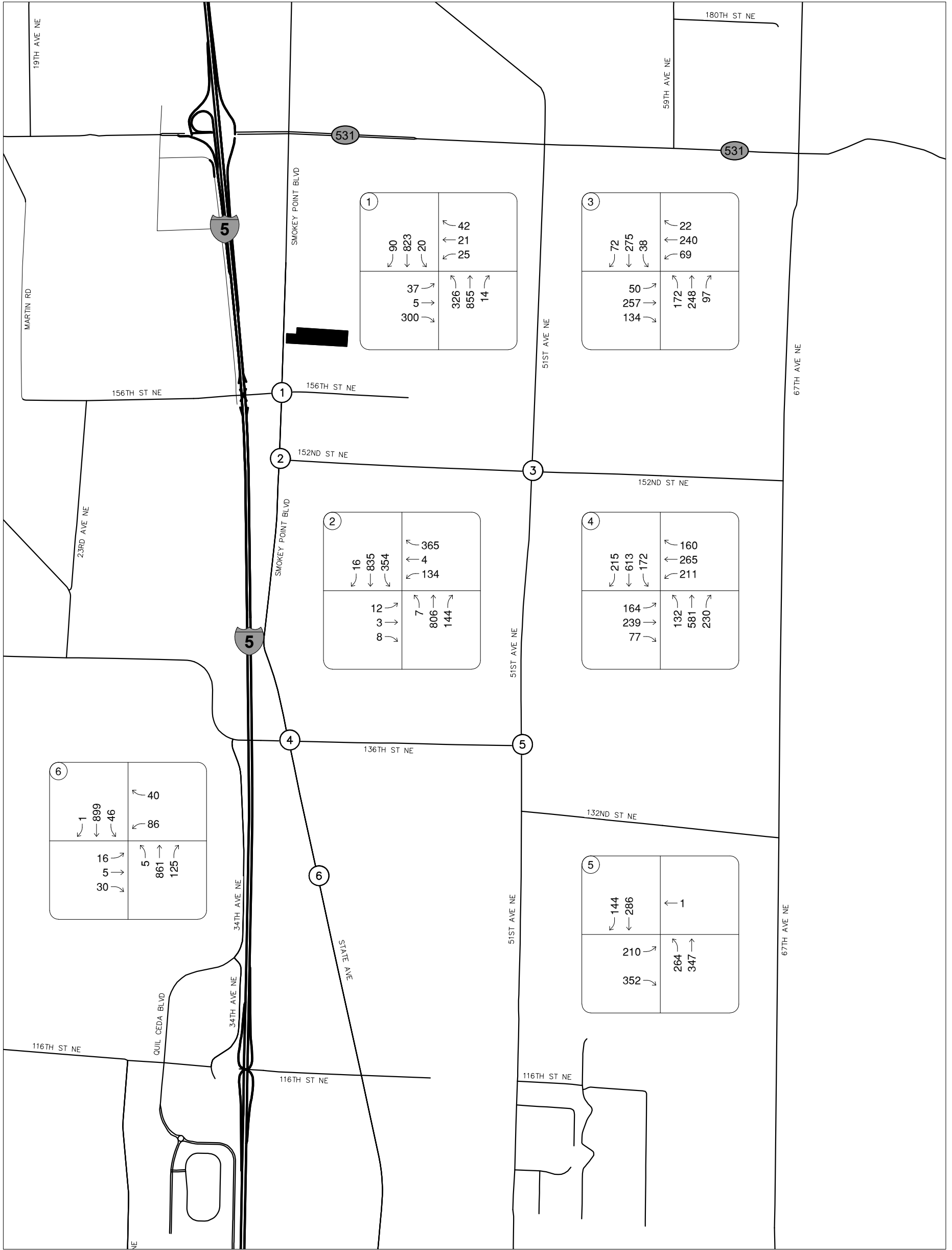
LEGEND

- XXX → PEAK-HOUR TURNING MOVEMENT VOLUME
- (XX) STUDY INTERSECTION

FIGURE 9
 2025 OPENING YEAR
 TURNING MOVEMENTS

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CITY OF MARYSVILLE



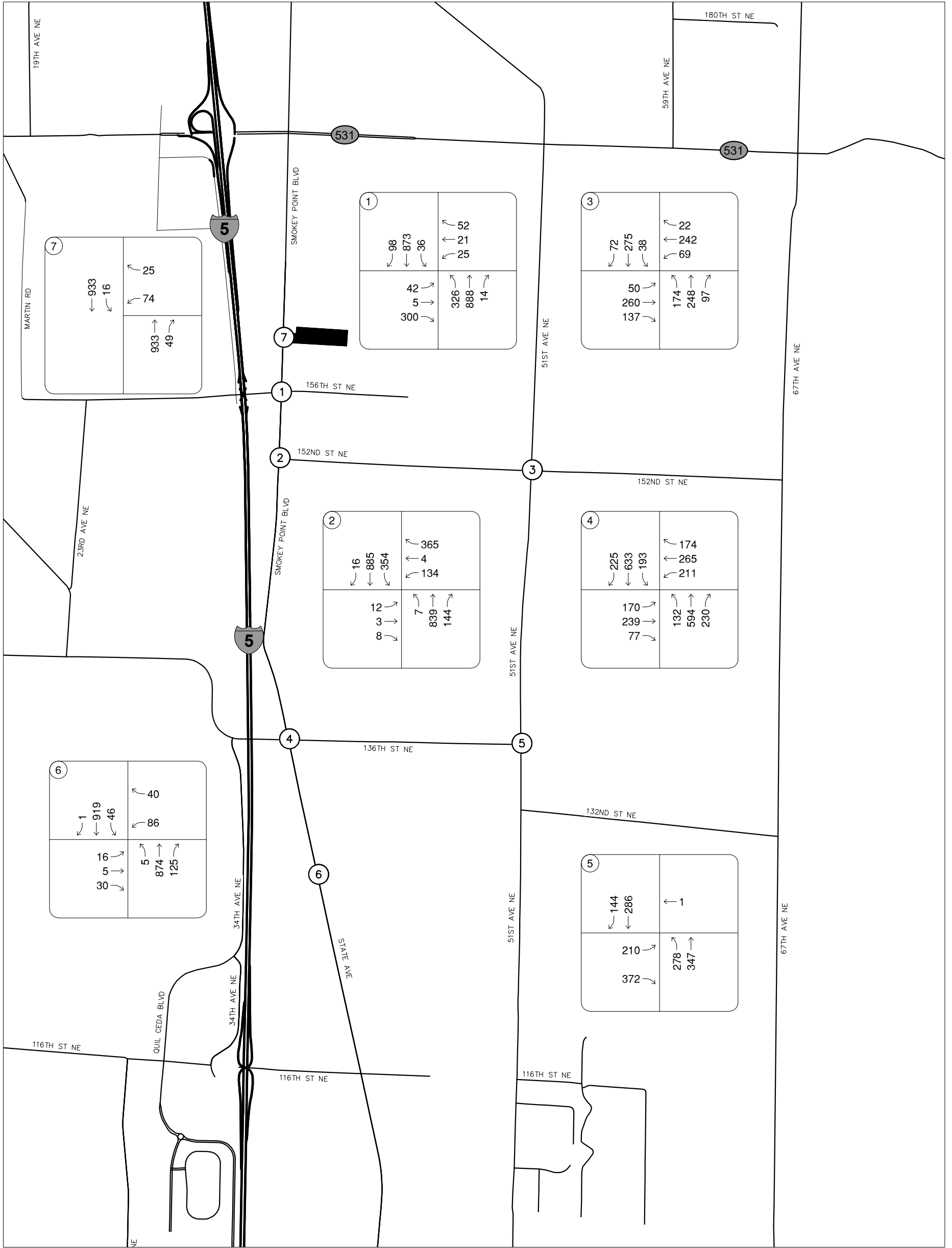
KENDALL SUBARU

LEGEND

- XXX → PEAK-HOUR TURNING MOVEMENT VOLUME
- (XX) STUDY INTERSECTION

FIGURE 10
 2031 BASELINE
 TURNING MOVEMENTS

CITY OF MARYSVILLE



LEGEND

- XXX → PEAK-HOUR TURNING MOVEMENT VOLUME
- (XX) STUDY INTERSECTION

FIGURE 11
 2031 HORIZON YEAR
 TURNING MOVEMENTS

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Table 3: Level of Service Summary – 2025 Opening Year Conditions

| Intersection | Control | 2022 Existing Conditions | | 2025 Baseline Conditions | | 2025 Opening Year Conditions | |
|--|----------------------|--------------------------|----------|--------------------------|----------|------------------------------|----------|
| | | LOS | Delay | LOS | Delay | LOS | Delay |
| 1. 156 th Street NE at Smokey Point Boulevard | Signal | B | 13.5 sec | B | 14.0 sec | B | 15.4 sec |
| 2. 152 nd Street NE at Smokey Point Boulevard | Signal | B | 13.0 sec | B | 13.9 sec | B | 14.4 sec |
| 3. 152 nd Street NE at 51 st Avenue NE | All-Way Stop-Control | D | 25.8 sec | F | 51.5 sec | F | 54.5 sec |
| 4. 136 th Street NE at Smokey Point Boulevard | Signal | C | 26.9 sec | C | 28.9 sec | C | 30.0 sec |
| 5. 136 th Street NE at 51 st Avenue NE | Signal | B | 10.4 sec | B | 10.8 sec | B | 10.8 sec |
| 6. 128 th Street NE at State Avenue | Signal | A | 8.7 sec | A | 10.0 sec | A | 10.0 sec |
| 7. Site Access at Smokey Point Boulevard | Two-Way Stop-Control | --- | --- | --- | --- | C | 23.6 sec |

The intersection level of service analysis shows that the intersection of 152nd Street NE at 51st Avenue NE is anticipated to operate at LOS F under the 2025 baseline and 2025 Opening Year conditions. This intersection is discussed in more detail later in this report. The intersection level of service for the existing and 2031 horizon year conditions is summarized in Table 4.

Table 4: Level of Service Summary – 2031 Horizon Year Conditions

| Intersection | Control | 2022 Existing Conditions | | 2031 Baseline Conditions | | 2031 Opening Year Conditions | |
|--|----------------------|--------------------------|----------|--------------------------|-----------|------------------------------|-----------|
| | | LOS | Delay | LOS | Delay | LOS | Delay |
| 1. 156 th Street NE at Smokey Point Boulevard | Signal | B | 13.5 sec | B | 17.4 sec | B | 18.5 sec |
| 2. 152 nd Street NE at Smokey Point Boulevard | Signal | B | 13.0 sec | B | 16.6 sec | B | 16.9 sec |
| 3. 152 nd Street NE at 51 st Avenue NE | All-Way Stop-Control | D | 25.8 sec | F | 135.3 sec | F | 138.7 sec |
| 4. 136 th Street NE at Smokey Point Boulevard | Signal | C | 26.9 sec | D | 35.3 sec | D | 37.3 sec |
| 5. 136 th Street NE at 51 st Avenue NE | Signal | B | 10.4 sec | B | 12.1 sec | B | 12.2 sec |
| 6. 128 th Street NE at State Avenue | Signal | A | 8.7 sec | B | 12.6 sec | B | 12.7 sec |
| 7. Site Access at Smokey Point Boulevard | Two-Way Stop-Control | --- | --- | --- | --- | D | 29.7 sec |

The level of service calculations are included in the attachments.

5.3 152nd Street NE at 51st Avenue NE

The intersection of 152nd Street NE at 51st Avenue NE is anticipated to operate at LOS F under the 2025 baseline conditions and beyond. The intersections is planned to be signalized with additional channelization, which is included in the cost fee basis for the City of Marysville traffic mitigation fee. The addition of the signal and channelization will allow the intersection to operate at LOS C under the 2025 baseline, 2025 Opening Year conditions, 2031 baseline, and 2031 Horizon Year conditions. The level of service calculations are included in the attachments.

6. ACCESS ANALYSIS

The Kendall Subaru development only has frontage along Smokey Point Boulevard and is proposed to have one access point to Smokey Point Boulevard. The analysis shows that this access is anticipated to operate at LOS D, as shown in Table 3 and Table 4. Additional roadway improvements should not be required other than curb, gutter, and sidewalk improvements that may be required along the frontage of the site.

7. TRAFFIC MITIGATION FEES

The City of Marysville has an interlocal agreement with Snohomish County that provides for the payment of traffic mitigation fees to Snohomish County for City of Marysville developments. The City of Marysville also has an understanding with WSDOT for the payment of traffic mitigation fees.

7.1 City of Marysville

The City of Marysville traffic mitigation fees have been calculated using the commercial rate of \$2,220 per PM peak-hour trip. The Kendall Subaru development is proposed to generate 163.46 PM peak-hour trips, reduced to 122.60 PM peak-hour trips after the 25% pass-by credit identified in the City of Marysville *Traffic Impact Analysis Guidelines*. These trips will result in traffic mitigation fees of \$272,172.00.

7.2 Snohomish County

The City of Marysville and Snohomish County have an interlocal agreement that provides for the payment of traffic mitigation for impacts to Snohomish County roadways by City of Marysville developments. Traffic mitigation fees are based on predetermined area impacts or impacts to actual improvement projects. The Kendall Subaru development is located in CI-MA-1, which has a predetermined impact to Snohomish County roadways of 20%. The current Snohomish County fee for commercial developments located in the City of Marysville is \$157 per daily trip. The generation of 1,410.36 new daily trips (including the 25% pass-by reduction) and a 20% impact result in a Snohomish County traffic mitigation fee of \$44,285.30.

7.3 Washington State Department of Transportation

There are two major WSDOT improvements in the site vicinity that are impacted by trips generated by the Kendall Subaru development. These improvements are the 172nd Street NE/SR-531 corridor improvements and the 156th Street NE interchange with Interstate-5. Both of these improvements are identified as funded as part of the Connecting Washington legislation. Payment of WSDOT traffic mitigation fees should therefore not be a condition of the Kendall Subaru development.

8. CONCLUSIONS

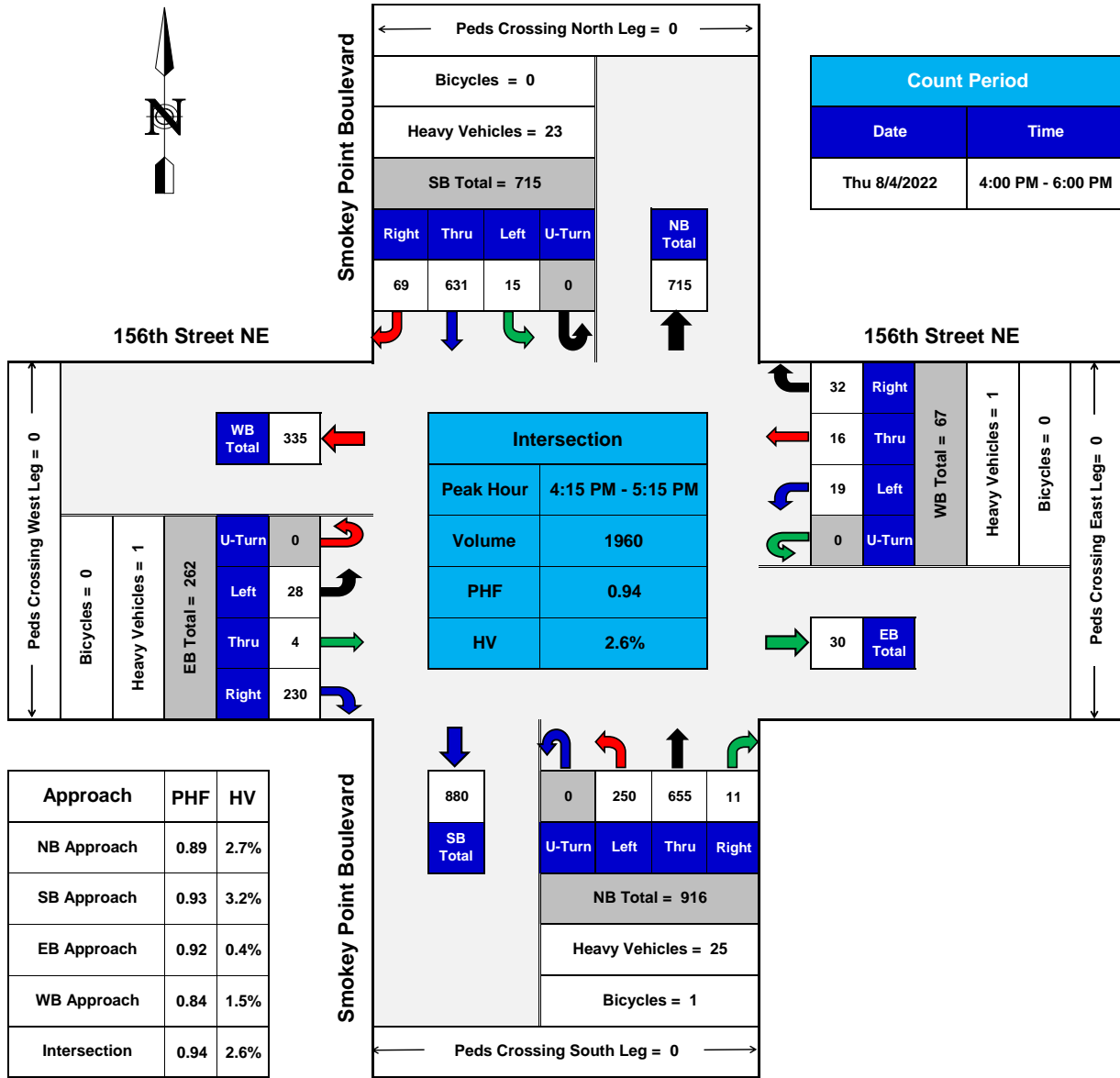
The Kendall Subaru development is proposed to consist of a 67,546 SF automobile sales building. The development could generate up to approximately 1,410 average weekday daily trips with 94 weekday AM peak-hour trips and 123 weekday PM peak-hour trips with a 25% pass-by reduction. There are seven intersections that are anticipated to be analyzed for the weekday PM peak-hour. The total traffic mitigation fees for the development could be up to \$272,172.00 for the City of Marysville and \$44,285.30 for Snohomish County. These fees do not include a credit for roadway improvements. WSDOT traffic mitigation fees should not be required for the Kendall Subaru development.

Site Plan

Count Data

Smokey Point Boulevard @ 156th Street NE

Marysville, WA



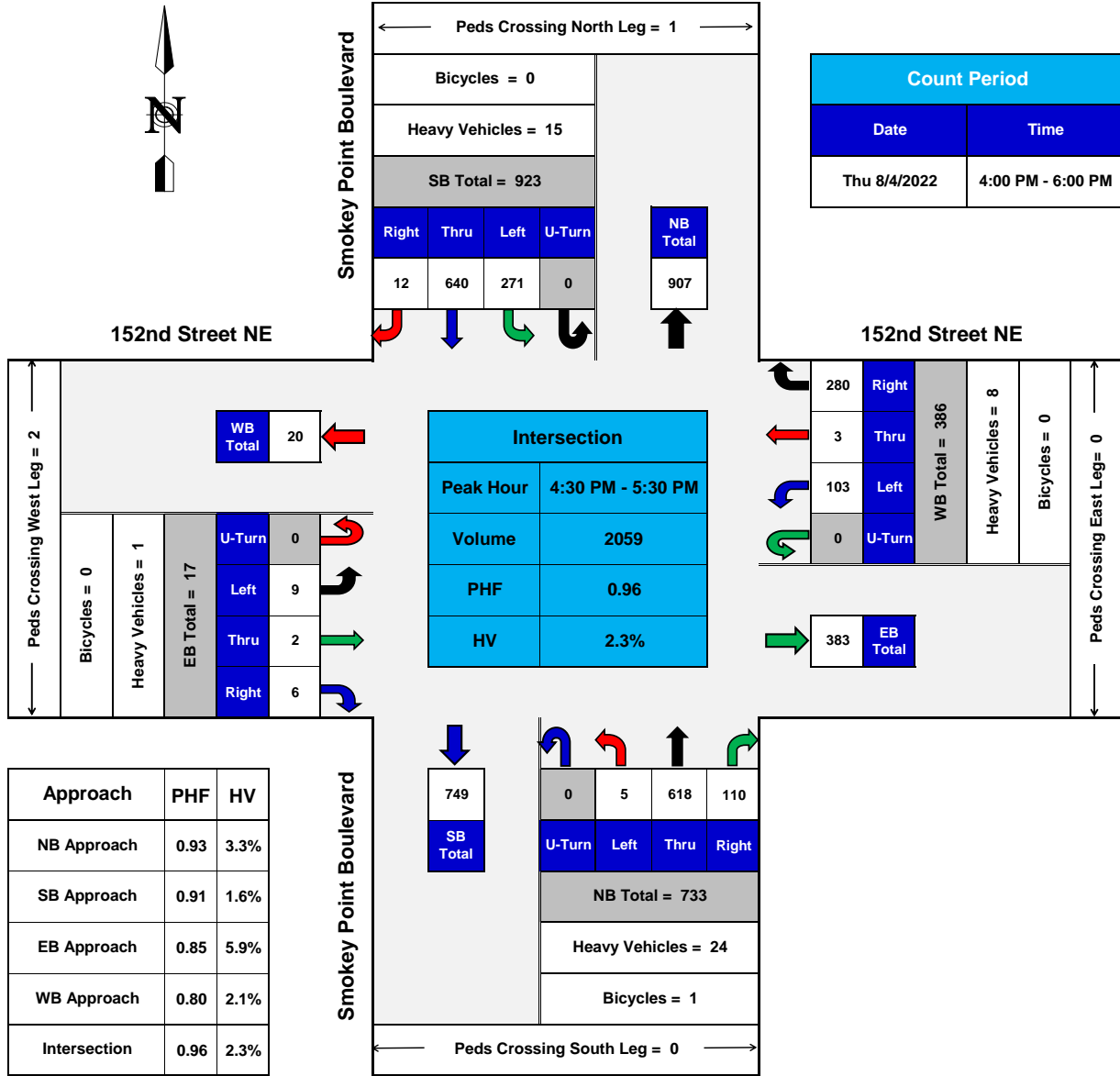
PHF = Peak Hour Factor
 HV = Heavy Vehicles

TURNING MOVEMENTS DIAGRAM PEAK HOUR SUMMARY



Smokey Point Boulevard @ 152nd Street NE

Marysville, WA

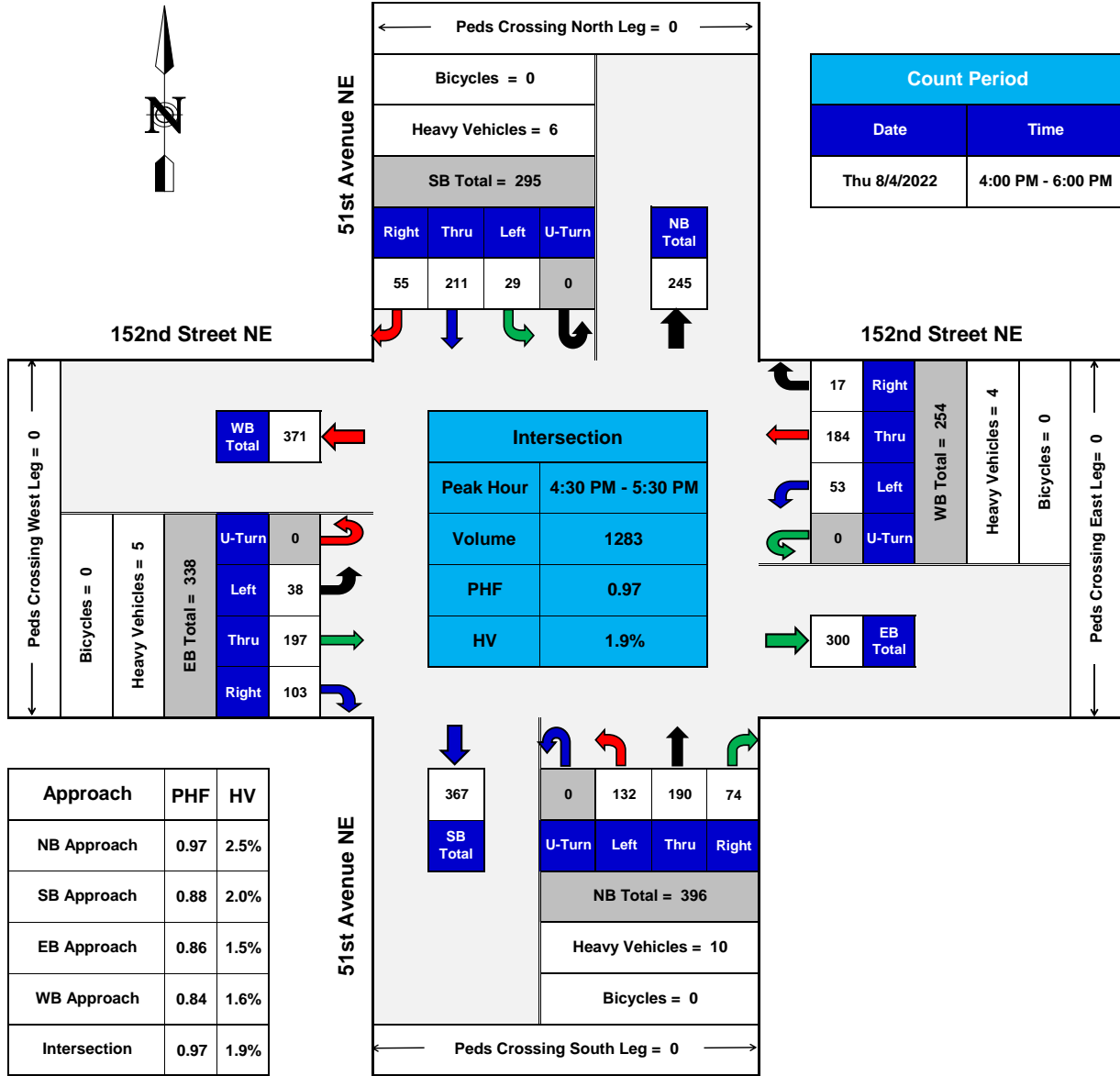


**TURNING MOVEMENTS DIAGRAM
PEAK HOUR SUMMARY**



51st Avenue NE @ 152nd Street NE

Marysville, WA

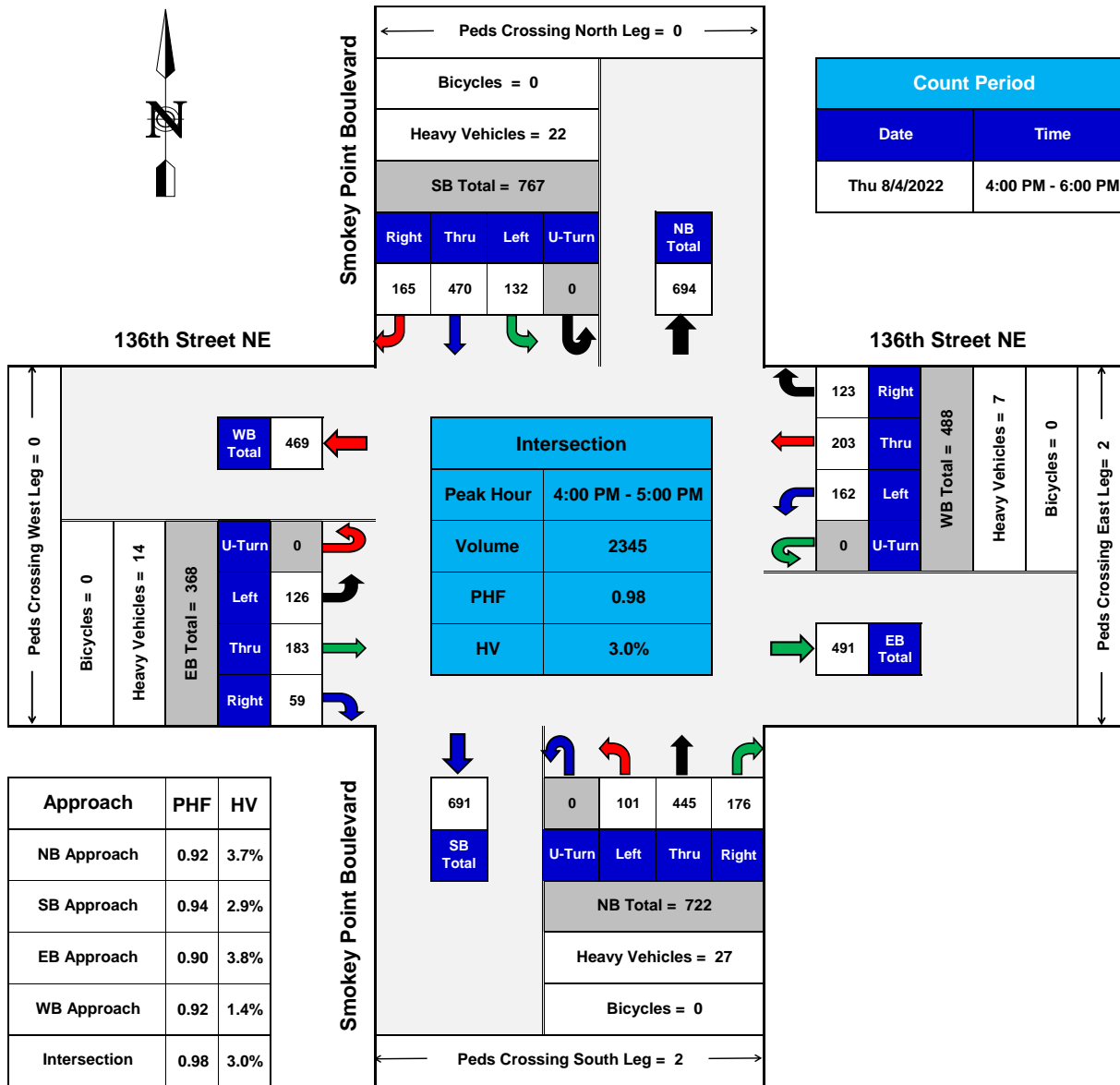


**TURNING MOVEMENTS DIAGRAM
PEAK HOUR SUMMARY**



Smokey Point Boulevard @ 136th Street NE

Marysville, WA

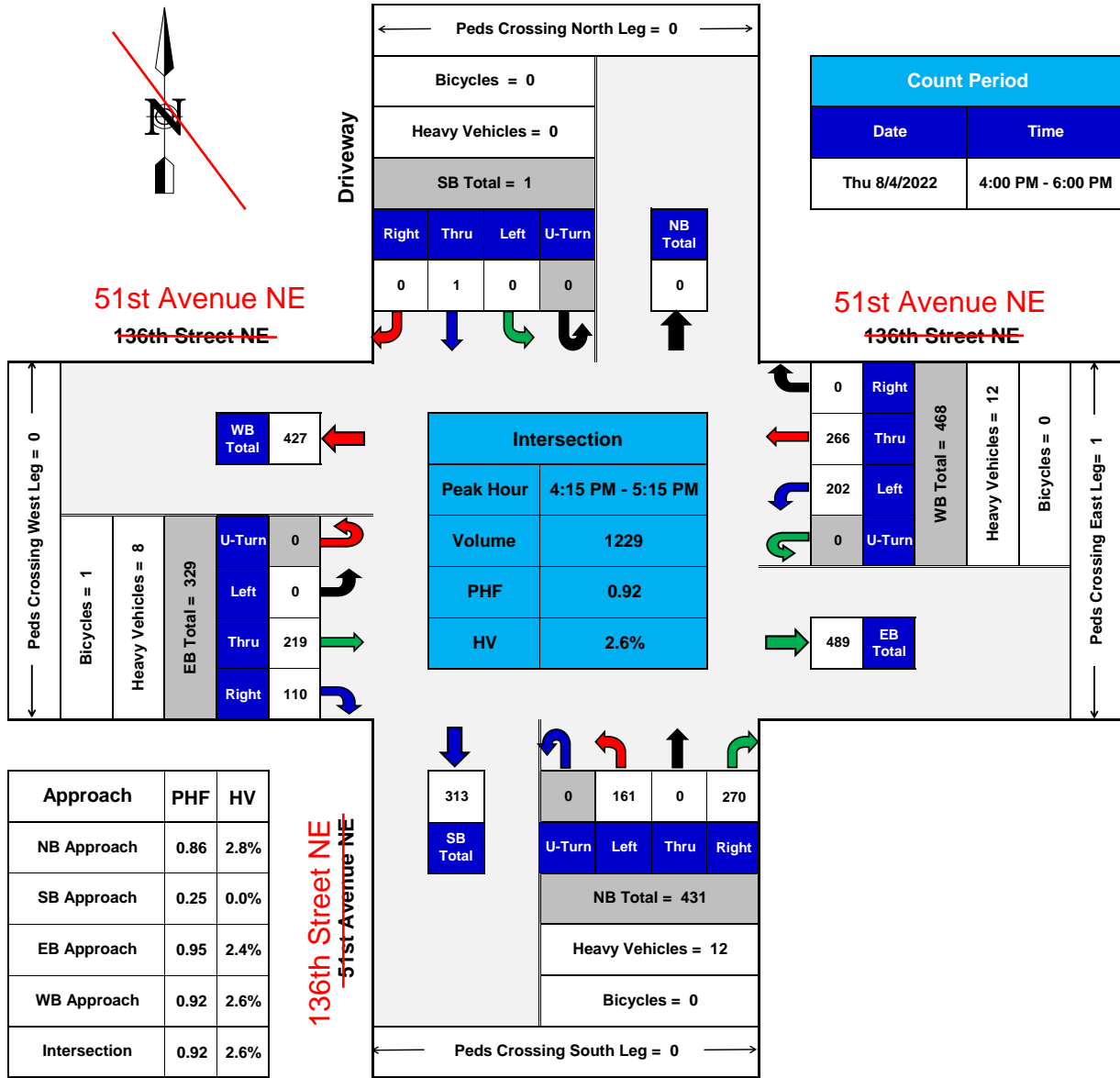
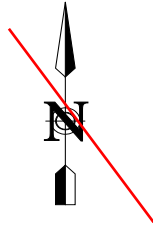


TURNING MOVEMENTS DIAGRAM PEAK HOUR SUMMARY



51st Avenue NE @ 136th Street NE

Marysville, WA

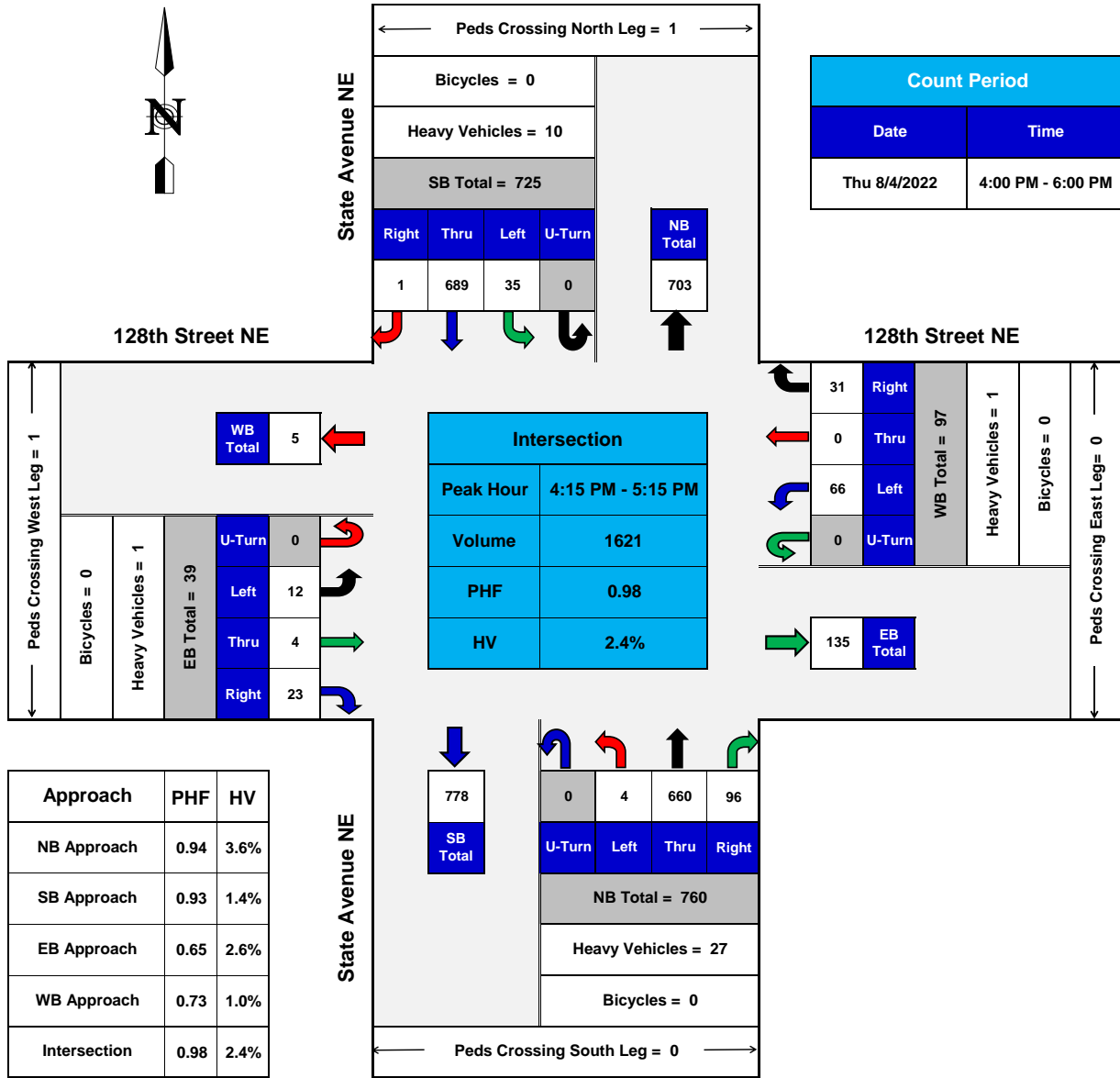


PHF = Peak Hour Factor
HV = Heavy Vehicles

TURNING MOVEMENTS DIAGRAM PEAK HOUR SUMMARY



State Avenue NE @ 128th Street NE
Marysville, WA



PHF = Peak Hour Factor
 HV = Heavy Vehicles

TURNING MOVEMENTS DIAGRAM
PEAK HOUR SUMMARY

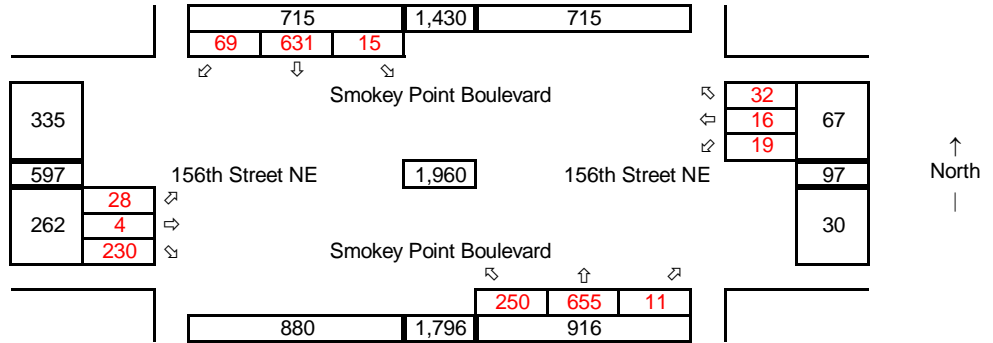


Weekday PM Peak-Hour Turning Movement Calculations

Synchro ID: 1
Existing
 Average Weekday
 PM Peak-Hour

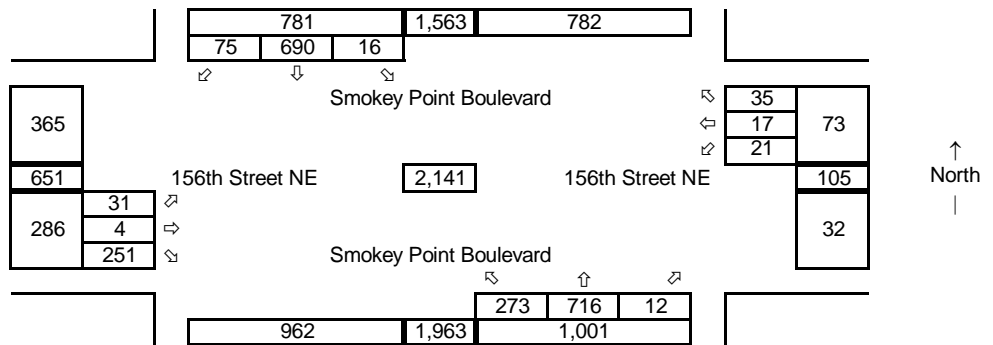
Year: **8/4/2022**

Data Source: **TDG**

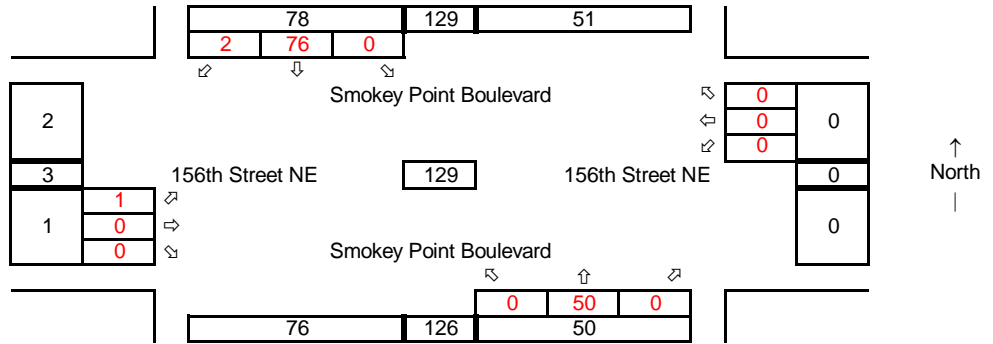


Future without Development
 Average Weekday
 PM Peak Hour

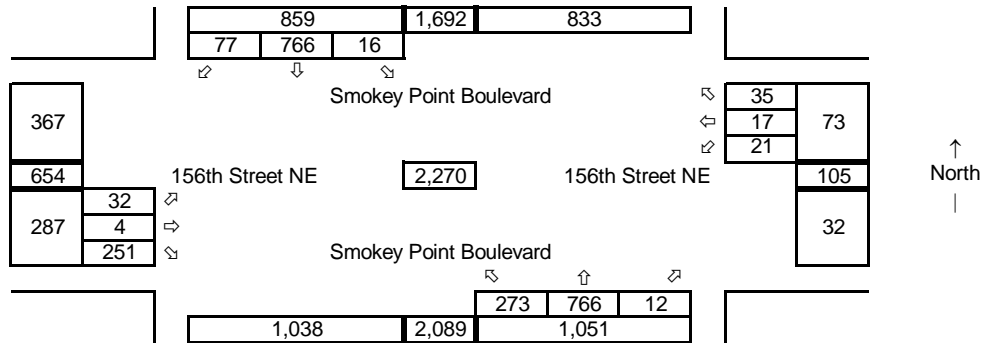
Year: **2025**
 Growth Rate = **3.0%**
 Years of Growth = 3
 Total Growth = 1.0927



Total Development Trips
 Average Weekday
 PM Peak Hour



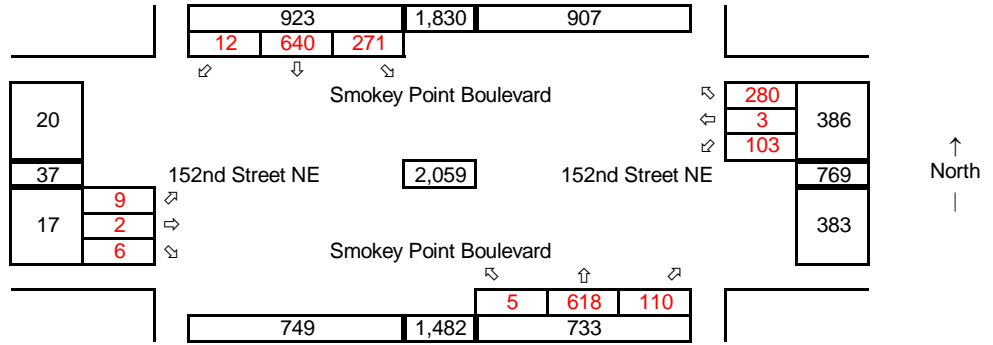
Future with Development
 Average Weekday
 PM Peak Hour



Synchro ID: 2
Existing
 Average Weekday
 PM Peak-Hour

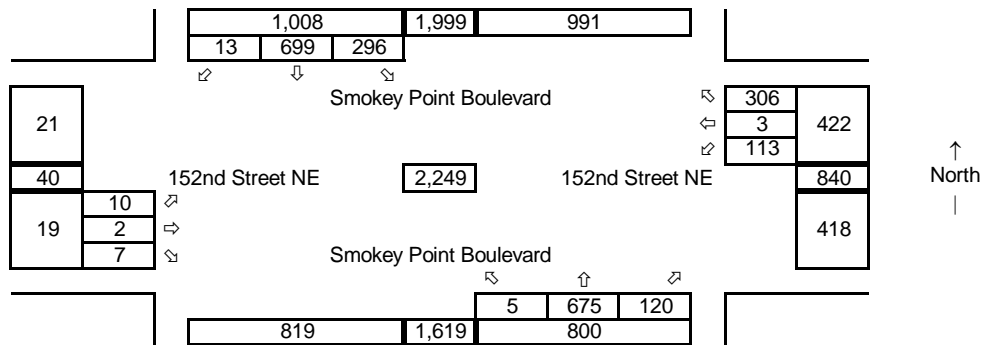
Year: **8/4/2022**

Data Source: **TDG**

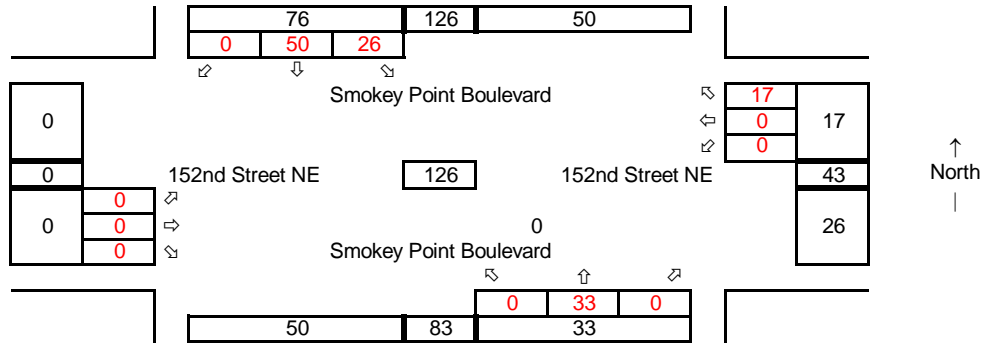


Future without Development
 Average Weekday
 PM Peak Hour

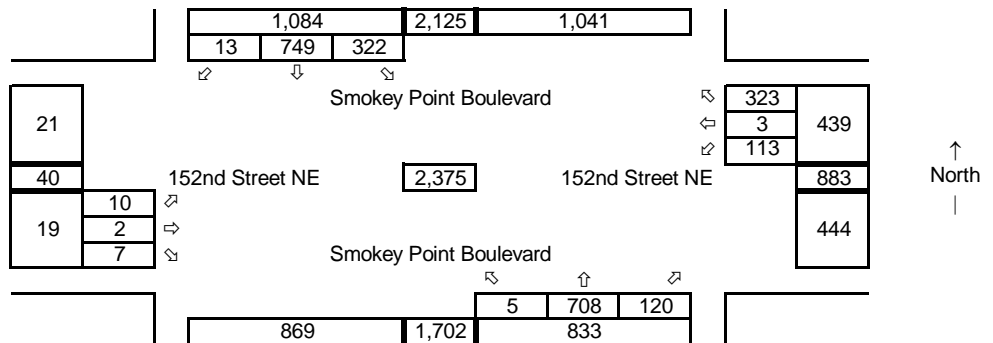
Year: 2025
 Growth Rate = 3.0%
 Years of Growth = 3
 Total Growth = 1.0927



Total Development Trips
 Average Weekday
 PM Peak Hour



Future with Development
 Average Weekday
 PM Peak Hour

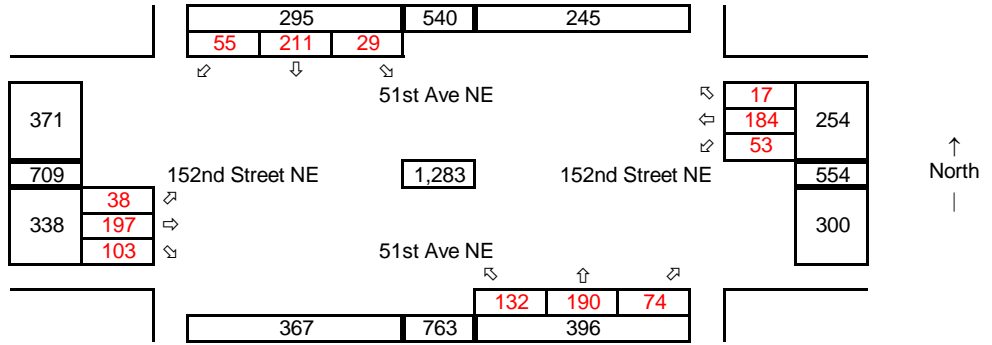


Synchro ID: 3

Existing
Average Weekday
PM Peak-Hour

Year: **8/4/2022**

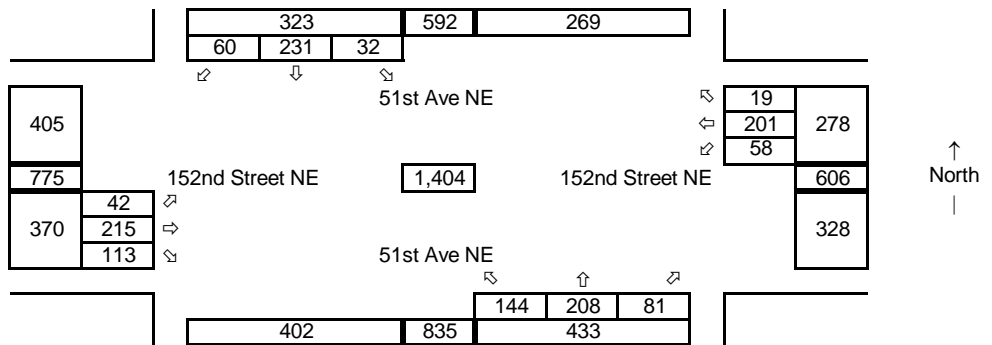
Data Source: **TDG**



Future without Development

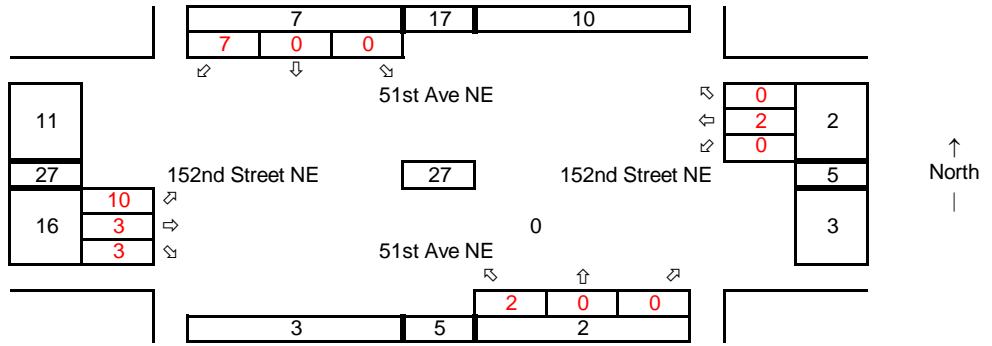
Average Weekday
PM Peak Hour

Year: 2025
Growth Rate = 3.0%
Years of Growth = 3
Total Growth = 1.0927



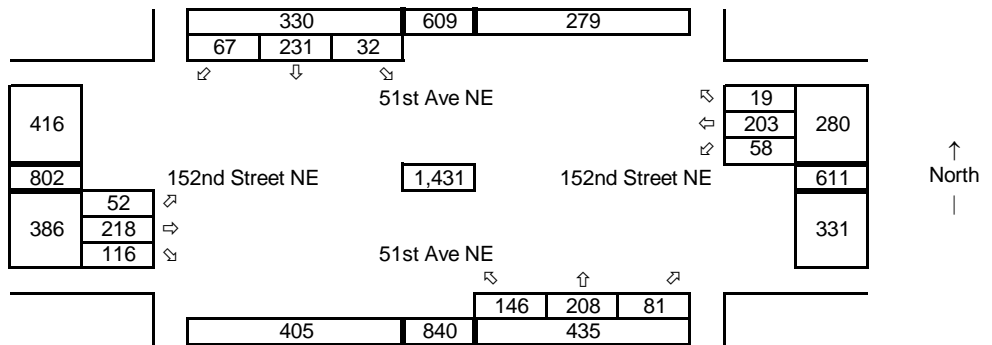
Total Development Trips

Average Weekday
PM Peak Hour



Future with Development

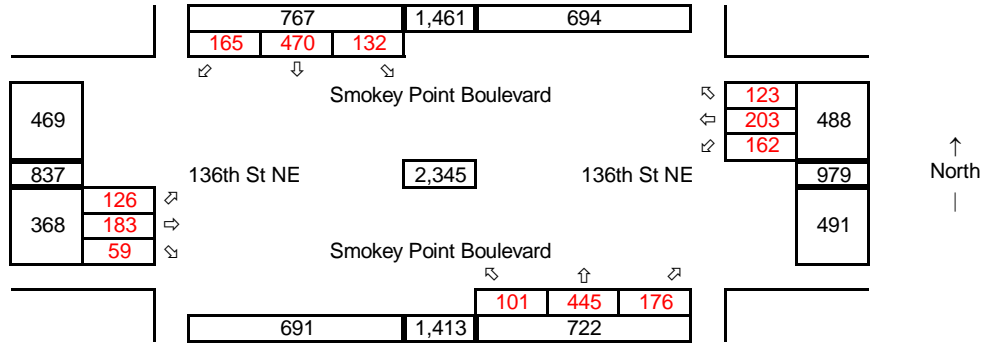
Average Weekday
PM Peak Hour



Synchro ID: 4
Existing
 Average Weekday
 PM Peak-Hour

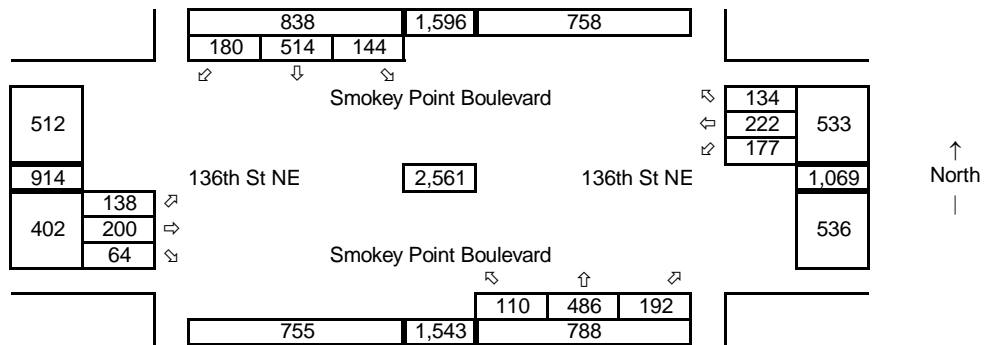
Year: **8/4/2022**

Data Source: **TDG**

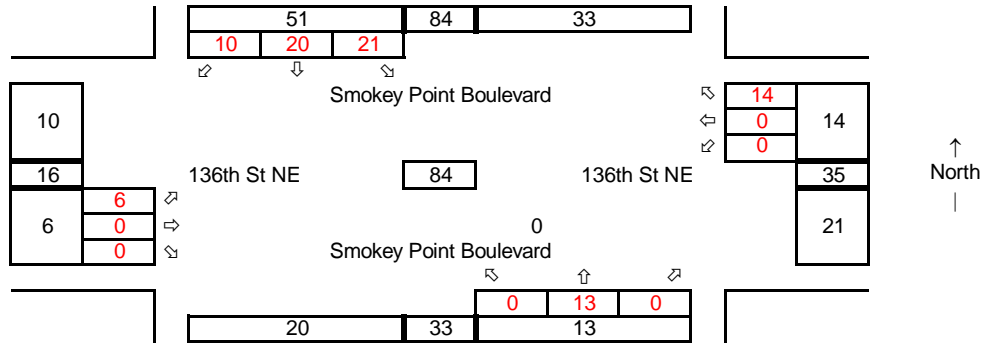


Future without Development
 Average Weekday
 PM Peak Hour

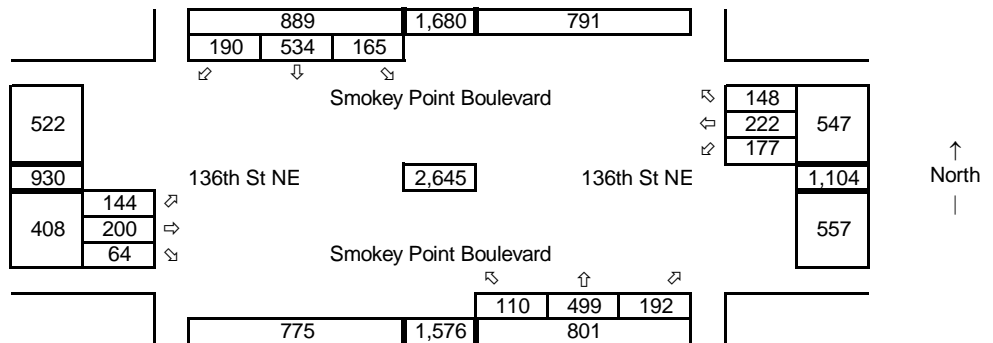
Year: 2025
 Growth Rate = 3.0%
 Years of Growth = 3
 Total Growth = 1.0927



Total Development Trips
 Average Weekday
 PM Peak Hour



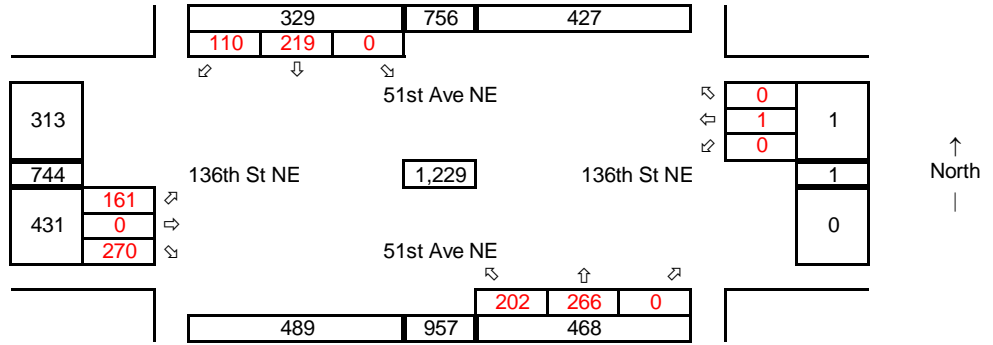
Future with Development
 Average Weekday
 PM Peak Hour



Synchro ID: 5
Existing
 Average Weekday
 PM Peak-Hour

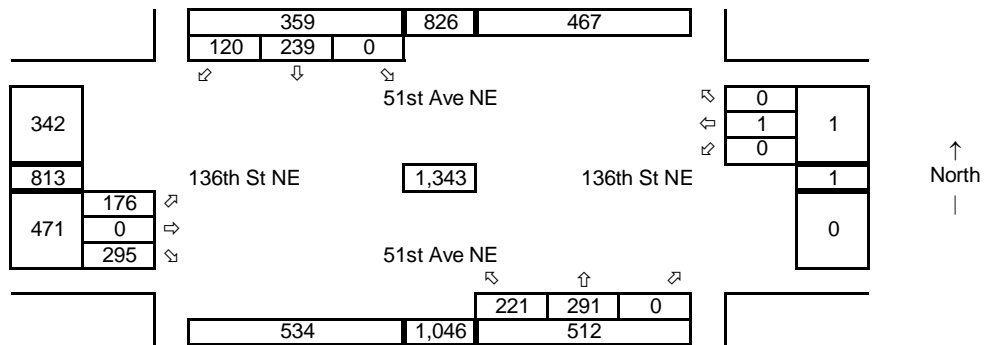
Year: **8/4/2022**

Data Source: **TDG**

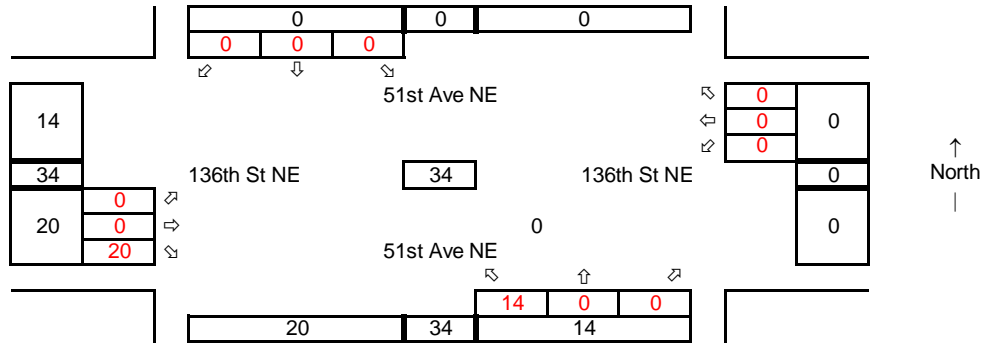


Future without Development
 Average Weekday
 PM Peak Hour

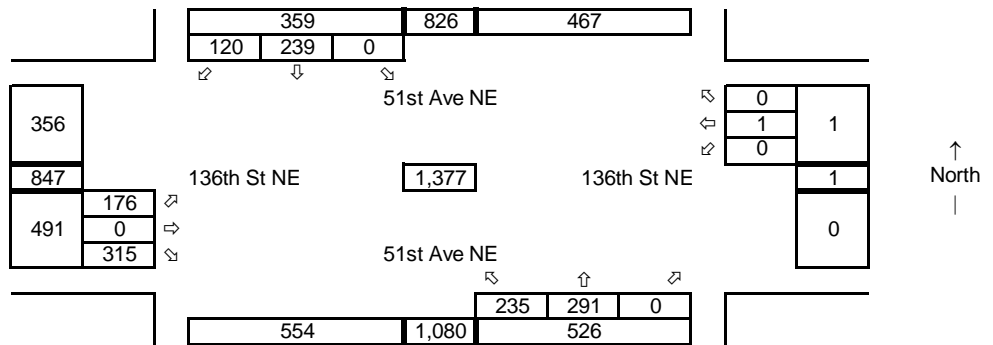
Year: 2025
 Growth Rate = 3.0%
 Years of Growth = 3
 Total Growth = 1.0927



Total Development Trips
 Average Weekday
 PM Peak Hour



Future with Development
 Average Weekday
 PM Peak Hour



Opening Year

7 Site Access at Smokey Point B

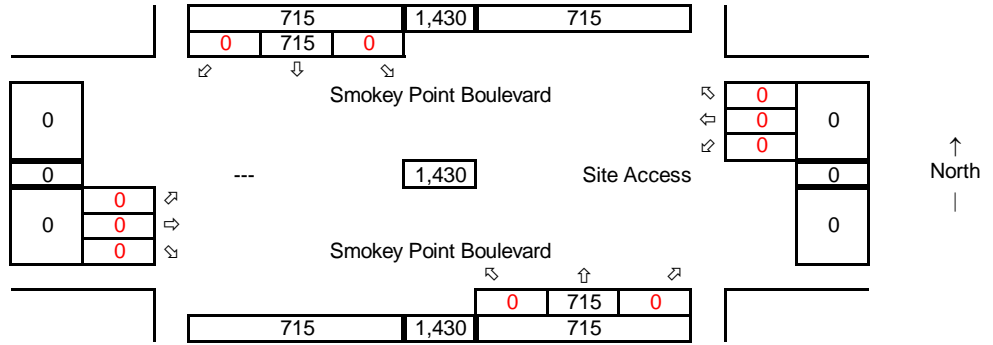
Weekday PM Peak-Hour

Synchro ID: 7
Existing
 Average Weekday
 PM Peak-Hour

Year: **8/4/2022**

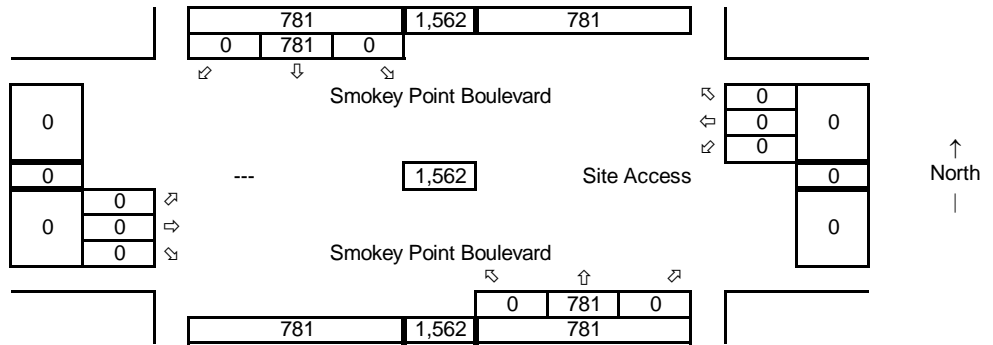
Data Source: **TDG**

Volumes are based on 156th St
 NE at Smokey Pt Blvd

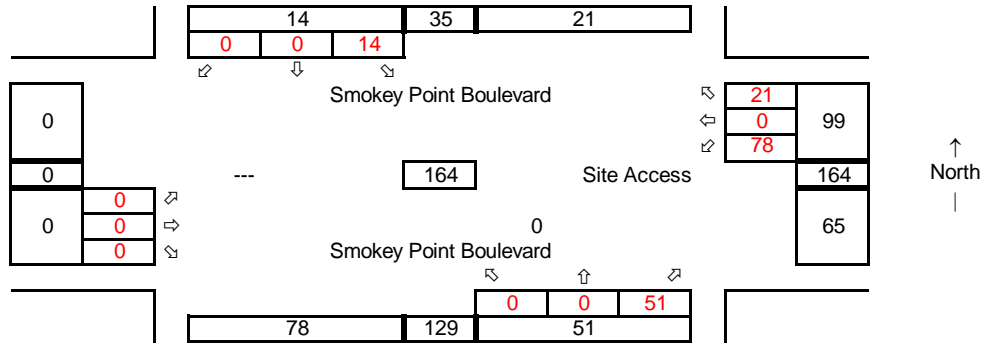


Future without Development
 Average Weekday
 PM Peak Hour

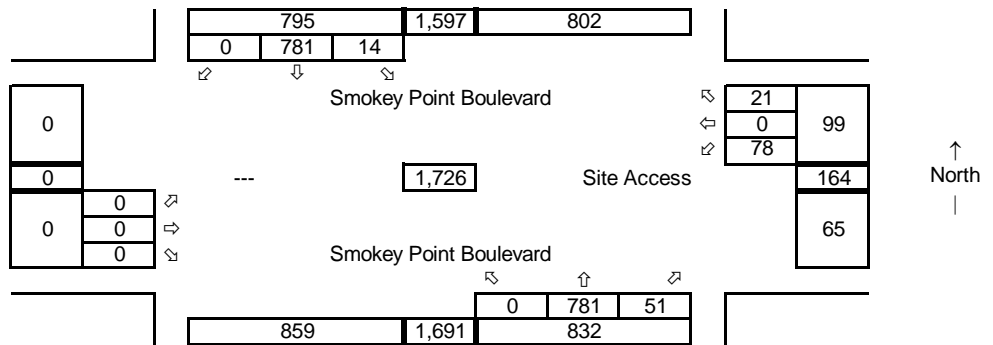
Year: 2025
 Growth Rate = 3.0%
 Years of Growth = 3
 Total Growth = 1.0927



Total Development Trips
 Average Weekday
 PM Peak Hour



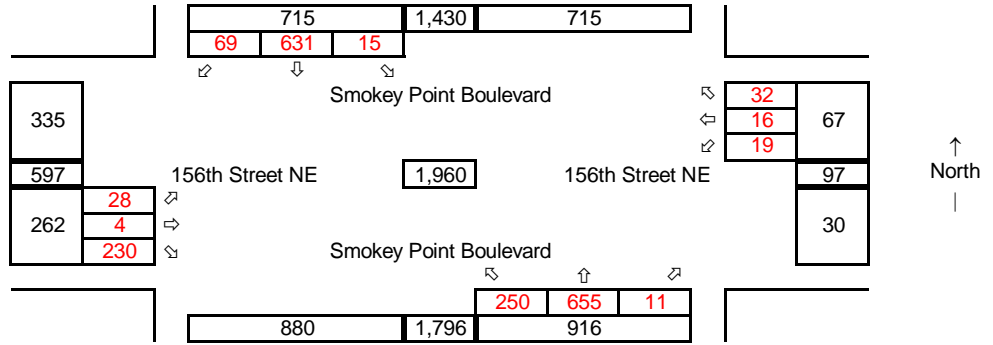
Future with Development
 Average Weekday
 PM Peak Hour



Synchro ID: 1
Existing
 Average Weekday
 PM Peak-Hour

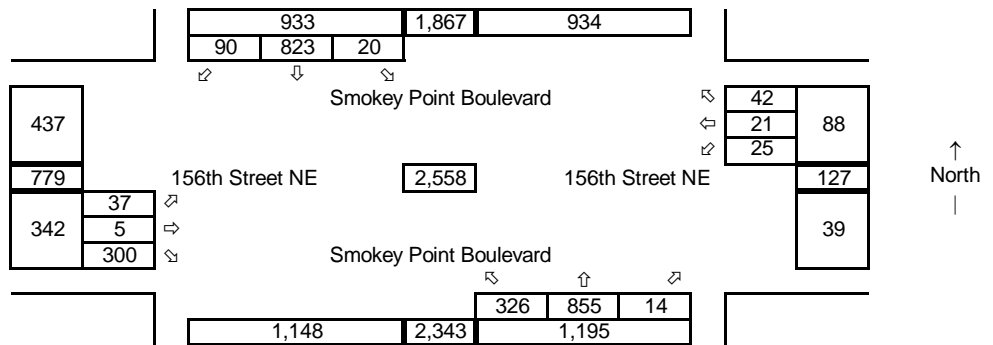
Year: **8/4/2022**

Data Source: **TDG**

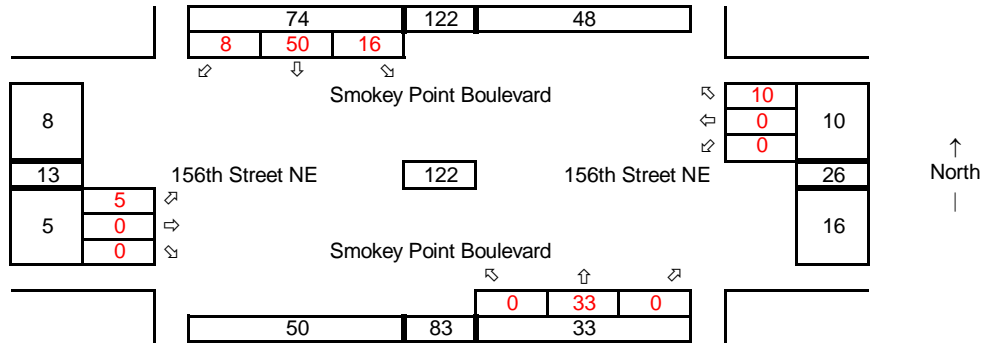


Future without Development
 Average Weekday
 PM Peak Hour

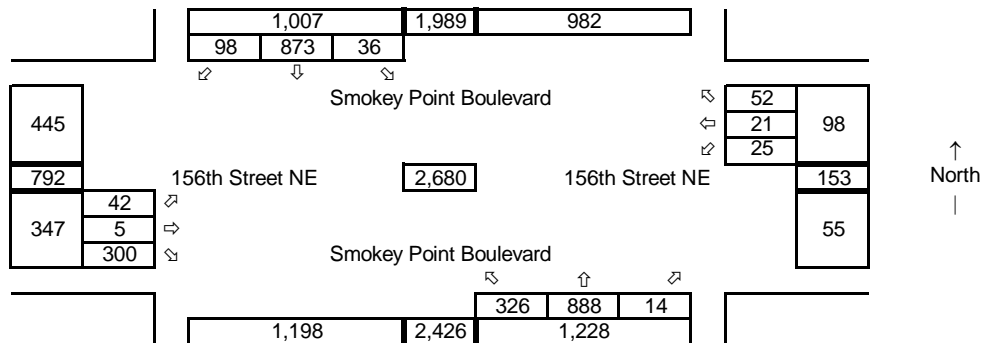
Year: **2031**
 Growth Rate = **3.0%**
 Years of Growth = 9
 Total Growth = 1.3048



Total Development Trips
 Average Weekday
 PM Peak Hour



Future with Development
 Average Weekday
 PM Peak Hour

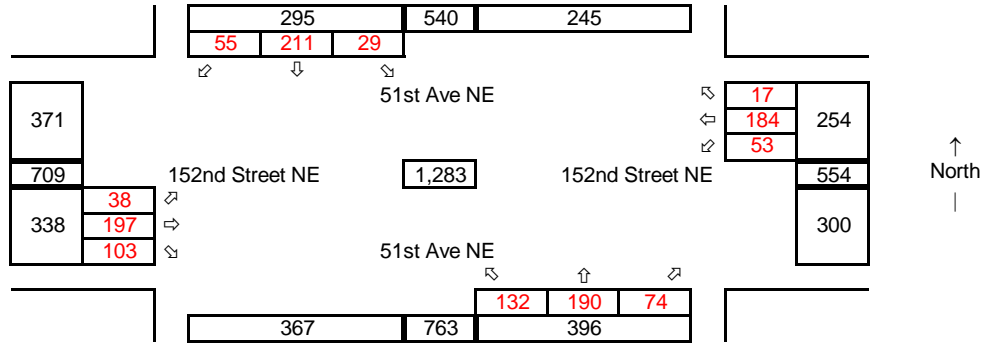


Synchro ID: 3

Existing
Average Weekday
PM Peak-Hour

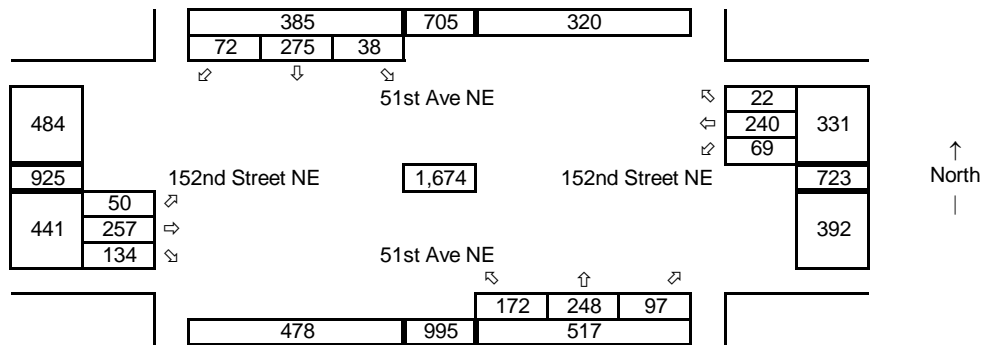
Year: **8/4/2022**

Data Source: **TDG**

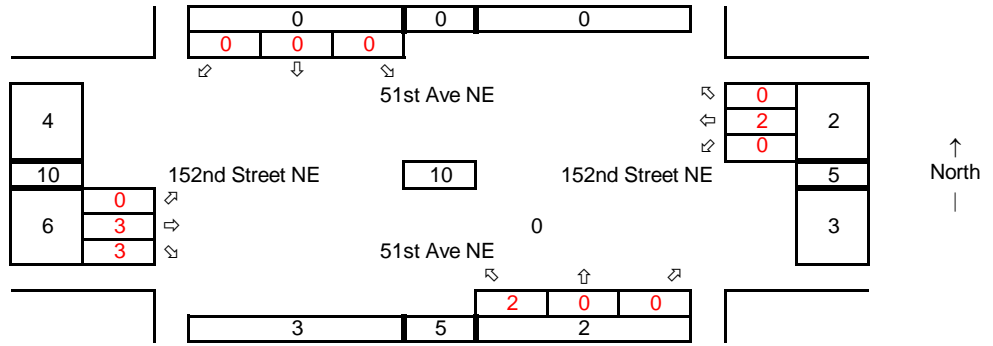


Future without Development
Average Weekday
PM Peak Hour

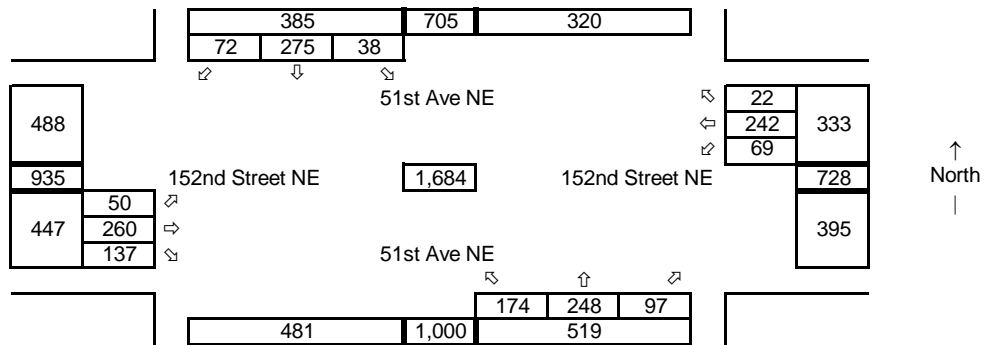
Year: 2031
Growth Rate = 3.0%
Years of Growth = 9
Total Growth = 1.3048



Total Development Trips
Average Weekday
PM Peak Hour



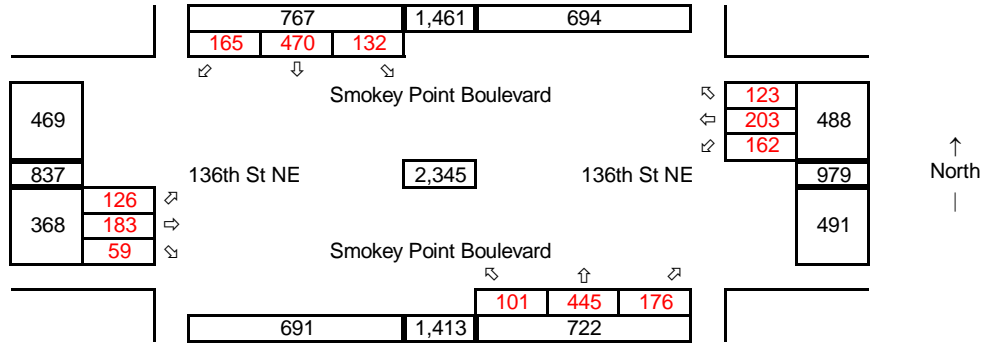
Future with Development
Average Weekday
PM Peak Hour



Synchro ID: 4
Existing
 Average Weekday
 PM Peak-Hour

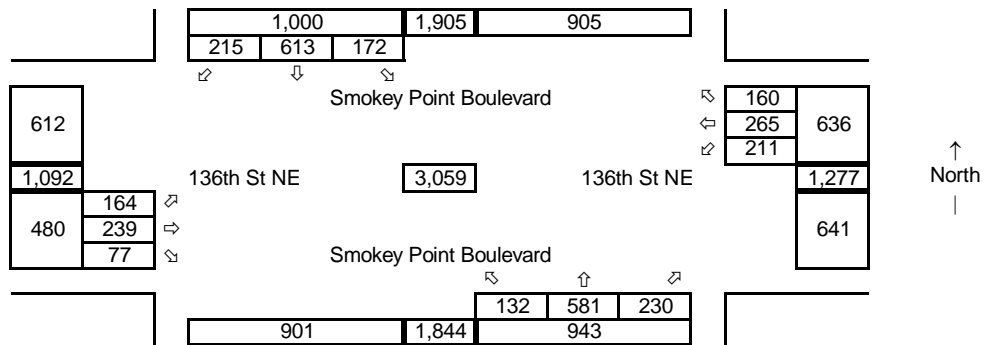
Year: **8/4/2022**

Data Source: **TDG**

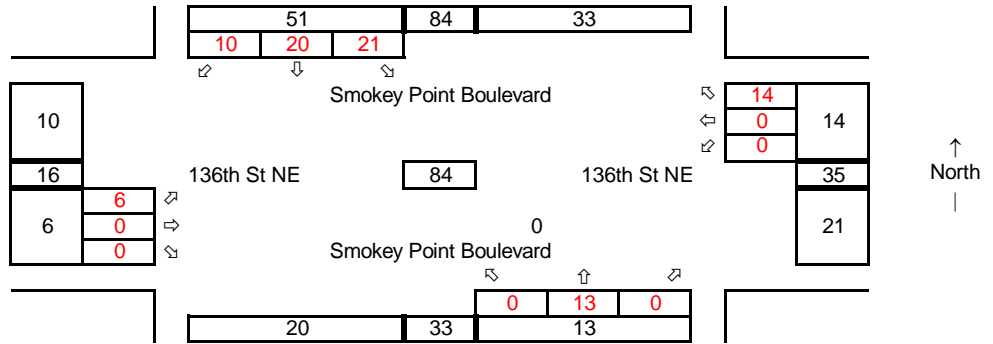


Future without Development
 Average Weekday
 PM Peak Hour

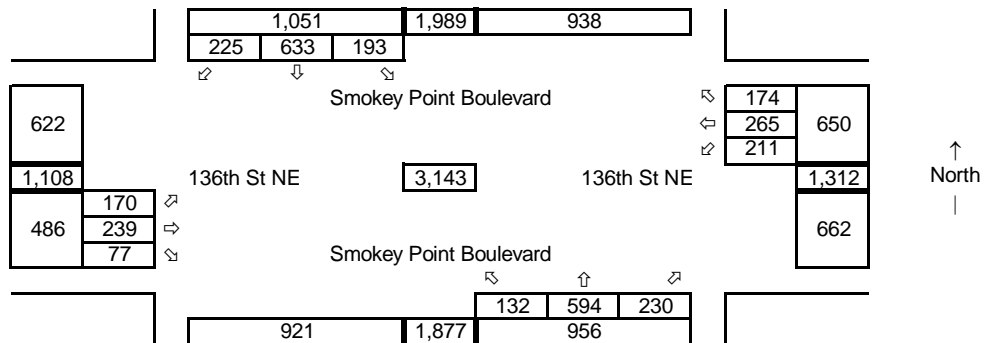
Year: 2031
 Growth Rate = 3.0%
 Years of Growth = 9
 Total Growth = 1.3048



Total Development Trips
 Average Weekday
 PM Peak Hour



Future with Development
 Average Weekday
 PM Peak Hour

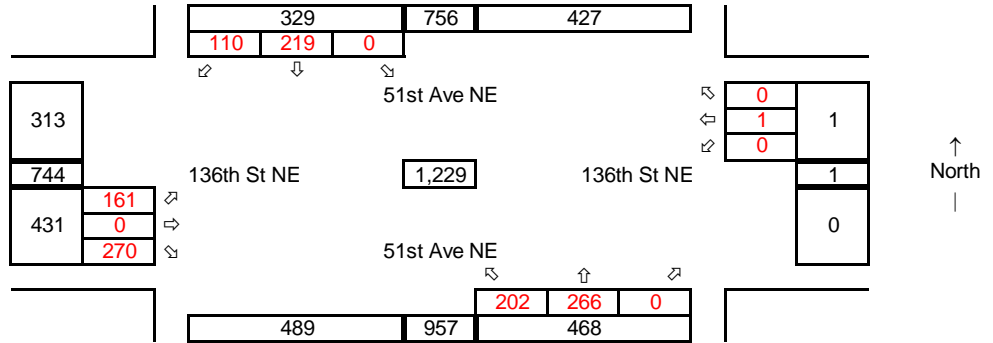


Synchro ID: 5

Existing
Average Weekday
PM Peak-Hour

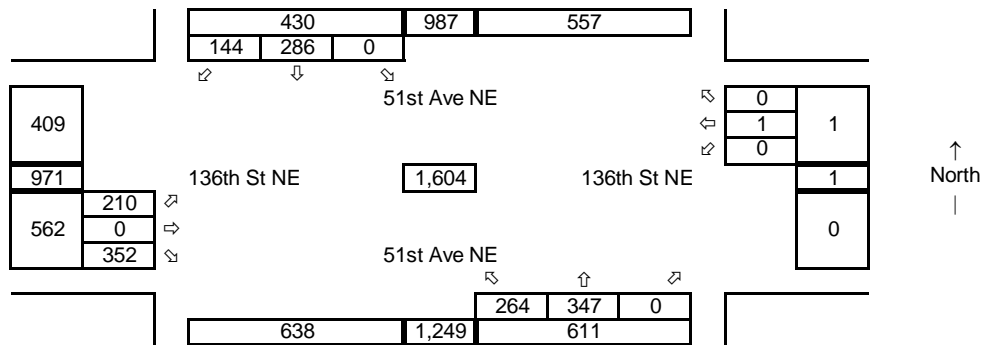
Year: **8/4/2022**

Data Source: **TDG**

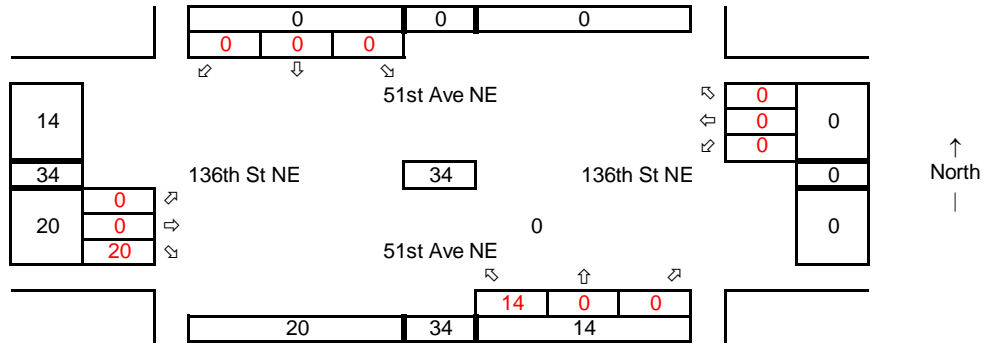


Future without Development
Average Weekday
PM Peak Hour

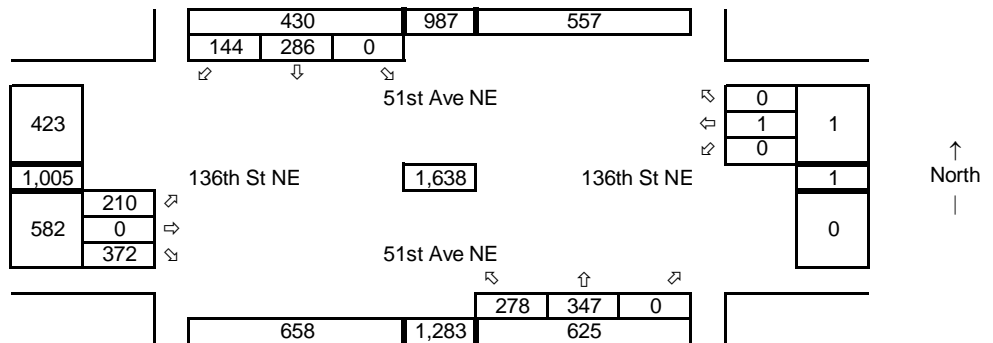
Year: 2031
Growth Rate = 3.0%
Years of Growth = 9
Total Growth = 1.3048



Total Development Trips
Average Weekday
PM Peak Hour



Future with Development
Average Weekday
PM Peak Hour

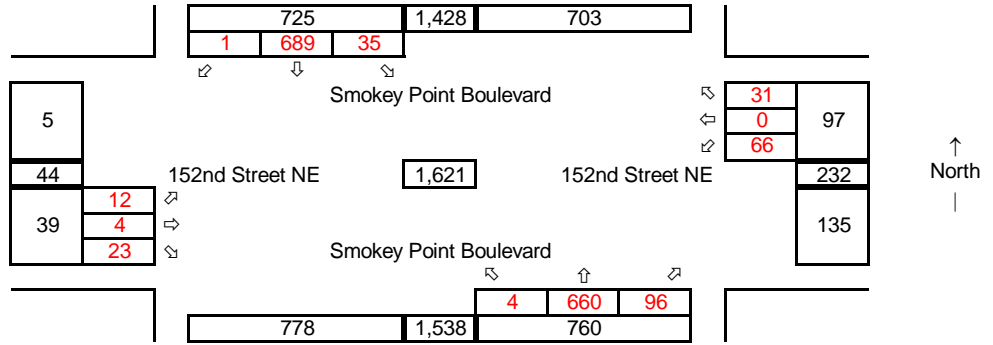


Synchro ID: 6

Existing
Average Weekday
PM Peak-Hour

Year: **8/4/2022**

Data Source: **TDG**



Future without Development

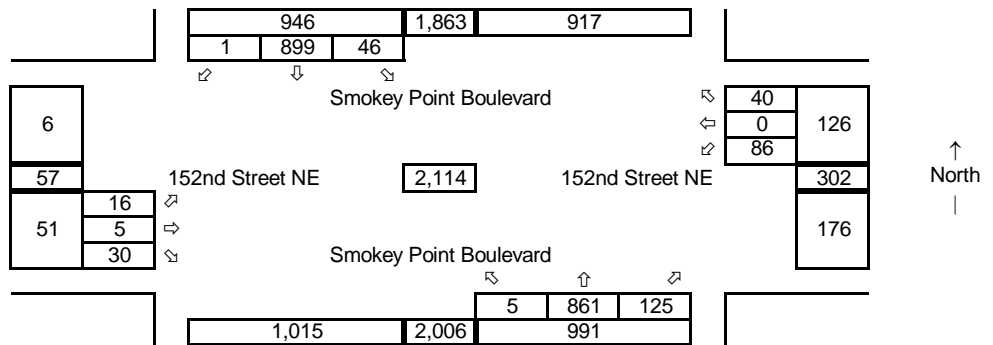
Average Weekday
PM Peak Hour

Year: 2031

Growth Rate = 3.0%

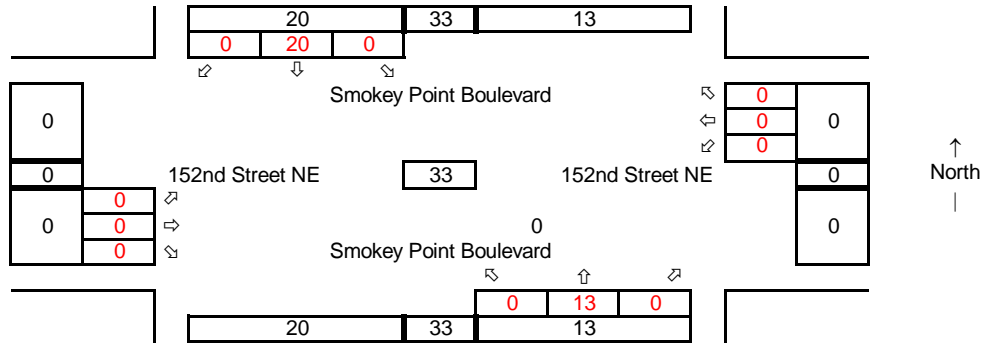
Years of Growth = 9

Total Growth = 1.3048



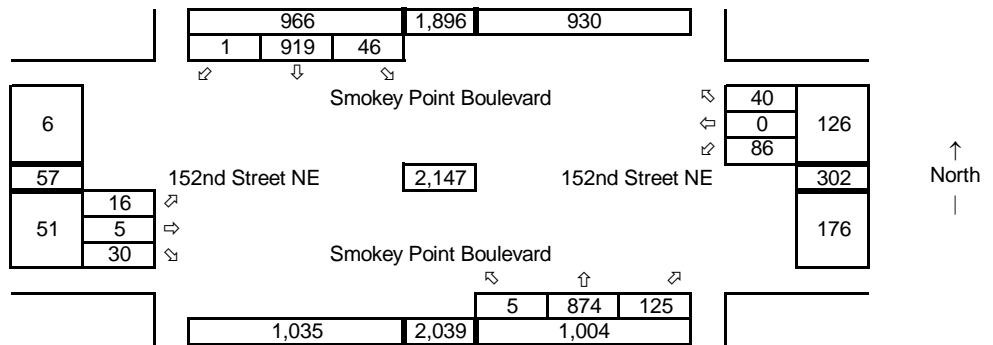
Total Development Trips

Average Weekday
PM Peak Hour



Future with Development

Average Weekday
PM Peak Hour



Opening Year

7 Site Access at Smokey Point B

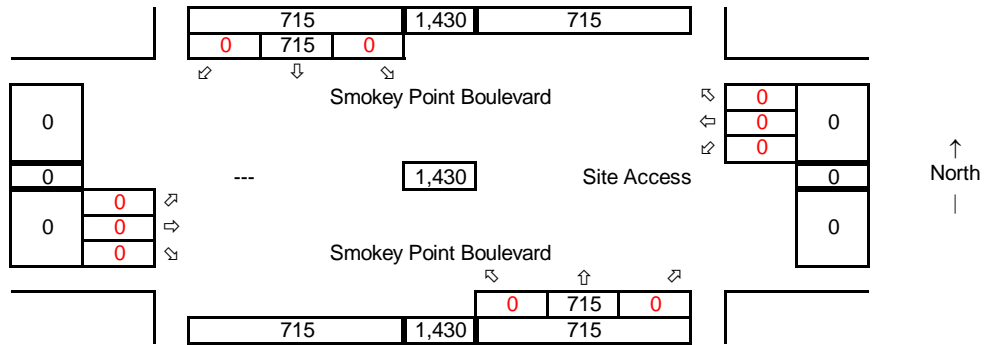
Weekday PM Peak-Hour

Synchro ID: 7
Existing
 Average Weekday
 PM Peak-Hour

Year: **8/4/2022**

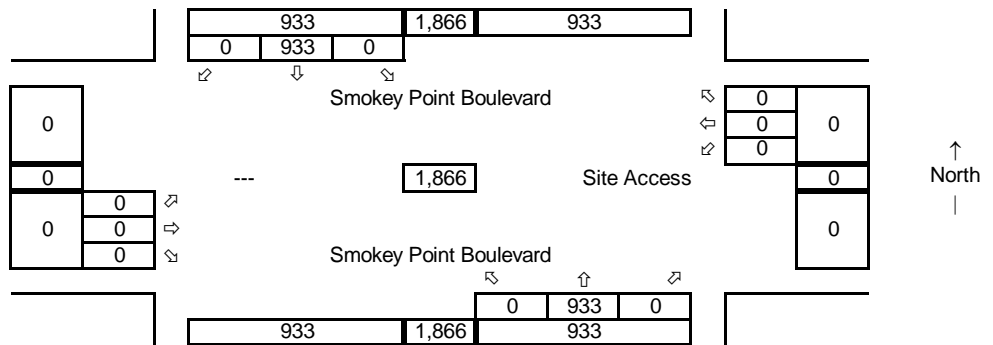
Data Source: **TDG**

Volumes are based on 156th St
 NE at Smokey Pt Blvd

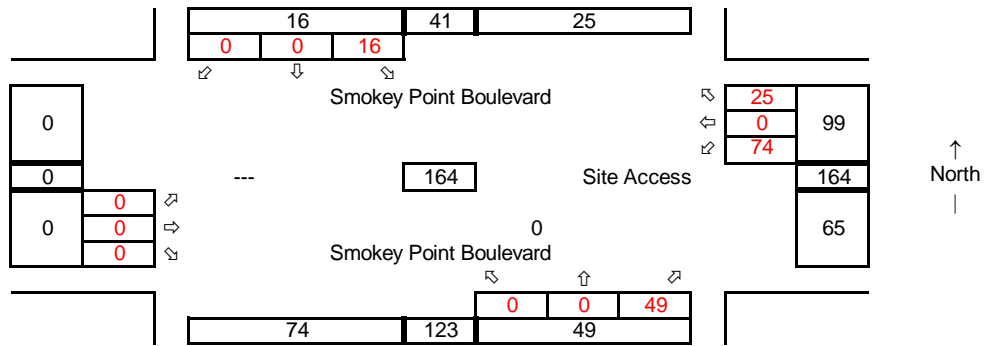


Future without Development
 Average Weekday
 PM Peak Hour

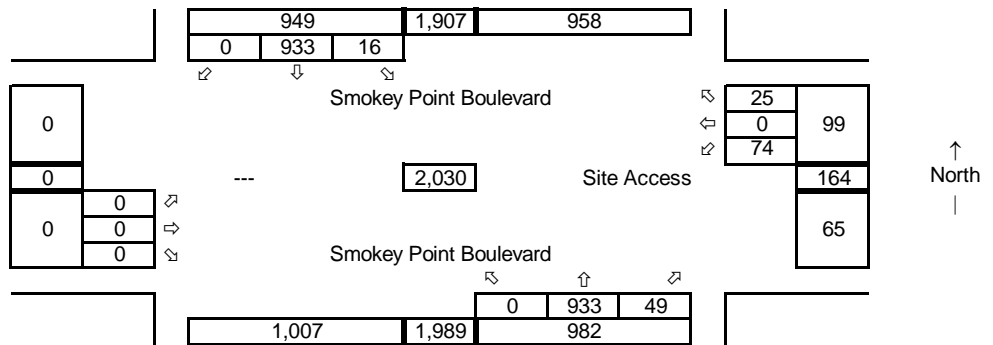
Year: 2031
 Growth Rate = 3.0%
 Years of Growth = 9
 Total Growth = 1.3048



Total Development Trips
 Average Weekday
 PM Peak Hour



Future with Development
 Average Weekday
 PM Peak Hour



Weekday PM Peak-Hour Level of Service Calculations

Lanes, Volumes, Timings

1: Smokey Point Boulevard & 156th Street NE

Kendall Subaru

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|-------|-------|-------|-------|-------|------|-------|-------|------|-------|-------|------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 28 | 4 | 230 | 19 | 16 | 32 | 250 | 655 | 11 | 15 | 631 | 69 |
| Future Volume (vph) | 28 | 4 | 230 | 19 | 16 | 32 | 250 | 655 | 11 | 15 | 631 | 69 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 150 | | 150 | 200 | | 0 | 250 | | 0 | 200 | | 0 |
| Storage Lanes | 1 | | 1 | 1 | | 0 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 |
| Ped Bike Factor | | | | | | | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Frt | | | 0.850 | | 0.900 | | | 0.997 | | | 0.985 | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1752 | 1845 | 1568 | 1752 | 1660 | 0 | 1752 | 3493 | 0 | 1752 | 3444 | 0 |
| Flt Permitted | 0.724 | | | 0.755 | | | 0.227 | | | 0.382 | | |
| Satd. Flow (perm) | 1336 | 1845 | 1568 | 1393 | 1660 | 0 | 418 | 3493 | 0 | 704 | 3444 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 245 | | 34 | | | 2 | | | 12 | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 1704 | | | 1283 | | | 1356 | | | 1304 | |
| Travel Time (s) | | 38.7 | | | 29.2 | | | 30.8 | | | 29.6 | |
| Confl. Peds. (#/hr) | | | | | | | 2 | | 1 | 1 | | 2 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles (%) | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 30 | 4 | 245 | 20 | 51 | 0 | 266 | 709 | 0 | 16 | 744 | 0 |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | | pm+pt | NA | | pm+pt | NA | |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | | 2 | | | 6 | | |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | | 7.0 | 10.0 | | 7.0 | 10.0 | |
| Minimum Split (s) | 12.0 | 25.0 | 25.0 | 12.0 | 25.0 | | 12.0 | 25.0 | | 12.0 | 25.0 | |
| Total Split (s) | 25.0 | 20.0 | 20.0 | 25.0 | 10.0 | | 20.0 | 50.0 | | 20.0 | 50.0 | |
| Total Split (%) | 21.7% | 17.4% | 17.4% | 21.7% | 8.7% | | 17.4% | 43.5% | | 17.4% | 43.5% | |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | |
| All-Red Time (s) | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Lost Time (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | | Yes | Yes | | Yes | Yes | |
| Recall Mode | None | None | None | None | None | | None | Min | | None | Min | |
| Act Effct Green (s) | 10.5 | 8.2 | 8.2 | 10.4 | 8.2 | | 40.1 | 38.4 | | 29.2 | 21.8 | |
| Actuated g/C Ratio | 0.17 | 0.13 | 0.13 | 0.17 | 0.13 | | 0.64 | 0.61 | | 0.46 | 0.35 | |
| v/c Ratio | 0.11 | 0.02 | 0.59 | 0.07 | 0.21 | | 0.49 | 0.33 | | 0.04 | 0.62 | |
| Control Delay | 23.6 | 31.0 | 11.4 | 23.3 | 18.8 | | 9.0 | 8.3 | | 7.1 | 20.1 | |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | 23.6 | 31.0 | 11.4 | 23.3 | 18.8 | | 9.0 | 8.3 | | 7.1 | 20.1 | |
| LOS | C | C | B | C | B | | A | A | | A | C | |
| Approach Delay | | 13.0 | | | 20.0 | | | 8.5 | | | 19.8 | |
| Approach LOS | | B | | | C | | | A | | | B | |

2022 Existing Conditions

PM Peak-Hour

Kimley-Horn and Associates, Inc. [AH 090222176]

Lanes, Volumes, Timings

1: Smokey Point Boulevard & 156th Street NE

Kendall Subaru

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|------|------|------|------|------|-----|------|------|-----|------|------|-----|
| Queue Length 50th (ft) | 10 | 1 | 0 | 6 | 6 | | 24 | 35 | | 1 | 104 | |
| Queue Length 95th (ft) | 33 | 11 | 65 | 24 | 40 | | 100 | 175 | | 11 | 221 | |
| Internal Link Dist (ft) | | 1624 | | | 1203 | | | 1276 | | | 1224 | |
| Turn Bay Length (ft) | 150 | | 150 | 200 | | | 250 | | | 200 | | |
| Base Capacity (vph) | 608 | 470 | 582 | 609 | 448 | | 607 | 2662 | | 685 | 2615 | |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Reduced v/c Ratio | 0.05 | 0.01 | 0.42 | 0.03 | 0.11 | | 0.44 | 0.27 | | 0.02 | 0.28 | |

Intersection Summary

Area Type: Other
 Cycle Length: 115
 Actuated Cycle Length: 62.8
 Natural Cycle: 75
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.62
 Intersection Signal Delay: 13.6
 Intersection Capacity Utilization 54.2%
 Analysis Period (min) 15























Intersection LOS: B
 ICU Level of Service A

Splits and Phases: 1: Smokey Point Boulevard & 156th Street NE



Lanes, Volumes, Timings
2: Smokey Point Boulevard & 152nd Street NE

Kendall Subaru

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  | |  |  | |  |  |  |  |  |  |
| Traffic Volume (vph) | 9 | 2 | 6 | 103 | 3 | 280 | 5 | 618 | 110 | 271 | 640 | 12 |
| Future Volume (vph) | 9 | 2 | 6 | 103 | 3 | 280 | 5 | 618 | 110 | 271 | 640 | 12 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 50 | | 0 | 125 | | 0 | 150 | | 0 | 200 | | 0 |
| Storage Lanes | 1 | | 0 | 1 | | 0 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 |
| Ped Bike Factor | 1.00 | | | | 0.99 | | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Frt | | 0.887 | | | 0.852 | | | 0.977 | | | 0.997 | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1770 | 1652 | 0 | 1770 | 1566 | 0 | 1770 | 3444 | 0 | 1770 | 3527 | 0 |
| Flt Permitted | | | | 0.548 | | | 0.393 | | | 0.215 | | |
| Satd. Flow (perm) | 1861 | 1652 | 0 | 1021 | 1566 | 0 | 731 | 3444 | 0 | 400 | 3527 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 6 | | | 292 | | | 19 | | | 2 | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 209 | | | 5141 | | | 1452 | | | 1356 | |
| Travel Time (s) | | 4.8 | | | 116.8 | | | 33.0 | | | 30.8 | |
| Confl. Peds. (#/hr) | 1 | | | | | 1 | 2 | | 2 | 2 | | 2 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 9 | 8 | 0 | 107 | 295 | 0 | 5 | 759 | 0 | 282 | 680 | 0 |
| Turn Type | pm+pt | NA | | pm+pt | NA | | pm+pt | NA | | pm+pt | NA | |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | | 8 | | | 2 | | | 6 | | |
| Detector Phase | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 7.0 | | 4.0 | 7.0 | |
| Minimum Split (s) | 9.5 | 27.0 | | 11.5 | 26.0 | | 9.5 | 24.0 | | 9.5 | 26.0 | |
| Total Split (s) | 16.0 | 16.0 | | 16.0 | 40.0 | | 16.0 | 50.0 | | 16.0 | 50.0 | |
| Total Split (%) | 13.1% | 13.1% | | 13.1% | 32.8% | | 13.1% | 41.0% | | 13.1% | 41.0% | |
| Yellow Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | |
| All-Red Time (s) | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Lost Time (s) | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Lead/Lag | Lead | Lag | | Lead | Lag | | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | Yes | Yes | | Yes | Yes | | Yes | Yes | | Yes | Yes | |
| Recall Mode | None | None | | None | None | | None | Min | | None | Min | |
| Act Effct Green (s) | 6.1 | 5.2 | | 9.2 | 7.6 | | 23.2 | 17.9 | | 33.9 | 32.4 | |
| Actuated g/C Ratio | 0.11 | 0.10 | | 0.17 | 0.14 | | 0.43 | 0.34 | | 0.63 | 0.61 | |
| v/c Ratio | 0.04 | 0.05 | | 0.38 | 0.62 | | 0.01 | 0.65 | | 0.53 | 0.32 | |
| Control Delay | 21.0 | 20.4 | | 24.2 | 10.6 | | 6.4 | 18.3 | | 9.8 | 7.6 | |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | 21.0 | 20.4 | | 24.2 | 10.6 | | 6.4 | 18.3 | | 9.8 | 7.6 | |
| LOS | C | C | | C | B | | A | B | | A | A | |
| Approach Delay | | 20.7 | | | 14.2 | | | 18.2 | | | 8.2 | |
| Approach LOS | | C | | | B | | | B | | | A | |
| Queue Length 50th (ft) | 2 | 1 | | 29 | 1 | | 1 | 93 | | 26 | 34 | |

Lanes, Volumes, Timings

2: Smokey Point Boulevard & 152nd Street NE

Kendall Subaru

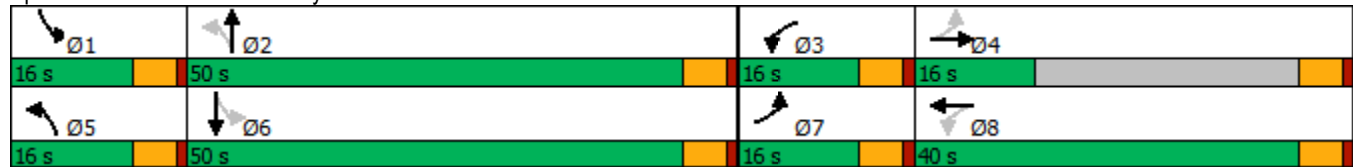
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|------|------|-----|------|------|-----|------|------|-----|------|------|-----|
| Queue Length 95th (ft) | 13 | 13 | | 75 | 66 | | 5 | 205 | | #113 | 160 | |
| Internal Link Dist (ft) | | 129 | | | 5061 | | | 1372 | | | 1276 | |
| Turn Bay Length (ft) | 50 | | | 125 | | | 150 | | | 200 | | |
| Base Capacity (vph) | 421 | 1136 | | 414 | 1167 | | 626 | 2974 | | 549 | 3043 | |
| Starvation Cap Reductn | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Spillback Cap Reductn | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Storage Cap Reductn | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Reduced v/c Ratio | 0.02 | 0.01 | | 0.26 | 0.25 | | 0.01 | 0.26 | | 0.51 | 0.22 | |

Intersection Summary

Area Type: Other
 Cycle Length: 122
 Actuated Cycle Length: 53.4
 Natural Cycle: 80
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.65
 Intersection Signal Delay: 13.0
 Intersection Capacity Utilization 65.7%
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Intersection LOS: B
 ICU Level of Service C

Splits and Phases: 2: Smokey Point Boulevard & 152nd Street NE



HCM 6th AWSC
3: 51st Avenue NE & 152nd Street NE

Kendall Subaru

Intersection

| | |
|---------------------------|------|
| Intersection Delay, s/veh | 25.8 |
| Intersection LOS | D |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|----------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations | | ↔ | | | ↔ | | | ↔ | | | ↔ | |
| Traffic Vol, veh/h | 38 | 197 | 103 | 53 | 184 | 17 | 132 | 190 | 74 | 29 | 211 | 55 |
| Future Vol, veh/h | 38 | 197 | 103 | 53 | 184 | 17 | 132 | 190 | 74 | 29 | 211 | 55 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 39 | 203 | 106 | 55 | 190 | 18 | 136 | 196 | 76 | 30 | 218 | 57 |
| 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 | 25.3 | | | 19.9 | | | 33.2 | | | 21.7 | | |
| HCM LOS | D | | | C | | | D | | | C | | |

| Lane | NBLn1 | EBLn1 | WBLn1 | SBLn1 |
|------------------------|-------|-------|-------|-------|
| Vol Left, % | 33% | 11% | 21% | 10% |
| Vol Thru, % | 48% | 58% | 72% | 72% |
| Vol Right, % | 19% | 30% | 7% | 19% |
| Sign Control | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 396 | 338 | 254 | 295 |
| LT Vol | 132 | 38 | 53 | 29 |
| Through Vol | 190 | 197 | 184 | 211 |
| RT Vol | 74 | 103 | 17 | 55 |
| Lane Flow Rate | 408 | 348 | 262 | 304 |
| Geometry Grp | 1 | 1 | 1 | 1 |
| Degree of Util (X) | 0.802 | 0.696 | 0.554 | 0.619 |
| Departure Headway (Hd) | 7.071 | 7.193 | 7.623 | 7.332 |
| Convergence, Y/N | Yes | Yes | Yes | Yes |
| Cap | 510 | 498 | 471 | 490 |
| Service Time | 5.154 | 5.28 | 5.721 | 5.425 |
| HCM Lane V/C Ratio | 0.8 | 0.699 | 0.556 | 0.62 |
| HCM Control Delay | 33.2 | 25.3 | 19.9 | 21.7 |
| HCM Lane LOS | D | D | C | C |
| HCM 95th-tile Q | 7.6 | 5.3 | 3.3 | 4.1 |

Lanes, Volumes, Timings

4: State Avenue/Smokey Point Boulevard & 136th Street NE

Kendall Subaru

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|-------|-------|-------|-------|-------|------|-------|-------|------|-------|-------|------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 126 | 183 | 59 | 162 | 203 | 123 | 101 | 445 | 176 | 132 | 470 | 165 |
| Future Volume (vph) | 126 | 183 | 59 | 162 | 203 | 123 | 101 | 445 | 176 | 132 | 470 | 165 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 150 | | 150 | 200 | | 0 | 300 | | 0 | 300 | | 0 |
| Storage Lanes | 1 | | 1 | 1 | | 0 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 |
| Ped Bike Factor | | | 0.99 | 1.00 | | | | | | | 0.99 | |
| Frt | | | 0.850 | | 0.943 | | | 0.957 | | | 0.961 | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1752 | 1845 | 1568 | 1752 | 1740 | 0 | 1752 | 3354 | 0 | 1752 | 3347 | 0 |
| Flt Permitted | 0.289 | | | 0.502 | | | 0.309 | | | 0.291 | | |
| Satd. Flow (perm) | 533 | 1845 | 1547 | 925 | 1740 | 0 | 570 | 3354 | 0 | 537 | 3347 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 143 | | 26 | | | 42 | | | 33 | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 981 | | | 4740 | | | 2821 | | | 4424 | |
| Travel Time (s) | | 22.3 | | | 107.7 | | | 64.1 | | | 100.5 | |
| Confl. Peds. (#/hr) | | | 1 | 1 | | | | | | | | |
| Confl. Bikes (#/hr) | | | | | | | | | | | | 2 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Heavy Vehicles (%) | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 129 | 187 | 60 | 165 | 333 | 0 | 103 | 634 | 0 | 135 | 648 | 0 |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | | pm+pt | NA | | pm+pt | NA | |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | | 2 | | | 6 | | |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 | 5.0 | 7.0 | | 5.0 | 7.0 | | 5.0 | 7.0 | |
| Minimum Split (s) | 10.0 | 34.0 | 34.0 | 10.0 | 23.0 | | 10.0 | 35.0 | | 10.0 | 23.0 | |
| Total Split (s) | 15.0 | 35.0 | 35.0 | 30.0 | 40.0 | | 35.0 | 35.0 | | 30.0 | 30.0 | |
| Total Split (%) | 11.5% | 26.9% | 26.9% | 23.1% | 30.8% | | 26.9% | 26.9% | | 23.1% | 23.1% | |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | |
| All-Red Time (s) | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Lost Time (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | | Yes | Yes | | Yes | Yes | |
| Recall Mode | None | None | None | None | None | | None | Max | | None | Max | |
| Act Effct Green (s) | 27.7 | 18.9 | 18.9 | 30.3 | 20.2 | | 38.1 | 30.4 | | 40.1 | 31.4 | |
| Actuated g/C Ratio | 0.31 | 0.21 | 0.21 | 0.34 | 0.23 | | 0.43 | 0.34 | | 0.45 | 0.36 | |
| v/c Ratio | 0.45 | 0.47 | 0.14 | 0.40 | 0.80 | | 0.30 | 0.54 | | 0.37 | 0.54 | |
| Control Delay | 23.3 | 35.2 | 0.6 | 21.4 | 44.7 | | 16.2 | 25.5 | | 16.8 | 25.1 | |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | 23.3 | 35.2 | 0.6 | 21.4 | 44.7 | | 16.2 | 25.5 | | 16.8 | 25.1 | |
| LOS | C | D | A | C | D | | B | C | | B | C | |
| Approach Delay | | 25.6 | | | 37.0 | | | 24.2 | | | 23.6 | |

2022 Existing Conditions

PM Peak-Hour

Kimley-Horn and Associates, Inc. [AH 090222176]

Lanes, Volumes, Timings

4: State Avenue/Smokey Point Boulevard & 136th Street NE

Kendall Subaru

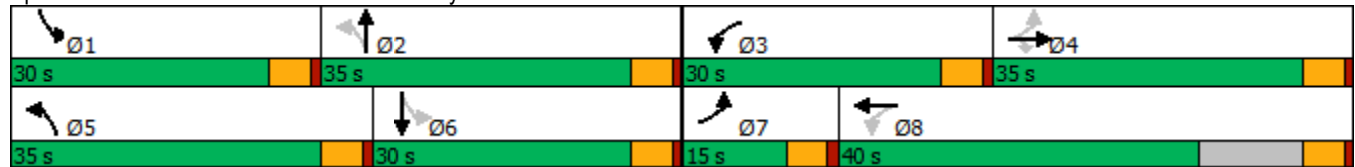
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|------|------|------|------|------|------|------|------|-----|------|------|-----|
| Approach LOS | | C | | | | D | | | | C | | |
| Queue Length 50th (ft) | 46 | 90 | 0 | 60 | 163 | | 30 | 138 | | 40 | 142 | |
| Queue Length 95th (ft) | 89 | 168 | 0 | 110 | 272 | | 69 | 238 | | 87 | 241 | |
| Internal Link Dist (ft) | | 901 | | | | 4660 | | | | 2741 | | |
| Turn Bay Length (ft) | 150 | | 150 | 200 | | | 300 | | | 300 | | |
| Base Capacity (vph) | 314 | 633 | 625 | 596 | 909 | | 691 | 1180 | | 616 | 1209 | |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Reduced v/c Ratio | 0.41 | 0.30 | 0.10 | 0.28 | 0.37 | | 0.15 | 0.54 | | 0.22 | 0.54 | |

Intersection Summary

Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 88.4
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.80
 Intersection Signal Delay: 26.9
 Intersection Capacity Utilization 67.1%
 Analysis Period (min) 15

Intersection LOS: C
 ICU Level of Service C

Splits and Phases: 4: State Avenue/Smokey Point Boulevard & 136th Street NE



Lanes, Volumes, Timings

5: 51st Avenue NE & 136th Street NE/School Exit

Kendall Subaru

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|-------|-------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 161 | 0 | 270 | 0 | 1 | 0 | 202 | 266 | 0 | 0 | 219 | 110 |
| Future Volume (vph) | 161 | 0 | 270 | 0 | 1 | 0 | 202 | 266 | 0 | 0 | 219 | 110 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 150 | | 0 | 0 | | 25 | 150 | | 0 | 0 | | 75 |
| Storage Lanes | 1 | | 1 | 0 | | 1 | 1 | | 0 | 0 | | 1 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | 1.00 | | 0.98 | | | | | | | | | 0.98 |
| Frt | | | 0.850 | | | | | | | | | 0.850 |
| Flt Protected | 0.950 | | | | | | 0.950 | | | | | |
| Satd. Flow (prot) | 1752 | 0 | 1568 | 0 | 1845 | 1845 | 1752 | 1845 | 0 | 0 | 1845 | 1568 |
| Flt Permitted | 0.757 | | | | | | 0.494 | | | | | |
| Satd. Flow (perm) | 1394 | 0 | 1531 | 0 | 1845 | 1845 | 911 | 1845 | 0 | 0 | 1845 | 1535 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 293 | | | | | | | | | 120 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | | 30 |
| Link Distance (ft) | | 4740 | | | 361 | | | 670 | | | 2819 | |
| Travel Time (s) | | 107.7 | | | 8.2 | | | 15.2 | | | 64.1 | |
| Confl. Peds. (#/hr) | 1 | | 2 | 2 | | | 1 | | | | | |
| Confl. Bikes (#/hr) | | | | | | | 3 | | 4 | | | 1 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles (%) | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 175 | 0 | 293 | 0 | 1 | 0 | 220 | 289 | 0 | 0 | 238 | 120 |
| Turn Type | Perm | | Perm | | NA | Perm | pm+pt | NA | | | NA | Perm |
| Protected Phases | | | | | 8 | | 5 | 2 | | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 8 | 2 | | | | | 6 |
| Detector Phase | 4 | | 4 | 8 | 8 | 8 | 5 | 2 | | | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | | 5.0 | 7.0 | 7.0 | 7.0 | 5.0 | 7.0 | | | 7.0 | 7.0 |
| Minimum Split (s) | 23.0 | | 23.0 | 22.5 | 22.5 | 22.5 | 10.0 | 23.0 | | | 26.0 | 26.0 |
| Total Split (s) | 25.0 | | 25.0 | 35.0 | 35.0 | 35.0 | 10.0 | 35.0 | | | 25.0 | 25.0 |
| Total Split (%) | 35.7% | | 35.7% | 50.0% | 50.0% | 50.0% | 14.3% | 50.0% | | | 35.7% | 35.7% |
| Yellow Time (s) | 4.0 | | 4.0 | 3.0 | 3.0 | 3.0 | 4.0 | 4.0 | | | 4.0 | 4.0 |
| All-Red Time (s) | 1.0 | | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | | | 1.0 | 1.0 |
| Lost Time Adjust (s) | 0.0 | | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | | | 0.0 | 0.0 |
| Total Lost Time (s) | 5.0 | | 5.0 | | 4.0 | 4.0 | 5.0 | 5.0 | | | 5.0 | 5.0 |
| Lead/Lag | | | | | | | Lead | | | | Lag | Lag |
| Lead-Lag Optimize? | | | | | | | Yes | | | | Yes | Yes |
| Recall Mode | None | | None | None | None | None | None | Max | | | Max | Max |
| Act Effct Green (s) | 10.7 | | 10.7 | | 11.7 | | 31.1 | 31.1 | | | 21.1 | 21.1 |
| Actuated g/C Ratio | 0.21 | | 0.21 | | 0.23 | | 0.60 | 0.60 | | | 0.41 | 0.41 |
| v/c Ratio | 0.61 | | 0.53 | | 0.00 | | 0.35 | 0.26 | | | 0.32 | 0.17 |
| Control Delay | 27.9 | | 6.6 | | 14.0 | | 7.4 | 6.5 | | | 13.0 | 3.7 |
| Queue Delay | 0.0 | | 0.0 | | 0.0 | | 0.0 | 0.0 | | | 0.0 | 0.0 |
| Total Delay | 27.9 | | 6.6 | | 14.0 | | 7.4 | 6.5 | | | 13.0 | 3.7 |
| LOS | C | | A | | B | | A | A | | | B | A |
| Approach Delay | | 14.6 | | | 14.0 | | | 6.9 | | | 9.9 | |

2022 Existing Conditions

PM Peak-Hour

Kimley-Horn and Associates, Inc. [AH 090222176]

Lanes, Volumes, Timings

5: 51st Avenue NE & 136th Street NE/School Exit

Kendall Subaru

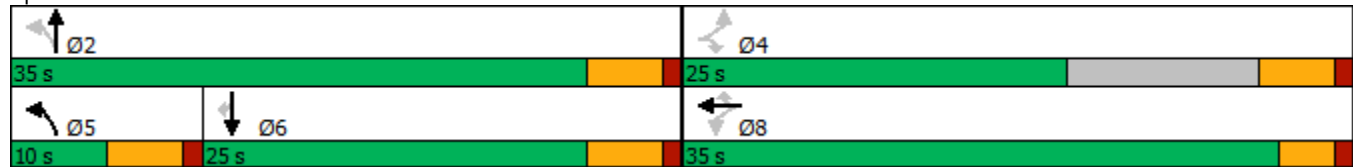
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|------|------|------|-----|------|-----|------|------|-----|-----|------|------|
| Approach LOS | | B | | | B | | | A | | | A | |
| Queue Length 50th (ft) | 49 | | 0 | | 0 | | 26 | 35 | | | 47 | 0 |
| Queue Length 95th (ft) | 98 | | 47 | | 3 | | 67 | 86 | | | 105 | 27 |
| Internal Link Dist (ft) | | 4660 | | | 281 | | | 590 | | | 2739 | |
| Turn Bay Length (ft) | 150 | | | | | | 150 | | | | | 75 |
| Base Capacity (vph) | 809 | | 1011 | | 1106 | | 627 | 1106 | | | 749 | 694 |
| Starvation Cap Reductn | 0 | | 0 | | 0 | | 0 | 0 | | | 0 | 0 |
| Spillback Cap Reductn | 0 | | 0 | | 0 | | 0 | 0 | | | 0 | 0 |
| Storage Cap Reductn | 0 | | 0 | | 0 | | 0 | 0 | | | 0 | 0 |
| Reduced v/c Ratio | 0.22 | | 0.29 | | 0.00 | | 0.35 | 0.26 | | | 0.32 | 0.17 |

Intersection Summary

Area Type: Other
 Cycle Length: 70
 Actuated Cycle Length: 51.9
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.61
 Intersection Signal Delay: 10.4
 Intersection Capacity Utilization 50.0%
 Analysis Period (min) 15



















Intersection LOS: B
 ICU Level of Service A

Splits and Phases: 5: 51st Avenue NE & 136th Street NE/School Exit



Lanes, Volumes, Timings
6: State Avenue & 128th Street NE

Kendall Subaru

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | |  | | |  | |  |  | |  |  | |
| Traffic Volume (vph) | 12 | 4 | 23 | 66 | 0 | 31 | 4 | 660 | 96 | 35 | 689 | 1 |
| Future Volume (vph) | 12 | 4 | 23 | 66 | 0 | 31 | 4 | 660 | 96 | 35 | 689 | 1 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 200 | | 0 | 200 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 0 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 |
| Ped Bike Factor | | | | | | | | 1.00 | | | 1.00 | |
| Frt | | 0.920 | | | 0.956 | | | 0.981 | | | | |
| Flt Protected | | 0.985 | | | 0.967 | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 0 | 1688 | 0 | 0 | 1722 | 0 | 1770 | 3460 | 0 | 1770 | 3539 | 0 |
| Flt Permitted | | 0.985 | | | 0.633 | | 0.381 | | | 0.320 | | |
| Satd. Flow (perm) | 0 | 1688 | 0 | 0 | 1127 | 0 | 710 | 3460 | 0 | 596 | 3539 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 23 | | | 101 | | | 13 | | | | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | | 30 |
| Link Distance (ft) | | 1088 | | | 1243 | | | 4124 | | | | 2821 |
| Travel Time (s) | | 24.7 | | | 28.3 | | | 93.7 | | | | 64.1 |
| Confl. Peds. (#/hr) | | | | | | | | | 1 | 1 | | |
| Confl. Bikes (#/hr) | | | | | | | | | 1 | | | 2 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 39 | 0 | 0 | 99 | 0 | 4 | 771 | 0 | 36 | 704 | 0 |
| Turn Type | Split | NA | | pm+pt | NA | | pm+pt | NA | | pm+pt | NA | |
| Protected Phases | 8 | 8 | | 4 | 3 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | | | | 3 | | | 2 | | | 6 | | |
| Detector Phase | 8 | 8 | | 4 | 3 | | 5 | 2 | | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | | 8.0 | 5.0 | | 5.0 | 7.0 | | 5.0 | 7.0 | |
| Minimum Split (s) | 23.0 | 23.0 | | 23.0 | 25.0 | | 10.0 | 23.0 | | 10.0 | 23.0 | |
| Total Split (s) | 10.0 | 10.0 | | 30.0 | 20.0 | | 20.0 | 50.0 | | 20.0 | 50.0 | |
| Total Split (%) | 7.7% | 7.7% | | 23.1% | 15.4% | | 15.4% | 38.5% | | 15.4% | 38.5% | |
| Yellow Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | |
| All-Red Time (s) | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | |
| Lost Time Adjust (s) | | 0.0 | | | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Lost Time (s) | | 5.0 | | | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Lead/Lag | | | | Lag | Lead | | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | | | | Yes | Yes | | Yes | Yes | | Yes | Yes | |
| Recall Mode | None | None | | None | None | | None | Max | | None | Max | |
| Act Effct Green (s) | | 5.1 | | | 6.5 | | 54.1 | 52.5 | | 56.4 | 56.5 | |
| Actuated g/C Ratio | | 0.07 | | | 0.08 | | 0.70 | 0.68 | | 0.73 | 0.73 | |
| v/c Ratio | | 0.30 | | | 0.53 | | 0.01 | 0.33 | | 0.07 | 0.27 | |
| Control Delay | | 28.3 | | | 18.8 | | 5.2 | 8.8 | | 5.1 | 6.3 | |
| Queue Delay | | 0.0 | | | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | | 28.3 | | | 18.8 | | 5.2 | 8.8 | | 5.1 | 6.3 | |
| LOS | | C | | | B | | A | A | | A | A | |
| Approach Delay | | 28.3 | | | 18.8 | | | 8.8 | | | 6.3 | |
| Approach LOS | | C | | | B | | | A | | | A | |

Lanes, Volumes, Timings
6: State Avenue & 128th Street NE

Kendall Subaru

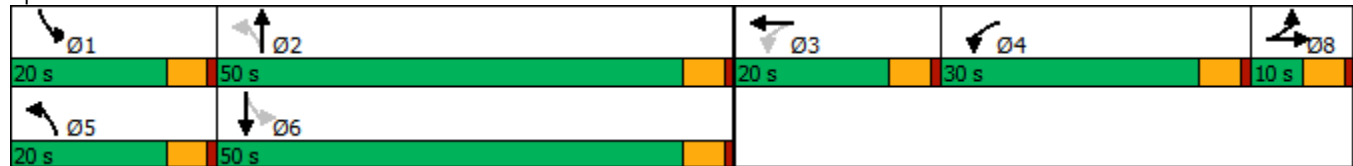
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|-----|------|-----|-----|------|-----|------|------|-----|------|------|-----|
| Queue Length 50th (ft) | | 8 | | | 0 | | 1 | 103 | | 5 | 61 | |
| Queue Length 95th (ft) | | 39 | | | 44 | | 4 | 170 | | 16 | 150 | |
| Internal Link Dist (ft) | | 1008 | | | 1163 | | | 4044 | | | 2741 | |
| Turn Bay Length (ft) | | | | | | | 200 | | | 200 | | |
| Base Capacity (vph) | | 132 | | | 303 | | 736 | 2368 | | 674 | 2601 | |
| Starvation Cap Reductn | | 0 | | | 0 | | 0 | 0 | | 0 | 0 | |
| Spillback Cap Reductn | | 0 | | | 0 | | 0 | 0 | | 0 | 0 | |
| Storage Cap Reductn | | 0 | | | 0 | | 0 | 0 | | 0 | 0 | |
| Reduced v/c Ratio | | 0.30 | | | 0.33 | | 0.01 | 0.33 | | 0.05 | 0.27 | |

Intersection Summary

Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 76.9
 Natural Cycle: 105
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.53
 Intersection Signal Delay: 8.7
 Intersection Capacity Utilization 48.6%
 Analysis Period (min) 15

Intersection LOS: A
 ICU Level of Service A

Splits and Phases: 6: State Avenue & 128th Street NE



Lanes, Volumes, Timings

1: Smokey Point Boulevard & 156th Street NE

Kendall Subaru

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|-------|-------|-------|-------|-------|------|-------|-------|------|-------|-------|------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 31 | 4 | 251 | 21 | 17 | 35 | 273 | 716 | 12 | 16 | 690 | 75 |
| Future Volume (vph) | 31 | 4 | 251 | 21 | 17 | 35 | 273 | 716 | 12 | 16 | 690 | 75 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 150 | | 150 | 200 | | 0 | 250 | | 0 | 200 | | 0 |
| Storage Lanes | 1 | | 1 | 1 | | 0 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 |
| Ped Bike Factor | | | | | | | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Frt | | | 0.850 | | 0.899 | | | 0.997 | | | 0.985 | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1752 | 1845 | 1568 | 1752 | 1658 | 0 | 1752 | 3493 | 0 | 1752 | 3444 | 0 |
| Flt Permitted | 0.713 | | | 0.755 | | | 0.204 | | | 0.358 | | |
| Satd. Flow (perm) | 1315 | 1845 | 1568 | 1393 | 1658 | 0 | 376 | 3493 | 0 | 660 | 3444 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 267 | | 37 | | | 2 | | | 12 | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 1704 | | | 1283 | | | 1356 | | | 1304 | |
| Travel Time (s) | | 38.7 | | | 29.2 | | | 30.8 | | | 29.6 | |
| Confl. Peds. (#/hr) | | | | | | | 2 | | 1 | 1 | | 2 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles (%) | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 33 | 4 | 267 | 22 | 55 | 0 | 290 | 775 | 0 | 17 | 814 | 0 |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | | pm+pt | NA | | pm+pt | NA | |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | | 2 | | | 6 | | |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | | 7.0 | 10.0 | | 7.0 | 10.0 | |
| Minimum Split (s) | 12.0 | 25.0 | 25.0 | 12.0 | 25.0 | | 12.0 | 25.0 | | 12.0 | 25.0 | |
| Total Split (s) | 25.0 | 20.0 | 20.0 | 25.0 | 10.0 | | 20.0 | 50.0 | | 20.0 | 50.0 | |
| Total Split (%) | 21.7% | 17.4% | 17.4% | 21.7% | 8.7% | | 17.4% | 43.5% | | 17.4% | 43.5% | |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | |
| All-Red Time (s) | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Lost Time (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | | Yes | Yes | | Yes | Yes | |
| Recall Mode | None | None | None | None | None | | None | Min | | None | Min | |
| Act Effct Green (s) | 10.7 | 8.4 | 8.4 | 10.5 | 8.3 | | 43.7 | 41.9 | | 31.9 | 24.5 | |
| Actuated g/C Ratio | 0.16 | 0.13 | 0.13 | 0.16 | 0.12 | | 0.66 | 0.63 | | 0.48 | 0.37 | |
| v/c Ratio | 0.13 | 0.02 | 0.62 | 0.08 | 0.23 | | 0.54 | 0.35 | | 0.04 | 0.64 | |
| Control Delay | 25.3 | 32.5 | 12.0 | 24.8 | 19.4 | | 10.8 | 8.2 | | 7.0 | 20.3 | |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | 25.3 | 32.5 | 12.0 | 24.8 | 19.4 | | 10.8 | 8.2 | | 7.0 | 20.3 | |
| LOS | C | C | B | C | B | | B | A | | A | C | |
| Approach Delay | | 13.7 | | | 20.9 | | | 9.0 | | | 20.1 | |
| Approach LOS | | B | | | C | | | A | | | C | |

2025 Baseline Conditions

PM Peak-Hour

Kimley-Horn and Associates, Inc. [AH 090222176]

Lanes, Volumes, Timings

1: Smokey Point Boulevard & 156th Street NE

Kendall Subaru

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|------|------|------|------|------|-----|------|------|-----|------|------|-----|
| Queue Length 50th (ft) | 12 | 1 | 0 | 8 | 6 | | 27 | 40 | | 1 | 118 | |
| Queue Length 95th (ft) | 37 | 12 | 69 | 28 | 44 | | 127 | 196 | | 11 | 247 | |
| Internal Link Dist (ft) | | 1624 | | | 1203 | | | 1276 | | | 1224 | |
| Turn Bay Length (ft) | 150 | | 150 | 200 | | | 250 | | | 200 | | |
| Base Capacity (vph) | 573 | 441 | 578 | 574 | 424 | | 576 | 2538 | | 661 | 2475 | |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Reduced v/c Ratio | 0.06 | 0.01 | 0.46 | 0.04 | 0.13 | | 0.50 | 0.31 | | 0.03 | 0.33 | |

Intersection Summary

Area Type: Other

Cycle Length: 115

Actuated Cycle Length: 66.4

Natural Cycle: 75

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.64

Intersection Signal Delay: 14.0








Intersection Capacity Utilization 57.5%

Analysis Period (min) 15

Intersection LOS: B

ICU Level of Service B























Splits and Phases: 1: Smokey Point Boulevard & 156th Street NE

| | | | |
|---|---|--|---|
|  |  |  |  |
| 20 s | 50 s | 25 s | 20 s |
|  |  |  |  |
| 20 s | 50 s | 25 s | 10 s |

Lanes, Volumes, Timings

2: Smokey Point Boulevard & 152nd Street NE

Kendall Subaru

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  | |  |  | |  |  |  |  |  |  |
| Traffic Volume (vph) | 10 | 2 | 7 | 113 | 3 | 306 | 5 | 675 | 120 | 296 | 699 | 13 |
| Future Volume (vph) | 10 | 2 | 7 | 113 | 3 | 306 | 5 | 675 | 120 | 296 | 699 | 13 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 50 | | 0 | 125 | | 0 | 150 | | 0 | 200 | | 0 |
| Storage Lanes | 1 | | 0 | 1 | | 0 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 |
| Ped Bike Factor | 1.00 | | | | 0.99 | | 1.00 | 1.00 | | | 1.00 | |
| Frt | | 0.883 | | | 0.851 | | | 0.977 | | | 0.997 | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1770 | 1645 | 0 | 1770 | 1564 | 0 | 1770 | 3444 | 0 | 1770 | 3527 | 0 |
| Flt Permitted | | | | 0.541 | | | 0.370 | | | 0.192 | | |
| Satd. Flow (perm) | 1861 | 1645 | 0 | 1008 | 1564 | 0 | 688 | 3444 | 0 | 358 | 3527 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 7 | | | 319 | | | 19 | | | 2 | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 209 | | | 5141 | | | 1452 | | | 1356 | |
| Travel Time (s) | | 4.8 | | | 116.8 | | | 33.0 | | | 30.8 | |
| Confl. Peds. (#/hr) | 1 | | | | | 1 | 2 | | 2 | 2 | | 2 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 10 | 9 | 0 | 118 | 322 | 0 | 5 | 828 | 0 | 308 | 742 | 0 |
| Turn Type | pm+pt | NA | | pm+pt | NA | | pm+pt | NA | | pm+pt | NA | |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | | 8 | | | 2 | | | 6 | | |
| Detector Phase | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 7.0 | | 4.0 | 7.0 | |
| Minimum Split (s) | 9.5 | 27.0 | | 11.5 | 26.0 | | 9.5 | 24.0 | | 9.5 | 26.0 | |
| Total Split (s) | 16.0 | 16.0 | | 16.0 | 40.0 | | 16.0 | 50.0 | | 16.0 | 50.0 | |
| Total Split (%) | 13.1% | 13.1% | | 13.1% | 32.8% | | 13.1% | 41.0% | | 13.1% | 41.0% | |
| Yellow Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | |
| All-Red Time (s) | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Lost Time (s) | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Lead/Lag | Lead | Lag | | Lead | Lag | | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | Yes | Yes | | Yes | Yes | | Yes | Yes | | Yes | Yes | |
| Recall Mode | None | None | | None | None | | None | Min | | None | Min | |
| Act Effct Green (s) | 6.3 | 5.4 | | 9.8 | 8.0 | | 25.3 | 20.0 | | 36.7 | 35.3 | |
| Actuated g/C Ratio | 0.11 | 0.10 | | 0.17 | 0.14 | | 0.45 | 0.35 | | 0.65 | 0.62 | |
| v/c Ratio | 0.05 | 0.06 | | 0.42 | 0.65 | | 0.01 | 0.68 | | 0.59 | 0.34 | |
| Control Delay | 22.5 | 20.7 | | 26.3 | 10.9 | | 6.4 | 18.8 | | 13.4 | 7.7 | |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | 22.5 | 20.7 | | 26.3 | 10.9 | | 6.4 | 18.8 | | 13.4 | 7.7 | |
| LOS | C | C | | C | B | | A | B | | B | A | |
| Approach Delay | | 21.6 | | | 15.0 | | | 18.8 | | | 9.3 | |
| Approach LOS | | C | | | B | | | B | | | A | |
| Queue Length 50th (ft) | 3 | 1 | | 34 | 1 | | 1 | 106 | | 30 | 39 | |

Lanes, Volumes, Timings

2: Smokey Point Boulevard & 152nd Street NE

Kendall Subaru

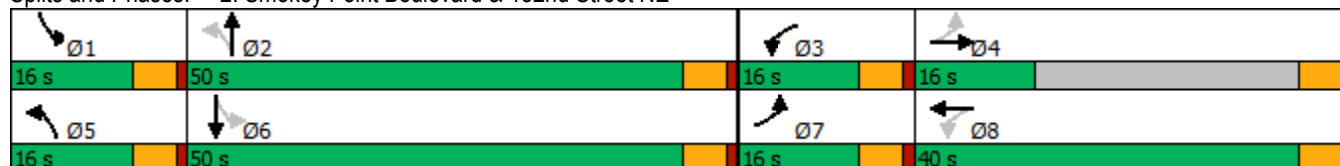
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|------|------|-----|------|------|-----|------|------|-----|------|------|-----|
| Queue Length 95th (ft) | 15 | 15 | | 86 | 71 | | 5 | 233 | | #183 | 181 | |
| Internal Link Dist (ft) | | 129 | | | 5061 | | | 1372 | | | 1276 | |
| Turn Bay Length (ft) | 50 | | | 125 | | | 150 | | | 200 | | |
| Base Capacity (vph) | 400 | 1065 | | 392 | 1122 | | 601 | 2845 | | 518 | 2910 | |
| Starvation Cap Reductn | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Spillback Cap Reductn | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Storage Cap Reductn | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Reduced v/c Ratio | 0.03 | 0.01 | | 0.30 | 0.29 | | 0.01 | 0.29 | | 0.59 | 0.25 | |

Intersection Summary

Area Type: Other
 Cycle Length: 122
 Actuated Cycle Length: 56.7
 Natural Cycle: 80
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.68
 Intersection Signal Delay: 13.9
 Intersection Capacity Utilization 70.6%
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Intersection LOS: B
 ICU Level of Service C

Splits and Phases: 2: Smokey Point Boulevard & 152nd Street NE



HCM 6th AWSC
 3: 51st Avenue NE & 152nd Street NE

Kendall Subaru

Intersection





















Intersection Delay, s/veh 51.5
 Intersection LOS F

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|----------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations | | ↔ | | | ↔ | | | ↔ | | | ↔ | |
| Traffic Vol, veh/h | 42 | 215 | 113 | 58 | 201 | 19 | 144 | 208 | 81 | 32 | 231 | 60 |
| Future Vol, veh/h | 42 | 215 | 113 | 58 | 201 | 19 | 144 | 208 | 81 | 32 | 231 | 60 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 43 | 222 | 116 | 60 | 207 | 20 | 148 | 214 | 84 | 33 | 238 | 62 |
| 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 | 49.3 | | | 31.5 | | | 76.2 | | | 38 | | |
| HCM LOS | E | | | D | | | F | | | E | | |

| Lane | NBLn1 | EBLn1 | WBLn1 | SBLn1 |
|------------------------|-------|-------|-------|-------|
| Vol Left, % | 33% | 11% | 21% | 10% |
| Vol Thru, % | 48% | 58% | 72% | 72% |
| Vol Right, % | 19% | 31% | 7% | 19% |
| Sign Control | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 433 | 370 | 278 | 323 |
| LT Vol | 144 | 42 | 58 | 32 |
| Through Vol | 208 | 215 | 201 | 231 |
| RT Vol | 81 | 113 | 19 | 60 |
| Lane Flow Rate | 446 | 381 | 287 | 333 |
| Geometry Grp | 1 | 1 | 1 | 1 |
| Degree of Util (X) | 1.015 | 0.886 | 0.712 | 0.795 |
| Departure Headway (Hd) | 8.185 | 8.365 | 9.048 | 8.702 |
| Convergence, Y/N | Yes | Yes | Yes | Yes |
| Cap | 442 | 431 | 401 | 420 |
| Service Time | 6.281 | 6.464 | 7.048 | 6.702 |
| HCM Lane V/C Ratio | 1.009 | 0.884 | 0.716 | 0.793 |
| HCM Control Delay | 76.2 | 49.3 | 31.5 | 38 |
| HCM Lane LOS | F | E | D | E |
| HCM 95th-tile Q | 13.3 | 9.2 | 5.4 | 7 |

Lanes, Volumes, Timings 3: 51st Avenue NE & 152nd Street NE

Kendall Subaru

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  | |  |  | |  |  | |  |  | |
| Traffic Volume (vph) | 42 | 215 | 113 | 58 | 201 | 19 | 144 | 208 | 81 | 32 | 231 | 60 |
| Future Volume (vph) | 42 | 215 | 113 | 58 | 201 | 19 | 144 | 208 | 81 | 32 | 231 | 60 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | 0.949 | | | 0.987 | | | 0.958 | | | 0.969 | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1770 | 1768 | 0 | 1770 | 1839 | 0 | 1770 | 1785 | 0 | 1770 | 1805 | 0 |
| Flt Permitted | 0.542 | | | 0.363 | | | 0.351 | | | 0.578 | | |
| Satd. Flow (perm) | 1010 | 1768 | 0 | 676 | 1839 | 0 | 654 | 1785 | 0 | 1077 | 1805 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 30 | | | 6 | | | 25 | | | 16 | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 5141 | | | 2552 | | | 1372 | | | 1670 | |
| Travel Time (s) | | 116.8 | | | 58.0 | | | 31.2 | | | 38.0 | |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 43 | 338 | 0 | 60 | 227 | 0 | 148 | 298 | 0 | 33 | 300 | 0 |
| Turn Type | pm+pt | NA | | pm+pt | NA | | pm+pt | NA | | pm+pt | NA | |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | | 8 | | | 2 | | | 6 | | |
| Detector Phase | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Minimum Split (s) | 9.5 | 22.5 | | 9.5 | 22.5 | | 9.5 | 22.5 | | 9.5 | 22.5 | |
| Total Split (s) | 10.0 | 32.0 | | 10.0 | 32.0 | | 14.0 | 38.0 | | 10.0 | 34.0 | |
| Total Split (%) | 11.1% | 35.6% | | 11.1% | 35.6% | | 15.6% | 42.2% | | 11.1% | 37.8% | |
| Yellow Time (s) | 3.5 | 3.5 | | 3.5 | 3.5 | | 3.5 | 3.5 | | 3.5 | 3.5 | |
| All-Red Time (s) | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Lost Time (s) | 4.5 | 4.5 | | 4.5 | 4.5 | | 4.5 | 4.5 | | 4.5 | 4.5 | |
| Lead/Lag | Lead | Lag | | Lead | Lag | | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | Yes | Yes | | Yes | Yes | | Yes | Yes | | Yes | Yes | |
| Recall Mode | None | None | | None | None | | None | Min | | None | Min | |
| Act Effect Green (s) | 20.3 | 17.6 | | 20.3 | 17.6 | | 26.5 | 23.6 | | 20.6 | 16.5 | |
| Actuated g/C Ratio | 0.34 | 0.29 | | 0.34 | 0.29 | | 0.44 | 0.39 | | 0.34 | 0.28 | |
| v/c Ratio | 0.10 | 0.62 | | 0.17 | 0.42 | | 0.31 | 0.42 | | 0.07 | 0.59 | |
| Control Delay | 13.8 | 25.2 | | 14.6 | 22.4 | | 13.6 | 17.3 | | 12.4 | 26.3 | |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | 13.8 | 25.2 | | 14.6 | 22.4 | | 13.6 | 17.3 | | 12.4 | 26.3 | |
| LOS | B | C | | B | C | | B | B | | B | C | |
| Approach Delay | | 23.9 | | | 20.8 | | | 16.1 | | | 25.0 | |
| Approach LOS | | C | | | C | | | B | | | C | |
| Queue Length 50th (ft) | 10 | 112 | | 14 | 75 | | 33 | 67 | | 7 | 103 | |
| Queue Length 95th (ft) | 32 | 222 | | 41 | 153 | | 82 | 188 | | 25 | 210 | |
| Internal Link Dist (ft) | | 5061 | | | 2472 | | | 1292 | | | 1590 | |
| Turn Bay Length (ft) | | | | | | | | | | | | |
| Base Capacity (vph) | 426 | 962 | | 349 | 989 | | 504 | 1098 | | 445 | 1019 | |
| Starvation Cap Reductn | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |

Lanes, Volumes, Timings
 3: 51st Avenue NE & 152nd Street NE

Kendall Subaru

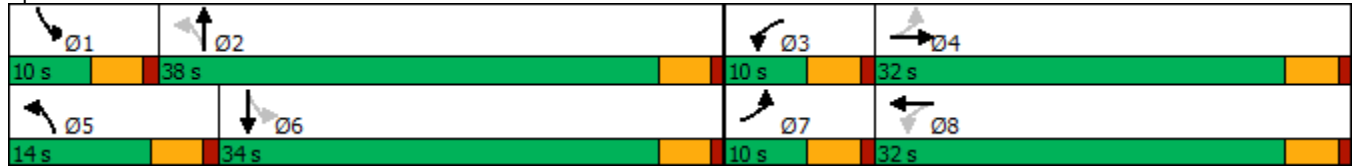
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-----------------------|------|------|-----|------|------|-----|------|------|-----|------|------|-----|
| Spillback Cap Reductn | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Storage Cap Reductn | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Reduced v/c Ratio | 0.10 | 0.35 | | 0.17 | 0.23 | | 0.29 | 0.27 | | 0.07 | 0.29 | |

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 59.8
 Natural Cycle: 65
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.62
 Intersection Signal Delay: 21.1
 Intersection Capacity Utilization 61.2%
 Analysis Period (min) 15

Intersection LOS: C
 ICU Level of Service B
























Splits and Phases: 3: 51st Avenue NE & 152nd Street NE



Lanes, Volumes, Timings

4: State Avenue/Smokey Point Boulevard & 136th Street NE

Kendall Subaru

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  |  |  |  | |  |  |  |  |  |  |
| Traffic Volume (vph) | 138 | 200 | 64 | 177 | 222 | 134 | 110 | 486 | 192 | 144 | 514 | 180 |
| Future Volume (vph) | 138 | 200 | 64 | 177 | 222 | 134 | 110 | 486 | 192 | 144 | 514 | 180 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 150 | | 150 | 200 | | 0 | 300 | | 0 | 300 | | 0 |
| Storage Lanes | 1 | | 1 | 1 | | 0 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 |
| Ped Bike Factor | | | 0.99 | 1.00 | | | | | | | 0.99 | |
| Frt | | | 0.850 | | 0.944 | | | 0.958 | | | 0.961 | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1752 | 1845 | 1568 | 1752 | 1741 | 0 | 1752 | 3358 | 0 | 1752 | 3347 | 0 |
| Flt Permitted | 0.262 | | | 0.469 | | | 0.263 | | | 0.246 | | |
| Satd. Flow (perm) | 483 | 1845 | 1547 | 864 | 1741 | 0 | 485 | 3358 | 0 | 454 | 3347 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 143 | | 26 | | | 42 | | | 33 | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 981 | | | 4740 | | | 2821 | | | 4424 | |
| Travel Time (s) | | 22.3 | | | 107.7 | | | 64.1 | | | 100.5 | |
| Confl. Peds. (#/hr) | | | 1 | 1 | | | | | | | | |
| Confl. Bikes (#/hr) | | | | | | | | | | | | 2 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Heavy Vehicles (%) | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 141 | 204 | 65 | 181 | 364 | 0 | 112 | 692 | 0 | 147 | 708 | 0 |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | | pm+pt | NA | | pm+pt | NA | |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | | 2 | | | 6 | | |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 | 5.0 | 7.0 | | 5.0 | 7.0 | | 5.0 | 7.0 | |
| Minimum Split (s) | 10.0 | 34.0 | 34.0 | 10.0 | 23.0 | | 10.0 | 35.0 | | 10.0 | 23.0 | |
| Total Split (s) | 15.0 | 35.0 | 35.0 | 30.0 | 40.0 | | 35.0 | 35.0 | | 30.0 | 30.0 | |
| Total Split (%) | 11.5% | 26.9% | 26.9% | 23.1% | 30.8% | | 26.9% | 26.9% | | 23.1% | 23.1% | |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | |
| All-Red Time (s) | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Lost Time (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | | Yes | Yes | | Yes | Yes | |
| Recall Mode | None | None | None | None | None | | None | Max | | None | Max | |
| Act Effct Green (s) | 29.8 | 20.7 | 20.7 | 33.2 | 22.4 | | 38.6 | 30.4 | | 40.9 | 31.5 | |
| Actuated g/C Ratio | 0.33 | 0.23 | 0.23 | 0.36 | 0.24 | | 0.42 | 0.33 | | 0.45 | 0.34 | |
| v/c Ratio | 0.50 | 0.49 | 0.14 | 0.43 | 0.82 | | 0.35 | 0.61 | | 0.44 | 0.60 | |
| Control Delay | 24.6 | 35.6 | 0.6 | 21.7 | 45.7 | | 18.2 | 28.4 | | 19.2 | 27.9 | |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | 24.6 | 35.6 | 0.6 | 21.7 | 45.7 | | 18.2 | 28.4 | | 19.2 | 27.9 | |
| LOS | C | D | A | C | D | | B | C | | B | C | |
| Approach Delay | | 26.3 | | | 37.7 | | | 27.0 | | | 26.4 | |

2025 Baseline Conditions

PM Peak-Hour

Kimley-Horn and Associates, Inc. [AH 090222176]

Lanes, Volumes, Timings

4: State Avenue/Smokey Point Boulevard & 136th Street NE

Kendall Subaru

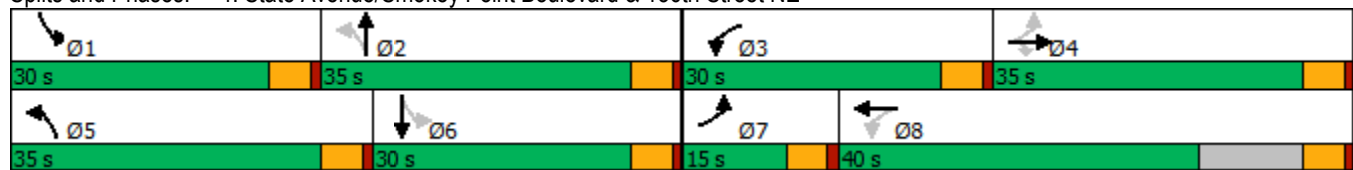
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|------|------|------|------|------|------|------|------|-----|------|------|-----|
| Approach LOS | | C | | | | D | | | | C | | |
| Queue Length 50th (ft) | 52 | 102 | 0 | 68 | 187 | | 34 | 165 | | 46 | 169 | |
| Queue Length 95th (ft) | 96 | 185 | 0 | 121 | 302 | | 79 | 280 | | 100 | 284 | |
| Internal Link Dist (ft) | | 901 | | | | 4660 | | | | 2741 | | |
| Turn Bay Length (ft) | 150 | | 150 | 200 | | | 300 | | | 300 | | |
| Base Capacity (vph) | 303 | 613 | 609 | 591 | 880 | | 658 | 1143 | | 581 | 1174 | |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Reduced v/c Ratio | 0.47 | 0.33 | 0.11 | 0.31 | 0.41 | | 0.17 | 0.61 | | 0.25 | 0.60 | |

Intersection Summary

Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 91.5
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.82
 Intersection Signal Delay: 28.9
 Intersection Capacity Utilization 71.7%
 Analysis Period (min) 15

Intersection LOS: C
 ICU Level of Service C

Splits and Phases: 4: State Avenue/Smokey Point Boulevard & 136th Street NE



Lanes, Volumes, Timings

5: 51st Avenue NE & 136th Street NE/School Exit

Kendall Subaru

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|-------|-------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 176 | 0 | 295 | 0 | 1 | 0 | 221 | 291 | 0 | 0 | 239 | 120 |
| Future Volume (vph) | 176 | 0 | 295 | 0 | 1 | 0 | 221 | 291 | 0 | 0 | 239 | 120 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 150 | | 0 | 0 | | 25 | 150 | | 0 | 0 | | 75 |
| Storage Lanes | 1 | | 1 | 0 | | 1 | 1 | | 0 | 0 | | 1 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | 1.00 | | 0.98 | | | | | | | | | 0.98 |
| Frt | | | 0.850 | | | | | | | | | 0.850 |
| Flt Protected | 0.950 | | | | | | 0.950 | | | | | |
| Satd. Flow (prot) | 1752 | 0 | 1568 | 0 | 1845 | 1845 | 1752 | 1845 | 0 | 0 | 1845 | 1568 |
| Flt Permitted | 0.757 | | | | | | 0.477 | | | | | |
| Satd. Flow (perm) | 1394 | 0 | 1531 | 0 | 1845 | 1845 | 880 | 1845 | 0 | 0 | 1845 | 1535 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 321 | | | | | | | | | 130 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | | 30 |
| Link Distance (ft) | | 4740 | | | 361 | | | 670 | | | 2819 | |
| Travel Time (s) | | 107.7 | | | 8.2 | | | 15.2 | | | 64.1 | |
| Confl. Peds. (#/hr) | 1 | | 2 | 2 | | | 1 | | | | | |
| Confl. Bikes (#/hr) | | | | | | | 3 | | 4 | | | 1 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles (%) | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 191 | 0 | 321 | 0 | 1 | 0 | 240 | 316 | 0 | 0 | 260 | 130 |
| Turn Type | Perm | | Perm | | NA | Perm | pm+pt | NA | | | NA | Perm |
| Protected Phases | | | | | 8 | | 5 | 2 | | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 8 | 2 | | | | | 6 |
| Detector Phase | 4 | | 4 | 8 | 8 | 8 | 5 | 2 | | | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | | 5.0 | 7.0 | 7.0 | 7.0 | 5.0 | 7.0 | | | 7.0 | 7.0 |
| Minimum Split (s) | 23.0 | | 23.0 | 22.5 | 22.5 | 22.5 | 10.0 | 23.0 | | | 26.0 | 26.0 |
| Total Split (s) | 25.0 | | 25.0 | 35.0 | 35.0 | 35.0 | 10.0 | 35.0 | | | 25.0 | 25.0 |
| Total Split (%) | 35.7% | | 35.7% | 50.0% | 50.0% | 50.0% | 14.3% | 50.0% | | | 35.7% | 35.7% |
| Yellow Time (s) | 4.0 | | 4.0 | 3.0 | 3.0 | 3.0 | 4.0 | 4.0 | | | 4.0 | 4.0 |
| All-Red Time (s) | 1.0 | | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | | | 1.0 | 1.0 |
| Lost Time Adjust (s) | 0.0 | | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | | | 0.0 | 0.0 |
| Total Lost Time (s) | 5.0 | | 5.0 | | 4.0 | 4.0 | 5.0 | 5.0 | | | 5.0 | 5.0 |
| Lead/Lag | | | | | | | Lead | | | | Lag | Lag |
| Lead-Lag Optimize? | | | | | | | Yes | | | | Yes | Yes |
| Recall Mode | None | | None | None | None | None | None | Max | | | Max | Max |
| Act Effct Green (s) | 11.4 | | 11.4 | | 12.4 | | 31.1 | 31.1 | | | 21.1 | 21.1 |
| Actuated g/C Ratio | 0.22 | | 0.22 | | 0.24 | | 0.59 | 0.59 | | | 0.40 | 0.40 |
| v/c Ratio | 0.63 | | 0.55 | | 0.00 | | 0.40 | 0.29 | | | 0.35 | 0.19 |
| Control Delay | 28.4 | | 6.4 | | 14.0 | | 8.3 | 7.0 | | | 13.7 | 3.8 |
| Queue Delay | 0.0 | | 0.0 | | 0.0 | | 0.0 | 0.0 | | | 0.0 | 0.0 |
| Total Delay | 28.4 | | 6.4 | | 14.0 | | 8.3 | 7.0 | | | 13.7 | 3.8 |
| LOS | C | | A | | B | | A | A | | | B | A |
| Approach Delay | | 14.6 | | | 14.0 | | | 7.6 | | | 10.4 | |

2025 Baseline Conditions

PM Peak-Hour

Kimley-Horn and Associates, Inc. [AH 090222176]

Lanes, Volumes, Timings

5: 51st Avenue NE & 136th Street NE/School Exit

Kendall Subaru

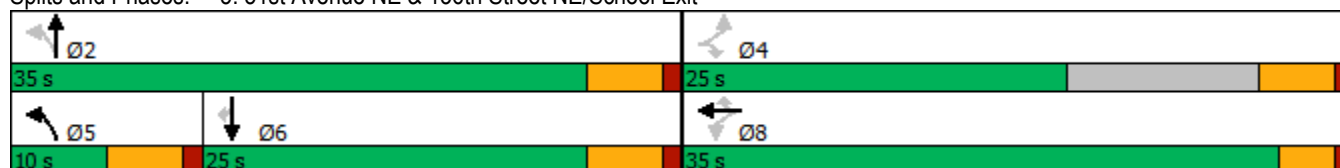
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|------|------|------|-----|------|-----|------|------|-----|-----|------|------|
| Approach LOS | | B | | | B | | | A | | | B | |
| Queue Length 50th (ft) | 54 | | 0 | | 0 | | 30 | 41 | | | 53 | 0 |
| Queue Length 95th (ft) | 106 | | 49 | | 3 | | 76 | 99 | | | 119 | 28 |
| Internal Link Dist (ft) | | 4660 | | | 281 | | | 590 | | | 2739 | |
| Turn Bay Length (ft) | 150 | | | | | | 150 | | | | | 75 |
| Base Capacity (vph) | 798 | | 1014 | | 1092 | | 604 | 1092 | | | 739 | 693 |
| Starvation Cap Reductn | 0 | | 0 | | 0 | | 0 | 0 | | | 0 | 0 |
| Spillback Cap Reductn | 0 | | 0 | | 0 | | 0 | 0 | | | 0 | 0 |
| Storage Cap Reductn | 0 | | 0 | | 0 | | 0 | 0 | | | 0 | 0 |
| Reduced v/c Ratio | 0.24 | | 0.32 | | 0.00 | | 0.40 | 0.29 | | | 0.35 | 0.19 |

Intersection Summary

Area Type: Other
 Cycle Length: 70
 Actuated Cycle Length: 52.6
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.63
 Intersection Signal Delay: 10.8
 Intersection Capacity Utilization 52.9%
 Analysis Period (min) 15



















Intersection LOS: B
 ICU Level of Service A

Splits and Phases: 5: 51st Avenue NE & 136th Street NE/School Exit



Lanes, Volumes, Timings
6: State Avenue & 128th Street NE

Kendall Subaru

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | |  | | |  | |  |  | |  |  | |
| Traffic Volume (vph) | 13 | 4 | 25 | 72 | 0 | 34 | 4 | 721 | 105 | 38 | 753 | 1 |
| Future Volume (vph) | 13 | 4 | 25 | 72 | 0 | 34 | 4 | 721 | 105 | 38 | 753 | 1 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 200 | | 0 | 200 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 0 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 |
| Ped Bike Factor | | | | | | | | 1.00 | | | 1.00 | |
| Frt | | 0.918 | | | 0.956 | | | 0.981 | | | | |
| Flt Protected | | 0.985 | | | 0.967 | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 0 | 1684 | 0 | 0 | 1722 | 0 | 1770 | 3460 | 0 | 1770 | 3539 | 0 |
| Flt Permitted | | 0.985 | | | 0.516 | | 0.348 | | | 0.286 | | |
| Satd. Flow (perm) | 0 | 1684 | 0 | 0 | 919 | 0 | 648 | 3460 | 0 | 533 | 3539 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 26 | | | 101 | | | 13 | | | | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | | 30 |
| Link Distance (ft) | | 1088 | | | 1243 | | | 4124 | | | 2821 | |
| Travel Time (s) | | 24.7 | | | 28.3 | | | 93.7 | | | 64.1 | |
| Confl. Peds. (#/hr) | | | | | | | | | 1 | 1 | | |
| Confl. Bikes (#/hr) | | | | | | | | | 1 | | | 2 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 43 | 0 | 0 | 108 | 0 | 4 | 843 | 0 | 39 | 769 | 0 |
| Turn Type | Split | NA | | pm+pt | NA | | pm+pt | NA | | pm+pt | NA | |
| Protected Phases | 8 | 8 | | 4 | 3 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | | | | 3 | | | 2 | | | 6 | | |
| Detector Phase | 8 | 8 | | 4 | 3 | | 5 | 2 | | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | | 8.0 | 5.0 | | 5.0 | 7.0 | | 5.0 | 7.0 | |
| Minimum Split (s) | 23.0 | 23.0 | | 23.0 | 25.0 | | 10.0 | 23.0 | | 10.0 | 23.0 | |
| Total Split (s) | 10.0 | 10.0 | | 30.0 | 20.0 | | 20.0 | 50.0 | | 20.0 | 50.0 | |
| Total Split (%) | 7.7% | 7.7% | | 23.1% | 15.4% | | 15.4% | 38.5% | | 15.4% | 38.5% | |
| Yellow Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | |
| All-Red Time (s) | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | |
| Lost Time Adjust (s) | | 0.0 | | | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Lost Time (s) | | 5.0 | | | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Lead/Lag | | | | Lag | Lead | | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | | | | Yes | Yes | | Yes | Yes | | Yes | Yes | |
| Recall Mode | None | None | | None | None | | None | Max | | None | Max | |
| Act Effct Green (s) | | 5.0 | | | 7.1 | | 53.3 | 50.5 | | 55.7 | 54.6 | |
| Actuated g/C Ratio | | 0.06 | | | 0.09 | | 0.67 | 0.64 | | 0.70 | 0.69 | |
| v/c Ratio | | 0.33 | | | 0.62 | | 0.01 | 0.38 | | 0.09 | 0.32 | |
| Control Delay | | 29.1 | | | 25.3 | | 5.8 | 9.8 | | 5.6 | 7.1 | |
| Queue Delay | | 0.0 | | | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | | 29.1 | | | 25.3 | | 5.8 | 9.8 | | 5.6 | 7.1 | |
| LOS | | C | | | C | | A | A | | A | A | |
| Approach Delay | | 29.1 | | | 25.3 | | | 9.8 | | | 7.0 | |
| Approach LOS | | C | | | C | | | A | | | A | |

Lanes, Volumes, Timings
6: State Avenue & 128th Street NE

Kendall Subaru








| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|-----|------|-----|-----|------|-----|------|------|-----|------|------|-----|
| Queue Length 50th (ft) | | 8 | | | 3 | | 1 | 118 | | 5 | 70 | |
| Queue Length 95th (ft) | | 42 | | | 53 | | 4 | 198 | | 19 | 174 | |
| Internal Link Dist (ft) | | 1008 | | | 1163 | | | 4044 | | | 2741 | |
| Turn Bay Length (ft) | | | | | | | 200 | | | 200 | | |
| Base Capacity (vph) | | 131 | | | 257 | | 674 | 2209 | | 615 | 2438 | |
| Starvation Cap Reductn | | 0 | | | 0 | | 0 | 0 | | 0 | 0 | |
| Spillback Cap Reductn | | 0 | | | 0 | | 0 | 0 | | 0 | 0 | |
| Storage Cap Reductn | | 0 | | | 0 | | 0 | 0 | | 0 | 0 | |
| Reduced v/c Ratio | | 0.33 | | | 0.42 | | 0.01 | 0.38 | | 0.06 | 0.32 | |

Intersection Summary

Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 79.3
 Natural Cycle: 105
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.62
 Intersection Signal Delay: 10.0
 Intersection Capacity Utilization 52.1%
 Analysis Period (min) 15

Intersection LOS: A
 ICU Level of Service A

Splits and Phases: 6: State Avenue & 128th Street NE

| | | | | |
|--|--|---|---|---|
|  Ø1 |  Ø2 |  Ø3 |  Ø4 |  Ø8 |
| 20 s | 50 s | 20 s | 30 s | 10 s |
|  Ø5 |  Ø6 | | | |
| 20 s | 50 s | | | |

Lanes, Volumes, Timings

1: Smokey Point Boulevard & 156th Street NE

Kendall Subaru

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|-------|-------|-------|-------|-------|------|-------|-------|------|-------|-------|------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 32 | 4 | 251 | 21 | 17 | 35 | 273 | 766 | 12 | 16 | 766 | 77 |
| Future Volume (vph) | 32 | 4 | 251 | 21 | 17 | 35 | 273 | 766 | 12 | 16 | 766 | 77 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 150 | | 150 | 200 | | 0 | 250 | | 0 | 200 | | 0 |
| Storage Lanes | 1 | | 1 | 1 | | 0 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 |
| Ped Bike Factor | | | | | | | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Frt | | | 0.850 | | 0.899 | | | 0.998 | | | 0.986 | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1752 | 1845 | 1568 | 1752 | 1658 | 0 | 1752 | 3497 | 0 | 1752 | 3448 | 0 |
| Flt Permitted | 0.624 | | | 0.755 | | | 0.172 | | | 0.340 | | |
| Satd. Flow (perm) | 1151 | 1845 | 1568 | 1393 | 1658 | 0 | 317 | 3497 | 0 | 627 | 3448 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 267 | | 37 | | | 2 | | | 11 | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 1704 | | | 1283 | | | 1356 | | | 1304 | |
| Travel Time (s) | | 38.7 | | | 29.2 | | | 30.8 | | | 29.6 | |
| Confl. Peds. (#/hr) | | | | | | | 2 | | 1 | 1 | | 2 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles (%) | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 34 | 4 | 267 | 22 | 55 | 0 | 290 | 828 | 0 | 17 | 897 | 0 |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | | pm+pt | NA | | pm+pt | NA | |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | | 2 | | | 6 | | |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | | 7.0 | 10.0 | | 7.0 | 10.0 | |
| Minimum Split (s) | 12.0 | 25.0 | 25.0 | 12.0 | 25.0 | | 12.0 | 25.0 | | 12.0 | 25.0 | |
| Total Split (s) | 25.0 | 20.0 | 20.0 | 25.0 | 10.0 | | 20.0 | 50.0 | | 20.0 | 50.0 | |
| Total Split (%) | 21.7% | 17.4% | 17.4% | 21.7% | 8.7% | | 17.4% | 43.5% | | 17.4% | 43.5% | |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | |
| All-Red Time (s) | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Lost Time (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | | Yes | Yes | | Yes | Yes | |
| Recall Mode | None | None | None | None | None | | None | Min | | None | Min | |
| Act Effct Green (s) | 12.8 | 10.4 | 10.4 | 11.6 | 8.0 | | 46.5 | 44.7 | | 34.3 | 26.9 | |
| Actuated g/C Ratio | 0.18 | 0.15 | 0.15 | 0.16 | 0.11 | | 0.65 | 0.63 | | 0.48 | 0.38 | |
| v/c Ratio | 0.13 | 0.01 | 0.58 | 0.08 | 0.25 | | 0.59 | 0.38 | | 0.04 | 0.69 | |
| Control Delay | 26.2 | 33.8 | 10.9 | 25.9 | 21.1 | | 14.5 | 8.8 | | 7.2 | 22.1 | |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | 26.2 | 33.8 | 10.9 | 25.9 | 21.1 | | 14.5 | 8.8 | | 7.2 | 22.1 | |
| LOS | C | C | B | C | C | | B | A | | A | C | |
| Approach Delay | | 12.9 | | | 22.5 | | | 10.3 | | | 21.8 | |
| Approach LOS | | B | | | C | | | B | | | C | |

2025 Opening Year Conditions

PM Peak-Hour

Kimley-Horn and Associates, Inc. [AH 090222176]

Lanes, Volumes, Timings

1: Smokey Point Boulevard & 156th Street NE

Kendall Subaru

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|------|------|------|------|------|-----|------|------|-----|------|------|-----|
| Queue Length 50th (ft) | 12 | 1 | 0 | 8 | 8 | | 51 | 83 | | 3 | 179 | |
| Queue Length 95th (ft) | 40 | 12 | 72 | 29 | 45 | | 152 | 212 | | 11 | 280 | |
| Internal Link Dist (ft) | | 1624 | | | 1203 | | | 1276 | | | 1224 | |
| Turn Bay Length (ft) | 150 | | 150 | 200 | | | 250 | | | 200 | | |
| Base Capacity (vph) | 534 | 421 | 564 | 536 | 398 | | 526 | 2448 | | 626 | 2312 | |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Reduced v/c Ratio | 0.06 | 0.01 | 0.47 | 0.04 | 0.14 | | 0.55 | 0.34 | | 0.03 | 0.39 | |

Intersection Summary

Area Type: Other
 Cycle Length: 115
 Actuated Cycle Length: 71.4
 Natural Cycle: 80
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.69
 Intersection Signal Delay: 15.4
 Intersection Capacity Utilization 59.7%
 Analysis Period (min) 15























Intersection LOS: B
 ICU Level of Service B

Splits and Phases: 1: Smokey Point Boulevard & 156th Street NE

| | | | |
|------|------|------|------|
| | | | |
| 20 s | 50 s | 25 s | 20 s |
| | | | |
| 20 s | 50 s | 25 s | 10 s |

Lanes, Volumes, Timings 2: Smokey Point Boulevard & 152nd Street NE

Kendall Subaru

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  | |  |  | |  |  |  |  |  |  |
| Traffic Volume (vph) | 10 | 2 | 7 | 113 | 3 | 323 | 5 | 708 | 120 | 322 | 749 | 13 |
| Future Volume (vph) | 10 | 2 | 7 | 113 | 3 | 323 | 5 | 708 | 120 | 322 | 749 | 13 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 50 | | 0 | 125 | | 0 | 150 | | 0 | 200 | | 0 |
| Storage Lanes | 1 | | 0 | 1 | | 0 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 |
| Ped Bike Factor | 1.00 | | | | 0.99 | | 1.00 | 1.00 | | | 1.00 | |
| Frt | | 0.883 | | | 0.851 | | | 0.978 | | | 0.997 | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1770 | 1645 | 0 | 1770 | 1564 | 0 | 1770 | 3448 | 0 | 1770 | 3527 | 0 |
| Flt Permitted | | | | 0.533 | | | 0.351 | | | 0.182 | | |
| Satd. Flow (perm) | 1861 | 1645 | 0 | 993 | 1564 | 0 | 653 | 3448 | 0 | 339 | 3527 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 7 | | | 336 | | | 18 | | | 2 | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 209 | | | 5141 | | | 1452 | | | 1356 | |
| Travel Time (s) | | 4.8 | | | 116.8 | | | 33.0 | | | 30.8 | |
| Confl. Peds. (#/hr) | 1 | | | | | 1 | 2 | | 2 | 2 | | 2 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 10 | 9 | 0 | 118 | 339 | 0 | 5 | 863 | 0 | 335 | 794 | 0 |
| Turn Type | pm+pt | NA | | pm+pt | NA | | pm+pt | NA | | pm+pt | NA | |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | | 8 | | | 2 | | | 6 | | |
| Detector Phase | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 7.0 | | 4.0 | 7.0 | |
| Minimum Split (s) | 9.5 | 27.0 | | 11.5 | 26.0 | | 9.5 | 24.0 | | 9.5 | 26.0 | |
| Total Split (s) | 16.0 | 16.0 | | 16.0 | 40.0 | | 16.0 | 50.0 | | 16.0 | 50.0 | |
| Total Split (%) | 13.1% | 13.1% | | 13.1% | 32.8% | | 13.1% | 41.0% | | 13.1% | 41.0% | |
| Yellow Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | |
| All-Red Time (s) | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Lost Time (s) | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Lead/Lag | Lead | Lag | | Lead | Lag | | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | Yes | Yes | | Yes | Yes | | Yes | Yes | | Yes | Yes | |
| Recall Mode | None | None | | None | None | | None | Min | | None | Min | |
| Act Effct Green (s) | 6.4 | 5.4 | | 9.9 | 8.2 | | 26.3 | 21.0 | | 37.8 | 36.3 | |
| Actuated g/C Ratio | 0.11 | 0.09 | | 0.17 | 0.14 | | 0.45 | 0.36 | | 0.65 | 0.63 | |
| v/c Ratio | 0.05 | 0.06 | | 0.43 | 0.67 | | 0.01 | 0.68 | | 0.66 | 0.36 | |
| Control Delay | 23.0 | 20.9 | | 26.9 | 11.1 | | 6.4 | 18.9 | | 17.0 | 7.8 | |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | 23.0 | 20.9 | | 26.9 | 11.1 | | 6.4 | 18.9 | | 17.0 | 7.8 | |
| LOS | C | C | | C | B | | A | B | | B | A | |
| Approach Delay | | 22.0 | | | 15.2 | | | 18.8 | | | 10.5 | |
| Approach LOS | | C | | | B | | | B | | | B | |
| Queue Length 50th (ft) | 3 | 1 | | 35 | 1 | | 1 | 113 | | 34 | 43 | |

2025 Opening Year Conditions
Kimley-Horn and Associates, Inc. [AH 090222176]

PM Peak-Hour

Lanes, Volumes, Timings
 2: Smokey Point Boulevard & 152nd Street NE

Kendall Subaru

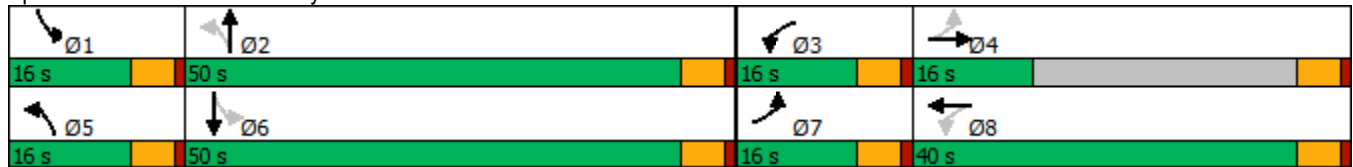
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|------|------|-----|------|------|-----|------|------|-----|------|------|-----|
| Queue Length 95th (ft) | 15 | 15 | | 89 | 74 | | 5 | 248 | | #233 | 198 | |
| Internal Link Dist (ft) | | 129 | | | 5061 | | | 1372 | | | 1276 | |
| Turn Bay Length (ft) | 50 | | | 125 | | | 150 | | | 200 | | |
| Base Capacity (vph) | 395 | 1045 | | 386 | 1114 | | 589 | 2802 | | 506 | 2863 | |
| Starvation Cap Reductn | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Spillback Cap Reductn | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Storage Cap Reductn | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Reduced v/c Ratio | 0.03 | 0.01 | | 0.31 | 0.30 | | 0.01 | 0.31 | | 0.66 | 0.28 | |

Intersection Summary

Area Type: Other
 Cycle Length: 122
 Actuated Cycle Length: 57.9
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.68
 Intersection Signal Delay: 14.4
 Intersection Capacity Utilization 74.0%
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Intersection LOS: B
 ICU Level of Service D

Splits and Phases: 2: Smokey Point Boulevard & 152nd Street NE



HCM 6th AWSC
3: 51st Avenue NE & 152nd Street NE

Kendall Subaru

Intersection





















Intersection Delay, s/veh 54.5
Intersection LOS F

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|----------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations | | ↕ | | | ↕ | | | ↕ | | | ↕ | |
| Traffic Vol, veh/h | 52 | 218 | 116 | 58 | 203 | 19 | 146 | 208 | 81 | 32 | 231 | 67 |
| Future Vol, veh/h | 52 | 218 | 116 | 58 | 203 | 19 | 146 | 208 | 81 | 32 | 231 | 67 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 54 | 225 | 120 | 60 | 209 | 20 | 151 | 214 | 84 | 33 | 238 | 69 |
| 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 | 53.2 | | | 31.5 | | | 82.5 | | | 38.7 | | |
| HCM LOS | F | | | D | | | F | | | E | | |

| Lane | NBLn1 | EBLn1 | WBLn1 | SBLn1 |
|------------------------|-------|-------|-------|-------|
| Vol Left, % | 34% | 13% | 21% | 10% |
| Vol Thru, % | 48% | 56% | 72% | 70% |
| Vol Right, % | 19% | 30% | 7% | 20% |
| Sign Control | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 435 | 386 | 280 | 330 |
| LT Vol | 146 | 52 | 58 | 32 |
| Through Vol | 208 | 218 | 203 | 231 |
| RT Vol | 81 | 116 | 19 | 67 |
| Lane Flow Rate | 448 | 398 | 289 | 340 |
| Geometry Grp | 1 | 1 | 1 | 1 |
| Degree of Util (X) | 1.037 | 0.907 | 0.707 | 0.799 |
| Departure Headway (Hd) | 8.328 | 8.518 | 9.164 | 8.78 |
| Convergence, Y/N | Yes | Yes | Yes | Yes |
| Cap | 439 | 430 | 398 | 415 |
| Service Time | 6.328 | 6.518 | 7.164 | 6.78 |
| HCM Lane V/C Ratio | 1.021 | 0.926 | 0.726 | 0.819 |
| HCM Control Delay | 82.5 | 53.2 | 31.5 | 38.7 |
| HCM Lane LOS | F | F | D | E |
| HCM 95th-tile Q | 14 | 9.8 | 5.3 | 7.1 |

Lanes, Volumes, Timings
 3: 51st Avenue NE & 152nd Street NE

Kendall Subaru

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  | |  |  | |  |  | |  |  | |
| Traffic Volume (vph) | 52 | 218 | 116 | 58 | 203 | 19 | 146 | 208 | 81 | 32 | 231 | 67 |
| Future Volume (vph) | 52 | 218 | 116 | 58 | 203 | 19 | 146 | 208 | 81 | 32 | 231 | 67 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | 0.948 | | | 0.987 | | | 0.958 | | | 0.966 | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1770 | 1766 | 0 | 1770 | 1839 | 0 | 1770 | 1785 | 0 | 1770 | 1799 | 0 |
| Flt Permitted | 0.538 | | | 0.353 | | | 0.344 | | | 0.578 | | |
| Satd. Flow (perm) | 1002 | 1766 | 0 | 658 | 1839 | 0 | 641 | 1785 | 0 | 1077 | 1799 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 31 | | | 6 | | | 25 | | | 17 | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 5141 | | | 2552 | | | 1372 | | | 1670 | |
| Travel Time (s) | | 116.8 | | | 58.0 | | | 31.2 | | | 38.0 | |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 54 | 345 | 0 | 60 | 229 | 0 | 151 | 298 | 0 | 33 | 307 | 0 |
| Turn Type | pm+pt | NA | | pm+pt | NA | | pm+pt | NA | | pm+pt | NA | |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | | 8 | | | 2 | | | 6 | | |
| Detector Phase | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Minimum Split (s) | 9.5 | 22.5 | | 9.5 | 22.5 | | 9.5 | 22.5 | | 9.5 | 22.5 | |
| Total Split (s) | 10.0 | 32.0 | | 10.0 | 32.0 | | 14.0 | 38.0 | | 10.0 | 34.0 | |
| Total Split (%) | 11.1% | 35.6% | | 11.1% | 35.6% | | 15.6% | 42.2% | | 11.1% | 37.8% | |
| Yellow Time (s) | 3.5 | 3.5 | | 3.5 | 3.5 | | 3.5 | 3.5 | | 3.5 | 3.5 | |
| All-Red Time (s) | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Lost Time (s) | 4.5 | 4.5 | | 4.5 | 4.5 | | 4.5 | 4.5 | | 4.5 | 4.5 | |
| Lead/Lag | Lead | Lag | | Lead | Lag | | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | Yes | Yes | | Yes | Yes | | Yes | Yes | | Yes | Yes | |
| Recall Mode | None | None | | None | None | | None | Min | | None | Min | |
| Act Effect Green (s) | 20.6 | 17.9 | | 20.6 | 17.9 | | 26.8 | 23.9 | | 20.9 | 16.9 | |
| Actuated g/C Ratio | 0.34 | 0.30 | | 0.34 | 0.30 | | 0.44 | 0.40 | | 0.35 | 0.28 | |
| v/c Ratio | 0.13 | 0.63 | | 0.17 | 0.42 | | 0.32 | 0.41 | | 0.07 | 0.60 | |
| Control Delay | 14.2 | 25.6 | | 14.8 | 22.6 | | 13.7 | 17.3 | | 12.4 | 26.5 | |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | 14.2 | 25.6 | | 14.8 | 22.6 | | 13.7 | 17.3 | | 12.4 | 26.5 | |
| LOS | B | C | | B | C | | B | B | | B | C | |
| Approach Delay | | 24.1 | | | 21.0 | | | 16.1 | | | 25.1 | |
| Approach LOS | | C | | | C | | | B | | | C | |
| Queue Length 50th (ft) | 13 | 116 | | 14 | 76 | | 35 | 68 | | 7 | 107 | |
| Queue Length 95th (ft) | 38 | 230 | | 41 | 155 | | 83 | 188 | | 25 | 214 | |
| Internal Link Dist (ft) | | 5061 | | | 2472 | | | 1292 | | | 1590 | |
| Turn Bay Length (ft) | | | | | | | | | | | | |
| Base Capacity (vph) | 424 | 955 | | 344 | 982 | | 499 | 1090 | | 447 | 1009 | |
| Starvation Cap Reductn | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |

2025 Opening Year Conditions
 Kimley-Horn and Associates, Inc. [AH 090222176]

PM Peak-Hour

Lanes, Volumes, Timings
 3: 51st Avenue NE & 152nd Street NE

Kendall Subaru

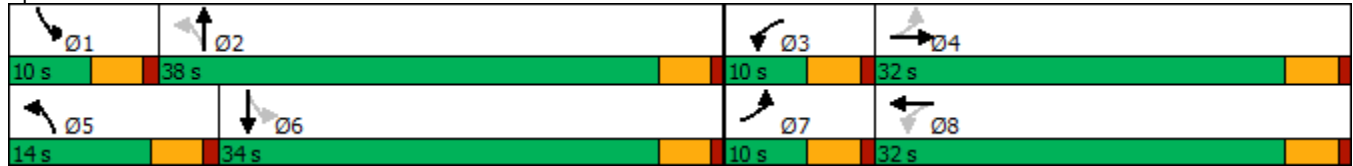
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-----------------------|------|------|-----|------|------|-----|------|------|-----|------|------|-----|
| Spillback Cap Reductn | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Storage Cap Reductn | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Reduced v/c Ratio | 0.13 | 0.36 | | 0.17 | 0.23 | | 0.30 | 0.27 | | 0.07 | 0.30 | |

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 60.4
 Natural Cycle: 65
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.63
 Intersection Signal Delay: 21.3
 Intersection Capacity Utilization 62.0%
 Analysis Period (min) 15

Intersection LOS: C
 ICU Level of Service B

Splits and Phases: 3: 51st Avenue NE & 152nd Street NE



Lanes, Volumes, Timings

4: State Avenue/Smokey Point Boulevard & 136th Street NE

Kendall Subaru

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|-------|-------|-------|-------|-------|------|-------|-------|------|-------|-------|------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 144 | 200 | 64 | 177 | 222 | 148 | 110 | 499 | 192 | 165 | 534 | 190 |
| Future Volume (vph) | 144 | 200 | 64 | 177 | 222 | 148 | 110 | 499 | 192 | 165 | 534 | 190 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 150 | | 150 | 200 | | 0 | 300 | | 0 | 300 | | 0 |
| Storage Lanes | 1 | | 1 | 1 | | 0 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 |
| Ped Bike Factor | | | 0.99 | 1.00 | | | | | | | 0.99 | |
| Frt | | | 0.850 | | 0.940 | | | 0.958 | | | 0.961 | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1752 | 1845 | 1568 | 1752 | 1734 | 0 | 1752 | 3358 | 0 | 1752 | 3347 | 0 |
| Flt Permitted | 0.246 | | | 0.474 | | | 0.250 | | | 0.226 | | |
| Satd. Flow (perm) | 454 | 1845 | 1547 | 874 | 1734 | 0 | 461 | 3358 | 0 | 417 | 3347 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 143 | | 28 | | | 40 | | | 34 | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 981 | | | 4740 | | | 2821 | | | 4424 | |
| Travel Time (s) | | 22.3 | | | 107.7 | | | 64.1 | | | 100.5 | |
| Confl. Peds. (#/hr) | | | 1 | 1 | | | | | | | | |
| Confl. Bikes (#/hr) | | | | | | | | | | | | 2 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Heavy Vehicles (%) | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 147 | 204 | 65 | 181 | 378 | 0 | 112 | 705 | 0 | 168 | 739 | 0 |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | | pm+pt | NA | | pm+pt | NA | |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | | 2 | | | 6 | | |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 | 5.0 | 7.0 | | 5.0 | 7.0 | | 5.0 | 7.0 | |
| Minimum Split (s) | 10.0 | 34.0 | 34.0 | 10.0 | 23.0 | | 10.0 | 35.0 | | 10.0 | 23.0 | |
| Total Split (s) | 15.0 | 35.0 | 35.0 | 30.0 | 40.0 | | 35.0 | 35.0 | | 30.0 | 30.0 | |
| Total Split (%) | 11.5% | 26.9% | 26.9% | 23.1% | 30.8% | | 26.9% | 26.9% | | 23.1% | 23.1% | |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | |
| All-Red Time (s) | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Lost Time (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | | Yes | Yes | | Yes | Yes | |
| Recall Mode | None | None | None | None | None | | None | Max | | None | Max | |
| Act Effct Green (s) | 31.1 | 21.9 | 21.9 | 34.4 | 23.6 | | 38.7 | 30.4 | | 42.5 | 32.3 | |
| Actuated g/C Ratio | 0.33 | 0.23 | 0.23 | 0.37 | 0.25 | | 0.41 | 0.32 | | 0.45 | 0.34 | |
| v/c Ratio | 0.53 | 0.47 | 0.14 | 0.43 | 0.83 | | 0.37 | 0.63 | | 0.50 | 0.63 | |
| Control Delay | 25.7 | 35.5 | 0.6 | 21.8 | 46.6 | | 19.0 | 30.2 | | 20.9 | 29.0 | |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | 25.7 | 35.5 | 0.6 | 21.8 | 46.6 | | 19.0 | 30.2 | | 20.9 | 29.0 | |
| LOS | C | D | A | C | D | | B | C | | C | C | |
| Approach Delay | | 26.6 | | | 38.5 | | | 28.7 | | | 27.5 | |

2025 Opening Year Conditions

PM Peak-Hour

Kimley-Horn and Associates, Inc. [AH 090222176]

Lanes, Volumes, Timings

4: State Avenue/Smokey Point Boulevard & 136th Street NE

Kendall Subaru

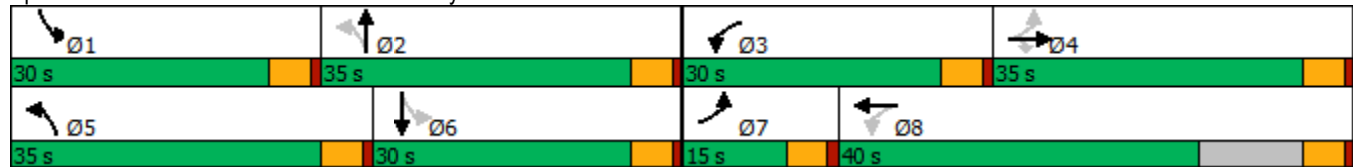
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|------|------|------|------|------|------|------|------|-----|------|------|-----|
| Approach LOS | | C | | | | D | | | | C | | |
| Queue Length 50th (ft) | 55 | 104 | 0 | 69 | 198 | | 35 | 176 | | 55 | 184 | |
| Queue Length 95th (ft) | 101 | 188 | 0 | 123 | 320 | | 80 | 295 | | 115 | 303 | |
| Internal Link Dist (ft) | | 901 | | | | 4660 | | | | 2741 | | |
| Turn Bay Length (ft) | 150 | | 150 | 200 | | | 300 | | | 300 | | |
| Base Capacity (vph) | 295 | 599 | 599 | 590 | 858 | | 644 | 1117 | | 564 | 1177 | |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Reduced v/c Ratio | 0.50 | 0.34 | 0.11 | 0.31 | 0.44 | | 0.17 | 0.63 | | 0.30 | 0.63 | |

Intersection Summary

Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 93.7
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.83
 Intersection Signal Delay: 30.0
 Intersection Capacity Utilization 74.4%
 Analysis Period (min) 15

Intersection LOS: C
 ICU Level of Service D

Splits and Phases: 4: State Avenue/Smokey Point Boulevard & 136th Street NE



Lanes, Volumes, Timings

5: 51st Avenue NE & 136th Street NE/School Exit

Kendall Subaru

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|-------|-------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 176 | 0 | 315 | 0 | 1 | 0 | 235 | 291 | 0 | 0 | 239 | 120 |
| Future Volume (vph) | 176 | 0 | 315 | 0 | 1 | 0 | 235 | 291 | 0 | 0 | 239 | 120 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 150 | | 0 | 0 | | 25 | 150 | | 0 | 0 | | 75 |
| Storage Lanes | 1 | | 1 | 0 | | 1 | 1 | | 0 | 0 | | 1 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | 1.00 | | 0.98 | | | | | | | | | 0.98 |
| Frt | | | 0.850 | | | | | | | | | 0.850 |
| Flt Protected | 0.950 | | | | | | 0.950 | | | | | |
| Satd. Flow (prot) | 1752 | 0 | 1568 | 0 | 1845 | 1845 | 1752 | 1845 | 0 | 0 | 1845 | 1568 |
| Flt Permitted | 0.757 | | | | | | 0.477 | | | | | |
| Satd. Flow (perm) | 1394 | 0 | 1531 | 0 | 1845 | 1845 | 880 | 1845 | 0 | 0 | 1845 | 1535 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 342 | | | | | | | | | 130 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | | 30 |
| Link Distance (ft) | | 4740 | | | 361 | | | 670 | | | 2819 | |
| Travel Time (s) | | 107.7 | | | 8.2 | | | 15.2 | | | 64.1 | |
| Confl. Peds. (#/hr) | 1 | | 2 | 2 | | | 1 | | | | | |
| Confl. Bikes (#/hr) | | | | | | | 3 | | 4 | | | 1 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles (%) | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 191 | 0 | 342 | 0 | 1 | 0 | 255 | 316 | 0 | 0 | 260 | 130 |
| Turn Type | Perm | | Perm | | NA | Perm | pm+pt | NA | | | NA | Perm |
| Protected Phases | | | | | 8 | | 5 | 2 | | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 8 | 2 | | | | | 6 |
| Detector Phase | 4 | | 4 | 8 | 8 | 8 | 5 | 2 | | | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | | 5.0 | 7.0 | 7.0 | 7.0 | 5.0 | 7.0 | | | 7.0 | 7.0 |
| Minimum Split (s) | 23.0 | | 23.0 | 22.5 | 22.5 | 22.5 | 10.0 | 23.0 | | | 26.0 | 26.0 |
| Total Split (s) | 25.0 | | 25.0 | 35.0 | 35.0 | 35.0 | 10.0 | 35.0 | | | 25.0 | 25.0 |
| Total Split (%) | 35.7% | | 35.7% | 50.0% | 50.0% | 50.0% | 14.3% | 50.0% | | | 35.7% | 35.7% |
| Yellow Time (s) | 4.0 | | 4.0 | 3.0 | 3.0 | 3.0 | 4.0 | 4.0 | | | 4.0 | 4.0 |
| All-Red Time (s) | 1.0 | | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | | | 1.0 | 1.0 |
| Lost Time Adjust (s) | 0.0 | | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | | | 0.0 | 0.0 |
| Total Lost Time (s) | 5.0 | | 5.0 | | 4.0 | 4.0 | 5.0 | 5.0 | | | 5.0 | 5.0 |
| Lead/Lag | | | | | | | Lead | | | | Lag | Lag |
| Lead-Lag Optimize? | | | | | | | Yes | | | | Yes | Yes |
| Recall Mode | None | | None | None | None | None | None | Max | | | Max | Max |
| Act Effct Green (s) | 11.4 | | 11.4 | | 12.4 | | 31.1 | 31.1 | | | 21.1 | 21.1 |
| Actuated g/C Ratio | 0.22 | | 0.22 | | 0.24 | | 0.59 | 0.59 | | | 0.40 | 0.40 |
| v/c Ratio | 0.63 | | 0.57 | | 0.00 | | 0.42 | 0.29 | | | 0.35 | 0.19 |
| Control Delay | 28.4 | | 6.6 | | 14.0 | | 8.6 | 7.0 | | | 13.7 | 3.8 |
| Queue Delay | 0.0 | | 0.0 | | 0.0 | | 0.0 | 0.0 | | | 0.0 | 0.0 |
| Total Delay | 28.4 | | 6.6 | | 14.0 | | 8.6 | 7.0 | | | 13.7 | 3.8 |
| LOS | C | | A | | B | | A | A | | | B | A |
| Approach Delay | | 14.4 | | | 14.0 | | | 7.7 | | | 10.4 | |

2025 Opening Year Conditions

PM Peak-Hour

Kimley-Horn and Associates, Inc. [AH 090222176]

Lanes, Volumes, Timings

5: 51st Avenue NE & 136th Street NE/School Exit

Kendall Subaru

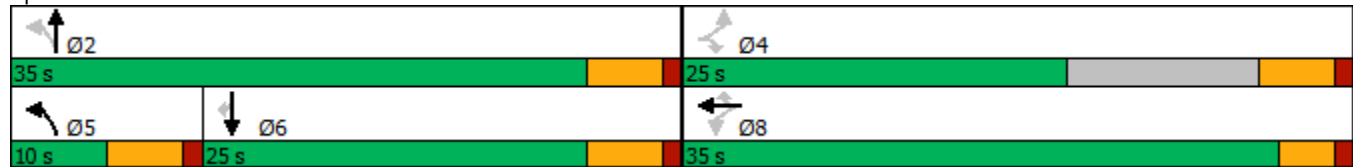
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|------|------|------|-----|------|-----|------|------|-----|-----|------|------|
| Approach LOS | | B | | | B | | | A | | | B | |
| Queue Length 50th (ft) | 54 | | 0 | | 0 | | 32 | 41 | | | 53 | 0 |
| Queue Length 95th (ft) | 106 | | 50 | | 3 | | 81 | 99 | | | 119 | 28 |
| Internal Link Dist (ft) | | 4660 | | | 281 | | | 590 | | | 2739 | |
| Turn Bay Length (ft) | 150 | | | | | | 150 | | | | | 75 |
| Base Capacity (vph) | 798 | | 1023 | | 1092 | | 604 | 1092 | | | 739 | 693 |
| Starvation Cap Reductn | 0 | | 0 | | 0 | | 0 | 0 | | | 0 | 0 |
| Spillback Cap Reductn | 0 | | 0 | | 0 | | 0 | 0 | | | 0 | 0 |
| Storage Cap Reductn | 0 | | 0 | | 0 | | 0 | 0 | | | 0 | 0 |
| Reduced v/c Ratio | 0.24 | | 0.33 | | 0.00 | | 0.42 | 0.29 | | | 0.35 | 0.19 |

Intersection Summary

Area Type: Other
 Cycle Length: 70
 Actuated Cycle Length: 52.6
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.63
 Intersection Signal Delay: 10.8
 Intersection Capacity Utilization 53.7%
 Analysis Period (min) 15




















Intersection LOS: B
 ICU Level of Service A

Splits and Phases: 5: 51st Avenue NE & 136th Street NE/School Exit



Lanes, Volumes, Timings
6: State Avenue & 128th Street NE

Kendall Subaru

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | |  | | |  | |  |  | |  |  |  |
| Traffic Volume (vph) | 13 | 4 | 25 | 72 | 0 | 34 | 4 | 734 | 105 | 38 | 773 | 1 |
| Future Volume (vph) | 13 | 4 | 25 | 72 | 0 | 34 | 4 | 734 | 105 | 38 | 773 | 1 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 200 | | 0 | 200 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 0 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 |
| Ped Bike Factor | | | | | | | | 1.00 | | | 1.00 | |
| Frt | | 0.918 | | | 0.956 | | | 0.981 | | | | |
| Flt Protected | | 0.985 | | | 0.967 | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 0 | 1684 | 0 | 0 | 1722 | 0 | 1770 | 3461 | 0 | 1770 | 3539 | 0 |
| Flt Permitted | | 0.985 | | | 0.516 | | 0.339 | | | 0.281 | | |
| Satd. Flow (perm) | 0 | 1684 | 0 | 0 | 919 | 0 | 631 | 3461 | 0 | 523 | 3539 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 26 | | | 101 | | | 13 | | | | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | | 30 |
| Link Distance (ft) | | 1088 | | | 1243 | | | 4124 | | | 2821 | |
| Travel Time (s) | | 24.7 | | | 28.3 | | | 93.7 | | | 64.1 | |
| Confl. Peds. (#/hr) | | | | | | | | | 1 | 1 | | |
| Confl. Bikes (#/hr) | | | | | | | | | 1 | | | 2 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 43 | 0 | 0 | 108 | 0 | 4 | 856 | 0 | 39 | 790 | 0 |
| Turn Type | Split | NA | | pm+pt | NA | | pm+pt | NA | | pm+pt | NA | |
| Protected Phases | 8 | 8 | | 4 | 3 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | | | | 3 | | | 2 | | | 6 | | |
| Detector Phase | 8 | 8 | | 4 | 3 | | 5 | 2 | | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | | 8.0 | 5.0 | | 5.0 | 7.0 | | 5.0 | 7.0 | |
| Minimum Split (s) | 23.0 | 23.0 | | 23.0 | 25.0 | | 10.0 | 23.0 | | 10.0 | 23.0 | |
| Total Split (s) | 10.0 | 10.0 | | 30.0 | 20.0 | | 20.0 | 50.0 | | 20.0 | 50.0 | |
| Total Split (%) | 7.7% | 7.7% | | 23.1% | 15.4% | | 15.4% | 38.5% | | 15.4% | 38.5% | |
| Yellow Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | |
| All-Red Time (s) | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | |
| Lost Time Adjust (s) | | 0.0 | | | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Lost Time (s) | | 5.0 | | | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Lead/Lag | | | | Lag | Lead | | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | | | | Yes | Yes | | Yes | Yes | | Yes | Yes | |
| Recall Mode | None | None | | None | None | | None | Max | | None | Max | |
| Act Effct Green (s) | | 5.0 | | | 7.1 | | 53.3 | 50.5 | | 55.7 | 54.6 | |
| Actuated g/C Ratio | | 0.06 | | | 0.09 | | 0.67 | 0.64 | | 0.70 | 0.69 | |
| v/c Ratio | | 0.33 | | | 0.62 | | 0.01 | 0.39 | | 0.09 | 0.32 | |
| Control Delay | | 29.1 | | | 25.3 | | 5.8 | 9.9 | | 5.6 | 7.2 | |
| Queue Delay | | 0.0 | | | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | | 29.1 | | | 25.3 | | 5.8 | 9.9 | | 5.6 | 7.2 | |
| LOS | | C | | | C | | A | A | | A | A | |
| Approach Delay | | 29.1 | | | 25.3 | | | 9.9 | | | 7.1 | |
| Approach LOS | | C | | | C | | | A | | | A | |

2025 Opening Year Conditions

PM Peak-Hour

Kimley-Horn and Associates, Inc. [AH 090222176]

Lanes, Volumes, Timings
6: State Avenue & 128th Street NE

Kendall Subaru

| Lane Group | | | | | | | | | | | | |
|-------------------------|--|------|--|--|------|--|------|------|--|------|------|--|
| Queue Length 50th (ft) | | 8 | | | 3 | | 1 | 121 | | 5 | 73 | |
| Queue Length 95th (ft) | | 42 | | | 53 | | 4 | 202 | | 19 | 180 | |
| Internal Link Dist (ft) | | 1008 | | | 1163 | | | 4044 | | | 2741 | |
| Turn Bay Length (ft) | | | | | | | 200 | | | 200 | | |
| Base Capacity (vph) | | 131 | | | 257 | | 666 | 2209 | | 609 | 2438 | |
| Starvation Cap Reductn | | 0 | | | 0 | | 0 | 0 | | 0 | 0 | |
| Spillback Cap Reductn | | 0 | | | 0 | | 0 | 0 | | 0 | 0 | |
| Storage Cap Reductn | | 0 | | | 0 | | 0 | 0 | | 0 | 0 | |
| Reduced v/c Ratio | | 0.33 | | | 0.42 | | 0.01 | 0.39 | | 0.06 | 0.32 | |

Intersection Summary

Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 79.3
 Natural Cycle: 105
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.62
 Intersection Signal Delay: 10.0
 Intersection Capacity Utilization 52.1%
 Analysis Period (min) 15

Intersection LOS: A
 ICU Level of Service A

Splits and Phases: 6: State Avenue & 128th Street NE

| | | | | |
|------|------|------|------|------|
| | | | | |
| 20 s | 50 s | 20 s | 30 s | 10 s |
| | | | | |
| 20 s | 50 s | | | |

HCM 6th TWSC
 7: Smokey Point Boulevard & Site Access

Kendall Subaru

Intersection

| | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 1.4 | | | | | |
| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
| Lane Configurations | TT | | TT | | T | TT |
| Traffic Vol, veh/h | 78 | 21 | 781 | 51 | 14 | 781 |
| Future Vol, veh/h | 78 | 21 | 781 | 51 | 14 | 781 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | 100 | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 85 | 23 | 849 | 55 | 15 | 849 |

| | | | | | |
|----------------------|--------|--------|--------|---|------|
| Major/Minor | Minor1 | Major1 | Major2 | | |
| Conflicting Flow All | 1332 | 452 | 0 | 0 | 904 |
| Stage 1 | 877 | - | - | - | - |
| Stage 2 | 455 | - | - | - | - |
| Critical Hdwy | 6.84 | 6.94 | - | - | 4.14 |
| Critical Hdwy Stg 1 | 5.84 | - | - | - | - |
| Critical Hdwy Stg 2 | 5.84 | - | - | - | - |
| Follow-up Hdwy | 3.52 | 3.32 | - | - | 2.22 |
| Pot Cap-1 Maneuver | 146 | 555 | - | - | 748 |
| Stage 1 | 367 | - | - | - | - |
| Stage 2 | 606 | - | - | - | - |
| Platoon blocked, % | | | - | - | - |
| Mov Cap-1 Maneuver | 143 | 555 | - | - | 748 |
| Mov Cap-2 Maneuver | 267 | - | - | - | - |
| Stage 1 | 367 | - | - | - | - |
| Stage 2 | 594 | - | - | - | - |

| | | | |
|----------------------|------|----|-----|
| Approach | WB | NB | SB |
| HCM Control Delay, s | 23.6 | 0 | 0.2 |
| HCM LOS | C | | |

| | | | | |
|-----------------------|-----|----------|-------|------|
| Minor Lane/Major Mvmt | NBT | NBRWBLn1 | SBL | SBT |
| Capacity (veh/h) | - | - | 300 | 748 |
| HCM Lane V/C Ratio | - | - | 0.359 | 0.02 |
| HCM Control Delay (s) | - | - | 23.6 | 9.9 |
| HCM Lane LOS | - | - | C | A |
| HCM 95th %tile Q(veh) | - | - | 1.6 | 0.1 |

Lanes, Volumes, Timings

1: Smokey Point Boulevard & 156th Street NE

Kendall Subaru

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|-------|-------|-------|-------|-------|------|-------|-------|------|-------|-------|------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 37 | 5 | 300 | 25 | 21 | 42 | 326 | 855 | 14 | 20 | 823 | 90 |
| Future Volume (vph) | 37 | 5 | 300 | 25 | 21 | 42 | 326 | 855 | 14 | 20 | 823 | 90 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 150 | | 150 | 200 | | 0 | 250 | | 0 | 200 | | 0 |
| Storage Lanes | 1 | | 1 | 1 | | 0 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 |
| Ped Bike Factor | | | | | | | | 1.00 | | | 1.00 | |
| Frt | | | 0.850 | | 0.899 | | | 0.998 | | | 0.985 | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1752 | 1845 | 1568 | 1752 | 1658 | 0 | 1752 | 3497 | 0 | 1752 | 3444 | 0 |
| Flt Permitted | 0.613 | | | 0.754 | | | 0.150 | | | 0.309 | | |
| Satd. Flow (perm) | 1131 | 1845 | 1568 | 1391 | 1658 | 0 | 277 | 3497 | 0 | 570 | 3444 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 319 | | 45 | | | 2 | | | 12 | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 1704 | | | 1283 | | | 1356 | | | 1304 | |
| Travel Time (s) | | 38.7 | | | 29.2 | | | 30.8 | | | 29.6 | |
| Confl. Peds. (#/hr) | | | | | | | 2 | | 1 | 1 | | 2 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles (%) | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 39 | 5 | 319 | 27 | 67 | 0 | 347 | 925 | 0 | 21 | 972 | 0 |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | | pm+pt | NA | | pm+pt | NA | |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | | 2 | | | 6 | | |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | | 7.0 | 10.0 | | 7.0 | 10.0 | |
| Minimum Split (s) | 12.0 | 25.0 | 25.0 | 12.0 | 25.0 | | 12.0 | 25.0 | | 12.0 | 25.0 | |
| Total Split (s) | 25.0 | 20.0 | 20.0 | 25.0 | 10.0 | | 20.0 | 50.0 | | 20.0 | 50.0 | |
| Total Split (%) | 21.7% | 17.4% | 17.4% | 21.7% | 8.7% | | 17.4% | 43.5% | | 17.4% | 43.5% | |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | |
| All-Red Time (s) | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Lost Time (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | | Yes | Yes | | Yes | Yes | |
| Recall Mode | None | None | None | None | None | | None | Min | | None | Min | |
| Act Effct Green (s) | 13.2 | 10.7 | 10.7 | 11.9 | 8.2 | | 51.6 | 47.7 | | 38.0 | 30.6 | |
| Actuated g/C Ratio | 0.17 | 0.14 | 0.14 | 0.15 | 0.11 | | 0.67 | 0.62 | | 0.49 | 0.40 | |
| v/c Ratio | 0.15 | 0.02 | 0.65 | 0.11 | 0.31 | | 0.71 | 0.43 | | 0.05 | 0.70 | |
| Control Delay | 28.3 | 35.6 | 11.6 | 27.9 | 22.0 | | 23.5 | 10.7 | | 7.2 | 22.5 | |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | 28.3 | 35.6 | 11.6 | 27.9 | 22.0 | | 23.5 | 10.7 | | 7.2 | 22.5 | |
| LOS | C | D | B | C | C | | C | B | | A | C | |
| Approach Delay | | 13.7 | | | 23.7 | | | 14.2 | | | 22.2 | |
| Approach LOS | | B | | | C | | | B | | | C | |

2031 Baseline Conditions

PM Peak-Hour

Kimley-Horn and Associates, Inc. [AH 090222176]

Lanes, Volumes, Timings

1: Smokey Point Boulevard & 156th Street NE

Kendall Subaru

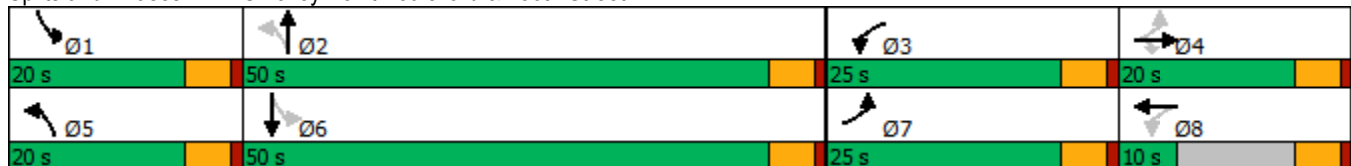
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|------|------|------|------|------|-----|------|------|-----|------|------|-----|
| Queue Length 50th (ft) | 15 | 2 | 0 | 10 | 10 | | 85 | 96 | | 3 | 200 | |
| Queue Length 95th (ft) | 45 | 14 | 81 | 35 | 52 | | #286 | 252 | | 13 | 317 | |
| Internal Link Dist (ft) | | 1624 | | | 1203 | | | 1276 | | | 1224 | |
| Turn Bay Length (ft) | 150 | | 150 | 200 | | | 250 | | | 200 | | |
| Base Capacity (vph) | 495 | 387 | 581 | 499 | 375 | | 488 | 2260 | | 586 | 2123 | |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Reduced v/c Ratio | 0.08 | 0.01 | 0.55 | 0.05 | 0.18 | | 0.71 | 0.41 | | 0.04 | 0.46 | |

Intersection Summary

Area Type: Other
 Cycle Length: 115
 Actuated Cycle Length: 76.8
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.71
 Intersection Signal Delay: 17.4
 Intersection Capacity Utilization 64.9%
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Intersection LOS: B
 ICU Level of Service C

Splits and Phases: 1: Smokey Point Boulevard & 156th Street NE



Lanes, Volumes, Timings

2: Smokey Point Boulevard & 152nd Street NE

Kendall Subaru

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|-------|-------|------|-------|-------|------|-------|-------|------|-------|-------|------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 12 | 3 | 8 | 134 | 4 | 365 | 7 | 806 | 144 | 354 | 835 | 16 |
| Future Volume (vph) | 12 | 3 | 8 | 134 | 4 | 365 | 7 | 806 | 144 | 354 | 835 | 16 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 50 | | 0 | 125 | | 0 | 150 | | 0 | 200 | | 0 |
| Storage Lanes | 1 | | 0 | 1 | | 0 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 |
| Ped Bike Factor | 1.00 | | | | 0.99 | | | 1.00 | | | 1.00 | |
| Frt | | 0.891 | | | 0.852 | | | 0.977 | | | 0.997 | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1770 | 1660 | 0 | 1770 | 1566 | 0 | 1770 | 3444 | 0 | 1770 | 3527 | 0 |
| Flt Permitted | | | | 0.606 | | | 0.321 | | | 0.150 | | |
| Satd. Flow (perm) | 1862 | 1660 | 0 | 1129 | 1566 | 0 | 598 | 3444 | 0 | 279 | 3527 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 8 | | | 380 | | | 19 | | | 2 | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 209 | | | 5141 | | | 1452 | | | 1356 | |
| Travel Time (s) | | 4.8 | | | 116.8 | | | 33.0 | | | 30.8 | |
| Confl. Peds. (#/hr) | 1 | | | | | 1 | 2 | | 2 | 2 | | 2 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 13 | 11 | 0 | 140 | 384 | 0 | 7 | 990 | 0 | 369 | 887 | 0 |
| Turn Type | pm+pt | NA | | pm+pt | NA | | pm+pt | NA | | pm+pt | NA | |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | | 8 | | | 2 | | | 6 | | |
| Detector Phase | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 7.0 | | 4.0 | 7.0 | |
| Minimum Split (s) | 9.5 | 27.0 | | 11.5 | 26.0 | | 9.5 | 24.0 | | 9.5 | 26.0 | |
| Total Split (s) | 16.0 | 16.0 | | 16.0 | 40.0 | | 16.0 | 50.0 | | 16.0 | 50.0 | |
| Total Split (%) | 13.1% | 13.1% | | 13.1% | 32.8% | | 13.1% | 41.0% | | 13.1% | 41.0% | |
| Yellow Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | |
| All-Red Time (s) | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Lost Time (s) | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Lead/Lag | Lead | Lag | | Lead | Lag | | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | Yes | Yes | | Yes | Yes | | Yes | Yes | | Yes | Yes | |
| Recall Mode | None | None | | None | None | | None | Min | | None | Min | |
| Act Effct Green (s) | 6.9 | 5.8 | | 11.0 | 9.5 | | 31.3 | 25.8 | | 42.7 | 41.2 | |
| Actuated g/C Ratio | 0.11 | 0.09 | | 0.17 | 0.15 | | 0.49 | 0.40 | | 0.67 | 0.64 | |
| v/c Ratio | 0.07 | 0.07 | | 0.50 | 0.69 | | 0.02 | 0.71 | | 0.81 | 0.39 | |
| Control Delay | 26.5 | 23.1 | | 31.3 | 11.3 | | 6.3 | 19.2 | | 29.8 | 8.0 | |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | 26.5 | 23.1 | | 31.3 | 11.3 | | 6.3 | 19.2 | | 29.8 | 8.0 | |
| LOS | C | C | | C | B | | A | B | | C | A | |
| Approach Delay | | 24.9 | | | 16.6 | | | 19.2 | | | 14.4 | |
| Approach LOS | | C | | | B | | | B | | | B | |
| Queue Length 50th (ft) | 4 | 1 | | 46 | 1 | | 1 | 142 | | 64 | 54 | |

2031 Baseline Conditions

PM Peak-Hour

Kimley-Horn and Associates, Inc. [AH 090222176]

Lanes, Volumes, Timings

2: Smokey Point Boulevard & 152nd Street NE

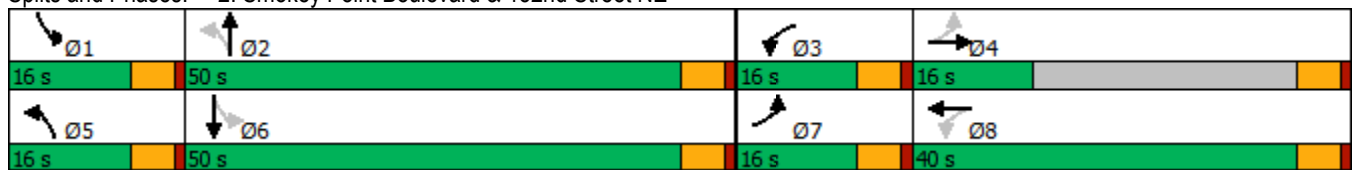
Kendall Subaru

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|------|------|-----|------|------|-----|------|------|-----|------|------|-----|
| Queue Length 95th (ft) | 19 | 18 | | 113 | 85 | | 7 | 305 | | #336 | 235 | |
| Internal Link Dist (ft) | | 129 | | | 5061 | | | 1372 | | | 1276 | |
| Turn Bay Length (ft) | 50 | | | 125 | | | 150 | | | 200 | | |
| Base Capacity (vph) | 364 | 955 | | 358 | 1059 | | 559 | 2543 | | 454 | 2621 | |
| Starvation Cap Reductn | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Spillback Cap Reductn | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Storage Cap Reductn | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Reduced v/c Ratio | 0.04 | 0.01 | | 0.39 | 0.36 | | 0.01 | 0.39 | | 0.81 | 0.34 | |

Intersection Summary

Area Type: Other
 Cycle Length: 122
 Actuated Cycle Length: 64.2
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.81
 Intersection Signal Delay: 16.6
 Intersection Capacity Utilization 81.9%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service D
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 2: Smokey Point Boulevard & 152nd Street NE



HCM 6th AWSC
 3: 51st Avenue NE & 152nd Street NE

Kendall Subaru

Intersection

Intersection Delay, s/veh 135.3
 Intersection LOS F

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|----------------------------|-------|------|------|------|------|------|-------|------|------|------|------|------|
| Lane Configurations | | ↕ | | | ↕ | | | ↕ | | | ↕ | |
| Traffic Vol, veh/h | 50 | 257 | 134 | 69 | 240 | 22 | 172 | 248 | 97 | 38 | 275 | 72 |
| Future Vol, veh/h | 50 | 257 | 134 | 69 | 240 | 22 | 172 | 248 | 97 | 38 | 275 | 72 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 52 | 265 | 138 | 71 | 247 | 23 | 177 | 256 | 100 | 39 | 284 | 74 |
| 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 | 133.3 | | | 64.4 | | | 215.7 | | | 90.6 | | |
| HCM LOS | F | | | F | | | F | | | F | | |

| Lane | NBLn1 | EBLn1 | WBLn1 | SBLn1 |
|------------------------|--------|--------|--------|--------|
| Vol Left, % | 33% | 11% | 21% | 10% |
| Vol Thru, % | 48% | 58% | 73% | 71% |
| Vol Right, % | 19% | 30% | 7% | 19% |
| Sign Control | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 517 | 441 | 331 | 385 |
| LT Vol | 172 | 50 | 69 | 38 |
| Through Vol | 248 | 257 | 240 | 275 |
| RT Vol | 97 | 134 | 22 | 72 |
| Lane Flow Rate | 533 | 455 | 341 | 397 |
| Geometry Grp | 1 | 1 | 1 | 1 |
| Degree of Util (X) | 1.382 | 1.165 | 0.904 | 1.024 |
| Departure Headway (Hd) | 10.024 | 10.432 | 11.446 | 10.957 |
| Convergence, Y/N | Yes | Yes | Yes | Yes |
| Cap | 368 | 350 | 321 | 333 |
| Service Time | 8.024 | 8.432 | 9.446 | 8.957 |
| HCM Lane V/C Ratio | 1.448 | 1.3 | 1.062 | 1.192 |
| HCM Control Delay | 215.7 | 133.3 | 64.4 | 90.6 |
| HCM Lane LOS | F | F | F | F |
| HCM 95th-tile Q | 24.7 | 16.3 | 8.6 | 11.7 |

Lanes, Volumes, Timings
 3: 51st Avenue NE & 152nd Street NE

Kendall Subaru

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|-------|-------|------|-------|-------|------|-------|-------|------|-------|-------|------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 50 | 257 | 134 | 69 | 240 | 22 | 172 | 248 | 97 | 38 | 275 | 72 |
| Future Volume (vph) | 50 | 257 | 134 | 69 | 240 | 22 | 172 | 248 | 97 | 38 | 275 | 72 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | 0.949 | | | 0.987 | | | 0.958 | | | 0.969 | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1770 | 1768 | 0 | 1770 | 1839 | 0 | 1770 | 1785 | 0 | 1770 | 1805 | 0 |
| Flt Permitted | 0.492 | | | 0.242 | | | 0.276 | | | 0.540 | | |
| Satd. Flow (perm) | 916 | 1768 | 0 | 451 | 1839 | 0 | 514 | 1785 | 0 | 1006 | 1805 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 30 | | | 5 | | | 25 | | | 16 | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 5141 | | | 2552 | | | 1372 | | | 1670 | |
| Travel Time (s) | | 116.8 | | | 58.0 | | | 31.2 | | | 38.0 | |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 52 | 403 | 0 | 71 | 270 | 0 | 177 | 356 | 0 | 39 | 358 | 0 |
| Turn Type | pm+pt | NA | | pm+pt | NA | | pm+pt | NA | | pm+pt | NA | |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | | 8 | | | 2 | | | 6 | | |
| Detector Phase | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Minimum Split (s) | 9.5 | 22.5 | | 9.5 | 22.5 | | 9.5 | 22.5 | | 9.5 | 22.5 | |
| Total Split (s) | 10.0 | 32.0 | | 10.0 | 32.0 | | 14.0 | 38.0 | | 10.0 | 34.0 | |
| Total Split (%) | 11.1% | 35.6% | | 11.1% | 35.6% | | 15.6% | 42.2% | | 11.1% | 37.8% | |
| Yellow Time (s) | 3.5 | 3.5 | | 3.5 | 3.5 | | 3.5 | 3.5 | | 3.5 | 3.5 | |
| All-Red Time (s) | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Lost Time (s) | 4.5 | 4.5 | | 4.5 | 4.5 | | 4.5 | 4.5 | | 4.5 | 4.5 | |
| Lead/Lag | Lead | Lag | | Lead | Lag | | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | Yes | Yes | | Yes | Yes | | Yes | Yes | | Yes | Yes | |
| Recall Mode | None | None | | None | None | | None | Min | | None | Min | |
| Act Effect Green (s) | 24.1 | 20.1 | | 25.1 | 22.2 | | 33.2 | 28.3 | | 25.1 | 19.2 | |
| Actuated g/C Ratio | 0.34 | 0.28 | | 0.36 | 0.31 | | 0.47 | 0.40 | | 0.36 | 0.27 | |
| v/c Ratio | 0.14 | 0.77 | | 0.26 | 0.46 | | 0.43 | 0.49 | | 0.09 | 0.71 | |
| Control Delay | 15.2 | 33.9 | | 17.0 | 24.3 | | 16.4 | 21.0 | | 13.1 | 32.4 | |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | 15.2 | 33.9 | | 17.0 | 24.3 | | 16.4 | 21.0 | | 13.1 | 32.4 | |
| LOS | B | C | | B | C | | B | C | | B | C | |
| Approach Delay | | 31.7 | | | 22.8 | | | 19.5 | | | 30.5 | |
| Approach LOS | | C | | | C | | | B | | | C | |
| Queue Length 50th (ft) | 14 | 154 | | 19 | 100 | | 46 | 124 | | 9 | 141 | |
| Queue Length 95th (ft) | 39 | 295 | | 50 | 196 | | 95 | 228 | | 28 | 253 | |
| Internal Link Dist (ft) | | 5061 | | | 2472 | | | 1292 | | | 1590 | |
| Turn Bay Length (ft) | | | | | | | | | | | | |
| Base Capacity (vph) | 384 | 761 | | 271 | 776 | | 424 | 927 | | 421 | 823 | |
| Starvation Cap Reductn | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |

Lanes, Volumes, Timings
 3: 51st Avenue NE & 152nd Street NE

Kendall Subaru

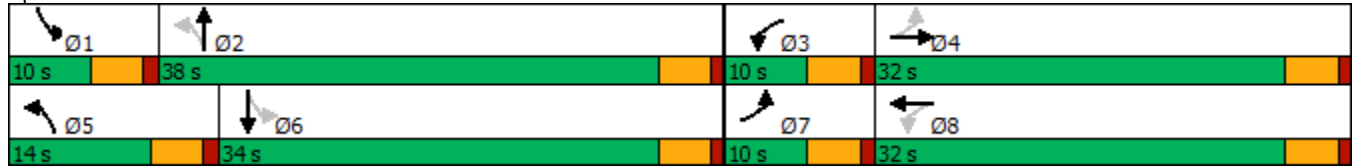
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-----------------------|------|------|-----|------|------|-----|------|------|-----|------|------|-----|
| Spillback Cap Reductn | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Storage Cap Reductn | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Reduced v/c Ratio | 0.14 | 0.53 | | 0.26 | 0.35 | | 0.42 | 0.38 | | 0.09 | 0.43 | |

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 70.6
 Natural Cycle: 65
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.77
 Intersection Signal Delay: 25.9
 Intersection Capacity Utilization 69.2%
 Analysis Period (min) 15

Intersection LOS: C
 ICU Level of Service C
























Splits and Phases: 3: 51st Avenue NE & 152nd Street NE



Lanes, Volumes, Timings

4: State Avenue/Smokey Point Boulevard & 136th Street NE

Kendall Subaru

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  |  |  |  | |  |  |  |  |  |  |
| Traffic Volume (vph) | 164 | 239 | 77 | 211 | 265 | 160 | 132 | 581 | 230 | 172 | 613 | 215 |
| Future Volume (vph) | 164 | 239 | 77 | 211 | 265 | 160 | 132 | 581 | 230 | 172 | 613 | 215 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 150 | | 150 | 200 | | 0 | 300 | | 0 | 300 | | 0 |
| Storage Lanes | 1 | | 1 | 1 | | 0 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 |
| Ped Bike Factor | | | 0.99 | 1.00 | | | | | | | 0.99 | |
| Frt | | | 0.850 | | 0.944 | | | 0.957 | | | 0.961 | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1752 | 1845 | 1568 | 1752 | 1741 | 0 | 1752 | 3354 | 0 | 1752 | 3347 | 0 |
| Flt Permitted | 0.200 | | | 0.393 | | | 0.166 | | | 0.150 | | |
| Satd. Flow (perm) | 369 | 1845 | 1547 | 724 | 1741 | 0 | 306 | 3354 | 0 | 277 | 3347 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 143 | | 26 | | | 42 | | | 33 | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 981 | | | 4740 | | | 2821 | | | 4424 | |
| Travel Time (s) | | 22.3 | | | 107.7 | | | 64.1 | | | 100.5 | |
| Confl. Peds. (#/hr) | | | 1 | 1 | | | | | | | | |
| Confl. Bikes (#/hr) | | | | | | | | | | | | 2 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Heavy Vehicles (%) | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 167 | 244 | 79 | 215 | 433 | 0 | 135 | 828 | 0 | 176 | 845 | 0 |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | | pm+pt | NA | | pm+pt | NA | |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | | 2 | | | 6 | | |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 | 5.0 | 7.0 | | 5.0 | 7.0 | | 5.0 | 7.0 | |
| Minimum Split (s) | 10.0 | 34.0 | 34.0 | 10.0 | 23.0 | | 10.0 | 35.0 | | 10.0 | 23.0 | |
| Total Split (s) | 15.0 | 35.0 | 35.0 | 30.0 | 40.0 | | 35.0 | 35.0 | | 30.0 | 30.0 | |
| Total Split (%) | 11.5% | 26.9% | 26.9% | 23.1% | 30.8% | | 26.9% | 26.9% | | 23.1% | 23.1% | |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | |
| All-Red Time (s) | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Lost Time (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | | Yes | Yes | | Yes | Yes | |
| Recall Mode | None | None | None | None | None | | None | Max | | None | Max | |
| Act Effct Green (s) | 33.3 | 23.8 | 23.8 | 38.5 | 26.7 | | 39.9 | 30.3 | | 42.5 | 31.7 | |
| Actuated g/C Ratio | 0.34 | 0.24 | 0.24 | 0.39 | 0.27 | | 0.41 | 0.31 | | 0.44 | 0.32 | |
| v/c Ratio | 0.64 | 0.54 | 0.16 | 0.52 | 0.88 | | 0.51 | 0.77 | | 0.62 | 0.76 | |
| Control Delay | 31.4 | 38.0 | 0.8 | 23.3 | 51.5 | | 23.7 | 36.5 | | 27.5 | 35.5 | |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | 31.4 | 38.0 | 0.8 | 23.3 | 51.5 | | 23.7 | 36.5 | | 27.5 | 35.5 | |
| LOS | C | D | A | C | D | | C | D | | C | D | |
| Approach Delay | | 29.8 | | | 42.2 | | | 34.7 | | | 34.2 | |

2031 Baseline Conditions

PM Peak-Hour

Kimley-Horn and Associates, Inc. [AH 090222176]

Lanes, Volumes, Timings

4: State Avenue/Smokey Point Boulevard & 136th Street NE

Kendall Subaru

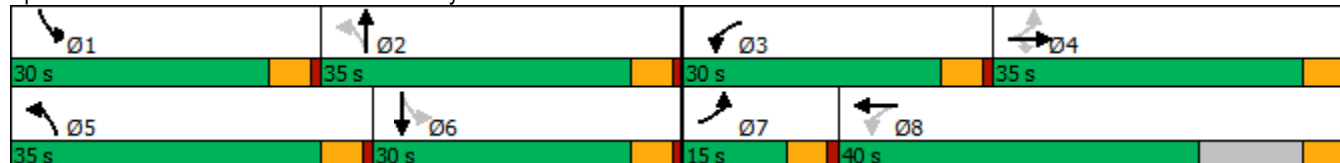
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|------|------|------|------|------|-----|------|------|-----|------|------|-----|
| Approach LOS | | C | | | D | | | C | | | C | |
| Queue Length 50th (ft) | 64 | 132 | 0 | 85 | 244 | | 47 | 238 | | 63 | 242 | |
| Queue Length 95th (ft) | #128 | 233 | 2 | 147 | 384 | | 94 | #391 | | 126 | #394 | |
| Internal Link Dist (ft) | | 901 | | | 4660 | | | 2741 | | | 4344 | |
| Turn Bay Length (ft) | 150 | | 150 | 200 | | | 300 | | | 300 | | |
| Base Capacity (vph) | 271 | 573 | 579 | 572 | 825 | | 594 | 1072 | | 513 | 1108 | |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Reduced v/c Ratio | 0.62 | 0.43 | 0.14 | 0.38 | 0.52 | | 0.23 | 0.77 | | 0.34 | 0.76 | |

Intersection Summary

Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 97.6
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.88
 Intersection Signal Delay: 35.3
 Intersection Capacity Utilization 82.4%
 Analysis Period (min) 15
 Intersection LOS: D
 ICU Level of Service E

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





















Splits and Phases: 4: State Avenue/Smokey Point Boulevard & 136th Street NE



Lanes, Volumes, Timings

5: 51st Avenue NE & 136th Street NE/School Exit

Kendall Subaru

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  | |  | |  |  |  |  | | |  |  |
| Traffic Volume (vph) | 210 | 0 | 352 | 0 | 1 | 0 | 264 | 347 | 0 | 0 | 286 | 144 |
| Future Volume (vph) | 210 | 0 | 352 | 0 | 1 | 0 | 264 | 347 | 0 | 0 | 286 | 144 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 150 | | 0 | 0 | | 25 | 150 | | 0 | 0 | | 75 |
| Storage Lanes | 1 | | 1 | 0 | | 1 | 1 | | 0 | 0 | | 1 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | 1.00 | | 0.98 | | | | | | | | | 0.98 |
| Frt | | | 0.850 | | | | | | | | | 0.850 |
| Flt Protected | 0.950 | | | | | | 0.950 | | | | | |
| Satd. Flow (prot) | 1752 | 0 | 1568 | 0 | 1845 | 1845 | 1752 | 1845 | 0 | 0 | 1845 | 1568 |
| Flt Permitted | 0.757 | | | | | | 0.421 | | | | | |
| Satd. Flow (perm) | 1394 | 0 | 1531 | 0 | 1845 | 1845 | 777 | 1845 | 0 | 0 | 1845 | 1535 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 383 | | | | | | | | | 145 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | | 30 |
| Link Distance (ft) | | 4740 | | | 361 | | | 670 | | | | 2819 |
| Travel Time (s) | | 107.7 | | | 8.2 | | | 15.2 | | | | 64.1 |
| Confl. Peds. (#/hr) | 1 | | 2 | 2 | | | 1 | | | | | |
| Confl. Bikes (#/hr) | | | | | | | 3 | | 4 | | | 1 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles (%) | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 228 | 0 | 383 | 0 | 1 | 0 | 287 | 377 | 0 | 0 | 311 | 157 |
| Turn Type | Perm | | Perm | | NA | Perm | pm+pt | NA | | | NA | Perm |
| Protected Phases | | | | | 8 | | 5 | 2 | | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 8 | 2 | | | | | 6 |
| Detector Phase | 4 | | 4 | 8 | 8 | 8 | 5 | 2 | | | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | | 5.0 | 7.0 | 7.0 | 7.0 | 5.0 | 7.0 | | | 7.0 | 7.0 |
| Minimum Split (s) | 23.0 | | 23.0 | 22.5 | 22.5 | 22.5 | 10.0 | 23.0 | | | 26.0 | 26.0 |
| Total Split (s) | 25.0 | | 25.0 | 35.0 | 35.0 | 35.0 | 10.0 | 35.0 | | | 25.0 | 25.0 |
| Total Split (%) | 35.7% | | 35.7% | 50.0% | 50.0% | 50.0% | 14.3% | 50.0% | | | 35.7% | 35.7% |
| Yellow Time (s) | 4.0 | | 4.0 | 3.0 | 3.0 | 3.0 | 4.0 | 4.0 | | | 4.0 | 4.0 |
| All-Red Time (s) | 1.0 | | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | | | 1.0 | 1.0 |
| Lost Time Adjust (s) | 0.0 | | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | | | 0.0 | 0.0 |
| Total Lost Time (s) | 5.0 | | 5.0 | | 4.0 | 4.0 | 5.0 | 5.0 | | | 5.0 | 5.0 |
| Lead/Lag | | | | | | | Lead | | | | Lag | Lag |
| Lead-Lag Optimize? | | | | | | | Yes | | | | Yes | Yes |
| Recall Mode | None | | None | None | None | None | None | Max | | | Max | Max |
| Act Effct Green (s) | 13.0 | | 13.0 | | 14.0 | | 31.2 | 31.2 | | | 21.1 | 21.1 |
| Actuated g/C Ratio | 0.24 | | 0.24 | | 0.26 | | 0.57 | 0.57 | | | 0.39 | 0.39 |
| v/c Ratio | 0.68 | | 0.58 | | 0.00 | | 0.54 | 0.36 | | | 0.43 | 0.23 |
| Control Delay | 29.4 | | 6.1 | | 14.0 | | 11.7 | 8.4 | | | 15.7 | 4.5 |
| Queue Delay | 0.0 | | 0.0 | | 0.0 | | 0.0 | 0.0 | | | 0.0 | 0.0 |
| Total Delay | 29.4 | | 6.1 | | 14.0 | | 11.7 | 8.4 | | | 15.7 | 4.5 |
| LOS | C | | A | | B | | B | A | | | B | A |
| Approach Delay | | 14.8 | | | 14.0 | | | 9.8 | | | 12.0 | |

2031 Baseline Conditions

PM Peak-Hour

Kimley-Horn and Associates, Inc. [AH 090222176]

Lanes, Volumes, Timings

5: 51st Avenue NE & 136th Street NE/School Exit

Kendall Subaru

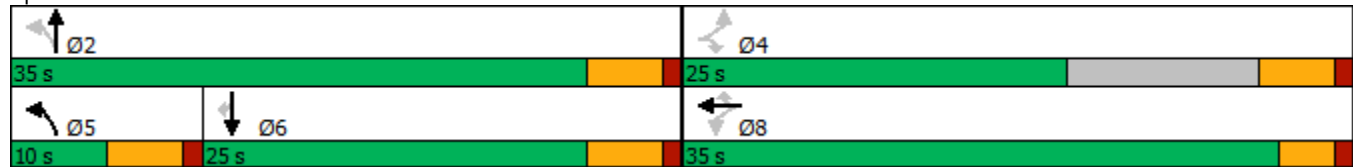
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|------|------|------|-----|------|-----|------|------|-----|-----|------|------|
| Approach LOS | | B | | | B | | | A | | | B | |
| Queue Length 50th (ft) | 66 | | 0 | | 0 | | 41 | 56 | | | 70 | 2 |
| Queue Length 95th (ft) | 126 | | 51 | | 3 | | 101 | 134 | | | 154 | 36 |
| Internal Link Dist (ft) | | 4660 | | | 281 | | | 590 | | | 2739 | |
| Turn Bay Length (ft) | 150 | | | | | | 150 | | | | | 75 |
| Base Capacity (vph) | 775 | | 1021 | | 1059 | | 536 | 1059 | | | 718 | 685 |
| Starvation Cap Reductn | 0 | | 0 | | 0 | | 0 | 0 | | | 0 | 0 |
| Spillback Cap Reductn | 0 | | 0 | | 0 | | 0 | 0 | | | 0 | 0 |
| Storage Cap Reductn | 0 | | 0 | | 0 | | 0 | 0 | | | 0 | 0 |
| Reduced v/c Ratio | 0.29 | | 0.38 | | 0.00 | | 0.54 | 0.36 | | | 0.43 | 0.23 |

Intersection Summary

Area Type: Other
 Cycle Length: 70
 Actuated Cycle Length: 54.3
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.68
 Intersection Signal Delay: 12.1
 Intersection Capacity Utilization 59.6%
 Analysis Period (min) 15



















Intersection LOS: B
 ICU Level of Service B

Splits and Phases: 5: 51st Avenue NE & 136th Street NE/School Exit



Lanes, Volumes, Timings
6: State Avenue & 128th Street NE

Kendall Subaru

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | |  | | |  | |  |  | |  |  | |
| Traffic Volume (vph) | 16 | 5 | 30 | 86 | 0 | 40 | 5 | 861 | 125 | 46 | 899 | 1 |
| Future Volume (vph) | 16 | 5 | 30 | 86 | 0 | 40 | 5 | 861 | 125 | 46 | 899 | 1 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 200 | | 0 | 200 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 0 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 |
| Ped Bike Factor | | | | | | | | 1.00 | | | 1.00 | |
| Frt | | 0.920 | | | 0.957 | | | 0.981 | | | | |
| Flt Protected | | 0.985 | | | 0.967 | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 0 | 1688 | 0 | 0 | 1724 | 0 | 1770 | 3460 | 0 | 1770 | 3539 | 0 |
| Flt Permitted | | 0.985 | | | 0.481 | | 0.280 | | | 0.219 | | |
| Satd. Flow (perm) | 0 | 1688 | 0 | 0 | 857 | 0 | 522 | 3460 | 0 | 408 | 3539 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 31 | | | 101 | | | 13 | | | | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | | 30 |
| Link Distance (ft) | | 1088 | | | 1243 | | | 4124 | | | 2821 | |
| Travel Time (s) | | 24.7 | | | 28.3 | | | 93.7 | | | 64.1 | |
| Confl. Peds. (#/hr) | | | | | | | | | 1 | 1 | | |
| Confl. Bikes (#/hr) | | | | | | | | | 1 | | | 2 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 52 | 0 | 0 | 129 | 0 | 5 | 1007 | 0 | 47 | 918 | 0 |
| Turn Type | Split | NA | | pm+pt | NA | | pm+pt | NA | | pm+pt | NA | |
| Protected Phases | 8 | 8 | | 4 | 3 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | | | | 3 | | | 2 | | | 6 | | |
| Detector Phase | 8 | 8 | | 4 | 3 | | 5 | 2 | | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | | 8.0 | 5.0 | | 5.0 | 7.0 | | 5.0 | 7.0 | |
| Minimum Split (s) | 23.0 | 23.0 | | 23.0 | 25.0 | | 10.0 | 23.0 | | 10.0 | 23.0 | |
| Total Split (s) | 10.0 | 10.0 | | 30.0 | 20.0 | | 20.0 | 50.0 | | 20.0 | 50.0 | |
| Total Split (%) | 7.7% | 7.7% | | 23.1% | 15.4% | | 15.4% | 38.5% | | 15.4% | 38.5% | |
| Yellow Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | |
| All-Red Time (s) | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | |
| Lost Time Adjust (s) | | 0.0 | | | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Lost Time (s) | | 5.0 | | | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Lead/Lag | | | | Lag | Lead | | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | | | | Yes | Yes | | Yes | Yes | | Yes | Yes | |
| Recall Mode | None | None | | None | None | | None | Max | | None | Max | |
| Act Effct Green (s) | | 5.0 | | | 8.6 | | 51.5 | 48.7 | | 54.0 | 52.9 | |
| Actuated g/C Ratio | | 0.06 | | | 0.11 | | 0.63 | 0.60 | | 0.66 | 0.65 | |
| v/c Ratio | | 0.39 | | | 0.71 | | 0.01 | 0.49 | | 0.13 | 0.40 | |
| Control Delay | | 31.0 | | | 33.9 | | 6.4 | 12.5 | | 6.8 | 9.1 | |
| Queue Delay | | 0.0 | | | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | | 31.0 | | | 33.9 | | 6.4 | 12.5 | | 6.8 | 9.1 | |
| LOS | | C | | | C | | A | B | | A | A | |
| Approach Delay | | 31.0 | | | 33.9 | | | 12.5 | | | 9.0 | |
| Approach LOS | | C | | | C | | | B | | | A | |

Lanes, Volumes, Timings
6: State Avenue & 128th Street NE

Kendall Subaru








| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|-----|------|-----|-----|------|-----|------|------|-----|------|------|-----|
| Queue Length 50th (ft) | | 11 | | | 14 | | 1 | 164 | | 7 | 98 | |
| Queue Length 95th (ft) | | 48 | | | 73 | | 5 | 268 | | 23 | 230 | |
| Internal Link Dist (ft) | | 1008 | | | 1163 | | | 4044 | | | 2741 | |
| Turn Bay Length (ft) | | | | | | | 200 | | | 200 | | |
| Base Capacity (vph) | | 133 | | | 242 | | 583 | 2076 | | 527 | 2302 | |
| Starvation Cap Reductn | | 0 | | | 0 | | 0 | 0 | | 0 | 0 | |
| Spillback Cap Reductn | | 0 | | | 0 | | 0 | 0 | | 0 | 0 | |
| Storage Cap Reductn | | 0 | | | 0 | | 0 | 0 | | 0 | 0 | |
| Reduced v/c Ratio | | 0.39 | | | 0.53 | | 0.01 | 0.49 | | 0.09 | 0.40 | |

Intersection Summary

Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 81.3
 Natural Cycle: 115
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.71
 Intersection Signal Delay: 12.6
 Intersection Capacity Utilization 58.3%
 Analysis Period (min) 15

Intersection LOS: B
 ICU Level of Service B

Splits and Phases: 6: State Avenue & 128th Street NE

| | | | | |
|---|---|--|--|--|
|  |  |  |  |  |
| 20 s | 50 s | 20 s | 30 s | 10 s |
|  |  | | | |
| 20 s | 50 s | | | |

Lanes, Volumes, Timings

1: Smokey Point Boulevard & 156th Street NE

Kendall Subaru

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|-------|-------|-------|-------|-------|------|-------|-------|------|-------|-------|------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 42 | 5 | 300 | 25 | 21 | 52 | 326 | 888 | 14 | 36 | 873 | 98 |
| Future Volume (vph) | 42 | 5 | 300 | 25 | 21 | 52 | 326 | 888 | 14 | 36 | 873 | 98 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 150 | | 150 | 200 | | 0 | 250 | | 0 | 200 | | 0 |
| Storage Lanes | 1 | | 1 | 1 | | 0 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 |
| Ped Bike Factor | | | | | | | | 1.00 | | | 1.00 | |
| Frt | | | 0.850 | | 0.893 | | | 0.998 | | | 0.985 | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1752 | 1845 | 1568 | 1752 | 1647 | 0 | 1752 | 3497 | 0 | 1752 | 3443 | 0 |
| Flt Permitted | 0.601 | | | 0.754 | | | 0.131 | | | 0.298 | | |
| Satd. Flow (perm) | 1109 | 1845 | 1568 | 1391 | 1647 | 0 | 242 | 3497 | 0 | 550 | 3443 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 319 | | 55 | | | 2 | | | 12 | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 1704 | | | 1283 | | | 1356 | | | 1304 | |
| Travel Time (s) | | 38.7 | | | 29.2 | | | 30.8 | | | 29.6 | |
| Confl. Peds. (#/hr) | | | | | | | 2 | | 1 | 1 | | 2 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles (%) | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 45 | 5 | 319 | 27 | 77 | 0 | 347 | 960 | 0 | 38 | 1033 | 0 |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | | pm+pt | NA | | pm+pt | NA | |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | | 2 | | | 6 | | |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | | 7.0 | 10.0 | | 7.0 | 10.0 | |
| Minimum Split (s) | 12.0 | 25.0 | 25.0 | 12.0 | 25.0 | | 12.0 | 25.0 | | 12.0 | 25.0 | |
| Total Split (s) | 25.0 | 20.0 | 20.0 | 25.0 | 10.0 | | 20.0 | 50.0 | | 20.0 | 50.0 | |
| Total Split (%) | 21.7% | 17.4% | 17.4% | 21.7% | 8.7% | | 17.4% | 43.5% | | 17.4% | 43.5% | |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | |
| All-Red Time (s) | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Lost Time (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | | Yes | Yes | | Yes | Yes | |
| Recall Mode | None | None | None | None | None | | None | Min | | None | Min | |
| Act Effct Green (s) | 13.3 | 10.7 | 10.7 | 11.8 | 8.1 | | 53.3 | 47.0 | | 39.7 | 32.3 | |
| Actuated g/C Ratio | 0.17 | 0.14 | 0.14 | 0.15 | 0.10 | | 0.68 | 0.60 | | 0.51 | 0.41 | |
| v/c Ratio | 0.18 | 0.02 | 0.65 | 0.11 | 0.35 | | 0.74 | 0.46 | | 0.10 | 0.72 | |
| Control Delay | 29.3 | 36.0 | 11.8 | 28.6 | 21.7 | | 27.8 | 12.1 | | 7.3 | 22.8 | |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | 29.3 | 36.0 | 11.8 | 28.6 | 21.7 | | 27.8 | 12.1 | | 7.3 | 22.8 | |
| LOS | C | D | B | C | C | | C | B | | A | C | |
| Approach Delay | | 14.3 | | | 23.5 | | | 16.3 | | | 22.3 | |
| Approach LOS | | B | | | C | | | B | | | C | |

2031 Horizon Year Conditions

PM Peak-Hour

Kimley-Horn and Associates, Inc. [AH 090222176]

Lanes, Volumes, Timings

1: Smokey Point Boulevard & 156th Street NE

Kendall Subaru

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|------|------|------|------|------|-----|------|------|-----|------|------|-----|
| Queue Length 50th (ft) | 19 | 2 | 0 | 11 | 11 | | 98 | 159 | | 6 | 218 | |
| Queue Length 95th (ft) | 51 | 14 | 81 | 35 | 56 | | #311 | 264 | | 20 | 345 | |
| Internal Link Dist (ft) | | 1624 | | | 1203 | | | 1276 | | | 1224 | |
| Turn Bay Length (ft) | 150 | | 150 | 200 | | | 250 | | | 200 | | |
| Base Capacity (vph) | 483 | 378 | 575 | 487 | 373 | | 466 | 2174 | | 577 | 2071 | |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Reduced v/c Ratio | 0.09 | 0.01 | 0.55 | 0.06 | 0.21 | | 0.74 | 0.44 | | 0.07 | 0.50 | |

Intersection Summary

Area Type: Other
 Cycle Length: 115
 Actuated Cycle Length: 78.4
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.74
 Intersection Signal Delay: 18.5
 Intersection Capacity Utilization 66.8%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service C

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























Splits and Phases: 1: Smokey Point Boulevard & 156th Street NE



Lanes, Volumes, Timings

2: Smokey Point Boulevard & 152nd Street NE

Kendall Subaru

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  | |  |  | |  |  |  |  |  |  |
| Traffic Volume (vph) | 12 | 3 | 8 | 134 | 4 | 365 | 7 | 839 | 144 | 354 | 885 | 16 |
| Future Volume (vph) | 12 | 3 | 8 | 134 | 4 | 365 | 7 | 839 | 144 | 354 | 885 | 16 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 50 | | 0 | 125 | | 0 | 150 | | 0 | 200 | | 0 |
| Storage Lanes | 1 | | 0 | 1 | | 0 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 |
| Ped Bike Factor | 1.00 | | | | 0.99 | | | 1.00 | | | 1.00 | |
| Frt | | 0.891 | | | 0.852 | | | 0.978 | | | 0.997 | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1770 | 1660 | 0 | 1770 | 1566 | 0 | 1770 | 3448 | 0 | 1770 | 3527 | 0 |
| Flt Permitted | | | | 0.606 | | | 0.304 | | | 0.144 | | |
| Satd. Flow (perm) | 1862 | 1660 | 0 | 1129 | 1566 | 0 | 566 | 3448 | 0 | 268 | 3527 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 8 | | | 380 | | | 18 | | | 2 | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 209 | | | 5141 | | | 1452 | | | 1356 | |
| Travel Time (s) | | 4.8 | | | 116.8 | | | 33.0 | | | 30.8 | |
| Confl. Peds. (#/hr) | 1 | | | | | 1 | 2 | | 2 | 2 | | 2 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 13 | 11 | 0 | 140 | 384 | 0 | 7 | 1024 | 0 | 369 | 939 | 0 |
| Turn Type | pm+pt | NA | | pm+pt | NA | | pm+pt | NA | | pm+pt | NA | |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | | 8 | | | 2 | | | 6 | | |
| Detector Phase | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 7.0 | | 4.0 | 7.0 | |
| Minimum Split (s) | 9.5 | 27.0 | | 11.5 | 26.0 | | 9.5 | 24.0 | | 9.5 | 26.0 | |
| Total Split (s) | 16.0 | 16.0 | | 16.0 | 40.0 | | 16.0 | 50.0 | | 16.0 | 50.0 | |
| Total Split (%) | 13.1% | 13.1% | | 13.1% | 32.8% | | 13.1% | 41.0% | | 13.1% | 41.0% | |
| Yellow Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | |
| All-Red Time (s) | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Lost Time (s) | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Lead/Lag | Lead | Lag | | Lead | Lag | | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | Yes | Yes | | Yes | Yes | | Yes | Yes | | Yes | Yes | |
| Recall Mode | None | None | | None | None | | None | Min | | None | Min | |
| Act Effct Green (s) | 6.9 | 5.9 | | 11.2 | 9.7 | | 32.8 | 27.4 | | 44.3 | 42.8 | |
| Actuated g/C Ratio | 0.10 | 0.09 | | 0.17 | 0.15 | | 0.50 | 0.42 | | 0.67 | 0.65 | |
| v/c Ratio | 0.07 | 0.07 | | 0.51 | 0.69 | | 0.02 | 0.71 | | 0.83 | 0.41 | |
| Control Delay | 27.7 | 23.9 | | 32.5 | 11.4 | | 6.3 | 19.1 | | 32.6 | 8.1 | |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | 27.7 | 23.9 | | 32.5 | 11.4 | | 6.3 | 19.1 | | 32.6 | 8.1 | |
| LOS | C | C | | C | B | | A | B | | C | A | |
| Approach Delay | | 25.9 | | | 17.1 | | | 19.0 | | | 15.0 | |
| Approach LOS | | C | | | B | | | B | | | B | |
| Queue Length 50th (ft) | 4 | 1 | | 48 | 1 | | 1 | 150 | | 68 | 60 | |

2031 Horizon Year Conditions

PM Peak-Hour

Kimley-Horn and Associates, Inc. [AH 090222176]

Lanes, Volumes, Timings

2: Smokey Point Boulevard & 152nd Street NE

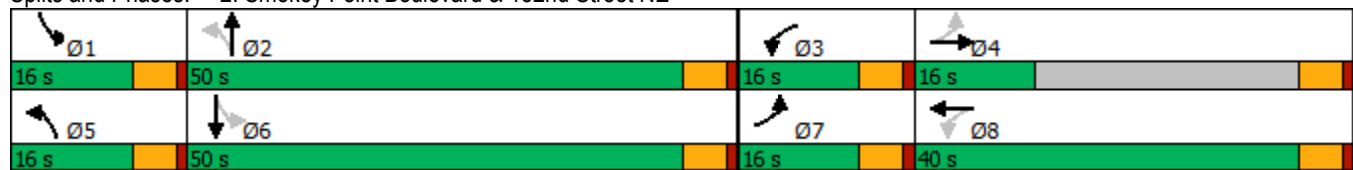
Kendall Subaru

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|------|------|-----|------|------|-----|------|------|-----|------|------|-----|
| Queue Length 95th (ft) | 20 | 18 | | 117 | 86 | | 7 | 320 | | #351 | 253 | |
| Internal Link Dist (ft) | | 129 | | | 5061 | | | 1372 | | | 1276 | |
| Turn Bay Length (ft) | 50 | | | 125 | | | 150 | | | 200 | | |
| Base Capacity (vph) | 356 | 932 | | 350 | 1043 | | 546 | 2485 | | 443 | 2600 | |
| Starvation Cap Reductn | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Spillback Cap Reductn | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Storage Cap Reductn | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Reduced v/c Ratio | 0.04 | 0.01 | | 0.40 | 0.37 | | 0.01 | 0.41 | | 0.83 | 0.36 | |

Intersection Summary

Area Type: Other
 Cycle Length: 122
 Actuated Cycle Length: 66
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.83
 Intersection Signal Delay: 16.9
 Intersection LOS: B
 Intersection Capacity Utilization 82.8%
 ICU Level of Service E
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 2: Smokey Point Boulevard & 152nd Street NE



HCM 6th AWSC
 3: 51st Avenue NE & 152nd Street NE

Kendall Subaru

Intersection





















Intersection Delay, s/veh 138.7
 Intersection LOS F

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|----------------------------|-------|------|------|------|------|------|-------|------|------|------|------|------|
| Lane Configurations | | ↔ | | | ↔ | | | ↔ | | | ↔ | |
| Traffic Vol, veh/h | 50 | 260 | 137 | 69 | 242 | 22 | 174 | 248 | 97 | 38 | 275 | 72 |
| Future Vol, veh/h | 50 | 260 | 137 | 69 | 242 | 22 | 174 | 248 | 97 | 38 | 275 | 72 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 52 | 268 | 141 | 71 | 249 | 23 | 179 | 256 | 100 | 39 | 284 | 74 |
| 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 | 139.9 | | | 66.1 | | | 219.2 | | | 91.6 | | |
| HCM LOS | F | | | F | | | F | | | F | | |

| Lane | NBLn1 | EBLn1 | WBLn1 | SBLn1 |
|------------------------|--------|--------|--------|--------|
| Vol Left, % | 34% | 11% | 21% | 10% |
| Vol Thru, % | 48% | 58% | 73% | 71% |
| Vol Right, % | 19% | 31% | 7% | 19% |
| Sign Control | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 519 | 447 | 333 | 385 |
| LT Vol | 174 | 50 | 69 | 38 |
| Through Vol | 248 | 260 | 242 | 275 |
| RT Vol | 97 | 137 | 22 | 72 |
| Lane Flow Rate | 535 | 461 | 343 | 397 |
| Geometry Grp | 1 | 1 | 1 | 1 |
| Degree of Util (X) | 1.39 | 1.183 | 0.911 | 1.026 |
| Departure Headway (Hd) | 10.098 | 10.478 | 11.534 | 11.058 |
| Convergence, Y/N | Yes | Yes | Yes | Yes |
| Cap | 364 | 350 | 316 | 333 |
| Service Time | 8.098 | 8.478 | 9.534 | 9.058 |
| HCM Lane V/C Ratio | 1.47 | 1.317 | 1.085 | 1.192 |
| HCM Control Delay | 219.2 | 139.9 | 66.1 | 91.6 |
| HCM Lane LOS | F | F | F | F |
| HCM 95th-tile Q | 24.9 | 16.9 | 8.7 | 11.7 |

Lanes, Volumes, Timings 3: 51st Avenue NE & 152nd Street NE

Kendall Subaru

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  | |  |  | |  |  | |  |  | |
| Traffic Volume (vph) | 50 | 260 | 137 | 69 | 242 | 22 | 174 | 248 | 97 | 38 | 275 | 72 |
| Future Volume (vph) | 50 | 260 | 137 | 69 | 242 | 22 | 174 | 248 | 97 | 38 | 275 | 72 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | 0.948 | | | 0.987 | | | 0.958 | | | 0.969 | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1770 | 1766 | 0 | 1770 | 1839 | 0 | 1770 | 1785 | 0 | 1770 | 1805 | 0 |
| Flt Permitted | 0.491 | | | 0.239 | | | 0.274 | | | 0.537 | | |
| Satd. Flow (perm) | 915 | 1766 | 0 | 445 | 1839 | 0 | 510 | 1785 | 0 | 1000 | 1805 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 30 | | | 5 | | | 25 | | | 16 | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 5141 | | | 2552 | | | 1372 | | | 1670 | |
| Travel Time (s) | | 116.8 | | | 58.0 | | | 31.2 | | | 38.0 | |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 52 | 409 | 0 | 71 | 272 | 0 | 179 | 356 | 0 | 39 | 358 | 0 |
| Turn Type | pm+pt | NA | | pm+pt | NA | | pm+pt | NA | | pm+pt | NA | |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | | 8 | | | 2 | | | 6 | | |
| Detector Phase | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Minimum Split (s) | 9.5 | 22.5 | | 9.5 | 22.5 | | 9.5 | 22.5 | | 9.5 | 22.5 | |
| Total Split (s) | 10.0 | 32.0 | | 10.0 | 32.0 | | 14.0 | 38.0 | | 10.0 | 34.0 | |
| Total Split (%) | 11.1% | 35.6% | | 11.1% | 35.6% | | 15.6% | 42.2% | | 11.1% | 37.8% | |
| Yellow Time (s) | 3.5 | 3.5 | | 3.5 | 3.5 | | 3.5 | 3.5 | | 3.5 | 3.5 | |
| All-Red Time (s) | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Lost Time (s) | 4.5 | 4.5 | | 4.5 | 4.5 | | 4.5 | 4.5 | | 4.5 | 4.5 | |
| Lead/Lag | Lead | Lag | | Lead | Lag | | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | Yes | Yes | | Yes | Yes | | Yes | Yes | | Yes | Yes | |
| Recall Mode | None | None | | None | None | | None | Min | | None | Min | |
| Act Effect Green (s) | 24.5 | 20.4 | | 25.4 | 22.6 | | 33.3 | 28.3 | | 25.2 | 19.2 | |
| Actuated g/C Ratio | 0.35 | 0.29 | | 0.36 | 0.32 | | 0.47 | 0.40 | | 0.35 | 0.27 | |
| v/c Ratio | 0.13 | 0.77 | | 0.26 | 0.46 | | 0.44 | 0.49 | | 0.09 | 0.72 | |
| Control Delay | 15.2 | 34.1 | | 17.0 | 24.3 | | 16.6 | 21.2 | | 13.2 | 32.6 | |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | 15.2 | 34.1 | | 17.0 | 24.3 | | 16.6 | 21.2 | | 13.2 | 32.6 | |
| LOS | B | C | | B | C | | B | C | | B | C | |
| Approach Delay | | 32.0 | | | 22.8 | | | 19.6 | | | 30.7 | |
| Approach LOS | | C | | | C | | | B | | | C | |
| Queue Length 50th (ft) | 14 | 158 | | 19 | 101 | | 47 | 126 | | 10 | 142 | |
| Queue Length 95th (ft) | 39 | 301 | | 50 | 198 | | 96 | 228 | | 28 | 253 | |
| Internal Link Dist (ft) | | 5061 | | | 2472 | | | 1292 | | | 1590 | |
| Turn Bay Length (ft) | | | | | | | | | | | | |
| Base Capacity (vph) | 386 | 754 | | 270 | 770 | | 420 | 920 | | 418 | 817 | |
| Starvation Cap Reductn | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |

Lanes, Volumes, Timings
 3: 51st Avenue NE & 152nd Street NE

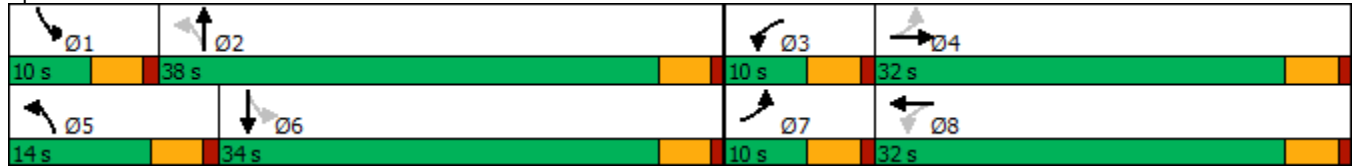
Kendall Subaru

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-----------------------|------|------|-----|------|------|-----|------|------|-----|------|------|-----|
| Spillback Cap Reductn | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Storage Cap Reductn | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Reduced v/c Ratio | 0.13 | 0.54 | | 0.26 | 0.35 | | 0.43 | 0.39 | | 0.09 | 0.44 | |

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 71
 Natural Cycle: 65
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.77
 Intersection Signal Delay: 26.1
 Intersection Capacity Utilization 69.7%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service C























Splits and Phases: 3: 51st Avenue NE & 152nd Street NE



Lanes, Volumes, Timings

4: State Avenue/Smokey Point Boulevard & 136th Street NE

Kendall Subaru

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  |  |  |  | |  |  | |  |  |  |
| Traffic Volume (vph) | 170 | 239 | 77 | 211 | 265 | 174 | 132 | 594 | 230 | 193 | 633 | 225 |
| Future Volume (vph) | 170 | 239 | 77 | 211 | 265 | 174 | 132 | 594 | 230 | 193 | 633 | 225 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 150 | | 150 | 200 | | 0 | 300 | | 0 | 300 | | 0 |
| Storage Lanes | 1 | | 1 | 1 | | 0 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 |
| Ped Bike Factor | | | 0.99 | 1.00 | | | | | | | 0.99 | |
| Frt | | | 0.850 | | 0.940 | | | 0.958 | | | 0.961 | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1752 | 1845 | 1568 | 1752 | 1734 | 0 | 1752 | 3358 | 0 | 1752 | 3347 | 0 |
| Flt Permitted | 0.182 | | | 0.397 | | | 0.155 | | | 0.132 | | |
| Satd. Flow (perm) | 336 | 1845 | 1547 | 732 | 1734 | 0 | 286 | 3358 | 0 | 243 | 3347 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 143 | | 28 | | | 41 | | | 34 | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 981 | | | 4740 | | | 2821 | | | 4424 | |
| Travel Time (s) | | 22.3 | | | 107.7 | | | 64.1 | | | 100.5 | |
| Confl. Peds. (#/hr) | | | 1 | 1 | | | | | | | | |
| Confl. Bikes (#/hr) | | | | | | | | | | | | 2 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Heavy Vehicles (%) | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 173 | 244 | 79 | 215 | 448 | 0 | 135 | 841 | 0 | 197 | 876 | 0 |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | | pm+pt | NA | | pm+pt | NA | |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | | 2 | | | 6 | | |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 | 5.0 | 7.0 | | 5.0 | 7.0 | | 5.0 | 7.0 | |
| Minimum Split (s) | 10.0 | 34.0 | 34.0 | 10.0 | 23.0 | | 10.0 | 35.0 | | 10.0 | 23.0 | |
| Total Split (s) | 15.0 | 35.0 | 35.0 | 30.0 | 40.0 | | 35.0 | 35.0 | | 30.0 | 30.0 | |
| Total Split (%) | 11.5% | 26.9% | 26.9% | 23.1% | 30.8% | | 26.9% | 26.9% | | 23.1% | 23.1% | |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | |
| All-Red Time (s) | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Lost Time (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | | Yes | Yes | | Yes | Yes | |
| Recall Mode | None | None | None | None | None | | None | Max | | None | Max | |
| Act Effct Green (s) | 34.5 | 24.9 | 24.9 | 39.8 | 27.8 | | 40.0 | 30.4 | | 44.4 | 32.5 | |
| Actuated g/C Ratio | 0.35 | 0.25 | 0.25 | 0.40 | 0.28 | | 0.40 | 0.30 | | 0.44 | 0.33 | |
| v/c Ratio | 0.69 | 0.53 | 0.16 | 0.51 | 0.89 | | 0.53 | 0.80 | | 0.69 | 0.79 | |
| Control Delay | 35.7 | 38.2 | 0.8 | 23.5 | 53.6 | | 25.0 | 39.0 | | 32.6 | 36.9 | |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | 35.7 | 38.2 | 0.8 | 23.5 | 53.6 | | 25.0 | 39.0 | | 32.6 | 36.9 | |
| LOS | D | D | A | C | D | | C | D | | C | D | |
| Approach Delay | | 31.3 | | | 43.9 | | | 37.1 | | | 36.1 | |

2031 Horizon Year Conditions

PM Peak-Hour

Kimley-Horn and Associates, Inc. [AH 090222176]

Lanes, Volumes, Timings

4: State Avenue/Smokey Point Boulevard & 136th Street NE

Kendall Subaru

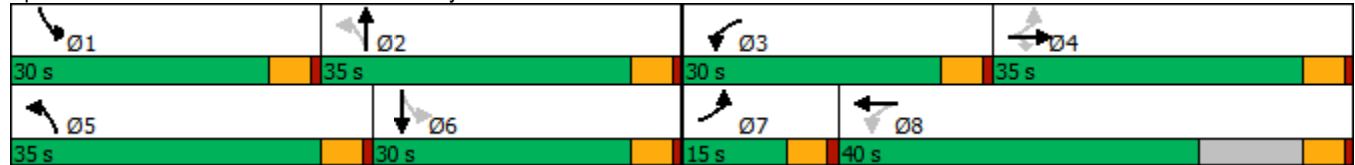
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|------|------|------|------|------|------|------|------|-----|------|------|-----|
| Approach LOS | | C | | | | D | | | | D | | |
| Queue Length 50th (ft) | 68 | 134 | 0 | 87 | 258 | | 49 | 253 | | 74 | 261 | |
| Queue Length 95th (ft) | #157 | 238 | 2 | 151 | #436 | | 94 | #411 | | 153 | #415 | |
| Internal Link Dist (ft) | | 901 | | | | 4660 | | | | 2741 | | |
| Turn Bay Length (ft) | 150 | | 150 | 200 | | | 300 | | | 300 | | |
| Base Capacity (vph) | 261 | 563 | 571 | 569 | 806 | | 581 | 1050 | | 497 | 1114 | |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Reduced v/c Ratio | 0.66 | 0.43 | 0.14 | 0.38 | 0.56 | | 0.23 | 0.80 | | 0.40 | 0.79 | |

Intersection Summary

Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 99.8
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.89
 Intersection Signal Delay: 37.3
 Intersection Capacity Utilization 85.1%
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Intersection LOS: D
 ICU Level of Service E

Splits and Phases: 4: State Avenue/Smokey Point Boulevard & 136th Street NE



Lanes, Volumes, Timings

5: 51st Avenue NE & 136th Street NE/School Exit

Kendall Subaru

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|-------|-------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 210 | 0 | 372 | 0 | 1 | 0 | 278 | 347 | 0 | 0 | 286 | 144 |
| Future Volume (vph) | 210 | 0 | 372 | 0 | 1 | 0 | 278 | 347 | 0 | 0 | 286 | 144 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 150 | | 0 | 0 | | 25 | 150 | | 0 | 0 | | 75 |
| Storage Lanes | 1 | | 1 | 0 | | 1 | 1 | | 0 | 0 | | 1 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | 1.00 | | 0.98 | | | | | | | | | 0.98 |
| Frt | | | 0.850 | | | | | | | | | 0.850 |
| Flt Protected | 0.950 | | | | | | 0.950 | | | | | |
| Satd. Flow (prot) | 1752 | 0 | 1568 | 0 | 1845 | 1845 | 1752 | 1845 | 0 | 0 | 1845 | 1568 |
| Flt Permitted | 0.757 | | | | | | 0.421 | | | | | |
| Satd. Flow (perm) | 1394 | 0 | 1531 | 0 | 1845 | 1845 | 777 | 1845 | 0 | 0 | 1845 | 1535 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 404 | | | | | | | | | 145 |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | | 30 |
| Link Distance (ft) | | 4740 | | | 361 | | | 670 | | | 2819 | |
| Travel Time (s) | | 107.7 | | | 8.2 | | | 15.2 | | | 64.1 | |
| Confl. Peds. (#/hr) | 1 | | 2 | 2 | | | 1 | | | | | |
| Confl. Bikes (#/hr) | | | | | | | 3 | | 4 | | | 1 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles (%) | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 228 | 0 | 404 | 0 | 1 | 0 | 302 | 377 | 0 | 0 | 311 | 157 |
| Turn Type | Perm | | Perm | | NA | Perm | pm+pt | NA | | | NA | Perm |
| Protected Phases | | | | | 8 | | 5 | 2 | | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 8 | 2 | | | | | 6 |
| Detector Phase | 4 | | 4 | 8 | 8 | 8 | 5 | 2 | | | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | | 5.0 | 7.0 | 7.0 | 7.0 | 5.0 | 7.0 | | | 7.0 | 7.0 |
| Minimum Split (s) | 23.0 | | 23.0 | 22.5 | 22.5 | 22.5 | 10.0 | 23.0 | | | 26.0 | 26.0 |
| Total Split (s) | 25.0 | | 25.0 | 35.0 | 35.0 | 35.0 | 10.0 | 35.0 | | | 25.0 | 25.0 |
| Total Split (%) | 35.7% | | 35.7% | 50.0% | 50.0% | 50.0% | 14.3% | 50.0% | | | 35.7% | 35.7% |
| Yellow Time (s) | 4.0 | | 4.0 | 3.0 | 3.0 | 3.0 | 4.0 | 4.0 | | | 4.0 | 4.0 |
| All-Red Time (s) | 1.0 | | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | | | 1.0 | 1.0 |
| Lost Time Adjust (s) | 0.0 | | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | | | 0.0 | 0.0 |
| Total Lost Time (s) | 5.0 | | 5.0 | | 4.0 | 4.0 | 5.0 | 5.0 | | | 5.0 | 5.0 |
| Lead/Lag | | | | | | | Lead | | | | Lag | Lag |
| Lead-Lag Optimize? | | | | | | | Yes | | | | Yes | Yes |
| Recall Mode | None | | None | None | None | None | None | Max | | | Max | Max |
| Act Effct Green (s) | 13.0 | | 13.0 | | 14.0 | | 31.2 | 31.2 | | | 21.1 | 21.1 |
| Actuated g/C Ratio | 0.24 | | 0.24 | | 0.26 | | 0.57 | 0.57 | | | 0.39 | 0.39 |
| v/c Ratio | 0.68 | | 0.60 | | 0.00 | | 0.56 | 0.36 | | | 0.43 | 0.23 |
| Control Delay | 29.4 | | 6.2 | | 14.0 | | 12.4 | 8.4 | | | 15.7 | 4.5 |
| Queue Delay | 0.0 | | 0.0 | | 0.0 | | 0.0 | 0.0 | | | 0.0 | 0.0 |
| Total Delay | 29.4 | | 6.2 | | 14.0 | | 12.4 | 8.4 | | | 15.7 | 4.5 |
| LOS | C | | A | | B | | B | A | | | B | A |
| Approach Delay | | 14.6 | | | 14.0 | | | 10.2 | | | 12.0 | |

2031 Horizon Year Conditions

PM Peak-Hour

Kimley-Horn and Associates, Inc. [AH 090222176]

Lanes, Volumes, Timings

5: 51st Avenue NE & 136th Street NE/School Exit

Kendall Subaru

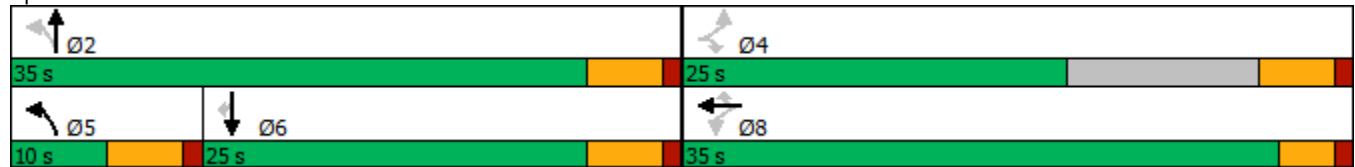
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|------|------|------|-----|------|-----|------|------|-----|-----|------|------|
| Approach LOS | | B | | | B | | | B | | | B | |
| Queue Length 50th (ft) | 66 | | 0 | | 0 | | 43 | 56 | | | 70 | 2 |
| Queue Length 95th (ft) | 126 | | 52 | | 3 | | 107 | 134 | | | 154 | 36 |
| Internal Link Dist (ft) | | 4660 | | | 281 | | | 590 | | | 2739 | |
| Turn Bay Length (ft) | 150 | | | | | | 150 | | | | | 75 |
| Base Capacity (vph) | 775 | | 1030 | | 1059 | | 536 | 1059 | | | 718 | 685 |
| Starvation Cap Reductn | 0 | | 0 | | 0 | | 0 | 0 | | | 0 | 0 |
| Spillback Cap Reductn | 0 | | 0 | | 0 | | 0 | 0 | | | 0 | 0 |
| Storage Cap Reductn | 0 | | 0 | | 0 | | 0 | 0 | | | 0 | 0 |
| Reduced v/c Ratio | 0.29 | | 0.39 | | 0.00 | | 0.56 | 0.36 | | | 0.43 | 0.23 |

Intersection Summary

Area Type: Other
 Cycle Length: 70
 Actuated Cycle Length: 54.3
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.68
 Intersection Signal Delay: 12.2
 Intersection Capacity Utilization 60.4%
 Analysis Period (min) 15

Intersection LOS: B
 ICU Level of Service B

Splits and Phases: 5: 51st Avenue NE & 136th Street NE/School Exit



Lanes, Volumes, Timings
6: State Avenue & 128th Street NE

Kendall Subaru

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|-------|-------|------|-------|-------|------|-------|-------|------|-------|-------|------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 16 | 5 | 30 | 86 | 0 | 40 | 5 | 874 | 125 | 46 | 919 | 1 |
| Future Volume (vph) | 16 | 5 | 30 | 86 | 0 | 40 | 5 | 874 | 125 | 46 | 919 | 1 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 200 | | 0 | 200 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 0 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 25 | | | 25 | | | 25 | | | 25 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 |
| Ped Bike Factor | | | | | | | | 1.00 | | | 1.00 | |
| Frt | | 0.920 | | | 0.957 | | | 0.981 | | | | |
| Flt Protected | | 0.985 | | | 0.967 | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 0 | 1688 | 0 | 0 | 1724 | 0 | 1770 | 3460 | 0 | 1770 | 3539 | 0 |
| Flt Permitted | | 0.985 | | | 0.481 | | 0.272 | | | 0.214 | | |
| Satd. Flow (perm) | 0 | 1688 | 0 | 0 | 857 | 0 | 507 | 3460 | 0 | 399 | 3539 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 31 | | | 101 | | | 13 | | | | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | | 30 |
| Link Distance (ft) | | 1088 | | | 1243 | | | 4124 | | | | 2821 |
| Travel Time (s) | | 24.7 | | | 28.3 | | | 93.7 | | | | 64.1 |
| Confl. Peds. (#/hr) | | | | | | | | | 1 | 1 | | |
| Confl. Bikes (#/hr) | | | | | | | | | 1 | | | 2 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 52 | 0 | 0 | 129 | 0 | 5 | 1020 | 0 | 47 | 939 | 0 |
| Turn Type | Split | NA | | pm+pt | NA | | pm+pt | NA | | pm+pt | NA | |
| Protected Phases | 8 | 8 | | 4 | 3 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | | | | 3 | | | 2 | | | 6 | | |
| Detector Phase | 8 | 8 | | 4 | 3 | | 5 | 2 | | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 5.0 | | 8.0 | 5.0 | | 5.0 | 7.0 | | 5.0 | 7.0 | |
| Minimum Split (s) | 23.0 | 23.0 | | 23.0 | 25.0 | | 10.0 | 23.0 | | 10.0 | 23.0 | |
| Total Split (s) | 10.0 | 10.0 | | 30.0 | 20.0 | | 20.0 | 50.0 | | 20.0 | 50.0 | |
| Total Split (%) | 7.7% | 7.7% | | 23.1% | 15.4% | | 15.4% | 38.5% | | 15.4% | 38.5% | |
| Yellow Time (s) | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | | 4.0 | 4.0 | |
| All-Red Time (s) | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | |
| Lost Time Adjust (s) | | 0.0 | | | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Lost Time (s) | | 5.0 | | | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | |
| Lead/Lag | | | | Lag | Lead | | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | | | | Yes | Yes | | Yes | Yes | | Yes | Yes | |
| Recall Mode | None | None | | None | None | | None | Max | | None | Max | |
| Act Effct Green (s) | | 5.0 | | | 8.6 | | 51.5 | 48.7 | | 54.0 | 52.9 | |
| Actuated g/C Ratio | | 0.06 | | | 0.11 | | 0.63 | 0.60 | | 0.66 | 0.65 | |
| v/c Ratio | | 0.39 | | | 0.71 | | 0.01 | 0.49 | | 0.13 | 0.41 | |
| Control Delay | | 31.0 | | | 33.9 | | 6.4 | 12.6 | | 6.9 | 9.1 | |
| Queue Delay | | 0.0 | | | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | | 31.0 | | | 33.9 | | 6.4 | 12.6 | | 6.9 | 9.1 | |
| LOS | | C | | | C | | A | B | | A | A | |
| Approach Delay | | 31.0 | | | 33.9 | | | 12.5 | | | 9.0 | |
| Approach LOS | | C | | | C | | | B | | | A | |

2031 Horizon Year Conditions
Kimley-Horn and Associates, Inc. [AH 090222176]

PM Peak-Hour

Lanes, Volumes, Timings
6: State Avenue & 128th Street NE

Kendall Subaru








| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|-----|------|-----|-----|------|-----|------|------|-----|------|------|-----|
| Queue Length 50th (ft) | | 11 | | | 14 | | 1 | 167 | | 7 | 102 | |
| Queue Length 95th (ft) | | 48 | | | 73 | | 5 | 273 | | 23 | 236 | |
| Internal Link Dist (ft) | | 1008 | | | 1163 | | | 4044 | | | 2741 | |
| Turn Bay Length (ft) | | | | | | | 200 | | | 200 | | |
| Base Capacity (vph) | | 133 | | | 242 | | 576 | 2076 | | 523 | 2302 | |
| Starvation Cap Reductn | | 0 | | | 0 | | 0 | 0 | | 0 | 0 | |
| Spillback Cap Reductn | | 0 | | | 0 | | 0 | 0 | | 0 | 0 | |
| Storage Cap Reductn | | 0 | | | 0 | | 0 | 0 | | 0 | 0 | |
| Reduced v/c Ratio | | 0.39 | | | 0.53 | | 0.01 | 0.49 | | 0.09 | 0.41 | |

Intersection Summary

Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 81.3
 Natural Cycle: 115
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.71
 Intersection Signal Delay: 12.7
 Intersection Capacity Utilization 58.7%
 Analysis Period (min) 15

Intersection LOS: B
 ICU Level of Service B

Splits and Phases: 6: State Avenue & 128th Street NE

| | | | | |
|---|---|--|--|--|
| Ø1  | Ø2  | Ø3  | Ø4  | Ø8  |
| 20 s | 50 s | 20 s | 30 s | 10 s |
| Ø5  | Ø6  | | | |
| 20 s | 50 s | | | |

HCM 6th TWSC
7: Smokey Point Boulevard & Site Access

Kendall Subaru

Intersection

| | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 1.5 | | | | | |
| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
| Lane Configurations | TT | | TT | | TT | TT |
| Traffic Vol, veh/h | 74 | 25 | 933 | 49 | 16 | 933 |
| Future Vol, veh/h | 74 | 25 | 933 | 49 | 16 | 933 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | 100 | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 80 | 27 | 1014 | 53 | 17 | 1014 |

| | | | | | |
|----------------------|--------|--------|--------|---|------|
| Major/Minor | Minor1 | Major1 | Major2 | | |
| Conflicting Flow All | 1582 | 534 | 0 | 0 | 1067 |
| Stage 1 | 1041 | - | - | - | - |
| Stage 2 | 541 | - | - | - | - |
| Critical Hdwy | 6.84 | 6.94 | - | - | 4.14 |
| Critical Hdwy Stg 1 | 5.84 | - | - | - | - |
| Critical Hdwy Stg 2 | 5.84 | - | - | - | - |
| Follow-up Hdwy | 3.52 | 3.32 | - | - | 2.22 |
| Pot Cap-1 Maneuver | 99 | 491 | - | - | 649 |
| Stage 1 | 301 | - | - | - | - |
| Stage 2 | 548 | - | - | - | - |
| Platoon blocked, % | | | | | |
| Mov Cap-1 Maneuver | 96 | 491 | - | - | 649 |
| Mov Cap-2 Maneuver | 215 | - | - | - | - |
| Stage 1 | 301 | - | - | - | - |
| Stage 2 | 534 | - | - | - | - |

| | | | |
|----------------------|------|----|-----|
| Approach | WB | NB | SB |
| HCM Control Delay, s | 29.7 | 0 | 0.2 |
| HCM LOS | D | | |

| | | | | |
|-----------------------|-----|----------|-------|-------|
| Minor Lane/Major Mvmt | NBT | NBRWBLn1 | SBL | SBT |
| Capacity (veh/h) | - | - | 251 | 649 |
| HCM Lane V/C Ratio | - | - | 0.429 | 0.027 |
| HCM Control Delay (s) | - | - | 29.7 | 10.7 |
| HCM Lane LOS | - | - | D | B |
| HCM 95th %tile Q(veh) | - | - | 2 | 0.1 |

WSDOT Exhibit C List

LIST OF PROGRAMMED
WSDOT PROJECTS IN
SNOHOMISH COUNTY
AS OF Nov. 2008

| County ID# | TSA | SR | MP1 | MP2 | Title/Description | Design/Construction year | Total Cost (M) | TOTAL CAPACITY (ADT) | PRESENT VOLUME | RESERVE CAPACITY (ADT) | TRUE CONTRIBUTION PER ADT | 50% TRIP END DEDUCTION | TAX DEDUCTION | Proportionate Share Per Development Generated ADT |
|------------|-----|-----|--------|--------|---|--------------------------|----------------|----------------------|----------------|------------------------|---------------------------|------------------------|---------------|---|
| DOT-11 | D | 5 | 186.42 | 186.42 | 128th ST SW Interchange - Construct Loop Ramps / HOV Bypass | 2014 | \$13.30 | 99,000 | 65,000 | 34,000 | \$391.18 | \$195.15 | \$40.98 | \$154.17 |
| DOT-01 | A | 5 | 205.85 | 205.85 | 172nd Street NE (SR 531) interchange improvements, SB loop ramp, bridge widening | 2009 | \$41.00 | 90,000 | 34,900 | 55,100 | \$744.10 | \$372.05 | \$63.25 | \$308.80 |
| DOT-30 | E | 9 | 1.66 | 4.04 | 212th Street SE to 176th Street SE, widen to 5 lanes | 2011 | \$80.80 | 54,000 | 21,000 | 33,000 | 2,448.48 | \$1,224.24 | \$183.64 | \$1,040.60 |
| DOT-56 | B | 9 | 16.48 | 17.49 | Lundeen Parkway to SR-92, Widen to 4 lanes & RT-LT lanes | 2009 | \$38.90 | 54,000 | 24,000 | 30,000 | \$1,296.67 | \$648.34 | \$123.18 | \$525.16 |
| DOT-37 | B | 9 | 17.96 | 17.96 | SR-9 at 60th Street NE, add LT & RT lanes at Tee intersection | 2011 | \$2.95 | 54,000 | 36,000 | 18,000 | \$163.89 | \$81.95 | \$13.91 | \$67.94 |
| DOT-22 | A | 9 | 18.88 | 19.46 | SR 9/SR 528 intersection improvements, Signal & Channelization | 2010 | \$17.13 | 54,000 | 36,000 | 18,000 | \$951.67 | \$475.83 | \$80.89 | \$394.94 |
| DOT-57 | A | 9 | 20.51 | 20.59 | SR-9/84th Street NE intersection improvements, LT & RT lanes | 2011 | \$17.13 | 54,000 | 12,000 | 42,000 | \$407.88 | \$203.93 | \$55.06 | \$148.87 |
| DOT-58 | A | 9 | 26.00 | 26.09 | SR-9/SR-531/172nd St. NE intersection improvement, Roundabout | 2011 | \$15.60 | 54,000 | 11,000 | 43,000 | \$362.80 | \$181.40 | \$45.87 | \$135.53 |
| DOT-33 | B | 92 | 1.46 | 1.46 | SR-92 at 113th Avenue NE, Roundabout | 2009 | \$2.36 | 54,000 | 19,600 | 34,000 | \$68.60 | \$34.30 | \$6.52 | \$27.78 |
| DOT-31 | B | 92 | 1.73 | 1.73 | SR-92 at Callow/Grade Road, turn lanes to SR-92 | 2009 | \$1.90 | 54,000 | 19,600 | 34,400 | \$55.24 | \$27.62 | \$5.25 | \$22.37 |
| DOT-46 | C | 203 | 22.36 | 22.38 | SR-203 at North High Rock/Tualco Roads, Re-align cross street for I/S and add LT & RT lanes on SR-203 | 2009 | \$3.34 | 18,000 | 13,000 | 5,000 | \$688.00 | \$344.00 | \$73.48 | \$270.52 |
| DOT-36 | C | 203 | 23.01 | 23.01 | Ben Howard Rd channelization, LT lanes on SR-203 | 2009 | \$1.07 | 54,000 | 13,000 | 41,000 | \$26.10 | \$13.05 | \$2.87 | \$10.18 |
| DOT-16 | E | 522 | 13.82 | 16.61 | Paradise Lake Road I/C, Stage 3, new interchange | 2010 | \$27.95 | 81,000 | 48,000 | 33,000 | \$847.03 | \$423.52 | \$63.53 | \$359.99 |
| DOT-17 | E | 522 | 16.80 | 20.41 | Paradise Lake Road to Snohomish River, Bridge, Stage 2, widen to 4 lanes | 2009 | \$33.48 | 80,000 | 21,900 | 58,100 | \$576.25 | \$288.13 | \$43.22 | \$244.91 |
| DOT-28 | C | 522 | 20.50 | 24.68 | Snohomish River Bridge to SR 2, widen to 4 lanes | 2010 | \$171.98 | 80,000 | 20,000 | 60,000 | \$2,866.33 | \$1,433.17 | \$315.30 | \$1,117.87 |

