

April 19, 2019

Mr. Michael Zuraf, AICP
Stafford County
1300 Courthouse Road
Stafford, Virginia 22554
Phone: (540) 658-8668

Reference: Wawa – Garrisonville Road – Traffic Impact Analysis (TIA) and Access Management Exception (AME) Request
Stafford County, Virginia

Dear Mr. Zuraf,

Ramey Kemp & Associates, Inc. (RKA) has performed a Traffic Impact Analysis (TIA) for the proposed convenience store with 20 fueling positions (f.p.) located in the northeast quadrant of the Route 610 (Garrisonville Road) at Furnace Road / Tech Parkway intersection.

The proposed access plan includes one right-in only driveway on Garrisonville Road and one full-movement driveway on Tech Parkway. If approved, the proposed store is expected to be built in 2021. Figure 1 shows the site location and study intersections, and Figure 2 shows the preliminary site plan.

The purpose of this letter report is to provide the following:

- Trip generation calculations
- Evaluation of turn lane warrants for the proposed site driveways
- Capacity and queueing analysis of the study intersections

Existing Roadway Conditions

Route 610 (Garrisonville Road) is a four-lane divided Major Collector with a 2019 average daily traffic (ADT) volume of approximately 16,000 vehicles per day (vpd), and a posted speed limit of 45 miles per hour (mph) in the vicinity of the site.

Furnace Road is a two-lane Minor Collector with a 2019 ADT volume of approximately 6,300 vpd, and a posted speed limit of 35 mph in the vicinity of the site.

Tech Parkway is a four-lane divided private roadway with a 2019 ADT volume of approximately 3,400 vpd, and a posted speed limit of 30 mph in the vicinity of the site.

Note that the ADTs were calculated assuming the AM and PM peak hour volumes represent 20% of the daily traffic.

Existing Traffic Volumes

The AM peak hour (7:00 to 9:00 AM) and PM peak hour (4:00 to 6:00 PM) turning movement counts were conducted by Peggy Malone & Associates at the following intersections during the week of March 25:

- Garrisonville Road at Furnace Road / Tech Parkway
- Garrisonville Road at Keystone Drive / Commercial Driveway

The traffic count data is enclosed, and the existing 2019 volumes are shown in Figure 3.

Background Traffic Growth

The 2019 peak hour traffic volumes were grown by an annual rate of 2.0% for two years to estimate the 2021 peak hour traffic volumes. Figure 3 shows the estimated 2021 no-build peak hour traffic volumes.

Approved Development

Based on discussion with the County and VDOT, there are two approved developments in the vicinity of the site that will generate a significant amount of traffic.

The North Stafford Center for Business and Technology is located on the west side of Tech Parkway. The trip generation potential of the remaining development during a typical weekday, AM peak hour, and PM peak hour was estimated using the methodologies published by the Institute of Transportation Engineers (ITE) *Trip Generation Manual – 10th Edition* is shown in Table 1.

Table 1
ITE Trip Generation – Weekday – 10th Edition
North Stafford Center for Business and Technology

Land Use (ITE Land Use Code)	Size	Weekday Daily Traffic (vpd)		AM Peak Hour (vph)		PM Peak Hour (vph)	
		Enter	Exit	Enter	Exit	Enter	Exit
General Office Space (710)	35,000 s.f.	192	192	35	6	7	35

The site trip distribution and assignment for the North Stafford Center for Business and Technology shown in Figure 4 are based on the August 2014 scoping document and June 2015 site plan provided by the County.

The North Stafford Office Complex is located on the south side of Garrisonville Road between Furnace Road and Keystone Drive and is partially built out. The trip generation potential of the remaining development during a typical weekday, AM peak hour, and PM peak hour was estimated using the methodologies published by the *ITE Trip Generation Manual – 10th Edition* is shown in Table 2.

Table 2
ITE Trip Generation – Weekday – 10th Edition
North Stafford Office Complex

Land Use (ITE Land Use Code)	Size	Weekday Daily Traffic (vpd)		AM Peak Hour (vph)		PM Peak Hour (vph)	
		Enter	Exit	Enter	Exit	Enter	Exit
General Office Space (710)	21,225 s.f.	118	118	21	4	4	22
General Retail Space (820)	35,000 s.f.	661	661	20	13	64	69
Subtotal		779	779	41	17	68	91
Internal Capture – 7% AM / 6% PM		-50	-50	-2	-2	-4	-4
Driveway Volumes		729	729	39	15	64	87
ITE Pass-by Trips: General Retail – 34%		-210	-210	-5	-5	-21	-21
New Primary Trips		519	519	34	10	43	66

Figure 5 shows the primary distribution and assignment, Figure 6 shows the pass-by distribution and assignment, and Figure 7 shows the total approved development trips.

The existing 2019 peak hour volumes were grown using the background growth rate and combined with the approved development trips to estimate the no-build 2021 peak hour volumes, which are shown in Figure 7.

Trip Generation

The trip generation potential of the proposed store during a typical weekday, AM peak hour, and PM peak hour was estimated using the methodologies published by the ITE *Trip Generation Manual – 10th Edition*. Based on discussion with VDOT, the trip generation potential of the proposed Wawa store was estimated using the multi-variable regression formula published by ITE. Table 3 shows the ITE trip generation potential of the proposed 6,050 s.f. convenience store with 20 fueling positions.

Table 3
ITE Trip Generation – Weekday – 10th Edition

Land Use (ITE Land Use Code)	Size	Weekday Daily Traffic (vpd)		AM Peak Hour (vph)		PM Peak Hour (vph)	
		Enter	Exit	Enter	Exit	Enter	Exit
Super Convenience Market / Gas Station (960)	20 f.p. / 6,050 s.f.	2,305	2,305	328*	328*	253*	253*
ITE Pass-by Trips: 63% AM / 66% PM		-1,487	-1,487	-207	-207	-167	-167
New Primary Trips		818	818	121	121	86	86

* Value was calculated using the multi-variable regression formula published by ITE

Convenience stores attract pass-by trips, which are made by drivers who are already driving by the site today and will visit the store in the future because it is convenient. The ITE pass-by rates are shown in Table 3.

Site Traffic Distribution

The following primary site traffic distribution was applied based on a review of the existing traffic volumes, the adjacent roadway network, discussion with the County and VDOT, and engineering judgement:

- 50% to / from the east on Garrisonville Road
- 35% to / from the west on Garrisonville Road
- 15% to / from the south on Furnace Road

The pass-by trips will originate from Garrisonville Road with the following directional distributions:

- AM Peak – 60% eastbound / 40% westbound
- PM Peak – 45% eastbound / 55% westbound

Figures 8 and 9 show the primary site trip distribution and assignment, respectively. Figures 10 and 11 show the pass-by site trip distribution and assignment, respectively. Figure 12 shows the total site trips and Figure 13 shows the projected 2021 build-out peak hour traffic volumes.

VDOT Turn Lane Warrant Analysis

The projected build-out AM and PM peak hour traffic volumes at the proposed right-in only site driveway was compared to the turn lane warrants in the Virginia Department of Transportation (VDOT) *Access Management Design Standards for Entrances and Intersections*.

Garrisonville Road at Right-in Only Driveway:

- A westbound right-turn lane on Garrisonville Road is warranted

The turn lane warrant diagram is enclosed for reference, and Figure 14 shows the recommended roadway laneage at the proposed driveways.

Intersection Spacing Standards

Garrisonville Road is a Major Collector posted 45 mph and the proposed right-in only driveway is located approximately 265 feet east of the Garrisonville Road at Furnace Road / Tech Parkway intersection. The right-in only driveway will be within the functional area of the intersection, so an Access Management Exception (AME) request will be submitted to VDOT.

Traffic Capacity Analysis

Traffic capacity analysis for the study intersections was performed using Synchro 10, which is a comprehensive software package that allows the user to model signalized and unsignalized intersections to determine levels-of-service based on the thresholds specified in the Highway Capacity Manual (HCM) – 6th Edition.

Table 4 summarizes the capacity analysis results for the signalized intersection of Garrisonville Road at Furnace Road / Tech Parkway, and the Synchro outputs are enclosed for reference.

Table 4
Level-of-Service Summary for Garrisonville Road at Furnace Road / Tech Parkway

CONDITION	LANE GROUP	AM PEAK HOUR				PM PEAK HOUR			
		Lane LOS	Lane Delay (sec)	Queue (ft)	Overall LOS (Delay)	Lane LOS	Lane Delay (sec)	Queue (ft)	Overall LOS (Delay)
Existing (2019) Traffic Conditions	EBL	A	9.4	31	B (15.5 sec)	B	15.2	9	C (29.6 sec)
	EBT	C	22.9	311		D	35.1	261	
	EBR	A	2.3	24		A	0.7	0	
	WBL	B	12.6	91		C	20.7	114	
	WBT	B	13.8	85		C	24.5	421	
	WBR	A	0.2	0		A	0.0	0	
	NBL/T	D	41.4	150		D	53.8	338	
	NBR	A	0.1	0		A	0.1	0	
	SBL	D	45.4	21		E	56.2	197	
	SBL/T	D	45.4	23		E	56.2	198	
	SBR	A	0.0	0		A	0.0	0	

Table 4 (continued)
Level-of-Service Summary for Garrisonville Road at Furnace Road / Tech Parkway

CONDITION	LANE GROUP	AM PEAK HOUR				PM PEAK HOUR			
		Lane LOS	Lane Delay (sec)	Queue (ft)	Overall LOS (Delay)	Lane LOS	Lane Delay (sec)	Queue (ft)	Overall LOS (Delay)
No-Build (2021) Traffic Conditions	EBL	A	10.0	38	B (16.2 sec)	B	19.7	13	C (33.9 sec)
	EBT	C	23.8	348		D	39.8	313	
	EBR	A	3.2	33		A	0.9	0	
	WBL	B	13.7	103		C	25.9	150	
	WBT	B	14.2	88		C	29.2	526	
	WBR	A	0.3	0		A	0.0	0	
	NBL/T	D	44.2	174		E	58.0	321	
	NBR	A	0.2	0		A	0.1	0	
	SBL	D	49.5	30		E	61.9	242	
	SBL/T	D	49.4	31		E	61.4	238	
Build (2021) Traffic Conditions	SBR	A	0.0	0	C (24.4 sec)	A	0.0	0	D (41.6 sec)
	EBL	B	18.0	166		D	40.9	129	
	EBT	C	34.2	350		D	39.2	280	
	EBR	A	9.2	76		A	4.8	36	
	WBL	C	22.1	132		C	27.5	157	
	WBT	C	26.6	85		D	44.4	493	
	WBR	A	0.3	0		A	0.0	0	
	NBL/T	D	53.6	210		E	70.1	373	
	NBR	A	0.2	0		A	0.1	0	
	SBL	D	54.9	171		E	71.8	343	
	SBL/T	D	55.0	174		E	71.0	342	
	SBR	A	0.1	0		A	0.2	0	

Capacity analysis indicates that the intersection currently operates at LOS B during the AM peak hour and at LOS C during the PM peak hour. Under no-build conditions, the intersection is expected to continue to operate at LOS B during the AM peak hour and at LOS C during the PM peak hour.

Under build conditions, the intersection is expected to operate at LOS C during the AM peak hour and at LOS D during the PM peak hour with all movements at LOS E or better.

No improvements are warranted or recommended at this intersection.

Table 5 summarizes the capacity analysis results for the signalized intersection of Garrisonville Road at Keystone Drive / Commercial Driveway, and the Synchro outputs are enclosed for reference.

Table 5
Level-of-Service Summary for Garrisonville Road at Keystone Drive / Commercial Driveway

CONDITION	LANE GROUP	AM PEAK HOUR				PM PEAK HOUR			
		Lane LOS	Lane Delay (sec)	Queue (ft)	Overall LOS (Delay)	Lane LOS	Lane Delay (sec)	Queue (ft)	Overall LOS (Delay)
Existing (2019) Traffic Conditions	EBL	A	5.0	2	A (9.0 sec)	A	5.7	4	B (12.4 sec)
	EBT	B	11.8	287		B	17.4	317	
	EBR	A	0.0	0		A	0.1	0	
	WBL	A	4.7	26		A	8.0	61	
	WBT/R	A	5.8	180		A	9.1	380	
	NBL/T	C	33.1	17		D	38.0	49	
	NBR	A	1.0	3		A	7.0	43	
	SBL/T/R	C	32.3	10		D	38.0	11	
No-Build (2021) Traffic Conditions	EBL	A	5.0	2	A (9.1 sec)	A	5.7	4	B (12.9 sec)
	EBT	B	12.1	313		B	18.1	365	
	EBR	A	0.0	0		A	0.1	0	
	WBL	A	4.8	30		A	9.5	75	
	WBT/R	A	5.8	200		A	9.1	409	
	NBL/T	C	34.9	21		D	40.2	65	
	NBR	A	2.0	8		A	6.8	48	
	SBL/T/R	C	33.0	10		D	40.0	12	
Build (2021) Traffic Conditions	EBL	A	5.0	2	A (9.0 sec)	A	5.3	4	B (12.7 sec)
	EBT	B	11.9	338		B	17.7	374	
	EBR	A	0.0	0		A	0.1	0	
	WBL	A	4.7	30		B	10.3	79	
	WBT/R	A	5.7	220		A	8.8	414	
	NBL/T	D	36.8	22		D	42.0	67	
	NBR	A	2.0	7		A	7.3	51	
	SBL/T/R	C	35.0	11		D	40.7	12	

Capacity analysis indicates that the intersection currently operates at LOS A during the AM peak hour and at LOS B during the PM peak hour. Under no-build conditions, the intersection is expected to continue to operate at LOS A during the AM peak hour and at LOS B during the PM peak hour.

Under build conditions, the intersection is expected to continue to operate at LOS A during the AM peak hour and at LOS B during the PM peak hour with all movements at LOS D or better.

No improvements are warranted or recommended at this intersection.

Recommendations

Based on the trip generation potential of the proposed Wawa store, the following improvements are recommended:

Garrisonville Road at Right-in Only Site Driveway

- Extend the existing westbound right-turn lane on Garrisonville Road to provide 100 feet of additional storage
- Construct site driveway with one ingress lane

Tech Parkway at Full-movement Site Driveway

- Construct site driveway with one ingress lane and one egress lane

We appreciate your attention to this matter. Please contact me at (804) 217-8560 if you have any questions about this report.

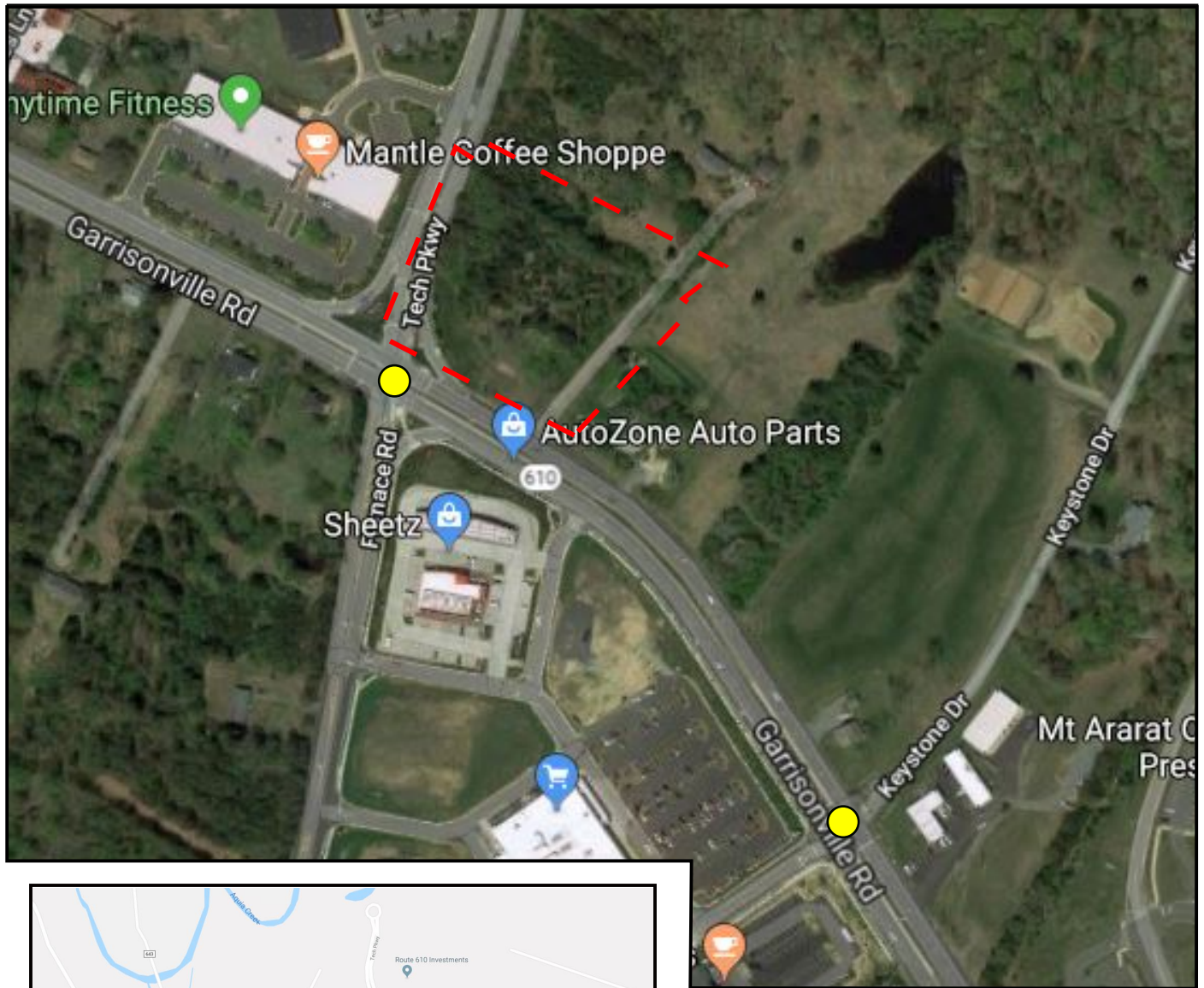
Sincerely yours,
Ramey Kemp & Associates, Inc.



Michael Bailey, P.E., PTOE
Project Manager

Enclosures: Figures, VDOT turn lane warrant diagrams, Traffic count data, Synchro outputs

Copy to: Mr. Joey Hess, Stafford County
Mr. David Beale, P.E., VDOT
Mr. Peter Hedrich, P.E., PTOE, VDOT
Ms. Margaret Niemann, VDOT
Mr. Ryan Yauger, P.E., Bohler Engineering



Inset



Overview



LEGEND



Study Intersection



Site Boundary



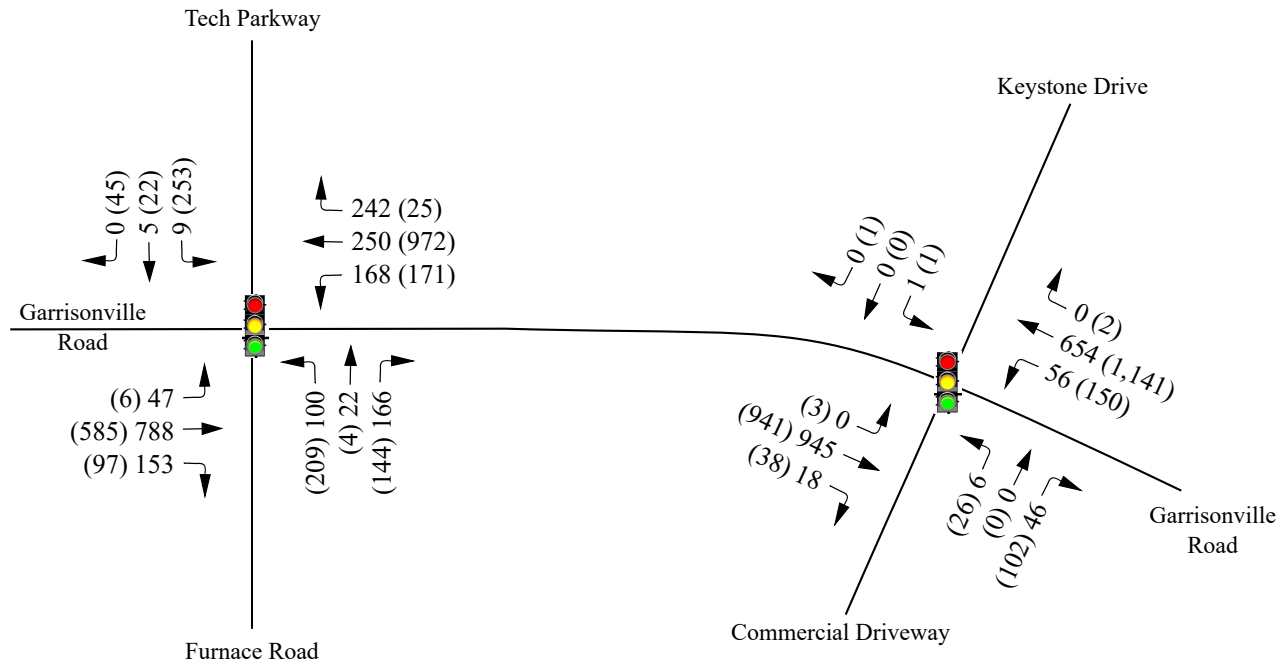
Wawa
Garrisonville Road
Stafford County, Virginia

Site Location and
Study Intersections

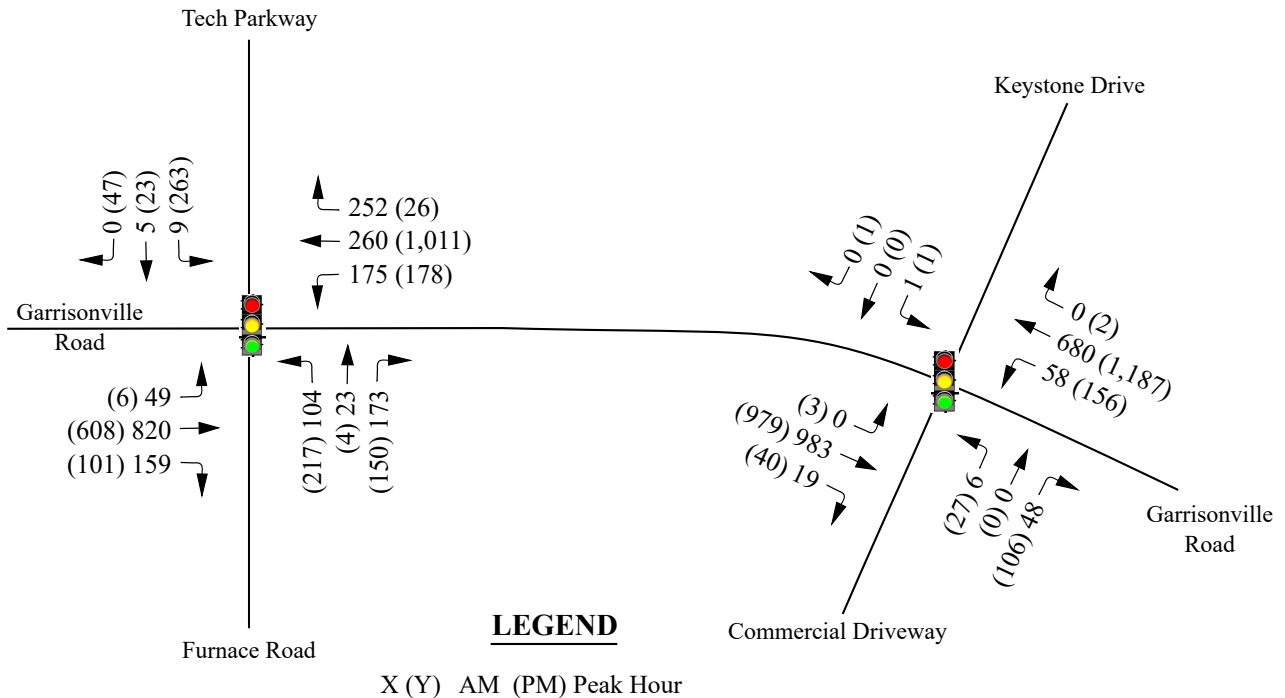
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Figure 1

Existing (2019) Traffic Volumes



Projected (2021) Traffic Volumes (Growth Only)



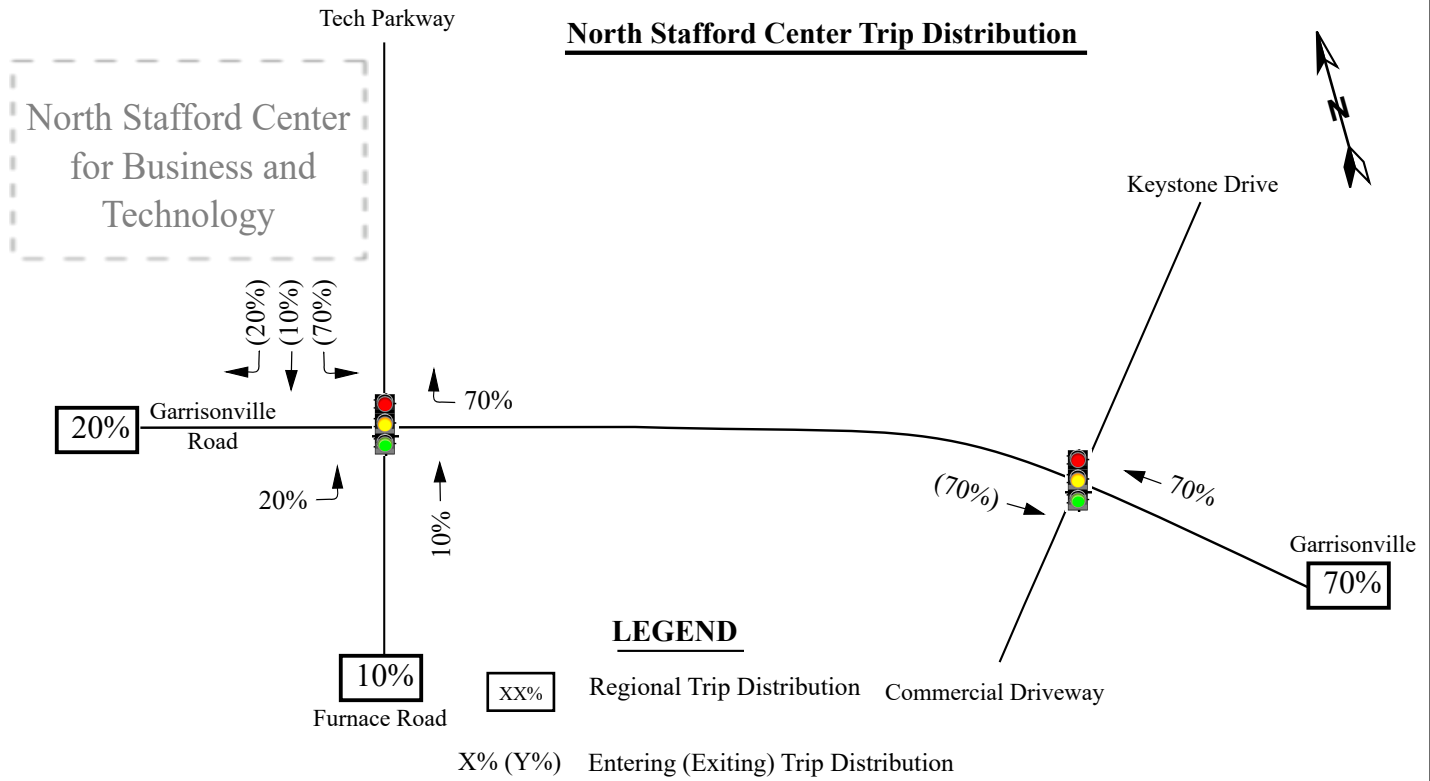
Wawa
Garrisonville Road
Stafford County, Virginia

Existing (2019) and
Projected (2021)
Peak Hour Traffic Volumes

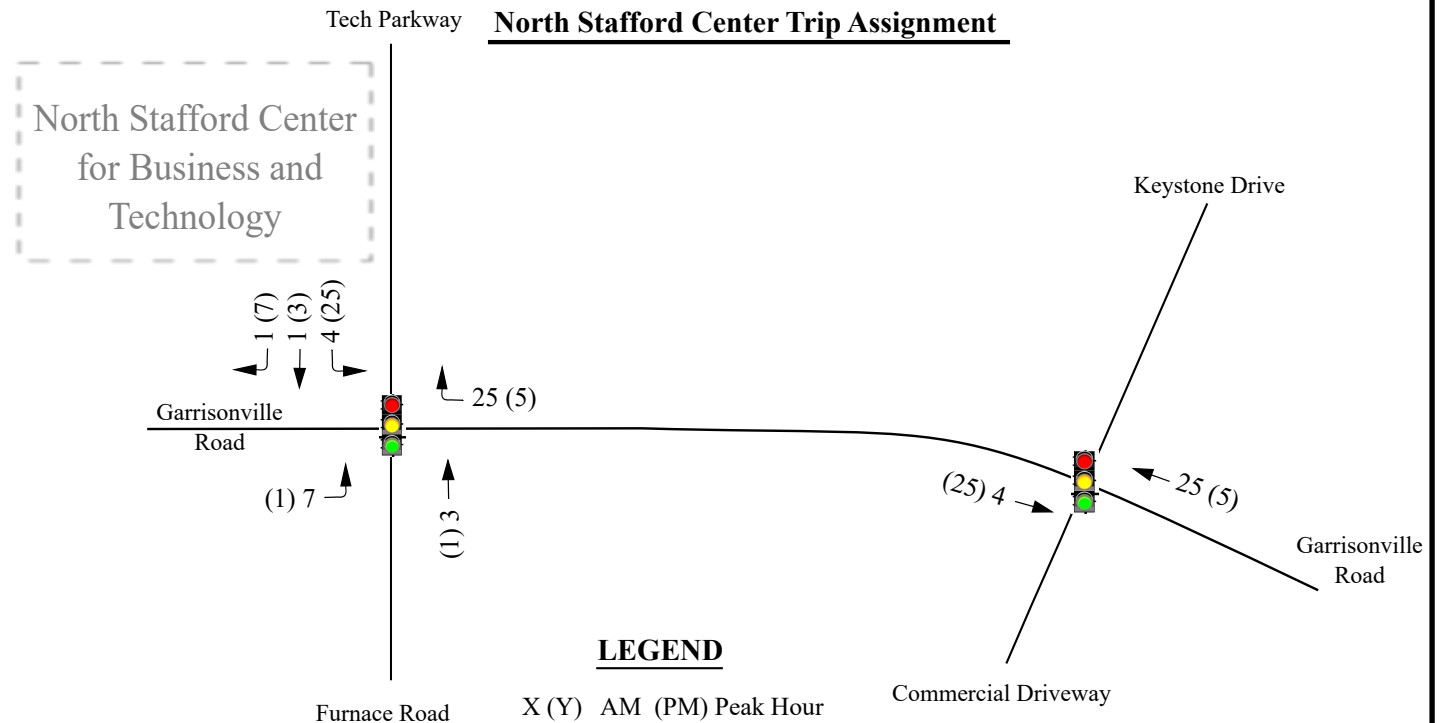
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Figure 3

North Stafford Center Trip Distribution



North Stafford Center Trip Assignment

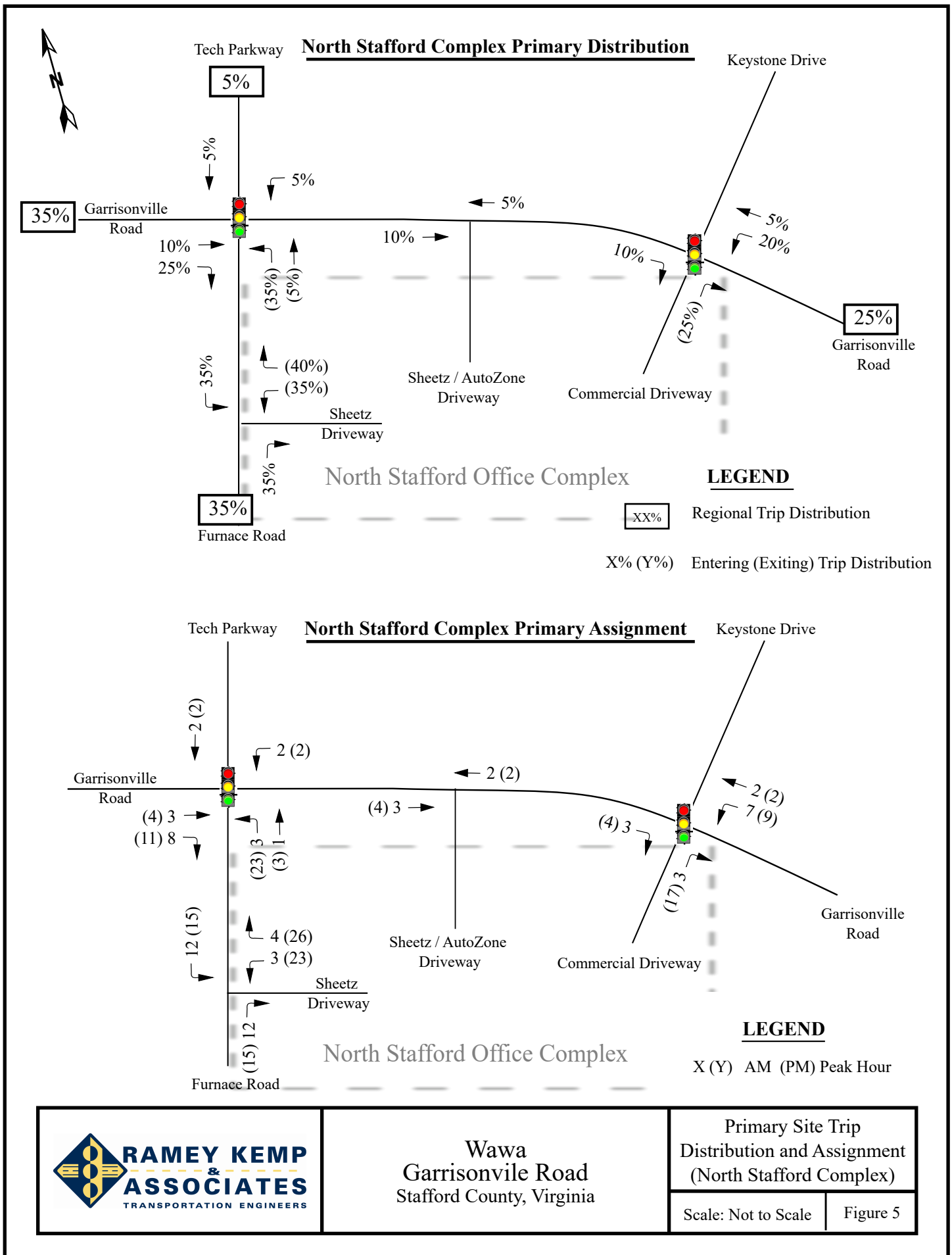


Wawa
Garrisonville Road
Stafford County, Virginia

Site Trip Distribution
and Assignment
(North Stafford Center)

Scale: Not to Scale

Figure 4





Tech Parkway

North Stafford Complex Pass-By Distribution

Keystone Drive

Garrisonville
Road
(-30%) -40%
(30%) 40%

← -10% (-10%)
↘ 10% (10%)

↘ 50% (40%)

↘ (10%) 10%
↘ (30%) 40%

↘ 50% (40%)
Sheetz
Driveway

Sheetz / AutoZone
Driveway

(-15%) -20%
(15%) 20%

Commercial Driveway

← -30% (-45%)
↘ 30% (45%)

Garrisonville
Road

(45%) 30%
(15%) 20%

North Stafford Office Complex

Furnace Road

X% (Y%)

LEGEND

AM (PM) Trip Distribution

North Stafford Complex Pass-By Assignment

Tech Parkway

Keystone Drive

Garrisonville
Road

← -1 (-2)
↘ 1 (2)

(-6) -2
(6) 2

↘ 3 (8)

↘ (2) 1
↘ (6) 2

↘ 3 (8)
Sheetz
Driveway

Sheetz / AutoZone
Driveway

(-3) -1
(3) 1

Commercial Driveway

← -1 (-10)
↘ 1 (10)

Garrisonville
Road

(10) 1
(3) 1

North Stafford Office Complex

Furnace Road

X (Y) AM (PM) Peak Hour

LEGEND



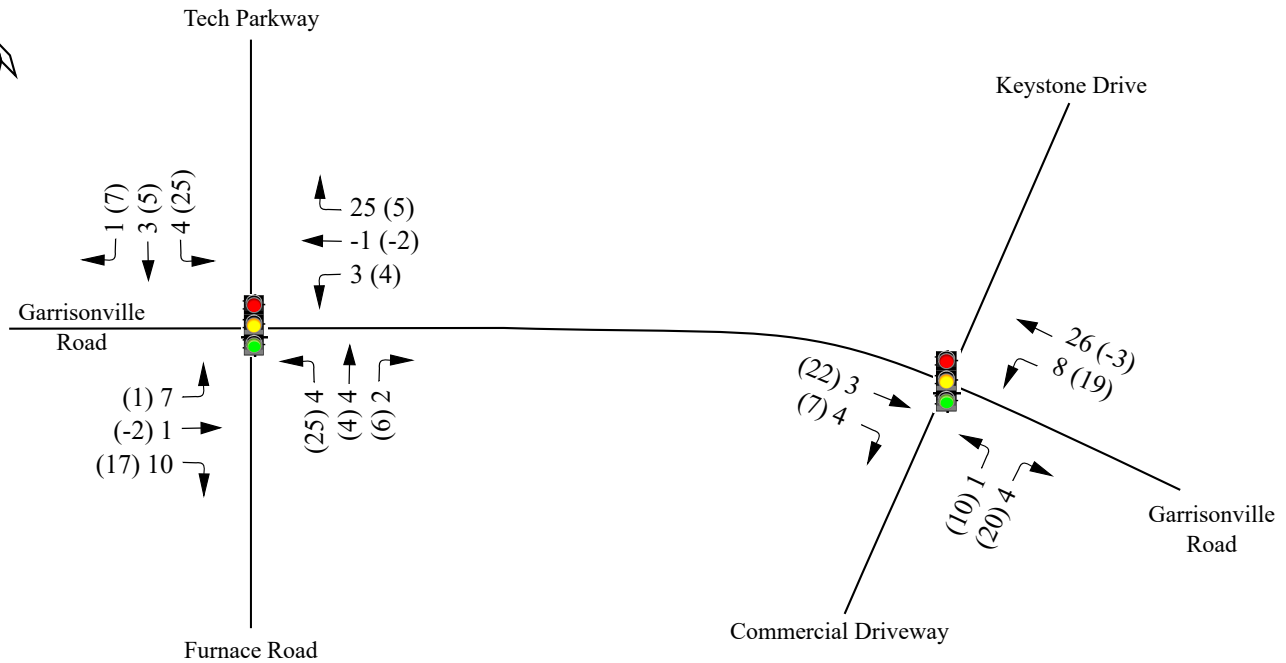
Wawa
Garrisonville Road
Stafford County, Virginia

Pass-By Site Trip
Distribution and Assignment
(North Stafford Complex)

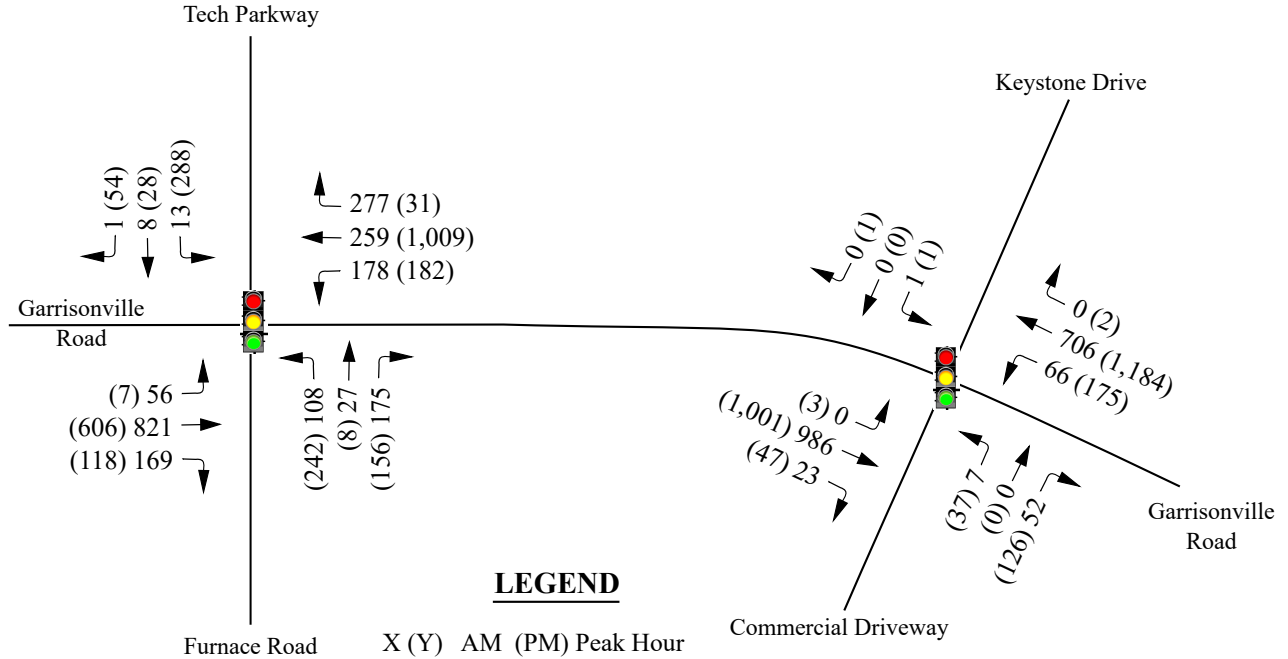
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Figure 6

Total Approved Development Trips



No-Build (2021) Traffic Volumes

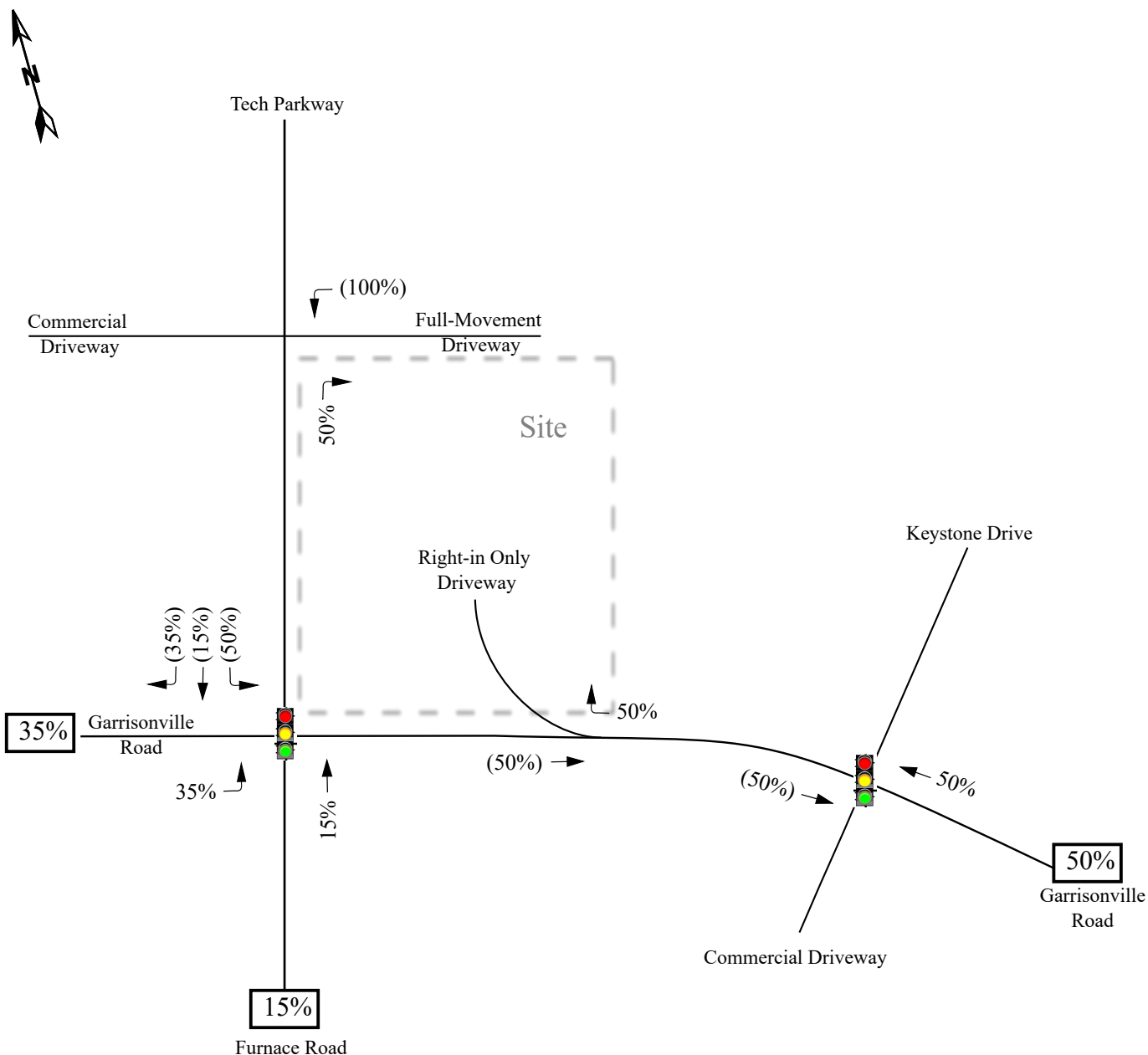


Wawa
Garrisonville Road
Stafford County, Virginia

Total Approved Development
Trips and No-Build (2021)
Peak Hour Traffic Volumes

Scale: Not to Scale

Figure 7



LEGEND



Regional Trip Distribution

X% (Y%) Entering (Exiting) Trip Distribution

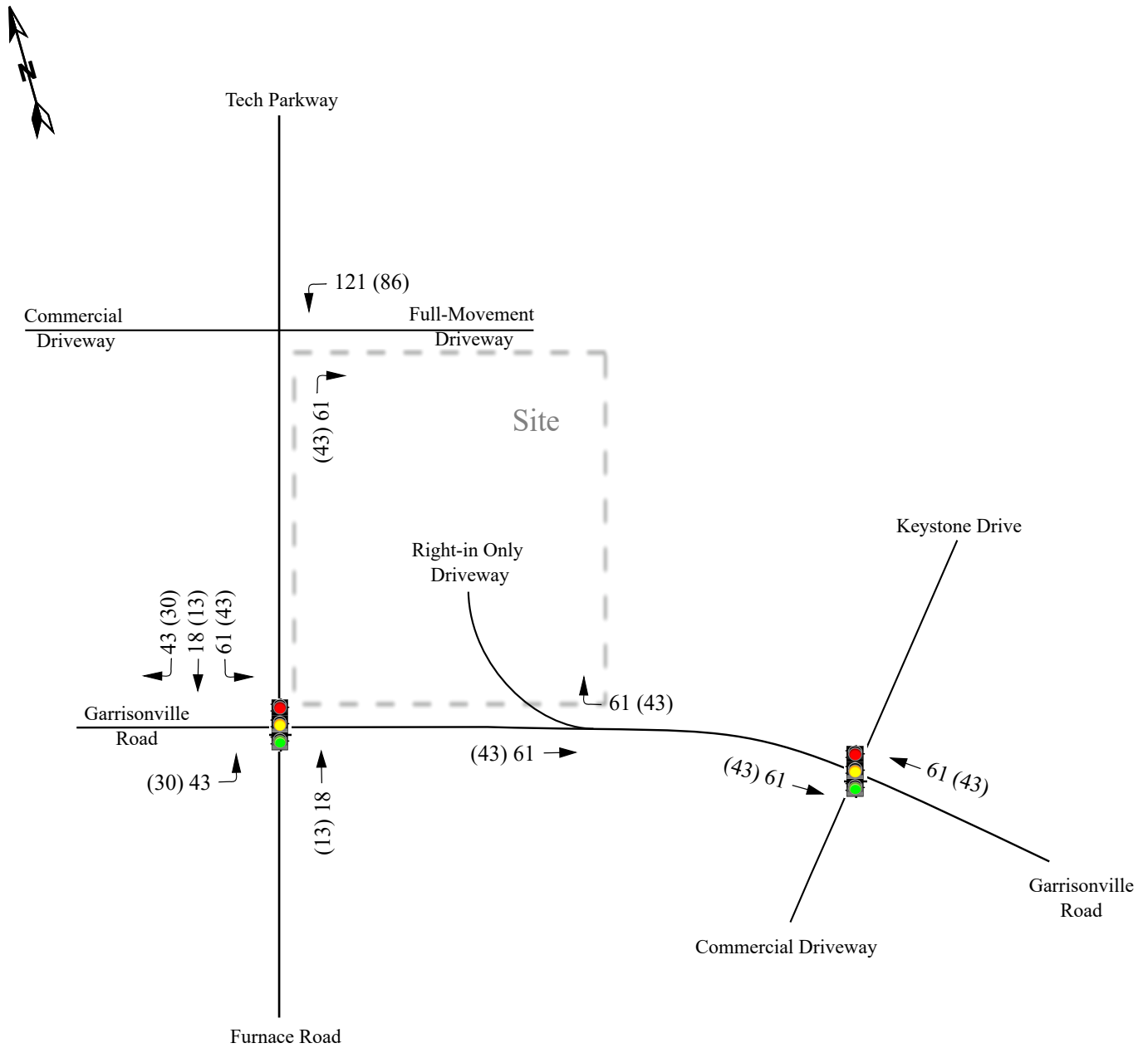


Wawa
Garrisonville Road
Stafford County, Virginia

Primary
Site Trip Distribution

Scale: Not to Scale

Figure 8



LEGEND

X (Y) AM (PM) Peak Hour

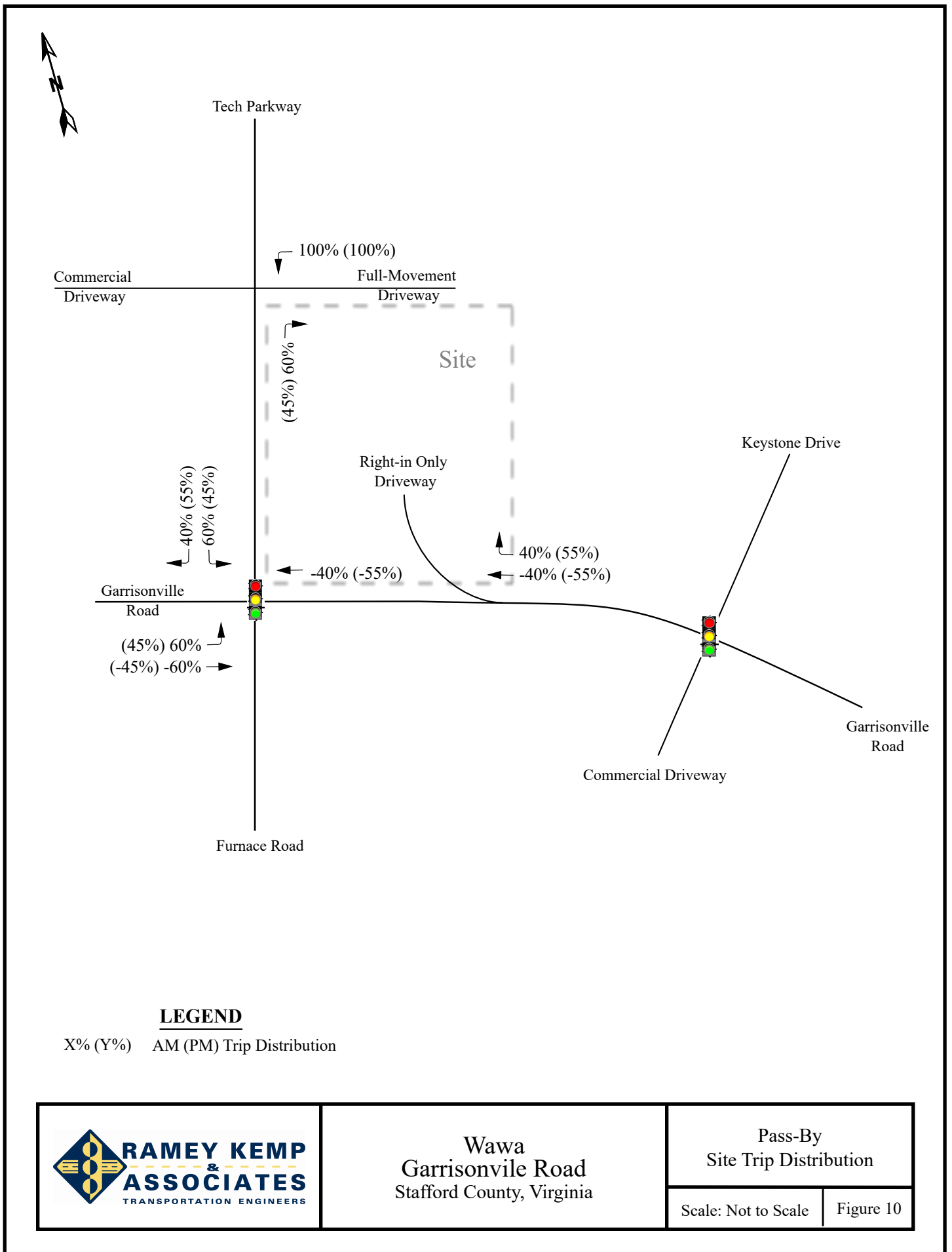


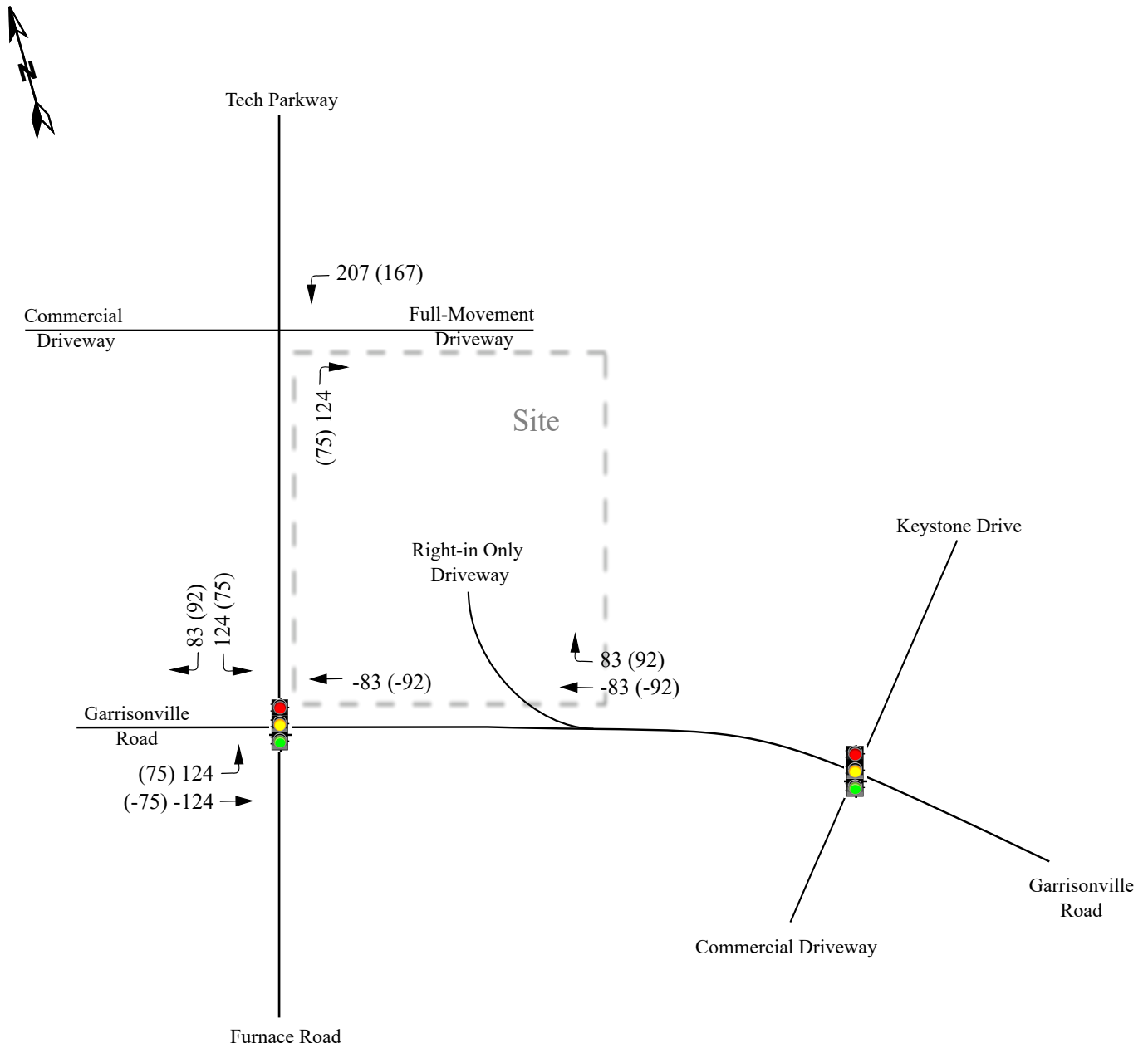
Wawa
Garrisonville Road
Stafford County, Virginia

Primary
Site Trip Assignment

Scale: Not to Scale

Figure 9



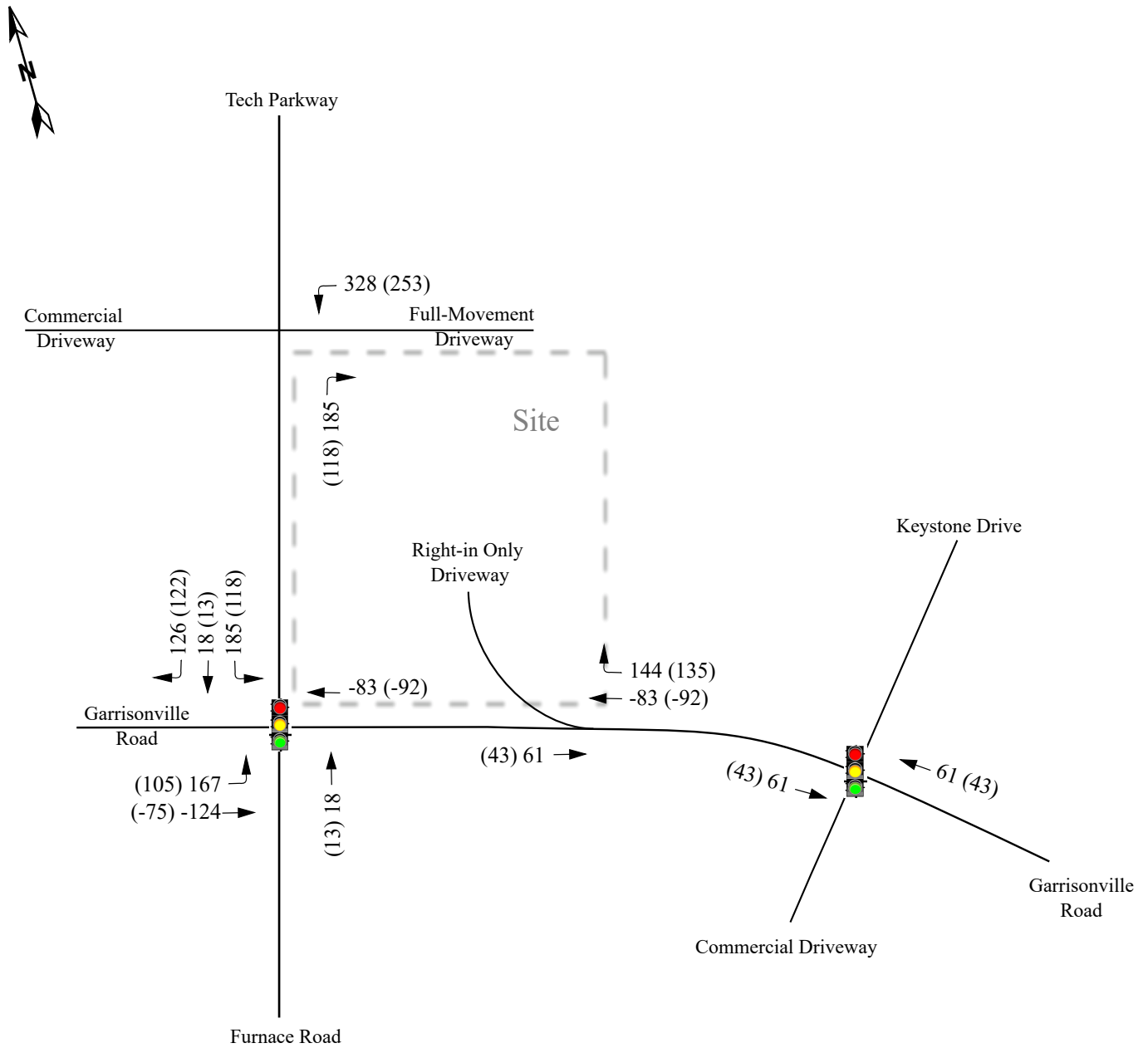


Wawa
Garrisonville Road
Stafford County, Virginia

Pass-By
Site Trip Assignment

Scale: Not to Scale

Figure 11

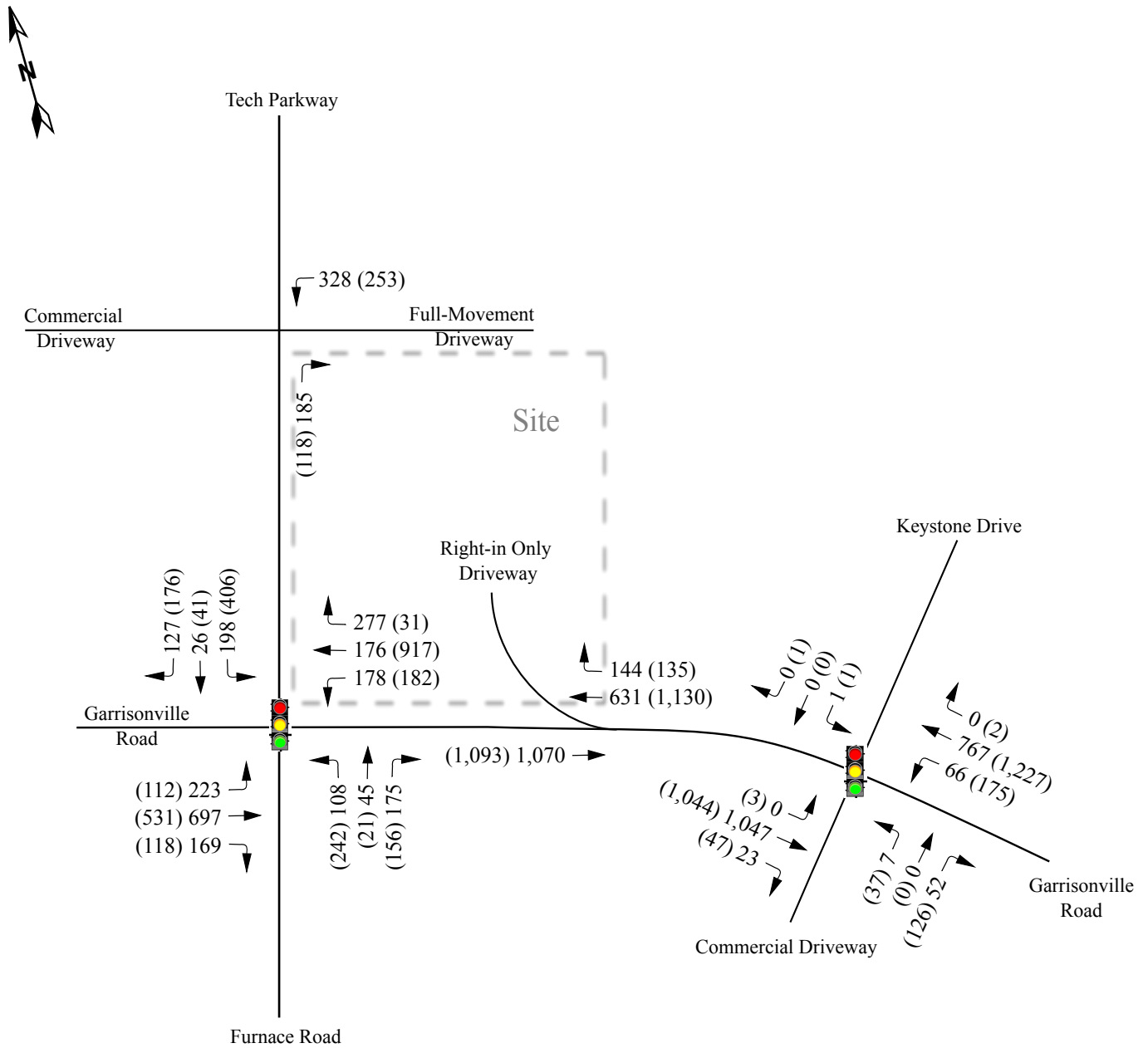


Wawa
Garrisonville Road
Stafford County, Virginia

Total Site Trips

Scale: Not to Scale

Figure 12



LEGEND

X (Y) AM (PM) Peak Hour

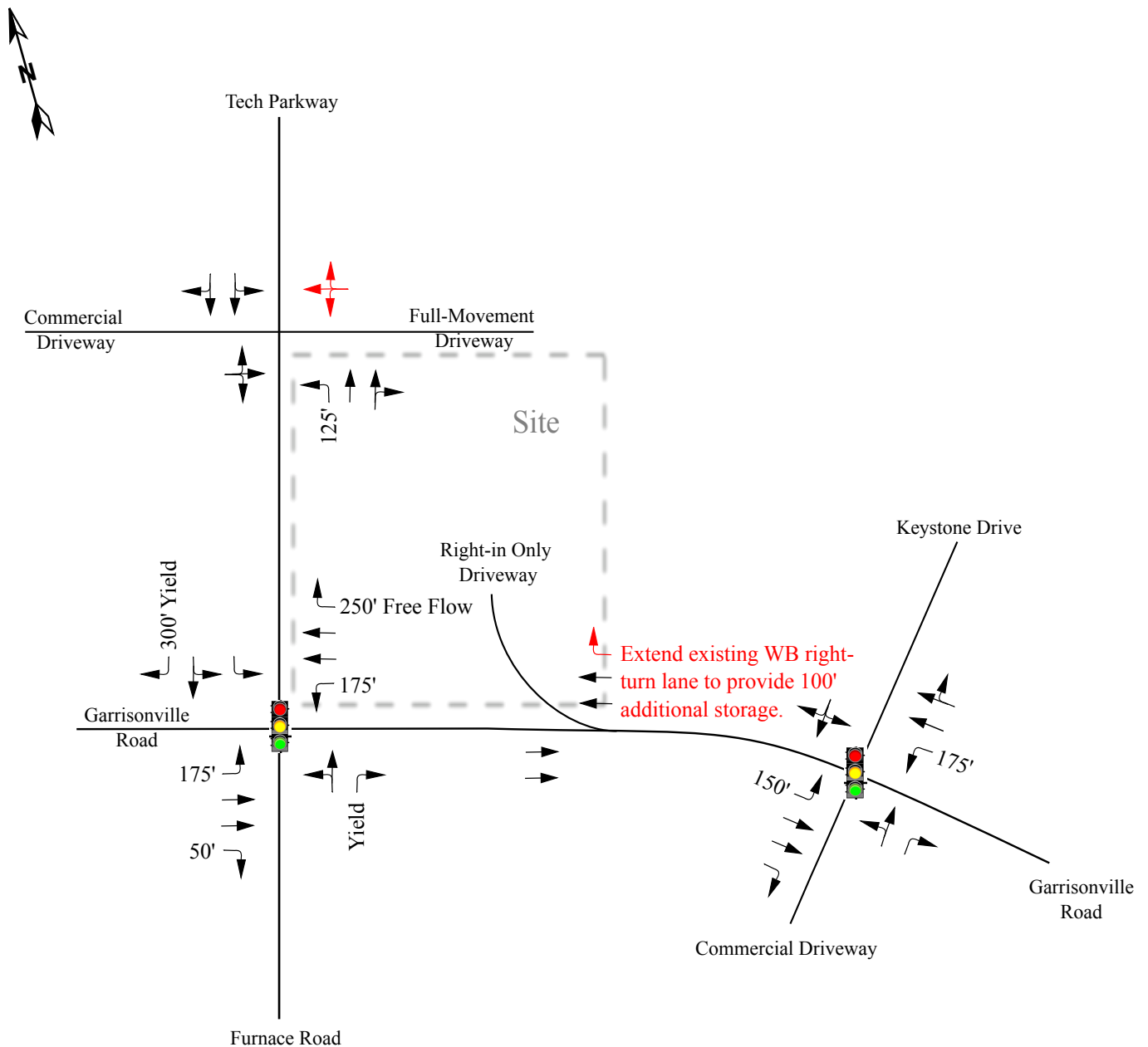


Wawa
Garrisonville Road
Stafford County, Virginia

Build (2021) Peak Hour
Traffic Volumes

Scale: Not to Scale

Figure 13



LEGEND

- X' Storage (In Feet)
-  Existing Traffic Signal
-  Existing Lane
-  Recommended Lane

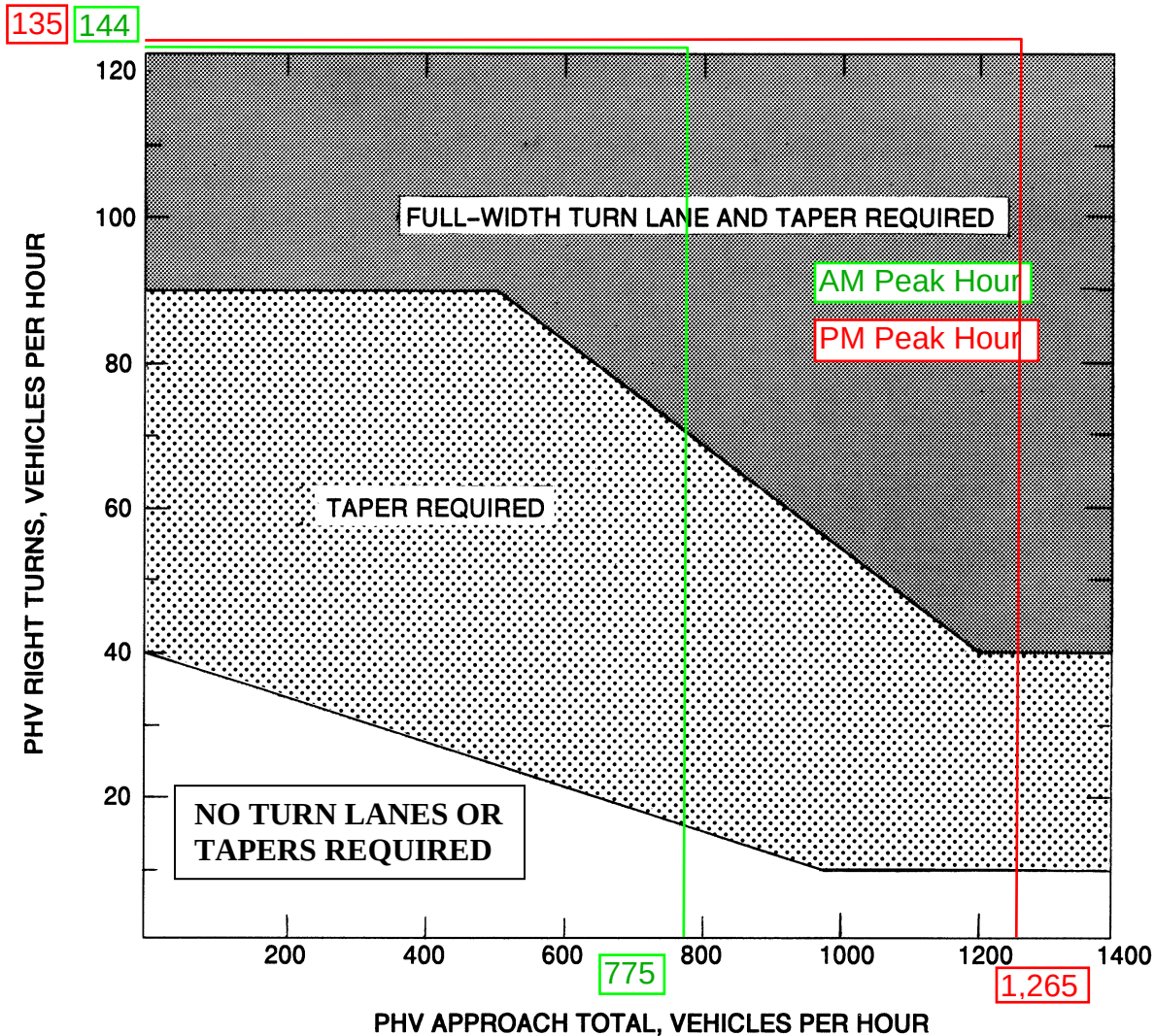


Wawa
Garrisonville Road
Stafford County, Virginia

Recommended Lane
Configuration

Scale: Not to Scale

Figure 14



Appropriate Radius required at all Intersections and Entrances (Commercial or Private).

LEGEND

PHV- - Peak Hour Volume (also Design Hourly Volume equivalent)

Adjustment for Right Turns

If PHV is not known use formula: $PHV = ADT \times K \times D$

K = the percent of AADT occurring in the peak hour

D = the percent of traffic in the peak direction of flow

Note: An average of 11% for K x D will suffice.

When right turn facilities are warranted, see Figure 3-1 for design criteria.*

FIGURE 3-27 WARRANTS FOR RIGHT TURN TREATMENT (4-LANE HIGHWAY)

Peggy Malone & Associates

(888) 247-8602

File Name : 2-Tech Pkwy_Furnace Rd & Garrisonville Rd AM

Site Code :

Start Date : 3/28/2019

Page No : 1

Groups Printed- Car

	Tech Parkway Southbound					Garrisonville Rd Westbound					Furnace Rd Northbound					Garrisonville Rd Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	1	1	2	0	4	36	52	27	2	117	15	7	12	0	34	22	206	12	0	240	395
07:15 AM	0	0	2	0	2	44	72	24	0	140	26	2	15	0	43	27	207	10	0	244	429
07:30 AM	0	3	2	0	5	71	53	34	0	158	40	7	23	0	70	39	200	13	0	252	485
07:45 AM	0	0	2	0	2	61	56	59	0	176	48	5	28	0	81	48	163	15	0	226	485
Total	1	4	8	0	13	212	233	144	2	591	129	21	78	0	228	136	776	50	0	962	1794
08:00 AM	0	2	2	0	4	66	59	39	0	164	44	8	26	0	78	32	193	9	0	234	480
08:15 AM	0	3	6	0	9	50	72	37	0	159	33	8	14	0	55	16	172	13	0	201	424
08:30 AM	0	4	4	0	8	43	67	43	0	153	59	1	13	0	73	41	169	5	0	215	449
08:45 AM	0	3	10	0	13	33	79	38	0	150	79	9	37	0	125	49	150	7	0	206	494
Total	0	12	22	0	34	192	277	157	0	626	215	26	90	0	331	138	684	34	0	856	1847
Grand Total	1	16	30	0	47	404	510	301	2	1217	344	47	168	0	559	274	1460	84	0	1818	3641
Apprch %	2.1	34	63.8	0		33.2	41.9	24.7	0.2		61.5	8.4	30.1	0		15.1	80.3	4.6	0		
Total %	0	0.4	0.8	0	1.3	11.1	14	8.3	0.1	33.4	9.4	1.3	4.6	0	15.4	7.5	40.1	2.3	0	49.9	

	Tech Parkway Southbound				Garrisonville Rd Westbound				Furnace Rd Northbound				Garrisonville Rd Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	0	2	2	44	72	24	140	26	2	15	43	27	207	10	244	429
07:30 AM	0	3	2	5	71	53	34	158	40	7	23	70	39	200	13	252	485
07:45 AM	0	0	2	2	61	56	59	176	48	5	28	81	48	163	15	226	485
08:00 AM	0	2	2	4	66	59	39	164	44	8	26	78	32	193	9	234	480
Total Volume	0	5	8	13	242	240	156	638	158	22	92	272	146	763	47	956	1879
% App. Total	0	38.5	61.5		37.9	37.6	24.5		58.1	8.1	33.8		15.3	79.8	4.9		
PHF	.000	.417	1.00	.650	.852	.833	.661	.906	.823	.688	.821	.840	.760	.921	.783	.948	.969

Peggy Malone & Associates

(888) 247-8602

File Name : 2-Tech Pkwy_Furnace Rd & Garrisonville Rd AM

Site Code :

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Groups Printed- Truck

	Tech Parkway Southbound					Garrisonville Rd Westbound					Furnace Rd Northbound					Garrisonville Rd Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	1	4	0	0	5	0	0	0	0	0	0	2	1	0	3	8
07:15 AM	0	0	0	0	0	0	1	3	0	4	2	0	1	0	3	1	1	0	0	2	9
07:30 AM	0	0	0	0	0	0	4	3	0	7	0	0	0	0	0	4	1	0	0	5	12
07:45 AM	0	0	1	0	1	0	3	4	0	7	2	0	5	0	7	2	1	0	0	3	18
Total	0	0	1	0	1	1	12	10	0	23	4	0	6	0	10	7	5	1	0	13	47
08:00 AM	0	0	0	0	0	0	2	2	0	4	4	0	2	0	6	0	5	0	0	5	15
08:15 AM	0	0	0	0	0	0	4	3	0	7	1	0	1	0	2	2	2	0	0	4	13
08:30 AM	0	0	0	0	0	0	3	7	0	10	7	0	1	0	8	3	4	0	0	7	25
08:45 AM	0	0	0	0	0	0	4	0	0	4	9	0	0	0	9	1	5	0	0	6	19
Total	0	0	0	0	0	0	13	12	0	25	21	0	4	0	25	6	16	0	0	22	72
Grand Total	0	0	1	0	1	1	25	22	0	48	25	0	10	0	35	13	21	1	0	35	119
Apprch %	0	0	100	0		2.1	52.1	45.8	0		71.4	0	28.6	0		37.1	60	2.9	0		
Total %	0	0	0.8	0	0.8	0.8	21	18.5	0	40.3	21	0	8.4	0	29.4	10.9	17.6	0.8	0	29.4	

	Tech Parkway Southbound					Garrisonville Rd Westbound					Furnace Rd Northbound					Garrisonville Rd Eastbound					
Start Time	Right	Thru	Left	App. Total		Right	Thru	Left	App. Total		Right	Thru	Left	App. Total		Right	Thru	Left	App. Total		Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	0	0	0	0		0	2	2	4		4	0	2	6		0	5	0	5		15
08:15 AM	0	0	0	0		0	4	3	7		1	0	1	2		2	2	0	4		13
08:30 AM	0	0	0	0		0	3	7	10		7	0	1	8		3	4	0	7		25
08:45 AM	0	0	0	0		0	4	0	4		9	0	0	9		1	5	0	6		19
Total Volume	0	0	0	0		0	13	12	25		21	0	4	25		6	16	0	22		72
% App. Total	0	0	0			0	52	48			84	0	16			27.3	72.7	0			
PHF	.000	.000	.000	.000		.000	.813	.429	.625		.583	.000	.500	.694		.500	.800	.000	.786		.720

Peggy Malone & Associates

(888) 247-8602

File Name : 2-Tech Pkwy_Furnace Rd & Garrisonville Rd AM

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Groups Printed- Combined

	Tech Parkway Southbound					Garrisonville Rd Westbound					Furnace Rd Northbound					Garrisonville Rd Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	1	2	0	3	37	56	27	2	122	15	7	12	0	34	22	208	13	0	243	402
07:15 AM	0	0	2	0	2	44	73	27	0	144	28	2	16	0	46	28	208	10	0	246	438
07:30 AM	0	3	2	0	5	71	57	37	0	165	40	7	23	0	70	43	201	13	0	257	497
07:45 AM	0	0	3	0	3	61	59	63	0	183	50	5	33	0	88	50	164	15	0	229	503
Total	0	4	9	0	13	213	245	154	2	614	133	21	84	0	238	143	781	51	0	975	1840
08:00 AM	0	2	2	0	4	66	61	41	0	168	48	8	28	0	84	32	198	9	0	239	495
08:15 AM	0	3	6	0	9	50	76	40	0	166	34	8	15	0	57	18	174	13	0	205	437
08:30 AM	0	4	4	0	8	43	70	50	0	163	66	1	14	0	81	44	173	5	0	222	474
08:45 AM	0	3	10	0	13	33	83	38	0	154	88	9	37	0	134	50	155	7	0	212	513
Total	0	12	22	0	34	192	290	169	0	651	236	26	94	0	356	144	700	34	0	878	1919
Grand Total	0	16	31	0	47	405	535	323	2	1265	369	47	178	0	594	287	1481	85	0	1853	3759
Apprch %	0	34	66	0		32	42.3	25.5	0.2		62.1	7.9	30	0		15.5	79.9	4.6	0		
Total %	0	0.4	0.8	0	1.3	10.8	14.2	8.6	0.1	33.7	9.8	1.3	4.7	0	15.8	7.6	39.4	2.3	0	49.3	

	Tech Parkway Southbound				Garrisonville Rd Westbound				Furnace Rd Northbound				Garrisonville Rd Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	0	2	2	44	73	27	144	28	2	16	46	28	208	10	246	438
07:30 AM	0	3	2	5	71	57	37	165	40	7	23	70	43	201	13	257	497
07:45 AM	0	0	3	3	61	59	63	183	50	5	33	88	50	164	15	229	503
08:00 AM	0	2	2	4	66	61	41	168	48	8	28	84	32	198	9	239	495
Total Volume	0	5	9	14	242	250	168	660	166	22	100	288	153	771	47	971	1933
% App. Total	0	35.7	64.3		36.7	37.9	25.5		57.6	7.6	34.7		15.8	79.4	4.8		
PHF	.000	.417	.750	.700	.852	.856	.667	.902	.830	.688	.758	.818	.765	.927	.783	.945	.961

Peggy Malone & Associates

(888) 247-8602

File Name : 2-Tech Pkwy_Furnace Rd & Garrisonville Rd PM

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Groups Printed- Car

	Tech Parkway Southbound					Garrisonville Rd Westbound					Furnace Rd Northbound					Garrisonville Rd Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	11	8	75	0	94	5	208	29	0	242	47	2	62	0	111	24	113	2	0	139	586
04:15 PM	10	5	62	0	77	8	242	38	0	288	34	0	54	0	88	13	149	0	0	162	615
04:30 PM	14	5	69	0	88	9	216	45	0	270	19	1	41	0	61	22	143	4	0	169	588
04:45 PM	9	4	47	0	60	3	241	54	0	298	37	1	49	0	87	37	166	0	0	203	648
Total	44	22	253	0	319	25	907	166	0	1098	137	4	206	0	347	96	571	6	0	673	2437
05:00 PM	7	1	35	0	43	7	223	37	0	267	41	0	51	0	92	15	147	0	0	162	564
05:15 PM	4	2	27	0	33	5	254	56	0	315	28	0	38	0	66	10	178	2	0	190	604
05:30 PM	2	3	32	0	37	0	236	66	0	302	17	0	30	0	47	28	150	0	0	178	564
05:45 PM	4	3	9	0	16	5	222	63	0	290	16	3	39	0	58	36	163	2	0	201	565
Total	17	9	103	0	129	17	935	222	0	1174	102	3	158	0	263	89	638	4	0	731	2297
Grand Total	61	31	356	0	448	42	1842	388	0	2272	239	7	364	0	610	185	1209	10	0	1404	4734
Apprch %	13.6	6.9	79.5	0		1.8	81.1	17.1	0		39.2	1.1	59.7	0		13.2	86.1	0.7	0		
Total %	1.3	0.7	7.5	0	9.5	0.9	38.9	8.2	0	48	5	0.1	7.7	0	12.9	3.9	25.5	0.2	0	29.7	

	Tech Parkway Southbound				Garrisonville Rd Westbound				Furnace Rd Northbound				Garrisonville Rd Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	11	8	75	94	5	208	29	242	47	2	62	111	24	113	2	139	586
04:15 PM	10	5	62	77	8	242	38	288	34	0	54	88	13	149	0	162	615
04:30 PM	14	5	69	88	9	216	45	270	19	1	41	61	22	143	4	169	588
04:45 PM	9	4	47	60	3	241	54	298	37	1	49	87	37	166	0	203	648
Total Volume	44	22	253	319	25	907	166	1098	137	4	206	347	96	571	6	673	2437
% App. Total	13.8	6.9	79.3		2.3	82.6	15.1		39.5	1.2	59.4		14.3	84.8	0.9		
PHF	.786	.688	.843	.848	.694	.937	.769	.921	.729	.500	.831	.782	.649	.860	.375	.829	.940

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(888) 247-8602

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Groups Printed- Truck

	Tech Parkway Southbound					Garrisonville Rd Westbound					Furnace Rd Northbound					Garrisonville Rd Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	4	3	0	7	7	0	3	0	10	1	2	0	0	3	20
04:15 PM	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	0	2	0	0	2	8
04:30 PM	1	0	0	0	1	0	5	0	0	5	0	0	0	0	0	0	6	0	0	6	12
04:45 PM	0	0	0	0	0	0	5	2	0	7	0	0	0	0	0	0	4	0	0	4	11
Total	1	0	0	0	1	0	20	5	0	25	7	0	3	0	10	1	14	0	0	15	51
05:00 PM	0	0	0	0	0	0	2	0	0	2	0	0	1	0	1	0	4	0	0	4	7
05:15 PM	0	0	0	0	0	0	3	1	0	4	0	0	0	0	0	0	2	0	0	2	6
05:30 PM	0	0	0	0	0	0	1	0	0	1	0	0	1	0	1	0	1	0	0	1	3
05:45 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	3	0	0	3	5
Total	0	0	0	0	0	0	8	1	0	9	0	0	2	0	2	0	10	0	0	10	21
Grand Total	1	0	0	0	1	0	28	6	0	34	7	0	5	0	12	1	24	0	0	25	72
Apprch %	100	0	0	0		0	82.4	17.6	0		58.3	0	41.7	0		4	96	0	0		
Total %	1.4	0	0	0	1.4	0	38.9	8.3	0	47.2	9.7	0	6.9	0	16.7	1.4	33.3	0	0	34.7	

	Tech Parkway Southbound				Garrisonville Rd Westbound				Furnace Rd Northbound				Garrisonville Rd Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	0	0	0	4	3	7	7	0	3	10	1	2	0	3	20
04:15 PM	0	0	0	0	0	6	0	6	0	0	0	0	0	2	0	2	8
04:30 PM	1	0	0	1	0	5	0	5	0	0	0	0	0	6	0	6	12
04:45 PM	0	0	0	0	0	5	2	7	0	0	0	0	0	4	0	4	11
Total Volume	1	0	0	1	0	20	5	25	7	0	3	10	1	14	0	15	51
% App. Total	100	0	0		0	80	20		70	0	30		6.7	93.3	0		
PHF	.250	.000	.000	.250	.000	.833	.417	.893	.250	.000	.250	.250	.250	.583	.000	.625	.638

Peggy Malone & Associates

(888) 247-8602

File Name : 2-Tech Pkwy_Furnace Rd & Garrisonville Rd PM

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Groups Printed- Combined

	Tech Parkway Southbound					Garrisonville Rd Westbound					Furnace Rd Northbound					Garrisonville Rd Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	11	8	75	0	94	5	212	32	0	249	54	2	65	0	121	25	115	2	0	142	606
04:15 PM	10	5	62	0	77	8	248	38	0	294	34	0	54	0	88	13	151	0	0	164	623
04:30 PM	15	5	69	0	89	9	221	45	0	275	19	1	41	0	61	22	149	4	0	175	600
04:45 PM	9	4	47	0	60	3	246	56	0	305	37	1	49	0	87	37	170	0	0	207	659
Total	45	22	253	0	320	25	927	171	0	1123	144	4	209	0	357	97	585	6	0	688	2488
05:00 PM	7	1	35	0	43	7	225	37	0	269	41	0	52	0	93	15	151	0	0	166	571
05:15 PM	4	2	27	0	33	5	257	57	0	319	28	0	38	0	66	10	180	2	0	192	610
05:30 PM	2	3	32	0	37	0	237	66	0	303	17	0	31	0	48	28	151	0	0	179	567
05:45 PM	4	3	9	0	16	5	224	63	0	292	16	3	39	0	58	36	166	2	0	204	570
Total	17	9	103	0	129	17	943	223	0	1183	102	3	160	0	265	89	648	4	0	741	2318
Grand Total	62	31	356	0	449	42	1870	394	0	2306	246	7	369	0	622	186	1233	10	0	1429	4806
Apprch %	13.8	6.9	79.3	0		1.8	81.1	17.1	0		39.5	1.1	59.3	0		13	86.3	0.7	0		
Total %	1.3	0.6	7.4	0	9.3	0.9	38.9	8.2	0	48	5.1	0.1	7.7	0	12.9	3.9	25.7	0.2	0	29.7	

	Tech Parkway Southbound				Garrisonville Rd Westbound				Furnace Rd Northbound				Garrisonville Rd Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	11	8	75	94	5	212	32	249	54	2	65	121	25	115	2	142	606
04:15 PM	10	5	62	77	8	248	38	294	34	0	54	88	13	151	0	164	623
04:30 PM	15	5	69	89	9	221	45	275	19	1	41	61	22	149	4	175	600
04:45 PM	9	4	47	60	3	246	56	305	37	1	49	87	37	170	0	207	659
Total Volume	45	22	253	320	25	927	171	1123	144	4	209	357	97	585	6	688	2488
% App. Total	14.1	6.9	79.1		2.2	82.5	15.2		40.3	1.1	58.5		14.1	85	0.9		
PHF	.750	.688	.843	.851	.694	.934	.763	.920	.667	.500	.804	.738	.655	.860	.375	.831	.944

Peggy Malone & Associates

(888) 247-8602

File Name : 1-Keystone Dr_Stafford Complex & Garrisonville Rd AM
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Groups Printed- Car

	Keystone Dr Southbound					Garrisonville Rd Westbound					Stafford Complex Northbound					Garrisonville Rd Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	123	6	0	129	1	0	0	0	1	3	222	0	0	225	355
07:15 AM	0	0	1	0	1	0	134	7	0	141	4	0	0	0	4	1	231	0	0	232	378
07:30 AM	0	0	0	0	0	1	163	6	0	170	13	0	0	0	13	2	236	1	0	239	422
07:45 AM	0	0	2	0	2	0	174	15	0	189	7	0	1	0	8	4	216	0	0	220	419
Total	0	0	3	0	3	1	594	34	0	629	25	0	1	0	26	10	905	1	0	916	1574
08:00 AM	0	0	1	0	1	0	167	5	0	172	13	0	0	0	13	3	229	0	0	232	418
08:15 AM	0	0	0	0	0	0	154	11	0	165	8	0	1	0	9	7	222	0	0	229	403
08:30 AM	0	0	0	0	0	0	156	12	0	168	13	0	2	0	15	7	220	0	0	227	410
08:45 AM	0	0	0	0	0	0	148	17	0	165	5	0	3	0	8	1	241	0	0	242	415
Total	0	0	1	0	1	0	625	45	0	670	39	0	6	0	45	18	912	0	0	930	1646
Grand Total	0	0	4	0	4	1	1219	79	0	1299	64	0	7	0	71	28	1817	1	0	1846	3220
Apprch %	0	0	100	0		0.1	93.8	6.1	0		90.1	0	9.9	0		1.5	98.4	0.1	0		
Total %	0	0	0.1	0	0.1	0	37.9	2.5	0	40.3	2	0	0.2	0	2.2	0.9	56.4	0	0	57.3	

	Keystone Dr Southbound				Garrisonville Rd Westbound				Stafford Complex Northbound				Garrisonville Rd Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	0	0	0	1	163	6	170	13	0	0	13	2	236	1	239	422
07:45 AM	0	0	2	2	0	174	15	189	7	0	1	8	4	216	0	220	419
08:00 AM	0	0	1	1	0	167	5	172	13	0	0	13	3	229	0	232	418
08:15 AM	0	0	0	0	0	154	11	165	8	0	1	9	7	222	0	229	403
Total Volume	0	0	3	3	1	658	37	696	41	0	2	43	16	903	1	920	1662
% App. Total	0	0	100		0.1	94.5	5.3		95.3	0	4.7		1.7	98.2	0.1		
PHF	.000	.000	.375	.375	.250	.945	.617	.921	.788	.000	.500	.827	.571	.957	.250	.962	.985

Peggy Malone & Associates

(888) 247-8602

File Name : 1-Keystone Dr_Stafford Complex & Garrisonville Rd AM
 Site Code :
 Start Date : 3/28/2019
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Groups Printed- Truck

	Keystone Dr Southbound					Garrisonville Rd Westbound					Stafford Complex Northbound					Garrisonville Rd Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	6	3	0	9	3	0	0	0	3	0	2	0	0	2	14
07:15 AM	0	0	0	0	0	0	4	2	0	6	2	0	0	0	2	0	4	0	0	4	12
07:30 AM	0	0	0	0	0	0	6	2	0	8	1	0	0	0	1	0	1	0	0	1	10
07:45 AM	0	0	0	0	0	0	7	0	0	7	2	0	0	0	2	0	6	0	0	6	15
Total	0	0	0	0	0	0	23	7	0	30	8	0	0	0	8	0	13	0	0	13	51
08:00 AM	0	0	0	0	0	0	3	1	0	4	2	0	0	0	2	0	6	0	0	6	12
08:15 AM	0	0	0	0	0	0	6	3	0	9	1	0	0	0	1	0	2	0	0	2	12
08:30 AM	0	0	0	0	0	0	10	2	0	12	3	0	0	0	3	0	10	0	0	10	25
08:45 AM	0	0	0	0	0	0	5	5	0	10	1	0	0	0	1	0	15	0	0	15	26
Total	0	0	0	0	0	0	24	11	0	35	7	0	0	0	7	0	33	0	0	33	75
Grand Total	0	0	0	0	0	0	47	18	0	65	15	0	0	0	15	0	46	0	0	46	126
Apprch %	0	0	0	0		0	72.3	27.7	0		100	0	0	0		0	100	0	0		
Total %	0	0	0	0	0	0	37.3	14.3	0	51.6	11.9	0	0	0	11.9	0	36.5	0	0	36.5	

	Keystone Dr Southbound				Garrisonville Rd Westbound				Stafford Complex Northbound				Garrisonville Rd Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	0	0	0	0	0	3	1	4	2	0	0	2	0	6	0	6	12
08:15 AM	0	0	0	0	0	6	3	9	1	0	0	1	0	2	0	2	12
08:30 AM	0	0	0	0	0	10	2	12	3	0	0	3	0	10	0	10	25
08:45 AM	0	0	0	0	0	5	5	10	1	0	0	1	0	15	0	15	26
Total Volume	0	0	0	0	0	24	11	35	7	0	0	7	0	33	0	33	75
% App. Total	0	0	0		0	68.6	31.4		100	0	0		0	100	0		
PHF	.000	.000	.000	.000	.000	.600	.550	.729	.583	.000	.000	.583	.000	.550	.000	.550	.721

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File Name : 1-Keystone Dr_Stafford Complex & Garrisonville Rd AM
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Groups Printed- Combined

	Keystone Dr Southbound					Garrisonville Rd Westbound					Stafford Complex Northbound					Garrisonville Rd Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	129	9	0	138	4	0	0	0	4	3	224	0	0	227	369
07:15 AM	0	0	1	0	1	0	138	9	0	147	6	0	0	0	6	1	235	0	0	236	390
07:30 AM	0	0	0	0	0	1	169	8	0	178	14	0	0	0	14	2	237	1	0	240	432
07:45 AM	0	0	2	0	2	0	181	15	0	196	9	0	1	0	10	4	222	0	0	226	434
Total	0	0	3	0	3	1	617	41	0	659	33	0	1	0	34	10	918	1	0	929	1625
08:00 AM	0	0	1	0	1	0	170	6	0	176	15	0	0	0	15	3	235	0	0	238	430
08:15 AM	0	0	0	0	0	0	160	14	0	174	9	0	1	0	10	7	224	0	0	231	415
08:30 AM	0	0	0	0	0	0	166	14	0	180	16	0	2	0	18	7	230	0	0	237	435
08:45 AM	0	0	0	0	0	0	153	22	0	175	6	0	3	0	9	1	256	0	0	257	441
Total	0	0	1	0	1	0	649	56	0	705	46	0	6	0	52	18	945	0	0	963	1721
Grand Total	0	0	4	0	4	1	1266	97	0	1364	79	0	7	0	86	28	1863	1	0	1892	3346
Apprch %	0	0	100	0		0.1	92.8	7.1	0		91.9	0	8.1	0		1.5	98.5	0.1	0		
Total %	0	0	0.1	0	0.1	0	37.8	2.9	0	40.8	2.4	0	0.2	0	2.6	0.8	55.7	0	0	56.5	

	Keystone Dr Southbound				Garrisonville Rd Westbound				Stafford Complex Northbound				Garrisonville Rd Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	0	0	1	1	0	170	6	176	15	0	0	15	3	235	0	238	430
08:15 AM	0	0	0	0	0	160	14	174	9	0	1	10	7	224	0	231	415
08:30 AM	0	0	0	0	0	166	14	180	16	0	2	18	7	230	0	237	435
08:45 AM	0	0	0	0	0	153	22	175	6	0	3	9	1	256	0	257	441
Total Volume	0	0	1	1	0	649	56	705	46	0	6	52	18	945	0	963	1721
% App. Total	0	0	100		0	92.1	7.9		88.5	0	11.5		1.9	98.1	0		
PHF	.000	.000	.250	.250	.000	.954	.636	.979	.719	.000	.500	.722	.643	.923	.000	.937	.976

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Groups Printed- Car

	Keystone Dr Southbound					Garrisonville Rd Westbound					Stafford Complex Northbound					Garrisonville Rd Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	1	0	0	0	1	1	245	48	0	294	17	0	2	0	19	9	241	0	0	250	564
04:15 PM	0	0	0	0	0	0	269	41	0	310	27	0	8	0	35	10	219	1	0	230	575
04:30 PM	0	0	0	0	0	0	270	51	0	321	25	0	5	0	30	10	232	1	0	243	594
04:45 PM	0	0	1	0	1	1	292	35	0	328	17	0	8	1	26	11	245	1	0	257	612
Total	1	0	1	0	2	2	1076	175	0	1253	86	0	23	1	110	40	937	3	0	980	2345
05:00 PM	1	0	0	0	1	0	259	31	0	290	26	0	6	0	32	5	230	1	0	236	559
05:15 PM	0	0	0	0	0	1	302	33	0	336	31	0	6	0	37	12	214	0	0	226	599
05:30 PM	0	0	0	0	0	0	298	41	0	339	23	0	4	0	27	7	198	0	0	205	571
05:45 PM	0	0	0	0	0	0	288	44	0	332	23	0	7	0	30	7	191	0	0	198	560
Total	1	0	0	0	1	1	1147	149	0	1297	103	0	23	0	126	31	833	1	0	865	2289
Grand Total	2	0	1	0	3	3	2223	324	0	2550	189	0	46	1	236	71	1770	4	0	1845	4634
Apprch %	66.7	0	33.3	0		0.1	87.2	12.7	0		80.1	0	19.5	0.4		3.8	95.9	0.2	0		
Total %	0	0	0	0	0.1	0.1	48	7	0	55	4.1	0	1	0	5.1	1.5	38.2	0.1	0	39.8	

	Keystone Dr Southbound				Garrisonville Rd Westbound				Stafford Complex Northbound				Garrisonville Rd Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	0	0	0	0	270	51	321	25	0	5	30	10	232	1	243	594
04:45 PM	0	0	1	1	1	292	35	328	17	0	8	25	11	245	1	257	611
05:00 PM	1	0	0	1	0	259	31	290	26	0	6	32	5	230	1	236	559
05:15 PM	0	0	0	0	1	302	33	336	31	0	6	37	12	214	0	226	599
Total Volume	1	0	1	2	2	1123	150	1275	99	0	25	124	38	921	3	962	2363
% App. Total	50	0	50		0.2	88.1	11.8		79.8	0	20.2		4	95.7	0.3		
PHF	.250	.000	.250	.500	.500	.930	.735	.949	.798	.000	.781	.838	.792	.940	.750	.936	.967

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Groups Printed- Truck

	Keystone Dr Southbound					Garrisonville Rd Westbound					Stafford Complex Northbound					Garrisonville Rd Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	8	1	0	9	2	0	0	0	2	0	10	0	0	10	21
04:15 PM	0	0	0	0	0	0	5	0	0	5	2	0	0	0	2	0	2	0	0	2	9
04:30 PM	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	0	5	0	0	5	11
04:45 PM	0	0	0	0	0	0	6	0	0	6	3	0	1	0	4	0	5	0	0	5	15
Total	0	0	0	0	0	0	25	1	0	26	7	0	1	0	8	0	22	0	0	22	56
05:00 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	4	0	0	4	6
05:15 PM	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	3	0	0	3	7
05:30 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	2
05:45 PM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	3	0	0	3	6
Total	0	0	0	0	0	0	10	0	0	10	0	0	0	0	0	0	11	0	0	11	21
Grand Total	0	0	0	0	0	0	35	1	0	36	7	0	1	0	8	0	33	0	0	33	77
Apprch %	0	0	0	0		0	97.2	2.8	0		87.5	0	12.5	0		0	100	0	0		
Total %	0	0	0	0	0	0	45.5	1.3	0	46.8	9.1	0	1.3	0	10.4	0	42.9	0	0	42.9	

	Keystone Dr Southbound				Garrisonville Rd Westbound				Stafford Complex Northbound				Garrisonville Rd Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	0	0	0	8	1	9	2	0	0	2	0	10	0	10	21
04:15 PM	0	0	0	0	0	5	0	5	2	0	0	2	0	2	0	2	9
04:30 PM	0	0	0	0	0	6	0	6	0	0	0	0	0	5	0	5	11
04:45 PM	0	0	0	0	0	6	0	6	3	0	1	4	0	5	0	5	15
Total Volume	0	0	0	0	0	25	1	26	7	0	1	8	0	22	0	22	56
% App. Total	0	0	0		0	96.2	3.8		87.5	0	12.5		0	100	0		
PHF	.000	.000	.000	.000	.000	.781	.250	.722	.583	.000	.250	.500	.000	.550	.000	.550	.667

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File Name : 1-Keystone Dr_Stafford Complex & Garrisonville Rd PM
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Groups Printed- Combined

	Keystone Dr Southbound					Garrisonville Rd Westbound					Stafford Complex Northbound					Garrisonville Rd Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	1	0	0	0	1	1	253	49	0	303	19	0	2	0	21	9	251	0	0	260	585
04:15 PM	0	0	0	0	0	0	274	41	0	315	29	0	8	0	37	10	221	1	0	232	584
04:30 PM	0	0	0	0	0	0	276	51	0	327	25	0	5	0	30	10	237	1	0	248	605
04:45 PM	0	0	1	0	1	1	298	35	0	334	20	0	9	1	30	11	250	1	0	262	627
Total	1	0	1	0	2	2	1101	176	0	1279	93	0	24	1	118	40	959	3	0	1002	2401
05:00 PM	1	0	0	0	1	0	261	31	0	292	26	0	6	0	32	5	234	1	0	240	565
05:15 PM	0	0	0	0	0	1	306	33	0	340	31	0	6	0	37	12	217	0	0	229	606
05:30 PM	0	0	0	0	0	0	299	41	0	340	23	0	4	0	27	7	199	0	0	206	573
05:45 PM	0	0	0	0	0	0	291	44	0	335	23	0	7	0	30	7	194	0	0	201	566
Total	1	0	0	0	1	1	1157	149	0	1307	103	0	23	0	126	31	844	1	0	876	2310
Grand Total	2	0	1	0	3	3	2258	325	0	2586	196	0	47	1	244	71	1803	4	0	1878	4711
Apprch %	66.7	0	33.3	0		0.1	87.3	12.6	0		80.3	0	19.3	0.4		3.8	96	0.2	0		
Total %	0	0	0	0	0.1	0.1	47.9	6.9	0	54.9	4.2	0	1	0	5.2	1.5	38.3	0.1	0	39.9	

	Keystone Dr Southbound				Garrisonville Rd Westbound				Stafford Complex Northbound				Garrisonville Rd Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	0	0	0	0	276	51	327	25	0	5	30	10	237	1	248	605
04:45 PM	0	0	1	1	1	298	35	334	20	0	9	29	11	250	1	262	626
05:00 PM	1	0	0	1	0	261	31	292	26	0	6	32	5	234	1	240	565
05:15 PM	0	0	0	0	1	306	33	340	31	0	6	37	12	217	0	229	606
Total Volume	1	0	1	2	2	1141	150	1293	102	0	26	128	38	938	3	979	2402
% App. Total	50	0	50		0.2	88.2	11.6		79.7	0	20.3		3.9	95.8	0.3		
PHF	.250	.000	.250	.500	.500	.932	.735	.951	.823	.000	.722	.865	.792	.938	.750	.934	.959

Wawa - Garrisonville Road

Existing (2019) Conditions

1: Furnace Road /Tech Parkway & Garrisonville Road

Timing Plan: AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 						 	
Traffic Volume (vph)	47	788	153	168	250	242	100	22	166	9	5	1
Future Volume (vph)	47	788	153	168	250	242	100	22	166	9	5	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	175		50	175		250	0		850	0		300
Storage Lanes	1		1	1		1	0		1	1		1
Taper Length (ft)	100			100			100			100		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	0	1790	1583	1681	1738	1583
Flt Permitted	0.586			0.197				0.961		0.950	0.982	
Satd. Flow (perm)	1092	3539	1583	367	3539	1583	0	1790	1583	1681	1738	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			202			260			255			255
Link Speed (mph)		45			45			35			30	
Link Distance (ft)		521			1134			1160			1020	
Travel Time (s)		7.9			17.2			22.6			23.2	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Shared Lane Traffic (%)										26%		
Lane Group Flow (vph)	51	847	165	181	269	260	0	132	178	7	8	1
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Free	Split	NA	Free	Split	NA	Free
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases	2		2	6		Free			Free			Free
Detector Phase	5	2	2	1	6		3	3		4	4	
Switch Phase												
Minimum Initial (s)	5.0	12.0	12.0	5.0	12.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	13.0	18.5	18.5	13.0	18.5		25.0	25.0		16.0	16.0	
Total Split (s)	15.0	60.0	60.0	25.0	70.0		25.0	25.0		25.0	25.0	
Total Split (%)	11.1%	44.4%	44.4%	18.5%	51.9%		18.5%	18.5%		18.5%	18.5%	
Yellow Time (s)	4.0	4.5	4.5	4.0	4.5		4.0	4.0		4.0	4.0	
All-Red Time (s)	3.0	2.0	2.0	3.0	2.0		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0			0.0		0.0	0.0	
Total Lost Time (s)	7.0	6.5	6.5	7.0	6.5			7.0		7.0	7.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lead		Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	Min	Min	None	Min		None	None		None	None	
Act Effect Green (s)	36.5	29.9	29.9	45.1	39.8	78.3		12.1	78.3	6.4	6.4	78.3
Actuated g/C Ratio	0.47	0.38	0.38	0.58	0.51	1.00		0.15	1.00	0.08	0.08	1.00
v/c Ratio	0.09	0.63	0.23	0.47	0.15	0.16		0.48	0.11	0.05	0.06	0.00
Control Delay	9.4	22.9	2.3	12.6	13.8	0.2		41.4	0.1	45.4	45.4	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
Total Delay	9.4	22.9	2.3	12.6	13.8	0.2		41.4	0.1	45.4	45.4	0.0
LOS	A	C	A	B	B	A		D	A	D	D	A
Approach Delay		19.1			8.5			17.7			42.6	
Approach LOS		B			A			B			D	
Queue Length 50th (ft)	7	140	0	27	34	0		50	0	3	3	0
Queue Length 95th (ft)	31	311	24	91	85	0		150	0	21	23	0
Internal Link Dist (ft)		441			1054			1080			940	
Turn Bay Length (ft)	175		50	175		250			850			300
Base Capacity (vph)	606	2611	1221	569	2938	1583		447	1583	419	434	1583
Starvation Cap Reductn	0	0	0	0	0	0		0	0	0	0	0

Wawa - Garrisonville Road

1: Furnace Road /Tech Parkway & Garrisonville Road

Existing (2019) Conditions

Timing Plan: AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0	0	0	0	0		0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0		0	0	0	0	0
Reduced v/c Ratio	0.08	0.32	0.14	0.32	0.09	0.16		0.30	0.11	0.02	0.02	0.00

Intersection Summary

Area Type: Other

Cycle Length: 135

Actuated Cycle Length: 78.3

Natural Cycle: 80

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.63

Intersection Signal Delay: 15.5

Intersection Capacity Utilization 61.5%

Analysis Period (min) 15

Intersection LOS: B

ICU Level of Service B

Splits and Phases: 1: Furnace Road /Tech Parkway & Garrisonville Road

 Ø1	 Ø2	 Ø3	 Ø4
25 s	60 s	25 s	25 s
 Ø5	 Ø6		
15 s	70 s		

Wawa - Garrisonville Road

Existing (2019) Conditions

2: Commercial Driveway /Keystone Drive & Garrisonville Road

Timing Plan: AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 						 	
Traffic Volume (vph)	1	945	18	56	654	1	6	1	46	1	1	1
Future Volume (vph)	1	945	18	56	654	1	6	1	46	1	1	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	175		0	0		0	0		0
Storage Lanes	1		1	1		0	0		1	0		0
Taper Length (ft)	100			100			100			100		
Satd. Flow (prot)	1770	3539	1583	1770	3539	0	0	1786	1583	0	1750	0
Flt Permitted	0.384			0.199				0.959			0.984	
Satd. Flow (perm)	715	3539	1583	371	3539	0	0	1786	1583	0	1750	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			170						102		1	
Link Speed (mph)		45			45			25			25	
Link Distance (ft)		1134			793			412			1000	
Travel Time (s)		17.2			12.0			11.2			27.3	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1	1016	19	60	704	0	0	7	49	0	3	0
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA		Split	NA	pm+ov	Split	NA	
Protected Phases	5	2	8	1	6		8	8	1	4	4	
Permitted Phases	2		2	6					8			
Detector Phase	5	2	8	1	6		8	8	1	4	4	
Switch Phase												
Minimum Initial (s)	7.0	15.0	7.0	7.0	15.0		7.0	7.0	7.0	5.0	5.0	
Minimum Split (s)	14.6	24.0	16.0	14.6	22.6		16.0	16.0	14.6	12.0	12.0	
Total Split (s)	15.0	60.0	25.0	25.0	70.0		25.0	25.0	25.0	12.0	12.0	
Total Split (%)	12.3%	49.2%	20.5%	20.5%	57.4%		20.5%	20.5%	20.5%	9.8%	9.8%	
Yellow Time (s)	4.8	4.8	3.0	4.8	4.8		3.0	3.0	4.8	3.0	3.0	
All-Red Time (s)	2.8	2.8	3.9	2.8	2.8		3.9	3.9	2.8	3.8	3.8	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)	7.6	7.6	6.9	7.6	7.6			6.9	7.6		6.8	
Lead/Lag	Lead	Lag		Lead	Lag				Lead			
Lead-Lag Optimize?	Yes	Yes		Yes	Yes				Yes			
Recall Mode	None	Min	None	None	Min		None	None	None	None	None	
Act Effect Green (s)	39.3	36.2	46.8	44.5	49.5			7.7	12.0		5.7	
Actuated g/C Ratio	0.66	0.61	0.79	0.75	0.83			0.13	0.20		0.10	
v/c Ratio	0.00	0.47	0.01	0.13	0.24			0.03	0.12		0.02	
Control Delay	5.0	11.8	0.0	4.7	5.8			33.1	1.0		32.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0			0.0	0.0		0.0	
Total Delay	5.0	11.8	0.0	4.7	5.8			33.1	1.0		32.3	
LOS	A	B	A	A	A			C	A		C	
Approach Delay		11.6			5.7			5.0			32.3	
Approach LOS		B			A			A			C	
Queue Length 50th (ft)	0	84	0	1	0			2	0		1	
Queue Length 95th (ft)	2	287	0	26	180			17	3		10	
Internal Link Dist (ft)		1054			713			332			920	
Turn Bay Length (ft)	150			175								
Base Capacity (vph)	620	3075	1447	732	3256			596	683		168	
Starvation Cap Reductn	0	0	0	0	0			0	0		0	

Wawa - Garrisonville Road

2: Commercial Driveway /Keystone Drive & Garrisonville Road

Existing (2019) Conditions

Timing Plan: AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0	0	0	0			0	0		0	
Storage Cap Reductn	0	0	0	0	0			0	0		0	
Reduced v/c Ratio	0.00	0.33	0.01	0.08	0.22			0.01	0.07		0.02	

Intersection Summary

Area Type: Other

Cycle Length: 122

Actuated Cycle Length: 59.5

Natural Cycle: 70

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.47

Intersection Signal Delay: 9.0

Intersection Capacity Utilization 56.2%

Analysis Period (min) 15

Intersection LOS: A

ICU Level of Service B

Splits and Phases: 2: Commercial Driveway /Keystone Drive & Garrisonville Road

 Ø1	 Ø2	 Ø4	 Ø8
25 s	60 s	12 s	25 s
 Ø5	 Ø6		
15 s	70 s		

Wawa - Garrisonville Road

Existing (2019) Conditions

1: Furnace Road /Tech Parkway & Garrisonville Road

Timing Plan: PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 							
Traffic Volume (vph)	6	585	97	171	972	25	209	4	144	253	22	45
Future Volume (vph)	6	585	97	171	972	25	209	4	144	253	22	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	175		50	175		250	0		850	0		300
Storage Lanes	1		1	1		1	0		1	1		1
Taper Length (ft)	100			100			100			100		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	0	1775	1583	1681	1699	1583
Flt Permitted	0.198			0.242				0.953		0.950	0.960	
Satd. Flow (perm)	369	3539	1583	451	3539	1583	0	1775	1583	1681	1699	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			202			255			255			255
Link Speed (mph)		45			45			35			30	
Link Distance (ft)		521			1134			1160			1020	
Travel Time (s)		7.9			17.2			22.6			23.2	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Shared Lane Traffic (%)										46%		
Lane Group Flow (vph)	6	629	104	184	1045	27	0	229	155	147	149	48
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Free	Split	NA	Free	Split	NA	Free
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases	2		2	6		Free			Free			Free
Detector Phase	5	2	2	1	6		3	3		4	4	
Switch Phase												
Minimum Initial (s)	5.0	12.0	12.0	5.0	12.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	13.0	18.5	18.5	13.0	18.5		25.0	25.0		16.0	16.0	
Total Split (s)	15.0	60.0	60.0	25.0	70.0		25.0	25.0		25.0	25.0	
Total Split (%)	11.1%	44.4%	44.4%	18.5%	51.9%		18.5%	18.5%		18.5%	18.5%	
Yellow Time (s)	4.0	4.5	4.5	4.0	4.5		4.0	4.0		4.0	4.0	
All-Red Time (s)	3.0	2.0	2.0	3.0	2.0		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0			0.0		0.0	0.0	
Total Lost Time (s)	7.0	6.5	6.5	7.0	6.5			7.0		7.0	7.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lead		Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	Min	Min	None	Min		None	None		None	None	
Act Effect Green (s)	32.2	26.8	26.8	45.4	43.8	98.6		18.1	98.6	13.5	13.5	98.6
Actuated g/C Ratio	0.33	0.27	0.27	0.46	0.44	1.00		0.18	1.00	0.14	0.14	1.00
v/c Ratio	0.03	0.65	0.18	0.50	0.67	0.02		0.70	0.10	0.64	0.64	0.03
Control Delay	15.2	35.1	0.7	20.7	24.5	0.0		53.8	0.1	56.2	56.2	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
Total Delay	15.2	35.1	0.7	20.7	24.5	0.0		53.8	0.1	56.2	56.2	0.0
LOS	B	D	A	C	C	A		D	A	E	E	A
Approach Delay		30.1			23.4			32.1			48.4	
Approach LOS		C			C			C			D	
Queue Length 50th (ft)	2	182	0	67	251	0		132	0	90	91	0
Queue Length 95th (ft)	9	261	0	114	421	0		#338	0	197	198	0
Internal Link Dist (ft)		441			1054			1080			940	
Turn Bay Length (ft)	175		50	175		250			850			300
Base Capacity (vph)	245	1971	971	454	2339	1583		332	1583	314	318	1583
Starvation Cap Reductn	0	0	0	0	0	0		0	0	0	0	0

Wawa - Garrisonville Road

1: Furnace Road /Tech Parkway & Garrisonville Road

Existing (2019) Conditions

Timing Plan: PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0	0	0	0	0		0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0		0	0	0	0	0
Reduced v/c Ratio	0.02	0.32	0.11	0.41	0.45	0.02		0.69	0.10	0.47	0.47	0.03

Intersection Summary

Area Type: Other

Cycle Length: 135

Actuated Cycle Length: 98.6

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.70

Intersection Signal Delay: 29.6

Intersection LOS: C

Intersection Capacity Utilization 66.6%

ICU Level of Service C

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 1: Furnace Road /Tech Parkway & Garrisonville Road

 Ø1	 Ø2	 Ø3	 Ø4
25 s	60 s	25 s	25 s
 Ø5	 Ø6		
15 s	70 s		

Wawa - Garrisonville Road

Existing (2019) Conditions

2: Commercial Driveway /Keystone Drive & Garrisonville Road

Timing Plan: PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 						 	
Traffic Volume (vph)	3	941	38	150	1141	2	26	1	102	1	1	1
Future Volume (vph)	3	941	38	150	1141	2	26	1	102	1	1	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	175		0	0		0	0		0
Storage Lanes	1		1	1		0	0		1	0		0
Taper Length (ft)	100			100			100			100		
Satd. Flow (prot)	1770	3539	1583	1770	3539	0	0	1777	1583	0	1750	0
Flt Permitted	0.200			0.169				0.954			0.984	
Satd. Flow (perm)	373	3539	1583	315	3539	0	0	1777	1583	0	1750	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			170						110		1	
Link Speed (mph)		45			45			25			25	
Link Distance (ft)		1134			793			412			1000	
Travel Time (s)		17.2			12.0			11.2			27.3	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Shared Lane Traffic (%)												
Lane Group Flow (vph)	3	1012	41	161	1229	0	0	29	110	0	3	0
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA		Split	NA	pm+ov	Split	NA	
Protected Phases	5	2	8	1	6		8	8	1	4	4	
Permitted Phases	2		2	6					8			
Detector Phase	5	2	8	1	6		8	8	1	4	4	
Switch Phase												
Minimum Initial (s)	7.0	15.0	7.0	7.0	15.0		7.0	7.0	7.0	5.0	5.0	
Minimum Split (s)	14.6	24.0	16.0	14.6	22.6		16.0	16.0	14.6	12.0	12.0	
Total Split (s)	15.0	60.0	25.0	25.0	70.0		25.0	25.0	25.0	12.0	12.0	
Total Split (%)	12.3%	49.2%	20.5%	20.5%	57.4%		20.5%	20.5%	20.5%	9.8%	9.8%	
Yellow Time (s)	4.8	4.8	3.0	4.8	4.8		3.0	3.0	4.8	3.0	3.0	
All-Red Time (s)	2.8	2.8	3.9	2.8	2.8		3.9	3.9	2.8	3.8	3.8	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)	7.6	7.6	6.9	7.6	7.6			6.9	7.6		6.8	
Lead/Lag	Lead	Lag		Lead	Lag				Lead			
Lead-Lag Optimize?	Yes	Yes		Yes	Yes				Yes			
Recall Mode	None	Min	None	None	Min		None	None	None	None	None	
Act Effect Green (s)	38.8	30.9	46.8	47.8	49.1			8.2	19.8		5.8	
Actuated g/C Ratio	0.56	0.45	0.68	0.69	0.71			0.12	0.29		0.08	
v/c Ratio	0.01	0.64	0.04	0.40	0.49			0.14	0.21		0.02	
Control Delay	5.7	17.4	0.1	8.0	9.1			38.0	7.0		38.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0			0.0	0.0		0.0	
Total Delay	5.7	17.4	0.1	8.0	9.1			38.0	7.0		38.0	
LOS	A	B	A	A	A			D	A		D	
Approach Delay		16.7			8.9			13.5			38.0	
Approach LOS		B			A			B			D	
Queue Length 50th (ft)	0	158	0	19	106			11	0		1	
Queue Length 95th (ft)	4	317	0	61	380			49	43		11	
Internal Link Dist (ft)		1054			713			332			920	
Turn Bay Length (ft)	150			175								
Base Capacity (vph)	378	2763	1344	628	3118			519	757		147	
Starvation Cap Reductn	0	0	0	0	0			0	0		0	

Wawa - Garrisonville Road

2: Commercial Driveway /Keystone Drive & Garrisonville Road

Existing (2019) Conditions

Timing Plan: PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0	0	0	0			0	0		0	
Storage Cap Reductn	0	0	0	0	0			0	0		0	
Reduced v/c Ratio	0.01	0.37	0.03	0.26	0.39			0.06	0.15		0.02	

Intersection Summary

Area Type: Other

Cycle Length: 122

Actuated Cycle Length: 69.2

Natural Cycle: 80

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.64

Intersection Signal Delay: 12.4

Intersection Capacity Utilization 61.7%

Analysis Period (min) 15

Intersection LOS: B

ICU Level of Service B

Splits and Phases: 2: Commercial Driveway /Keystone Drive & Garrisonville Road

 Ø1	 Ø2	 Ø4	 Ø8
25 s	60 s	12 s	25 s
 Ø5	 Ø6		
15 s	70 s		

Wawa - Garrisonville Road

No-Build (2021) Conditions

1: Furnace Road /Tech Parkway & Garrisonville Road

Timing Plan: AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 							
Traffic Volume (vph)	56	821	169	178	259	277	108	27	175	13	8	1
Future Volume (vph)	56	821	169	178	259	277	108	27	175	13	8	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	175		50	175		250	0		850	0		300
Storage Lanes	1		1	1		1	0		1	1		1
Taper Length (ft)	100			100			100			100		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	0	1792	1583	1681	1748	1583
Flt Permitted	0.581			0.179				0.962		0.950	0.988	
Satd. Flow (perm)	1082	3539	1583	333	3539	1583	0	1792	1583	1681	1748	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			202			298			255			255
Link Speed (mph)		45			45			35			30	
Link Distance (ft)		521			1134			1160			1020	
Travel Time (s)		7.9			17.2			22.6			23.2	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Shared Lane Traffic (%)										19%		
Lane Group Flow (vph)	60	883	182	191	278	298	0	145	188	11	12	1
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Free	Split	NA	Free	Split	NA	Free
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases	2		2	6		Free			Free			Free
Detector Phase	5	2	2	1	6		3	3		4	4	
Switch Phase												
Minimum Initial (s)	5.0	12.0	12.0	5.0	12.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	13.0	18.5	18.5	13.0	18.5		25.0	25.0		16.0	16.0	
Total Split (s)	13.0	63.0	63.0	26.0	76.0		30.0	30.0		16.0	16.0	
Total Split (%)	9.6%	46.7%	46.7%	19.3%	56.3%		22.2%	22.2%		11.9%	11.9%	
Yellow Time (s)	4.0	4.5	4.5	4.0	4.5		4.0	4.0		4.0	4.0	
All-Red Time (s)	3.0	2.0	2.0	3.0	2.0		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0			0.0		0.0	0.0	
Total Lost Time (s)	7.0	6.5	6.5	7.0	6.5			7.0		7.0	7.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lead		Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	Min	Min	None	Min		None	None		None	None	
Act Effect Green (s)	39.0	33.1	33.1	48.9	41.2	83.9		13.4	83.9	6.7	6.7	83.9
Actuated g/C Ratio	0.46	0.39	0.39	0.58	0.49	1.00		0.16	1.00	0.08	0.08	1.00
v/c Ratio	0.11	0.63	0.24	0.51	0.16	0.19		0.51	0.12	0.08	0.09	0.00
Control Delay	10.0	23.8	3.2	13.7	14.2	0.3		44.2	0.2	49.5	49.4	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
Total Delay	10.0	23.8	3.2	13.7	14.2	0.3		44.2	0.2	49.5	49.4	0.0
LOS	A	C	A	B	B	A		D	A	D	D	A
Approach Delay		19.7			8.7			19.3			47.4	
Approach LOS		B			A			B			D	
Queue Length 50th (ft)	9	164	0	32	37	0		64	0	5	6	0
Queue Length 95th (ft)	38	348	33	103	88	0		174	0	30	31	0
Internal Link Dist (ft)		441			1054			1080			940	
Turn Bay Length (ft)	175		50	175		250			850			300
Base Capacity (vph)	558	2575	1207	559	2927	1583		539	1583	197	205	1583
Starvation Cap Reductn	0	0	0	0	0	0		0	0	0	0	0

Wawa - Garrisonville Road

No-Build (2021) Conditions

1: Furnace Road /Tech Parkway & Garrisonville Road

Timing Plan: AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0	0	0	0	0		0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0		0	0	0	0	0
Reduced v/c Ratio	0.11	0.34	0.15	0.34	0.09	0.19		0.27	0.12	0.06	0.06	0.00

Intersection Summary

Area Type: Other

Cycle Length: 135

Actuated Cycle Length: 83.9

Natural Cycle: 80

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.63

Intersection Signal Delay: 16.2

Intersection Capacity Utilization 63.4%

Analysis Period (min) 15

Intersection LOS: B

ICU Level of Service B

Splits and Phases: 1: Furnace Road /Tech Parkway & Garrisonville Road

 Ø1	 Ø2	 Ø3	 Ø4
26 s	63 s	30 s	16 s
 Ø5	 Ø6		
13 s	76 s		

Wawa - Garrisonville Road

No-Build (2021) Conditions

2: Commercial Driveway /Keystone Drive & Garrisonville Road

Timing Plan: AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 						 	
Traffic Volume (vph)	1	986	23	66	706	1	7	1	52	1	1	1
Future Volume (vph)	1	986	23	66	706	1	7	1	52	1	1	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	175		0	0		0	0		0
Storage Lanes	1		1	1		0	0		1	0		0
Taper Length (ft)	100			100			100			100		
Satd. Flow (prot)	1770	3539	1583	1770	3539	0	0	1783	1583	0	1750	0
Flt Permitted	0.363			0.184				0.957			0.984	
Satd. Flow (perm)	676	3539	1583	343	3539	0	0	1783	1583	0	1750	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			102						102		1	
Link Speed (mph)		45			45			25			25	
Link Distance (ft)		1134			793			412			1000	
Travel Time (s)		17.2			12.0			11.2			27.3	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1	1060	25	71	760	0	0	9	56	0	3	0
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA		Split	NA	pm+ov	Split	NA	
Protected Phases	5	2	8	1	6		8	8	1	4	4	
Permitted Phases	2		2	6					8			
Detector Phase	5	2	8	1	6		8	8	1	4	4	
Switch Phase												
Minimum Initial (s)	7.0	15.0	7.0	7.0	15.0		7.0	7.0	7.0	5.0	5.0	
Minimum Split (s)	14.6	24.0	16.0	14.6	22.6		16.0	16.0	14.6	12.0	12.0	
Total Split (s)	17.0	72.0	18.0	18.0	73.0		18.0	18.0	18.0	14.0	14.0	
Total Split (%)	13.9%	59.0%	14.8%	14.8%	59.8%		14.8%	14.8%	14.8%	11.5%	11.5%	
Yellow Time (s)	4.8	4.8	3.0	4.8	4.8		3.0	3.0	4.8	3.0	3.0	
All-Red Time (s)	2.8	2.8	3.9	2.8	2.8		3.9	3.9	2.8	3.8	3.8	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)	7.6	7.6	6.9	7.6	7.6			6.9	7.6		6.8	
Lead/Lag	Lead	Lag		Lead	Lag				Lead			
Lead-Lag Optimize?	Yes	Yes		Yes	Yes				Yes			
Recall Mode	None	Min	None	None	Min		None	None	None	None	None	
Act Effect Green (s)	39.7	36.6	47.4	45.2	50.4			7.8	12.1		6.3	
Actuated g/C Ratio	0.66	0.61	0.79	0.75	0.84			0.13	0.20		0.10	
v/c Ratio	0.00	0.49	0.02	0.16	0.26			0.04	0.14		0.02	
Control Delay	5.0	12.1	0.0	4.8	5.8			34.9	2.0		33.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0			0.0	0.0		0.0	
Total Delay	5.0	12.1	0.0	4.8	5.8			34.9	2.0		33.0	
LOS	A	B	A	A	A			C	A		C	
Approach Delay		11.8			5.7			6.6			33.0	
Approach LOS		B			A			A			C	
Queue Length 50th (ft)	0	89	0	1	0			2	0		1	
Queue Length 95th (ft)	2	313	0	30	200			21	8		10	
Internal Link Dist (ft)		1054			713			332			920	
Turn Bay Length (ft)	150			175								
Base Capacity (vph)	658	3246	1348	534	3264			367	489		234	
Starvation Cap Reductn	0	0	0	0	0			0	0		0	

Wawa - Garrisonville Road

No-Build (2021) Conditions

2: Commercial Driveway /Keystone Drive & Garrisonville Road

Timing Plan: AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0	0	0	0			0	0		0	
Storage Cap Reductn	0	0	0	0	0			0	0		0	
Reduced v/c Ratio	0.00	0.33	0.02	0.13	0.23			0.02	0.11		0.01	

Intersection Summary

Area Type: Other

Cycle Length: 122

Actuated Cycle Length: 60.2

Natural Cycle: 75

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.49

Intersection Signal Delay: 9.1

Intersection Capacity Utilization 57.3%

Analysis Period (min) 15

Intersection LOS: A

ICU Level of Service B

Splits and Phases: 2: Commercial Driveway /Keystone Drive & Garrisonville Road

 Ø1	 Ø2	 Ø4	 Ø8
18 s	72 s	14 s	18 s
 Ø5	 Ø6		
17 s	73 s		

Wawa - Garrisonville Road

No-Build (2021) Conditions

1: Furnace Road /Tech Parkway & Garrisonville Road

Timing Plan: PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 							
Traffic Volume (vph)	7	606	118	182	1009	31	242	8	156	288	28	54
Future Volume (vph)	7	606	118	182	1009	31	242	8	156	288	28	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	175		50	175		250	0		850	0		300
Storage Lanes	1		1	1		1	0		1	1		1
Taper Length (ft)	100			100			100			100		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	0	1777	1583	1681	1699	1583
Flt Permitted	0.170			0.225				0.954		0.950	0.960	
Satd. Flow (perm)	317	3539	1583	419	3539	1583	0	1777	1583	1681	1699	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			202			255			255			255
Link Speed (mph)		45			45			35			30	
Link Distance (ft)		521			1134			1160			1020	
Travel Time (s)		7.9			17.2			22.6			23.2	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Shared Lane Traffic (%)										45%		
Lane Group Flow (vph)	8	652	127	196	1085	33	0	269	168	170	170	58
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Free	Split	NA	Free	Split	NA	Free
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases	2		2	6		Free			Free			Free
Detector Phase	5	2	2	1	6		3	3		4	4	
Switch Phase												
Minimum Initial (s)	5.0	12.0	12.0	5.0	12.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	13.0	18.5	18.5	13.0	18.5		25.0	25.0		16.0	16.0	
Total Split (s)	13.0	50.0	50.0	22.0	59.0		36.0	36.0		27.0	27.0	
Total Split (%)	9.6%	37.0%	37.0%	16.3%	43.7%		26.7%	26.7%		20.0%	20.0%	
Yellow Time (s)	4.0	4.5	4.5	4.0	4.5		4.0	4.0		4.0	4.0	
All-Red Time (s)	3.0	2.0	2.0	3.0	2.0		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0			0.0		0.0	0.0	
Total Lost Time (s)	7.0	6.5	6.5	7.0	6.5			7.0		7.0	7.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lead		Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	Min	Min	None	Min		None	None		None	None	
Act Effect Green (s)	34.3	28.9	28.9	48.3	46.7	107.2		21.3	107.2	15.8	15.8	107.2
Actuated g/C Ratio	0.32	0.27	0.27	0.45	0.44	1.00		0.20	1.00	0.15	0.15	1.00
v/c Ratio	0.04	0.68	0.22	0.56	0.70	0.02		0.76	0.11	0.69	0.68	0.04
Control Delay	19.7	39.8	0.9	25.9	29.2	0.0		58.0	0.1	61.9	61.4	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
Total Delay	19.7	39.8	0.9	25.9	29.2	0.0		58.0	0.1	61.9	61.4	0.0
LOS	B	D	A	C	C	A		E	A	E	E	A
Approach Delay		33.3			28.0			35.7			52.7	
Approach LOS		C			C			D			D	
Queue Length 50th (ft)	3	215	0	82	304	0		176	0	117	117	0
Queue Length 95th (ft)	13	313	0	150	526	0		321	0	#242	#238	0
Internal Link Dist (ft)		441			1054			1080			940	
Turn Bay Length (ft)	175		50	175		250			850			300
Base Capacity (vph)	186	1497	786	385	1829	1583		501	1583	327	330	1583
Starvation Cap Reductn	0	0	0	0	0	0		0	0	0	0	0

Wawa - Garrisonville Road

No-Build (2021) Conditions

1: Furnace Road /Tech Parkway & Garrisonville Road

Timing Plan: PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0	0	0	0	0		0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0		0	0	0	0	0
Reduced v/c Ratio	0.04	0.44	0.16	0.51	0.59	0.02		0.54	0.11	0.52	0.52	0.04

Intersection Summary

Area Type: Other

Cycle Length: 135

Actuated Cycle Length: 107.2

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.76

Intersection Signal Delay: 33.9

Intersection LOS: C

Intersection Capacity Utilization 69.6%

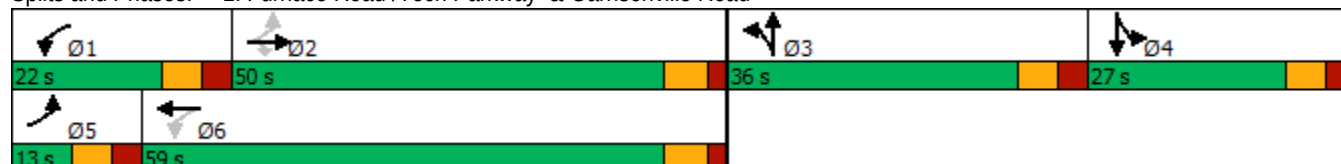
ICU Level of Service C

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 1: Furnace Road /Tech Parkway & Garrisonville Road



Wawa - Garrisonville Road

No-Build (2021) Conditions

2: Commercial Driveway /Keystone Drive & Garrisonville Road

Timing Plan: PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 						 	
Traffic Volume (vph)	3	1001	47	175	1184	2	37	1	126	1	1	1
Future Volume (vph)	3	1001	47	175	1184	2	37	1	126	1	1	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	175		0	0		0	0		0
Storage Lanes	1		1	1		0	0		1	0		0
Taper Length (ft)	100			100			100			100		
Satd. Flow (prot)	1770	3539	1583	1770	3539	0	0	1775	1583	0	1750	0
Flt Permitted	0.188			0.153				0.953			0.984	
Satd. Flow (perm)	350	3539	1583	285	3539	0	0	1775	1583	0	1750	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			170						135		1	
Link Speed (mph)		45			45			25			25	
Link Distance (ft)		1134			793			412			1000	
Travel Time (s)		17.2			12.0			11.2			27.3	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Shared Lane Traffic (%)												
Lane Group Flow (vph)	3	1076	51	188	1275	0	0	41	135	0	3	0
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA		Split	NA	pm+ov	Split	NA	
Protected Phases	5	2	8	1	6		8	8	1	4	4	
Permitted Phases	2		2	6					8			
Detector Phase	5	2	8	1	6		8	8	1	4	4	
Switch Phase												
Minimum Initial (s)	7.0	15.0	7.0	7.0	15.0		7.0	7.0	7.0	5.0	5.0	
Minimum Split (s)	14.6	24.0	16.0	14.6	22.6		16.0	16.0	14.6	12.0	12.0	
Total Split (s)	16.0	67.0	18.0	25.0	76.0		18.0	18.0	25.0	12.0	12.0	
Total Split (%)	13.1%	54.9%	14.8%	20.5%	62.3%		14.8%	14.8%	20.5%	9.8%	9.8%	
Yellow Time (s)	4.8	4.8	3.0	4.8	4.8		3.0	3.0	4.8	3.0	3.0	
All-Red Time (s)	2.8	2.8	3.9	2.8	2.8		3.9	3.9	2.8	3.8	3.8	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)	7.6	7.6	6.9	7.6	7.6			6.9	7.6		6.8	
Lead/Lag	Lead	Lag		Lead	Lag				Lead			
Lead-Lag Optimize?	Yes	Yes		Yes	Yes				Yes			
Recall Mode	None	Min	None	None	Min		None	None	None	None	None	
Act Effect Green (s)	41.4	33.5	49.9	51.3	52.5			8.7	20.7		5.9	
Actuated g/C Ratio	0.57	0.46	0.68	0.70	0.72			0.12	0.28		0.08	
v/c Ratio	0.01	0.66	0.04	0.48	0.50			0.19	0.25		0.02	
Control Delay	5.7	18.1	0.1	9.5	9.1			40.2	6.8		40.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0			0.0	0.0		0.0	
Total Delay	5.7	18.1	0.1	9.5	9.1			40.2	6.8		40.0	
LOS	A	B	A	A	A			D	A		D	
Approach Delay		17.3			9.2			14.6			40.0	
Approach LOS		B			A			B			D	
Queue Length 50th (ft)	0	177	0	23	114			16	0		1	
Queue Length 95th (ft)	4	365	0	75	409			65	48		12	
Internal Link Dist (ft)		1054			713			332			920	
Turn Bay Length (ft)	150			175								
Base Capacity (vph)	390	2896	1211	600	3244			304	749		141	
Starvation Cap Reductn	0	0	0	0	0			0	0		0	

Wawa - Garrisonville Road

No-Build (2021) Conditions

2: Commercial Driveway /Keystone Drive & Garrisonville Road

Timing Plan: PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0	0	0	0			0	0		0	
Storage Cap Reductn	0	0	0	0	0			0	0		0	
Reduced v/c Ratio	0.01	0.37	0.04	0.31	0.39			0.13	0.18		0.02	

Intersection Summary

Area Type: Other

Cycle Length: 122

Actuated Cycle Length: 72.9

Natural Cycle: 80

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.66

Intersection Signal Delay: 12.9

Intersection LOS: B

Intersection Capacity Utilization 62.9%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 2: Commercial Driveway /Keystone Drive & Garrisonville Road

 Ø1	 Ø2	 Ø4	 Ø8
25 s	67 s	12 s	18 s
 Ø5	 Ø6		
16 s	76 s		

Wawa - Garrisonville Road

Build (2021) Conditions

1: Furnace Road /Tech Parkway & Garrisonville Road

Timing Plan: AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 						 	
Traffic Volume (vph)	223	697	169	178	176	277	108	45	175	198	26	127
Future Volume (vph)	223	697	169	178	176	277	108	45	175	198	26	127
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	175		50	175		250	0		850	0		300
Storage Lanes	1		1	1		1	0		1	1		1
Taper Length (ft)	100			100			100			100		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	0	1799	1583	1681	1704	1583
Flt Permitted	0.613			0.228				0.966		0.950	0.963	
Satd. Flow (perm)	1142	3539	1583	425	3539	1583	0	1799	1583	1681	1704	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			145			298			198			198
Link Speed (mph)		45			45			35			30	
Link Distance (ft)		521			1134			1160			1020	
Travel Time (s)		7.9			17.2			22.6			23.2	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Shared Lane Traffic (%)										44%		
Lane Group Flow (vph)	240	749	182	191	189	298	0	164	188	119	122	137
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Free	Split	NA	Free	Split	NA	Free
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases	2		2	6		Free			Free			Free
Detector Phase	5	2	2	1	6		3	3		4	4	
Switch Phase												
Minimum Initial (s)	5.0	12.0	12.0	5.0	12.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	13.0	18.5	18.5	13.0	18.5		25.0	25.0		16.0	16.0	
Total Split (s)	21.0	54.0	54.0	24.0	57.0		30.0	30.0		27.0	27.0	
Total Split (%)	15.6%	40.0%	40.0%	17.8%	42.2%		22.2%	22.2%		20.0%	20.0%	
Yellow Time (s)	4.0	4.5	4.5	4.0	4.5		4.0	4.0		4.0	4.0	
All-Red Time (s)	3.0	2.0	2.0	3.0	2.0		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0			0.0		0.0	0.0	
Total Lost Time (s)	7.0	6.5	6.5	7.0	6.5			7.0		7.0	7.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lead		Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	Min	Min	None	Min		None	None		None	None	
Act Effect Green (s)	43.8	31.3	31.3	41.8	30.2	100.2		15.0	100.2	13.0	13.0	100.2
Actuated g/C Ratio	0.44	0.31	0.31	0.42	0.30	1.00		0.15	1.00	0.13	0.13	1.00
v/c Ratio	0.41	0.68	0.31	0.57	0.18	0.19		0.61	0.12	0.55	0.55	0.09
Control Delay	18.0	34.2	9.2	22.1	26.6	0.3		53.6	0.2	54.9	55.0	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Delay	18.0	34.2	9.2	22.1	26.6	0.3		53.6	0.2	54.9	55.0	0.1
LOS	B	C	A	C	C	A		D	A	D	D	A
Approach Delay		27.0			13.8			25.0			35.1	
Approach LOS		C			B			C			D	
Queue Length 50th (ft)	82	211	16	63	45	0		96	0	73	75	0
Queue Length 95th (ft)	166	350	76	132	85	0		210	0	171	174	0
Internal Link Dist (ft)		441			1054			1080			940	
Turn Bay Length (ft)	175		50	175		250			850			300
Base Capacity (vph)	610	1763	861	441	1874	1583		434	1583	352	357	1583
Starvation Cap Reductn	0	0	0	0	0	0		0	0	0	0	0

Wawa - Garrisonville Road

1: Furnace Road /Tech Parkway & Garrisonville Road

Build (2021) Conditions

Timing Plan: AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0	0	0	0	0		0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0		0	0	0	0	0
Reduced v/c Ratio	0.39	0.42	0.21	0.43	0.10	0.19		0.38	0.12	0.34	0.34	0.09

Intersection Summary

Area Type: Other

Cycle Length: 135

Actuated Cycle Length: 100.2

Natural Cycle: 80

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.68

Intersection Signal Delay: 24.4

Intersection Capacity Utilization 60.9%

Analysis Period (min) 15

Intersection LOS: C

ICU Level of Service B

Splits and Phases: 1: Furnace Road /Tech Parkway & Garrisonville Road

 Ø1	 Ø2	 Ø3	 Ø4
24 s	54 s	30 s	27 s
 Ø5	 Ø6		
21 s	57 s		

Wawa - Garrisonville Road

2: Commercial Driveway /Keystone Drive & Garrisonville Road

Build (2021) Conditions

Timing Plan: AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 						 	
Traffic Volume (vph)	1	1047	23	66	767	1	7	1	52	1	1	1
Future Volume (vph)	1	1047	23	66	767	1	7	1	52	1	1	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	175		0	0		0	0		0
Storage Lanes	1		1	1		0	0		1	0		0
Taper Length (ft)	100			100			100			100		
Satd. Flow (prot)	1770	3539	1583	1770	3539	0	0	1783	1583	0	1750	0
Flt Permitted	0.341			0.168				0.957			0.984	
Satd. Flow (perm)	635	3539	1583	313	3539	0	0	1783	1583	0	1750	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			102						102		1	
Link Speed (mph)		45			45			25			25	
Link Distance (ft)		1134			793			412			1000	
Travel Time (s)		17.2			12.0			11.2			27.3	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1	1126	25	71	826	0	0	9	56	0	3	0
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA		Split	NA	pm+ov	Split	NA	
Protected Phases	5	2	8	1	6		8	8	1	4	4	
Permitted Phases	2		2	6					8			
Detector Phase	5	2	8	1	6		8	8	1	4	4	
Switch Phase												
Minimum Initial (s)	7.0	15.0	7.0	7.0	15.0		7.0	7.0	7.0	5.0	5.0	
Minimum Split (s)	14.6	24.0	16.0	14.6	22.6		16.0	16.0	14.6	12.0	12.0	
Total Split (s)	16.0	72.0	18.0	18.0	74.0		18.0	18.0	18.0	14.0	14.0	
Total Split (%)	13.1%	59.0%	14.8%	14.8%	60.7%		14.8%	14.8%	14.8%	11.5%	11.5%	
Yellow Time (s)	4.8	4.8	3.0	4.8	4.8		3.0	3.0	4.8	3.0	3.0	
All-Red Time (s)	2.8	2.8	3.9	2.8	2.8		3.9	3.9	2.8	3.8	3.8	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)	7.6	7.6	6.9	7.6	7.6			6.9	7.6		6.8	
Lead/Lag	Lead	Lag		Lead	Lag				Lead			
Lead-Lag Optimize?	Yes	Yes		Yes	Yes				Yes			
Recall Mode	None	Min	None	None	Min		None	None	None	None	None	
Act Effect Green (s)	42.2	39.2	50.0	47.6	52.9			7.9	12.2		6.4	
Actuated g/C Ratio	0.67	0.63	0.80	0.76	0.84			0.13	0.19		0.10	
v/c Ratio	0.00	0.51	0.02	0.17	0.28			0.04	0.14		0.02	
Control Delay	5.0	11.9	0.0	4.7	5.7			36.8	2.0		35.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0			0.0	0.0		0.0	
Total Delay	5.0	11.9	0.0	4.7	5.7			36.8	2.0		35.0	
LOS	A	B	A	A	A			D	A		C	
Approach Delay		11.6			5.6			6.8			35.0	
Approach LOS		B			A			A			C	
Queue Length 50th (ft)	0	97	0	1	0			3	0		1	
Queue Length 95th (ft)	2	338	0	30	220			22	7		11	
Internal Link Dist (ft)		1054			713			332			920	
Turn Bay Length (ft)	150			175								
Base Capacity (vph)	610	3198	1358	511	3231			356	476		227	
Starvation Cap Reductn	0	0	0	0	0			0	0		0	

Wawa - Garrisonville Road

2: Commercial Driveway /Keystone Drive & Garrisonville Road

Build (2021) Conditions

Timing Plan: AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0	0	0	0			0	0		0	
Storage Cap Reductn	0	0	0	0	0			0	0		0	
Reduced v/c Ratio	0.00	0.35	0.02	0.14	0.26			0.03	0.12		0.01	

Intersection Summary

Area Type: Other

Cycle Length: 122

Actuated Cycle Length: 62.7

Natural Cycle: 75

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.51

Intersection Signal Delay: 9.0

Intersection Capacity Utilization 59.0%

Analysis Period (min) 15

Intersection LOS: A

ICU Level of Service B

Splits and Phases: 2: Commercial Driveway /Keystone Drive & Garrisonville Road

 Ø1	 Ø2	 Ø4	 Ø8
18 s	72 s	14 s	18 s
 Ø5	 Ø6		
16 s	74 s		

Wawa - Garrisonville Road

Build (2021) Conditions

1: Furnace Road /Tech Parkway & Garrisonville Road

Timing Plan: PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 							
Traffic Volume (vph)	112	531	118	182	917	31	242	21	156	406	41	176
Future Volume (vph)	112	531	118	182	917	31	242	21	156	406	41	176
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	175		50	175		250	0		850	0		300
Storage Lanes	1		1	1		1	0		1	1		1
Taper Length (ft)	100			100			100			100		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	0	1781	1583	1681	1701	1583
Flt Permitted	0.122			0.273				0.956		0.950	0.961	
Satd. Flow (perm)	227	3539	1583	509	3539	1583	0	1781	1583	1681	1701	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			145			198			198			198
Link Speed (mph)		45			45			35			30	
Link Distance (ft)		521			1134			1160			1020	
Travel Time (s)		7.9			17.2			22.6			23.2	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Shared Lane Traffic (%)										45%		
Lane Group Flow (vph)	120	571	127	196	986	33	0	283	168	240	241	189
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Free	Split	NA	Free	Split	NA	Free
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases	2		2	6		Free			Free			Free
Detector Phase	5	2	2	1	6		3	3		4	4	
Switch Phase												
Minimum Initial (s)	5.0	12.0	12.0	5.0	12.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	13.0	18.5	18.5	13.0	18.5		25.0	25.0		16.0	16.0	
Total Split (s)	15.0	47.0	47.0	22.0	54.0		34.0	34.0		32.0	32.0	
Total Split (%)	11.1%	34.8%	34.8%	16.3%	40.0%		25.2%	25.2%		23.7%	23.7%	
Yellow Time (s)	4.0	4.5	4.5	4.0	4.5		4.0	4.0		4.0	4.0	
All-Red Time (s)	3.0	2.0	2.0	3.0	2.0		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0			0.0		0.0	0.0	
Total Lost Time (s)	7.0	6.5	6.5	7.0	6.5			7.0		7.0	7.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lead		Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	Min	Min	None	Min		None	None		None	None	
Act Effect Green (s)	44.1	36.5	36.5	53.9	41.4	122.5		23.4	122.5	21.5	21.5	122.5
Actuated g/C Ratio	0.36	0.30	0.30	0.44	0.34	1.00		0.19	1.00	0.18	0.18	1.00
v/c Ratio	0.66	0.54	0.22	0.55	0.82	0.02		0.83	0.11	0.81	0.81	0.12
Control Delay	40.9	39.2	4.8	27.5	44.4	0.0		70.1	0.1	71.8	71.0	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Delay	40.9	39.2	4.8	27.5	44.4	0.0		70.1	0.1	71.8	71.0	0.2
LOS	D	D	A	C	D	A		E	A	E	E	A
Approach Delay		34.1			40.5			44.0			51.3	
Approach LOS		C			D			D			D	
Queue Length 50th (ft)	60	218	0	102	405	0		235	0	209	210	0
Queue Length 95th (ft)	#129	280	36	157	493	0		#373	0	#343	#342	0
Internal Link Dist (ft)		441			1054			1080			940	
Turn Bay Length (ft)	175		50	175		250			850			300
Base Capacity (vph)	184	1193	630	390	1400	1583		400	1583	350	354	1583
Starvation Cap Reductn	0	0	0	0	0	0		0	0	0	0	0

Wawa - Garrisonville Road

1: Furnace Road /Tech Parkway & Garrisonville Road

Build (2021) Conditions

Timing Plan: PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0	0	0	0	0		0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0		0	0	0	0	0
Reduced v/c Ratio	0.65	0.48	0.20	0.50	0.70	0.02		0.71	0.11	0.69	0.68	0.12

Intersection Summary

Area Type: Other

Cycle Length: 135

Actuated Cycle Length: 122.5

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.83

Intersection Signal Delay: 41.6

Intersection LOS: D

Intersection Capacity Utilization 69.8%

ICU Level of Service C

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 1: Furnace Road /Tech Parkway & Garrisonville Road

 Ø1	 Ø2	 Ø3	 Ø4
22 s	47 s	34 s	32 s
 Ø5	 Ø6		
15 s	54 s		

Wawa - Garrisonville Road

2: Commercial Driveway /Keystone Drive & Garrisonville Road

Build (2021) Conditions

Timing Plan: PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 						 	
Traffic Volume (vph)	3	1044	47	175	1227	2	37	1	126	1	1	1
Future Volume (vph)	3	1044	47	175	1227	2	37	1	126	1	1	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	175		0	0		0	0		0
Storage Lanes	1		1	1		0	0		1	0		0
Taper Length (ft)	100			100			100			100		
Satd. Flow (prot)	1770	3539	1583	1770	3539	0	0	1775	1583	0	1750	0
Flt Permitted	0.175			0.144				0.953			0.984	
Satd. Flow (perm)	326	3539	1583	268	3539	0	0	1775	1583	0	1750	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			170						133		1	
Link Speed (mph)		45			45			25			25	
Link Distance (ft)		1134			793			412			1000	
Travel Time (s)		17.2			12.0			11.2			27.3	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Shared Lane Traffic (%)												
Lane Group Flow (vph)	3	1123	51	188	1321	0	0	41	135	0	3	0
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA		Split	NA	pm+ov	Split	NA	
Protected Phases	5	2	8	1	6		8	8	1	4	4	
Permitted Phases	2		2	6					8			
Detector Phase	5	2	8	1	6		8	8	1	4	4	
Switch Phase												
Minimum Initial (s)	7.0	15.0	7.0	7.0	15.0		7.0	7.0	7.0	5.0	5.0	
Minimum Split (s)	14.6	24.0	16.0	14.6	22.6		16.0	16.0	14.6	12.0	12.0	
Total Split (s)	15.0	69.0	16.0	25.0	79.0		16.0	16.0	25.0	12.0	12.0	
Total Split (%)	12.3%	56.6%	13.1%	20.5%	64.8%		13.1%	13.1%	20.5%	9.8%	9.8%	
Yellow Time (s)	4.8	4.8	3.0	4.8	4.8		3.0	3.0	4.8	3.0	3.0	
All-Red Time (s)	2.8	2.8	3.9	2.8	2.8		3.9	3.9	2.8	3.8	3.8	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)	7.6	7.6	6.9	7.6	7.6			6.9	7.6		6.8	
Lead/Lag	Lead	Lag		Lead	Lag				Lead			
Lead-Lag Optimize?	Yes	Yes		Yes	Yes				Yes			
Recall Mode	None	Min	None	None	Min		None	None	None	None	None	
Act Effect Green (s)	43.4	35.6	51.7	53.3	54.4			8.4	20.5		5.8	
Actuated g/C Ratio	0.58	0.48	0.69	0.71	0.73			0.11	0.27		0.08	
v/c Ratio	0.01	0.66	0.04	0.49	0.51			0.20	0.25		0.02	
Control Delay	5.3	17.7	0.1	10.3	8.8			42.0	7.3		40.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0			0.0	0.0		0.0	
Total Delay	5.3	17.7	0.1	10.3	8.8			42.0	7.3		40.7	
LOS	A	B	A	B	A			D	A		D	
Approach Delay		16.9			9.0			15.4			40.7	
Approach LOS		B			A			B			D	
Queue Length 50th (ft)	0	189	0	23	122			17	1		1	
Queue Length 95th (ft)	4	374	0	79	414			67	51		12	
Internal Link Dist (ft)		1054			713			332			920	
Turn Bay Length (ft)	150			175								
Base Capacity (vph)	352	2912	1182	584	3199			242	727		137	
Starvation Cap Reductn	0	0	0	0	0			0	0		0	

Wawa - Garrisonville Road

2: Commercial Driveway /Keystone Drive & Garrisonville Road

Build (2021) Conditions

Timing Plan: PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0	0	0	0			0	0		0	
Storage Cap Reductn	0	0	0	0	0			0	0		0	
Reduced v/c Ratio	0.01	0.39	0.04	0.32	0.41			0.17	0.19		0.02	

Intersection Summary

Area Type: Other

Cycle Length: 122

Actuated Cycle Length: 74.6

Natural Cycle: 80

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.66

Intersection Signal Delay: 12.7

Intersection Capacity Utilization 64.1%

Analysis Period (min) 15

Intersection LOS: B

ICU Level of Service C

Splits and Phases: 2: Commercial Driveway /Keystone Drive & Garrisonville Road

 Ø1	 Ø2	 Ø4	 Ø8
25 s	69 s	12 s	16 s
 Ø5	 Ø6		
15 s	79 s		