Memorandum

TO: Mr. Wilhelm Kreuzer
Naperville Washington, LLC

FROM: Stephen B. Corcoran, P.E., PTOE
Director of Traffic Engineering

DATE: July 30, 2019

RE: Commercial Traffic Study #19-1000004
1001 S. Washington Street
Naperville, Illinois

This memorandum summarizes a traffic study conducted for a commercial development at 1001 S. Washington Street in Naperville, Illinois. The site is located between Sycamore Drive and Gartner Road west of Washington Street and was formally occupied by a vacant PNC bank/office building. The proposed development will consist of three buildings containing retail, restaurants, and office space. Access to the development will be provided by one access drive on Washington Street, one limited access drive on Sycamore Drive, and one access drive on Gartner Road. An existing driveway on Catalpa Lane will be closed. The purpose of the study was to observe the existing traffic patterns in the area of the site, estimate the traffic generated by the changes in the site plan, and then identify strategies to address any traffic issues.

EXISTING CONDITIONS

Site Location and Area Land-Use

The subject site was formerly occupied by a 30,000 square foot PNC Bank and office building which has been demolished. Retail shopping (Naperville Plaza) is located southeast of the site. A vacant gas station is located at the northwest corner of Gartner Road and Washington Street. Residential homes are located to the north, west, and south. **Figure 1** illustrates the site and the surrounding land-uses and roads. (Note: all figures are located at the end of the report).

Roadway Characteristics

Washington Street is a north-south major arterial extending through the City of Naperville. Along the site frontage, it has two through lanes in each direction with a painted left-turn median. At Sycamore Drive and at the existing site access, both are under stop sign control and have a northbound left-turn lane. The signalized intersection with Gartner Road, Washington Street has northbound and southbound left-turn lanes, crosswalks on all four legs, and countdown pedestrian signals. It is under the jurisdiction of the City of Naperville with a 35-mph speed limit north of Gartner Road and 40 mph to the south.

Gartner Road is an east-west major collector with one travel lane in each direction. At its signalized intersection with Washington Street, each approach has a shared thru/right-turn lanes and a separate left-turn lane. West of Washington Street, the left-turn lane turns into a dual optional left-turn lane serving the existing site drive and Naperville Plaza's access. It is under the jurisdiction of the City of Naperville with a 25-mph speed limit.

Sycamore Drive is a local residential street that extends west of Washington Street to Spruce Drive. It has one lane in each direction and on-street parking. It is under the jurisdiction of the City of Naperville with a 25-mph speed limit.

Catalpa Lane is a local residential street that extends north from Tupelo Avenue to a cul-de-sac north of Spruce Drive. It has one lane in each direction and on-street parking. It is under stop sign control at Spruce Drive and at Gartner Road. It is under the jurisdiction of the City of Naperville with a 25-mph speed limit.

Figure 2 illustrates the existing roadway geometrics.

Existing Traffic Volumes

Weekday morning (6:00 to 9:00 AM) and afternoon (3:00 to 7:00 PM) traffic counts were conducted at the intersection of Washington Street at Sycamore Drive and at Gartner Road along with a count at the Naperville Plaza access drive on Gartner Road. No counts were conducted at the four site driveways since the building was vacant. These counts showed the peak-hours of traffic occurring from 7:00 to 8:00 AM and 4:45 to 5:45 PM on a weekday. Washington carries a high volume of two-way traffic with 2,870 to 3,028 vehicles per hour (vph). Gartner Road next to the site carries 795 and 855 vph during the peak hours. The existing traffic volumes are shown in **Figure 3** and included in the **Appendix**.

SITE TRAFFIC CHARACTERISTICS

Site Trip Generation

The additional traffic generated by the development was estimated from data in the Institute of Transportation Engineer's Trip Generation 10th Ed. manual which contains trip generation surveys of similar uses. The resulting site traffic volumes (new and pass-by) are shown in **Table 1.** The ITE Trip Generation 10th Ed. manual also notes that many of the trips to coffee shops and restaurants are drawn from vehicles already traveling past the site today. Pass-by trips are existing vehicles that would stop and then continue on with their original trip to work or home which minimizes the overall increase the overall traffic on the road system. The total volume of new trips generated by the development are shown in **Table 2**. The trip generation for the retail and office components are low due to the small size of their space.

Table 1
Site Traffic Volumes

Use	Size	Trip Type	Morning Peak			Evening Peak		
			In	Out	Total	In	Out	Total
Coffee with Drive-Thru (1)	2,400 sq. ft.	New	43	43	86	21	21	42
		Pass-By	64	64	128	31	31	62
High Turnover (Sit Down) Restaurant (2)	4,500 sq. ft.	New	20	15	35	-	-	-
		Pass-By	5	5	10	-	-	-
Fast Casual Restaurant (3)	5,000 sq. ft.	New	-	-	-	25	18	43
		Pass-By	-	-	-	14	14	28
Retail (4)	3,000 sq. ft.	New	2	2	4	6	6	12
Office (5)	13,500 sq. ft.	New	14	2	16	2	14	16
Development Total		New Trips	79	62	141	54	59	113
		Pass-By Trips	69	69	138	45	45	90
Total Trips			**148**	**131**	**279**	**99**	**104**	**203**

(1) ITE Land Use Code 937 – Coffee/Donut Shop with Drive-Through Window
(2) ITE Land Use Code 932 – High-Turn Over (Sit-Down) Restaurant (Breakfast and Lunch)
(3) ITE Land Use Code 930 – Fast Casual Restaurant (Lunch and Dinner)
(4) ITE Land Use Code 820 – Shopping Center
(5) ITE Land Use Code 710 – General Office Building

Table 2
New Site Traffic Volumes

Use	Size	Morning Peak			Evening Peak		
		In	Out	Total	In	Out	Total
Coffee with Drive-Thru	2,400 sq. ft.	43	43	86	21	21	42
High Turnover (Sit Down) Restaurant	4,500 sq. ft.	20	15	35	-	-	-
Fast Casual Restaurant	5,000 sq. ft.	-	-	-	25	18	43
Retail	3,000 sq. ft.	2	2	4	6	6	12
Office	13,500 sq. ft.	14	2	16	2	14	16
Development Total		**79**	**62**	**141**	**54**	**59**	**113**

Traffic Comparison with Prior and Permitted Uses

The proposed development plan includes three buildings totaling 28,400 square feet in size. Previously the site was occupied by a 30,000 square foot building with a PNC retail banking operation and offices on the floors above. Zoning currently permits construction by right a 228,500 square foot office or medical-office building on the site. **Tables 3 and 4** show the site traffic volumes for each of the uses based on the ITE data. **Table 5** provides a comparison of the new traffic added to the road system for each scenario.

Table 3
Prior Use (PNC) Site Traffic Volumes

Use	Size	Trip Type	Morning Peak			Evening Peak		
			In	Out	Total	In	Out	Total
Drive-in Bank (1)	10,000 sq. ft.	New	40	29	69	68	67	135
		Pass-By	13	13	26	35	35	70
Office (2)	20,000 sq. ft	New	39	6	45	4	21	25
Total Trips			**92**	**48**	**140**	**107**	**123**	**230**

(1) ITE Land Use Code 912 – Drive-in Bank
(2) ITE Land Use Code 710 – Office Building

Table 4
Permitted Use Traffic Volumes

Use	Size	Trip Type	Morning Peak			Evening Peak		
			In	Out	Total	In	Out	Total
Office[1]	228,500 sq. ft	New	207	34	241	40	200	240
Medical Office[2]	228,500 sq. ft	New	363	103	466	217	560	777

(1) ITE Land Use Code 710 – Office Building
(2) ITE Land Use Code 720 – Medical-Dental Office Building

Table 5
Comparison of New Trips Generated

Scenario	Morning Peak			Evening Peak		
	In	Out	Total	In	Out	Total
Proposed Use	79	62	141	54	59	113
Prior Use – Bank/Office	79	35	114	72	88	160
Difference	**-**	**-27**	**-27**	**+18**	**+29**	**+47**
Permitted Use –Office	207	34	241	40	200	240
Difference	**+128**	**-28**	**+100**	**-14**	**+141**	**+127**
Permitted Use – Medical Office	363	103	466	217	560	777
Difference	**+284**	**+41**	**+325**	**+163**	**+501**	**+664**

The prior use of the site by PNC/office building generates less morning traffic (-27 vph) and more evening traffic (+47). An office building with a maximum floor area ratio would have 100 to 127 more peak-hour trips with a greater impact on projected traffic conditions along Washington Street and Gartner Road compared to the proposed or prior uses for the site. A smaller office building of 120,000 square feet could be built with a similar trip generation of the proposed use. A medical office use generates 3 to 5+ times more traffic than the proposed use. A smaller medical building around 50,000 square feet would have similar impact as the proposed use.

Trip Distribution

The trip distribution for a commercial development is based on a combination of the existing traffic volumes going by the site and the road network. The existing traffic flows heavily influenced the distribution of site traffic. The trip distribution for the site is shown on **Table 6** and **Figure 4**.

Table 6
Directional Distribution

Approach Route	New Trips		Pass-By trips	
	AM Peak	PM Peak	AM Peak	PM Peak
From the North on Washington Street	43%	41%	28%	60%
From the South on Washington Street	38%	40%	52%	25%
From the East from Gartner Road	7%	9%	3%	7%
From the West on Gartner Road	12%	10%	17%	8%
Total	**100%**	**100%**	**100%**	**100%**

Trip Assignment

The future vehicular trips generated by the development were distributed to the area roadways based on the directional distribution analysis and the proposed site plan. **Figure 5** displays the trip assignment for the new development trips. **Figure 6** shows the pass-by traffic assignments.

Projected Traffic Volumes

Total traffic volumes are a combination of the existing traffic volumes, projected non-site growth in those volumes, and the site traffic. Construction of the development is planned to be completed in the year 2020. The total traffic volumes are estimated for a period five years after the projected opening which is the Year 2025. Data provided by the Chicago Metropolitan Agency for Planning shows a growth rate on Washington Street of 0.3% per year and Gartner Road of 0.9% per year. A copy of the CMAP letter is included in the **Appendix**. This growth rate was applied to the existing traffic volumes to obtain the base 2025 volumes without the development (see **Figure 7**). The volumes from Figure 7 were combined with the site traffic volumes (Figures 5 and 6) to generate the Year 2025 total traffic volumes with the development which are shown on **Figure 8**.

ANALYSES

Future Traffic Conditions

In order to determine the operation of study area intersections and access drives, intersection capacity analyses were conducted with the proposed and nearby developments included. An intersection's ability to accommodate traffic flow is based on the average control delay experienced by vehicles passing through the intersection. The intersection and individual traffic movements are assigned a level of service (LOS), ranging from A to F based on the control delay created by a traffic signal or stop sign. Control delay consists of the initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. LOS A has the best traffic flow and least delay. LOS E represents saturated or at capacity conditions. LOS F experiences oversaturated conditions and extensive delays. The Highway Capacity Manual definitions for levels of service and the corresponding control delay for both signalized and unsignalized intersections are shown in **Table 7**.

Table 7
Level of Service Criteria for Intersections

Level of Service	Description	Control Delay (seconds/vehicle)	
		Signals	Stop Signs
A	Minimal delay and few stops	<10	<10
B	Low delay with more stops	>10-20	>10-15
C	Light congestion	>20-35	>15-25
D	Congestion is more noticeable with longer delays	>35-55	>25-35
E	High delays and number of stops	>55-80	>35-50
F	Unacceptable delays and over capacity	>80	>50

The existing and total traffic volumes were applied to the proposed access system and capacity analyses were completed to determine the existing and future operating conditions with the commercial development. **Table 8** summarizes the results of those analyses.

Catalpa Lane Site Access

The existing site has a two-lane driveway to Catalpa Lane with one inbound and one outbound lane. As part of the new site plan, this driveway has been eliminated minimizing site traffic in the neighborhood and allowing a bigger landscaping buffer for the residential homes across the street.

Sycamore Drive at Site Access

There are two driveways on Sycamore Drive serving the existing site with a service drive for deliveries and a 67-foot-wide inbound driveway to the five drive-thru bank teller lanes and a bypass lane. Both of these drives will be closed and a new two-lane drive way will be built. The outbound lane will be restricted to right-turns only under with a stop sign. It is projected to be a low volume driveway and will operate at a good level of service. No left-turns onto Sycamore Drive will be permitted.

Washington Street at Sycamore Drive

Sycamore Drive has a one lane approach under stop sign control at Washington Street. The turns onto Washington Street works at a LOS F during the peak hours due to the heavy volumes of traffic along Washington Street. This is not uncommon for any unsignalized street along an arterial roadway. The projected vehicle queues are 2 to 3 vehicles. It is also recommended that do not block intersections signs be installed at this location. These vehicles also have the option of using Gartner Road.

Gartner Road at Site Access/Naperville Plaza Access

Currently, the driveways serving the site and Naperville Plaza are off-set on Gartner Road by 35 feet which results in overlapping left-turn movements on Gartner Road and restricted sight lines. The development plan will move the site driveway to align with the Naperville Plaza access and provide three lanes; one inbound and two outbound (thru/right and a left-turn) under stop sign control. Both driveways will work at a good level of service. This will also allow the eastbound left-turn lane striping at Washington Street to be lengthened.

A study was conducted of the traffic queueing in front of the driveways serving the site and Naperville Plaza during the AM and PM peak hours (Copy in **Appendix**). The City staff also provided a study completed in 2018. Both studies showed vehicles queued in the eastbound left-turn and thru/right-turn lanes to be less than 4 vehicles per lane on average during both peaks. Traffic does backup past the driveways from time to time but then queue clears out when the light turns green allowing traffic from either retail center to turn onto Gartner Road.

Table 8
Intersection Level of Service and Delay (seconds)

Intersection	Movement	Morning Peak		Evening Peak	
		Existing (2019)	Future (2025)	Existing (2019)	Future (2025)
Washington Street At Gartner Road (Traffic Signal)	All	C – 32.6	D – 38.8	E – 65.1	E – 76.2
Gartner Road At Naperville Plaza And Site Access (Stop Controlled)	SB Th/Rt		A – 9.6		B – 11.4
	SB Left		C – 24.4		D -26.3
	NB Th/Rt	B – 12.2	B – 12.4	B – 10.7	B – 10.8
	NB Left	C – 17.8	C – 20.2	C – 19.2	C -21.2
	EB Left		A – 7.8		A – 8.4
	WB Left	A – 8.7	A – 8.7	A – 8.0	A – 8.1
Washington Street At Site Access (Stop Controlled)	EB Left		F – 100+		F - 100+
	EB Right		B – 12.3		C – 24.9
	NB Left		B – 10.4		C – 20.1
Washington Street At Sycamore Drive (Stop Controlled)	EB Approach	F – 75.9	F – 100+	C – 20.9	F – 100+
	NB Left	A – 10.0	B – 10.2	A – 0.0	A – 0.0
Sycamore Drive at Site Access (Stop Controlled)	NB Approach		A – 7.3		A – 8.3
	WB Left		A – 8.5		A – 7.2

Washington Street at Site Access

The site has an existing driveway on Washington Street with one inbound and two outbound lanes (left and right). A left-turn lane on Washington Street allows for left-turns into the site without interfering with thru traffic. This driveway intersects Washington Street at a 60-degree angle and is 50 feet wide due to the skew. The proposed drive will also be three lanes (one inbound and two outbound) with a proper 90-degree angle to Washington Street at the same location. The right-angle driveway has better sight lines and turning paths into the driveway.

The left-turn in and right-turn out will work well at LOS B or C during the peak-hours. The outbound left-turn works at a LOS F during the peak hours due to the heavy volumes of traffic along Washington Street. This is not uncommon for any commercial driveway during the peak-hours along an arterial roadway. Given the lower volume of left-turns, the expected outbound left vehicle queue is three vehicles. Please note that users always have the option of going out the Gartner Road access and use the traffic signal to turn onto Washington Street.

In the evening peak hour, the volume of southbound Washington Street traffic is high and frequently queues past the site access. It is recommended that do not block intersection signs be installed at this location. Most commercial driveways on an arterial roadway normally has higher delays turning onto the road during the peak commute times. The 20 vehicles turning left in the evening represent one vehicle every three minutes on average. A combination of gaps created by the traffic signals to the north and

south, two-part left-turn maneuvers, “Do Not Block” intersection signs, and the courtesy gaps will allow this low volume to be accommodated.

Washington Street at Sycamore Drive

Sycamore Drive has a one lane approach under stop sign control at Washington Street. The turns onto Washington Street works at a LOS F during the peak hours due to the heavy volumes of traffic along Washington Street. This is not uncommon for any unsignalized street along an arterial roadway. The projected vehicle queues are 2 to 3 vehicles. It is also recommended that do not block intersections signs be installed at this location.

Washington Street at Gartner Road

During the peak-hours, traffic on Washington Street is predominately northbound in the morning and southbound in the evening. Also, eastbound left-turn volume from Gartner Road is heavy in the morning peak. The intersection’s levels of service are lower and those movements experience longer queues. This is a result of existing traffic volumes and their projected growth. The new site related traffic adds approximately one additional vehicle per minute.

Elmwood Elementary School

Elmwood Elementary School is located approximately 1,100 feet west of the project site along Sycamore Drive. The school is bounded by Sycamore Drive to the south, Magnolia Lane to the west, and Elmwood Drive to the north. School hours are from 8:15 AM to 2:30 PM. Observations were conducted on Tuesday May 21, 2019 during a rainy day. Sycamore Drive westbound is used by parents to enter the South Circle Drive at the school for student drop-off and pick-up. In the morning, at peak activity, vehicles were stacked along the northside of Sycamore Drive heading west with the end of the queue just past Laurel Lane. This queue did not affect Sycamore Drive further to the east.

In the afternoon, parents arrived early for dismissal and the peak queue occurred just as school let out (2:30-2:32 PM) with 8 vehicles stacked east of Catalpa Lane. It did not extend past the proposed site driveway. Within five minutes after the last vehicle arrived, the queue moved further west as students were picked up and Sycamore Drive was clear. Elmwood School traffic has an impact on Sycamore Drive east of Catalpa Lane for only a few minutes on a school day. By restricting the outbound left-turns from the site drive on Sycamore Drive, there will be no conflicts with the westbound school vehicles stacking on Sycamore Drive.

CONCLUSIONS

The preceding traffic analysis analyzed the proposed commercial development at 1001 South Washington Street and developed the following conclusions:

- The development will not adversely impact the level-of-service of study area intersections.
- One existing site driveway on Catalpa Lane will closed to minimize traffic in the neighborhood and provide more buffer.
- Two existing driveways on Sycamore Drive will be replaced by a single, smaller limited access (right-out only) two-lane driveway.
- Access on Washington Street will be three lanes and realigned to 90 degrees. A do not block intersection sign is recommend for southbound Washington Street.
- Access on Gartner Road will be aligned with the Naperville Plaza access and widened from two to three lanes. A do not block intersection sign is recommend for eastbound Gartner Road.
- A do not block intersection sign should also be provided at Sycamore Drive.

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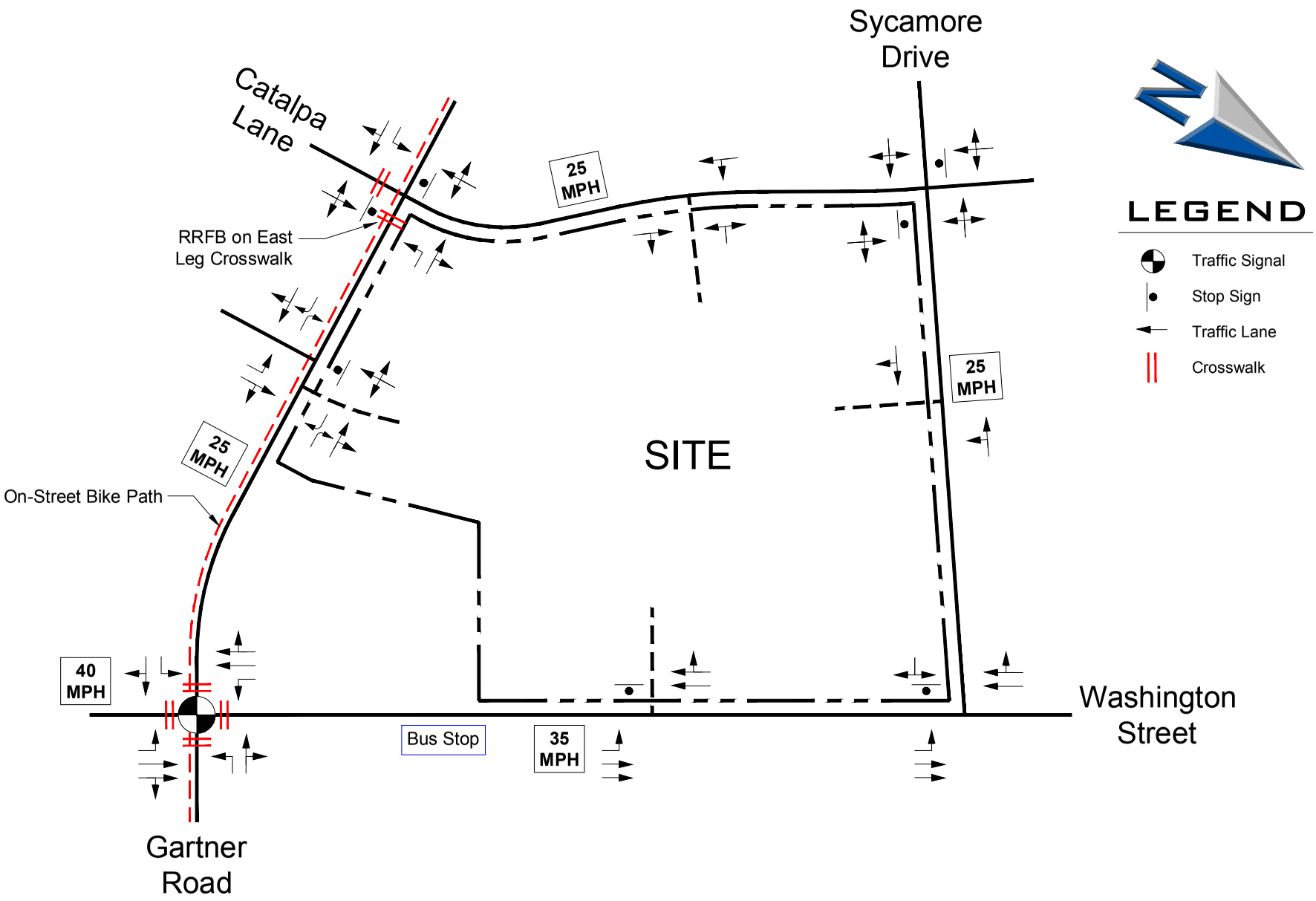
Site Location & Area Roadways

Figure 1



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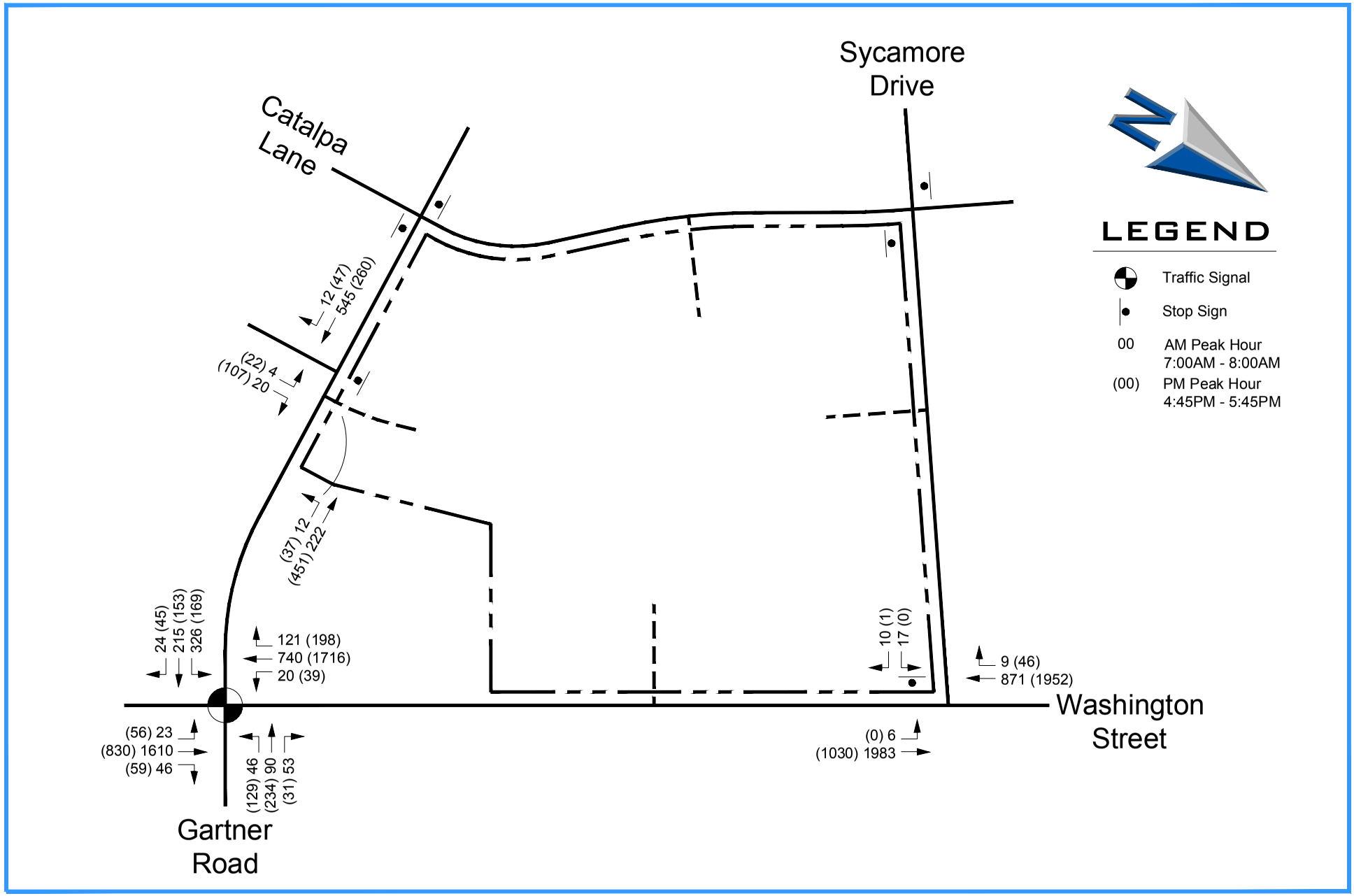
Existing Roadway Geometrics

Figure 2



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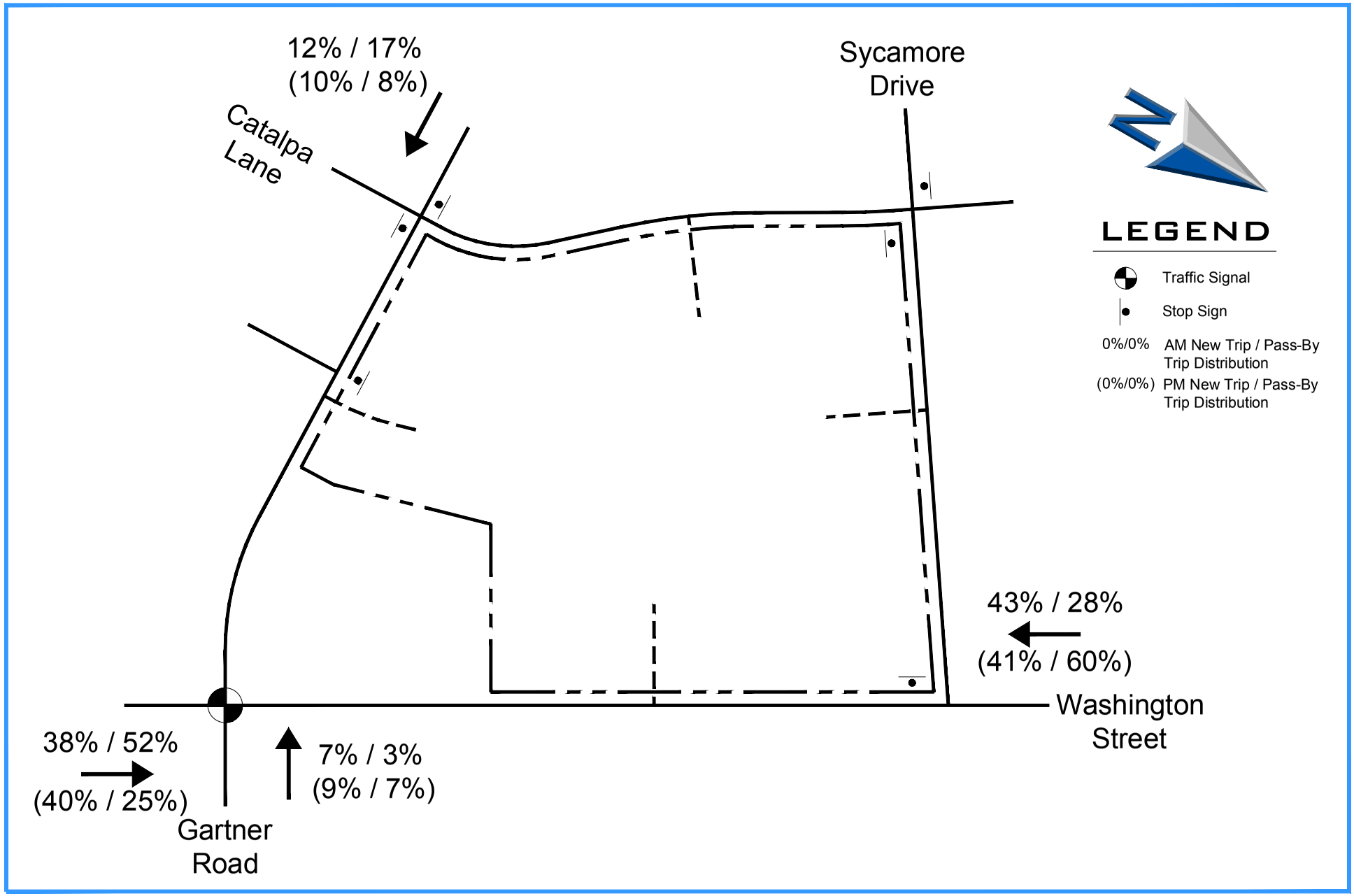
Existing Traffic Volumes

Figure 3



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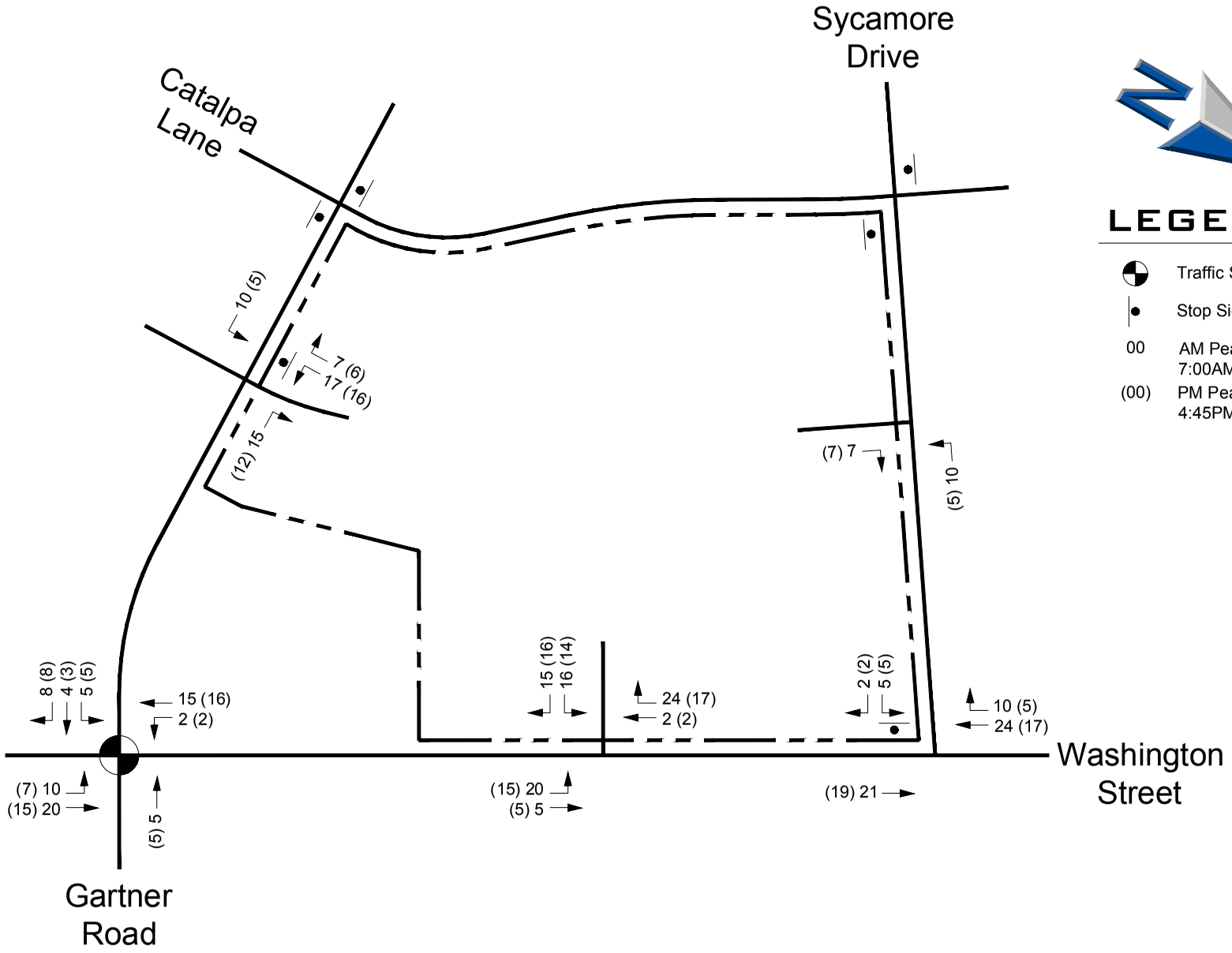
Directional Distribution

Figure 4



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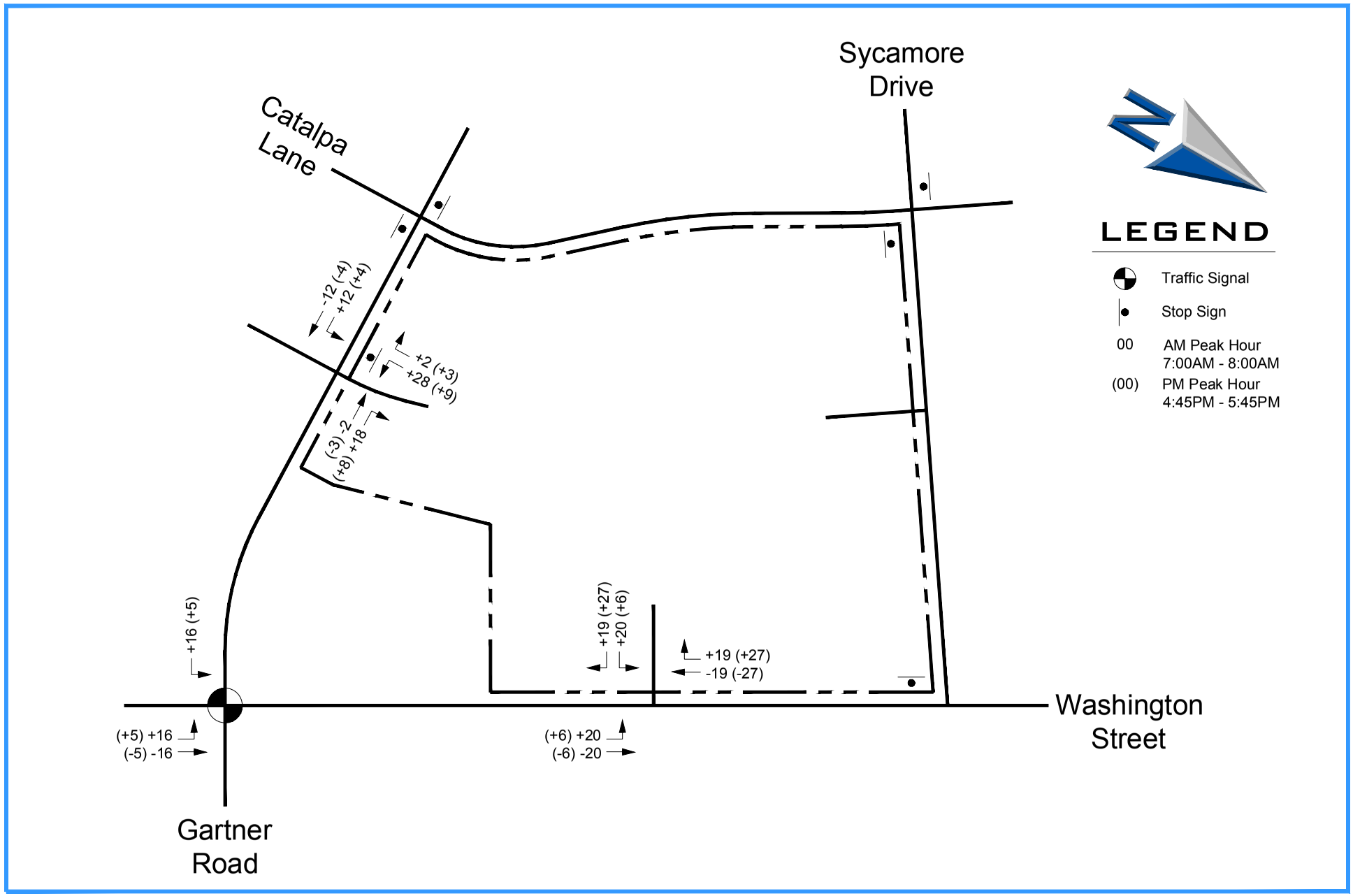
New Site Traffic Volumes

Figure 5



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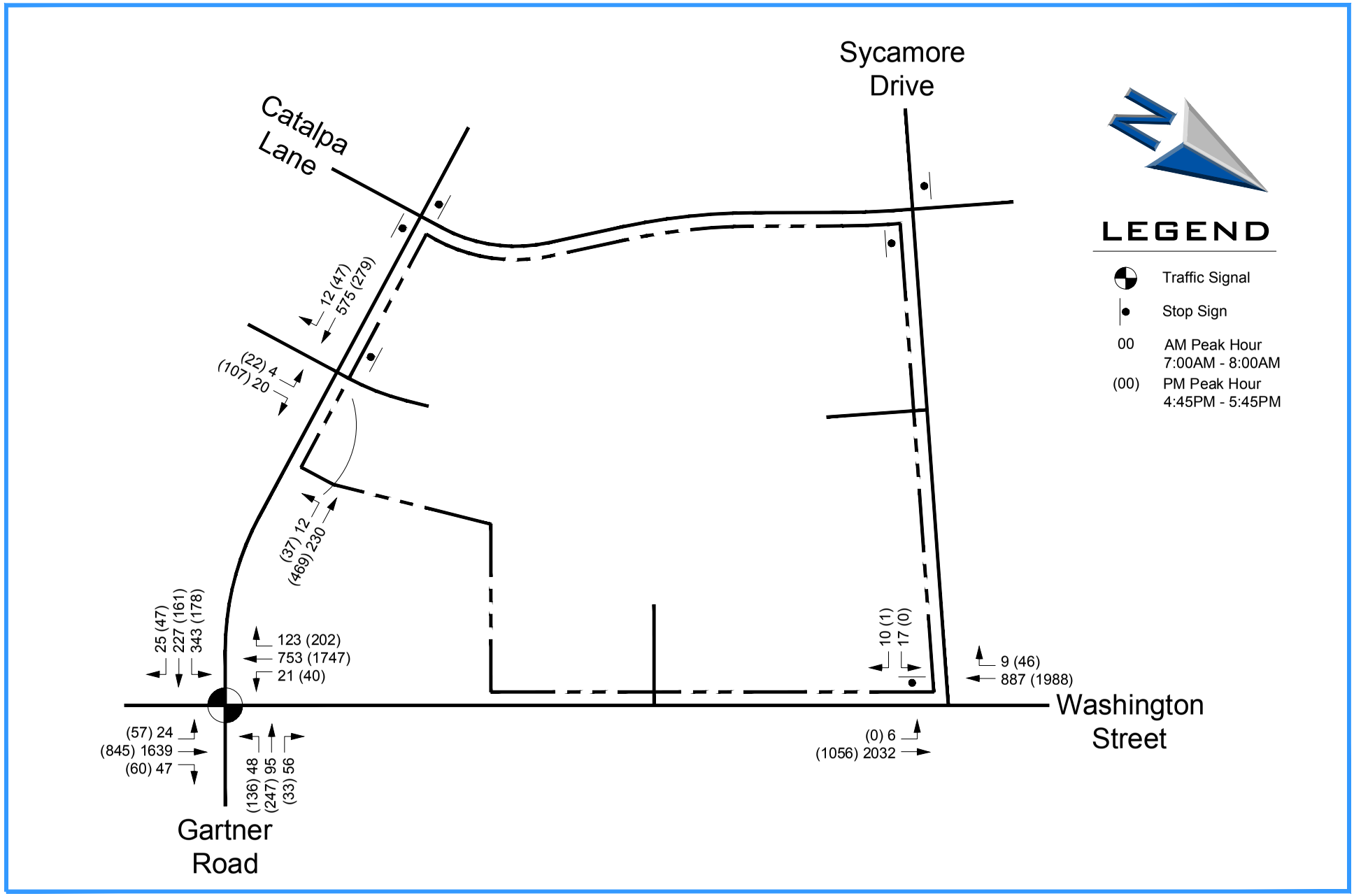
Pass-By Site Traffic Volumes

Figure 6



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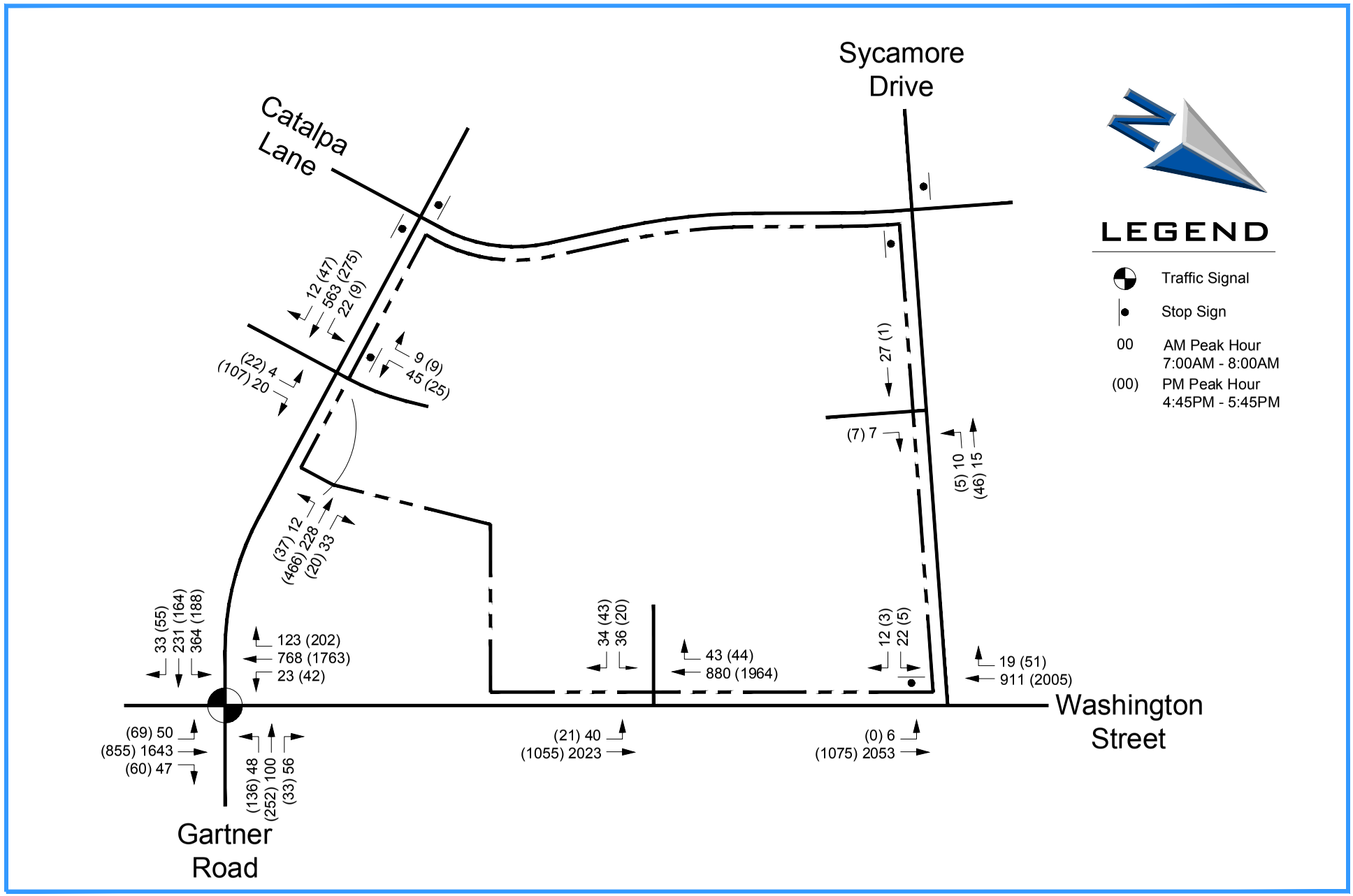
Year 2025 Base Traffic Volumes

Figure 7



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Year 2025 Total Traffic Volumes

Figure 8

APPENDIX

- **Existing Traffic Counts**
- **CMAP Letter**
- **Intersection Capacity Analyses**
- **Gartner Road Queue Study**

Washington Street at Gartner Road

Naperville, Illinois															
	Washington Street Southbound			Gartner Road Westbound			Washington Street Northbound			Gartner Road Eastbound			15	60	Peak
Begin Time	Right Turn	Through	Left Turn	Right Turn	Through	Left Turn	Right Turn	Through	Left Turn	Right Turn	Through	Left Turn	Minute Totals	Minute Totals	Hour Factor
	Thursday February 21, 2019														
6:00 AM	5	76	0	2	8	2	5	208	2	4	9	25	346	2065	0.77
6:15 AM	8	84	6	3	8	6	3	274	2	1	13	46	454	2580	0.75
6:30 AM	10	108	1	8	10	7	4	350	4	3	22	68	595	2971	0.86
6:45 AM	14	124	4	7	16	5	10	379	1	5	43	62	670	3231	0.94
7:00 AM	32	158	1	12	16	12	12	451	6	6	55	100	861	**3314**	**0.96**
7:15 AM	25	191	2	10	14	10	10	431	2	5	54	91	845	3154	0.92
7:30 AM	29	219	6	9	24	11	7	406	6	9	61	68	855	3001	0.88
7:45 AM	35	172	11	22	36	13	17	322	9	4	45	67	753	2787	0.93
8:00 AM	27	142	11	17	26	10	7	341	6	5	41	68	701	2478	0.88
8:15 AM	35	152	10	16	27	20	15	302	5	9	40	61	692		
8:30 AM	21	120	16	10	27	13	14	289	9	9	49	64	641		
8:45 AM	26	11	8	16	29	15	11	220	11	12	40	45	444		
Total	267	1557	76	132	241	124	115	3973	63	72	472	765			
7:00-8:00 AM	**121**	**740**	**20**	**53**	**90**	**46**	**46**	**1610**	**23**	**24**	**215**	**326**	**3314**		
	Thursday February 21, 2019														
3:00 PM	38	304	8	8	36	18	4	203	15	10	24	41	709	3054	0.93
3:15 PM	39	348	9	10	44	15	8	185	11	12	37	44	762	3143	0.96
3:30 PM	39	425	8	7	43	17	6	163	5	21	35	50	819	3178	0.97
3:45 PM	25	390	12	9	28	22	11	182	7	10	31	37	764	3218	0.94
4:00 PM	40	370	14	10	45	28	15	193	5	10	34	34	798	3300	0.96
4:15 PM	41	380	10	8	47	20	12	198	11	9	28	33	797	3374	0.97
4:30 PM	46	376	11	6	52	19	13	215	15	16	44	46	859	3441	0.99
4:45 PM	44	402	9	7	49	26	15	207	12	10	30	35	846	**3462**	**0.98**
5:00 PM	46	394	7	5	64	30	17	200	16	11	44	38	872	3427	0.97
5:15 PM	45	375	12	11	51	35	14	211	12	13	39	46	864		
5:30 PM	63	369	11	8	70	38	13	191	16	11	40	50	880		
5:45 PM	47	360	10	10	52	32	13	184	12	12	36	43	811		
6:00 PM	40	337	5	7	51	33	18	179	17	2	30	39	758		
6:15 PM	39	341	8	7	44	31	10	188	11	9	27	32	747		
6:30 PM	53	281	10	2	40	35	6	180	5	7	32	36	687		
6:45 PM	33	223	7	5	37	26	8	186	9	10	30	36	610		
Total	678	5675	151	120	753	425	183	3065	179	173	541	640			
4:45-5:45 PM	**198**	**1540**	**39**	**31**	**234**	**129**	**59**	**809**	**56**	**45**	**153**	**169**	**3462**		

Washington Street at Sycamore Drive

Naperville, Illinois									
	Washington Street Southbound		Washington Street Northbound		Sycamore Drive Eastbound		15 Minute Totals	60 Minute Totals	Peak Hour Factor
Begin Time	Right Turn	Through	Through	Left Turn	Right Turn	Left Turn			
	Tuesday February 26, 2019								
6:00 AM	0	48	202	0	3	5	258	1511	0.75
6:15 AM	4	61	282	0	0	2	349	1836	0.79
6:30 AM	1	73	320	0	0	3	397	2138	0.82
6:45 AM	3	104	398	0	0	2	507	2437	0.88
7:00 AM	1	154	420	0	1	7	583	**2604**	**0.94**
7:15 AM	1	200	442	1	1	6	651	2654	0.95
7:30 AM	2	274	415	1	3	1	696	2583	0.93
7:45 AM	5	236	421	4	5	3	674	2385	0.88
8:00 AM	7	194	405	2	14	11	633	2129	0.84
8:15 AM	4	187	380	1	4	4	580		
8:30 AM	2	155	340	0	0	1	498		
8:45 AM	1	133	280	0	1	3	418		
Total	31	1819	4305	9	32	48			
7:00-8:00 AM	**9**	**864**	**1698**	**6**	**10**	**17**	**2604**		
	Tuesday February 26, 2019								
3:00 PM	4	308	246	1	1	1	561	2489	0.92
3:15 PM	8	428	218	0	2	0	656	2567	0.95
3:30 PM	9	475	188	0	1	0	673	2604	0.94
3:45 PM	7	363	227	0	0	2	599	2616	0.94
4:00 PM	10	391	234	1	3	0	639	2781	0.91
4:15 PM	9	445	236	3	0	0	693	2845	0.93
4:30 PM	13	420	250	1	1	0	685	2940	0.93
4:45 PM	10	491	263	0	0	0	764	**3029**	**0.96**
5:00 PM	7	444	251	0	1	0	703	3010	0.95
5:15 PM	8	531	249	0	0	0	788		
5:30 PM	21	486	267	0	0	0	774		
5:45 PM	15	487	242	0	1	0	745		
6:00 PM	6	369	219	1	0	0	595		
6:15 PM	11	386	193	0	0	1	591		
6:30 PM	10	339	211	1	0	2	563		
6:45 PM	1	289	235	2	0	0	527		
Total	149	6652	3729	10	10	6			
4:45-5:45 PM	**46**	**1952**	**1030**	**0**	**1**	**0**	**3029**		

Gartner Road at Naperville Plaza Drive

Naperville, Illinois							
	Gartner Road Westbound	Naperville Plaza Northbound		Gartner Road Eastbound	15	60	Peak
Begin Time	Left Turn	Right Turn	Left Turn	Right Turn	Minute Totals	Minute Totals	Hour Factor
6:00 AM	1	0	0	0	1	15	0.63
6:15 AM	2	1	0	1	4	27	0.52
6:30 AM	2	1	0	1	4	32	0.62
6:45 AM	1	2	3	0	6	37	0.71
7:00 AM	0	7	2	4	13	**48**	**0.71**
7:15 AM	2	1	1	5	9	57	0.65
7:30 AM	4	3	0	2	9	77	0.66
7:45 AM	6	9	1	1	17	106	0.70
8:00 AM	2	11	3	6	22	136	0.72
8:15 AM	10	14	3	2	29		
8:30 AM	11	19	2	6	38		
8:45 AM	9	19	6	13	47		
Total	50	87	21	41			
7:00-8:00 AM	**12**	**20**	**4**	**12**	**48**		
3:00 PM	9	18	5	6	38	174	0.95
3:15 PM	10	22	7	6	45	193	0.85
3:30 PM	12	19	6	8	45	204	0.89
3:45 PM	10	22	7	7	46	219	0.91
4:00 PM	11	25	8	13	57	229	0.95
4:15 PM	16	20	10	10	56	227	0.95
4:30 PM	10	21	7	22	60	232	0.95
4:45 PM	8	24	10	14	56	**213**	**0.87**
5:00 PM	9	26	5	15	55	193	0.79
5:15 PM	12	37	2	10	61		
5:30 PM	8	20	5	8	41		
5:45 PM	4	19	3	10	36		
6:00 PM	7	21	6	6	40		
6:15 PM	7	15	11	9	42		
6:30 PM	9	16	4	5	34		
6:45 PM	5	15	3	2	25		
Total	147	340	99	151			
4:45-5:45 PM	**37**	**107**	**22**	**47**	**213**		

Chicago Metropolitan Agency for Planning

233 South Wacker Drive
Suite 800
Chicago, Illinois 60606

312 454 0400
www.cmap.illinois.gov

February 12, 2019

Stephen B. Corcoran, PE, PTOE
Director of Traffic Engineering
Eriksson Engineering Associates, Ltd.
145 Commerce Drive
Grayslake, IL 60030

Subject: ***Washington Street @ Gartner Road***
IDOT

Dear Mr. Corcoran:

In response to a request made on your behalf and dated February 11, 2019, we have developed year 2050 average daily traffic (ADT) projections for the subject location.

ROAD SEGMENT	Current Volumes	Year 2050 ADT
Washington St, @ Gartner Rd	29,000	32,900
Gartner Rd, west of Washington St	5,850	7,700

Traffic projections are developed using existing ADT data provided in the request letter and the results from the October 2018 CMAP Travel Demand Analysis. The regional travel model uses CMAP 2050 socioeconomic projections and assumes the implementation of the ON TO 2050 Comprehensive Regional Plan for the Northeastern Illinois area. The provision of this data in support of your request does not constitute a CMAP endorsement of the proposed development or any subsequent developments.

If you have any questions, please call me at (312) 386-8806.

Sincerely,

Jose Rodriguez, PTP, AICP
Senior Planner, Research & Analysis

cc: Quigley (IDOT)
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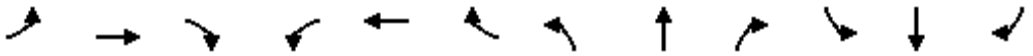
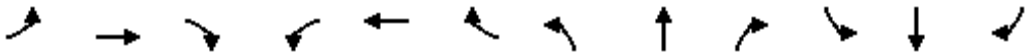


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	326	215	24	46	90	53	23	1610	46	20	740	121
Future Volume (vph)	326	215	24	46	90	53	23	1610	46	20	740	121
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1900	1900	1900	1900	1900	1900
Storage Length (ft)	105		0	130		0	150		0	85		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	95			75			100			60		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor				0.92								
Frt		0.985			0.945			0.996			0.979	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1660	1721	0	1660	1651	0	1752	3491	0	1752	3431	0
Flt Permitted	0.462			0.605			0.239			0.064		
Satd. Flow (perm)	807	1721	0	969	1651	0	441	3491	0	118	3431	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			21			3			20	
Link Speed (mph)		25			25			40			35	
Link Distance (ft)		304			538			1350			367	
Travel Time (s)		8.3			14.7			23.0			7.1	
Confl. Peds. (#/hr)				90								
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Adj. Flow (vph)	340	224	25	48	94	55	24	1677	48	21	771	126
Shared Lane Traffic (%)												
Lane Group Flow (vph)	340	249	0	48	149	0	24	1725	0	21	897	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes										
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	3.0	8.0		3.0	8.0		3.0	15.0		3.0	15.0	
Minimum Split (s)	6.0	14.0		6.0	14.0		6.0	21.0		6.0	21.0	
Total Split (s)	21.0	33.0		13.0	25.0		13.0	61.0		13.0	61.0	
Total Split (%)	17.5%	27.5%		10.8%	20.8%		10.8%	50.8%		10.8%	50.8%	
Maximum Green (s)	18.0	27.0		10.0	19.0		10.0	55.0		10.0	55.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	0.0	2.0		0.0	2.0		0.0	2.0		0.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.0	6.0		3.0	6.0		3.0	6.0		3.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	7.0		3.0	7.0		3.0	4.0		3.0	4.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	9.0		6.0	6.0		6.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0			7.0			8.0	
Flash Dont Walk (s)		20.0			22.0			20.0			16.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	40.9	28.9		27.7	16.9		71.9	66.2		71.2	64.3	
Actuated g/C Ratio	0.34	0.24		0.23	0.14		0.60	0.55		0.59	0.54	
v/c Ratio	0.84	0.60		0.18	0.60		0.07	0.90		0.14	0.49	
Control Delay	53.0	47.2		28.3	51.2		10.5	32.5		12.0	19.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	53.0	47.2		28.3	51.2		10.5	32.5		12.0	19.2	
LOS	D	D		C	D		B	C		B	B	
Approach Delay		50.6			45.6			32.2			19.0	
Approach LOS		D			D			C			B	
Queue Length 50th (ft)	213	170		25	93		7	564		6	235	
Queue Length 95th (ft)	#349	264		52	162		19	#888		17	303	
Internal Link Dist (ft)		224			458			1270			287	
Turn Bay Length (ft)	105			130			150			85		
Base Capacity (vph)	403	416		298	279		377	1927		207	1848	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.84	0.60		0.16	0.53		0.06	0.90		0.10	0.49	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 42 (35%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 90	

Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.90	
Intersection Signal Delay: 32.6	Intersection LOS: C
Intersection Capacity Utilization 86.8%	ICU Level of Service E
Analysis Period (min) 15	

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

Splits and Phases: 1: Washington & Gartner

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	17	10	6	1983	871	9
Future Vol, veh/h	17	10	6	1983	871	9
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	-	135	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	3	3	2
Mvmt Flow	18	11	6	2110	927	10

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1999	469	937	0	-	0
Stage 1	932	-	-	-	-	-
Stage 2	1067	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	52	541	727	-	-	-
Stage 1	344	-	-	-	-	-
Stage 2	292	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	52	541	727	-	-	-
Mov Cap-2 Maneuver	52	-	-	-	-	-
Stage 1	341	-	-	-	-	-
Stage 2	292	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	75.9	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	727	-	78	-	-
HCM Lane V/C Ratio	0.009	-	0.368	-	-
HCM Control Delay (s)	10	-	75.9	-	-
HCM Lane LOS	A	-	F	-	-
HCM 95th %tile Q(veh)	0	-	1.4	-	-

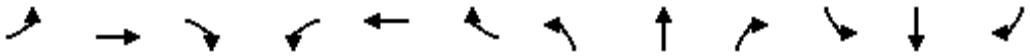
Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	545	12	12	222	0	4	0	20	0	0	0
Future Vol, veh/h	0	545	12	12	222	0	4	0	20	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	75	-	-	40	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	3	3	3	3	3	3	2	2	2	2	2	2
Mvmt Flow	0	568	13	13	231	0	4	0	21	0	0	0

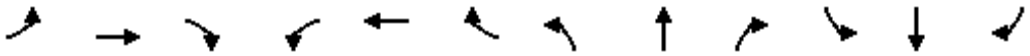
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	231	0	0	581	0	0	832	832	575	842	838	231
Stage 1	-	-	-	-	-	-	575	575	-	257	257	-
Stage 2	-	-	-	-	-	-	257	257	-	585	581	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.227	-	-	2.227	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1331	-	-	988	-	-	288	305	518	284	302	808
Stage 1	-	-	-	-	-	-	503	503	-	748	695	-
Stage 2	-	-	-	-	-	-	748	695	-	497	500	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1331	-	-	988	-	-	285	301	518	270	298	808
Mov Cap-2 Maneuver	-	-	-	-	-	-	285	301	-	270	298	-
Stage 1	-	-	-	-	-	-	503	503	-	748	686	-
Stage 2	-	-	-	-	-	-	738	686	-	477	500	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.4	13.1	0
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	285	518	1331	-	-	988	-	-	-
HCM Lane V/C Ratio	0.015	0.04	-	-	-	0.013	-	-	-
HCM Control Delay (s)	17.8	12.2	0	-	-	8.7	-	-	0
HCM Lane LOS	C	B	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0	0.1	0	-	-	0	-	-	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	169	153	45	129	234	31	56	830	59	39	1716	198
Future Volume (vph)	169	153	45	129	234	31	56	830	59	39	1716	198
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1900	1900	1900	1900	1900	1900
Storage Length (ft)	105		0	130		0	150		0	85		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	95			75			100			60		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.966			0.982			0.990			0.984	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1660	1688	0	1660	1716	0	1752	3470	0	1752	3449	0
Flt Permitted	0.267			0.557			0.067			0.234		
Satd. Flow (perm)	467	1688	0	973	1716	0	124	3470	0	432	3449	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11			5			8			13	
Link Speed (mph)		25			25			40			35	
Link Distance (ft)		304			538			1350			367	
Travel Time (s)		8.3			14.7			23.0			7.1	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Adj. Flow (vph)	172	156	46	132	239	32	57	847	60	40	1751	202
Shared Lane Traffic (%)												
Lane Group Flow (vph)	172	202	0	132	271	0	57	907	0	40	1953	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes										
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	3.0	8.0		3.0	8.0		3.0	15.0		3.0	15.0	
Minimum Split (s)	6.0	33.0		6.0	35.0		6.0	33.0		6.0	30.0	
Total Split (s)	18.0	33.0		14.0	29.0		13.0	60.0		13.0	60.0	
Total Split (%)	15.0%	27.5%		11.7%	24.2%		10.8%	50.0%		10.8%	50.0%	
Maximum Green (s)	15.0	27.0		11.0	23.0		10.0	54.0		10.0	54.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	0.0	2.0		0.0	2.0		0.0	2.0		0.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.0	6.0		3.0	6.0		3.0	6.0		3.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	7.0		3.0	7.0		3.0	4.0		3.0	4.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	9.0		6.0	6.0		6.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0			7.0			8.0	
Flash Dont Walk (s)		20.0			22.0			20.0			16.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	42.1	26.1		36.1	22.9		69.7	60.6		68.7	60.2	
Actuated g/C Ratio	0.35	0.22		0.30	0.19		0.58	0.50		0.57	0.50	
v/c Ratio	0.58	0.54		0.38	0.82		0.34	0.52		0.12	1.13	
Control Delay	35.8	44.9		30.3	66.3		16.3	22.0		11.6	94.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	35.8	44.9		30.3	66.3		16.3	22.0		11.6	94.4	
LOS	D	D		C	E		B	C		B	F	
Approach Delay		40.7			54.5			21.7			92.8	
Approach LOS		D			D			C			F	
Queue Length 50th (ft)	93	131		70	199		18	251		13	~961	
Queue Length 95th (ft)	151	209		118	#337		37	321		28	#1123	
Internal Link Dist (ft)		224			458			1270			287	
Turn Bay Length (ft)	105			130			150			85		
Base Capacity (vph)	314	389		361	338		209	1756		365	1735	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.55	0.52		0.37	0.80		0.27	0.52		0.11	1.13	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.13	

Intersection Signal Delay: 65.1	Intersection LOS: E
Intersection Capacity Utilization 91.9%	ICU Level of Service F
Analysis Period (min) 15	

~ 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: Washington & Gartner

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	1	0	1030	1952	46
Future Vol, veh/h	0	1	0	1030	1952	46
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	-	135	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	3	3	2
Mvmt Flow	0	1	0	1073	2033	48

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2594	1041	2081	0	-	0
Stage 1	2057	-	-	-	-	-
Stage 2	537	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	20	227	263	-	-	-
Stage 1	84	-	-	-	-	-
Stage 2	550	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	20	227	263	-	-	-
Mov Cap-2 Maneuver	20	-	-	-	-	-
Stage 1	84	-	-	-	-	-
Stage 2	550	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	20.9	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	263	-	227	-	-
HCM Lane V/C Ratio	-	-	0.005	-	-
HCM Control Delay (s)	0	-	20.9	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

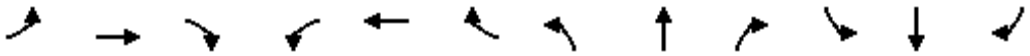
Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	260	47	37	451	0	22	0	107	0	0	0
Future Vol, veh/h	0	260	47	37	451	0	22	0	107	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	50	-	-	40	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	3	3	3	3	3	3	2	2	2	2	2	2
Mvmt Flow	0	271	49	39	470	0	23	0	111	0	0	0

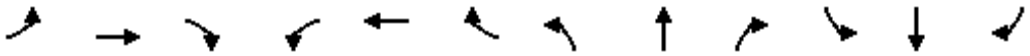
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	470	0	0	320	0	0	844	844	296	899	868	470
Stage 1	-	-	-	-	-	-	296	296	-	548	548	-
Stage 2	-	-	-	-	-	-	548	548	-	351	320	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.227	-	-	2.227	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1086	-	-	1234	-	-	283	300	743	260	290	594
Stage 1	-	-	-	-	-	-	712	668	-	521	517	-
Stage 2	-	-	-	-	-	-	521	517	-	666	652	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1086	-	-	1234	-	-	276	290	743	216	281	594
Mov Cap-2 Maneuver	-	-	-	-	-	-	276	290	-	216	281	-
Stage 1	-	-	-	-	-	-	712	668	-	521	500	-
Stage 2	-	-	-	-	-	-	505	500	-	566	652	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.6	12.1	0
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	276	743	1086	-	-	1234	-	-	-
HCM Lane V/C Ratio	0.083	0.15	-	-	-	0.031	-	-	-
HCM Control Delay (s)	19.2	10.7	0	-	-	8	-	-	0
HCM Lane LOS	C	B	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0.3	0.5	0	-	-	0.1	-	-	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	364	231	33	48	100	56	50	1643	47	23	768	123
Future Volume (vph)	364	231	33	48	100	56	50	1643	47	23	768	123
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1900	1900	1900	1900	1900	1900
Storage Length (ft)	105		0	130		0	150		0	85		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	95			75			100			60		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor				0.92								
Frt		0.981			0.946			0.996			0.979	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1660	1714	0	1660	1653	0	1752	3491	0	1752	3431	0
Flt Permitted	0.434			0.590			0.217			0.067		
Satd. Flow (perm)	758	1714	0	951	1653	0	400	3491	0	124	3431	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5			20			3			20	
Link Speed (mph)		25			25			40			35	
Link Distance (ft)		304			538			1350			367	
Travel Time (s)		8.3			14.7			23.0			7.1	
Confl. Peds. (#/hr)				90								
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Adj. Flow (vph)	379	241	34	50	104	58	52	1711	49	24	800	128
Shared Lane Traffic (%)												
Lane Group Flow (vph)	379	275	0	50	162	0	52	1760	0	24	928	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes										
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	3.0	8.0		3.0	8.0		3.0	15.0		3.0	15.0	
Minimum Split (s)	6.0	14.0		6.0	14.0		6.0	21.0		6.0	21.0	
Total Split (s)	21.0	33.0		13.0	25.0		13.0	61.0		13.0	61.0	
Total Split (%)	17.5%	27.5%		10.8%	20.8%		10.8%	50.8%		10.8%	50.8%	
Maximum Green (s)	18.0	27.0		10.0	19.0		10.0	55.0		10.0	55.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	0.0	2.0		0.0	2.0		0.0	2.0		0.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.0	6.0		3.0	6.0		3.0	6.0		3.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	7.0		3.0	7.0		3.0	4.0		3.0	4.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	9.0		6.0	6.0		6.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0			7.0			8.0	
Flash Dont Walk (s)		20.0			22.0			20.0			16.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	41.4	29.3		28.2	17.4		71.5	63.9		69.5	61.4	
Actuated g/C Ratio	0.34	0.24		0.24	0.14		0.60	0.53		0.58	0.51	
v/c Ratio	0.96	0.65		0.19	0.63		0.16	0.95		0.15	0.53	
Control Delay	71.2	49.1		28.2	53.6		11.5	39.5		12.4	21.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	71.2	49.1		28.2	53.6		11.5	39.5		12.4	21.4	
LOS	E	D		C	D		B	D		B	C	
Approach Delay		61.9			47.6			38.7			21.2	
Approach LOS		E			D			D			C	
Queue Length 50th (ft)	242	189		25	103		16	~765		7	253	
Queue Length 95th (ft)	#453	293		54	177		33	#920		19	325	
Internal Link Dist (ft)		224			458			1270			287	
Turn Bay Length (ft)	105			130			150			85		
Base Capacity (vph)	396	421		299	278		355	1860		210	1764	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.96	0.65		0.17	0.58		0.15	0.95		0.11	0.53	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 74 (62%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 90	

Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.96	
Intersection Signal Delay: 38.8	Intersection LOS: D
Intersection Capacity Utilization 90.7%	ICU Level of Service E
Analysis Period (min) 15	

~ 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: Washington & Gartner

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	22	12	6	2053	911	19
Future Vol, veh/h	22	12	6	2053	911	19
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	-	135	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	3	3	2
Mvmt Flow	23	13	6	2184	969	20

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2083	495	989	0	-	0
Stage 1	979	-	-	-	-	-
Stage 2	1104	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	46	520	695	-	-	-
Stage 1	325	-	-	-	-	-
Stage 2	279	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	46	520	695	-	-	-
Mov Cap-2 Maneuver	46	-	-	-	-	-
Stage 1	322	-	-	-	-	-
Stage 2	279	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	106.8	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	695	-	68	-	-
HCM Lane V/C Ratio	0.009	-	0.532	-	-
HCM Control Delay (s)	10.2	-	106.8	-	-
HCM Lane LOS	B	-	F	-	-
HCM 95th %tile Q(veh)	0	-	2.2	-	-

Intersection	
Int Delay, s/veh	2.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	27	0	10	15	0	7
Future Vol, veh/h	27	0	10	15	0	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	29	0	11	16	0	8

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	29	0	-	29
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	4.12	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	2.218	-	-	3.318
Pot Cap-1 Maneuver	-	-	1584	-	0	1046
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1584	-	-	1046
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.9	8.5
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1046	-	-	1584	-
HCM Lane V/C Ratio	0.007	-	-	0.007	-
HCM Control Delay (s)	8.5	-	-	7.3	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	36	34	40	2023	880	43
Future Vol, veh/h	36	34	40	2023	880	43
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	50	-	135	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	3	3	2
Mvmt Flow	38	35	42	2107	917	45

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2078	481	962	0	-	0
Stage 1	940	-	-	-	-	-
Stage 2	1138	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	46	531	711	-	-	-
Stage 1	340	-	-	-	-	-
Stage 2	268	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	43	531	711	-	-	-
Mov Cap-2 Maneuver	43	-	-	-	-	-
Stage 1	320	-	-	-	-	-
Stage 2	268	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	131.2	0.2	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	711	-	43	531	-	-
HCM Lane V/C Ratio	0.059	-	0.872	0.067	-	-
HCM Control Delay (s)	10.4	-	243.5	12.3	-	-
HCM Lane LOS	B	-	F	B	-	-
HCM 95th %tile Q(veh)	0.2	-	3.4	0.2	-	-

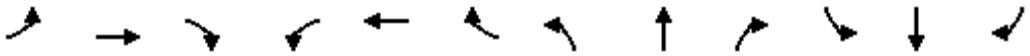
Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	22	563	12	12	228	33	4	0	20	45	0	9
Future Vol, veh/h	22	563	12	12	228	33	4	0	20	45	0	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	75	-	-	40	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	3	3	3	3	3	3	2	2	2	2	2	2
Mvmt Flow	23	586	13	13	238	34	4	0	21	47	0	9

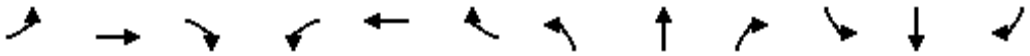
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	272	0	0	599	0	0	925	937	593	930	926	255
Stage 1	-	-	-	-	-	-	639	639	-	281	281	-
Stage 2	-	-	-	-	-	-	286	298	-	649	645	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.227	-	-	2.227	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1286	-	-	973	-	-	250	265	506	248	269	784
Stage 1	-	-	-	-	-	-	464	470	-	726	678	-
Stage 2	-	-	-	-	-	-	721	667	-	458	467	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1286	-	-	973	-	-	241	257	506	232	261	784
Mov Cap-2 Maneuver	-	-	-	-	-	-	241	257	-	232	261	-
Stage 1	-	-	-	-	-	-	456	462	-	713	669	-
Stage 2	-	-	-	-	-	-	703	658	-	431	459	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.4	13.7	21.9
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	241	506	1286	-	-	973	-	-	232	784
HCM Lane V/C Ratio	0.017	0.041	0.018	-	-	0.013	-	-	0.202	0.012
HCM Control Delay (s)	20.2	12.4	7.8	-	-	8.7	-	-	24.4	9.6
HCM Lane LOS	C	B	A	-	-	A	-	-	C	A
HCM 95th %tile Q(veh)	0.1	0.1	0.1	-	-	0	-	-	0.7	0



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	188	164	55	136	252	33	69	855	60	42	1763	202
Future Volume (vph)	188	164	55	136	252	33	69	855	60	42	1763	202
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1900	1900	1900	1900	1900	1900
Storage Length (ft)	95		0	85		0	130		0	110		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	95			75			100			60		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor				0.92								
Frt		0.962			0.982			0.990			0.985	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1660	1681	0	1660	1716	0	1752	3470	0	1752	3452	0
Flt Permitted	0.232			0.523			0.067			0.223		
Satd. Flow (perm)	405	1681	0	838	1716	0	124	3470	0	411	3452	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		13			5			8			13	
Link Speed (mph)		25			25			40			35	
Link Distance (ft)		304			538			1350			367	
Travel Time (s)		8.3			14.7			23.0			7.1	
Confl. Peds. (#/hr)				90								
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Adj. Flow (vph)	192	167	56	139	257	34	70	872	61	43	1799	206
Shared Lane Traffic (%)												
Lane Group Flow (vph)	192	223	0	139	291	0	70	933	0	43	2005	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes										
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	3.0	8.0		3.0	8.0		3.0	15.0		3.0	15.0	
Minimum Split (s)	6.5	14.0		6.5	14.0		6.5	21.0		6.5	21.0	
Total Split (s)	18.0	33.0		14.0	29.0		13.0	60.0		13.0	60.0	
Total Split (%)	15.0%	27.5%		11.7%	24.2%		10.8%	50.0%		10.8%	50.0%	
Maximum Green (s)	15.0	27.0		11.0	23.0		10.0	54.0		10.0	54.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	0.0	2.0		0.0	2.0		0.0	2.0		0.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.0	6.0		3.0	6.0		3.0	6.0		3.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes			Yes			Yes			Yes		
Vehicle Extension (s)	3.0	7.0		3.0	7.0		3.0	4.0		3.0	4.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	9.0		0.0	6.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0			7.0			8.0	
Flash Dont Walk (s)		20.0			22.0			20.0			16.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	43.0	26.7		36.5	23.1		69.3	59.9		67.7	59.1	
Actuated g/C Ratio	0.36	0.22		0.30	0.19		0.58	0.50		0.56	0.49	
v/c Ratio	0.66	0.58		0.43	0.87		0.40	0.54		0.14	1.18	
Control Delay	39.3	46.0		31.4	72.3		18.9	22.7		11.8	115.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	39.3	46.0		31.4	72.3		18.9	22.7		11.8	115.0	
LOS	D	D		C	E		B	C		B	F	
Approach Delay		42.9			59.1			22.4			112.8	
Approach LOS		D			E			C			F	
Queue Length 50th (ft)	106	146		74	217		22	262		13	~1011	
Queue Length 95th (ft)	167	230		124	#377		48	333		30	#1175	
Internal Link Dist (ft)		224			458			1270			287	
Turn Bay Length (ft)	95			85			130			110		
Base Capacity (vph)	302	389		334	335		208	1735		351	1706	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.64	0.57		0.42	0.87		0.34	0.54		0.12	1.18	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 38.5 (32%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 130	

Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.18	
Intersection Signal Delay: 76.2	Intersection LOS: E
Intersection Capacity Utilization 97.8%	ICU Level of Service F
Analysis Period (min) 15	

~ 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: Washington & Gartner

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	3	0	1075	2005	51
Future Vol, veh/h	5	3	0	1075	2005	51
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	-	135	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	3	3	2
Mvmt Flow	5	3	0	1120	2089	53

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2676	1071	2142	0	-	0
Stage 1	2116	-	-	-	-	-
Stage 2	560	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	18	217	249	-	-	-
Stage 1	78	-	-	-	-	-
Stage 2	535	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	18	217	249	-	-	-
Mov Cap-2 Maneuver	18	-	-	-	-	-
Stage 1	78	-	-	-	-	-
Stage 2	535	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	189.5	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	249	-	27	-	-
HCM Lane V/C Ratio	-	-	0.309	-	-
HCM Control Delay (s)	0	-	189.5	-	-
HCM Lane LOS	A	-	F	-	-
HCM 95th %tile Q(veh)	0	-	1	-	-

Intersection	
Int Delay, s/veh	1.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1	0	5	46	0	7
Future Vol, veh/h	1	0	5	46	0	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	0	5	50	0	8

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1	0	-	1
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	4.12	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	2.218	-	-	3.318
Pot Cap-1 Maneuver	-	-	1622	-	0	1084
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1622	-	-	1084
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.7	8.3
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1084	-	-	1622	-
HCM Lane V/C Ratio	0.007	-	-	0.003	-
HCM Control Delay (s)	8.3	-	-	7.2	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	4.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	20	43	21	1055	1964	44
Future Vol, veh/h	20	43	21	1055	1964	44
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	50	-	135	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	3	3	2
Mvmt Flow	21	45	22	1099	2046	46

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2663	1046	2092	0	-	0
Stage 1	2069	-	-	-	-	-
Stage 2	594	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	~ 18	225	260	-	-	-
Stage 1	83	-	-	-	-	-
Stage 2	514	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 16	225	260	-	-	-
Mov Cap-2 Maneuver	~ 16	-	-	-	-	-
Stage 1	76	-	-	-	-	-
Stage 2	514	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	228.9	0.4	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	260	-	16	225	-	-
HCM Lane V/C Ratio	0.084	-	1.302	0.199	-	-
HCM Control Delay (s)	20.1	-	$ 667.4	24.9	-	-
HCM Lane LOS	C	-	F	C	-	-
HCM 95th %tile Q(veh)	0.3	-	3.1	0.7	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	2.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	9	275	47	37	466	20	22	0	107	25	0	9
Future Vol, veh/h	9	275	47	37	466	20	22	0	107	25	0	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	75	-	-	40	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	3	3	3	3	3	3	2	2	2	2	2	2
Mvmt Flow	9	286	49	39	485	21	23	0	111	26	0	9

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	506	0	0	335	0	0	907	913	311	958	927	496
Stage 1	-	-	-	-	-	-	329	329	-	574	574	-
Stage 2	-	-	-	-	-	-	578	584	-	384	353	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.227	-	-	2.227	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1054	-	-	1219	-	-	257	273	729	237	268	574
Stage 1	-	-	-	-	-	-	684	646	-	504	503	-
Stage 2	-	-	-	-	-	-	501	498	-	639	631	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1054	-	-	1219	-	-	245	262	729	195	257	574
Mov Cap-2 Maneuver	-	-	-	-	-	-	245	262	-	195	257	-
Stage 1	-	-	-	-	-	-	678	640	-	499	487	-
Stage 2	-	-	-	-	-	-	477	482	-	537	625	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.6	12.6	22.4
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	245	729	1054	-	-	1219	-	-	195	574
HCM Lane V/C Ratio	0.094	0.153	0.009	-	-	0.032	-	-	0.134	0.016
HCM Control Delay (s)	21.2	10.8	8.4	-	-	8.1	-	-	26.3	11.4
HCM Lane LOS	C	B	A	-	-	A	-	-	D	B
HCM 95th %tile Q(veh)	0.3	0.5	0	-	-	0.1	-	-	0.5	0.1

*N*ASHINGTON STREET TUESDAY JUNE 4, 2019

22 sec.	7-8 AM		Sorted Data		22 sec.	4:30-5:30 PM		Sorted Data	
Interval	Left	Th/Right	Left	Th/Right	Interval	Left	Th/Right	Left	Th/Right
1	1	2	0	0	1	0	4	0	0
2	2	3	0	0	2	1	5	0	0
3	4	3	0	0	3	0	0	0	0
4	0	0	0	0	4	1	2	0	0
5	0	0	0	0	5	2	4	0	0
6	4	1	0	0	6	1	4	0	0
7	7	1	0	0	7	0	0	0	0
8	7	1	0	0	8	1	1	0	0
9	7	2	0	0	9	2	2	0	0
10	0	0	0	0	10	3	2	0	0
11	1	0	0	0	11	0	3	0	0
12	4	0	0	0	12	0	0	0	0
13	8	1	0	0	13	1	1	0	0
14	12	2	0	0	14	4	2	0	0
15	4	0	0	0	15	5	3	0	0
16	0	0	0	0	16	6	5	0	0
17	0	0	0	0	17	3	1	0	0
18	1	0	0	0	18	5	2	0	0
19	6	2	0	0	19	7	2	0	0
20	8	3	0	0	20	8	3	0	0
21	0	0	0	0	21	11	3	0	0
22	0	0	0	0	22	0	0	0	0
23	1	2	0	0	23	1	0	0	0
24	2	2	0	0	24	0	4	0	0
25	2	2	0	0	25	3	5	0	0
26	1	1	0	0	26	4	5	0	0
27	2	1	0	0	27	1	6	0	0
28	6	4	0	0	28	0	0	0	0
29	0	4	0	0	29	0	0	0	0
30	9	4	0	0	30	0	2	0	0
31	10	4	0	0	31	0	2	0	0
32	0	0	0	0	32	1	5	0	0
33	1	1	0	0	33	0	0	0	0
34	6	3	0	0	34	0	0	0	0
35	7	4	0	0	35	1	1	0	0
36	8	4	0	0	36	1	4	0	0
37	0	4	0	0	37	3	5	0	0
38	0	0	0	0	38	1	5	0	0
39	2	6	0	0	39	0	0	0	1
40	6	6	0	0	40	0	2	0	1
41	6	9	0	0	41	1	5	0	1
42	3	9	0	0	42	3	9	0	1
43	0	0	0	0	43	4	14	0	1
44	0	0	0	0	44	0	13	0	1
45	2	0	0	0	45	2	2	0	1

46	4	2	0	0	46	4	2	0	1
47	10	2	0	0	47	6	1	0	1
48	1	0	1	0	48	11	3	0	1
49	0	0	1	0	49	10	3	0	1
50	1	2	1	0	50	4	1	0	1
51	1	2	1	0	51	2	2	0	1
52	3	2	1	0	52	2	5	0	1
53	1	3	1	0	53	2	6	0	1
54	0	0	1	0	54	2	6	0	1
55	0	2	1	0	55	0	6	0	1
56	1	2	1	0	56	0	0	0	1
57	1	3	1	0	57	2	0	0	1
58	1	4	1	0	58	3	1	0	1
59	0	0	1	0	59	3	3	1	1
60	4	1	1	1	60	0	5	1	1
61	7	0	1	1	61	0	0	1	1
62	9	0	1	1	62	2	2	1	1
63	10	0	1	1	63	4	3	1	1
64	10	1	1	1	64	6	7	1	1
65	0	0	1	1	65	6	7	1	1
66	5	0	1	1	66	0	0	1	1
67	6	0	1	1	67	0	0	1	2
68	8	5	1	1	68	1	1	1	2
69	9	8	1	1	69	3	2	1	2
70	0	0	1	1	70	4	4	1	2
71	0	0	1	1	71	2	4	1	2
72	1	1	1	1	72	0	0	1	2
73	2	4	1	1	73	1	0	1	2
74	3	6	1	1	74	1	0	1	2
75	0	9	2	1	75	1	2	1	2
76	0	0	2	1	76	1	3	1	2
77	2	0	2	1	77	0	1	1	2
78	3	0	2	1	78	0	5	1	2
79	3	1	2	1	79	2	6	1	2
80	4	2	2	1	80	2	10	1	2
81	2	0	2	2	81	3	11	1	2
82	1	3	2	2	82	0	12	1	2
83	3	4	2	2	83	0	0	1	2
84	3	3	2	2	84	1	1	1	2
85	4	4	2	2	85	2	2	1	2
86	0	4	2	2	86	5	3	1	2
87	0	0	2	2	87	3	4	1	2
88	2	0	2	2	88	0	0	1	3
89	4	0	2	2	89	0	1	1	3
90	4	0	2	2	90	1	4	2	3
91	3	0	2	2	91	1	5	2	3
92	0	0	2	2	92	1	5	2	3
93	2	2	3	2	93	0	8	2	3

94	3	4	3	2	94	0	0	2	3
95	5	11	3	2	95	0	1	2	3
96	5	15	3	2	96	0	2	2	3
97	0	5	3	2	97	1	5	2	3
98	0	0	3	2	98	0	8	2	3
99	0	1	3	2	99	0	4	2	3
100	1	1	3	2	100	2	1	2	3
101	6	1	3	2	101	4	3	2	3
102	7	3	3	2	102	5	5	2	3
103	2	0	3	2	103	4	9	2	4
104	0	0	3	3	104	0	9	2	4
105	1	1	3	3	105	0	0	2	4
106	3	1	3	3	106	0	1	2	4
107	3	5	3	3	107	4	2	2	4
108	1	6	3	3	108	4	7	2	4
109	0	0	3	3	109	0	0	2	4
110	3	0	3	3	110	0	0	2	4
111	3	2	3	3	111	1	2	2	4
112	3	2	4	3	112	3	4	2	4
113	0	2	4	3	113	7	5	3	4
114	0	1	4	3	114	12	5	3	4
115	1	5	4	3	115	2	0	3	4
116	3	7	4	3	116	2	1	3	4
117	6	9	4	3	117	2	1	3	4
118	0	11	4	4	118	3	4	3	4
119	0	13	4	4	119	3	4	3	4
120	0	0	4	4	120	0	4	3	4
121	1	4	4	4	121	0	0	3	4
122	2	5	4	4	122	4	0	3	5
123	3	11	4	4	123	5	1	3	5
124	0	11	4	4	124	7	4	3	5
125	0	0	4	4	125	7	6	3	5
126	0	0	4	4	126	0	4	3	5
127	1	3	5	4	127	1	0	3	5
128	6	4	5	4	128	1	3	4	5
129	7	9	5	4	129	4	4	4	5
130	0	11	5	4	130	6	8	4	5
131	0	0	6	4	131	0	8	4	5
132	0	0	6	4	132	0	0	4	5
133	0	0	6	4	133	0	1	4	5
134	3	2	6	4	134	2	1	4	5
135	0	0	6	4	135	4	1	4	5
136	4	0	6	5	136	5	0	4	5
137	0	0	6	5	137	0	0	4	5
138	1	0	6	5	138	0	1	4	5
139	1	2	6	5	139	1	2	4	5
140	2	3	6	5	140	3	3	4	5
141	0	0	7	6	141	5	4	4	5

142	1	1	7	6	142	0	5	5	6
143	2	4	7	6	143	0	0	5	6
144	4	9	7	6	144	0	0	5	6
145	4	9	7	7	145	1	1	5	6
146	4	10	7	8	146	2	1	5	6
147	0	0	7	8	147	2	3	5	6
148	3	2	8	9	148	0	0	5	7
149	6	4	8	9	149	0	0	5	7
150	10	10	8	9	150	0	4	6	7
151	11	11	8	9	151	2	5	6	7
152	1	3	9	9	152	2	7	6	8
153	1	0	9	9	153	0	8	6	8
154	3	1	9	9	154	0	0	6	8
155	9	0	9	10	155	0	1	6	8
156	12	3	9	10	156	3	1	7	8
157	5	8	10	11	157	5	1	7	9
158	0	0	10	11	158	6	5	7	9
159	2	1	10	11	159	1	0	7	9
160	2	2	10	11	160	1	0	8	10
161	4	3	10	11	161	1	1	10	11
162	9	4	11	11	162	0	1	11	12
163	1	0	12	13	163	1	2	11	13
164	2	1	12	15	164	2	3	12	14
			Average						
total veh	471	430	2.87	2.62	total veh	334	482		
							Average	2.04	2.94