

Gibson Traffic Consultants, Inc.
2813 Rockefeller Avenue
Suite B
Everett, WA 98201
425.339.8266

Smartcap Arlington Airport Business Park Traffic Impact Analysis

Jurisdiction: City of Arlington

October 2020



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1. INTRODUCTION

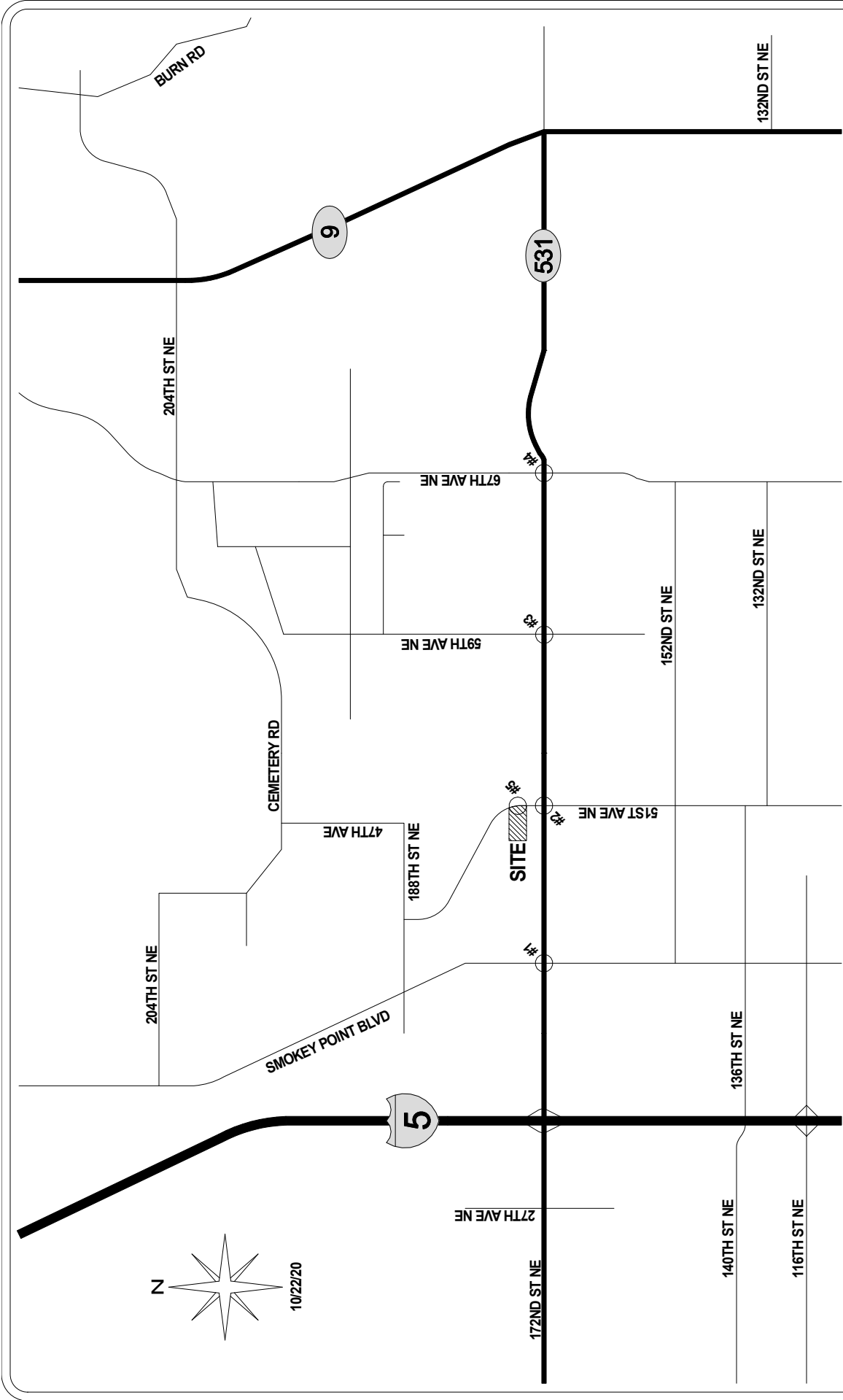
Gibson Traffic Consultants, Inc. (GTC) has been retained to analyze the traffic impacts of the proposed Smartcap Arlington Airport Business Park development. The proposed development is located along the west side of 51st Avenue NE, north of 172nd Street NE (SR-531). A site vicinity map is included in Figure 1. The development is proposed to consist of 300,775 square-feet (SF) of building space. The site is currently undeveloped. The development is anticipated to be constructed by the year 2023.

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

2. METHODOLOGY

Trip generation for the Smartcap Arlington Airport Business Park development is based on average trip generation rates from the Institute of Transportation Engineers (ITE) *Trip Generation Manual, 10th Edition (2017)*. Level of service (LOS) at the study intersections is determined using the methodology described in the *Highway Capacity Manual, 6th Edition (HCM)*. The analysis has been performed using the *Synchro 10.3, Build 151* software. The intersection level of service analysis has been performed for the existing conditions, 2023 baseline conditions, and 2023 future with development conditions during the PM peak-hour. The year 2022 has been utilized for the future analysis based on the anticipated completion date of the development.

Traffic congestion on roadways is generally measured in terms of level of service at critical intersections. In accordance with the *Highway Capacity Manual, 6th Edition*, roadway 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. The level of service at signalized, all-way stop-controlled and roundabout intersections are based on the average stopped delay for all entering vehicles. The level of service at two-way stop-controlled intersections is based on stopped delay times for the critical approach. Geometric characteristics and conflicting traffic movements are taken into consideration when determining level of service values. A summary of the level of service criteria has been included in Table 1.



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SMARTCAP
ARLINGTON AIRPORT
BUSINESS PARK

LEGEND

- DEVELOPMENT SITE
- STUDY INTERSECTION

FIGURE 1
SITE VICINITY MAP

CITY OF ARLINGTON

Table 1: Level of Service Criteria for Intersections

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

The City of Arlington has established an acceptable level of service of LOS D.

The City of Arlington and Snohomish County have an interlocal agreement that provides for reciprocal mitigation fees. Snohomish County mitigation fees can be calculated based on the default percentage in the interlocal agreement, which is 70%, or based on actual impacts. The City of Arlington also has an interlocal agreement with WSDOT that provides for mitigation fees to WSDOT for impacts to WSDOT improvement projects. WSDOT improvement projects and their associated fees are based on the most recent Exhibit C list, which is included in the attachments. City of Arlington developments are required to pay for any WSDOT improvement project on the Exhibit C list impacted with 3 or more directional PM peak-hour trips or based on the area wide mitigation fee.

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

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

LOS B: Generally stable traffic flow conditions.

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

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

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

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

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

3. TRIP GENERATION

Trip generation calculations for the proposed Smartcap Arlington Airport Business Park development are based on national research data contained in the Institute of Transportation Engineers' (ITE) *Trip Generation Manual, 10th Edition* (2017). The final uses in the development are not currently known. The trip generation calculations have therefore been performed using ITE Land Use Code 770, Business Park, to account for various uses. The trip generation of the Smartcap Arlington Airport Business Park development is summarized in Table 2.

Table 2: Trip Generation Summary

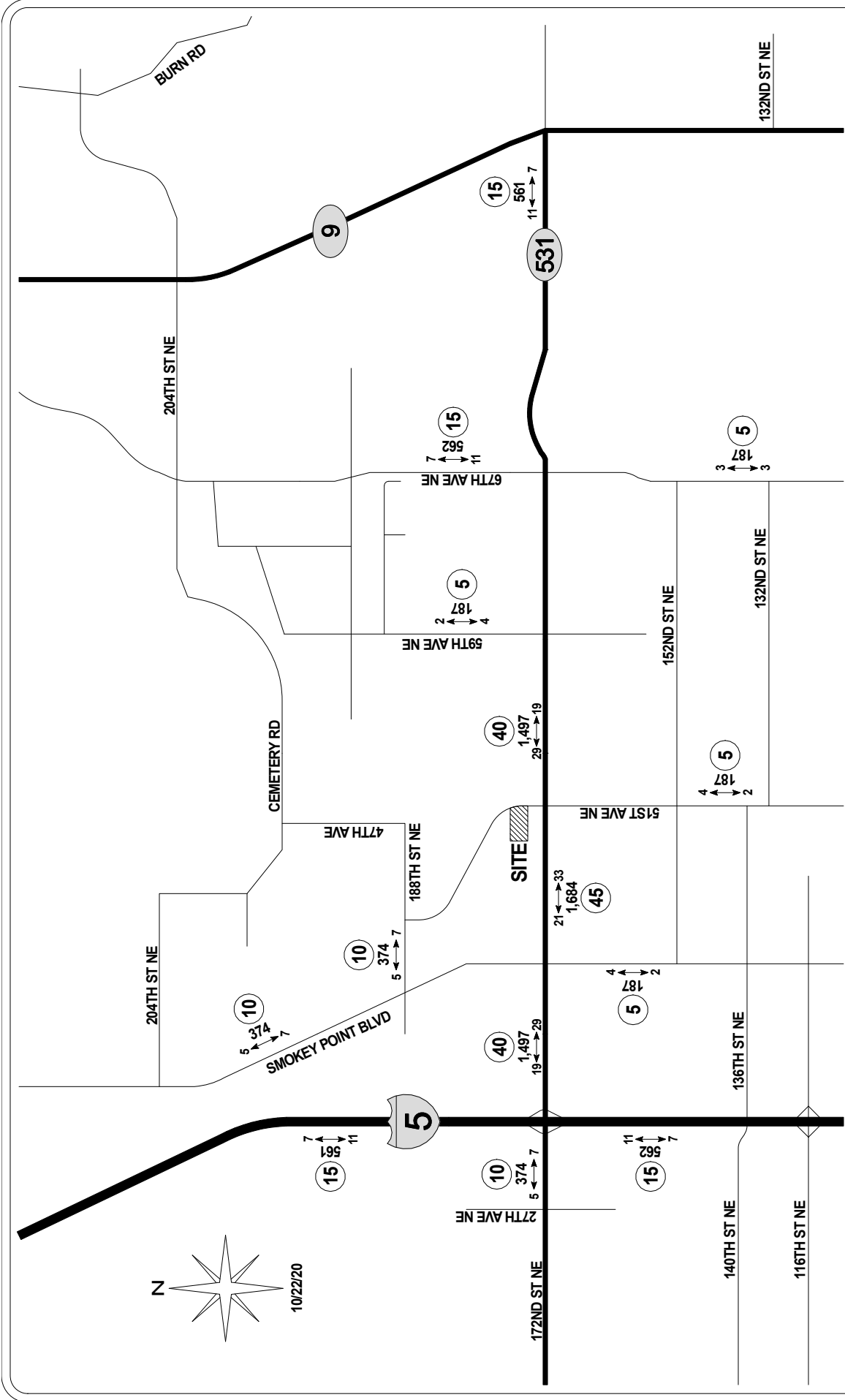
300,775 SF Business Park ITE LUC 770	Average Daily Trips			AM Peak-Hour Trips			PM Peak-Hour Trips		
	Inbound	Outbound	Total	Inbound	Outbound	Total	Inbound	Outbound	Total
Generation Rate	12.44 Trips per 1,000 SF			0.40 Trips per 1,000 SF			0.42 Trips per 1,000 SF		
Splits	50%	50%	100%	61%	39%	100%	46%	64%	100%
Trips	1,871	1,871	3,742	73	47	120	58	68	126

The Smartcap Arlington Airport Business Park development is anticipated to generate approximately 3,742 new average daily trips (ADT) with approximately 120 new AM peak-hour trips and approximately 126 new PM peak-hour trips.

4. TRIP DISTRIBUTION

The trip distribution for the Smartcap Arlington Airport Business Park development is based on previously approved distributions in the site vicinity, surrounding uses and existing traffic volumes. It is anticipated that 45% of the trips generated by the development will travel to and from the west along 172nd Street NE (SR-531). Approximately 40% of the trips generated by the development will travel to and from the east along 172nd Street NE (SR-531). An estimated 10% of the trips generated by the development will travel to and from the north along 51st Avenue NE. The remaining 5% of the trips generated by the development are anticipated to travel to and from the south along 51st Avenue NE. Detailed distributions for the AM and PM peak-hours are shown in Figure 2 and Figure 3, respectively.

The interlocal agreement between the City of Arlington and Snohomish County requires detailed development trip turning movement data at Snohomish County key intersections impacted with three or more directional trips during the AM peak-hour and PM peak-hour. The trips generated by the development will impact 4 Snohomish County key intersections during the AM and PM peak-hours before the local distribution of trips results in less than 3 directional peak-hour trips. Individual trip turning movements at the impacted Snohomish County key intersections are included in the attachments.



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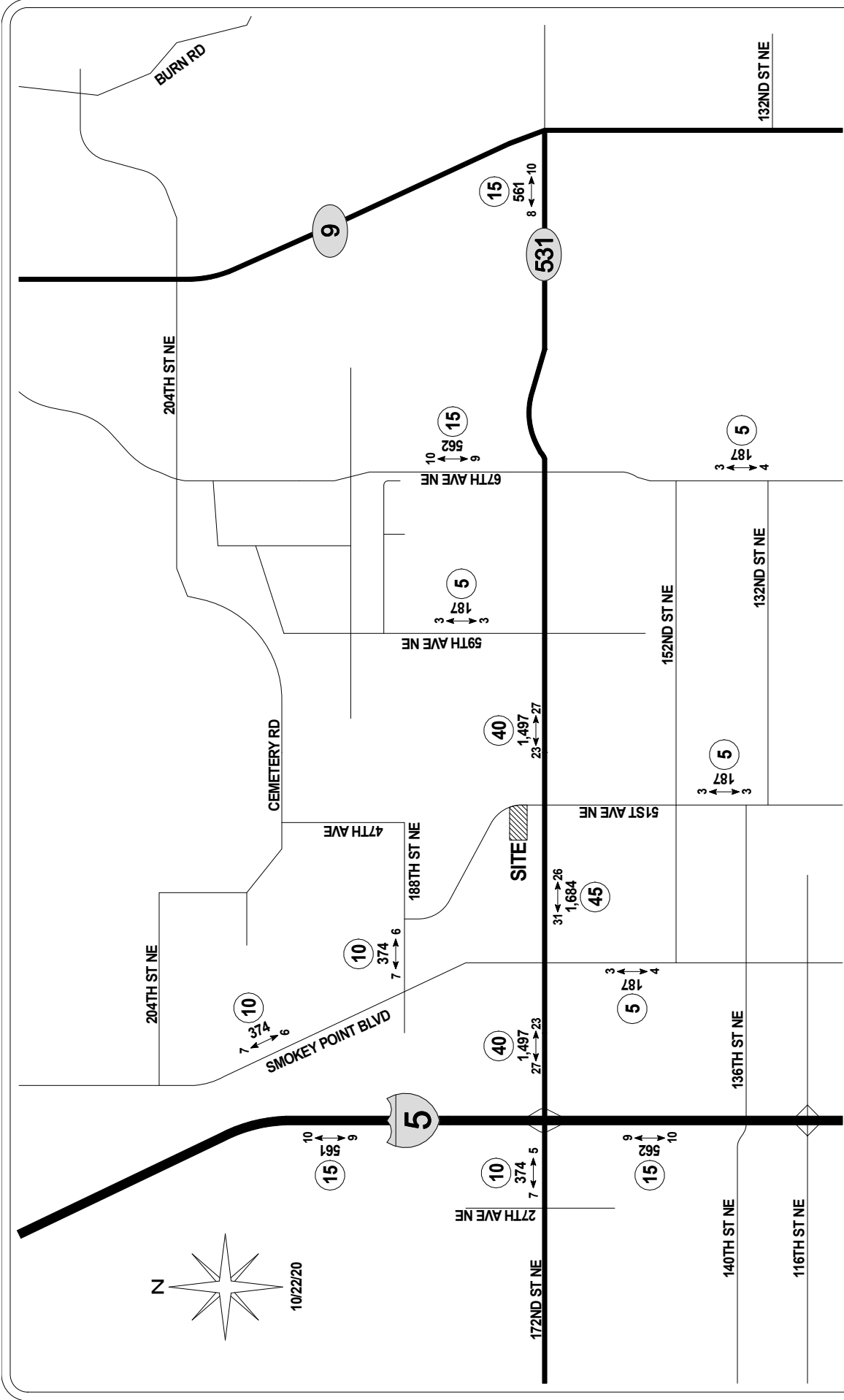
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LEGEND
AWDT
AM ↔ PEAK
NEW DAILY TRIPS
NEW AM PEAK-HOUR TRIPS
TRIP DISTRIBUTION %

FIGURE 2
DEVELOPMENT TRIP
DISTRIBUTION
AM PEAK-HOUR

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LEGEND
AWDT
PM ↔ PEAK
NEW DAILY TRIPS
NEW PM PEAK-HOUR TRIPS
TRIP DISTRIBUTION %

FIGURE 3
DEVELOPMENT TRIP
DISTRIBUTION
PM PEAK-HOUR

CITY OF ARLINGTON

5. LEVEL OF SERVICE ANALYSIS

The following intersections were analyzed as a part of this report:

1. 172nd Street NE (SR-531 at Smokey Point Boulevard)
2. 172nd Street NE (SR-531 at 51st Avenue NE)
3. 172nd Street NE (SR-531 at 59th Avenue NE)
4. 172nd Street NE (SR-531 at 67th Avenue NE)
5. Site Access at 51st Avenue NE – 2023 future with development only

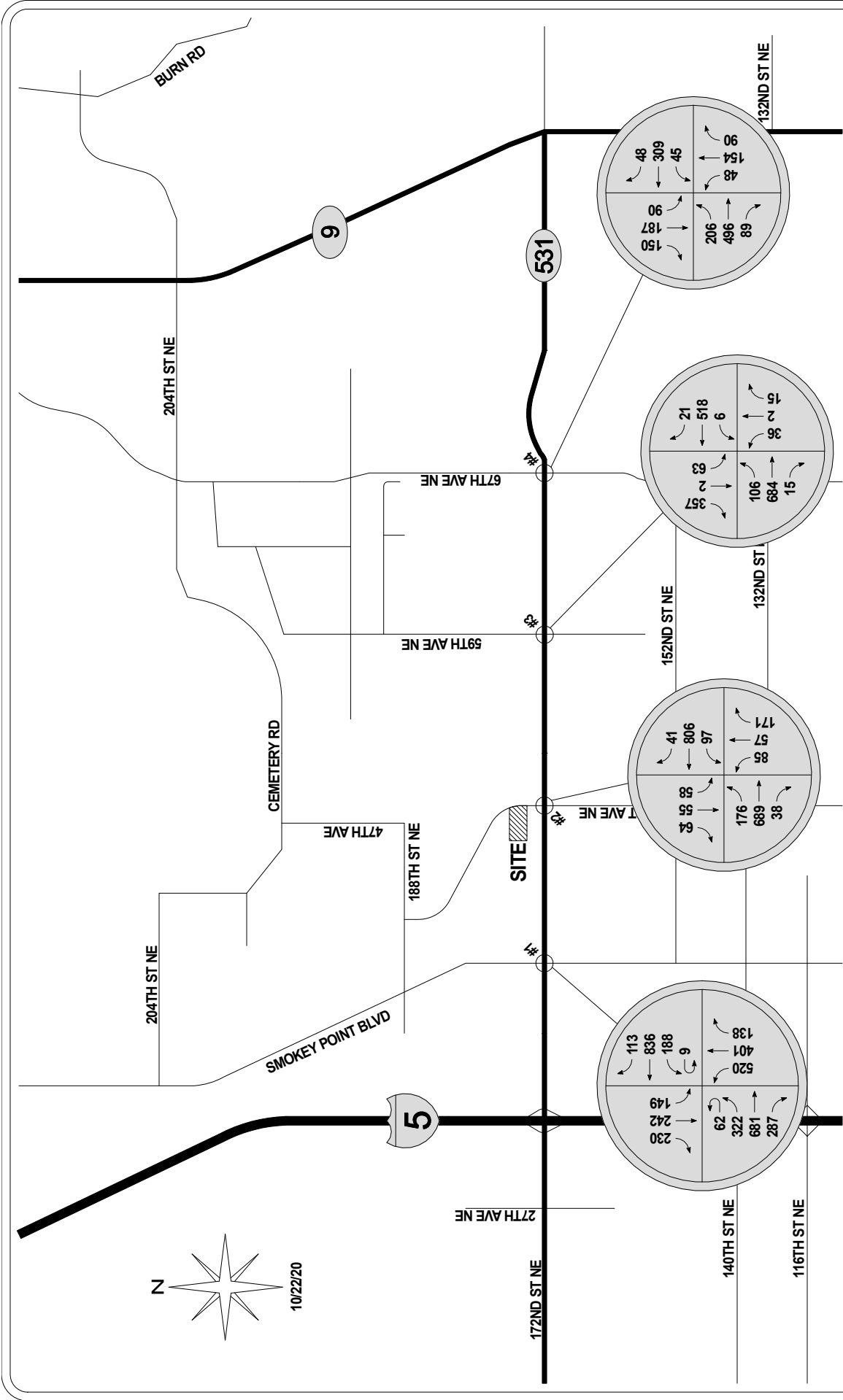
All of the existing intersections are signalized. The study intersections have been analyzed for the existing conditions, 2023 baseline conditions and 2023 future conditions with development. The site access has only been analyzed for the 2023 future conditions with development.

5.1 Intersection Turning Movements

The existing volumes at the study intersections are based on counts performed by the independent count firm Traffic Data Gathering (TDG) before the Covid-19 pandemic. The existing turning movements at the study intersections are shown in Figure 4. The 2023 baseline turning movements at the intersections have been calculated utilizing a 2% annually compounding growth rate, which is consistent with previous analysis performed in the City of Arlington. It is important to note that the growth is from the date of the county. The 2023 baseline turning movements are shown in Figure 5. The 2023 future with development turning movements were calculated by adding the trips generated by the development to the 2023 baseline tuning movements. The site is proposed to have multiple accesses to 51st Avenue NE, but the analysis assumes all of the trips will use a single access to represent the highest anticipated impacts to the site access. The 2023 future with development turning movements are shown in Figure 6. The existing turning movement counts and future turning movement calculations are included in the attachments.

5.2 Level of Service Analysis

The level of service analysis has been completed with the existing channelization and intersection control. The level of service analysis shows that the study intersections currently operate at LOS D, or better. The study intersections, with the exception of 172nd Street NE (SR-531) at Smokey Point Boulevard, are anticipated to operate at LOS D, or better, under the 2023 baseline and 2023 future with development conditions. The level of service results for the study intersections are summarized in Table 3.



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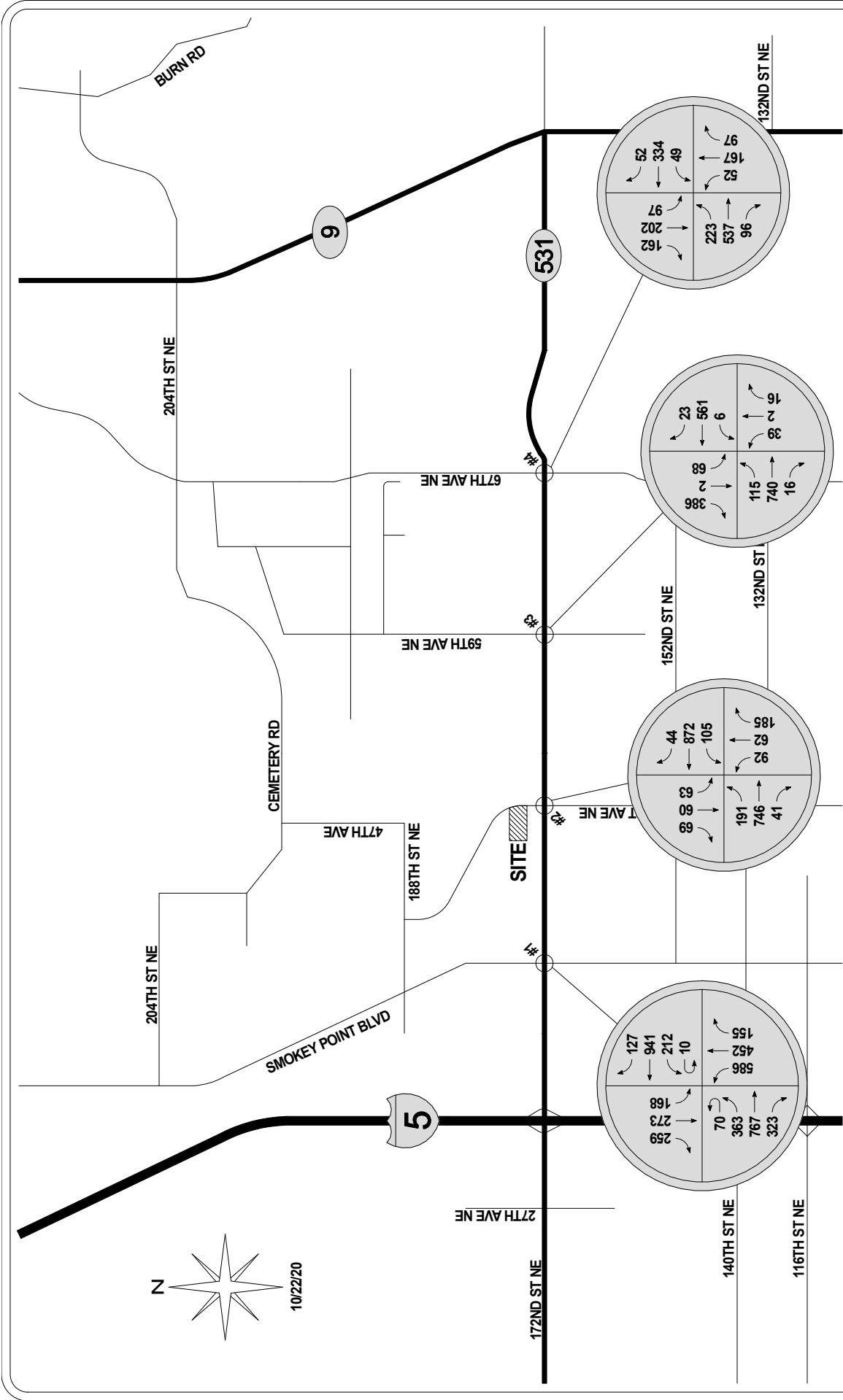
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LEGEND
PM PEAK-HOUR
TURNING MOVEMENT VOLUMES

FIGURE 4
EXISTING
TURNING MOVEMENTS

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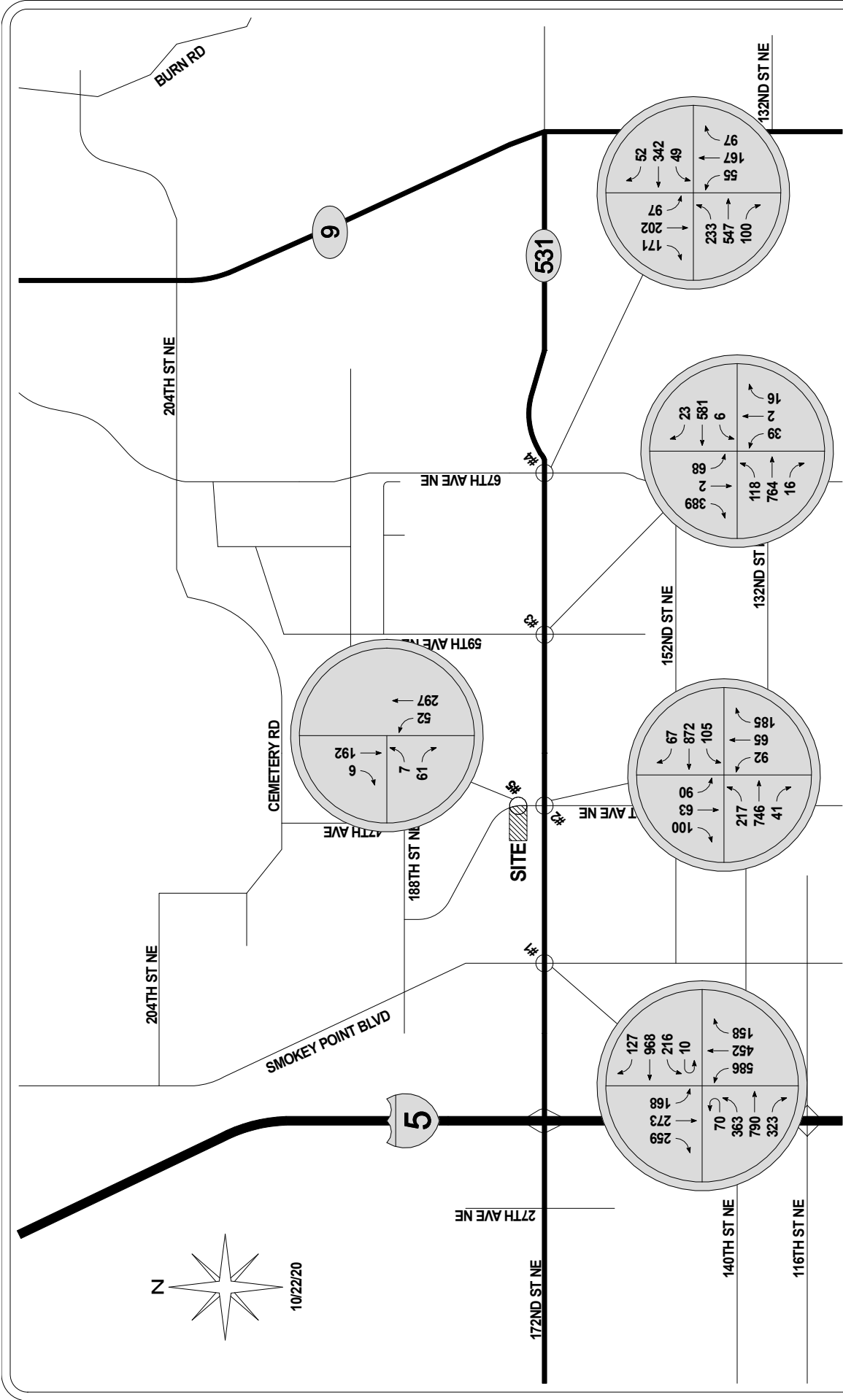
TRAFFIC IMPACT STUDY
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LEGEND
PM PEAK-HOUR
TURNING MOVEMENT VOLUMES

FIGURE 5
2023 BASELINE
TURNING MOVEMENTS

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PM PEAK-HOUR
TURNING MOVEMENT VOLUMES

LEGEND
XXX →

FIGURE 6
2023 FUTURE WITH
DEVELOPMENT
TURNING MOVEMENTS

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Table 3: Level of Service Summary

Intersection	Existing Conditions		2023 Baseline Conditions		2023 Future w Development Conditions	
	LOS	Delay	LOS	Delay	LOS	Delay
1. 172 nd Street NE (SR-531) at Smokey Point Boulevard	D	54.5 sec	E	63.8 sec	E	64.8 sec
2. 172 nd Street NE (SR-531) at 51 st Avenue NE	C	22.6 sec	C	28.7 sec	C	34.8 sec
3. 172 nd Street NE (SR-531) at 59 th Avenue NE	C	22.9 sec	C	25.7 sec	C	26.4 sec
4. 172 nd Street NE (SR-531) at 67 th Avenue NE	D	41.5 sec	D	42.5 sec	D	42.9 sec
5. Site Access at 51 st Avenue NE	---	---	---	---	B	10.3 sec

The intersection of 172nd Street NE (SR-531) at Smokey Point Boulevard is anticipated to operate at LOS E under the 2023 baseline conditions and under the 2023 future conditions with development. This intersection should be considered acceptable based on the WSDOT criteria for Tier 1 intersections. The level of service calculations are included in the attachments.

6. TRAFFIC MITIGATION FEES

The City of Arlington collects traffic mitigation fees based on the number of PM peak-hour trips generated by a development. The City of Arlington also has interlocal agreements with Snohomish County and WSDOT for traffic mitigation fees.

6.1 City of Arlington

The City of Arlington currently has a traffic mitigation fee of \$3,355 per PM peak-hour trip. The Smartcap Arlington Airport Business Park development is anticipated to generate 126 new PM peak-hour trips. These trips result in a City of Arlington traffic mitigation fees of \$422,730.00. This fee is equivalent to \$1,405.47 per 1,000 SF.

The uses of the Smartcap Arlington Airport Business Park development are not known and could be all warehouse. This would reduce the trip generation to 57 PM peak-hour trips and reduce the traffic mitigation fees to \$191,235.00. This would be equivalent to \$635.81 per 1,000 SF.

It is important to note that City of Arlington traffic mitigation fees do not vest to the time of application. It is possible that the City of Arlington mitigation fees will increase between the time of this report and when the traffic mitigation fees are required to be paid.

6.2 Washington State Department of Transportation

WSDOT improvement projects and their associated fees are based on the most recent Exhibit C list, which is part of the interlocal agreement between Snohomish County and WSDOT and included in the attachments. City of Arlington developments are required to pay for WSDOT improvement projects on the Exhibit C list impacted with 10 or more PM peak-hour trips. Trips generated by the Smartcap Arlington Airport Business Park development will impact one improvement project on the WSDOT Exhibit C List:

- DOT-05 – SR-531, 43rd Avenue NE to 67th Avenue NE

The improvements for this segment have already been fully funded as part of Connecting Washington, but WSDOT has not updated the Exhibit C list to reflect the funding of this improvement project. The interlocal agreement between Snohomish County and WSDOT identifies that developments are not required to pay for impacts to improvement projects that have been fully funded. WSDOT traffic mitigation fees should therefore not be required for the Smartcap Arlington Airport Business Park development.

6.3 Snohomish County

The City of Arlington has an interlocal agreement with Snohomish County that provides for mitigation payments for impacts to Snohomish County arterials. City of Arlington developments that impact road improvement projects with 3 directional PM peak-hour trips identified in Snohomish County's *Transportation Needs Report* (TNR) are required to pay mitigation fees to Snohomish County. There are no improvement projects identified in Snohomish County's TNR that will be impacted by 3 or more directional PM peak-hour trips generated by the Smartcap Arlington Airport Business Park development. Snohomish County traffic mitigation fees should therefore not be required for the Smartcap Arlington Airport Business Park development.

7. CONCLUSIONS

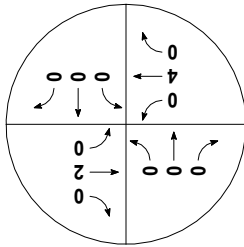
The proposed Smartcap Arlington Airport Business Park development is located on the west side of 51st Avenue NE, north of 172nd Street NE (SR-531). The development is proposed to consist of 300,775 SF of building space. The Smartcap Arlington Airport Business Park development is anticipated to generate 3,742 new daily trips with 120 new AM peak-hour trips and 126 new PM peak-hour trips.

The level of service analysis shows that the study intersections, with the exception of 172nd Street NE (SR-531) at Smokey Point Boulevard, are anticipated to operate at acceptable LOS D or better under the 2023 future with development conditions. The intersection of 172nd Street NE (SR-531) at Smokey Point Boulevard is anticipated to operate at LOS E under the 2023 baseline conditions and 2023 future with development conditions. This level of service should be deemed acceptable based on the WSDOT criteria for a Tier 1 intersection.

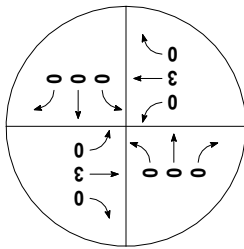
The Smartcap Arlington Airport Business Park development will have a total traffic mitigation fee of \$422,730.00 based on a variety of uses. However, this fee could be as low as \$191,235.00 if the entire site is used for warehousing. Traffic mitigation fees to WSDOT or Snohomish County should not be required, regardless of the use of the site. It is important to note that the City of Arlington traffic mitigation fees do not vest and could increase in the future.

Snohomish County Key Intersections

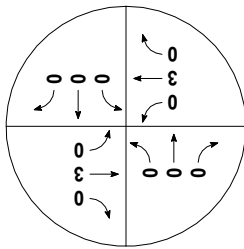
#81 51ST AVENUE @
132ND ST NE



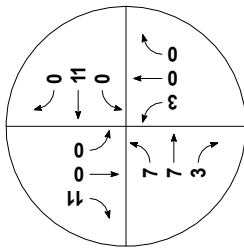
#83 67TH AVENUE @
132ND ST NE



#84 67TH AVENUE @
152ND ST NE



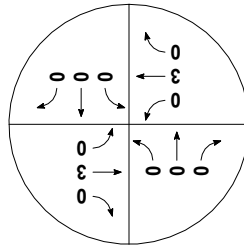
#85 67TH AVENUE @
SR-531



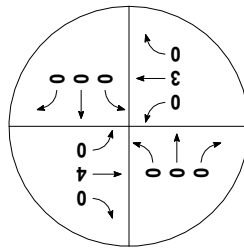
AM PEAK-HOUR

PM PEAK-HOUR

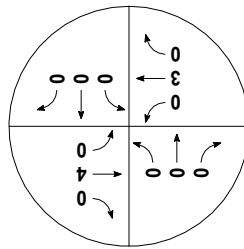
#81 51ST AVENUE @
132ND ST NE



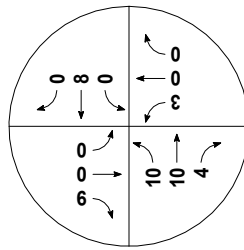
#83 67TH AVENUE @
132ND ST NE



#84 67TH AVENUE @
152ND ST NE



#85 67TH AVENUE @
SR-531



10/22/20

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LEGEND

PEAK-HOUR
TURNING MOVEMENT VOLUMES

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FIGURE A
KEY INTERSECTION
TURNING MOVEMENTS

Table A: AM Peak-Hour Key Intersection Volumes

Intersection	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
#81: 51 st Ave NE at 132 nd St NE	0	0	0	0	0	0	0	4	0	0	2	0
#83: 67 th Ave NE at 132 nd St NE	0	0	0	0	0	0	0	3	0	0	3	0
#84: 67 th Ave NE at 152 nd St NE	0	0	0	0	0	0	0	3	0	0	3	0
#85: 67 th Ave NE at SR-531	7	7	3	0	11	0	3	0	0	0	0	11

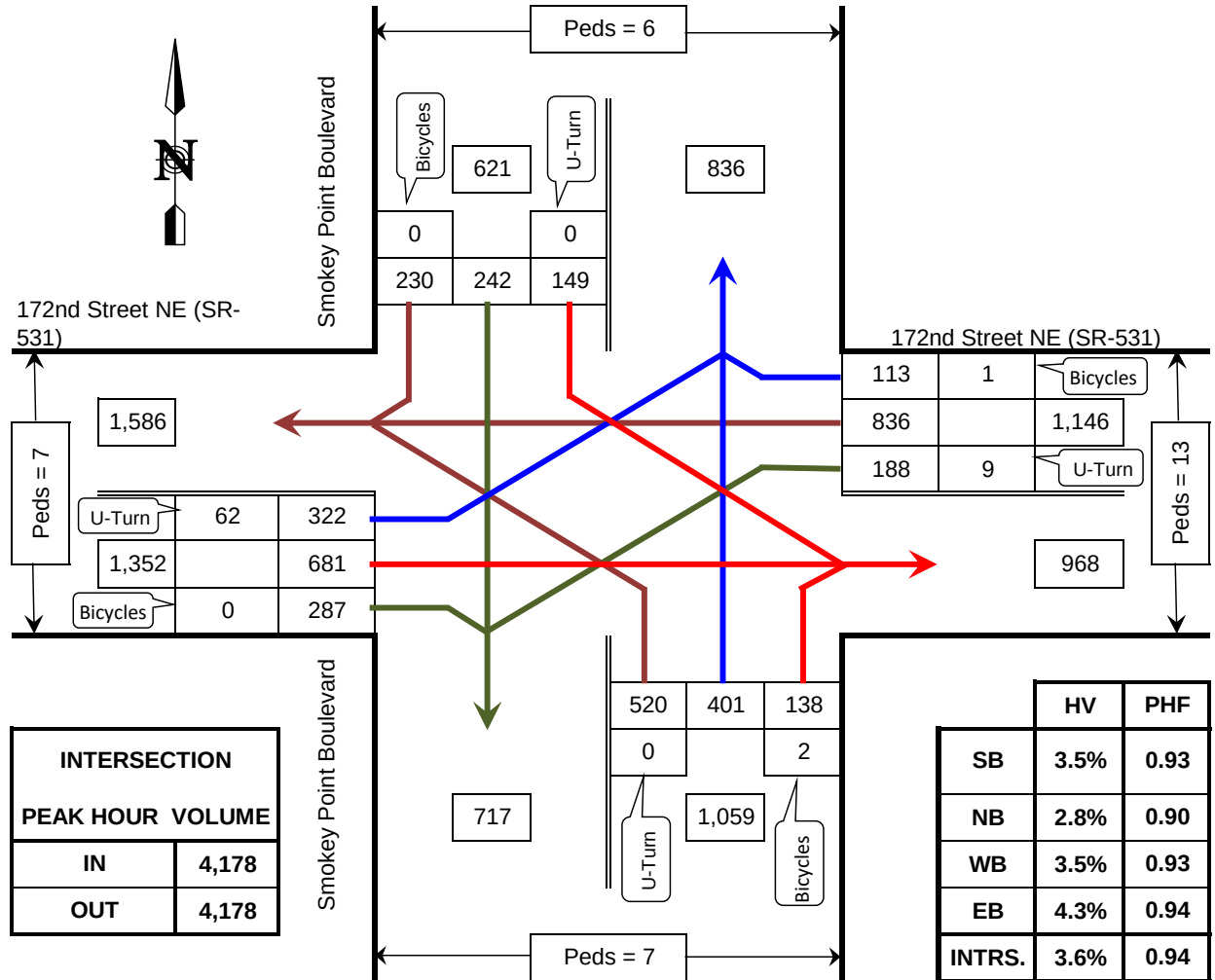
Table B: PM Peak-Hour Key Intersection Volumes

Intersection	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
#81: 51 st Ave NE at 132 nd St NE	0	0	0	0	0	0	0	3	0	0	3	0
#83: 67 th Ave NE at 132 nd St NE	0	0	0	0	0	0	0	3	0	0	4	0
#84: 67 th Ave NE at 152 nd St NE	0	0	0	0	0	0	0	3	0	0	4	0
#85: 67 th Ave NE at SR-531	10	10	4	0	8	0	3	0	0	0	0	9

Counts and Turning Movement Calculations

TURNING MOVEMENTS DIAGRAM

4:00 PM - 6:00 PM PEAK HOUR: 4:00 PM TO 5:00 PM



PHF = Peak Hour Factor
HV = Heavy Vehicle

Smokey Point Boulevard @ 172nd Street NE (SR-531)

Arlington, WA

COUNTED BY: CN/RN

DATE OF COUNT: Thu. 8/17/17

REDUCED BY: CN

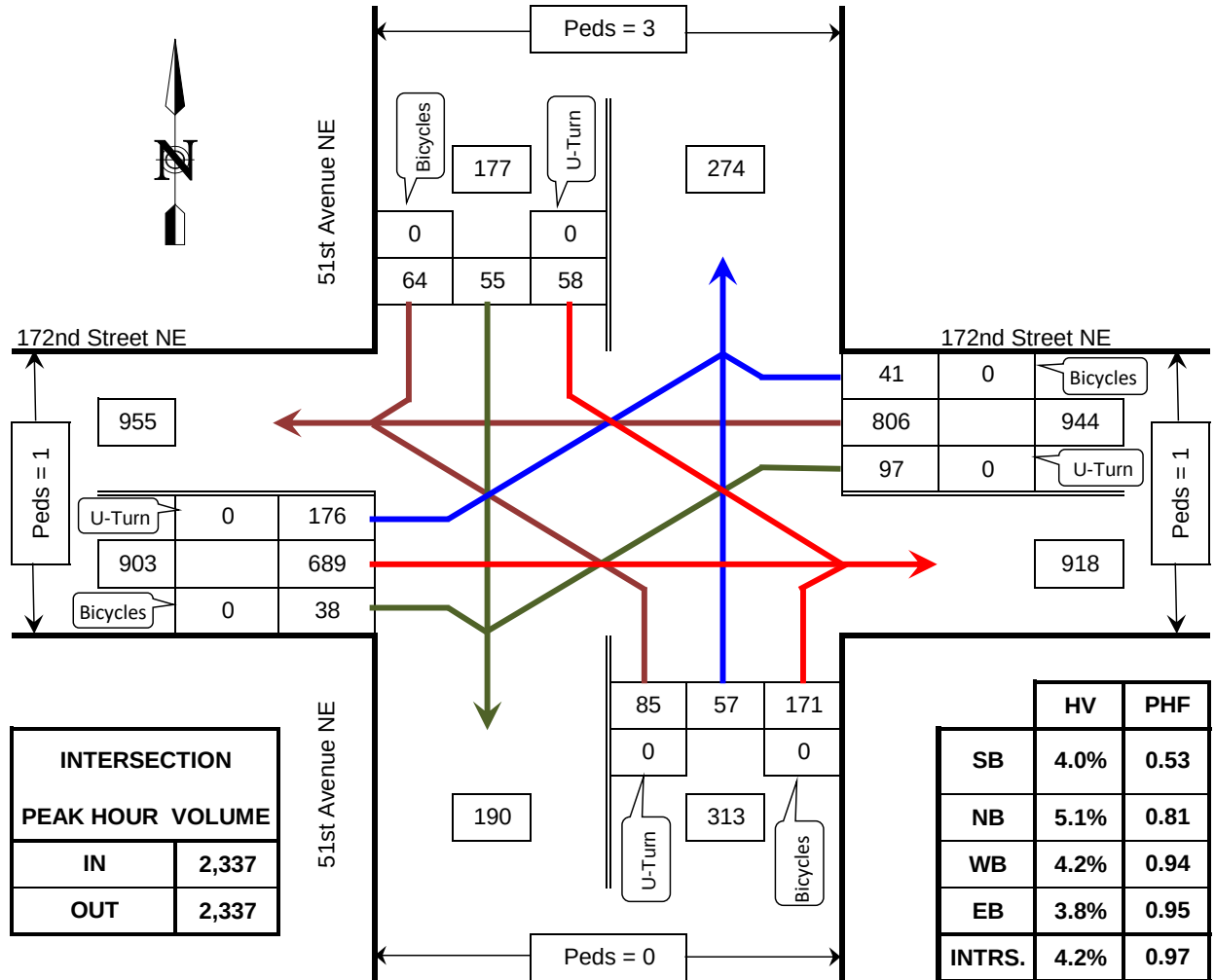
TIME OF COUNT: 4:00 PM - 6:00 PM

REDUCTION DATE: Fri. 8/18/17

WEATHER: Sunny

TURNING MOVEMENTS DIAGRAM

4:00 PM - 6:00 PM PEAK HOUR: 4:00 PM TO 5:00 PM



172nd Street NE @ 51st Avenue NE

Arlington, WA

COUNTED BY: TDG

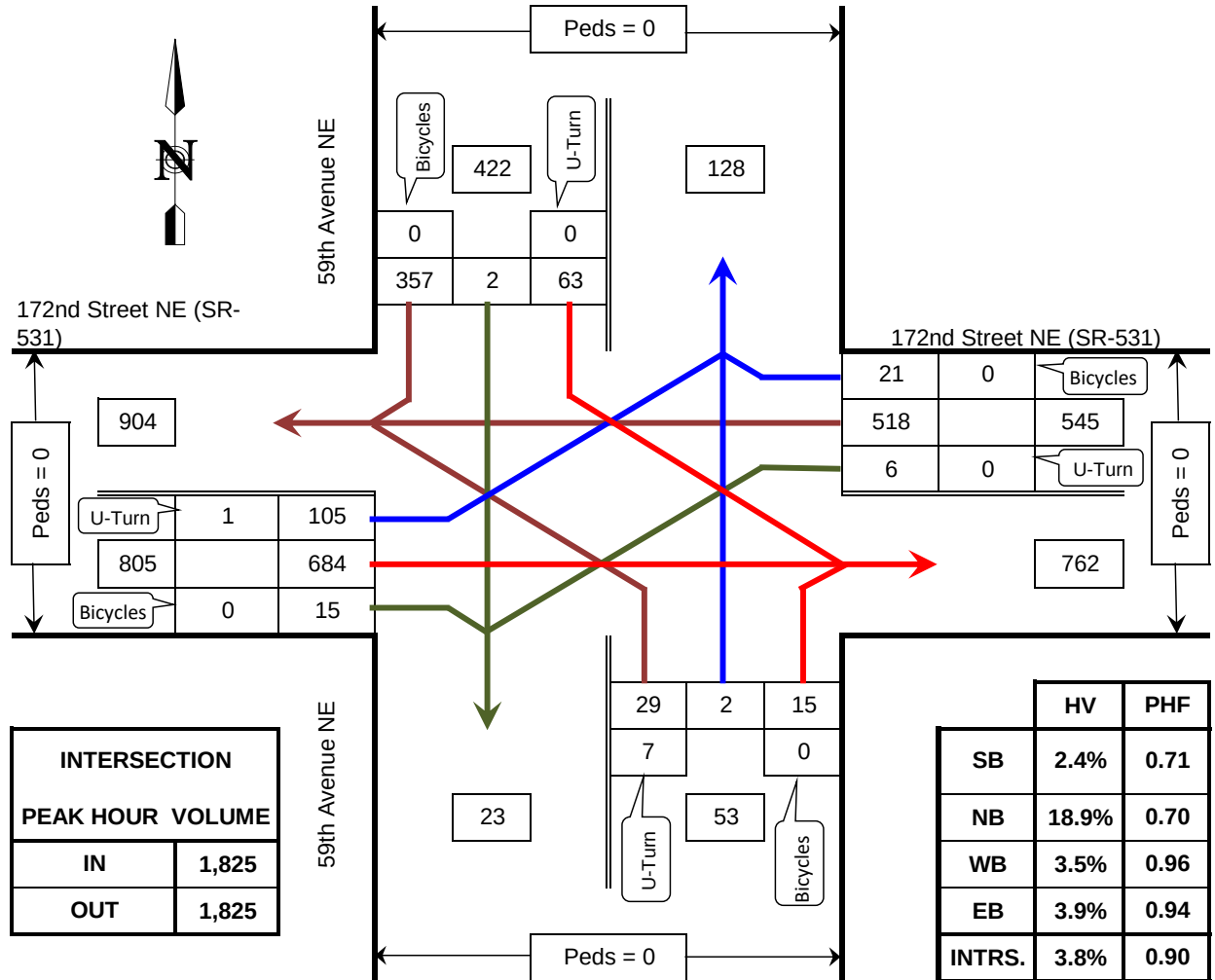
DATE OF COUNT: Tue. 10/8/19

REDUCTION DATE: Wed. 10/9/19

TIME OF COUNT: 4:00 PM - 6:00 PM

TURNING MOVEMENTS DIAGRAM

4:00 PM - 6:00 PM PEAK HOUR: 4:00 PM TO 5:00 PM



PHF = Peak Hour Factor
HV = Heavy Vehicle

172nd Street NE (SR-531) @ 59th Avenue NE

Arlington, WA

COUNTED BY: TDG

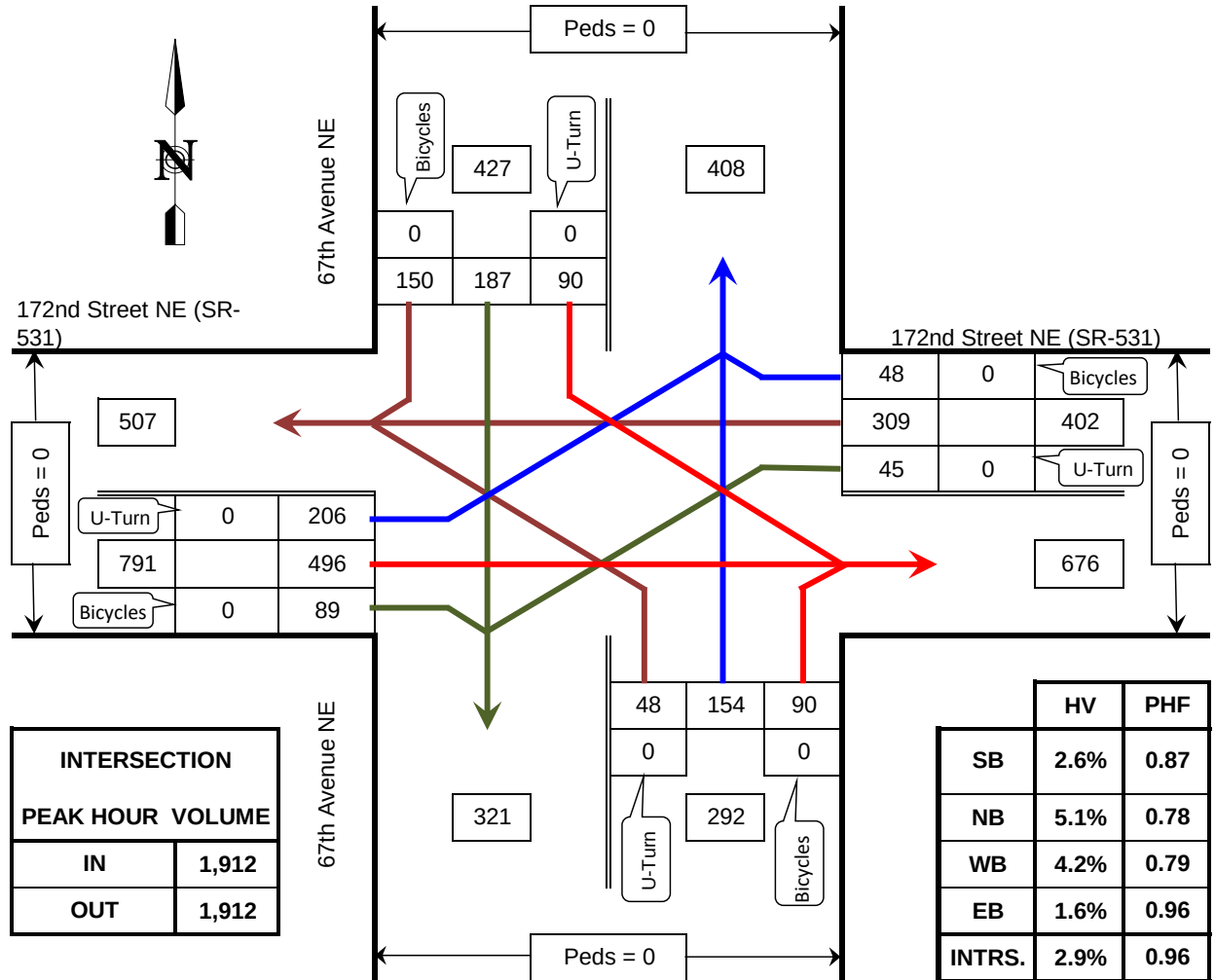
DATE OF COUNT: Wed. 3/6/19

REDUCTION DATE: Sun. 3/10/19

TIME OF COUNT: 4:00 PM - 6:00 PM

TURNING MOVEMENTS DIAGRAM

4:00 PM - 6:00 PM PEAK HOUR: 4:15 PM TO 5:15 PM



172nd Street NE (SR-531) @ 67th Avenue NE

Arlington, WA

COUNTED BY: TDG

DATE OF COUNT: Wed. 3/6/19

REDUCTION DATE: Sun. 3/10/19

TIME OF COUNT: 4:00 PM - 6:00 PM

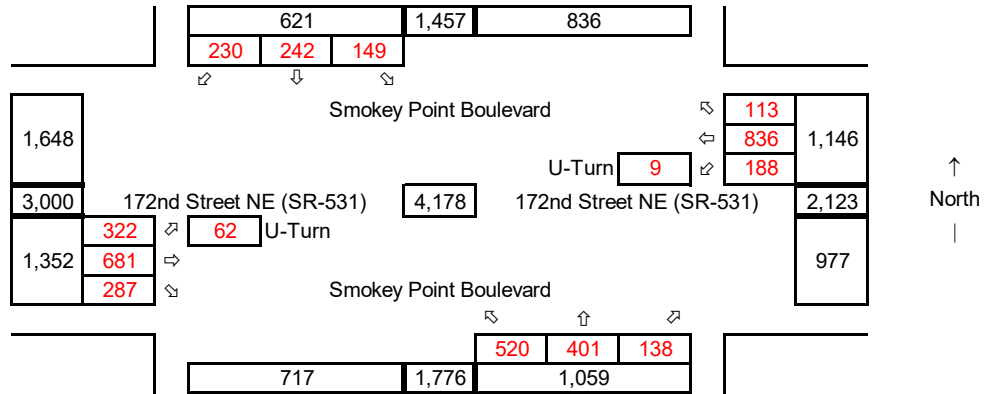
1 172nd St NE at Smokey Pt Blvd

Synchro ID: 1

Existing
Average Weekday
PM Peak Hour

Year: 8/17/2017

Data Source: TDG



Baseline

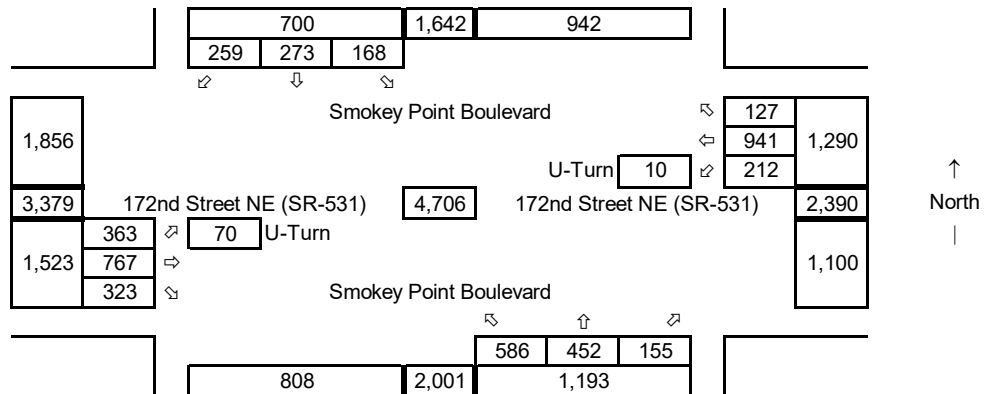
Average Weekday
PM Peak Hour

Year: 2023

Growth Rate = 2.0%

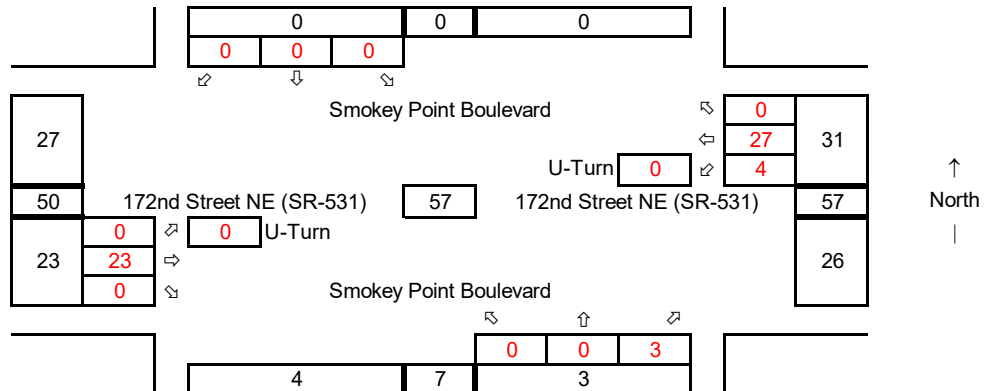
Years of Growth = 6

Total Growth = 1.1262



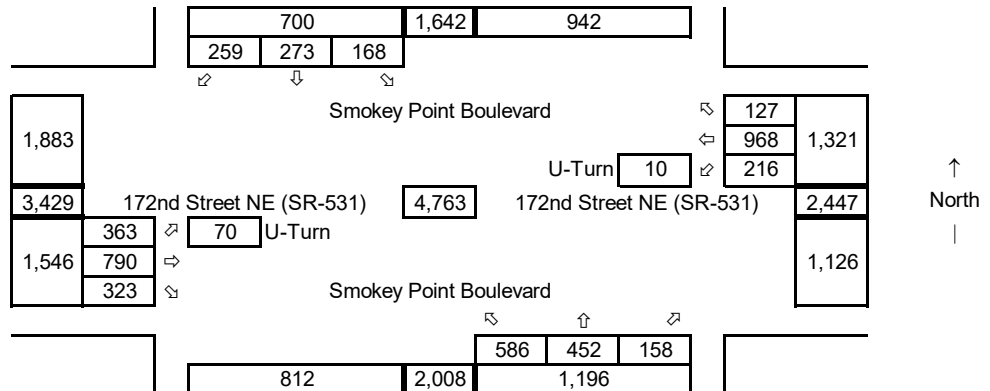
Development Trips

Average Weekday
PM Peak Hour



Future w Development

Average Weekday
PM Peak Hour



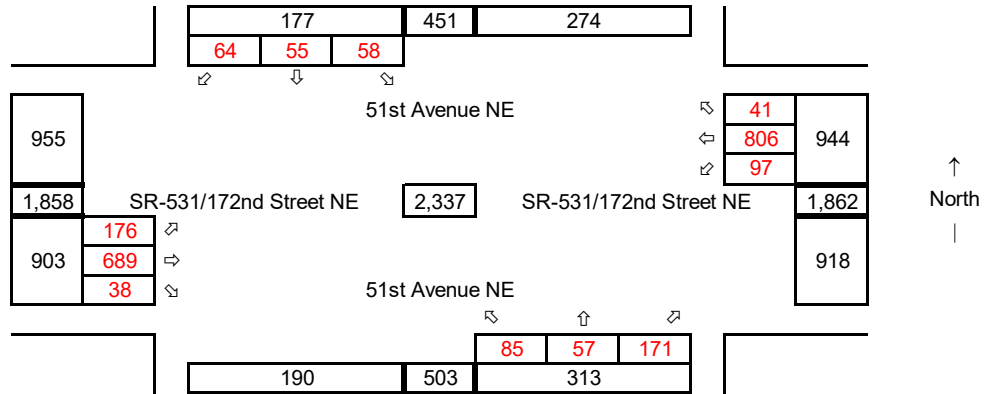
2 172nd St NE at 51st Ave NE

Synchro ID: 2

Existing
Average Weekday
PM Peak Hour

Year: 10/8/2019

Data Source: TDG



Baseline

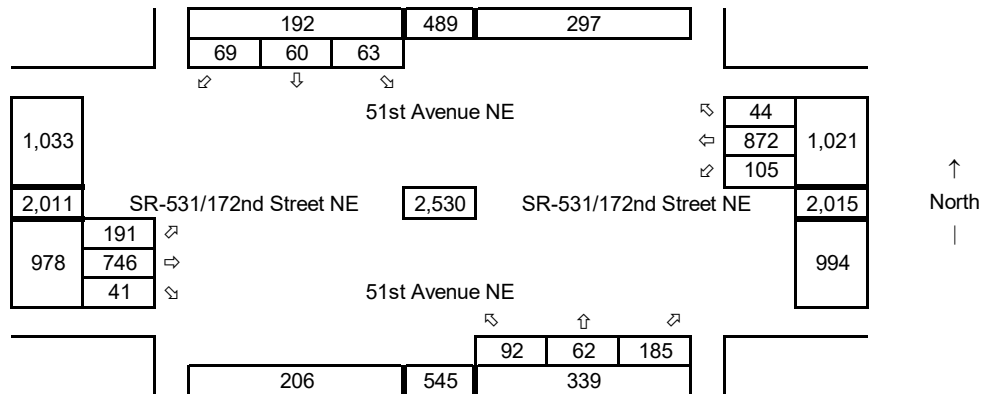
Average Weekday
PM Peak Hour

Year: 2023

Growth Rate = 2.0%

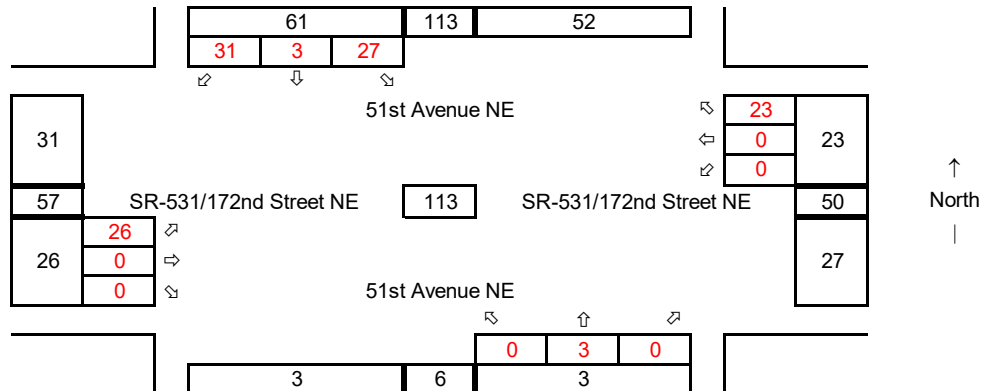
Years of Growth = 4

Total Growth = 1.0824



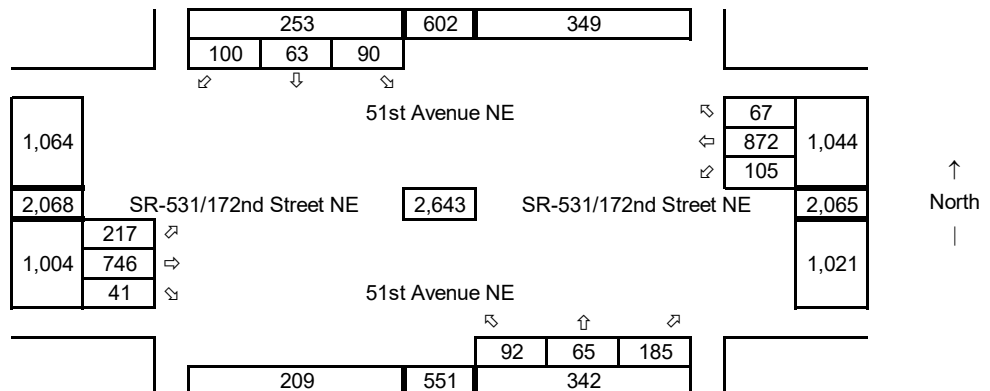
Development Trips

Average Weekday
PM Peak Hour



Future w Development

Average Weekday
PM Peak Hour



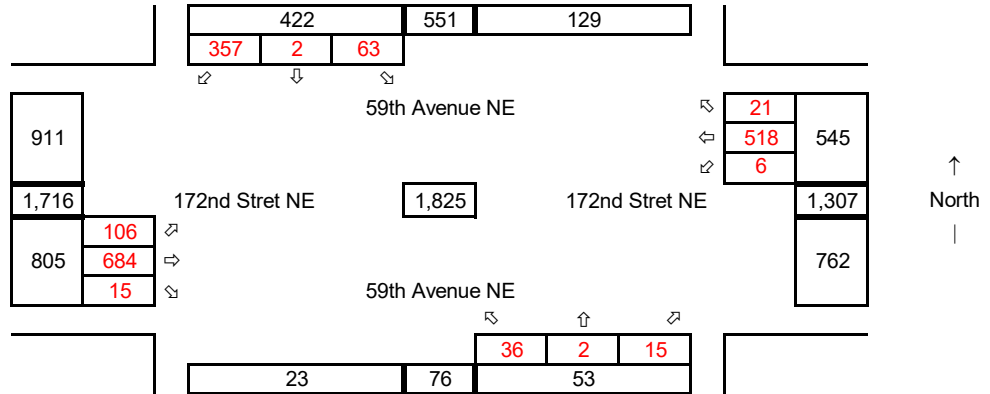
3 172nd St NE at 59th Ave NE

Synchro ID: 3

Existing
Average Weekday
PM Peak Hour

Year: 3/6/2019

Data Source: TDG



Baseline

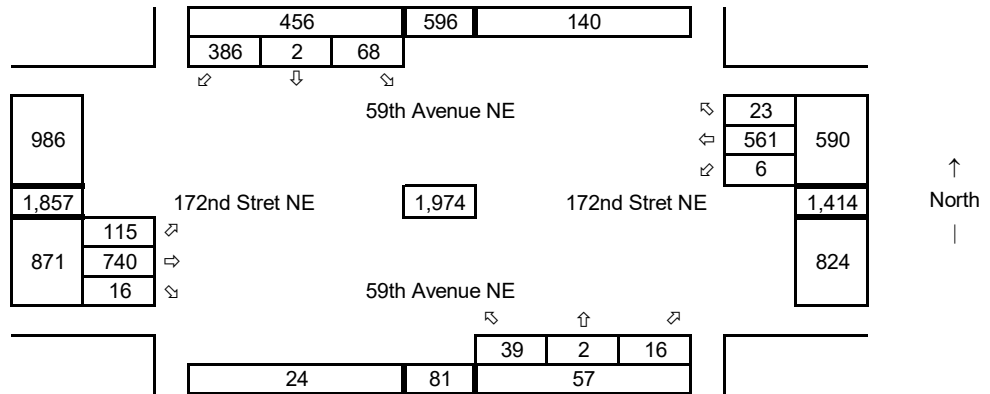
Average Weekday
PM Peak Hour

Year: 2023

Growth Rate = 2.0%

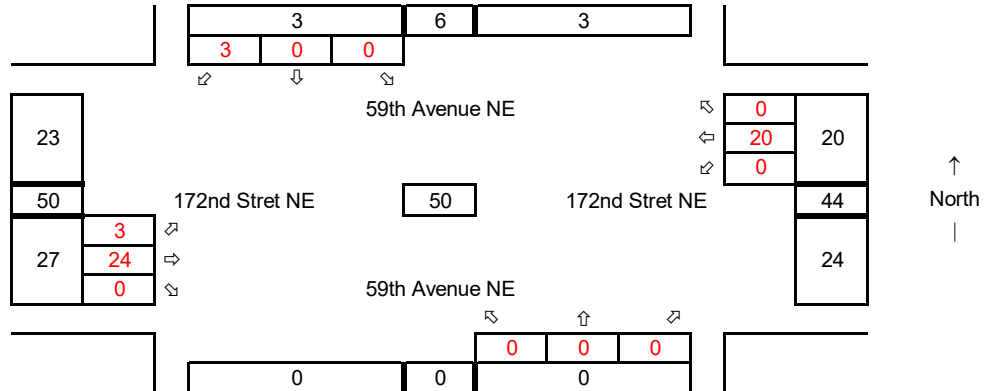
Years of Growth = 4

Total Growth = 1.0824



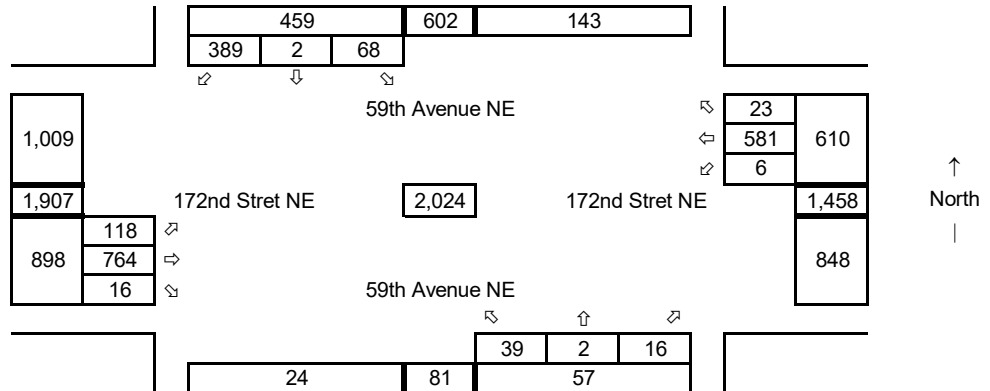
Development Trips

Average Weekday
PM Peak Hour



Future w Development

Average Weekday
PM Peak Hour



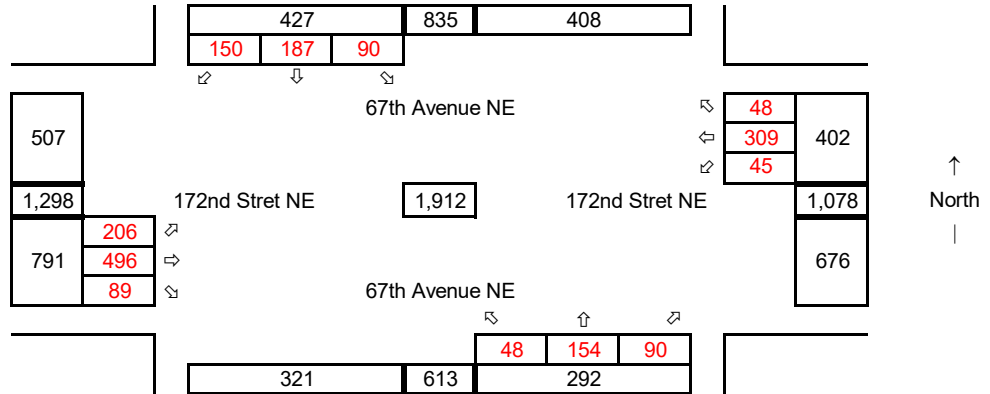
4 172nd St NE at 67th Ave NE

Synchro ID: 4

Existing
Average Weekday
PM Peak Hour

Year: 3/6/2019

Data Source: TDG



Baseline

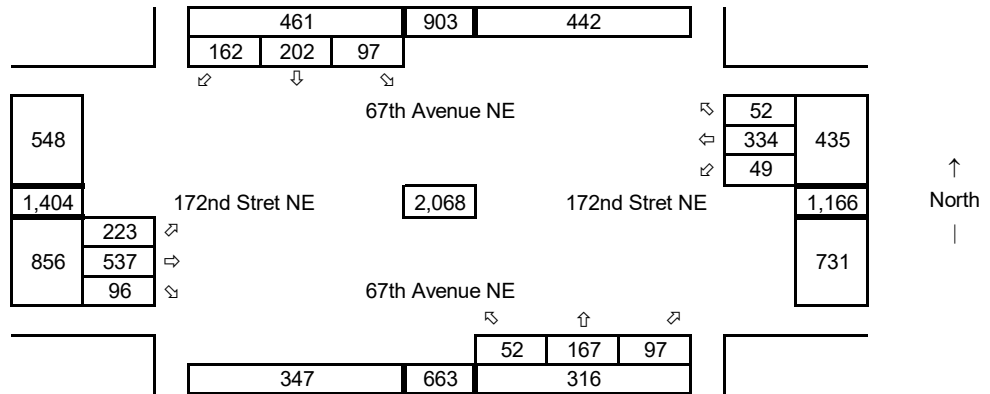
Average Weekday
PM Peak Hour

Year: 2023

Growth Rate = 2.0%

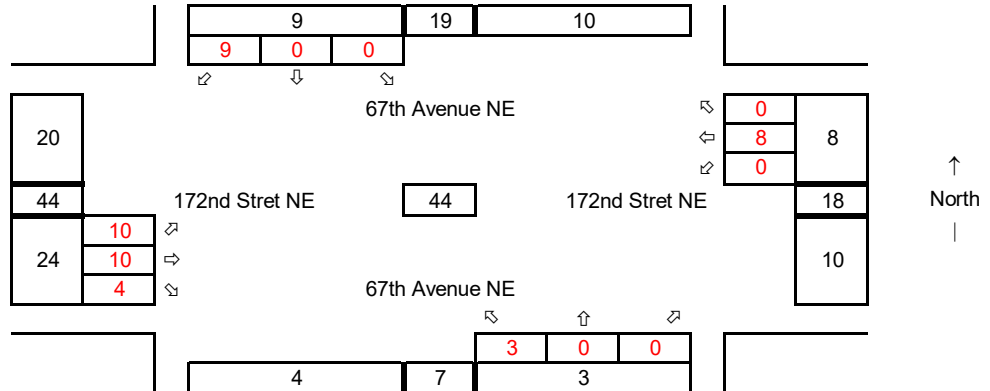
Years of Growth = 4

Total Growth = 1.0824



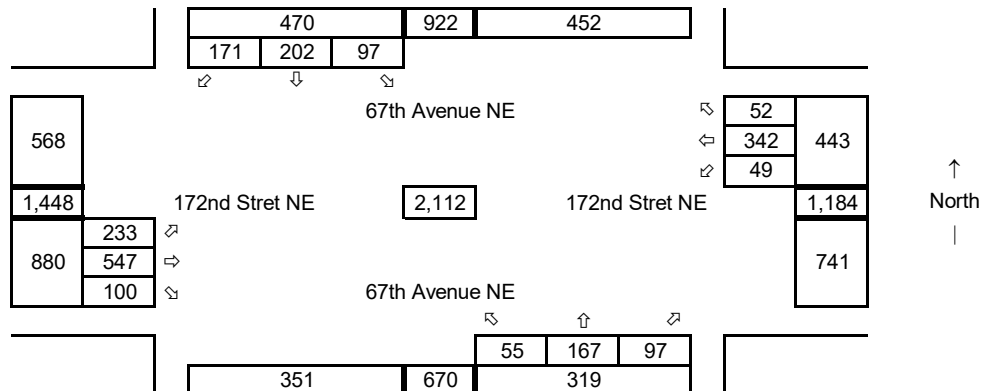
Development Trips

Average Weekday
PM Peak Hour



Future w Development

Average Weekday
PM Peak Hour



5 Site Access at 51st Ave NE

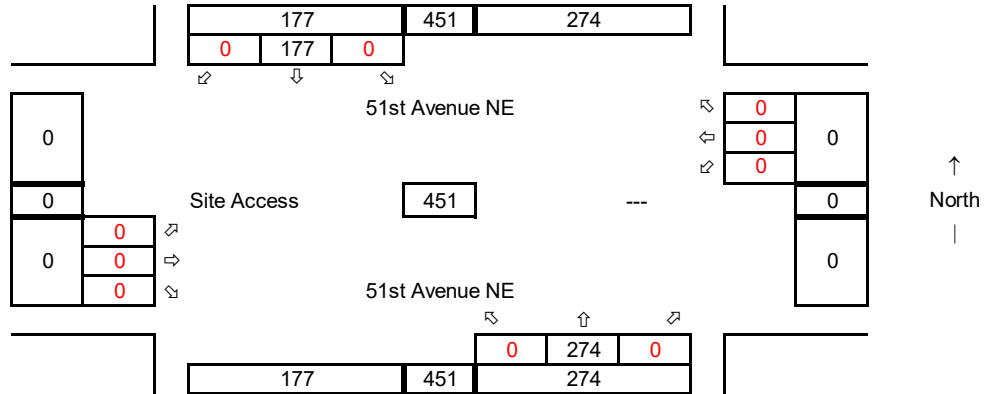
Synchro ID: 5

Existing
Average Weekday
PM Peak Hour

Year: 10/8/2019

Data Source: TDG

Based on count for
intersection of 172nd
St NE at 51st Ave NE



Baseline

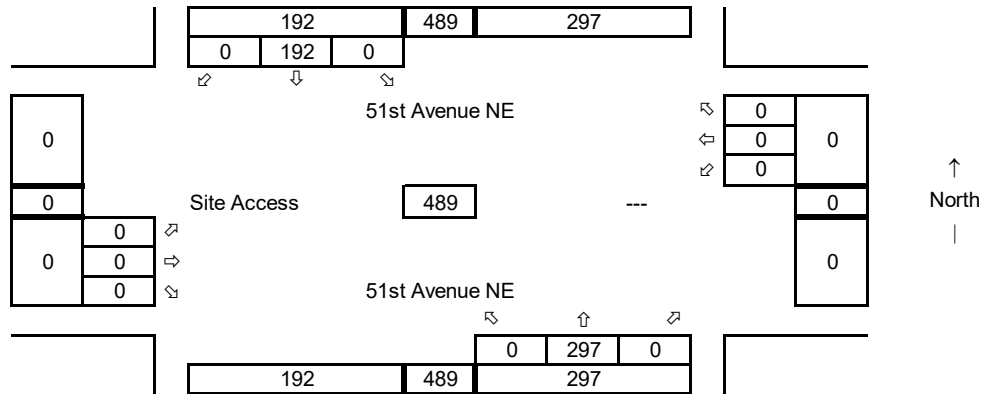
Average Weekday
PM Peak Hour

Year: 2023

Growth Rate = 2.0%

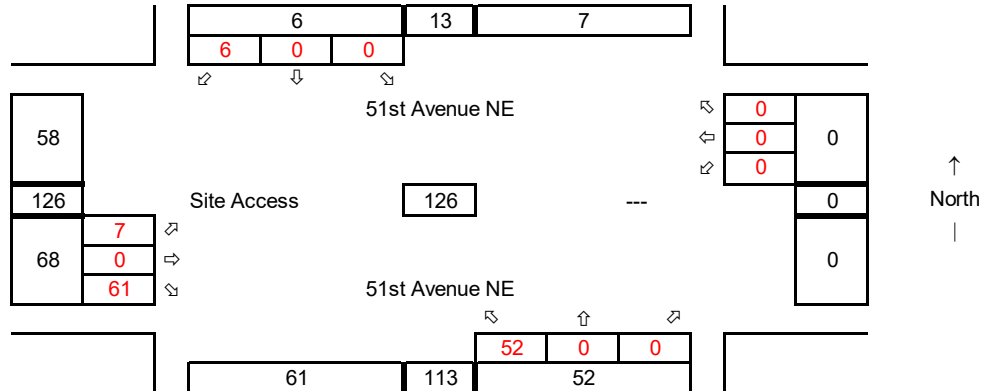
Years of Growth = 4

Total Growth = 1.0824



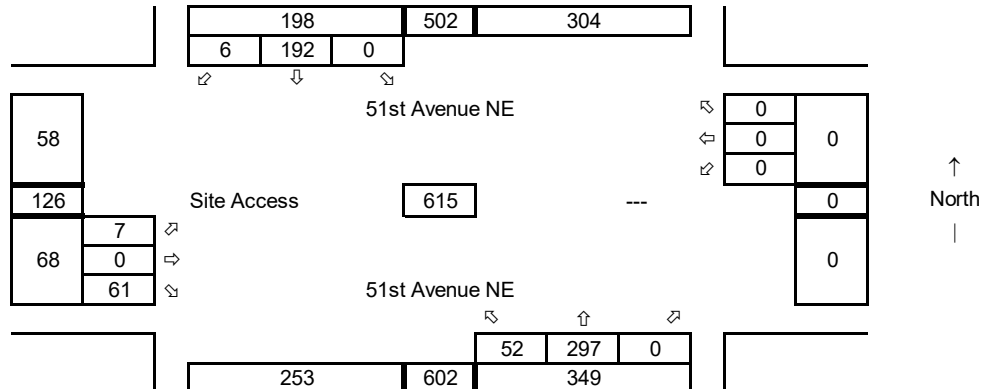
Development Trips

Average Weekday
PM Peak Hour



Future w Development

Average Weekday
PM Peak Hour



Level of Service Calculations

Lanes, Volumes, Timings

1: Smokey Point Boulevard & 172nd Street NE

Smartcap Arlington Airport Business Park

Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	62	322	681	287	9	188	836	113	520	401	138	149	242	230
Future Volume (vph)	62	322	681	287	9	188	836	113	520	401	138	149	242	230
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	490	490	0	0	400	400	1900	0	175	175	175	240	1900	155
Storage Lanes	1	1	1	1	1	1	1	1	2	1	1	1	1	1
Taper Length (ft)	25	25	0.91	0.91	0.91	0.91	0.91	0.91	0.97	0.95	1.00	1.00	0.95	1.00
Lane Util. Factor	0.95	1.00	0.95	1.00	0.91	1.00	0.91	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	1.00	1.00	0.98	0.98	1.00	1.00	0.98	0.98	0.99	0.98	0.97	0.99	0.98	0.98
Frt			0.850	0.850			0.850	0.850			0.850			0.850
Flt Protected		0.950				0.950			0.950			0.950		
Satd. Flow (prot)	0	1741	3471	1553	0	1737	4988	1553	3400	3505	1568	1736	3471	1553
Flt Permitted		0.950				0.950			0.950			0.950		
Satd. Flow (perm)	0	1737	3471	1519	0	1731	4988	1519	3379	3505	1524	1720	3471	1519
Right Turn on Red			Yes	Yes		Yes		Yes	Yes		Yes			Yes
Satd. Flow (RTOR)			266	266		120		120			147			245
Link Speed (mph)			30			30				30			30	
Link Distance (ft)			1100			748				1151			1766	
Travel Time (s)			25.0			17.0				26.2			40.1	
Confl. Peds. (#/hr)		6		7		7		6	7		13	13		7
Confl. Bikes (#/hr)								2						1
Peak Hour Factor	0.92	0.94	0.94	0.94	0.92	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	2%	4%	4%	4%	2%	4%	4%	4%	3%	3%	3%	4%	4%	4%
Adj. Flow (vph)	67	343	724	305	10	200	889	120	553	427	147	159	257	245
Shared Lane Traffic (%)														
Lane Group Flow (vph)	0	410	724	305	0	210	889	120	553	427	147	159	257	245
Turn Type	Prot	Prot	NA	Perm	Prot	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	5	2		1	1	6		3	8		7	4	
Permitted Phases				2				6			8			4
Detector Phase	5	5	2	2	1	1	6	6	3	8	8	7	4	4
Switch Phase														
Minimum Initial (s)	5.0	5.0	10.0	10.0	5.0	5.0	10.0	10.0	5.0	7.0	7.0	5.0	7.0	7.0
Minimum Split (s)	10.6	10.6	40.0	40.0	10.6	10.6	40.0	40.0	10.6	44.0	44.0	10.6	44.0	44.0
Total Split (s)	42.0	42.0	47.0	47.0	40.0	40.0	45.0	45.0	31.0	42.0	42.0	31.0	42.0	42.0

Existing Conditions
Gibson Traffic Consultants, Inc. [BJL #20-116] PM Peak-Hour

Lanes, Volumes, Timings

1: Smokey Point Boulevard & 172nd Street NE

Smartcap Arlington Airport Business Park

Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (%)	26.3%	26.3%	29.4%	29.4%	25.0%	25.0%	28.1%	28.1%	19.4%	26.3%	26.3%	19.4%	26.3%	26.3%
Maximum Green (s)	36.4	36.4	41.0	41.0	34.4	34.4	39.0	39.0	25.4	36.0	36.0	25.4	36.0	36.0
Yellow Time (s)	3.6	3.6	4.0	4.0	3.6	3.6	4.0	4.0	3.6	4.0	4.0	3.6	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.6	5.6	6.0	6.0	5.6	5.6	6.0	6.0	5.6	6.0	6.0	5.6	6.0	6.0
Lead/Lag	Lead	Lead	Lag	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?														
Vehicle Extension (s)	2.5	2.5	3.0	3.0	2.5	2.5	3.0	3.0	2.5	3.0	3.0	2.5	3.0	3.0
Recall Mode	None	None	C-Min	C-Min	None	None	C-Min	C-Min	None	None	None	None	None	None
Walk Time (s)			7.0	7.0			7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)			27.0	27.0			27.0	27.0		31.0	31.0		31.0	31.0
Pedestrian Calls (#/hr)			7	7			10	10		10	10		6	6
Act Effct Green (s)	43.0	43.0	60.5	60.5	24.2	24.2	41.7	41.7	28.7	32.9	32.9	19.2	23.4	23.4
Actuated g/C Ratio	0.27	0.27	0.38	0.38	0.15	0.15	0.26	0.26	0.18	0.21	0.21	0.12	0.15	0.15
v/c Ratio	0.88	0.88	0.55	0.41	0.80	0.80	0.68	0.25	0.91	0.59	0.34	0.76	0.51	0.57
Control Delay	75.8	75.8	43.5	9.2	87.2	87.2	56.7	8.7	83.0	61.1	9.2	90.6	64.9	11.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	75.8	75.8	43.5	9.2	87.2	87.2	56.7	8.7	83.0	61.1	9.2	90.6	64.9	11.0
LOS	E	E	D	A	F	F	E	A	F	E	A	F	E	B
Approach Delay			45.4				57.2			65.1			51.1	
Approach LOS			D				E			E			D	
Queue Length 50th (ft)	398	398	292	24	215	215	303	0	298	226	0	164	137	0
Queue Length 95th (ft)	#678	#678	449	122	296	296	370	54	#438	268	61	238	164	76
Internal Link Dist (ft)			1020				668			1071		1686		
Turn Bay Length (ft)	490	490			400	400			175		175	240		155
Base Capacity (vph)	467	467	1312	739	373	373	1299	484	610	797	460	275	780	531
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.88	0.88	0.55	0.41	0.56	0.56	0.68	0.25	0.91	0.54	0.32	0.58	0.33	0.46

Intersection Summary

Area Type: Other

Existing Conditions

Gibson Traffic Consultants, Inc. [BJL #20-116]

PM Peak-Hour

Lanes, Volumes, Timings

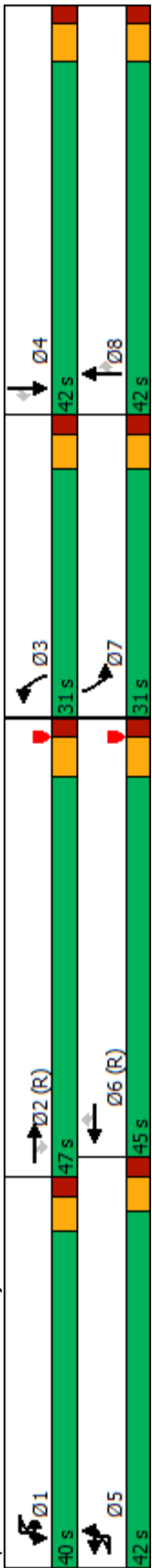
1: Smokey Point Boulevard & 172nd Street NE

Smartcap Arlington Airport Business Park

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Red
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.91
Intersection Signal Delay: 54.5
Intersection Capacity Utilization 102.2%
Analysis Period (min) 15
Intersection LOS: D
ICU Level of Service G

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

Splits and Phases: 1: Smokey Point Boulevard & 172nd Street NE



Lanes, Volumes, Timings

2: 51st Avenue NE & SR-531/172nd Street NE

Smartcap Aftington Airport Business Park

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	176	689	38	97	806	41	85	57	171	58	55	64
Traffic Volume (vph)	176	689	38	97	806	41	85	57	171	58	55	64
Future Volume (vph)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Ideal Flow (vphpl)	250	0	250	0	250	0	200	150	200	150	200	0
Storage Length (ft)	1	0	0	1	1	0	1	1	1	1	1	0
Storage Lanes	25	25	25	25	25	25	25	25	25	25	25	0
Taper Length (ft)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Util. Factor	0.992	0.992	0.992	0.992	0.992	0.992	0.992	0.992	0.992	0.992	0.992	0.992
Ped Bike Factor	0.950	0.950	0.950	0.950	0.950	0.950	0.950	0.950	0.950	0.950	0.950	0.950
Flt Protected	1736	1812	0	1736	1812	0	1736	1827	1553	1736	1660	0
Satd. Flow (prot)	0.152	0.152	0.261	0.261	0.261	0.261	0.504	0.504	0.719	0.719	0.719	0
Flt Permitted	278	1812	0	477	1812	0	918	1827	1517	1310	1660	0
Satd. Flow (perm)	0.278	0.278	0.477	0.477	0.477	0.477	0.918	0.918	0.918	0.918	0.918	0.918
Right Turn on Red	4	35	35	35	35	35	35	35	35	35	35	35
Satd. Flow (RTOR)	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Link Speed (mph)	2271	2271	2271	2271	2271	2271	2271	2271	2271	2271	2271	2271
Link Distance (ft)	44.2	44.2	44.2	44.2	44.2	44.2	44.2	44.2	44.2	44.2	44.2	44.2
Travel Time (s)	3	3	3	3	3	3	3	3	3	3	3	3
Confl. Peds. (#/hr)	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Peak Hour Factor	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Heavy Vehicles (%)	181	710	38	100	831	42	88	59	176	60	57	66
Adj. Flow (vph)	181	710	38	100	831	42	88	59	176	60	57	66
Shared Lane Traffic (%)	181	710	38	100	831	42	88	59	176	60	57	66
Lane Group Flow (vph)	pm-pt	NA	pm-pt	NA	pm-pt	NA	pm-pt	NA	pm-pt	NA	pm-pt	NA
Turn Type	5	2	1	6	1	6	3	8	8	4	4	4
Protected Phases	2	2	2	2	2	2	2	2	2	2	2	2
Permitted Phases	5	2	1	6	1	6	3	8	8	4	4	4
Detector Phase	5	2	1	6	1	6	3	8	8	4	4	4
Switch Phase	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Initial (s)	9.5	22.5	9.5	22.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5
Minimum Split (s)	17.0	75.0	12.0	70.0	70.0	70.0	10.0	23.0	23.0	10.0	23.0	23.0
Total Split (s)	14.2%	62.5%	10.0%	58.3%	58.3%	58.3%	8.3%	19.2%	19.2%	8.3%	19.2%	19.2%
Total Split (%)	12.5	70.5	7.5	65.5	65.5	65.5	5.5	18.5	18.5	5.5	18.5	18.5
Maximum Green (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Yellow Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
All-Red Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lost Time Adjust (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Total Lost Time (s)	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead/Lag	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Lead-Lag Optimize?	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Vehicle Extension (s)	None	Max	None	Max	Max	Max	None	None	None	None	None	None
Recall Mode	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Walk Time (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Flash Don't Walk (s)	3	3	3	3	3	3	3	3	3	3	3	3
Pedestrian Calls (#/hr)	80.6	70.9	74.9	68.0	68.0	68.0	15.4	11.1	11.1	15.4	11.1	11.1
Act Effct Green (s)	0.73	0.64	0.68	0.62	0.62	0.62	0.14	0.10	0.10	0.14	0.10	0.10
Actuated g/C Ratio	0.54	0.64	0.25	0.78	0.78	0.78	0.52	0.32	0.57	0.30	0.61	0.61
v/c Ratio												

Existing Conditions
Gibson Traffic Consultants, Inc. [B.J.L #20-116]

PM Peak-Hour

Lanes, Volumes, Timings

2: 51st Avenue NE & SR-531/172nd Street NE

Smartcap Aftington Airport Business Park

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	11.3	16.7	6.8	24.3	6.8	24.3	51.1	51.2	14.4	42.0	44.8	44.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.3	16.7	6.8	24.3	6.8	24.3	51.1	51.2	14.4	42.0	44.8	44.8
LOS	B	B	A	C	A	C	D	D	B	D	D	D
Approach Delay	15.7	15.7	22.5	22.5	22.5	22.5	31.1	31.1	0.0	0.0	43.9	43.9
Approach LOS	B	B	C	C	C	C	C	C	C	C	C	C
Queue Length 50th (ft)	34	315	18	450	18	450	55	40	0	37	57	57
Queue Length 95th (ft)	69	527	41	#848	41	#848	102	81	64	75	119	119
Internal Link Dist (ft)	250	2191	250	2564	250	2564	200	150	200	200	961	961
Turn Bay Length (ft)	373	1166	412	1118	412	1118	168	308	402	203	314	314
Base Capacity (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.49	0.64	0.24	0.78	0.24	0.78	0.52	0.19	0.44	0.30	0.39	0.39

Intersection Summary
Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 110.3
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.78
Intersection Capacity Utilization 77.4%
Analysis Period (min) 15
Intersection LOS: C
ICU Level of Service D
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Splits and Phases: 2: 51st Avenue NE & SR-531/172nd Street NE

Existing Conditions
Gibson Traffic Consultants, Inc. [B.J.L #20-116]

PM Peak-Hour

Lanes, Volumes, Timings

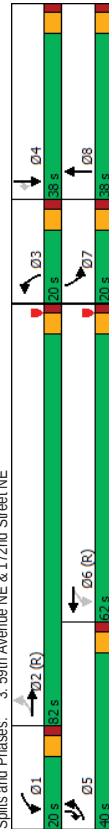
Smartcap Arlington Airport Business Park													
3: 59th Avenue NE & 172nd Street NE													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	106	684	15	6	518	21	36	2	15	63	2	357	
Traffic Volume (vph)	106	684	15	6	518	21	36	2	15	63	2	357	
Future Volume (vph)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Ideal Flow (vphpl)	250	0	250	0	230	0	355	15	0	355	15	0	
Storage Length (ft)	1	0	1	0	1	0	1	1	0	1	1	1	
Storage Lanes	25	25	25	25	25	25	25	25	25	25	25	25	
Taper Length (ft)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Lane Util. Factor	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	
Ped Bike Factor	0.950	0.950	0.950	0.950	0.950	0.950	0.950	0.950	0.950	0.950	0.950	0.950	
Flt Protected	1719	1803	0	1752	1834	0	1805	1647	0	1752	1845	1568	
Satd. Flow (prot)	0.307	0.358	0.660	0.660	0.660	0.660	0.660	0.660	0.660	0.660	0.660	0.660	
Flt Permitted	556	1803	0	1805	1647	0	1805	1647	0	1752	1845	1568	
Satd. Flow (perm)	1	1	1	1	1	1	1	1	1	1	1	1	
Right Turn on Red	30	30	30	30	30	30	30	30	30	30	30	30	
Satd. Flow (RTOR)	2644	2644	2644	2644	2644	2644	2644	2644	2644	2644	2644	2644	
Link Speed (mph)	60.1	60.1	60.1	60.1	60.1	60.1	60.1	60.1	60.1	60.1	60.1	60.1	
Link Distance (ft)	1	1	1	1	1	1	1	1	1	1	1	1	
Travel Time (s)	13.3	13.3	13.3	13.3	13.3	13.3	13.3	13.3	13.3	13.3	13.3	13.3	
Confl. Bikes (#/hr)	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Peak Hour Factor	5	5	5	5	5	5	5	5	5	5	5	5	
Heavy Vehicles (%)	115	743	16	7	563	23	39	2	16	68	2	388	
Adj. Flow (vph)	115	743	16	7	563	23	39	2	16	68	2	388	
Shared Lane Traffic (%)	115	759	0	7	586	0	39	18	0	68	2	388	
Lane Group Flow (vph)	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+pt	NA	
Turn Type	5	2	1	6	1	6	3	8	7	4	5	4	
Protected Phases	2	2	2	2	2	2	2	2	2	2	2	2	
Permitted Phases	5	2	1	6	1	6	3	8	7	4	5	4	
Detector Phase	5	2	1	6	1	6	3	8	7	4	5	4	
Switch Phase	3.0	7.0	3.0	7.0	3.0	7.0	3.0	5.0	3.0	4.0	3.0	3.0	
Minimum Initial (s)	9.0	35.0	9.0	38.0	9.0	38.0	9.0	33.0	9.0	33.0	9.0	33.0	
Minimum Split (s)	40.0	82.0	20.0	62.0	20.0	62.0	20.0	38.0	20.0	38.0	20.0	38.0	
Total Split (%)	25.0%	51.3%	12.5%	38.8%	12.5%	38.8%	12.5%	23.8%	12.5%	23.8%	12.5%	23.8%	
Maximum Green (s)	34.0	76.0	14.0	56.0	14.0	56.0	14.0	32.0	14.0	32.0	14.0	32.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag	
Lead-Lag Optimize?	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0	
Vehicle Extension (s)	2.5	3.0	2.5	3.0	2.5	3.0	2.5	3.0	2.5	3.0	2.5	3.0	
Minimum Gap (s)	15.0	30.0	10.0	30.0	10.0	30.0	10.0	30.0	10.0	30.0	10.0	30.0	
Time Before Reduce (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Time To Reduce (s)	None	C-Min	None	C-Min	None	C-Min	None	C-Min	None	C-Min	None	C-Min	
Recall Mode	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	
Walk Time (s)	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	
Flash Dont Walk (s)	0	0	0	0	0	0	0	0	0	0	0	0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0	

Existing Conditions
Gibson Traffic Consultants, Inc. [BJL #20-116]

PM Peak-Hour

Lanes, Volumes, Timings

Smartcap Arlington Airport Business Park													
3: 59th Avenue NE & 172nd Street NE													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Act Effct Green (s)	128.4	126.0	106.0	100.3	15.7	7.3	11.3	7.8	28.3				
Actuated g/C Ratio	0.80	0.79	0.66	0.63	0.10	0.05	0.07	0.05	0.18				
v/c Ratio	0.19	0.53	0.01	0.51	0.22	0.20	0.55	0.02	0.84				
Control Delay	5.1	10.0	5.7	20.3	67.6	36.8	87.6	71.5	40.9				
Queue Delay	5.1	10.0	5.7	20.3	67.6	36.8	87.6	71.5	40.9				
Total Delay	5.1	10.0	5.7	20.3	67.6	36.8	87.6	71.5	40.9				
LOS	A	B	A	C	E	D	F	E	D				
Approach Delay	9.4	20.1	20.1	20.1	57.9	48.0							
Approach LOS	A	C	C	C	E	D							
Queue Length 50th (ft)	26	275	2	249	36	2	70	2	180				
Queue Length 95th (ft)	50	568	m3	641	81	31	123	12	271				
Internal Link Dist (ft)	2564	2564	2564	2564	2564	2564	2564	2564	2564				
Turn Bay Length (ft)	250	250	250	250	230	230	355	380	15				
Base Capacity (vph)	693	1419	565	1150	210	342	155	369	563				
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	0.17	0.53	0.01	0.51	0.19	0.05	0.44	0.01	0.69				
Intersection Summary	Other												
Area Type:	Cycle Length: 160												
Actuated Cycle Length:	160												
Offset:	20 (13%), Referenced to phase 2EBTL and 6WBTL, Start of Red												
Natural Cycle:	30												
Control Type:	Actuated-Coordinated												
Maximum v/c Ratio:	0.84												
Intersection Signal Delay:	22.9												
Intersection Capacity Utilization:	69.0%												
Analysis Period (min):	15												
m	Volume for 95th percentile queue is metered by upstream signal.												



Lanes, Volumes, Timings

Smartcap Allington Airport Business Park													
4: 67th Avenue NE & 172nd Street NE													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Traffic Volume (vph)	206	496	89	45	309	48	48	154	90	90	187	150	
Future Volume (vph)	206	496	89	45	309	48	48	154	90	90	187	150	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	415	80	185	1	1	0	170	0	230	0	230	0	
Storage Lanes	1	1	1	1	1	0	1	0	1	0	1	0	
Taper Length (ft)	25			25			25		25		25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor		0.98											
Frt		0.850			0.980		0.945			0.933			
Flt Protected	0.950		0.950				0.950			0.950			
Satd. Flow (prot)	1770	1863	1583	1719	1768	0	1736	1726	0	1736	1705	0	
Flt Permitted	0.386		0.365				0.256			0.319			
Satd. Flow (perm)	719	1863	1546	660	1768	0	468	1726	0	583	1705	0	
Right Turn on Red			Yes			Yes			Yes		Yes		
Satd. Flow (RTOR)			102		5		17			23			
Link Speed (mph)		30			30		30			30			
Link Distance (ft)		2500			1857		754			5366			
Travel Time (s)		56.8			42.2		17.1			122.0			
Confl. Bikes (#/hr)		3			1								
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	
Heavy Vehicles (%)	2%	2%	5%	5%	5%	5%	4%	4%	4%	4%	4%	4%	
Adj. Flow (vph)	217	522	94	47	325	51	51	162	95	95	197	158	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	217	522	94	47	376	0	51	257	0	95	355	0	
Turn Type	pm-pt	NA	Perm	pm+pt	NA		pm+pt	NA		pm+pt	NA		
Protected Phases	5	2	1	6			3	8		7	4		
Permitted Phases	2	2	2	6			8			4			
Detector Phase	5	2	2	1	6		3	8		7	4		
Switch Phase													
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0		5.0	7.0		5.0	7.0		
Minimum Split (s)	11.0	32.0	32.0	11.0	35.0		11.0	35.0		11.0	35.0		
Total Split (s)	35.0	60.0	60.0	35.0	60.0		25.0	40.0		25.0	40.0		
Total Split (%)	21.9%	37.5%	37.5%	21.9%	37.5%		15.6%	25.0%		15.6%	25.0%		
Maximum Green (s)	29.0	54.0	54.0	29.0	54.0		19.0	34.0		19.0	34.0		
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)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0		
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)	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0		
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag		Lead	Lag		
Lead-Lag Optimize?													
Vehicle Extension (s)	3.0	5.0	5.0	2.5	5.0		2.5	5.0		2.5	5.0		
Minimum Gap (s)	3.0	4.0	4.0	2.5	4.0		2.5	4.0		2.5	4.0		
Time Before Reduce (s)	0.0	30.0	30.0	0.0	30.0		0.0	15.0		0.0	15.0		
Time To Reduce (s)	0.0	10.0	10.0	0.0	10.0		0.0	10.0		0.0	10.0		
Recall Mode	None	C-Min	C-Min	None	C-Min		None	None		None	None		
Walk Time (s)		7.0	7.0		7.0		7.0			7.0			
Flash Don't Walk (s)		19.0	19.0		22.0		21.0			22.0			
Pedestrian Calls (#/hr)		0	0		0		0			0			

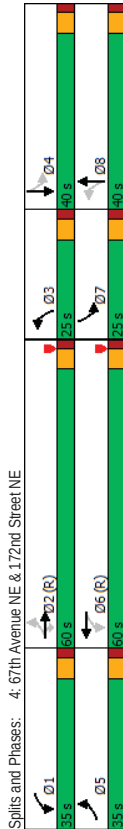
Existing Conditions
Gibson Traffic Consultants, Inc. [B.J.L #20-116]

PM Peak-Hour

Lanes, Volumes, Timings

Smartcap Allington Airport Business Park													
4: 67th Avenue NE & 172nd Street NE													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Act Effct Green (s)	95.1	85.4	85.4	82.2	75.3		42.8	34.8		49.7	40.2		
Actuated g/C Ratio	0.60	0.53	0.53	0.51	0.47		0.27	0.22		0.31	0.25		
v/c Ratio	0.41	0.53	0.11	0.12	0.45		0.27	0.66		0.36	0.80		
Control Delay	23.0	37.2	11.1	17.1	33.0		38.6	61.1		40.5	66.1		
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0		
Total Delay	23.0	37.2	11.1	17.1	33.0		38.6	61.1		40.5	66.1		
LOS	C	D	B	B	C		D	E		D	E		
Approach Delay		30.6		31.3				57.4			60.7		
Approach LOS		C		C				E			E		
Queue Length 50th (ft)	143	467	12	20	267		36	227		69	328		
Queue Length 95th (ft)	214	634	67	43	406		67	328		112	452		
Internal Link Dist (ft)		2420		1777				674			5286		
Turn Bay Length (ft)	415	80	185	834			170			230			
Base Capacity (vph)	622	994	872	588			301	417		325	445		
Sanctuary 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	0.35	0.53	0.11	0.08	0.45		0.17	0.62		0.29	0.80		

Intersection Summary
Area Type: Other
Cycle Length: 160
Actuated Cycle Length: 160
Offset: 108 (68%), Referenced to phase 2:EBTL and 6:WBTL, Start of Red
Natural Cycle: 95
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.80
Intersection Signal Delay: 41.5
Intersection Capacity Utilization 73.8%
Analysis Period (min) 15



Existing Conditions
Gibson Traffic Consultants, Inc. [B.J.L #20-116]

PM Peak-Hour

Lanes, Volumes, Timings

1: Smokey Point Boulevard & 172nd Street NE

Smartcap Arlington Airport Business Park

Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	70	363	767	323	10	212	941	127	586	452	155	168	273	259
Future Volume (vph)	70	363	767	323	10	212	941	127	586	452	155	168	273	259
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	490	490	400	400	400	400	400	400	400	400	400	400	400	400
Storage Lanes	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Taper Length (ft)	25	25	25	25	25	25	25	25	25	25	25	25	25	25
Lane Util. Factor	0.95	1.00	0.95	1.00	0.91	1.00	0.91	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	1.00	1.00	1.00	0.98	1.00	1.00	0.98	0.98	0.99	0.95	0.97	0.99	0.95	0.98
Frt				0.850				0.850			0.850			0.850
Flt Protected		0.950		0.950		0.950		0.950		0.950		0.950		0.950
Satd. Flow (prot)	0	1741	3471	1553	0	1737	4988	1553	3400	3505	1568	1736	3471	1553
Flt Permitted		0.950		0.950		0.950		0.950		0.950		0.950		0.950
Satd. Flow (perm)	0	1737	3471	1519	0	1732	4988	1519	3380	3505	1524	1721	3471	1519
Right Turn on Red				Yes				Yes			Yes			Yes
Satd. Flow (RTOR)			30	267			30	120		30	151		30	234
Link Speed (mph)			1100				748			1151			1766	
Link Distance (ft)			25.0				17.0			26.2			40.1	
Travel Time (s)		6		7		7		6	7		13	13		7
Confl. Peds. (#/hr)								2						1
Confl. Bikes (#/hr)														0.94
Peak Hour Factor	0.92	0.94	0.94	0.94	0.92	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	2%	4%	4%	4%	2%	4%	4%	4%	3%	3%	3%	4%	4%	4%
Adj. Flow (vph)	76	386	816	344	11	226	1001	135	623	481	165	179	290	276
Shared Lane Traffic (%)														
Lane Group Flow (vph)	0	462	816	344	0	237	1001	135	623	481	165	179	290	276
Turn Type	Prot	Prot	NA	Perm	Prot	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	5	2		1	1	6		3	8		7	4	
Permitted Phases				2				6			8			4
Detector Phase	5	5	2	2	1	1	6	6	3	8	8	7	4	4
Switch Phase														
Minimum Initial (s)	5.0	5.0	10.0	10.0	5.0	5.0	10.0	10.0	5.0	7.0	7.0	5.0	7.0	7.0
Minimum Split (s)	10.6	10.6	40.0	40.0	10.6	10.6	40.0	40.0	10.6	44.0	44.0	10.6	44.0	44.0
Total Split (s)	42.0	42.0	47.0	47.0	40.0	40.0	45.0	45.0	31.0	42.0	42.0	31.0	42.0	42.0

2023 Baseline Conditions
Gibson Traffic Consultants, Inc. [BJL #20-116] PM Peak-Hour

Lanes, Volumes, Timings

1: Smokey Point Boulevard & 172nd Street NE

Smartcap Arlington Airport Business Park

Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (%)	26.3%	26.3%	29.4%	29.4%	25.0%	25.0%	28.1%	28.1%	19.4%	26.3%	26.3%	19.4%	26.3%	26.3%
Maximum Green (s)	36.4	36.4	41.0	41.0	34.4	34.4	39.0	39.0	25.4	36.0	36.0	25.4	36.0	36.0
Yellow Time (s)	3.6	3.6	4.0	4.0	3.6	3.6	4.0	4.0	3.6	4.0	4.0	3.6	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.6	5.6	6.0	6.0	5.6	5.6	6.0	6.0	5.6	6.0	6.0	5.6	6.0	6.0
Lead/Lag	Lead	Lead	Lag	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?														
Vehicle Extension (s)	2.5	2.5	3.0	3.0	2.5	2.5	3.0	3.0	2.5	3.0	3.0	2.5	3.0	3.0
Recall Mode	None	None	C-Min	C-Min	None	None	C-Min	C-Min	None	None	None	None	None	None
Walk Time (s)			7.0	7.0			7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)			27.0	27.0			27.0	27.0		31.0	31.0		31.0	31.0
Pedestrian Calls (#/hr)			7	7			10	10		10	10		6	6
Act Effct Green (s)	46.7	46.7	57.9	57.9	26.5	26.5	37.7	37.7	26.7	31.8	31.8	20.6	25.7	25.7
Actuated g/C Ratio	0.29	0.29	0.36	0.36	0.17	0.17	0.24	0.24	0.17	0.20	0.20	0.13	0.16	0.16
v/c Ratio	0.91	0.91	0.65	0.48	0.83	0.83	0.85	0.30	1.10	0.69	0.39	0.80	0.52	0.63
Control Delay	76.9	76.9	47.7	13.2	86.8	86.8	66.4	12.0	126.9	64.9	12.1	92.6	63.4	17.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	76.9	76.9	47.7	13.2	86.8	86.8	66.4	12.0	126.9	64.9	12.1	92.6	63.4	17.1
LOS	E	E	D	B	F	F	E	B	F	E	B	F	E	B
Approach Delay			48.7				64.6			88.5			53.3	
Approach LOS			D				E			F			D	
Queue Length 50th (ft)	465	465	366	53	243	243	366	12	~394	255	12	184	149	39
Queue Length 95th (ft)	#800	#800	#559	176	327	327	424	71	#520	304	78	267	184	128
Internal Link Dist (ft)			1020				668			1071		1686		
Turn Bay Length (ft)	490	490			400	400			175		175	240		155
Base Capacity (vph)	507	507	1255	719	373	373	1215	461	567	793	461	275	780	523
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.91	0.91	0.65	0.48	0.64	0.64	0.82	0.29	1.10	0.61	0.36	0.65	0.37	0.53

Intersection Summary

Area Type: Other

2023 Baseline Conditions

Gibson Traffic Consultants, Inc. [BJL #20-116]

PM Peak-Hour

Lanes, Volumes, Timings

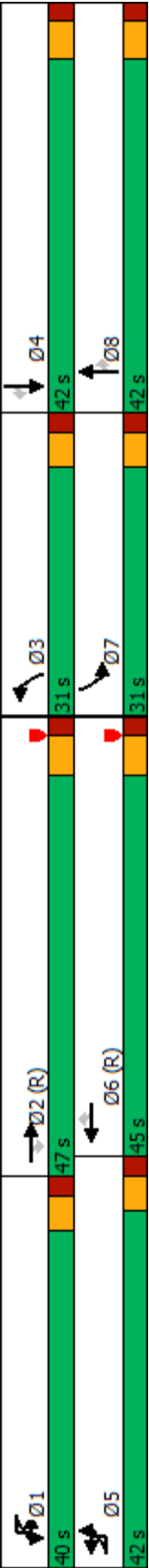
1: Smokey Point Boulevard & 172nd Street NE

Smartcap Arlington Airport Business Park

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Red
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.10
Intersection Signal Delay: 63.8
Intersection Capacity Utilization 108.2%
Analysis Period (min) 15
Intersection LOS: E
ICU Level of Service G

~ 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: 1: Smokey Point Boulevard & 172nd Street NE



Lanes, Volumes, Timings

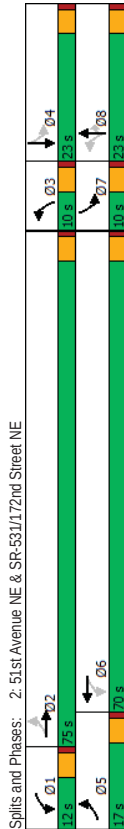
Smartcap Arlington Airport Business Park													
2: 51st Avenue NE & SR-531/172nd Street NE													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	191	746	41	105	872	44	92	62	185	63	60	69	
Traffic Volume (vph)	191	746	41	105	872	44	92	62	185	63	60	69	
Future Volume (vph)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Ideal Flow (vphpl)	250	0	250	0	250	0	200	150	200	150	200	0	
Storage Length (ft)	1	0	0	1	1	0	1	1	1	1	1	0	
Storage Lanes	25	25	25	25	25	25	25	25	25	25	25	0	
Taper Length (ft)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Lane Util. Factor	0.992	0.992	0.992	0.992	0.992	0.992	0.992	0.992	0.992	0.992	0.992	0.992	
Ped Bike Factor	0.950	0.950	0.950	0.950	0.950	0.950	0.950	0.950	0.950	0.950	0.950	0.950	
Flt Protected	1736	1812	0	1736	1812	0	1736	1827	1553	1736	1660	0	
Satd. Flow (prot)	0.081	0.216	0	0.216	0.216	0	0.441	0.804	1517	1302	1660	0	
Satd. Flow (perm)	148	1812	0	395	1812	0	804	1827	1517	1302	1660	0	
Right Turn on Red		Yes			Yes		Yes		Yes		Yes		
Satd. Flow (RTOR)	4	3		3	3		3	3	191		41		
Link Speed (mph)	35	35		35	35		35	35	1041		35		
Link Distance (ft)	2271	2644		1137	1137		1137	22.1	1	1	1	1	
Travel Time (s)	44.2	51.5		51.5	51.5		51.5	3	1	1	1	1	
Confl. Peds. (#/hr)	3												
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	
Adj. Flow (vph)	197	769	42	108	899	45	95	64	191	65	62	71	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	197	811	0	108	944	0	95	64	191	65	133	0	
Turn Type	pm-pt	NA	pm-pt	NA	NA	0	pm+pt	NA	Perm	pm-pt	NA	0	
Protected Phases	5	2	1	6	6	3	8	8	8	4	4		
Permitted Phases	2	6	6	6	6	6	8	8	8	4	4		
Detector Phase	5	2	1	6	6	3	8	8	8	7	4		
Switch Phase													
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	9.5	22.5	9.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	
Total Split (s)	17.0	75.0	12.0	70.0	70.0	70.0	10.0	23.0	23.0	10.0	23.0	23.0	
Total Split (%)	14.2%	62.5%	10.0%	58.3%	58.3%	58.3%	8.3%	19.2%	19.2%	8.3%	19.2%	19.2%	
Maximum Green (s)	12.5	70.5	7.5	65.5	65.5	65.5	5.5	18.5	18.5	5.5	18.5	18.5	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	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	0.0	0.0	0.0	
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	Max	None	Max	Max	Max	None	None	None	None	None	None	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	
Flash Don't Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)	3	3											
Act Effct Green (s)	81.7	70.7	73.2	66.2	66.2	66.2	18.2	13.9	13.9	17.3	11.8	11.8	
Actuated g/c Ratio	0.72	0.63	0.65	0.59	0.59	0.59	0.16	0.12	0.12	0.15	0.10	0.10	
v/c Ratio	0.73	0.72	0.32	0.89	0.89	0.89	0.54	0.29	0.54	0.30	0.64	0.64	

2023 Baseline Conditions
Gibson Traffic Consultants, Inc. [B.J.L #20-116]

PM Peak-Hour

Lanes, Volumes, Timings

Smartcap Arlington Airport Business Park													
2: 51st Avenue NE & SR-531/172nd Street NE													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Control Delay	35.6	19.7	8.2	33.4	33.4	33.4	51.9	49.7	12.5	41.9	47.1	47.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	35.6	19.7	8.2	33.4	33.4	33.4	51.9	49.7	12.5	41.9	47.1	47.1	
LOS	D	B	A	C	C	C	D	D	B	D	D	D	
Approach Delay	22.8	30.8	30.8	30.8	30.8	30.8	30.8	30.8	30.8	30.8	30.8	30.8	
Approach LOS	C	C	C	C	C	C	C	C	C	C	C	C	
Queue Length 50th (ft)	65	373	20	569	569	569	60	44	0	40	65	65	
Queue Length 95th (ft)	#182	609	44	#967	967	967	108	87	66	79	129	129	
Internal Link Dist (ft)	250	2191	250	2564	2564	2564	200	150	200	200	306	306	
Turn Bay Length (ft)	283	1134	346	1062	1062	1062	175	299	408	220	306	306	
Base Capacity (vph)	0	0	0	0	0	0	0	0	0	0	0	0	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.70	0.72	0.31	0.89	0.89	0.89	0.54	0.21	0.47	0.30	0.43	0.43	
Intersection Summary	Other												
Area Type:	Other												
Cycle Length:	120												
Actuated Cycle Length:	113												
Natural Cycle:	100												
Control Type:	Actuated-Uncoordinated												
Maximum v/c Ratio:	0.89												
Intersection LOS:	C												
Intersection Capacity Utilization	86.9%												
Analysis Period (min)	15												
# 95th percentile volume exceeds capacity, queue may be longer.	Queue shown is maximum after two cycles.												



Lanes, Volumes, Timings

3: 59th Avenue NE & 172nd Street NE														Smartcap Allington Airport Business Park													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	115	740	16	6	561	23	39	2	16	68	2	386		Lane Configurations	115	740	16	6	561	23	39	2	16	68	2	386	
Traffic Volume (vph)	115	740	16	6	561	23	39	2	16	68	2	386		Traffic Volume (vph)	115	740	16	6	561	23	39	2	16	68	2	386	
Future Volume (vph)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		Future Volume (vph)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Ideal Flow (vphpl)	250	0	250	0	250	0	230	0	355	15	1	1		Ideal Flow (vphpl)	250	0	250	0	250	0	230	0	355	15	1	1	
Storage Lanes	1	0	1	0	1	0	1	1	0	1	1	1		Storage Lanes	1	0	1	0	1	0	1	1	0	1	1	1	
Taper Length (ft)	25	25	25	25	25	25	25	25	25	25	25	25		Taper Length (ft)	25	25	25	25	25	25	25	25	25	25	25	25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997		Ped Bike Factor	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	
Flt Protected	0.950	0.950	0.950	0.950	0.950	0.950	0.950	0.950	0.950	0.950	0.950	0.950		Flt Protected	0.950	0.950	0.950	0.950	0.950	0.950	0.950	0.950	0.950	0.950	0.950	0.950	
Satd. Flow (prot)	1719	1803	0	1752	1834	0	1805	1645	0	1752	1845	1568		Satd. Flow (prot)	1719	1803	0	1752	1834	0	1805	1645	0	1752	1845	1568	
Flt Permitted	0.253	0.340	0	0.340	0.340	0	0.950	0.950	0	0.950	0.950	0.950		Flt Permitted	0.253	0.340	0	0.340	0.340	0	0.950	0.950	0	0.950	0.950	0.950	
Satd. Flow (perm)	458	1803	0	627	1834	0	1805	1645	0	1752	1845	1568		Satd. Flow (perm)	458	1803	0	627	1834	0	1805	1645	0	1752	1845	1568	
Right Turn on Red			Yes			Yes			Yes			Yes		Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)	1	1		1	1		1	17		1	17	204		Satd. Flow (RTOR)	1	1		1	1		1	17		1	17	204	
Link Speed (mph)	30	30		30	30		30	30		30	30	30		Link Speed (mph)	30	30		30	30		30	30		30	30	30	
Link Distance (ft)	2644	2644		2500	2500		586	586		460	460	460		Link Distance (ft)	2644	2644		2500	2500		586	586		460	460	460	
Travel Time (s)	60.1	60.1		56.8	56.8		13.3	13.3		10.5	10.5	10.5		Travel Time (s)	60.1	60.1		56.8	56.8		13.3	13.3		10.5	10.5	10.5	
Confl. Bikes (#/hr)			1											Confl. Bikes (#/hr)			1										
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92		Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Heavy Vehicles (%)	5%	5%	5%	3%	3%	3%	0%	0%	0%	3%	3%	3%		Heavy Vehicles (%)	5%	5%	5%	3%	3%	3%	0%	0%	0%	3%	3%	3%	
Adj. Flow (vph)	125	804	17	7	610	25	42	2	17	74	2	420		Adj. Flow (vph)	125	804	17	7	610	25	42	2	17	74	2	420	
Shared Lane Traffic (%)			1											Shared Lane Traffic (%)			1										
Lane Group Flow (vph)	125	821	0	7	635	0	42	19	0	74	2	420		Lane Group Flow (vph)	125	821	0	7	635	0	42	19	0	74	2	420	
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	Prot	NA	Prot	NA	pm+pt	NA		Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	Prot	NA	Prot	NA	pm+pt	NA	
Protected Phases	5	2	1	6	6	6	3	8	7	4	5	4		Protected Phases	5	2	1	6	6	6	3	8	7	4	5	4	
Permitted Phases	2	2	6	6	6	6	3	8	7	4	5	4		Permitted Phases	2	2	6	6	6	6	3	8	7	4	5	4	
Detector Phase	5	2	1	6	6	6	3	8	7	4	5	4		Detector Phase	5	2	1	6	6	6	3	8	7	4	5	4	
Switch Phase														Switch Phase													
Minimum Initial (s)	3.0	7.0	3.0	7.0	3.0	7.0	3.0	5.0	3.0	3.0	5.0	3.0		Minimum Initial (s)	3.0	7.0	3.0	7.0	3.0	7.0	3.0	5.0	3.0	3.0	5.0	3.0	
Minimum Split (s)	9.0	35.0	9.0	38.0	9.0	38.0	9.5	33.0	9.0	33.0	9.0	33.0		Minimum Split (s)	9.0	35.0	9.0	38.0	9.0	38.0	9.5	33.0	9.0	33.0	9.0	33.0	
Total Split (s)	40.0	82.0	20.0	62.0	20.0	62.0	20.0	38.0	20.0	38.0	20.0	40.0		Total Split (s)	40.0	82.0	20.0	62.0	20.0	62.0	20.0	38.0	20.0	38.0	20.0	40.0	
Total Split (%)	25.0%	51.3%	12.5%	38.8%	12.5%	38.8%	12.5%	23.8%	12.5%	23.8%	12.5%	25.0%		Total Split (%)	25.0%	51.3%	12.5%	38.8%	12.5%	38.8%	12.5%	23.8%	12.5%	23.8%	12.5%	25.0%	
Maximum Green (s)	34.0	76.0	14.0	56.0	14.0	56.0	14.0	32.0	14.0	32.0	14.0	34.0		Maximum Green (s)	34.0	76.0	14.0	56.0	14.0	56.0	14.0	32.0	14.0	32.0	14.0	34.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag		Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag	
Lead-Lag Optimize?														Lead-Lag Optimize?													
Vehicle Extension (s)	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0	3.0	3.0	4.0	3.0		Vehicle Extension (s)	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0	3.0	3.0	4.0	3.0	
Minimum Gap (s)	2.5	3.0	2.5	3.0	2.5	3.0	2.5	3.0	2.5	3.0	2.5	3.0		Minimum Gap (s)	2.5	3.0	2.5	3.0	2.5	3.0	2.5	3.0	2.5	3.0	2.5	3.0	
Time Before Reduce (s)	15.0	30.0	10.0	30.0	10.0	30.0	10.0	30.0	10.0	30.0	10.0	15.0		Time Before Reduce (s)	15.0	30.0	10.0	30.0	10.0	30.0	10.0	30.0	10.0	10.0	15.0	15.0	
Time To Reduce (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		Time To Reduce (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Recall Mode	None	C-Min	None	C-Min	None	C-Min	None	C-Min	None	C-Min	None	None		Recall Mode	None	C-Min	None	C-Min	None	C-Min	None	C-Min	None	None	None	None	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0		Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0		Flash Dont Walk (s)	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0		Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0	

2023 Baseline Conditions
Gibson Traffic Consultants, Inc. [BJL #20-116]

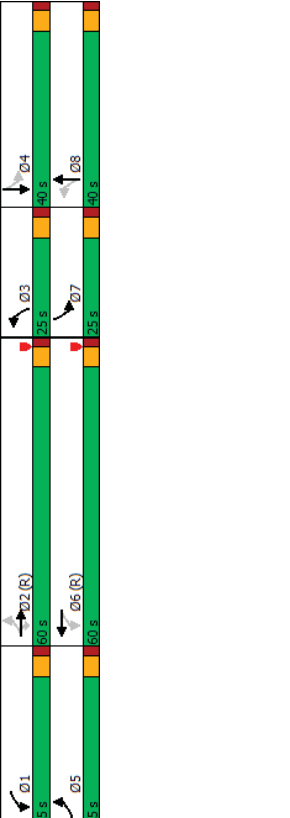
2023 Baseline Conditions
Gibson Traffic Consultants, Inc. [BJL #20-116]

PM Peak-Hour

Lanes, Volumes, Timings														Smartcap Arlington Airport Business Park													
4: 67th Avenue NE & 172nd Street NE																											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔		Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔		
Traffic Volume (vph)	223	537	96	49	334	52	52	167	97	97	202	162		Traffic Volume (vph)	223	537	96	49	334	52	52	167	97	97	202	162	
Future Volume (vph)	223	537	96	49	334	52	52	167	97	97	202	162		Future Volume (vph)	223	537	96	49	334	52	52	167	97	97	202	162	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	415		80	185		0	170		0	230		0		Storage Length (ft)	415		80	185		0	170		0	230		0	
Storage Lanes	1		1	1		0	1		0	1		0		Storage Lanes	1		1	1		0	1		0	1		0	
Taper Length (ft)	25			25			25			25		25		Taper Length (ft)	25			25			25		25		25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Ped Bike Factor														Ped Bike Factor													
Frt		0.850		0.980			0.945			0.933				Frt		0.850		0.980			0.945			0.933			
Flt Protected														Flt Protected													
Satd. Flow (prot)	1770	1863	1583	1719	1768	0	1736	1726	0	1736	1705	0		Satd. Flow (prot)	1770	1863	1583	1719	1768	0	1736	1726	0	1736	1705	0	
Flt Permitted	0.337		0.315				0.247			0.316				Flt Permitted	0.337		0.315			0.247			0.316				
Satd. Flow (perm)	628	1863	1546	570	1768	0	451	1726	0	577	1705	0		Satd. Flow (perm)	628	1863	1546	570	1768	0	451	1726	0	577	1705	0	
Right Turn on Red			Yes			Yes			Yes		Yes			Right Turn on Red			Yes			Yes			Yes		Yes		
Satd. Flow (RTOR)			102		5			17		30	23			Satd. Flow (RTOR)			102		5			17		30	23		
Link Speed (mph)		30			30			30			30			Link Speed (mph)		30			30			30			30		
Link Distance (ft)		2500			1857			754			5366			Link Distance (ft)		2500			1857			754			5366		
Travel Time (s)		56.8			42.2			17.1			122.0			Travel Time (s)		56.8			42.2			17.1			122.0		
Confl. Bikes (#/hr)			3		1									Confl. Bikes (#/hr)			3		1								
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95		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		
Heavy Vehicles (%)	2%	2%	2%	5%	5%	5%	4%	4%	4%	4%	4%	4%		Heavy Vehicles (%)	2%	2%	2%	5%	5%	5%	4%	4%	4%	4%	4%	4%	
Adj. Flow (vph)	235	565	101	52	352	55	55	176	102	102	213	171		Adj. Flow (vph)	235	565	101	52	352	55	55	176	102	102	213	171	
Shared Lane Traffic (%)														Shared Lane Traffic (%)													
Lane Group Flow (vph)	235	565	101	52	407	0	55	278	0	102	384	0		Lane Group Flow (vph)	235	565	101	52	407	0	55	278	0	102	384	0	
Turn Type	pm-pt	NA	Perm	pm-pt	NA		pm+pt	NA		pm+pt	NA			Turn Type	pm-pt	NA	Perm	pm-pt	NA		pm+pt	NA		pm+pt	NA		
Protected Phases	5	2		1	6		3	8		7	4			Protected Phases	5	2		1	6		3	8		7	4		
Permitted Phases	2		2	6			8			4				Permitted Phases	2		2	6			8			4			
Detector Phase	5	2	2	1	6		3	8		7	4			Detector Phase	5	2	2	1	6		3	8		7	4		
Switch Phase														Switch Phase													
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0		5.0	7.0		5.0	7.0			Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0		5.0	7.0		5.0	7.0		
Minimum Split (s)	11.0	32.0	32.0	11.0	35.0		11.0	35.0		11.0	35.0			Minimum Split (s)	11.0	32.0	32.0	11.0	35.0		11.0	35.0		11.0	35.0		
Total Split (s)	35.0	60.0	60.0	35.0	60.0		25.0	40.0		25.0	40.0			Total Split (s)	35.0	60.0	60.0	35.0	60.0		25.0	40.0		25.0	40.0		
Total Split (%)	21.9%	37.5%	37.5%	21.9%	37.5%		15.6%	25.0%		15.6%	25.0%			Total Split (%)	21.9%	37.5%	37.5%	21.9%	37.5%		15.6%	25.0%		15.6%	25.0%		
Maximum Green (s)	29.0	54.0	54.0	29.0	54.0		19.0	34.0		19.0	34.0			Maximum Green (s)	29.0	54.0	54.0	29.0	54.0		19.0	34.0		19.0	34.0		
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0			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)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0			All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0		
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0			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)	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0			Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0		
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag		Lead	Lag			Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag		Lead	Lag		
Lead-Lag Optimize?														Lead-Lag Optimize?													
Vehicle Extension (s)	3.0	5.0	5.0	2.5	5.0		2.5	5.0		2.5	5.0			Vehicle Extension (s)	3.0	5.0	5.0	2.5	5.0		2.5	5.0		2.5	5.0		
Minimum Gap (s)	3.0	4.0	4.0	2.5	4.0		2.5	4.0		2.5	4.0			Minimum Gap (s)	3.0	4.0	4.0	2.5	4.0		2.5	4.0		2.5	4.0		
Time Before Reduce (s)	0.0	30.0	30.0	0.0	30.0		0.0	15.0		0.0	15.0			Time Before Reduce (s)	0.0	30.0	30.0	0.0	30.0		0.0	15.0		0.0	15.0		
Time To Reduce (s)	0.0	10.0	10.0	0.0	10.0		0.0	10.0		0.0	10.0			Time To Reduce (s)	0.0	10.0	10.0	0.0	10.0		0.0	10.0		0.0	10.0		
Recall Mode	None	C-Min	C-Min	None	C-Min		None	None		None	None			Recall Mode	None	C-Min	C-Min	None	C-Min		None	None		None	None		
Walk Time (s)		7.0	7.0		7.0		7.0			7.0				Walk Time (s)		7.0	7.0		7.0		7.0			7.0			
Flash Dont Walk (s)		19.0	19.0		22.0		21.0			22.0				Flash Dont Walk (s)		19.0	19.0		22.0		21.0			22.0			
Pedestrian Calls (#/hr)		0	0		0		0			0				Pedestrian Calls (#/hr)		0	0		0		0			0			
2023 Baseline Conditions														PM Peak-Hour													
Gibson Traffic Consultants, Inc. [B.L #20-116]																											

2023 Baseline Conditions
Gibson Traffic Consultants, Inc. [B.J.L #20-116]

PM Peak-Hour

Lanes, Volumes, Timings														Smartcap Arlington Airport Business Park													
4: 67th Avenue NE & 172nd Street NE																											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Act Effct Green (s)	92.3	81.4	81.4	77.3	70.1		46.6	38.3		53.6	43.8			Act Effct Green (s)	92.3	81.4	81.4	77.3	70.1		46.6	38.3		53.6	43.8		
Actuated g/C Ratio	0.58	0.51	0.51	0.48	0.44		0.29	0.24		0.34	0.27			Actuated g/C Ratio	0.58	0.51	0.51	0.48	0.44		0.29	0.24		0.34	0.27		
v/c Ratio	0.49	0.60	0.12	0.16	0.52		0.28	0.65		0.37	0.80			v/c Ratio	0.49	0.60	0.12	0.16	0.52		0.28	0.65		0.37	0.80		
Control Delay	24.4	40.1	11.1	18.3	37.4		37.4	59.0		38.9	63.8			Control Delay	24.4	40.1	11.1	18.3	37.4		37.4	59.0		38.9	63.8		
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0			Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0		
Total Delay	24.4	40.1	11.1	18.3	37.4		37.4	59.0		38.9	63.8			Total Delay	24.4	40.1	11.1	18.3	37.4		37.4	59.0		38.9	63.8		
LOS	C	D	B	B	D		D	E		D	E			LOS	C	D	B	B	D		D	E		D	E		
Approach Delay														Approach Delay													
Approach LOS														Approach LOS													
Queue Length 50th (ft)	171	567	18	25	324		37	237		70	346			Queue Length 50th (ft)	171	567	18	25	324		37	237		70	346		
Queue Length 95th (ft)	222	679	73	46	454		72	359		119	526			Queue Length 95th (ft)	222	679	73	46	454		72	359		119	526		
Internal Link Dist (ft)	2420				1777			674			5286			Internal Link Dist (ft)	2420				1777			674			5286		
Turn Bay Length (ft)	415		80	185			170			230				Turn Bay Length (ft)	415		80	185			170			230			
Base Capacity (vph)	569	947	836	537	777		308	438		338	483			Base Capacity (vph)	569	947	836	537	777		308	438		338	483		
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0			Starvation Cap Reductn	0	0	0	0	0		0	0		0	0		
Spillback 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			Storage Cap Reductn	0	0	0	0	0		0	0		0	0		
Reduced v/c Ratio	0.41	0.60	0.12	0.10	0.52		0.18	0.63		0.30	0.80			Reduced v/c Ratio	0.41	0.60	0.12	0.10	0.52		0.18	0.63		0.30	0.80		
Intersection Summary																											
Area Type: Other																											
Cycle Length: 160																											
Actuated Cycle Length: 160																											
Offset: 108 (88%), Referenced to phase 2:EBTL and 6:WBTL, Start of Red																											
Natural Cycle: 95																											
Control Type: Actuated-Coordinated																											
Maximum v/c Ratio: 0.80																											
Intersection Signal Delay: 42.5														Intersection LOS: D													
Intersection Capacity Utilization 77.8%														ICU Level of Service D													
Analysis Period (min) 15																											
# 95th percentile volume exceeds capacity, queue may be longer.																											
Queue shown is maximum after two cycles.																											
Spills and Phases: 4: 67th Avenue NE & 172nd Street NE																											
																											

Lanes, Volumes, Timings

1: Smokey Point Boulevard & 172nd Street NE

Smartcap Arlington Airport Business Park

Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	70	363	790	323	10	216	968	127	586	452	158	168	273	259
Future Volume (vph)	70	363	790	323	10	216	968	127	586	452	158	168	273	259
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	490	490	400	400	400	400	400	400	400	400	400	400	400	400
Storage Lanes	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Taper Length (ft)	25	25	25	25	25	25	25	25	25	25	25	25	25	25
Lane Util. Factor	0.95	1.00	0.95	1.00	0.91	1.00	0.91	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.99	0.99	0.97	0.99	0.99	0.98
Frt				0.850				0.850			0.850			0.850
Flt Protected		0.950				0.950			0.950			0.950		
Satd. Flow (prot)	0	1741	3471	1553	0	1737	4988	1553	3400	3505	1568	1736	3471	1553
Flt Permitted		0.950				0.950			0.950			0.950		
Satd. Flow (perm)	0	1738	3471	1519	0	1732	4988	1519	3380	3505	1524	1721	3471	1519
Right Turn on Red				Yes				Yes			Yes			Yes
Satd. Flow (RTOR)			30	259				117			154			234
Link Speed (mph)			30				30			30			30	
Link Distance (ft)			1100				748			1151			1766	
Travel Time (s)			25.0				17.0			26.2			40.1	
Confl. Peds. (#/hr)		6		7		7		6	7		13	13		7
Confl. Bikes (#/hr)								2						1
Peak Hour Factor	0.92	0.94	0.94	0.94	0.92	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	2%	4%	4%	4%	2%	4%	4%	4%	3%	3%	3%	4%	4%	4%
Adj. Flow (vph)	76	386	840	344	11	230	1030	135	623	481	168	179	290	276
Shared Lane Traffic (%)														
Lane Group Flow (vph)	0	462	840	344	0	241	1030	135	623	481	168	179	290	276
Turn Type	Prot	Prot	NA	Perm	Prot	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	5	2		1	1	6		3	8		7	4	
Permitted Phases				2				6			8			4
Detector Phase	5	5	2	2	1	1	6	6	3	8	8	7	4	4
Switch Phase														
Minimum Initial (s)	5.0	5.0	10.0	10.0	5.0	5.0	10.0	10.0	5.0	7.0	7.0	5.0	7.0	7.0
Minimum Split (s)	10.6	10.6	40.0	40.0	10.6	10.6	40.0	40.0	10.6	44.0	44.0	10.6	44.0	44.0
Total Split (s)	42.0	42.0	47.0	47.0	40.0	40.0	45.0	45.0	31.0	42.0	42.0	31.0	42.0	42.0

2023 Future Conditions with Development
Gibson Traffic Consultants, Inc. [BJL #20-116] PM Peak-Hour

Lanes, Volumes, Timings

1: Smokey Point Boulevard & 172nd Street NE

Smartcap Arlington Airport Business Park

Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (%)	26.3%	26.3%	29.4%	29.4%	25.0%	25.0%	28.1%	28.1%	19.4%	26.3%	26.3%	19.4%	26.3%	26.3%
Maximum Green (s)	36.4	36.4	41.0	41.0	34.4	34.4	39.0	39.0	25.4	36.0	36.0	25.4	36.0	36.0
Yellow Time (s)	3.6	3.6	4.0	4.0	3.6	3.6	4.0	4.0	3.6	4.0	4.0	3.6	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.6	5.6	6.0	6.0	5.6	5.6	6.0	6.0	5.6	6.0	6.0	5.6	6.0	6.0
Lead/Lag	Lead	Lead	Lag	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?														
Vehicle Extension (s)	2.5	2.5	3.0	3.0	2.5	2.5	3.0	3.0	2.5	3.0	3.0	2.5	3.0	3.0
Recall Mode	None	None	C-Min	C-Min	None	None	C-Min	C-Min	None	None	None	None	None	None
Walk Time (s)			7.0	7.0			7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)			27.0	27.0			27.0	27.0		31.0	31.0		31.0	31.0
Pedestrian Calls (#/hr)			7	7			10	10		10	10		6	6
Act Effct Green (s)	46.6	46.6	57.9	57.9	26.8	26.8	38.1	38.1	26.3	31.5	31.5	20.6	25.8	25.8
Actuated g/C Ratio	0.29	0.29	0.36	0.36	0.17	0.17	0.24	0.24	0.16	0.20	0.20	0.13	0.16	0.16
v/c Ratio	0.91	0.91	0.67	0.48	0.83	0.83	0.87	0.30	1.11	0.70	0.40	0.80	0.52	0.63
Control Delay	77.3	77.3	48.2	14.1	87.0	87.0	67.3	12.7	132.3	65.3	12.0	92.6	63.3	17.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	77.3	77.3	48.2	14.1	87.0	87.0	67.3	12.7	132.3	65.3	12.0	92.6	63.3	17.1
LOS	E	E	D	B	F	F	E	B	F	E	B	F	E	B
Approach Delay			49.3				65.4			91.1			53.2	
Approach LOS			D				E			F			D	
Queue Length 50th (ft)	465	465	382	59	247	247	379	15	~394	255	12	184	149	39
Queue Length 95th (ft)	#800	#800	#586	185	333	333	438	74	#520	304	78	267	184	128
Internal Link Dist (ft)			1020				668			1071		1686		
Turn Bay Length (ft)	490	490			400	400			175		175	240		155
Base Capacity (vph)	506	506	1255	714	373	373	1215	458	559	793	464	275	780	523
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.91	0.91	0.67	0.48	0.65	0.65	0.85	0.29	1.11	0.61	0.36	0.65	0.37	0.53

Intersection Summary

Area Type: Other

2023 Future Conditions with Development

Gibson Traffic Consultants, Inc. [BJL #20-116]

PM Peak-Hour

Lanes, Volumes, Timings

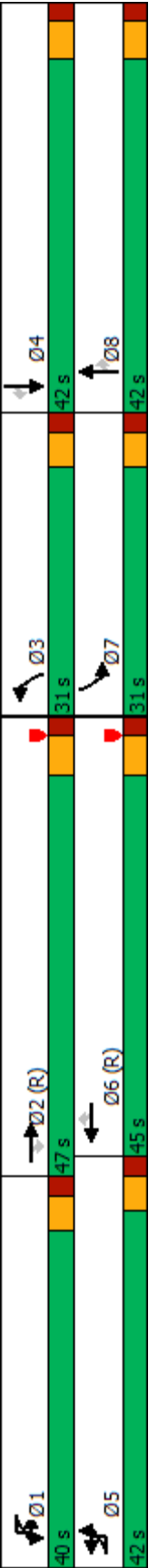
1: Smokey Point Boulevard & 172nd Street NE

Smartcap Arlington Airport Business Park

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Red
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.11
Intersection Signal Delay: 64.8
Intersection Capacity Utilization 108.2%
Analysis Period (min) 15
Intersection LOS: E
ICU Level of Service G

~ 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: 1: Smokey Point Boulevard & 172nd Street NE



Lanes, Volumes, Timings

Smartcap Arlington Airport Business Park													
2: 51st Avenue NE & SR-531/172nd Street NE													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Traffic Volume (vph)	217	746	41	105	872	67	92	65	185	90	63	100	
Future Volume (vph)	217	746	41	105	872	67	92	65	185	90	63	100	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	250	0	250	0	250	0	200	150	200	150	200	0	
Storage Lanes	1	0	0	1	1	0	1	1	1	1	1	0	
Taper Length (ft)	25	25	25	25	25	25	25	25	25	25	25	0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor	0.992	0.992	0.992	0.992	0.992	0.992	0.992	0.992	0.992	0.992	0.992	0.992	
Flt Protected	0.950	0.950	0.950	0.950	0.950	0.950	0.950	0.950	0.950	0.950	0.950	0.950	
Satd. Flow (prot)	1736	1812	0	1736	1803	0	1736	1827	1553	1736	1635	0	
Flt Permitted	0.058	0.218	0	0.218	0.353	0	0.353	0.713	0.713	0.713	0.713	0	
Satd. Flow (perm)	106	1812	0	398	1803	0	644	1827	1517	1299	1635	0	
Right Turn on Red		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Satd. Flow (RTOR)	4	35	5	35	5	35	35	35	191	191	56	0	
Link Speed (mph)	35	2271	2644	1137	22.1	14.3	14.3	14.3	14.3	14.3	14.3	14.3	
Link Distance (ft)	3	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	
Travel Time (s)	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	
Confl. Peds. (#/hr)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	
Peak Hour Factor	224	769	42	108	899	69	95	67	191	93	168	0	
Heavy Vehicles (%)													
Adj. Flow (vph)													
Shared Lane Traffic (%)													
Lane Group Flow (vph)	224	811	0	108	968	0	95	67	191	93	168	0	
Turn Type	pm-pt	NA	pm-pt	NA	pm-pt	NA	pm-pt	NA	pm-pt	NA	pm-pt	NA	
Protected Phases	5	2	1	6	1	6	3	8	8	4	4	0	
Permitted Phases	2	2	6	6	6	6	8	8	8	4	4	0	
Detector Phase	5	2	1	6	1	6	3	8	8	4	4	0	
Switch Phase													
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	9.5	22.5	9.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	
Total Split (s)	17.0	75.0	12.0	70.0	70.0	70.0	10.0	23.0	23.0	10.0	23.0	23.0	
Total Split (%)	14.2%	62.5%	10.0%	58.3%	58.3%	58.3%	8.3%	19.2%	19.2%	8.3%	19.2%	19.2%	
Maximum Green (s)	12.5	70.5	7.5	65.5	65.5	65.5	5.5	18.5	18.5	5.5	18.5	18.5	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	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	0.0	0.0	0.0	
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	Max	None	Max	None	Max	None	None	None	None	None	None	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	
Flash Don't Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)	3	3	3	3	3	3	3	3	3	3	3	3	
Act Eff Green (s)	82.5	70.9	72.6	65.6	65.6	65.6	18.5	13.0	13.0	18.5	13.0	13.0	
Actuated g/c Ratio	0.72	0.62	0.63	0.57	0.57	0.57	0.16	0.11	0.11	0.16	0.16	0.11	
v/c Ratio	0.89	0.72	0.32	0.94	0.94	0.94	0.61	0.32	0.56	0.40	0.71	0.71	

2023 Future Conditions with Development
Gibson Traffic Consultants, Inc. [BJL #20-116]

PM Peak-Hour

Lanes, Volumes, Timings

Smartcap Arlington Airport Business Park													
2: 51st Avenue NE & SR-531/172nd Street NE													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Control Delay	64.5	20.5	0.0	8.6	40.4	0.0	56.4	50.4	13.1	44.6	49.2	0.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	64.5	20.5	0.0	8.6	40.4	0.0	56.4	50.4	13.1	44.6	49.2	0.0	
LOS	E	C	C	A	D	D	E	D	B	D	D	D	
Approach Delay	30.1	37.2	31.9	37.2	31.9	31.9	31.9	31.9	31.9	31.9	31.9	31.9	
Approach LOS	C	C	C	D	D	D	C	C	C	C	C	C	
Queue Length 50th (ft)	113	389	616	21	627	60	46	0	58	80	156	156	
Queue Length 95th (ft)	#276	2191	2191	44	#1017	108	91	66	106	106	655	655	
Internal Link Dist (ft)	250	250	250	250	250	250	250	250	250	250	250	250	
Turn Bay Length (ft)	254	1123	341	1034	1034	156	295	405	230	311	311	311	
Base Capacity (vph)	0	0	0	0	0	0	0	0	0	0	0	0	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.88	0.72	0.32	0.94	0.94	0.61	0.23	0.47	0.40	0.54	0.54	0.54	
Intersection Summary	Other												
Area Type:	Other												
Cycle Length:	120												
Actuated Cycle Length:	114.5												
Natural Cycle:	110												
Control Type:	Actuated-Uncoordinated												
Maximum v/c Ratio:	0.94												
Intersection Capacity Utilization	91.8%												
Intersection Signal Delay:	34.8												
Analysis Period (min)	15												
# 95th percentile volume exceeds capacity, queue may be longer.	Queue shown is maximum after two cycles.												
Splits and Phases:	2: 51st Avenue NE & SR-531/172nd Street NE												
	Ø1	Ø2	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8	Ø9	Ø10	Ø11	Ø12	
	13 s	25 s	10 s	23 s	10 s	23 s	10 s	23 s	10 s	23 s	10 s	23 s	
	13 s	25 s	10 s	23 s	10 s	23 s	10 s	23 s	10 s	23 s	10 s	23 s	

2023 Future Conditions with Development
Gibson Traffic Consultants, Inc. [BJL #20-116]

PM Peak-Hour

Lanes, Volumes, Timings

Smartcap Allington Airport Business Park													
3: 59th Avenue NE & 172nd Street NE													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Traffic Volume (vph)	118	764	16	6	581	23	39	2	16	68	2	389	
Future Volume (vph)	118	764	16	6	581	23	39	2	16	68	2	389	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	250	0	250	0	250	0	230	0	355	0	15	15	
Storage Lanes	1	0	1	0	1	0	1	0	1	0	1	1	
Taper Length (ft)	25	25	25	25	25	25	25	25	25	25	25	25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor	1.00	0.997	0.997	0.994	0.994	0.994	0.994	0.994	0.994	0.994	0.994	0.994	
Flt Protected	0.950	0.950	0.950	0.950	0.950	0.950	0.950	0.950	0.950	0.950	0.950	0.950	
Satd. Flow (prot)	1719	1803	0	1752	1834	0	1805	1645	0	1752	1845	1568	
Flt Permitted	0.235	0.235	0.235	0.235	0.235	0.235	0.235	0.235	0.235	0.235	0.235	0.235	
Satd. Flow (perm)	425	1803	0	603	1834	0	1805	1645	0	1752	1845	1568	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)	1	30	1	30	1	30	1	30	1	30	1	197	
Link Speed (mph)	30	30	30	30	30	30	30	30	30	30	30	30	
Link Distance (ft)	2644	2644	2644	2644	2644	2644	2644	2644	2644	2644	2644	2644	
Travel Time (s)	60.1	60.1	60.1	60.1	60.1	60.1	60.1	60.1	60.1	60.1	60.1	60.1	
Confl. Bikes (#/hr)	1	1	1	1	1	1	1	1	1	1	1	1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Heavy Vehicles (%)	5%	5%	5%	3%	3%	3%	0%	0%	0%	3%	3%	3%	
Adj. Flow (vph)	128	830	17	7	632	25	42	2	17	74	2	423	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	128	847	0	7	657	0	42	19	0	74	2	423	
Turn Type	pm-pt	NA	pm+pt	NA	NA	NA	Prot	NA	Prot	NA	pm+ov	NA	
Protected Phases	5	2	1	6	1	6	3	8	7	4	5	4	
Permitted Phases	2	2	1	6	1	6	3	8	7	4	5	4	
Detector Phase	5	2	1	6	1	6	3	8	7	4	5	4	
Switch Phase													
Minimum Initial (s)	3.0	7.0	3.0	7.0	3.0	7.0	3.0	5.0	3.0	4.0	3.0	3.0	
Minimum Split (s)	9.0	35.0	9.0	35.0	9.0	35.0	9.0	33.0	9.0	33.0	9.0	33.0	
Total Split (s)	40.0	82.0	20.0	62.0	20.0	62.0	20.0	38.0	20.0	38.0	40.0	40.0	
Total Split (%)	25.0%	51.3%	12.5%	38.8%	12.5%	38.8%	12.5%	23.8%	12.5%	23.8%	25.0%	25.0%	
Maximum Green (s)	34.0	76.0	14.0	56.0	14.0	56.0	14.0	32.0	14.0	32.0	34.0	34.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag	
Lead-Lag Optimize?													
Vehicle Extension (s)	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0	
Minimum Gap (s)	2.5	3.0	2.5	3.0	2.5	3.0	2.5	3.0	2.5	3.0	2.5	3.0	
Time Before Reduce (s)	15.0	30.0	15.0	30.0	15.0	30.0	15.0	30.0	15.0	30.0	15.0	30.0	
Time To Reduce (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Recall Mode	None	C-Min	None	C-Min	None	C-Min	None	C-Min	None	C-Min	None	C-Min	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	22.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0	

2023 Future Conditions with Development
Gibson Traffic Consultants, Inc. [BJL #20-116]

PM Peak-Hour

Lanes, Volumes, Timings

Smartcap Allington Airport Business Park													
3: 59th Avenue NE & 172nd Street NE													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Act Effct Green (s)	128.2	125.8	98.9	93.3	16.2	7.3	11.5	7.6	34.9				
Actuated g/C Ratio	0.80	0.79	0.62	0.58	0.10	0.05	0.07	0.05	0.22				
v/c Ratio	0.22	0.60	0.02	0.61	0.23	0.21	0.59	0.02	0.85				
Control Delay	5.3	11.4	5.8	26.6	67.6	36.2	90.0	72.0	47.0				
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
Total Delay	5.3	11.4	5.8	26.6	67.6	36.2	90.0	72.0	47.0				
LOS	A	B	A	C	E	D	F	E	D				
Approach Delay	10.6	10.6	26.4	26.4	57.8	53.5							
Approach LOS	B	B	C	C	E	D							
Queue Length 50th (ft)	29	341	2	585	39	2	76	2	252				
Queue Length 95th (ft)	53	683	m3	775	87	32	133	12	332				
Internal Link Dist (ft)	2564	2564	2420	2420	506	380							
Turn Bay Length (ft)	250	1417	250	1069	230	355							
Base Capacity (vph)	631	504	504	1069	212	342	153	369	557				
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	0.20	0.60	0.01	0.61	0.20	0.06	0.48	0.01	0.76				

Intersection Summary
Area Type: Other
Cycle Length: 160
Actuated Cycle Length: 160
Offset: 20 (1.3%), Referenced to phase 2EBTL and 6WBTL, Start of Red
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.85
Intersection Signal Delay: 26.4
Intersection Capacity Utilization 74.4%
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

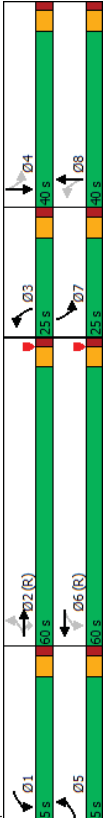
Splits and Phases: 3: 59th Avenue NE & 172nd Street NE



2023 Future Conditions with Development
Gibson Traffic Consultants, Inc. [BJL #20-116]

PM Peak-Hour

Lanes, Volumes, Timings														Smartcap Arlington Airport Business Park														
4: 67th Avenue NE & 172nd Street NE																												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Lane Configurations	233	547	100	49	342	52	55	167	97	97	202	171		Lane Configurations	233	547	100	49	342	52	55	167	97	97	202	171		
Traffic Volume (vph)	233	547	100	49	342	52	55	167	97	97	202	171		Traffic Volume (vph)	233	547	100	49	342	52	55	167	97	97	202	171		
Future Volume (vph)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		Future Volume (vph)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Ideal Flow (vphpl)	415	80	185	100	185	0	170	0	230	0	230	0		Ideal Flow (vphpl)	415	80	185	100	185	0	170	0	230	0	230	0		
Storage Length (ft)	1	1	1	1	1	0	1	0	1	0	1	0		Storage Length (ft)	1	1	1	1	1	0	1	0	1	0	1	0		
Storage Lanes	25			25			25		25		25			Storage Lanes	25			25			25		25		25			
Taper Length (ft)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		Taper Length (ft)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Lane Util. Factor	0.950	0.850		0.950	0.980		0.950		0.945		0.931			Lane Util. Factor	0.950	0.850		0.950	0.980		0.950		0.945		0.931			
Ped Bike Factor	1770	1863	1583	1719	1768	0	1736	1726	0	1736	1701	0		Ped Bike Factor	1770	1863	1583	1719	1768	0	1736	1726	0	1736	1701	0		
Flt Protected	0.322	0.301		0.301			0.242		0	0.327	1701	0		Flt Protected	0.322	0.301		0.301			0.242		0	0.327	1701	0		
Satd. Flow (prot)	600	1863	1546	545	1768	0	442	1726	0	597	1701	0		Satd. Flow (prot)	600	1863	1546	545	1768	0	442	1726	0	597	1701	0		
Satd. Flow (perm)			Yes			Yes			Yes		Yes	Yes		Satd. Flow (perm)			Yes			Yes			Yes		Yes	Yes		
Right Turn on Red			102		5			17			24			Right Turn on Red			102		5			17			24			
Satd. Flow (RTOR)		30			30			30			30			Satd. Flow (RTOR)		30			30			30			30			
Link Speed (mph)	2500				1857						5366			Link Speed (mph)	2500				1857						5366			
Link Distance (ft)	56.8				42.2			17.1			122.0			Link Distance (ft)	56.8				42.2			17.1			122.0			
Travel Time (s)														Travel Time (s)														
Confl. Bikes (#/hr)		3			1									Confl. Bikes (#/hr)		3			1									
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95		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 (%)	2%	2%	2%	5%	5%	5%	4%	4%	4%	4%	4%	4%		Heavy Vehicles (%)	2%	2%	2%	5%	5%	5%	4%	4%	4%	4%	4%	4%	4%	
Adj. Flow (vph)	245	576	105	52	360	55	58	176	102	102	213	180		Adj. Flow (vph)	245	576	105	52	360	55	58	176	102	102	213	180		
Shared Lane Traffic (%)														Shared Lane Traffic (%)														
Lane Group Flow (vph)	245	576	105	52	415	0	58	278	0	102	393	0		Lane Group Flow (vph)	245	576	105	52	415	0	58	278	0	102	393	0		
Turn Type	pm-pt	NA	Perm	pm-pt	NA		pm+pt	NA		pm+pt	NA			Turn Type	pm-pt	NA	Perm	pm-pt	NA		pm+pt	NA		pm+pt	NA			
Protected Phases	5	2		1	6		3	8		7	4			Protected Phases	5	2		1	6		3	8		7	4			
Permitted Phases	2		2	6			8			4				Permitted Phases	2		2	6			8			4				
Detector Phase	5	2	2	1	6		3	8		7	4			Detector Phase	5	2	2	1	6		3	8		7	4			
Switch Phase														Switch Phase														
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0		5.0	7.0		5.0	7.0			Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0		5.0	7.0		5.0	7.0			
Minimum Split (s)	11.0	32.0	32.0	11.0	35.0		11.0	35.0		11.0	35.0			Minimum Split (s)	11.0	32.0	32.0	11.0	35.0		11.0	35.0		11.0	35.0			
Total Split (s)	35.0	60.0	60.0	35.0	60.0		25.0	40.0		25.0	40.0			Total Split (s)	35.0	60.0	60.0	35.0	60.0		25.0	40.0		25.0	40.0			
Total Split (%)	21.9%	37.5%	37.5%	21.9%	37.5%		15.6%	25.0%		15.6%	25.0%			Total Split (%)	21.9%	37.5%	37.5%	21.9%	37.5%		15.6%	25.0%		15.6%	25.0%			
Maximum Green (s)	29.0	54.0	54.0	29.0	54.0		19.0	34.0		19.0	34.0			Maximum Green (s)	29.0	54.0	54.0	29.0	54.0		19.0	34.0		19.0	34.0			
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0			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)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0			All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0			
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0			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)	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0			Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0			
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag		Lead	Lag			Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag		Lead	Lag			
Lead-Lag Optimize?														Lead-Lag Optimize?														
Vehicle Extension (s)	3.0	5.0	5.0	2.5	5.0		2.5	5.0		2.5	5.0			Vehicle Extension (s)	3.0	5.0	5.0	2.5	5.0		2.5	5.0		2.5	5.0			
Minimum Gap (s)	3.0	4.0	4.0	2.5	4.0		2.5	4.0		2.5	4.0			Minimum Gap (s)	3.0	4.0	4.0	2.5	4.0		2.5	4.0		2.5	4.0			
Time Before Reduce (s)	0.0	30.0	30.0	0.0	30.0		0.0	15.0		0.0	15.0			Time Before Reduce (s)	0.0	30.0	30.0	0.0	30.0		0.0	15.0		0.0	15.0			
Time To Reduce (s)	0.0	10.0	10.0	0.0	10.0		0.0	10.0		0.0	10.0			Time To Reduce (s)	0.0	10.0	10.0	0.0	10.0		0.0	10.0		0.0	10.0			
Recall Mode	None	C-Min	C-Min	None	C-Min		None	None		None	None			Recall Mode	None	C-Min	C-Min	None	C-Min		None	None		None	None			
Walk Time (s)		7.0	7.0		7.0			7.0			7.0			Walk Time (s)		7.0	7.0		7.0			7.0			7.0			
Flash Don't Walk (s)		19.0	19.0		22.0			21.0			22.0			Flash Don't Walk (s)		19.0	19.0		22.0			21.0			22.0			
Pedestrian Calls (#/hr)		0	0		0			0			0			Pedestrian Calls (#/hr)		0	0		0			0			0			
2023 Future Conditions with Development														PM Peak-Hour														
Gibson Traffic Consultants, Inc. [B.J.L #20-116]																												

Lanes, Volumes, Timings														Smartcap Aflington Airport Business Park													
4: 67th Avenue NE & 172nd Street NE																											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Act Effct Green (s)	91.1	80.2	80.2	75.5	68.3		47.9	39.5		54.6	44.8			Act Effct Green (s)	91.1	80.2	80.2	75.5	68.3		47.9	39.5		54.6	44.8		
Actuated g/C Ratio	0.57	0.50	0.50	0.47	0.43		0.30	0.25		0.34	0.28			Actuated g/C Ratio	0.57	0.50	0.50	0.47	0.43		0.30	0.25		0.34	0.28		
v/c Ratio	0.53	0.62	0.13	0.17	0.55		0.29	0.63		0.36	0.80			v/c Ratio	0.53	0.62	0.13	0.17	0.55		0.29	0.63		0.36	0.80		
Control Delay	25.5	41.6	11.3	18.6	38.9		37.4	57.7		38.2	63.3			Control Delay	25.5	41.6	11.3	18.6	38.9		37.4	57.7		38.2	63.3		
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0			Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0		
Total Delay	25.5	41.6	11.3	18.6	38.9		37.4	57.7		38.2	63.3			Total Delay	25.5	41.6	11.3	18.6	38.9		37.4	57.7		38.2	63.3		
LOS	C	D	B	B	D		D	E		D	E			LOS	C	D	B	B	D		D	E		D	E		
Approach Delay		33.9			36.6						58.2			Approach Delay		33.9			36.6						58.2		
Approach LOS		C			D			D			E			Approach LOS		C			D			D			E		
Queue Length 50th (ft)	173	564	20	24	329		39	241		71	362			Queue Length 50th (ft)	173	564	20	24	329		39	241		71	362		
Queue Length 95th (ft)	224	694	75	46	469		74	359		119	4551			Queue Length 95th (ft)	224	694	75	46	469		74	359		119	4551		
Internal Link Dist (ft)		2420			1777			674			5286			Internal Link Dist (ft)		2420			1777			674			5286		
Turn Bay Length (ft)	415		80	185			170			230				Turn Bay Length (ft)	415		80	185			170			230			
Base Capacity (vph)	553	933	825	523	757		309	441		347	493			Base Capacity (vph)	553	933	825	523	757		309	441		347	493		
Stavation Cap Reductn	0	0	0	0	0		0	0		0	0			Stavation Cap Reductn	0	0	0	0	0		0	0		0	0		
Spillback 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			Storage Cap Reductn	0	0	0	0	0		0	0		0	0		
Reduced v/c Ratio	0.44	0.62	0.13	0.10	0.55		0.19	0.63		0.29	0.80			Reduced v/c Ratio	0.44	0.62	0.13	0.10	0.55		0.19	0.63		0.29	0.80		
Intersection Summary																											
Area Type: Other																											
Cycle Length: 160																											
Actuated Cycle Length: 160																											
Offset: 108 (88%). Referenced to phase 2:EBTL and 6:WBTL, Start of Red																											
Natural Cycle: 95																											
Control Type: Actuated-Coordinated																											
Maximum v/c Ratio: 0.80																											
Intersection Signal Delay: 42.9														Intersection LOS: D													
Intersection Capacity Utilization 79.3%														ICU Level of Service D													
Analysis Period (min): 15																											
# 95th percentile volume exceeds capacity, queue may be longer.																											
Queue shown is maximum after two cycles.																											
Splits and Phases: 4: 67th Avenue NE & 172nd Street NE																											
																											
														PM Peak-Hour													
2023 Future Conditions with Development																											
Gibson Traffic Consultants, Inc. [BL #20-116]																											

HCM 6th TWSC

5: 51st Avenue NE & Site Access

Smartcap Arlington Airport Business Park

Intersection

Int Delay, s/veh 1.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
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Lane Configurations						
Traffic Vol, veh/h	7	61	52	297	192	6
Future Vol, veh/h	7	61	52	297	192	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	66	57	323	209	7

Major/Minor	Minor2	Major1	Major2
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Conflicting Flow All	650	213	216	0	-	0
Stage 1	213	-	-	-	-	-
Stage 2	437	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	434	827	1354	-	-	-
Stage 1	823	-	-	-	-	-
Stage 2	651	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	416	827	1354	-	-	-
Mov Cap-2 Maneuver	416	-	-	-	-	-
Stage 1	788	-	-	-	-	-
Stage 2	651	-	-	-	-	-

Approach	EB	NB	SB
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HCM Control Delay, s	10.3	1.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
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Capacity (veh/h)	1354	-	751	-	-
HCM Lane V/C Ratio	0.042	-	0.098	-	-
HCM Control Delay (s)	7.8	-	10.3	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.3	-	-