

**Kimley»»Horn**

22722 29<sup>th</sup> Drive SE  
Suite 100  
Bothell, WA 98021  
425.339.8266

# Quality Auto Center Traffic Impact Analysis

**Jurisdiction: City of Marysville**

**February 2022**



090221277

**TABLE OF CONTENTS**

- 1. DEVELOPMENT IDENTIFICATION ..... 1
- 2. METHODOLOGY ..... 1
- 3. TRIP GENERATION ..... 3
- 4. TRIP DISTRIBUTION ..... 4
  - 4.1 2025 Opening Year ..... 4
  - 4.2 2031 Horizon Year ..... 7
  - 4.3 Snohomish County Key Intersection Impacts ..... 7
- 5. INTERSECTION LEVEL OF SERVICE ANALYSIS ..... 7
  - 5.1 Turning Movement Calculations ..... 11
  - 5.2 Level of Service Calculations ..... 11
- 6. ACCESS ANALYSIS ..... 17
- 7. TRAFFIC MITIGATION FEES ..... 17
  - 7.1 City of Marysville ..... 17
  - 7.2 Snohomish County ..... 18
  - 7.3 Washington State Department of Transportation ..... 18
- 8. CONCLUSIONS ..... 18

**LIST OF FIGURES**

- Figure 1: Site Vicinity Map ..... 2
- Figure 2: Opening Year Trip Distribution – Weekday AM Peak-Hour ..... 5
- Figure 3: Opening Year Trip Distribution – Weekday PM Peak- Hour ..... 6
- Figure 4: 2031 Horizon Year Trip Distribution – Weekday AM Peak-Hour ..... 8
- Figure 5: 2031 Horizon Year Trip Distribution – Weekday PM Peak-Hour ..... 9
- Figure 6: Study Intersections ..... 10
- Figure 7: Existing Turning Movements ..... 12
- Figure 8: 2025 Baseline Turning Movements ..... 13
- Figure 9: 2025 Opening Year Turning Movements ..... 14
- Figure 10: 2031 Baseline Turning Movements ..... 15
- Figure 11: 2031 Horizon Year Turning Movements ..... 16

**LIST OF TABLES**

- Table 1: Level of Service Criteria ..... 3
- Table 2: Trip Generation Summary - Weekday ..... 4
- Table 3: Level of Service Summary – 2025 Opening Year Conditions ..... 11
- Table 4: Level of Service Summary – 2031 Horizon Year Conditions ..... 17

ATTACHMENTS

Site Plan .....A  
Count Data .....B  
Weekday PM Peak-Hour Turning Movement Calculations .....C  
Weekday PM Peak-Hour Level of Service Calculations .....D  
WSDOT Exhibit C List.....E  
Snohomish County Key Intersections..... F

## 1. DEVELOPMENT IDENTIFICATION

Kimley-Horn and Associates, Inc. has been retained to provide a traffic impact analysis for the proposed Quality Auto Center 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 Quality Auto Center development is located along the east side of Smokey Point Boulevard, north of 152<sup>nd</sup> Street NE. A site vicinity map is included in Figure 1. The development is proposed to consist of 23,609 square-foot (SF) used 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, 11<sup>th</sup> 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) 6<sup>th</sup> 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.



**Table 1: Level of Service Criteria**

Level of <sup>1</sup> 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 <sup>2</sup>	>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.

### 3. TRIP GENERATION

The trip generation calculations for the Quality Auto Center development are based on data published by the Institute of Transportation Engineers (ITE) in the *Trip Generation Manual, 11<sup>th</sup> Edition (2021)*. The average trip generation rates for ITE Land Use Code 841, Automobile Sales (Used), were used for the trip generation calculations. The weekday trip generation calculations for the Quality Auto Center development are summarized in Table 2.

<sup>1</sup> **Source:** *Highway Capacity Manual 6<sup>th</sup> 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.

<sup>2</sup> 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**

23,609 SF Automobile Sales (Used)	Average Daily Trips			AM Peak-Hour Trips			PM Peak-Hour Trips		
	Inbound	Outbound	Total	Inbound	Outbound	Total	Inbound	Outbound	Total
Generation Rate	27.06 trips per 1,000 SF			2.13 trips per 1,000 SF			3.75 trips per 1,000 SF		
Splits	50%	50%	100%	24%	76%	100%	47%	53%	100%
Trips	319.43	319.43	638.86	38.22	12.07	50.29	41.61	46.92	88.53

The Quality Auto Center development is anticipated to generate approximately 639 average daily trips with 50 AM peak-hour trips and 89 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

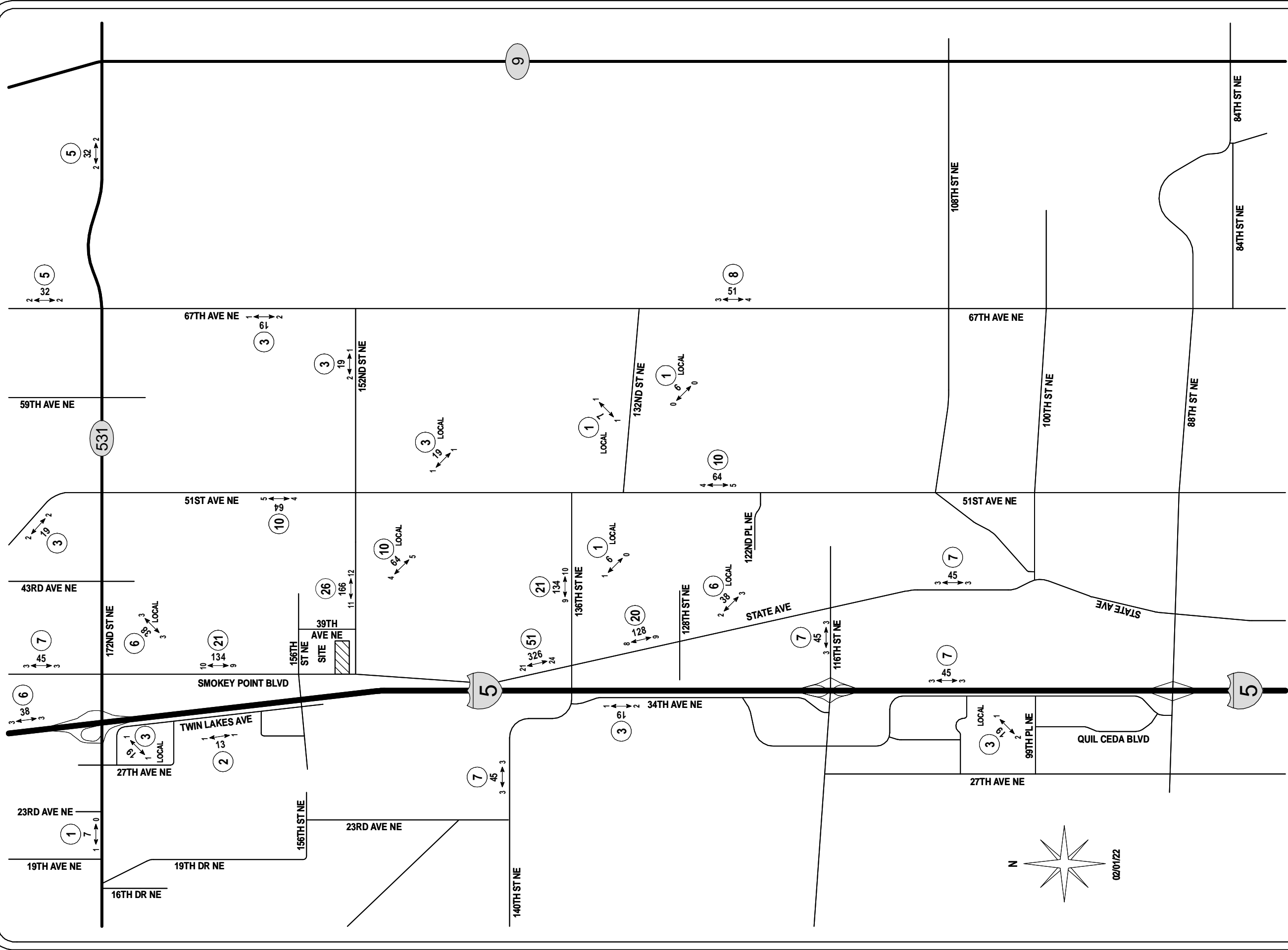
The trip distribution for the Quality Auto Center development is based on distributions provided by the City of Marysville for new developments in the site vicinity based on the MIC South distribution. The trip distribution has been evaluated for the 2025 Opening Year conditions and the 2031 Horizon 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 152<sup>nd</sup> 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.







TRAFFIC IMPACT STUDY  
KH #090221277

QUALITY AUTO CENTER

CITY OF MARYSVILLE

LEGEND

AWDT  
PM ← → PEAK

XX

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 156<sup>th</sup> 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 152<sup>nd</sup> 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 152<sup>nd</sup> Street NE and ten percent along 160<sup>th</sup> 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.

## 4.3 Snohomish County Key Intersection Impacts

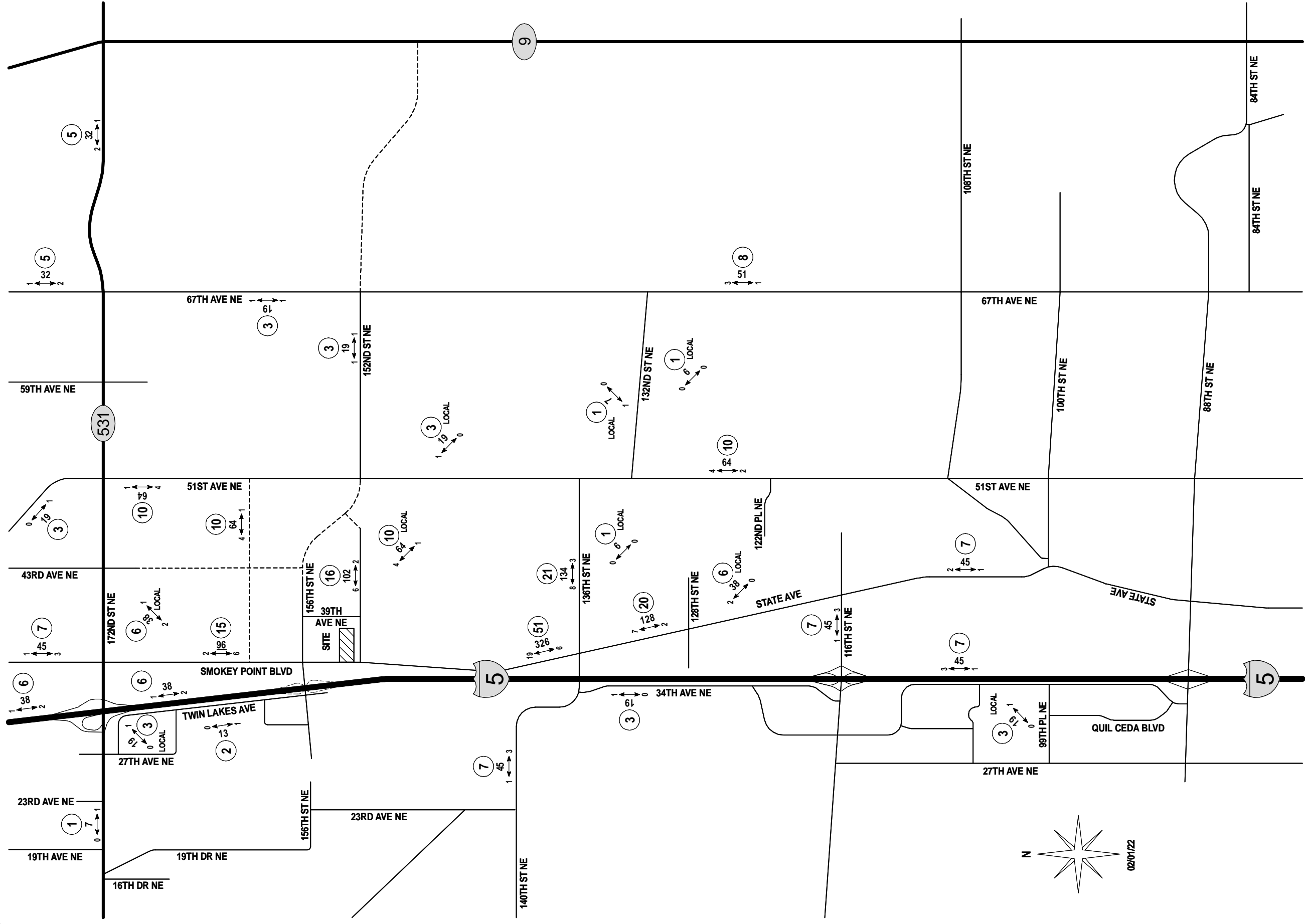
The interlocal agreement between the City of Marysville and Snohomish County requires detailed development trip turning movement data at Snohomish County key intersections impacted with three or more directional trips on an approach or departure. The trips from the Quality Auto Center development will impact 5 key intersections during the weekday AM and PM peak-hours. The turning movement volumes at the key intersections are shown in graphical and tabular form in the attachments.

## 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. 156<sup>th</sup> Street NE at Smokey Point Boulevard – Signalized
2. 152<sup>nd</sup> Street NE at Smokey Point Boulevard – Signalized
3. 136<sup>th</sup> Street NE at Smokey Point Boulevard – Signalized
4. Site Access at Smokey Point Boulevard – Two-Way Stop-Control

The study intersections have been analyzed for the 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.



TRAFFIC IMPACT STUDY  
KH #090221277

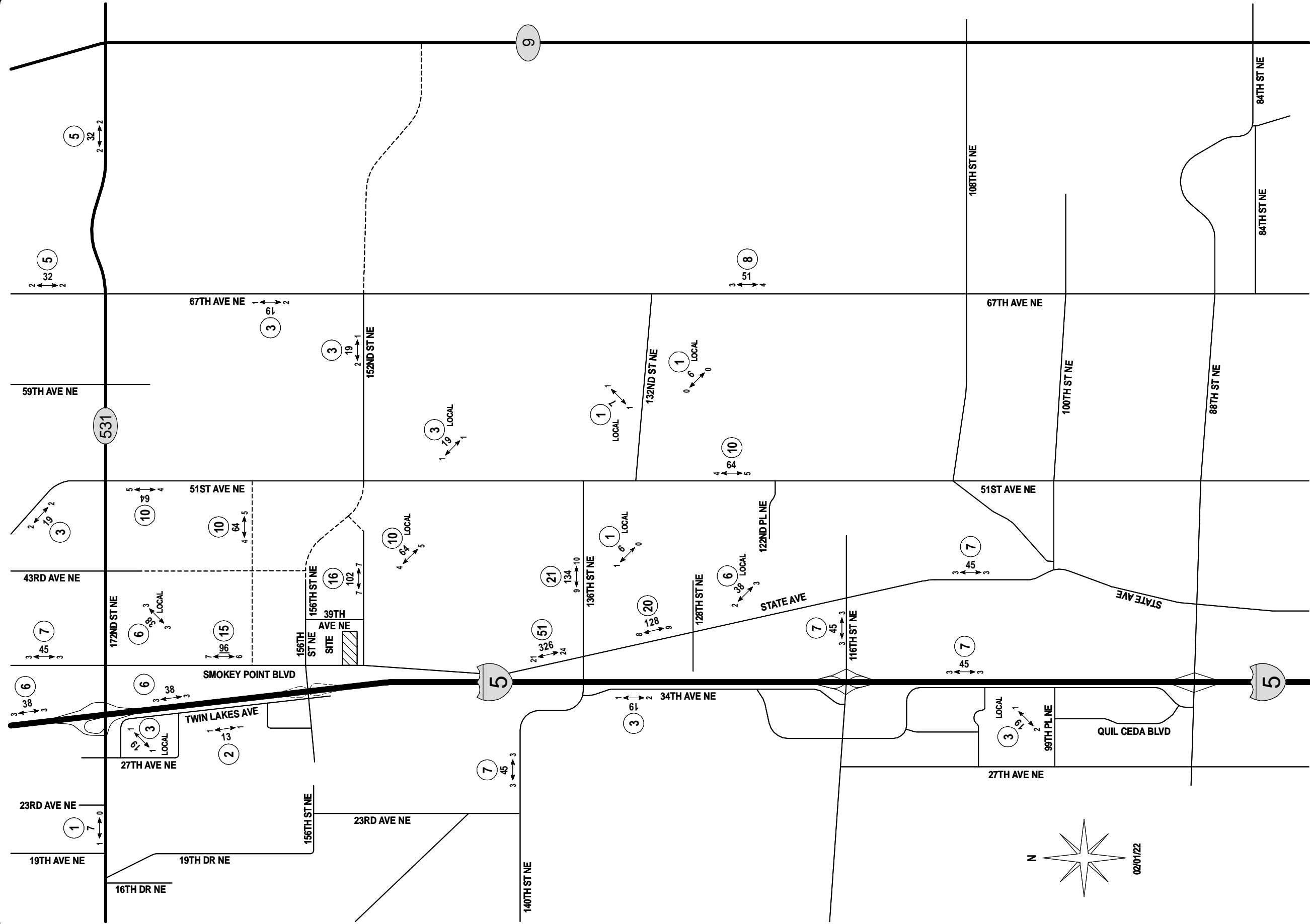
QUALITY AUTO CENTER

CITY OF MARYSVILLE

**LEGEND**  
AWDT  
AM ← → PEAK  
XX

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

**FIGURE 4**  
HORIZON YEAR  
TRIP DISTRIBUTION  
AM PEAK-HOUR



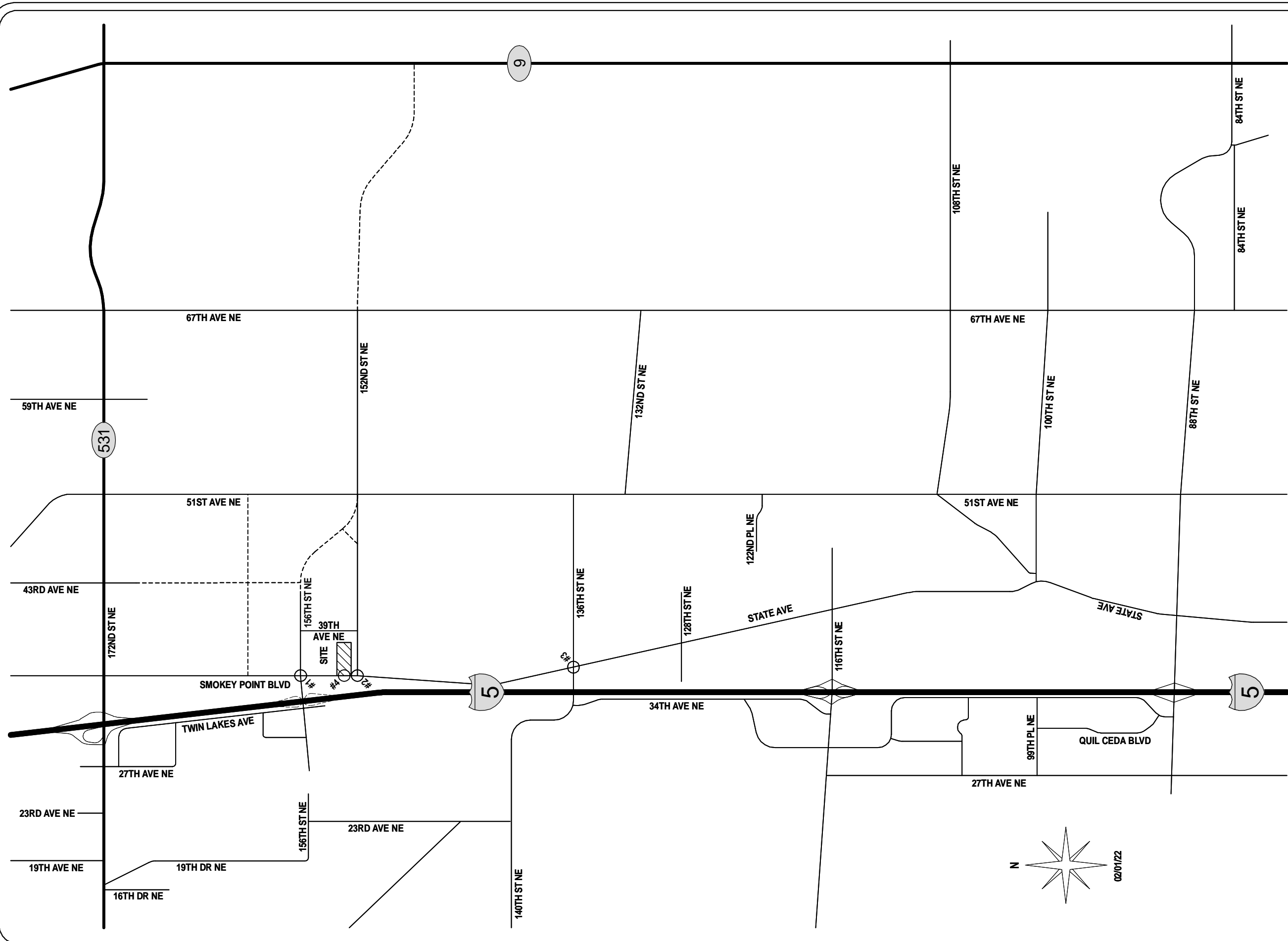
LEGEND

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

XX

FIGURE 5

HORIZON YEAR  
TRIP DISTRIBUTION  
PM PEAK-HOUR





TRAFFIC IMPACT STUDY  
KH #090221277

QUALITY AUTO CENTER  
CITY OF MARYSVILLE

FIGURE 6  
STUDY INTERSECTIONS

**LEGEND**

-  DEVELOPMENT SITE
-  STUDY INTERSECTION

## 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 July 2019.

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

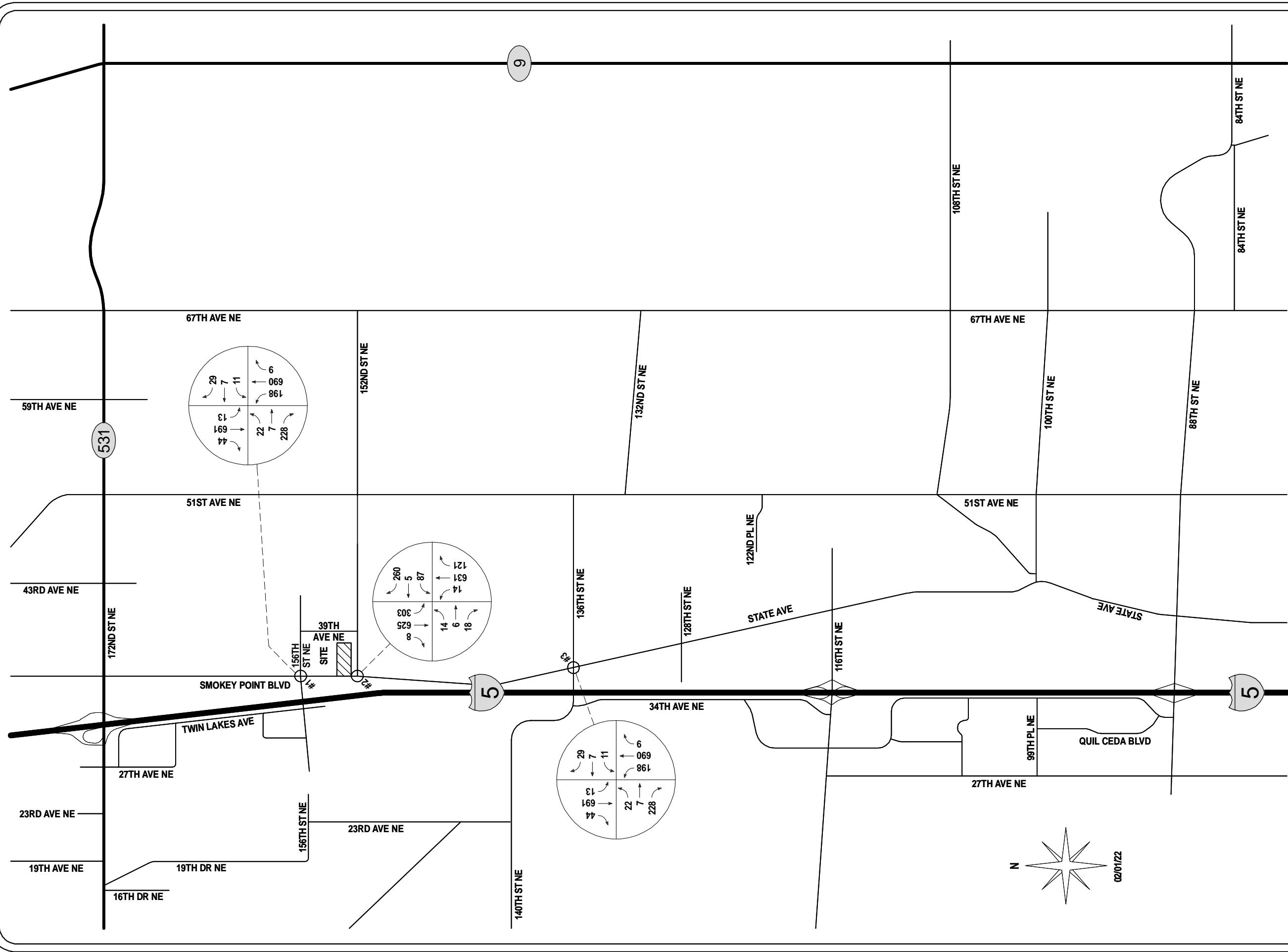
## 5.2 Level of Service Calculations

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.

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

Intersection	Control	Existing Conditions		2025 Baseline Conditions		2025 Opening Year Conditions	
		LOS	Delay	LOS	Delay	LOS	Delay
1. 156 <sup>th</sup> Street NE at Smokey Point Boulevard	Signal	B	12.9 sec	B	13.2 sec	B	13.2 sec
2. 152 <sup>nd</sup> Street NE at Smokey Point Boulevard	Signal	B	14.1 sec	B	15.8 sec	B	16.3 sec
3. 136 <sup>th</sup> Street NE at Smokey Point Boulevard	Signal	B	12.1 sec	B	13.3 sec	B	14.0 sec
4. Site Access at Smokey Point Boulevard	Two-Way Stop-Control	---	---	---	---	D	25.8 sec

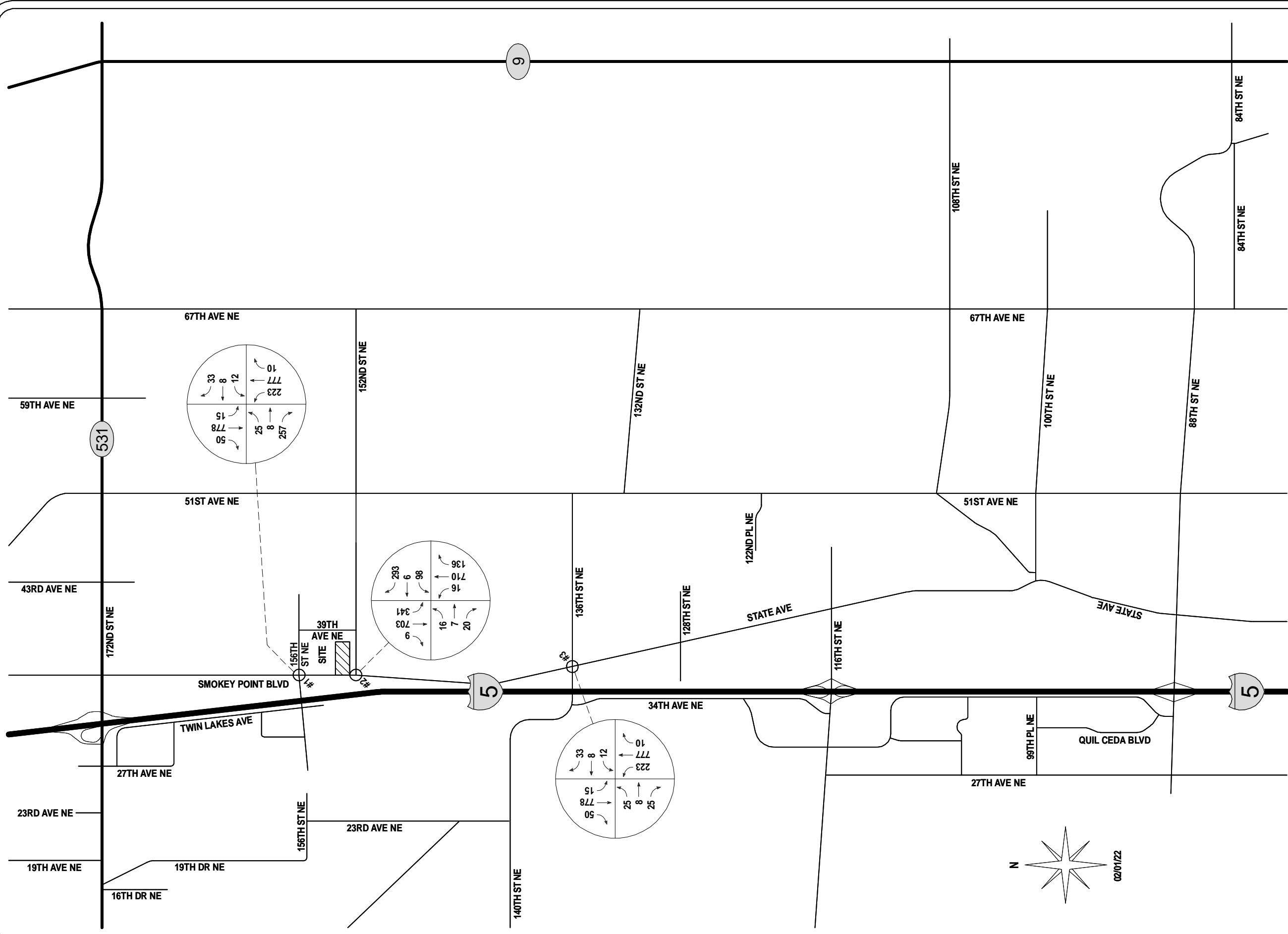
The intersection level of service for the existing and 2031 horizon year conditions is summarized in Table 5.



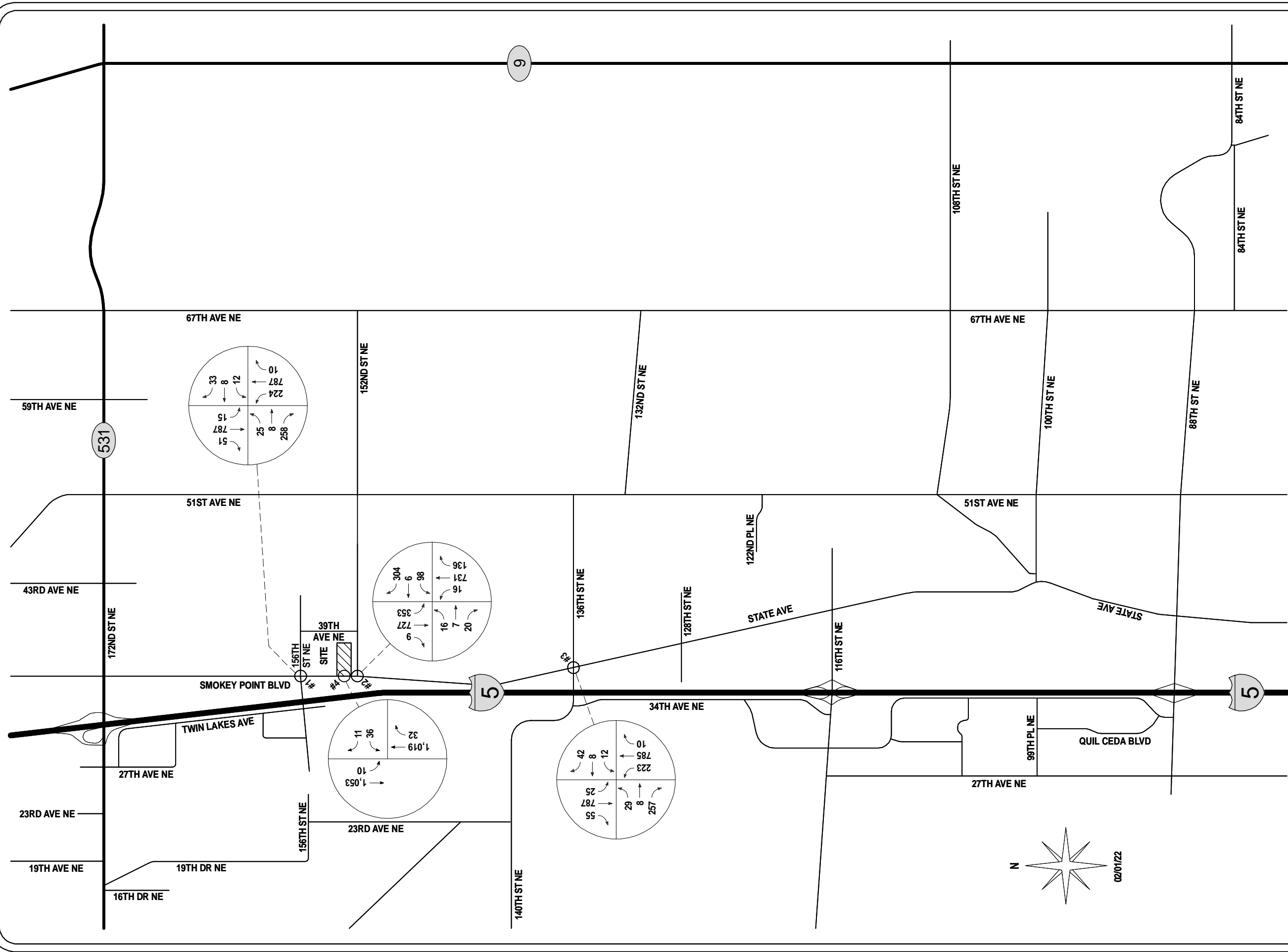
TRAFFIC IMPACT STUDY  
KH #090221277

QUALITY AUTO CENTER  
CITY OF MARYSVILLE

**FIGURE 7**  
EXISTING  
TURNING MOVEMENTS





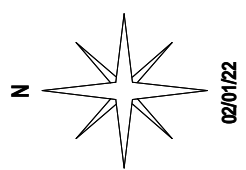


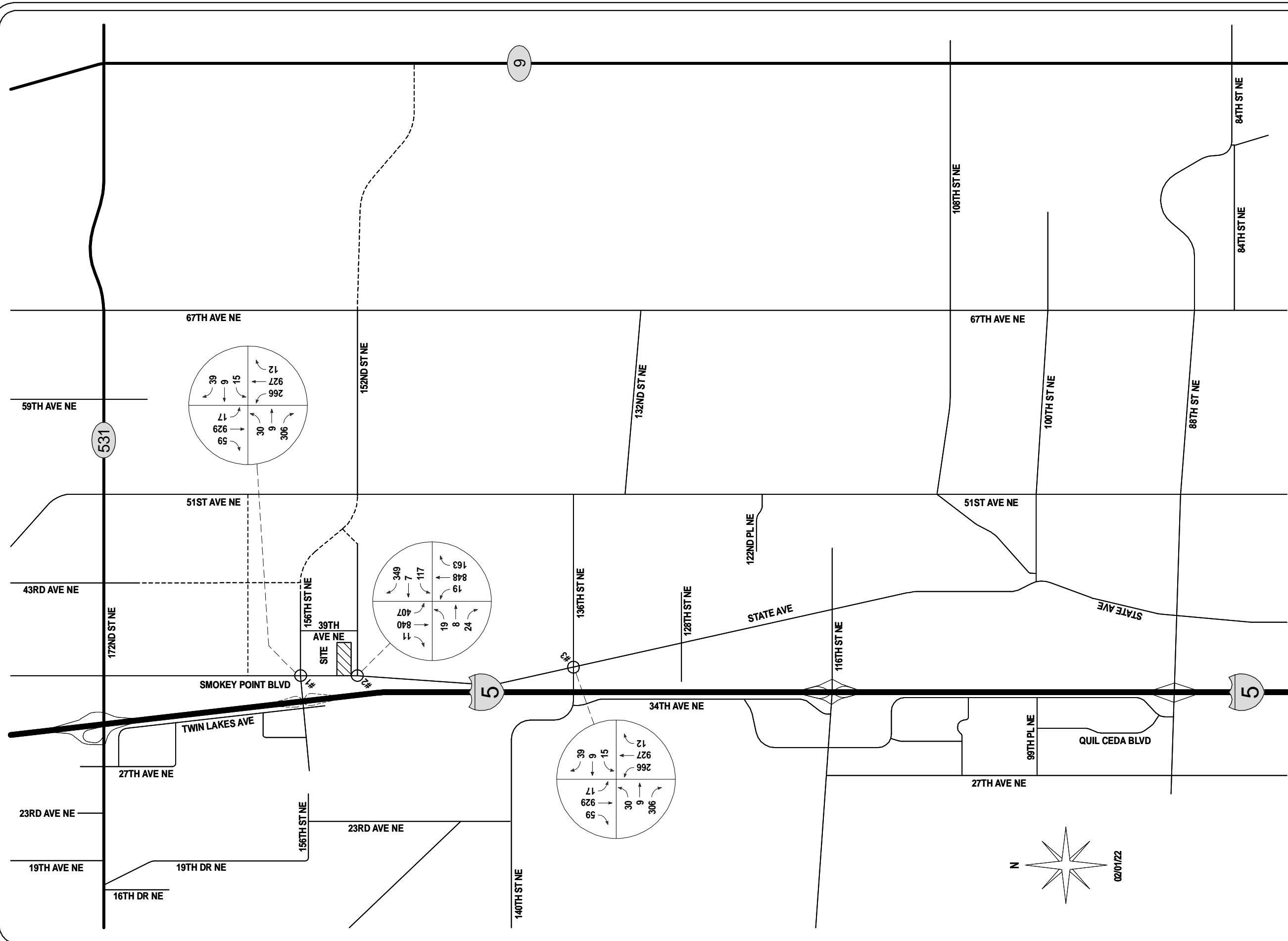
TRAFFIC IMPACT STUDY  
KH #090221277

QUALITY AUTO CENTER  
CITY OF MARYSVILLE

**FIGURE 9**  
2025 OPENING YEAR  
TURNING MOVEMENTS

**LEGEND**  
PM PEAK-HOUR  
TURNING MOVEMENT VOLUMES  
XXX →



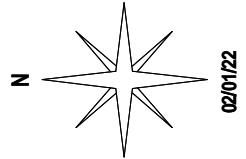


TRAFFIC IMPACT STUDY  
KH #090221277

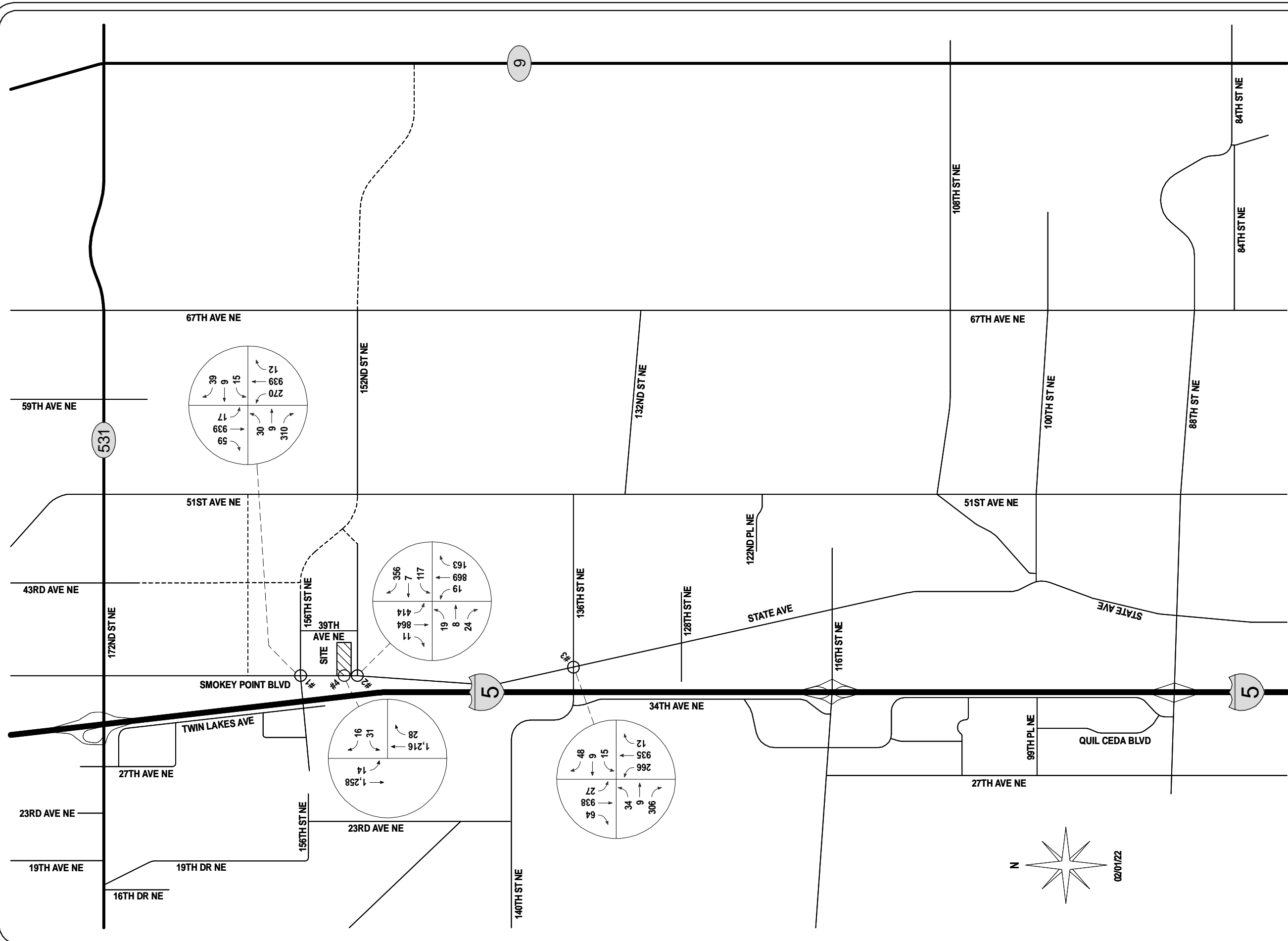
QUALITY AUTO CENTER  
CITY OF MARYSVILLE

**FIGURE 10**  
2031 BASELINE  
TURNING MOVEMENTS

**LEGEND**  
PM PEAK-HOUR  
TURNING MOVEMENT VOLUMES  
XXX →



02/01/22



TRAFFIC IMPACT STUDY  
KH #090221277

QUALITY AUTO CENTER

CITY OF MARYSVILLE

**FIGURE 11**  
2031 HORIZON YEAR  
TURNING MOVEMENTS

**LEGEND**  
PM PEAK-HOUR  
TURNING MOVEMENT VOLUMES  
XXX →

02/01/22

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

Intersection	Control	Existing Conditions		2031 Baseline Conditions		2031 Horizon Year Conditions	
		LOS	Delay	LOS	Delay	LOS	Delay
1. 156 <sup>th</sup> Street NE at Smokey Point Boulevard	Signal	B	12.9 sec	B	15.0 sec	B	15.3 sec
2. 152 <sup>nd</sup> Street NE at Smokey Point Boulevard	Signal	B	14.1 sec	C	26.1 sec	C	27.8 sec
3. 136 <sup>th</sup> Street NE at Smokey Point Boulevard	Signal	B	12.1 sec	B	16.7 sec	B	18.7 sec
4. Site Access at Smokey Point Boulevard	Two-Way Stop-Control	---	---	---	---	D	31.1 sec

The level of service calculations are included in the attachments.

## 6. ACCESS ANALYSIS

The Quality Auto Center development only has frontage along Smokey Point Boulevard. There is one access proposed in the northern area of the site. The analysis shows that this access is anticipated to operate at LOS D, as shown in Table 4 and Table 5. This analysis was performed without a use of the center left-turn lane, other than for southbound left-turns into the development. 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 residential rate of \$2,220 per PM peak-hour trip for commercial developments. The Quality Auto Center development is proposed to generate 88.53 PM peak-hour trips, reduced to 66.40 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 \$147,408.00.

## 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. There is only one Snohomish County improvement project identified in the Snohomish County *Transportation Needs Report* that is anticipated to be impacted 3 directional PM peak-hour trips generated by the Quality Auto Center development. This improvement is the intersection of 140<sup>th</sup> Street NE at 23<sup>rd</sup> Avenue NE. This intersection is anticipated to be impacted by 45 weekday daily trips (Figure 3 and Figure 6). The current Snohomish County fee for developments located in the City of Marysville is \$157 per daily trip. The impact of 45 average daily trips therefore results in a Snohomish County traffic mitigation fee of \$7,065.00.

## 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 Quality Auto Center development. These improvements are the 172<sup>nd</sup> Street NE/SR-531 corridor improvements and the 156<sup>th</sup> 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 Quality Auto Center development.

## 8. CONCLUSIONS

The Quality Auto Center development is proposed to consist of a 23,609 SF automobile sales building. The development is anticipated to generate approximately 639 average daily trips with 50 AM peak-hour trips and 89 PM peak-hour trips. The intersections that have been analyzed as part of this report are all anticipated to operate at acceptable levels of service under the 2025 opening year and 2031 horizon year conditions.

The development will have City of Marysville traffic mitigation fees of \$147,408.00 and Snohomish County traffic mitigation fees of \$7,065.00. WSDOT traffic mitigation fees should not be required for the Quality Auto Center development since the major WSDOT improvements in the site vicinity are identified as funded under the Connecting Washington legislation.

# Site Plan

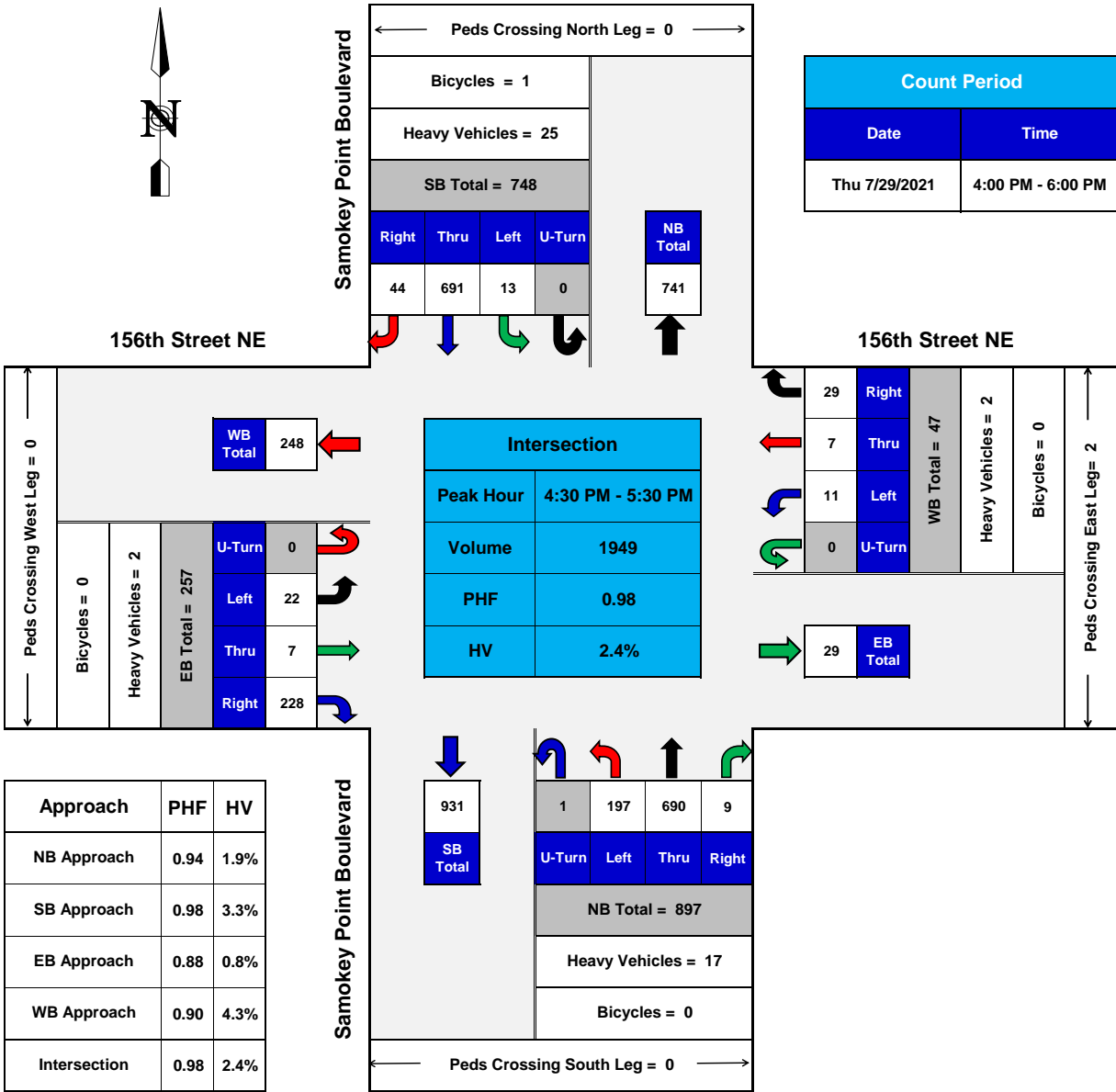


# Count Data



# 156th Street NE @ Smokey Point Boulevard

Marysville, Wa



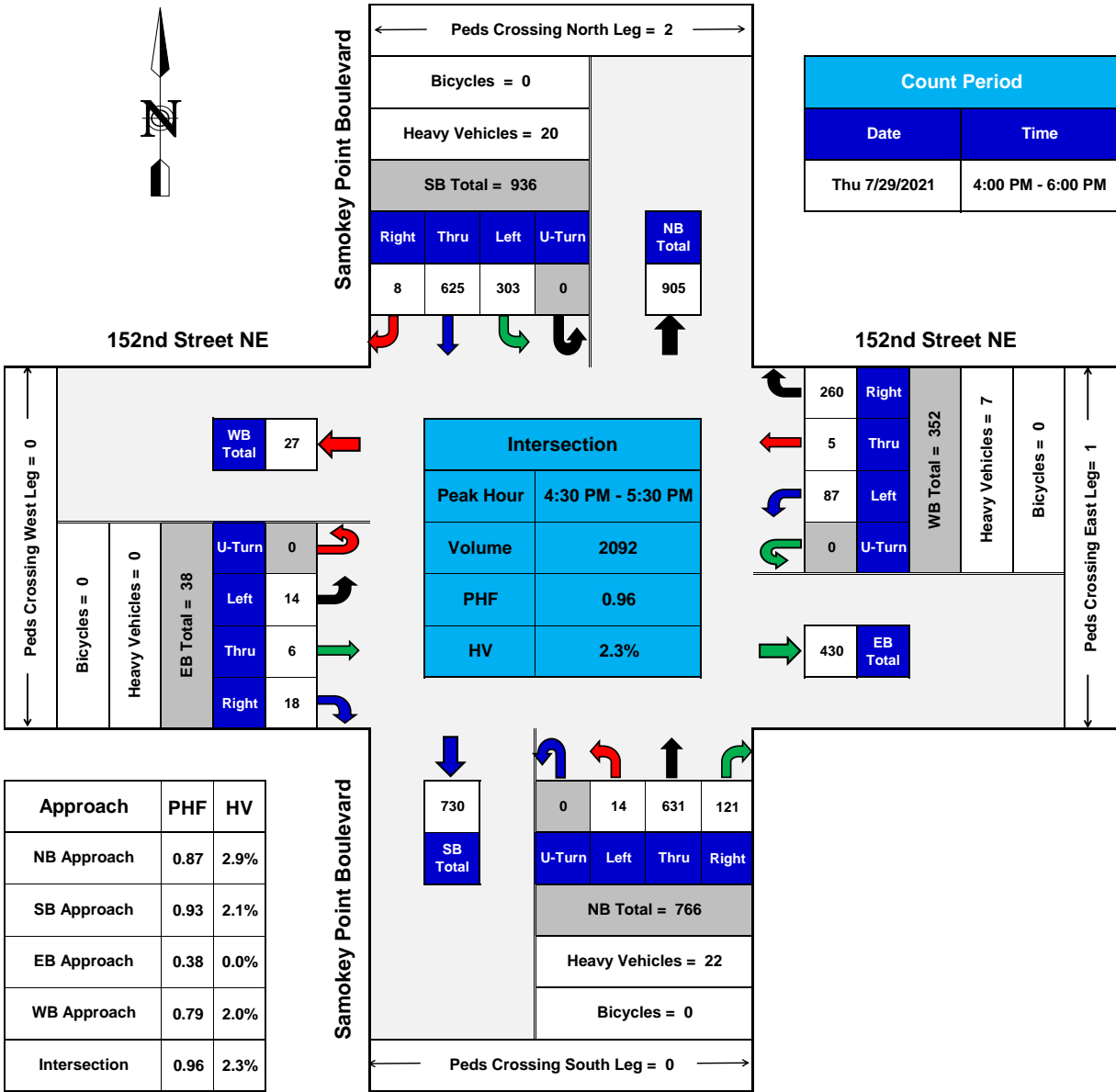
PHF = Peak Hour Factor  
HV = Heavy Vehicles

## TURNING MOVEMENTS DIAGRAM PEAK HOUR SUMMARY



# 152nd Street NE @ Smokey Point Boulevard

Marysville, Wa



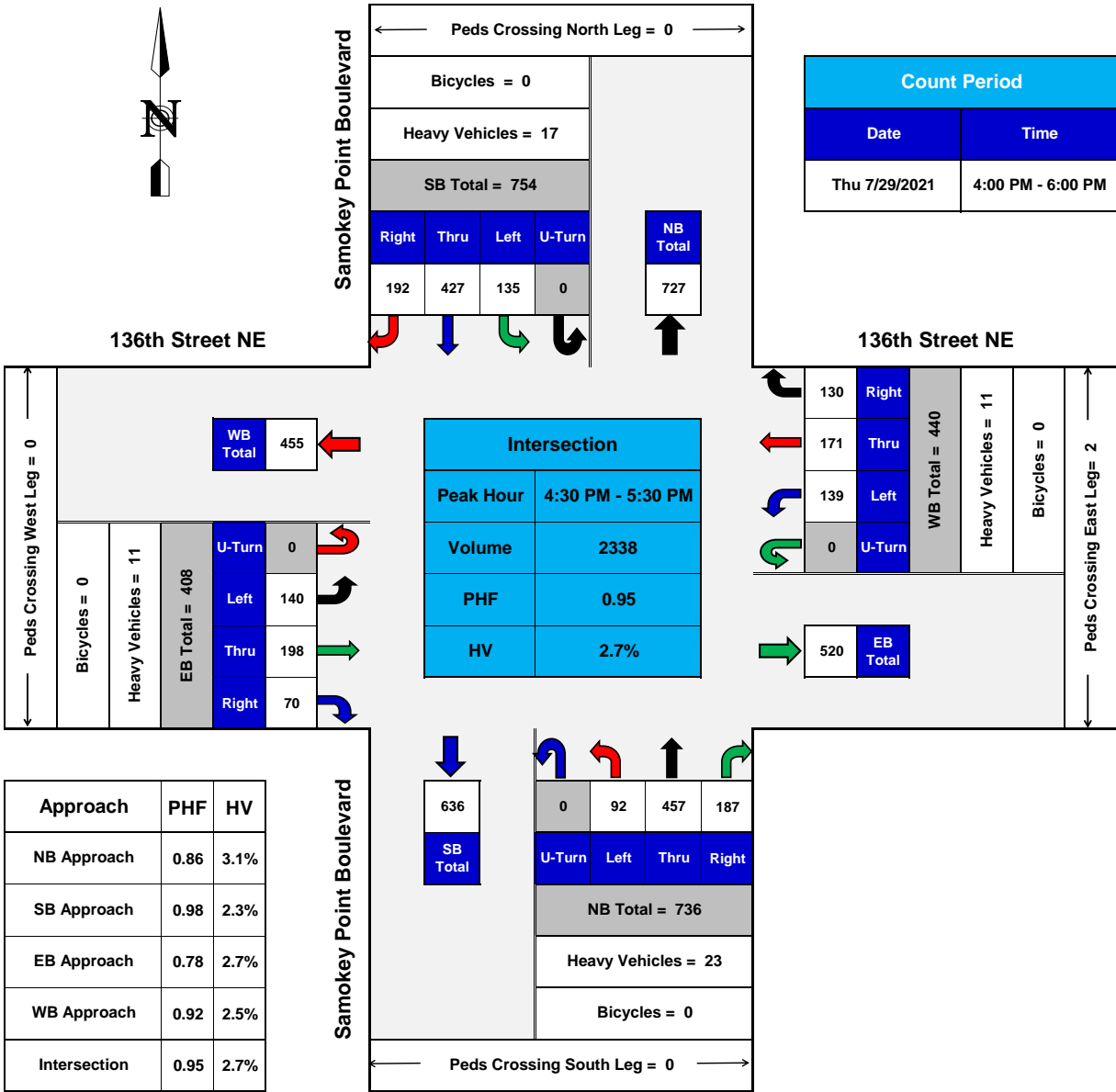
PHF = Peak Hour Factor  
 HV = Heavy Vehicles

## TURNING MOVEMENTS DIAGRAM PEAK HOUR SUMMARY



# 136th Street NE @ Smokey Point Boulevard

Marysville, Wa



**TURNING MOVEMENTS DIAGRAM  
PEAK HOUR SUMMARY**



# **Weekday PM Peak-Hour Turning Movement Calculations**

**Opening Year**

**1 156th St NE at Smokey Pt Blvd**

**Weekday PM Peak-Hour**

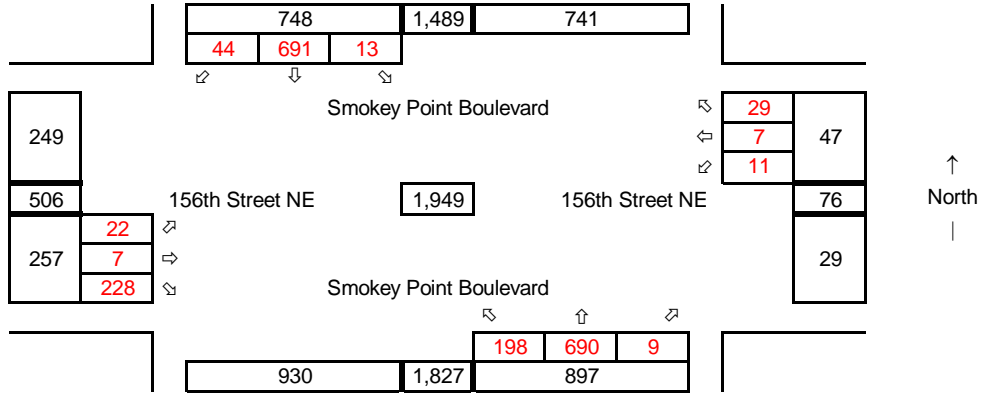
Synchro ID: 1

**Existing**

Average Weekday  
PM Peak-Hour

Year: **7/29/2021**

Data Source: **TDG**



**Future without Development**

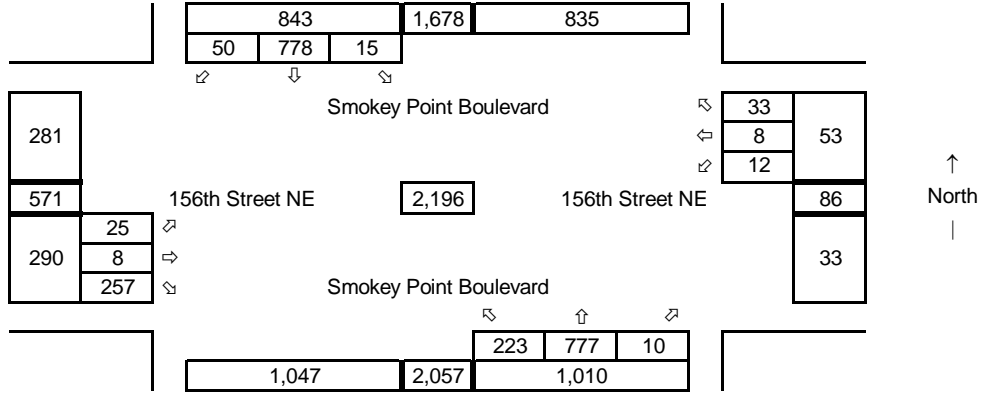
Average Weekday  
PM Peak Hour

Year: 2025

Growth Rate = 3.0%

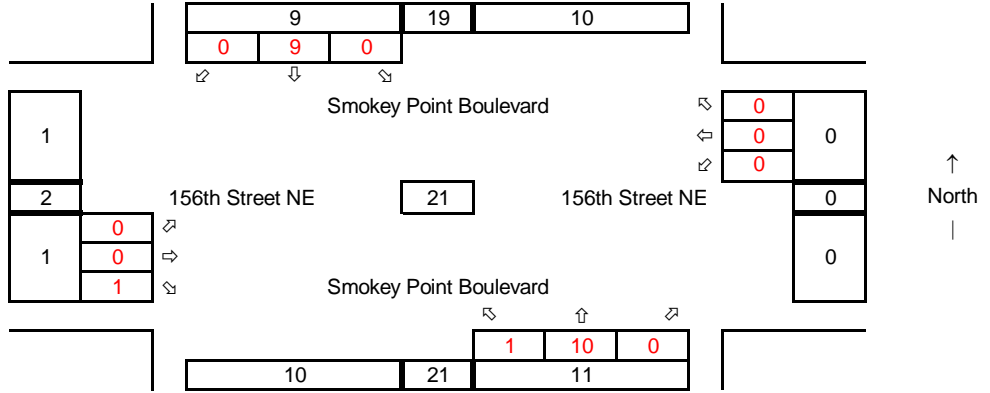
Years of Growth = 4

Total Growth = 1.1255



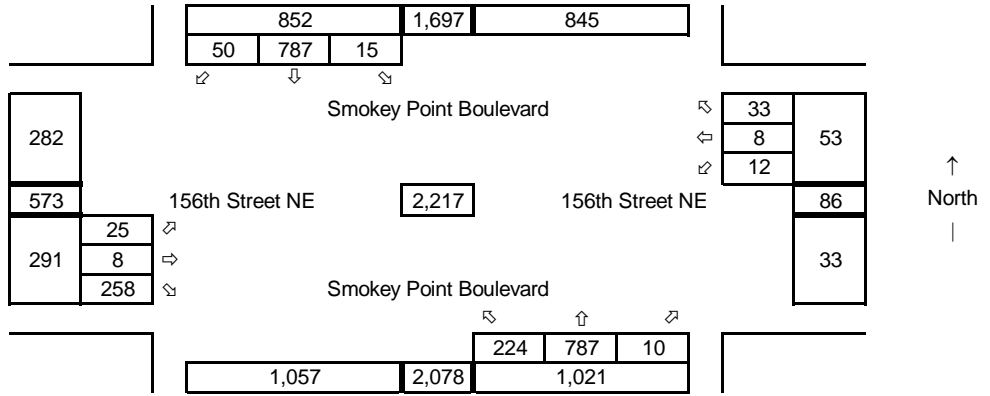
**Total Development Trips**

Average Weekday  
PM Peak Hour



**Future with Development**

Average Weekday  
PM Peak Hour



**Opening Year**

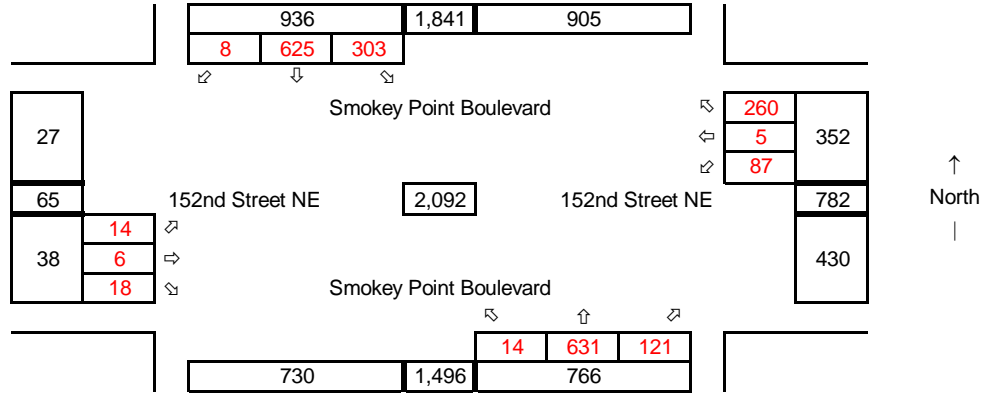
**2 152nd St NE at Smokey Pt Blvd**

**Weekday PM Peak-Hour**

Synchro ID: 2  
**Existing**  
 Average Weekday  
 PM Peak-Hour

Year: **7/29/2021**

Data Source: **TDG**



**Future without Development**

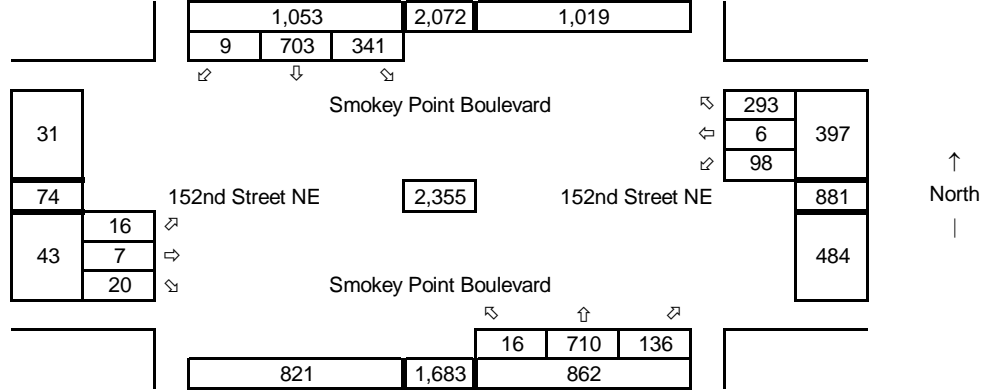
Average Weekday  
 PM Peak Hour

Year: 2025

Growth Rate = 3.0%

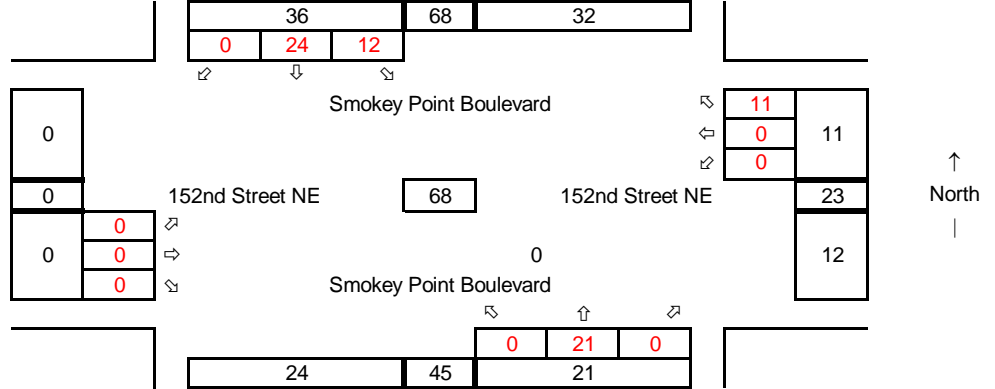
Years of Growth = 4

Total Growth = 1.1255



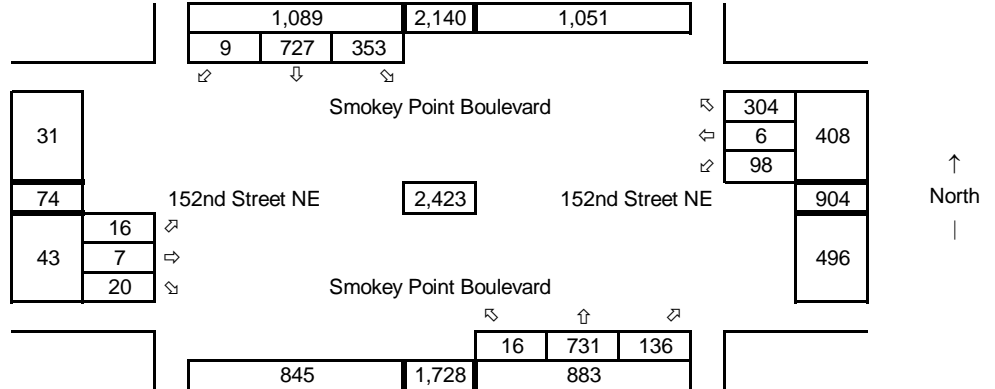
**Total Development Trips**

Average Weekday  
 PM Peak Hour



**Future with Development**

Average Weekday  
 PM Peak Hour



**Opening Year**

**3 136th St NE at Smokey Pt Blvd**

**Weekday PM Peak-Hour**

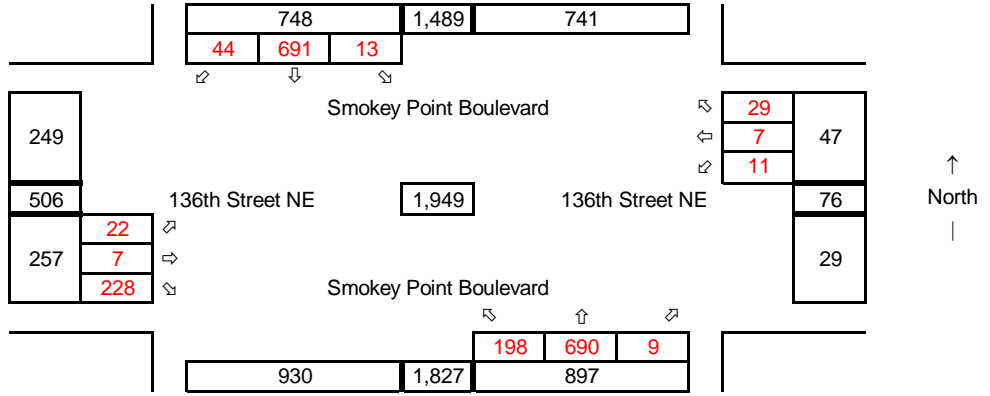
Synchro ID: 3

**Existing**

Average Weekday  
PM Peak-Hour

Year: **7/29/2021**

Data Source: **TDG**



**Future without Development**

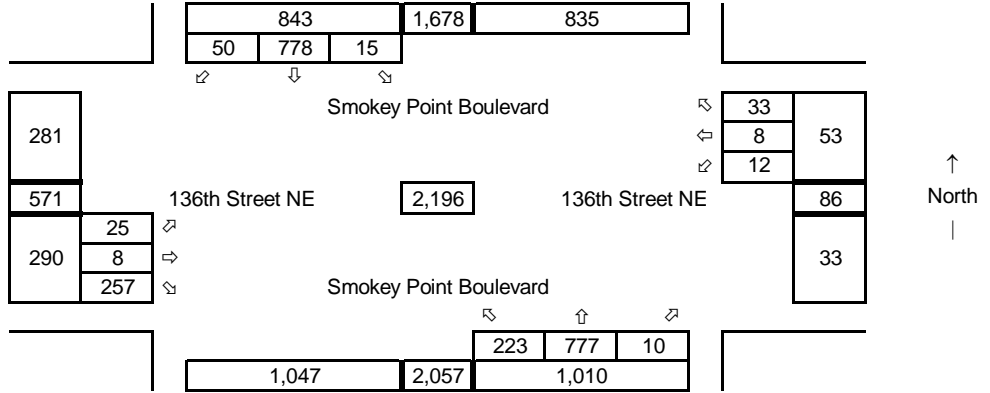
Average Weekday  
PM Peak Hour

Year: 2025

Growth Rate = 3.0%

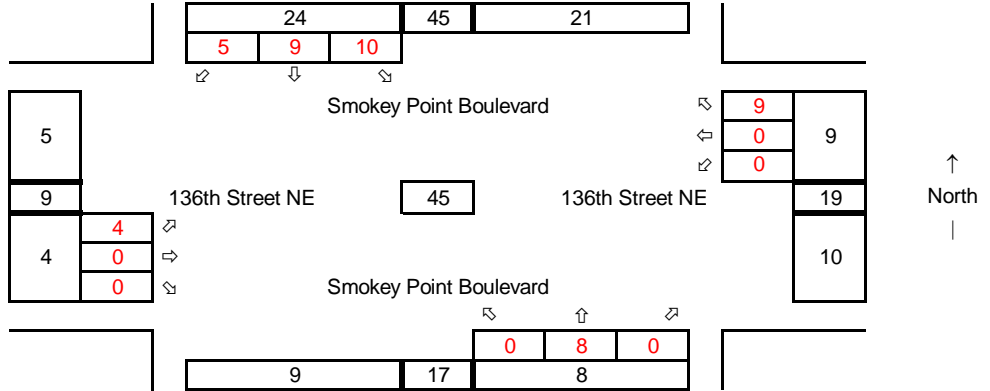
Years of Growth = 4

Total Growth = 1.1255



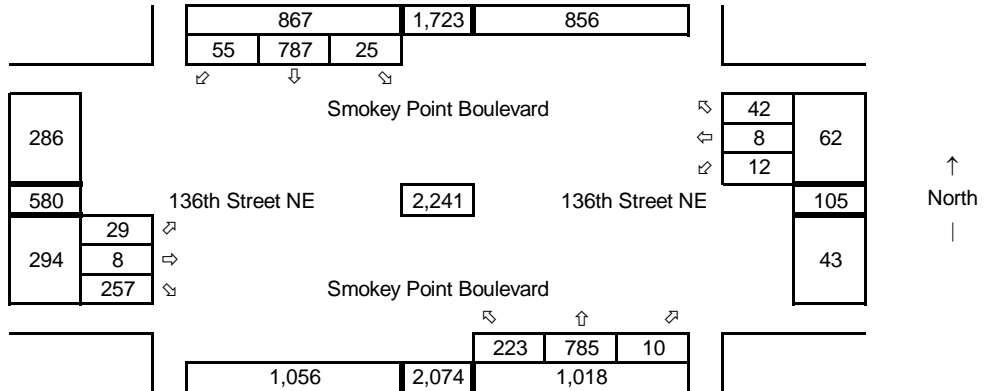
**Total Development Trips**

Average Weekday  
PM Peak Hour



**Future with Development**

Average Weekday  
PM Peak Hour



**Opening Year**

**4 Site Access at Smokey Pt Blvd**

**Weekday PM Peak-Hour**

Synchro ID: 4

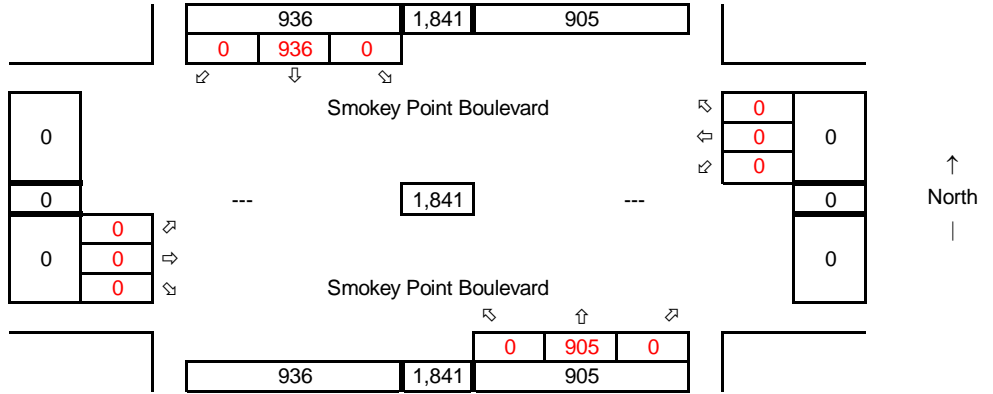
**Existing**

Average Weekday  
PM Peak-Hour

Year: 7/29/2021

Data Source: TDG

Volumes based on the north leg  
of 152nd Street NE at Smokey  
Point Boulevard.



**Future without Development**

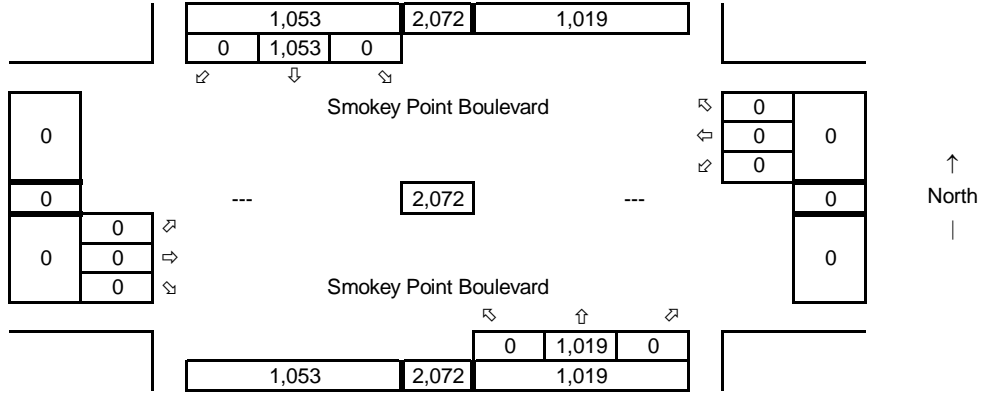
Average Weekday  
PM Peak Hour

Year: 2025

Growth Rate = 3.0%

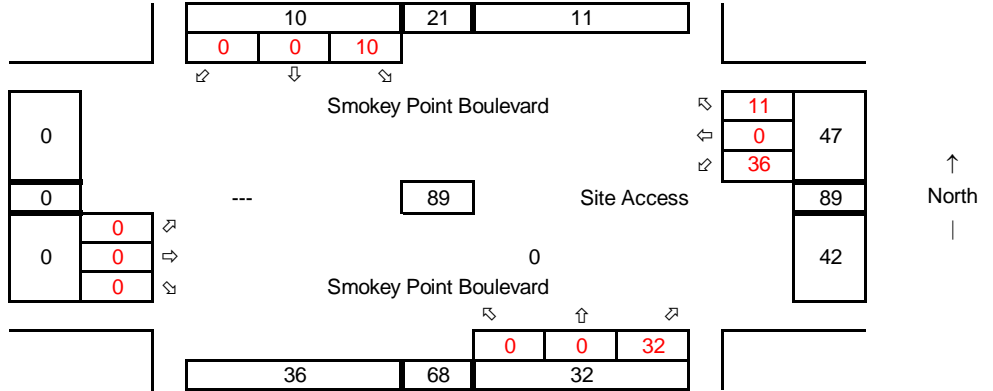
Years of Growth = 4

Total Growth = 1.1255



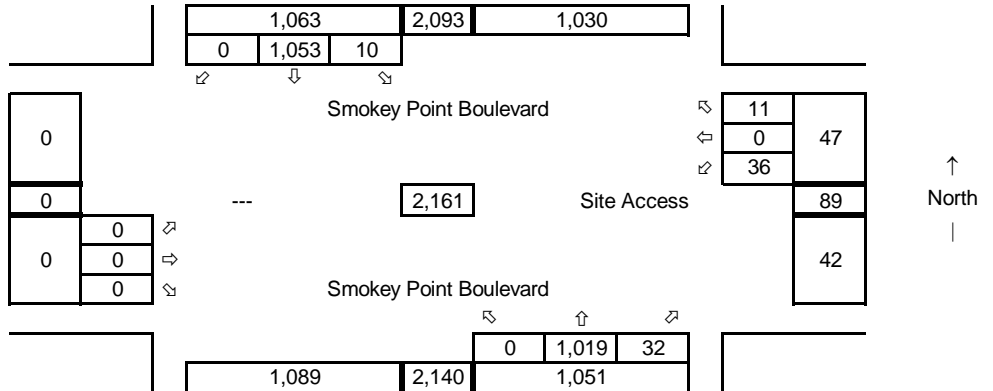
**Total Development Trips**

Average Weekday  
PM Peak Hour



**Future with Development**

Average Weekday  
PM Peak Hour





**Horizon Year**

**1 156th St NE at Smokey Pt Blvd**

**Weekday PM Peak-Hour**

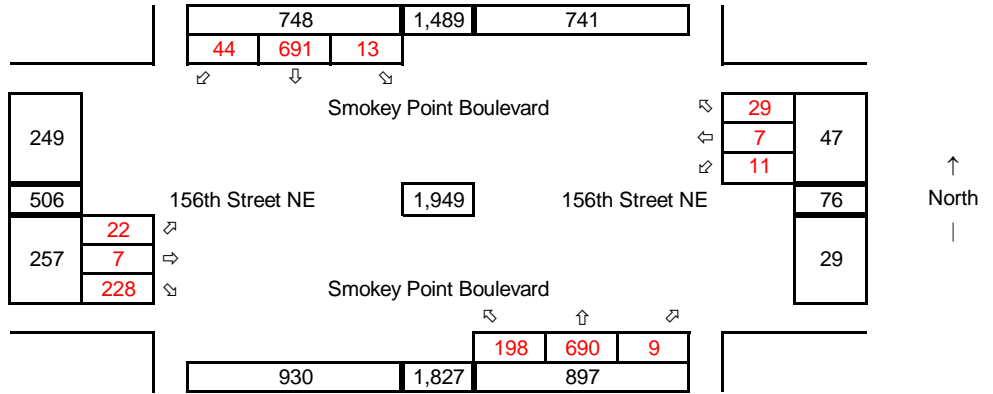
Synchro ID: 1

**Existing**

Average Weekday  
PM Peak-Hour

Year: **7/29/2021**

Data Source: **TDG**



**Future without Development**

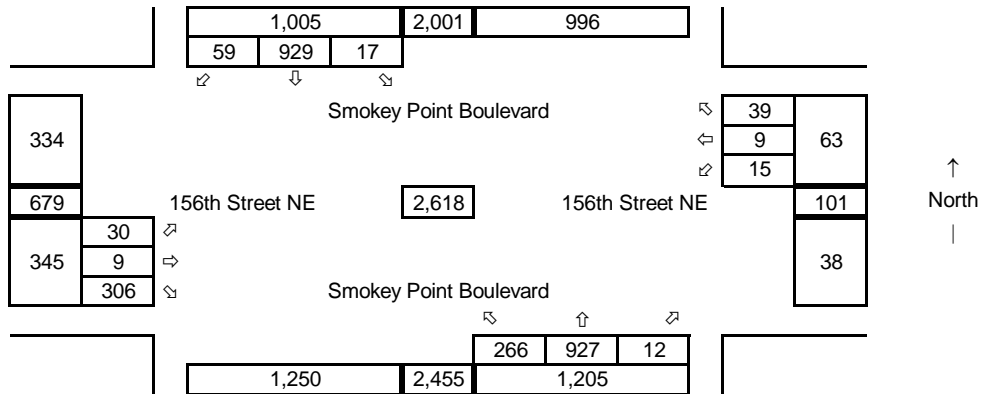
Average Weekday  
PM Peak Hour

Year: 2031

Growth Rate = 3.0%

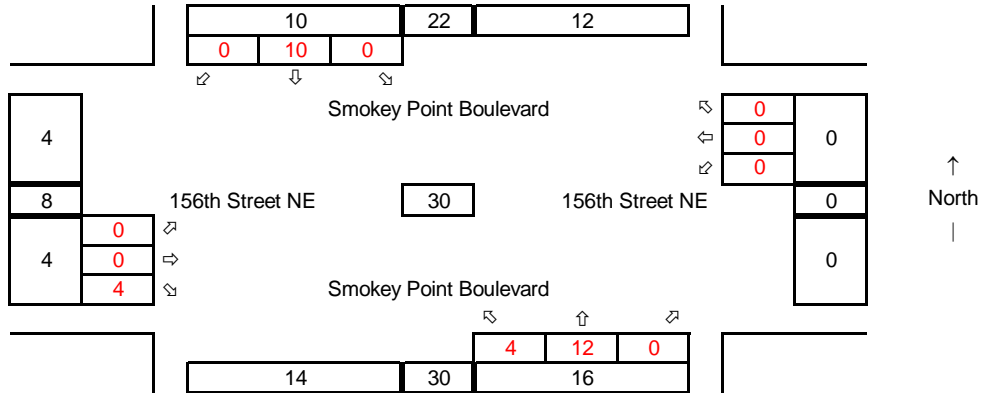
Years of Growth = 10

Total Growth = 1.3439



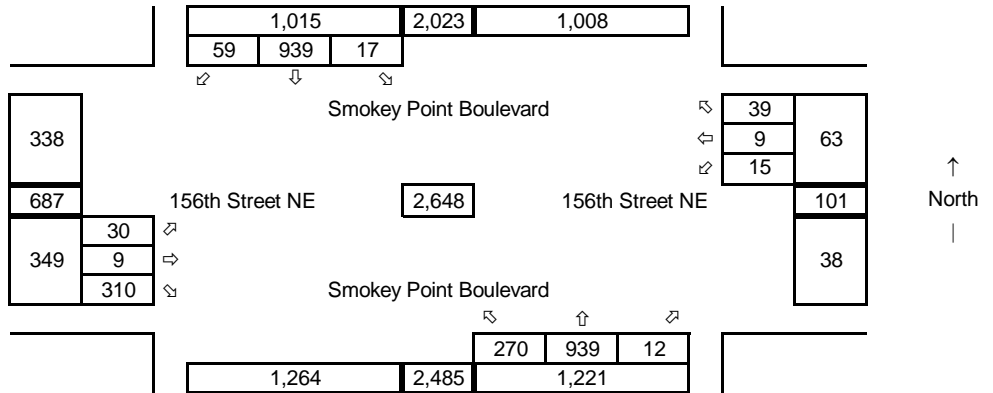
**Total Development Trips**

Average Weekday  
PM Peak Hour



**Future with Development**

Average Weekday  
PM Peak Hour



**Horizon Year**

**2 152nd St NE at SMOkey Pt Blvd**

**Weekday PM Peak-Hour**

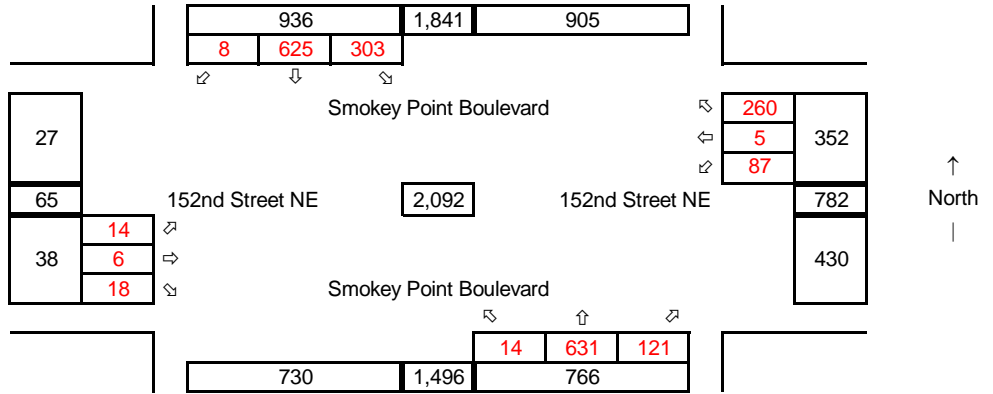
Synchro ID: 2

**Existing**

Average Weekday  
PM Peak-Hour

Year: 7/29/2021

Data Source: TDG



**Future without Development**

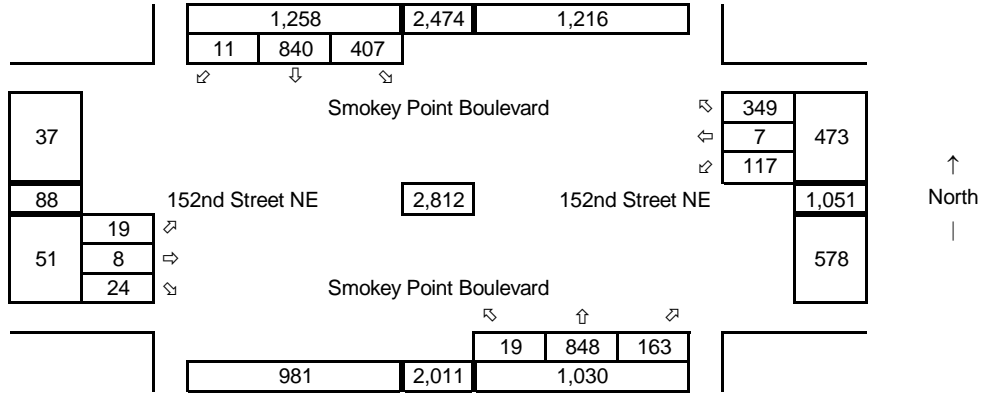
Average Weekday  
PM Peak Hour

Year: 2031

Growth Rate = 3.0%

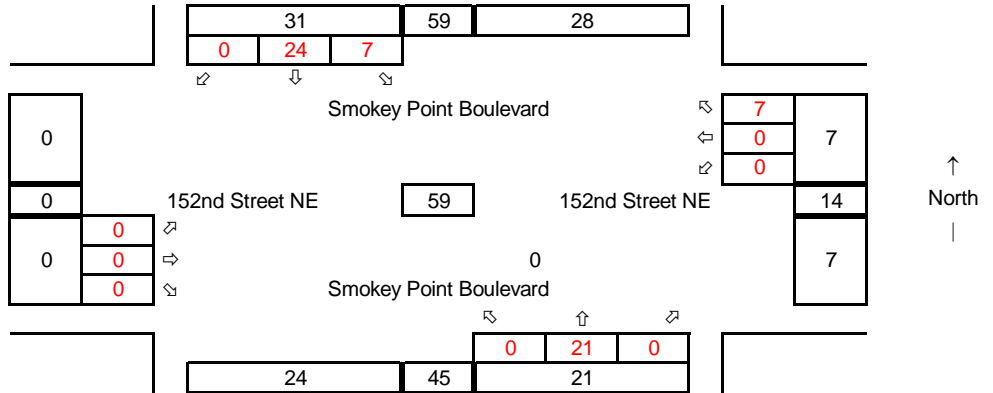
Years of Growth = 10

Total Growth = 1.3439



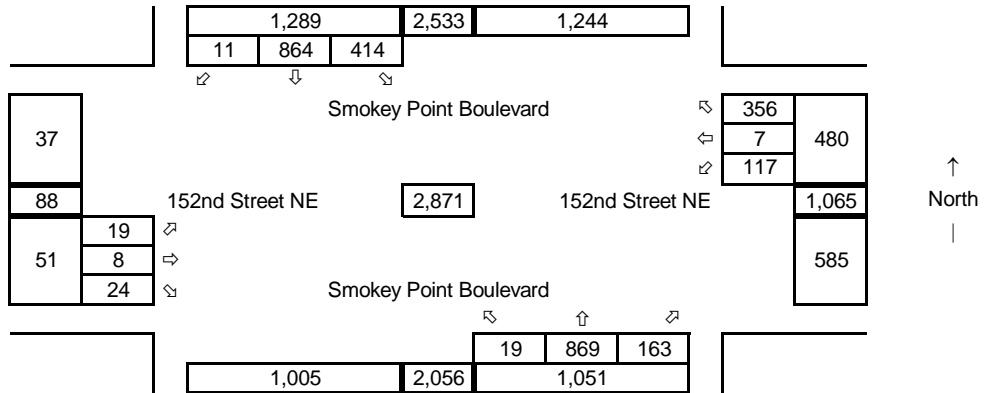
**Total Development Trips**

Average Weekday  
PM Peak Hour



**Future with Development**

Average Weekday  
PM Peak Hour



**Horizon Year**

**3 136th St NE at Smokey Pt Blvd**

**Weekday PM Peak-Hour**

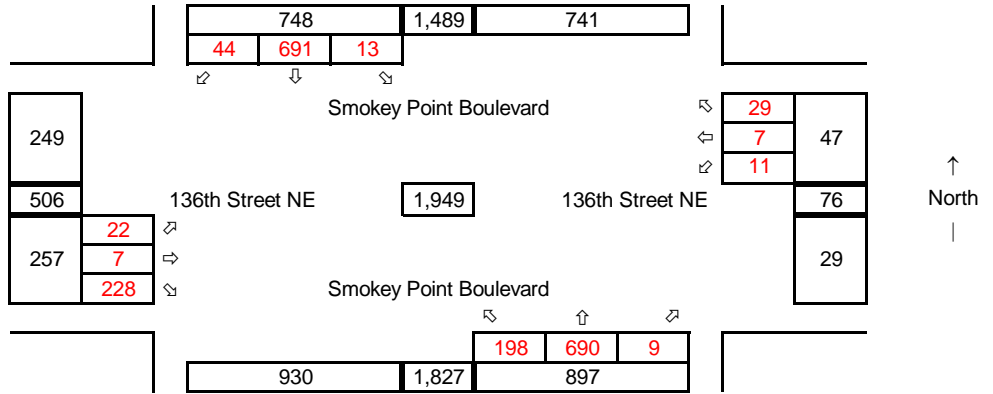
Synchro ID: 3

**Existing**

Average Weekday  
PM Peak-Hour

Year: 7/29/2021

Data Source: TDG



**Future without Development**

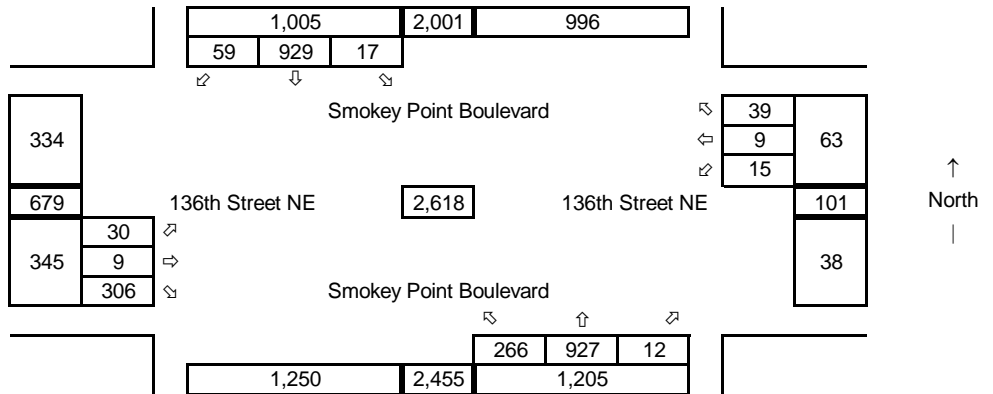
Average Weekday  
PM Peak Hour

Year: 2031

Growth Rate = 3.0%

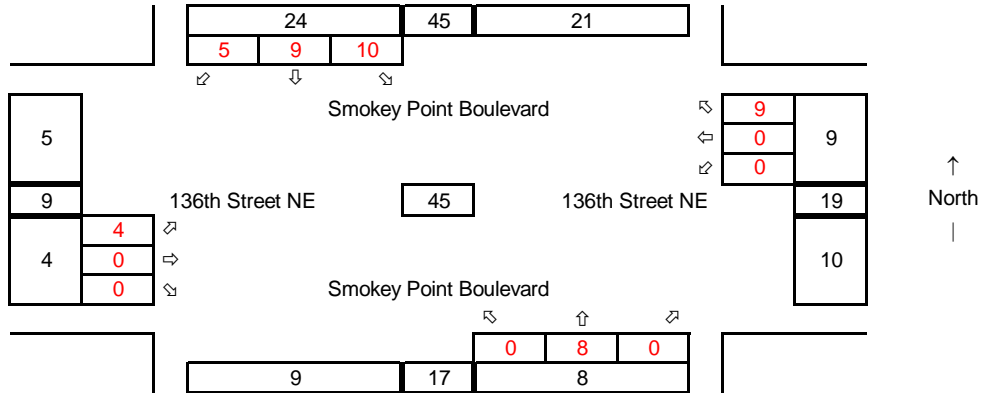
Years of Growth = 10

Total Growth = 1.3439



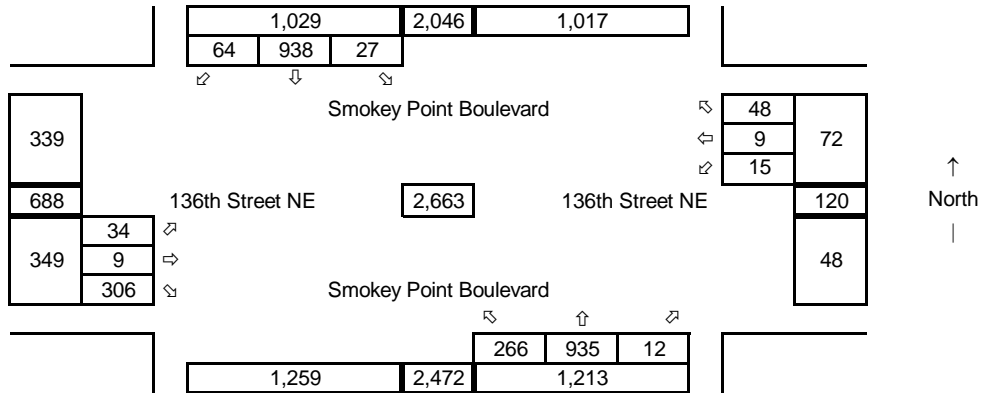
**Total Development Trips**

Average Weekday  
PM Peak Hour



**Future with Development**

Average Weekday  
PM Peak Hour



**Horizon Year**

**4 Site Access at Smokey Pt Blvd**

**Weekday PM Peak-Hour**

Synchro ID: 4

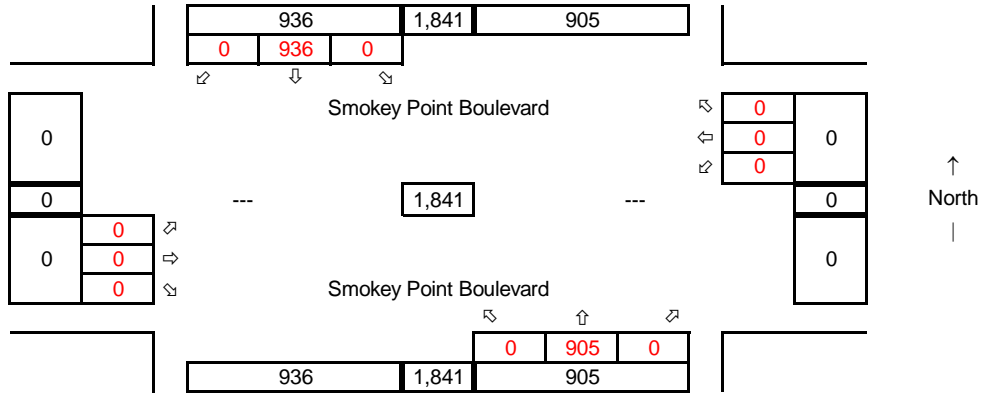
**Existing**

Average Weekday  
PM Peak-Hour

Year: **7/29/2021**

Data Source: **TDG**

Volumes based on the north leg  
of 152nd Street NE at Smokey  
Point Boulevard.



**Future without Development**

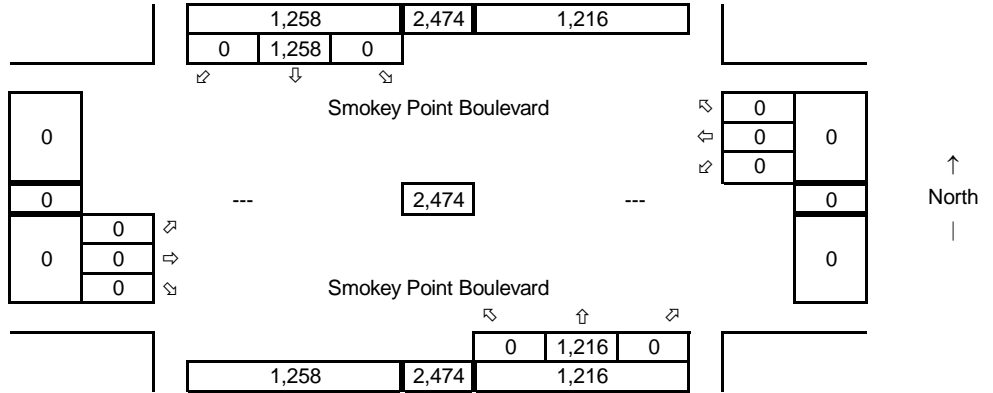
Average Weekday  
PM Peak Hour

Year: 2031

Growth Rate = 3.0%

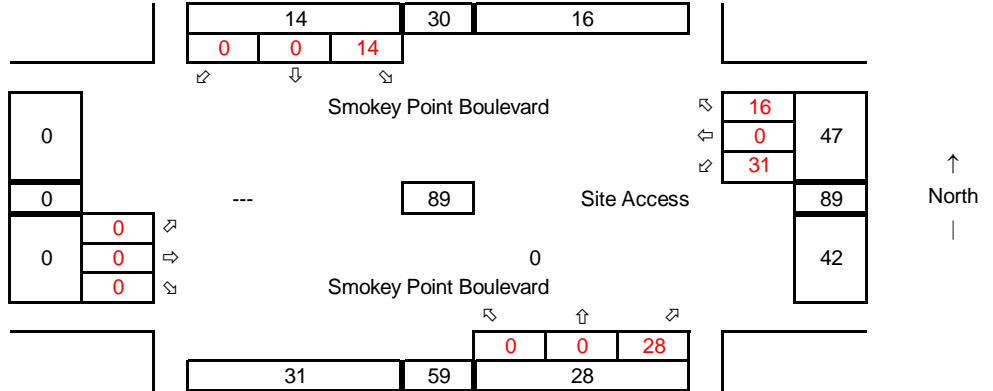
Years of Growth = 10

Total Growth = 1.3439



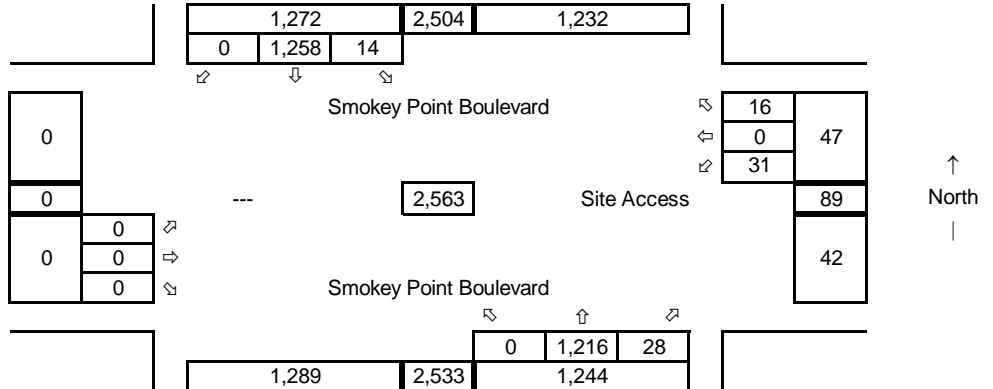
**Total Development Trips**

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

Quality Auto Center

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	7	228	11	7	29	198	690	9	13	691	44
Future Volume (vph)	22	7	228	11	7	29	198	690	9	13	691	44
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	
Frt			0.850		0.878			0.998			0.991	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1635	0	1770	3531	0	1770	3503	0
Flt Permitted	0.651			0.753			0.224			0.381		
Satd. Flow (perm)	1213	1863	1583	1403	1635	0	417	3531	0	709	3503	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			233		30			1			7	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1704			1283			1356			4794	
Travel Time (s)		38.7			29.2			30.8			109.0	
Confl. Peds. (#/hr)									2	2		
Confl. Bikes (#/hr)												1
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)	22	7	233	11	37	0	202	713	0	13	750	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 Effect Green (s)	10.8	9.8	9.8	10.0	7.8		37.0	35.3		28.0	20.5	
Actuated g/C Ratio	0.18	0.17	0.17	0.17	0.13		0.62	0.60		0.47	0.35	
v/c Ratio	0.08	0.02	0.51	0.04	0.15		0.39	0.34		0.03	0.62	
Control Delay	22.3	27.0	9.2	22.0	16.8		7.9	8.3		6.8	19.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	22.3	27.0	9.2	22.0	16.8		7.9	8.3		6.8	19.2	
LOS	C	C	A	C	B		A	A		A	B	
Approach Delay		10.8			18.0			8.2			19.0	
Approach LOS		B			B			A			B	

2022 Existing Conditions

Kimley Horn Associates, Inc. [SPF #090221277]

PM Peak-Hour

Lanes, Volumes, Timings

1: Smokey Point Boulevard & 156th Street NE

Quality Auto Center

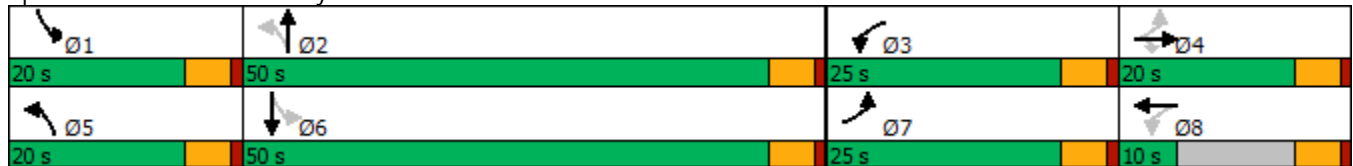
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	6	2	0	3	2		17	35		1	91	
Queue Length 95th (ft)	26	15	63	16	31		74	174		9	221	
Internal Link Dist (ft)		1624			1203			1276			4714	
Turn Bay Length (ft)	150		150	200			250			200		
Base Capacity (vph)	652	517	608	654	466		628	2831		713	2809	
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	0.03	0.01	0.38	0.02	0.08		0.32	0.25		0.02	0.27	

Intersection Summary

Area Type: Other  
 Cycle Length: 115  
 Actuated Cycle Length: 59.2  
 Natural Cycle: 75  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.62  
 Intersection Signal Delay: 12.9  
 Intersection Capacity Utilization 53.0%  
 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

Quality Auto Center

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	6	18	87	5	260	14	631	121	303	625	8
Future Volume (vph)	14	6	18	87	5	260	14	631	121	303	625	8
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				0.98			1.00		1.00		
Frt		0.886			0.853			0.976			0.998	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1650	0	1770	1565	0	1770	3441	0	1770	3532	0
Flt Permitted	0.930			0.435			0.401			0.205		
Satd. Flow (perm)	1729	1650	0	810	1565	0	747	3441	0	382	3532	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		19			271			21			1	
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)	2					2			1	1		
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)	15	25	0	91	276	0	15	783	0	316	659	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 Effect Green (s)	7.5	5.6		10.8	9.2		25.4	19.9		36.7	35.0	
Actuated g/C Ratio	0.13	0.10		0.19	0.16		0.44	0.34		0.63	0.60	
v/c Ratio	0.07	0.14		0.34	0.58		0.04	0.66		0.61	0.31	
Control Delay	20.5	19.1		23.8	9.7		7.1	19.4		14.0	8.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	20.5	19.1		23.8	9.7		7.1	19.4		14.0	8.3	
LOS	C	B		C	A		A	B		B	A	
Approach Delay		19.6			13.2			19.1			10.2	
Approach LOS		B			B			B			B	
Queue Length 50th (ft)	4	2		27	1		1	96		29	32	

2022 Existing Conditions  
 Kimley Horn Associates, Inc. [SPF #090221277]

PM Peak-Hour



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

Quality Auto Center

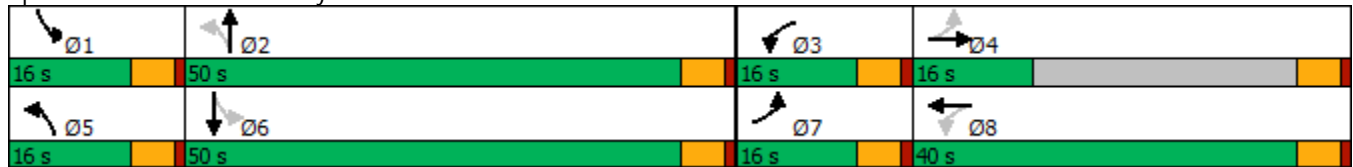
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (ft)	18	25		66	66		10	214		#177	157	
Internal Link Dist (ft)		129			5061			1372			1276	
Turn Bay Length (ft)	50			125			150			200		
Base Capacity (vph)	419	1052		396	1091		608	2778		518	2847	
Starvation Cap Reductn	0	0		0	0		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	0.02		0.23	0.25		0.02	0.28		0.61	0.23	

Intersection Summary

Area Type: Other  
 Cycle Length: 122  
 Actuated Cycle Length: 58  
 Natural Cycle: 80  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.66  
 Intersection Signal Delay: 14.1  
 Intersection Capacity Utilization 67.2%  
 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



Lanes, Volumes, Timings

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

Quality Auto Center

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	7	228	11	7	29	198	690	9	13	691	44
Future Volume (vph)	22	7	228	11	7	29	198	690	9	13	691	44
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								1.00		1.00		
Frt			0.850		0.878			0.998			0.991	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1752	1845	1568	1752	1620	0	1752	3497	0	1752	3473	0
Flt Permitted	0.642			0.753			0.236			0.372		
Satd. Flow (perm)	1184	1845	1568	1389	1620	0	435	3497	0	685	3473	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			240		31			1			4	
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)									2	2		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	23	7	240	12	38	0	208	735	0	14	773	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 Effect Green (s)	10.8	9.7	9.7	9.4	7.6		40.5	38.8		30.6	25.5	
Actuated g/C Ratio	0.17	0.16	0.16	0.15	0.12		0.65	0.62		0.49	0.41	
v/c Ratio	0.09	0.02	0.54	0.05	0.17		0.42	0.34		0.03	0.54	
Control Delay	21.3	25.0	9.2	20.8	15.6		8.2	7.9		7.1	17.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	21.3	25.0	9.2	20.8	15.6		8.2	7.9		7.1	17.4	
LOS	C	C	A	C	B		A	A		A	B	
Approach Delay		10.7			16.9			8.0			17.3	
Approach LOS		B			B			A			B	

Lanes, Volumes, Timings

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

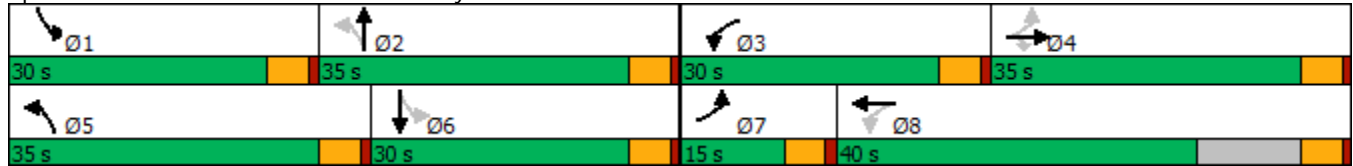
Quality Auto Center

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	7	2	0	4	2		18	37		1	94	
Queue Length 95th (ft)	24	14	60	16	29		73	166		9	223	
Internal Link Dist (ft)		901			4660			2741			4344	
Turn Bay Length (ft)	150		150	200			300			300		
Base Capacity (vph)	348	909	894	719	1206		932	2185		884	1429	
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	0.07	0.01	0.27	0.02	0.03		0.22	0.34		0.02	0.54	

Intersection Summary

Area Type: Other  
 Cycle Length: 130  
 Actuated Cycle Length: 62.1  
 Natural Cycle: 90  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.54  
 Intersection Signal Delay: 12.1  
 Intersection Capacity Utilization 51.9%  
 Analysis Period (min) 15  
 Intersection LOS: B  
 ICU Level of Service A
























Splits and Phases: 3: State Avenue/Smokey Point Boulevard & 136th Street NE



Lanes, Volumes, Timings

1: Smokey Point Boulevard & 156th Street NE

Quality Auto Center

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	8	257	12	8	33	223	777	10	15	778	50
Future Volume (vph)	25	8	257	12	8	33	223	777	10	15	778	50
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	
Frt			0.850		0.879			0.998			0.991	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1637	0	1770	3531	0	1770	3503	0
Flt Permitted	0.642			0.752			0.193			0.348		
Satd. Flow (perm)	1196	1863	1583	1401	1637	0	360	3531	0	648	3503	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			262		34			1			7	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1704			1283			1356			4794	
Travel Time (s)		38.7			29.2			30.8			109.0	
Confl. Peds. (#/hr)									2	2		
Confl. Bikes (#/hr)												1
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)	26	8	262	12	42	0	228	803	0	15	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)	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 Effect Green (s)	11.0	10.0	10.0	10.1	8.0		41.1	39.5		31.2	23.7	
Actuated g/C Ratio	0.17	0.16	0.16	0.16	0.13		0.65	0.62		0.49	0.37	
v/c Ratio	0.09	0.03	0.56	0.05	0.18		0.46	0.37		0.03	0.64	
Control Delay	24.6	29.1	9.8	24.2	17.3		8.5	8.2		6.7	19.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	24.6	29.1	9.8	24.2	17.3		8.5	8.2		6.7	19.6	
LOS	C	C	A	C	B		A	A		A	B	
Approach Delay		11.6			18.8			8.3			19.4	
Approach LOS		B			B			A			B	

# Lanes, Volumes, Timings

## 1: Smokey Point Boulevard & 156th Street NE

Quality Auto Center

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	8	2	0	4	2		20	41		1	113	
Queue Length 95th (ft)	31	17	69	19	34		86	204		10	258	
Internal Link Dist (ft)		1624			1203			1276			4714	
Turn Bay Length (ft)	150		150	200			250			200		
Base Capacity (vph)	610	481	603	612	440		590	2708		683	2658	
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	0.04	0.02	0.43	0.02	0.10		0.39	0.30		0.02	0.32	

### Intersection Summary

Area Type: Other  
 Cycle Length: 115  
 Actuated Cycle Length: 63.5  
 Natural Cycle: 75  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.64  
 Intersection Signal Delay: 13.2  
 Intersection Capacity Utilization 57.3%  
 Analysis Period (min) 15

Intersection LOS: B  
 ICU Level of Service B

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



# Lanes, Volumes, Timings

## 2: Smokey Point Boulevard & 152nd Street NE

Quality Auto Center

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	16	7	20	98	6	293	16	710	136	341	703	9
Future Volume (vph)	16	7	20	98	6	293	16	710	136	341	703	9
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				0.98			1.00				
Frt		0.887			0.853			0.976			0.998	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1652	0	1770	1565	0	1770	3441	0	1770	3532	0
Flt Permitted	0.909			0.426			0.370			0.176		
Satd. Flow (perm)	1691	1652	0	794	1565	0	689	3441	0	328	3532	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		21			305			21			1	
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)	2					2			1	1		
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)	17	28	0	102	311	0	17	882	0	355	741	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 Effect Green (s)	7.7	5.8		11.6	9.8		28.4	22.7		39.6	38.1	
Actuated g/C Ratio	0.12	0.09		0.19	0.16		0.46	0.37		0.64	0.62	
v/c Ratio	0.08	0.16		0.38	0.62		0.04	0.69		0.74	0.34	
Control Delay	22.4	20.3		26.1	10.1		7.2	19.9		22.6	8.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	22.4	20.3		26.1	10.1		7.2	19.9		22.6	8.6	
LOS	C	C		C	B		A	B		C	A	
Approach Delay		21.1			14.0			19.6			13.1	
Approach LOS		C			B			B			B	
Queue Length 50th (ft)	5	2		33	2		1	115		42	39	

2025 Baseline Conditions

PM Peak-Hour

Kimley Horn Associates, Inc. [SPF #090221277]

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

Quality Auto Center

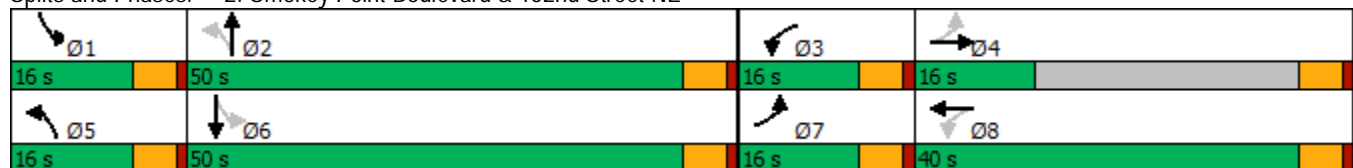
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (ft)	21	28		79	74		12	255		#267	187	
Internal Link Dist (ft)		129			5061			1372			1276	
Turn Bay Length (ft)	50			125			150			200		
Base Capacity (vph)	398	1000		378	1061		587	2653		482	2718	
Starvation Cap Reductn	0	0		0	0		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	0.03		0.27	0.29		0.03	0.33		0.74	0.27	

### Intersection Summary

Area Type: Other  
 Cycle Length: 122  
 Actuated Cycle Length: 61.7  
 Natural Cycle: 90  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.74  
 Intersection Signal Delay: 15.8  
 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



# Lanes, Volumes, Timings

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

Quality Auto Center

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	8	257	12	8	33	223	777	10	15	778	50
Future Volume (vph)	25	8	257	12	8	33	223	777	10	15	778	50
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								1.00		1.00		
Frt			0.850		0.878			0.998			0.991	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1752	1845	1568	1752	1620	0	1752	3497	0	1752	3473	0
Flt Permitted	0.633			0.752			0.191			0.340		
Satd. Flow (perm)	1168	1845	1568	1387	1620	0	352	3497	0	627	3473	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			271		35			1			4	
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)									2	2		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	26	8	271	13	43	0	235	829	0	16	872	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 Effect Green (s)	11.0	9.9	9.9	9.6	7.7		41.8	40.1		30.8	25.6	
Actuated g/C Ratio	0.17	0.16	0.16	0.15	0.12		0.66	0.63		0.48	0.40	
v/c Ratio	0.10	0.03	0.57	0.05	0.19		0.50	0.38		0.04	0.62	
Control Delay	22.2	25.8	9.5	21.7	15.9		9.5	8.2		7.5	19.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	22.2	25.8	9.5	21.7	15.9		9.5	8.2		7.5	19.9	
LOS	C	C	A	C	B		A	A		A	B	
Approach Delay		11.0			17.2			8.5			19.6	
Approach LOS		B			B			A			B	

2025 Baseline Conditions

PM Peak-Hour

Kimley Horn Associates, Inc. [SPF #090221277]



Lanes, Volumes, Timings

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

Quality Auto Center

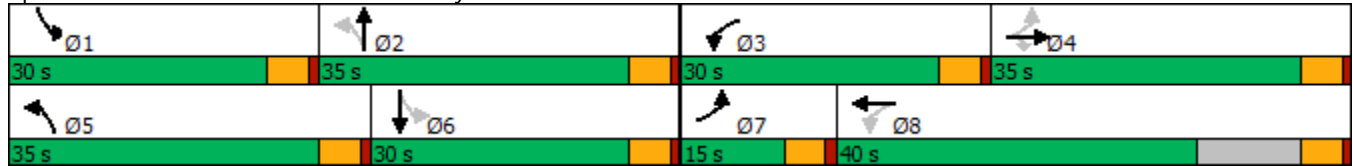
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	8	3	0	4	3		21	43		1	114	
Queue Length 95th (ft)	27	15	65	18	32		88	196		10	276	
Internal Link Dist (ft)		901			4660			2741			4344	
Turn Bay Length (ft)	150		150	200			300			300		
Base Capacity (vph)	342	890	897	704	1183		907	2206		864	1399	
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	0.30	0.02	0.04		0.26	0.38		0.02	0.62	

Intersection Summary

Area Type: Other  
 Cycle Length: 130  
 Actuated Cycle Length: 63.6  
 Natural Cycle: 90  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.62  
 Intersection Signal Delay: 13.3  
 Intersection Capacity Utilization 56.0%  
 Analysis Period (min) 15

Intersection LOS: B  
 ICU Level of Service B

Splits and Phases: 3: State Avenue/Smokey Point Boulevard & 136th Street NE



# Lanes, Volumes, Timings

## 1: Smokey Point Boulevard & 156th Street NE

Quality Auto Center

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	8	258	12	8	33	224	787	10	15	787	50
Future Volume (vph)	25	8	258	12	8	33	224	787	10	15	787	50
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	
Frt			0.850		0.879			0.998			0.991	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1637	0	1770	3531	0	1770	3503	0
Flt Permitted	0.642			0.752			0.191			0.345		
Satd. Flow (perm)	1196	1863	1583	1401	1637	0	356	3531	0	642	3503	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			263		34			1			7	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1704			1283			1072			4794	
Travel Time (s)		38.7			29.2			24.4			109.0	
Confl. Peds. (#/hr)									2	2		
Confl. Bikes (#/hr)												1
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)	26	8	263	12	42	0	229	813	0	15	854	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 Effect Green (s)	11.0	10.0	10.0	10.1	8.0		41.6	39.9		31.6	24.1	
Actuated g/C Ratio	0.17	0.16	0.16	0.16	0.12		0.65	0.62		0.49	0.38	
v/c Ratio	0.10	0.03	0.56	0.05	0.18		0.46	0.37		0.03	0.65	
Control Delay	24.9	29.5	9.9	24.6	17.5		8.5	8.2		6.6	19.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	24.9	29.5	9.9	24.6	17.5		8.5	8.2		6.6	19.6	
LOS	C	C	A	C	B		A	A		A	B	
Approach Delay		11.7			19.0			8.2			19.4	
Approach LOS		B			B			A			B	

2025 Future with Development Conditions  
 Kimley Horn Associates, Inc. [SPF #090221277]

PM Peak-Hour

# Lanes, Volumes, Timings

## 1: Smokey Point Boulevard & 156th Street NE

Quality Auto Center

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	8	2	0	4	2		20	42		1	115	
Queue Length 95th (ft)	32	17	70	19	34		87	206		10	261	
Internal Link Dist (ft)		1624			1203			992			4714	
Turn Bay Length (ft)	150		150	200			250			200		
Base Capacity (vph)	607	479	602	609	438		587	2709		681	2646	
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	0.04	0.02	0.44	0.02	0.10		0.39	0.30		0.02	0.32	

### Intersection Summary

Area Type: Other  
 Cycle Length: 115  
 Actuated Cycle Length: 64  
 Natural Cycle: 75  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.65  
 Intersection Signal Delay: 13.2  
 Intersection Capacity Utilization 57.7%  
 Analysis Period (min) 15

Intersection LOS: B  
 ICU Level of Service B

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



# Lanes, Volumes, Timings

## 2: Smokey Point Boulevard & 152nd Street NE

Quality Auto Center

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	16	7	20	98	6	304	16	731	136	353	727	9
Future Volume (vph)	16	7	20	98	6	304	16	731	136	353	727	9
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				0.98			1.00				
Frt		0.887			0.853			0.976			0.998	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1652	0	1770	1565	0	1770	3442	0	1770	3532	0
Flt Permitted	0.909			0.426			0.361			0.170		
Satd. Flow (perm)	1691	1652	0	794	1565	0	672	3442	0	317	3532	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		21			317			20			1	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		209			5141			1452			284	
Travel Time (s)		4.8			116.8			33.0			6.5	
Confl. Peds. (#/hr)	2					2			1	1		
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)	17	28	0	102	323	0	17	903	0	368	766	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 Effect Green (s)	7.8	5.8		11.6	9.8		29.1	23.5		40.4	38.8	
Actuated g/C Ratio	0.12	0.09		0.19	0.16		0.47	0.38		0.65	0.62	
v/c Ratio	0.08	0.16		0.38	0.63		0.04	0.69		0.77	0.35	
Control Delay	23.0	20.7		26.7	10.3		7.1	19.8		25.9	8.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	23.0	20.7		26.7	10.3		7.1	19.8		25.9	8.5	
LOS	C	C		C	B		A	B		C	A	
Approach Delay		21.6			14.2			19.6			14.2	
Approach LOS		C			B			B			B	
Queue Length 50th (ft)	6	2		33	2		1	120		50	41	

2025 Future with Development Conditions  
 Kimley Horn Associates, Inc. [SPF #090221277]

PM Peak-Hour

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

Quality Auto Center

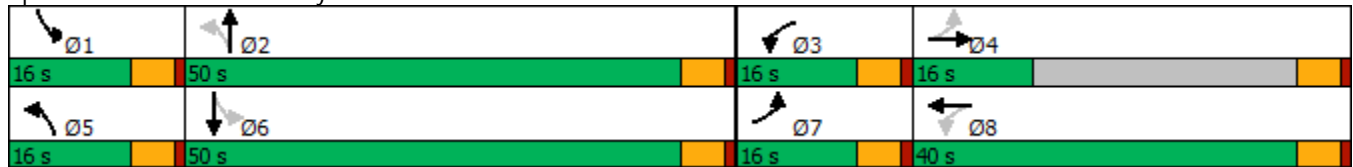
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (ft)	22	28		81	77		12	264		#297	195	
Internal Link Dist (ft)		129			5061			1372			204	
Turn Bay Length (ft)	50			125			150			200		
Base Capacity (vph)	394	989		374	1058		582	2698		476	2765	
Starvation Cap Reductn	0	0		0	0		0	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	0.03		0.27	0.31		0.03	0.33		0.77	0.28	

Intersection Summary

Area Type: Other  
 Cycle Length: 122  
 Actuated Cycle Length: 62.5  
 Natural Cycle: 90  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.77  
 Intersection Signal Delay: 16.3  
 Intersection Capacity Utilization 76.0%  
 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



Lanes, Volumes, Timings

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

Quality Auto Center

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	29	8	257	12	8	42	223	785	10	25	787	55
Future Volume (vph)	29	8	257	12	8	42	223	785	10	25	787	55
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								1.00		1.00		
Frt			0.850		0.873			0.998			0.990	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1752	1845	1568	1752	1610	0	1752	3497	0	1752	3470	0
Flt Permitted	0.622			0.752			0.183			0.337		
Satd. Flow (perm)	1147	1845	1568	1387	1610	0	338	3497	0	621	3470	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			271		44			1			5	
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)									2	2		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	31	8	271	13	52	0	235	837	0	26	886	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 Effect Green (s)	11.1	9.9	9.9	9.5	7.7		41.4	37.9		30.8	25.6	
Actuated g/C Ratio	0.18	0.16	0.16	0.15	0.12		0.65	0.60		0.49	0.40	
v/c Ratio	0.12	0.03	0.57	0.05	0.22		0.51	0.40		0.07	0.63	
Control Delay	22.2	25.4	9.4	21.4	15.0		10.2	10.0		7.4	19.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	22.2	25.4	9.4	21.4	15.0		10.2	10.0		7.4	19.9	
LOS	C	C	A	C	B		B	A		A	B	
Approach Delay		11.1			16.3			10.0			19.5	
Approach LOS		B			B			B			B	

Lanes, Volumes, Timings

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

Quality Auto Center

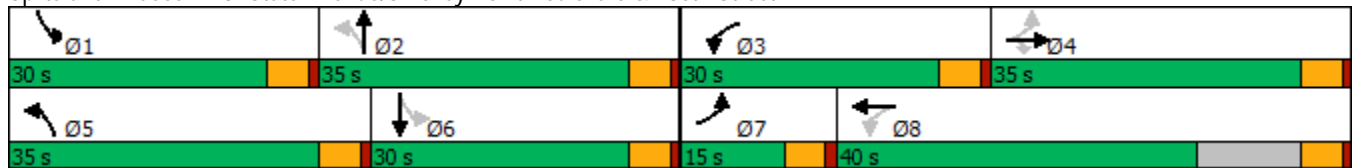
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	10	3	0	4	3		21	44		2	117	
Queue Length 95th (ft)	31	15	65	18	35		92	201		14	#283	
Internal Link Dist (ft)		901			4660			2741			4344	
Turn Bay Length (ft)	150		150	200			300			300		
Base Capacity (vph)	343	894	899	707	1182		906	2094		862	1404	
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	0.30	0.02	0.04		0.26	0.40		0.03	0.63	

Intersection Summary

Area Type: Other  
 Cycle Length: 130  
 Actuated Cycle Length: 63.3  
 Natural Cycle: 90  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.63  
 Intersection Signal Delay: 14.0  
 Intersection Capacity Utilization 56.6%  
 Analysis Period (min) 15  
 Intersection LOS: B  
 ICU Level of Service B

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

Splits and Phases: 3: State Avenue/Smokey Point Boulevard & 136th Street NE



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

Quality Auto Center

Intersection

Int Delay, s/veh	0.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	TT		TT		TT	TT
Traffic Vol, veh/h	36	11	1019	32	10	1053
Future Vol, veh/h	36	11	1019	32	10	1053
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	-	-	-	50	-
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	39	12	1108	35	11	1145

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1721	572	0	0	1143
Stage 1	1126	-	-	-	-
Stage 2	595	-	-	-	-
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	80	463	-	-	607
Stage 1	272	-	-	-	-
Stage 2	514	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	79	463	-	-	607
Mov Cap-2 Maneuver	193	-	-	-	-
Stage 1	272	-	-	-	-
Stage 2	505	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	25.8	0	0.1
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	224	607
HCM Lane V/C Ratio	-	-	0.228	0.018
HCM Control Delay (s)	-	-	25.8	11
HCM Lane LOS	-	-	D	B
HCM 95th %tile Q(veh)	-	-	0.9	0.1



# Lanes, Volumes, Timings

## 1: Smokey Point Boulevard & 156th Street NE

Quality Auto Center

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	9	306	15	9	39	266	927	12	17	929	59
Future Volume (vph)	30	9	306	15	9	39	266	927	12	17	929	59
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		0.878			0.998			0.991	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1635	0	1770	3531	0	1770	3503	0
Flt Permitted	0.565			0.752			0.145			0.299		
Satd. Flow (perm)	1052	1863	1583	1401	1635	0	270	3531	0	557	3503	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			312		40			1			7	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1704			1283			1356			4794	
Travel Time (s)		38.7			29.2			30.8			109.0	
Confl. Peds. (#/hr)									2	2		
Confl. Bikes (#/hr)												1
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)	31	9	312	15	49	0	271	958	0	17	1008	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 Effect Green (s)	13.3	12.2	12.2	11.3	7.7		49.4	47.6		37.9	30.4	
Actuated g/C Ratio	0.18	0.16	0.16	0.15	0.10		0.67	0.64		0.51	0.41	
v/c Ratio	0.12	0.03	0.60	0.06	0.24		0.60	0.42		0.04	0.70	
Control Delay	28.1	32.3	9.9	27.7	19.0		16.3	8.8		6.8	21.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	28.1	32.3	9.9	27.7	19.0		16.3	8.8		6.8	21.4	
LOS	C	C	A	C	B		B	A		A	C	
Approach Delay		12.1			21.0			10.5			21.2	
Approach LOS		B			C			B			C	

# Lanes, Volumes, Timings

## 1: Smokey Point Boulevard & 156th Street NE

Quality Auto Center

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	12	3	0	6	4		47	101		3	210	
Queue Length 95th (ft)	39	20	79	24	39		158	259		11	328	
Internal Link Dist (ft)		1624			1203			1276			4714	
Turn Bay Length (ft)	150		150	200			250			200		
Base Capacity (vph)	523	421	599	528	384		504	2492		609	2274	
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	0.02	0.52	0.03	0.13		0.54	0.38		0.03	0.44	

### Intersection Summary

Area Type: Other  
 Cycle Length: 115  
 Actuated Cycle Length: 74  
 Natural Cycle: 80  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.70  
 Intersection Signal Delay: 15.0  
 Intersection Capacity Utilization 64.8%  
 Analysis Period (min) 15

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

Quality Auto Center

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	8	24	117	7	349	19	848	163	407	840	11
Future Volume (vph)	19	8	24	117	7	349	19	848	163	407	840	11
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				0.98			1.00				
Frt		0.886			0.853			0.976			0.998	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1650	0	1770	1565	0	1770	3441	0	1770	3532	0
Flt Permitted	0.870			0.417			0.321			0.128		
Satd. Flow (perm)	1618	1650	0	777	1565	0	598	3441	0	238	3532	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		25			364			21			1	
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)	2					2			1	1		
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)	20	33	0	122	371	0	20	1053	0	424	886	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 Effect Green (s)	9.2	6.1		14.5	11.1		34.7	29.0		46.0	42.5	
Actuated g/C Ratio	0.13	0.09		0.20	0.16		0.49	0.41		0.64	0.60	
v/c Ratio	0.09	0.20		0.44	0.67		0.05	0.75		1.05	0.42	
Control Delay	25.4	22.0		30.3	11.4		7.5	21.9		80.8	11.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	25.4	22.0		30.3	11.4		7.5	21.9		80.8	11.1	
LOS	C	C		C	B		A	C		F	B	
Approach Delay		23.3			16.1			21.6			33.6	
Approach LOS		C			B			C			C	
Queue Length 50th (ft)	7	4		45	2		3	208		-175	97	

2031 Baseline Conditions

Kimley Horn Associates, Inc. [SPF #090221277]

PM Peak-Hour

# Lanes, Volumes, Timings

## 2: Smokey Point Boulevard & 152nd Street NE

Quality Auto Center

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (ft)	27	32		106	90		13	330		#455	237	
Internal Link Dist (ft)		129			5061			1372			1276	
Turn Bay Length (ft)	50			125			150			200		
Base Capacity (vph)	372	873		350	991		533	2316		404	2404	
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	0.05	0.04		0.35	0.37		0.04	0.45		1.05	0.37	

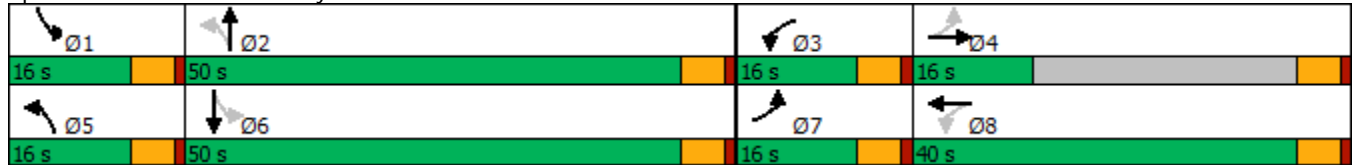
### Intersection Summary

Area Type: Other  
 Cycle Length: 122  
 Actuated Cycle Length: 71.4  
 Natural Cycle: 90  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 1.05  
 Intersection Signal Delay: 26.1  
 Intersection Capacity Utilization 85.9%  
 Analysis Period (min) 15

Intersection LOS: C  
 ICU Level of Service E

- ~ Volume exceeds capacity, queue is theoretically infinite.  
 Queue shown is maximum after two cycles.
- # 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



Lanes, Volumes, Timings

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

Quality Auto Center

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	9	306	15	9	39	266	927	12	17	929	59
Future Volume (vph)	30	9	306	15	9	39	266	927	12	17	929	59
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								1.00		1.00		
Frt			0.850		0.877			0.998			0.991	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1752	1845	1568	1752	1618	0	1752	3497	0	1752	3473	0
Flt Permitted	0.625			0.752			0.123			0.290		
Satd. Flow (perm)	1153	1845	1568	1387	1618	0	227	3497	0	535	3473	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			322		41			1			4	
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)									2	2		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	32	9	322	16	50	0	280	989	0	18	1040	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 Effect Green (s)	11.4	10.2	10.2	9.8	8.0		44.4	42.7		31.0	25.8	
Actuated g/C Ratio	0.17	0.15	0.15	0.15	0.12		0.67	0.64		0.47	0.39	
v/c Ratio	0.13	0.03	0.63	0.07	0.22		0.61	0.44		0.05	0.77	
Control Delay	24.1	27.4	10.0	23.5	16.3		17.2	8.8		8.4	26.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	24.1	27.4	10.0	23.5	16.3		17.2	8.8		8.4	26.0	
LOS	C	C	A	C	B		B	A		A	C	
Approach Delay		11.7			18.0			10.6			25.7	
Approach LOS		B			B			B			C	

Lanes, Volumes, Timings

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

Quality Auto Center

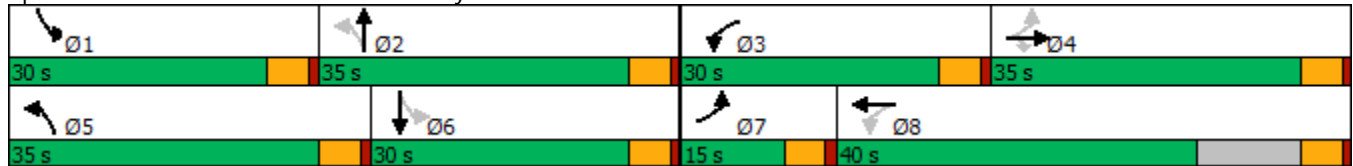
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	11	3	0	5	3		39	55		1	160	
Queue Length 95th (ft)	34	18	73	21	36		156	255		12	#447	
Internal Link Dist (ft)		901			4660			2741			4344	
Turn Bay Length (ft)	150		150	200			300			300		
Base Capacity (vph)	333	857	900	678	1140		859	2244		825	1347	
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	0.10	0.01	0.36	0.02	0.04		0.33	0.44		0.02	0.77	

Intersection Summary

Area Type: Other  
 Cycle Length: 130  
 Actuated Cycle Length: 66.6  
 Natural Cycle: 90  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.77  
 Intersection Signal Delay: 16.7  
 Intersection Capacity Utilization 63.2%  
 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 B

Splits and Phases: 3: State Avenue/Smokey Point Boulevard & 136th Street NE



# Lanes, Volumes, Timings

## 1: Smokey Point Boulevard & 156th Street NE

Quality Auto Center

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	9	310	15	9	39	270	939	12	17	939	59
Future Volume (vph)	30	9	310	15	9	39	270	939	12	17	939	59
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		0.878			0.998			0.991	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1635	0	1770	3531	0	1770	3503	0
Flt Permitted	0.565			0.752			0.141			0.295		
Satd. Flow (perm)	1052	1863	1583	1401	1635	0	263	3531	0	550	3503	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			316		40			1			6	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1704			1283			1072			4794	
Travel Time (s)		38.7			29.2			24.4			109.0	
Confl. Peds. (#/hr)									2	2		
Confl. Bikes (#/hr)												1
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)	31	9	316	15	49	0	276	970	0	17	1018	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 Effect Green (s)	13.4	12.2	12.2	11.3	7.7		50.8	49.0		38.3	31.0	
Actuated g/C Ratio	0.18	0.16	0.16	0.15	0.10		0.67	0.65		0.51	0.41	
v/c Ratio	0.12	0.03	0.61	0.06	0.24		0.59	0.42		0.04	0.71	
Control Delay	28.3	32.4	10.0	27.8	19.1		16.7	8.8		6.8	21.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	28.3	32.4	10.0	27.8	19.1		16.7	8.8		6.8	21.9	
LOS	C	C	B	C	B		B	A		A	C	
Approach Delay		12.2			21.1			10.6			21.6	
Approach LOS		B			C			B			C	

Lanes, Volumes, Timings

1: Smokey Point Boulevard & 156th Street NE

Quality Auto Center

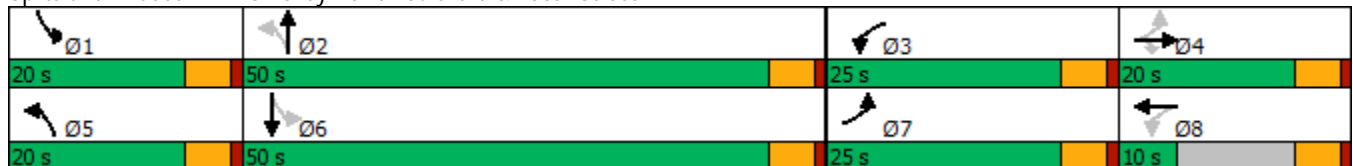
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	12	4	0	6	4		52	102		3	213	
Queue Length 95th (ft)	39	20	79	24	39		#171	264		11	334	
Internal Link Dist (ft)		1624			1203			992			4714	
Turn Bay Length (ft)	150		150	200			250			200		
Base Capacity (vph)	509	409	594	513	374		493	2435		597	2208	
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	0.02	0.53	0.03	0.13		0.56	0.40		0.03	0.46	

Intersection Summary

Area Type: Other  
 Cycle Length: 115  
 Actuated Cycle Length: 75.4  
 Natural Cycle: 80  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.71  
 Intersection Signal Delay: 15.3  
 Intersection Capacity Utilization 65.4%  
 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

Quality Auto Center

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	8	24	117	7	356	19	869	163	414	864	11
Future Volume (vph)	19	8	24	117	7	356	19	869	163	414	864	11
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				0.98			1.00				
Frt		0.886			0.853			0.976			0.998	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1650	0	1770	1565	0	1770	3442	0	1770	3532	0
Flt Permitted	0.851			0.412			0.313			0.124		
Satd. Flow (perm)	1583	1650	0	767	1565	0	583	3442	0	231	3532	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		25			371			20			1	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		209			5141			1452			284	
Travel Time (s)		4.8			116.8			33.0			6.5	
Confl. Peds. (#/hr)	2					2			1	1		
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)	20	33	0	122	378	0	20	1075	0	431	911	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 Effect Green (s)	9.3	6.3		14.7	11.3		35.7	30.0		47.0	43.5	
Actuated g/C Ratio	0.13	0.09		0.20	0.16		0.49	0.41		0.65	0.60	
v/c Ratio	0.09	0.20		0.45	0.68		0.05	0.75		1.08	0.43	
Control Delay	25.8	22.1		30.8	11.4		7.6	22.1		92.3	11.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	25.8	22.1		30.8	11.4		7.6	22.1		92.3	11.2	
LOS	C	C		C	B		A	C		F	B	
Approach Delay		23.5			16.2			21.8			37.2	
Approach LOS		C			B			C			D	
Queue Length 50th (ft)	7	4		46	2		3	215		-189	101	

2031 Future with Development Conditions  
 Kimley Horn Associates, Inc. [SPF #090221277]

PM Peak-Hour

# Lanes, Volumes, Timings

## 2: Smokey Point Boulevard & 152nd Street NE

Quality Auto Center

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (ft)	27	33		106	90		14	345		#480	250	
Internal Link Dist (ft)		129			5061			1372			204	
Turn Bay Length (ft)	50			125			150			200		
Base Capacity (vph)	368	860		345	985		526	2282		398	2386	
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	0.05	0.04		0.35	0.38		0.04	0.47		1.08	0.38	

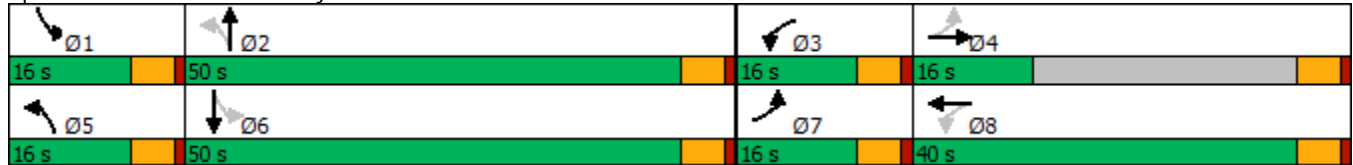
### Intersection Summary

Area Type: Other  
 Cycle Length: 122  
 Actuated Cycle Length: 72.6  
 Natural Cycle: 90  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 1.08  
 Intersection Signal Delay: 27.8  
 Intersection Capacity Utilization 87.3%  
 Analysis Period (min) 15

Intersection LOS: C  
 ICU Level of Service E

- ~ Volume exceeds capacity, queue is theoretically infinite.  
 Queue shown is maximum after two cycles.
- # 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



Lanes, Volumes, Timings

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

Quality Auto Center

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	9	306	15	9	48	266	935	12	27	938	64
Future Volume (vph)	34	9	306	15	9	48	266	935	12	27	938	64
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								1.00		1.00		
Frt			0.850		0.872			0.998			0.990	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1752	1845	1568	1752	1609	0	1752	3497	0	1752	3470	0
Flt Permitted	0.569			0.752			0.117			0.287		
Satd. Flow (perm)	1050	1845	1568	1387	1609	0	216	3497	0	529	3470	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			322		51			1			5	
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)									2	2		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	36	9	322	16	60	0	280	997	0	28	1054	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 Effect Green (s)	13.7	12.5	12.5	10.8	7.9		44.0	40.3		31.1	25.7	
Actuated g/C Ratio	0.20	0.18	0.18	0.16	0.12		0.64	0.59		0.45	0.38	
v/c Ratio	0.13	0.03	0.59	0.06	0.26		0.65	0.48		0.08	0.81	
Control Delay	23.1	26.6	8.8	22.5	15.6		20.1	11.6		8.9	28.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	23.1	26.6	8.8	22.5	15.6		20.1	11.6		8.9	28.3	
LOS	C	C	A	C	B		C	B		A	C	
Approach Delay		10.6			17.1			13.4			27.8	
Approach LOS		B			B			B			C	

Lanes, Volumes, Timings

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

Quality Auto Center

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	12	3	0	5	4		67	112		4	223	
Queue Length 95th (ft)	37	18	73	21	38		159	261		16	#454	
Internal Link Dist (ft)		901			4660			2741			4344	
Turn Bay Length (ft)	150		150	200			300			300		
Base Capacity (vph)	344	831	883	658	1105		831	2059		796	1307	
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	0.10	0.01	0.36	0.02	0.05		0.34	0.48		0.04	0.81	

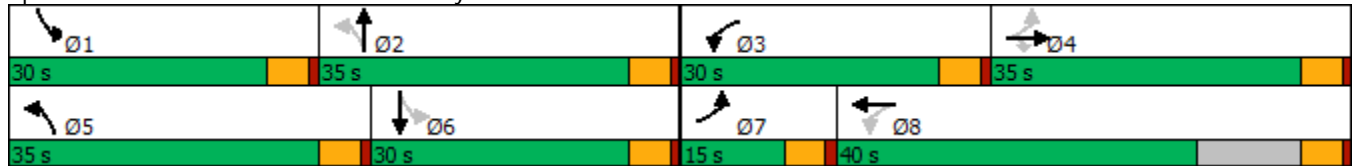
Intersection Summary

Area Type: Other  
 Cycle Length: 130  
 Actuated Cycle Length: 68.5  
 Natural Cycle: 90  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.81  
 Intersection Signal Delay: 18.7  
 Intersection Capacity Utilization 63.8%  
 Analysis Period (min) 15

Intersection LOS: B  
 ICU Level of Service B

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

Splits and Phases: 3: State Avenue/Smokey Point Boulevard & 136th Street NE



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

Quality Auto Center

Intersection

Int Delay, s/veh	0.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	TT		TT		TT	TT
Traffic Vol, veh/h	31	16	1216	28	14	1258
Future Vol, veh/h	31	16	1216	28	14	1258
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	-	-	-	50	-
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	34	17	1322	30	15	1367

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	2051	676	0	0	1352
Stage 1	1337	-	-	-	-
Stage 2	714	-	-	-	-
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	48	396	-	-	505
Stage 1	210	-	-	-	-
Stage 2	446	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	47	396	-	-	505
Mov Cap-2 Maneuver	148	-	-	-	-
Stage 1	210	-	-	-	-
Stage 2	433	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	31.1	0	0.1
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	188	505
HCM Lane V/C Ratio	-	-	0.272	0.03
HCM Control Delay (s)	-	-	31.1	12.3
HCM Lane LOS	-	-	D	B
HCM 95th %tile Q(veh)	-	-	1.1	0.1

# **WSDOT Exhibit C List**

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

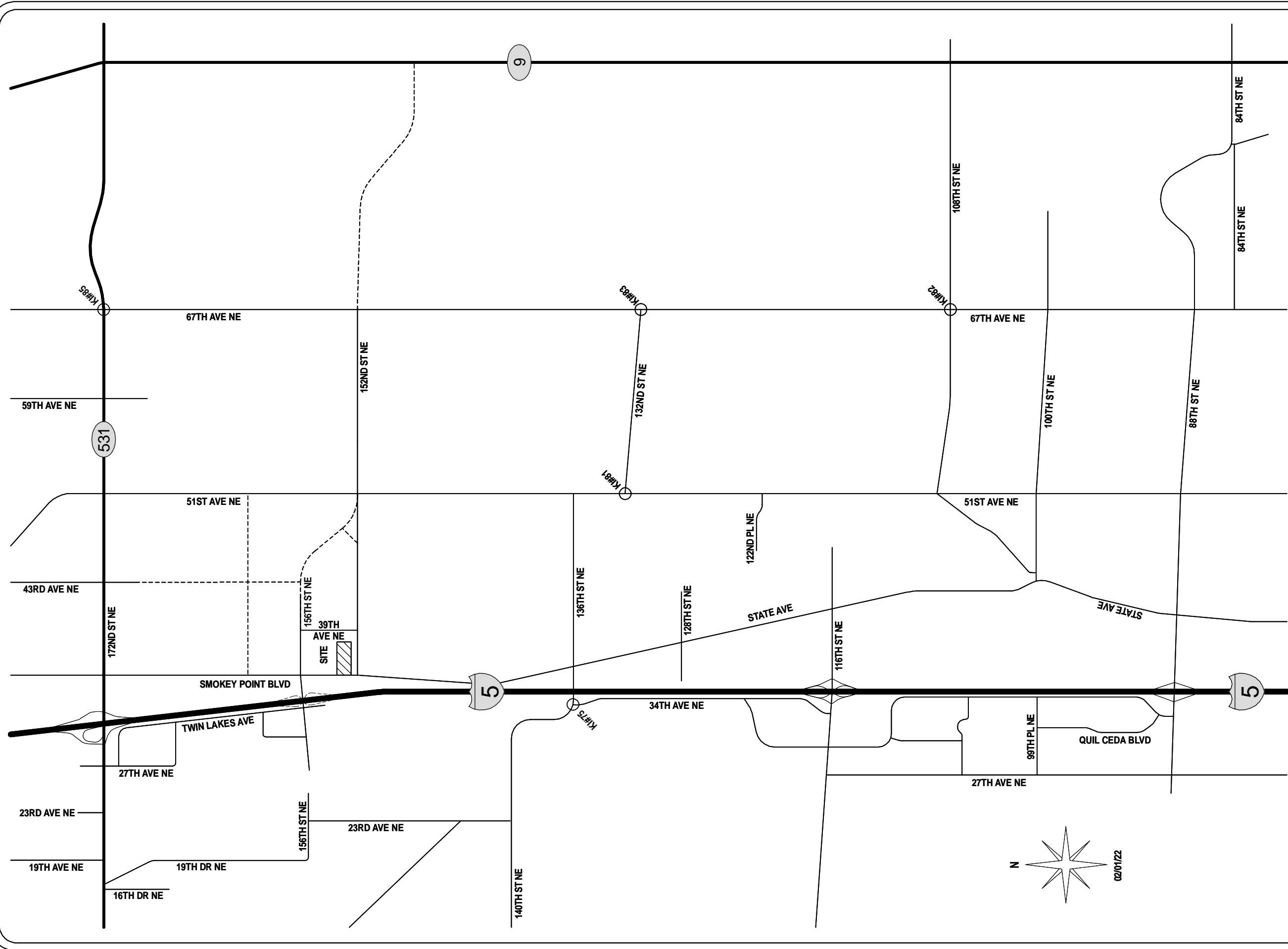
County ID#	TSA	SR	MP1	MP2	Title/Description	Design/Construction year	Total Cost (M)	TOTAL CAPACITY (ADT)	PRESENT VOLUME	RESERVE CAPACITY (ADT)	TRUE CONTRIBUTION PER ADT	50% TRIP END DEDUCTION	TAX DEDUCTION	Proportionate Share Per Development Generated ADT
DOT-11	D	5	186.42	186.42	128th ST SW Interchange - 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

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-19	F 524	5.87	9.50	24th Avenue SE to I-405, widen to 5 Lanes	2012	\$33.34	54,000	15,300	38,700	\$861.50	\$430.75	\$77.54	\$353.21
DOT-20	F 524	5.87	9.50	I-405 to Royal Ann Road, widen to 5 Lanes	2011	\$71.06	54,000	15,300	38,700	\$1,836.18	\$918.09	\$165.26	\$752.83
DOT-60	E 524	6.79	6.79	Larch Way intersection, LT lanes, signal	2009	\$2.59	54,000	15,300	38,700	\$66.93	\$33.47	\$5.02	\$28.45
DOT-59	D 525	6.25	6.25	SR-525/68th St. SW intersection improvements, NBRT, NBLT & SBLT	2011	\$3.70	25,700	17,000	8,700	\$425.29	\$212.64	\$89.31	\$123.33
DOT-49	A 530	17.30	17.30	SR-530 at Old 99, Roundabout	2011	\$8.00	18,000	10,000	8,000	\$1,000.00	\$500.00	\$85.00	\$415.00
DOT-62	A 530	19.71	19.71	211th Place NE, Intersection Roundabout	2011	\$6.10	24,000	15,000	9,000	\$677.78	\$338.89	\$57.61	\$281.28
DOT-52	A 531	1.95	2.25	SR-531/Jct. Freestad Road Intersection, LT lanes	2011	\$1.55	18,000	7,900	10,100	\$140.14	\$70.07	\$11.92	\$58.15
DOT-05	A 531	7.00	8.59	43rd Ave. NE to 67th Ave. NE, NE, Widen to 5 lanes (Arlington)	2014	\$20.78	54,000	11,000	43,000	\$483.14	\$241.57	\$41.07	\$200.50
				270th St. NW Vic. To 72nd Ave. NW, EB Climbing Lane, intersection improvements & signal.	2009	\$19.00	54,000	16,000	38,000	500	\$250.00	\$28.75	\$221.25
DOT-53	A 532	5.25	5.90	64th Ave. NW to 12th Ave. NW, Climbing lane & LT Lanes	2010	\$22.40	54,000	17,000	37,000	\$605.41	\$302.70	\$33.75	\$268.95
				TAX DEDUCTIONS									
				TSA A = 17%									
				TSA B = 19%									
				TSA C = 22%									
				TSA D = 21%									
				TSA E = 15%									
				TSA F = 18%									





# **Snohomish County Key Intersections**



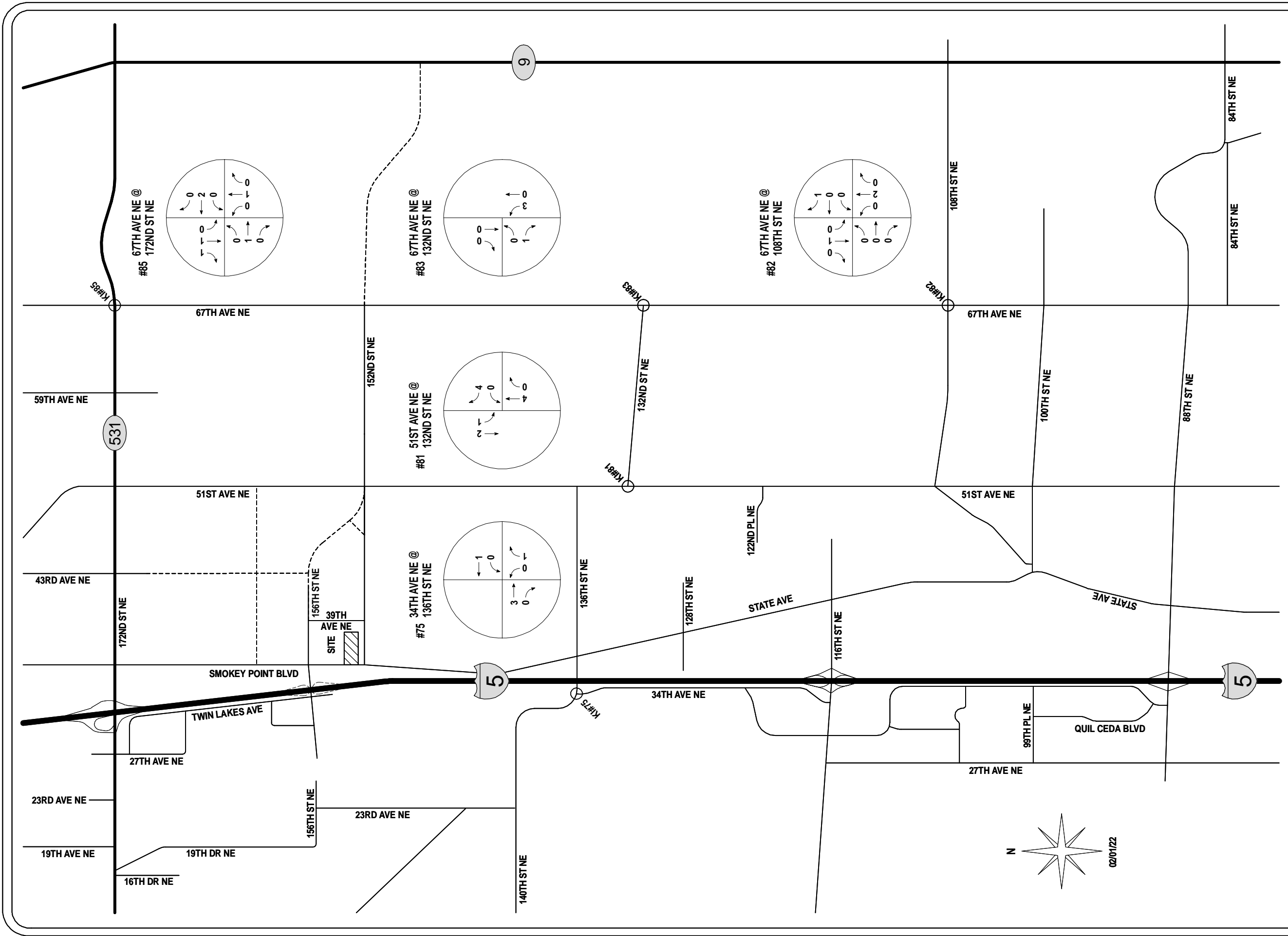
TRAFFIC IMPACT STUDY  
KH #090221277

QUALITY AUTO CENTER

CITY OF MARYSVILLE

- LEGEND**
-  DEVELOPMENT SITE
  -  SNOHOMISH COUNTY KEY INTERSECTION

**FIGURE A**  
**SNOHOMISH COUNTY**  
**KEY INTERSECTION**

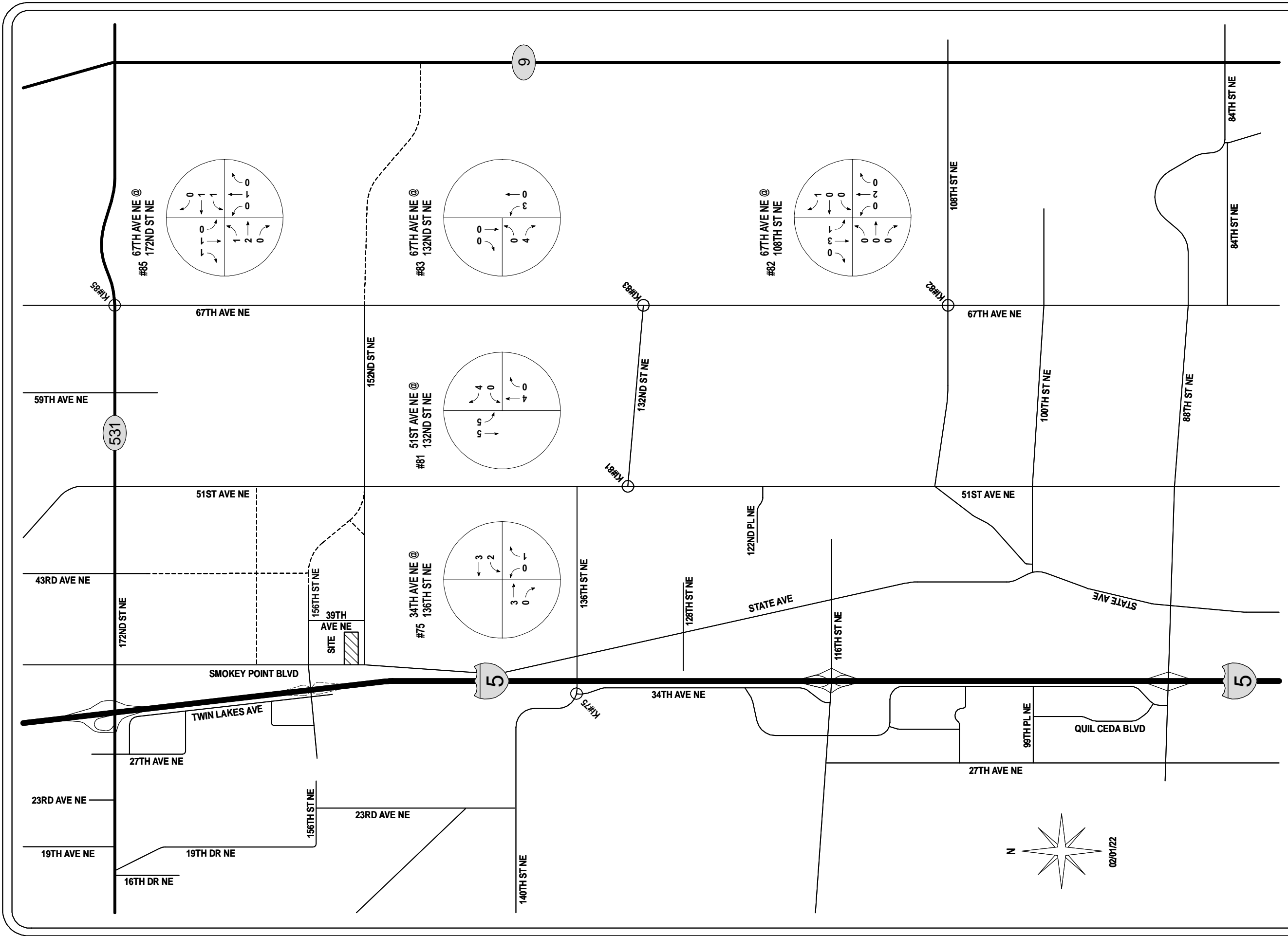


TRAFFIC IMPACT STUDY  
KH #090221277

QUALITY AUTO CENTER  
CITY OF MARYSVILLE

LEGEND  
XXX → DEVELOPMENT TURNING MOVEMENT VOLUMES

**FIGURE B**  
SNOHOMISH COUNTY  
KEY INTERSECTION  
TURNING MOVEMENTS  
AM PEAK-HOUR



TRAFFIC IMPACT STUDY  
KH #090221277

QUALITY AUTO CENTER  
CITY OF MARYSVILLE

LEGEND  
XXX → DEVELOPMENT TURNING MOVEMENT VOLUMES

**FIGURE C**  
SNOHOMISH COUNTY  
KEY INTERSECTION  
TURNING MOVEMENTS  
PM PEAK-HOUR

**Table A: AM Peak-Hour Key Intersection Volumes**

<b>Intersection</b>	<b>EBL</b>	<b>EBT</b>	<b>EBR</b>	<b>WBL</b>	<b>WBT</b>	<b>WBR</b>	<b>NBL</b>	<b>NBT</b>	<b>NBR</b>	<b>SBL</b>	<b>SBT</b>	<b>SBR</b>
#75: 34 <sup>th</sup> Ave NE at Stimson Rd	0	3	0	0	1	0	0	0	1	0	0	0
#81: 51 <sup>st</sup> Ave NE at 132 <sup>nd</sup> St NE	0	0	0	0	0	4	0	4	0	1	2	0
#82: 67 <sup>th</sup> Ave NE at 108 <sup>th</sup> St NE	0	0	0	0	0	1	0	2	0	0	1	0
#83: 67 <sup>th</sup> Ave NE at 132 <sup>nd</sup> St NE	0	0	1	0	0	0	3	0	0	0	0	0
#85: 67 <sup>th</sup> Ave NE at 172 <sup>nd</sup> St NE	0	1	0	0	2	0	0	1	0	0	1	1

**Table B: PM Peak-Hour Key Intersection Volumes**

<b>Intersection</b>	<b>EBL</b>	<b>EBT</b>	<b>EBR</b>	<b>WBL</b>	<b>WBT</b>	<b>WBR</b>	<b>NBL</b>	<b>NBT</b>	<b>NBR</b>	<b>SBL</b>	<b>SBT</b>	<b>SBR</b>
#75: 34 <sup>th</sup> Ave NE at Stimson Rd	0	3	0	2	3	0	0	0	1	0	0	0
#81: 51 <sup>st</sup> Ave NE at 132 <sup>nd</sup> St NE	0	0	0	0	0	4	0	4	0	5	5	0
#82: 67 <sup>th</sup> Ave NE at 108 <sup>th</sup> St NE	0	0	0	0	0	1	0	2	0	1	3	0
#83: 67 <sup>th</sup> Ave NE at 132 <sup>nd</sup> St NE	0	0	4	0	0	0	3	0	0	0	0	0
#85: 67 <sup>th</sup> Ave NE at 172 <sup>nd</sup> St NE	1	2	0	1	1	0	0	1	0	0	1	1