Street Traffic Studies, Ltd.

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March 5, 2024
Revised - March 22, 2024

Jody S. Kline
Attorney
Miller, Miller & Canby
200-B Monroe Street
Rockville, MD 20850

RE: 900 Rockville Pike
Danshes Project Plan Amendment
MD 355 Service Drive Access Study

Dear Mr. Kline:

In your December 7, 2023 memorandum, you requested that our office summarize our opinion as it relates to the adequacy of the existing service drive located along the east side of MD 355, to serve the Danshes Property if the existing directional driveway located to the immediate south of the site is not utilized by the Danshes Property. Our office prepared a summary response to your request dated December 19, 2023.

In that letter we detailed the alternatives available to the northern directional access driveway and concluded that the site trips would not have an adverse impact to the other service road driveway connections to MD 355. We made that determination based on several field studies to the site during peak and non peak hours, detailing the existing roadway physical conditions as well as observed traffic operations. We did not conduct any additional traffic counts or specific analyses at that time to support my conclusion.

Since that time, City of Rockville staff has requested that we conduct more detailed review of the service drive operations, including new traffic data, that would then serve as the quantitative basis to support our conclusions.

This letter summarizes the work effort to complete that review.

The existing service drive, located on the east side of MD 355, has 15 driveways along its length. This study focused on the three driveways located at the northern end of the service drive. The primary question of this study focuses on the ability of the second driveway, a full movement access drive to MD 355, to accommodate the peak hour trips generated by the 900 MD 355 retail project.

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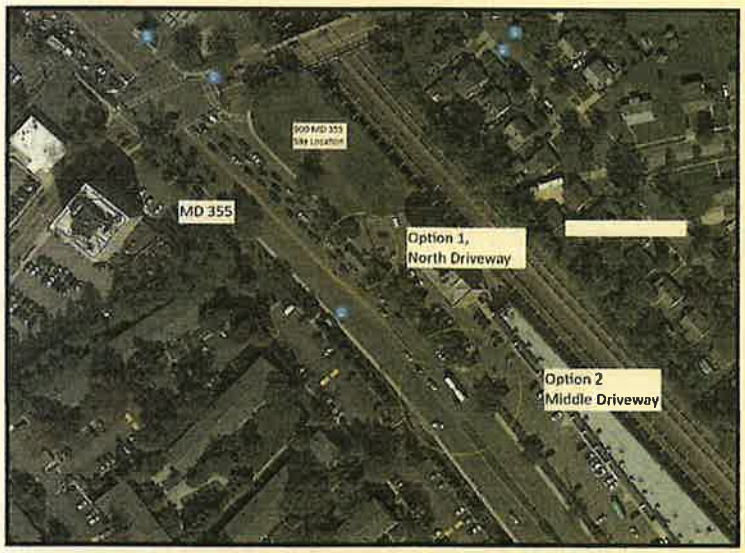
New peak period turning movement counts were taken for the three MD 355 / Service Road Driveway intersections and two of the internal service drive intersections on Tuesday, January 29, 2024 between the hours of 7:00 - 9:00 AM, 11:00 AM - 1:00 PM , and 4:00 - 7:00 PM. The counts included all motor vehicles, pedestrians and bicycles. Copies of the turning movement count summaries are attached to this letter, and peak hour volumes are graphically presented on Exhibit 1.

For the purpose of this analysis, we conducted two capacity study reviews. Both studies were developed initially based on existing traffic conditions and then with the added trips associated with the 900 MD 355 retail project.

For consistency purposes, the initial capacity analysis followed the standard City of Rockville procedures using the Critical Lane Volume Technique (CLV). The results of the CLV analysis for both study options clearly demonstrate that the driveway operations meet the City adequacy requirements. Because this procedure is more of a planning tool the latest version of the Highway Capacity Manual (HCM) Two Way Stop Controlled technique was also used to analyze each intersection. The HCM procedure is more of an operational study that include reviews of individual movements and approaches, with detailed results of projected vehicle queues and delay. For each Option, results will be summarized for both the morning and evening peak hour, for existing conditions and total site conditions, using both methods of analysis. The results of the two studies were then compared to detail the net changes due to the addition of the site traffic. The results of the queuing studies are based on 95% queue lengths and are listed based on 95% queue length in feet and number of vehicles.



The first study, noted as Option 1, reviewed the difference in traffic conditions at the northern driveway, assuming all site traffic utilized it as its sole means of access. The second option, responding to the City request, evaluated the ability of the second driveway to accommodate all of the site generated traffic. Option 2 included a review of the MD 355 / Middle Driveway intersection and the internal service drive intersection.

While there are many other alternatives that could be available for study that include the three driveways counted, including varying percentages of use between the access points, the Options studied represent the worst case conditions of all site trips at one driveway. Any other alternative that spreads the trips over multiple driveways would lower the net impact at the primary drives.

For each of the studies, the site trip were taken directly from the traffic statement as amended.

For consistency purposes, 11th ITE Trip Generation rates were applied for both the previous approval and the new proposed use. In both cases, average trips rates were used for both the morning and evening peak hours.

TABLE 1

TRIP GENERATION STUDY

Development	*Morning Peak Hour*			*Evening Peak Hour*		
	In	*Out*	*Total*	*In*	*Out*	*Total*
900 Rockville Pike Trips/ 4,400 sf retail	*6*	*4*	*10*	*14*	*15*	*29*
Previous approval (Resolution 14-06) Trips/12,574 Furniture Store	*2*	*1*	*3*	*3*	*4*	*7*
Net New Trips	*4*	*3*	*7*	*11*	*11*	*22*

ITE 11th Edition Trip Generation Manual used for all uses
LU Code 822 - Shopping Center less than 40,000 sf
LU Code 890 - Furniture Store
The average rate was used to calculate the trip generation for all peak hours.

For the purpose of this analysis, the total trips projected for the 4,400 sf retail building were used to analyze the driveway operations. It is important to emphasize that the projected trips are below the City of Rockville threshold that triggers the preparation of a traffic study even without consideration of the vested trips.

Option 1

This option is presented as a base case condition, assuming all site trips access MD 355 by way of the northern driveway only. The northern driveway is a directional driveway, with access limited to a right turn in, right turn out.

Assignment of the site trips under Option 1 consists of all inbound trips arriving from northbound MD 355 and turning right into the site and all existing volumes turning right from the driveway onto northbound MD 355 as shown on Exhibit 2.

Total traffic conditions as shown on Exhibit 3 reflect adding the site trips to the excising intersection volumes.

The results of the HCM analysis of the existing conditions at the northern directional driveway and the total traffic conditions are summarized in Tables 1A and 1B below.

TABLE 1A
CAPACITY ANALYSES
Option 1 - MD 355 / North Driveway

	Existing Conditions	Total Conditions
Critical Lane Methodology		
Morning Peak Hour	A(297)	A(757)
Evening Peak Hour	A(303)	A(777)

TABLE 1B
CAPACITY ANALYSES
Option 1 - MD 355 / North Driveway

	Existing Conditions	Total Conditions
Highway Capacity Manual Methodology		
Morning Peak hour		
WB Right Turn	B(12.4 sec. /vehicle) 95% Q - 0 feet, 0 vehicles	B(12.6 sec./vehicle) 95% Q - 0 feet, 0 vehicles
Evening Peak Hour		
WB Right Turn	D(27.6 sec./vehicle) 95% Q - 10.2 feet, 0.4 vehicles	D(30.6 Sec. /Vehicle) 95% Q - 17.9 feet, 0.7 vehicles

X(x.x sec./vehicle) - Intersection Level of Service (delay per vehicle)

As shown in Tables 1A and 1B, the addition of the trips associated with the subject site are projected to have a limited impact on the operations of the MD 355 intersection. There is no change in level of service, and outbound queue lengths are projected to continue to be less than one vehicle.

From our field investigations, the intersection north driveway operates very well. There were times noted, primarily during the evening peak hour, when mainline MD 355 queue from the MD 355 / Edmonston Road signal queued past the driveway. During those cases, vehicles exiting from the driveway waited for the queue to clear and proceeded safely onto MD 355 under control of the traffic signal.

Option 2

Option 2 represents a study of the middle driveway, assuming that the 900 MD 355 traffic uses it as its sole means of access. The north directional driveway is not available for its use.

Trip assignments for the morning and evening peak hour trips are shown on Exhibit 4. Trip assignments used the existing driveway distributions as the primary basis as they reflect the actual driveway use. Specifically, the outbound driveway volume during the evening peak predominantly turns right, with a very limited number turning left, typically at a 10:1 ratio. This split is a direct function of the mainline MD 355 peak hour volumes and was found to be consistent with the southern driveway volumes also, as well as observations of the remaining driveways to the south, with the exception of the signal controlled driveways.

Adding the site trips as shown in Exhibit 4 to the existing traffic volumes in Exhibit 1, results in the total peak hour trips for Option 2, shown on Exhibit 5.

The total traffic volumes were analyzed using the same methodologies as Option 1, the City standard CLV and the Highway Capacity Manual 2 way stop controlled analysis. The results of those studies are shown in Table 2.

The westbound approach of the service drive access to MD 355 is 30 feet wide. The approach is unmarked. The outbound approach as evidenced by the traffic data and supported by a number of field observations, typically operates as an outbound right turn lane. In the limited times that a vehicle is turn left onto MD 355, the approach was observed operating both as a single combined left / right turn lane and as separate left and right turn lanes. As noted in the peak hour summaries, there were no outbound lefts recorded during the morning peak and only 3 during the evening peak (averaging one every 20 minutes).

For the purposes of our analysis, the Critical Lane Analysis was prepared assuming the side street approaches operated with a single shared lane. Two separate HCM studies were prepared for Option 2, the first assuming two outbound lanes for the side street approach, summarized in Table 2B, and then assuming a single outbound lane for the side street approach, with the results summarized in Table B3.

TABLE 2A
CAPACITY ANALYSES
Option 2 - MD 355 / Middle Driveway

	Existing Conditions	Total Conditions
Critical Lane Methodology		
Morning Peak Hour	A(644)	A(668)
Evening Peak Hour	A(739)	A(765)

TABLE 2B
CAPACITY ANALYSES
Option 2 - MD 355 / Middle Driveway

Highway Capacity Manual
(Two outbound lanes)

Morning Peak hour	**Existing Conditions**	**Total Conditions**
WB Approach	**(0 left turns)**	**B (12.4 sec./veh)**
WB Right Turn	B(10.9 sec./ veh) 95% Q - 2.6 feet, 0.1 veh	B(10.9 sec./veh) 95% Q - 0 feet, 0 veh
WB Left Turn	N/A (0 left turns)	C(18.3 sec./veh) 95% Q - 0 feet, 0 veh
SB Approach	**A(0.1 sec/veh)**	**A(0.1 sec/veh)**
SB Left	B(10.8 sec/veh) 95% Q - 2.6 feet, 0.1 veh	B(10.8 sec/veh) 95% Q - 2.6 feet, 0.1 Veh

Evening Peak Hour	**Existing Conditions**	**Total Conditions**
WB Approach	**D (31.2 sec/Veh)**	**D (34.6 sec./veh)**
WB Right Turn	D(25.5 sec. /veh) 95% Q - 17.9 feet, 0.7 veh	D(27.3 sec./veh) 95% Q -25.6 feet, 1.0 veh
WB Left Turn	F(101.2 sec/veh) 95% Q - 5.1 feet, 0.2 veh	F(107.2 sec./veh) 95%Q - 10.2 feet, 0.4 veh
SB Approach	**A (0.6 sec/ veh)**	**A (0.9 sec / veh)**
SB Left	E(38.7 sec/veh) 95% Q - 17.9 feet, 0.7 veh	E(42.6 sec/veh) 95% Q - 28.2 feet, 1.1 Veh

X(x.x sec./veh) - Level of Service (delay per vehicle)

TABLE 2C
CAPACITY ANALYSES
Option 2 - MD 355 / Middle Driveway

Highway Capacity Manual
(One outbound lane)

Morning Peak hour	**Existing Conditions**	**Total Conditions**
WB Approach	**B (10.9 sec./veh)** 95% Q - 0 feet, 0.1 veh	**B (12.5 sec./veh)** 95% Q - 0 feet, 0 veh
SB Approach	**A(0.1 sec/veh)**	**A(0.1 sec/veh)**
SB Left	B(10.8 sec/veh) 95% Q - 2.6 feet, 0.1 veh	B(10.8 sec/veh) 95% Q - 2.6 feet, 0.1 Veh
Evening Peak Hour	**Existing Conditions**	**Total Conditions**
WB Approach	**D (34.9 sec/veh)** 95% Q - 25.6 feet, 1.0 veh	**E (46.2 sec./veh)** 95% Q -43.5 feet, 1.7 veh
SB Approach	**A (0.6 sec/ veh)**	**A (0.9 sec / veh)**
SB Left	**E(38.7 sec/veh)** 95% Q - 17.9 feet, 0.7 veh	**E(42.6 sec/veh)** 95% Q - 28.2 feet, 1.1 Veh

X(x.x sec./veh) - Level of Service (delay per vehicle)

As shown in Table 2A, the added impact of 10 morning peak hour trips and 29 evening peak hour trips to the middle driveway intersection results in very minor changes in the intersection capacity results based on the CLV analysis. The intersection is projected to continue operating at Level of Service 1 during both peak hours with the addition of the 90 MD 35 site trips added. Intersection approach levels of service remain unchanged, vehicle queues are consistently 1 vehicle or less.

Operationally, as shown on tales 2B and 2C, the addition of the 900 MD 355 trips is projected to have a minor impact as well. Generally the results in Table 2B would reflect operations of the intersection. In the limited case where an outbound vehicle turingin left blocked the right turns, the results as shown in Table 2c would be applicable.

In addition to the MD 355 / Middle Driveway intersection study, a review was also conducted of the service drive intersection with the middle driveway. In this case, due to the extremely low morning volumes, only the evening peak hour was studied. While not signed as one, the intersection operates primarily as an all way stop, so the HCM All WAY stop technique was used to review the intersection capacity. The results of those studies are summarized in Table 3 below and the work sheets are attached.

TABLE 3
CAPACITY ANALYSES
Option 2 - Service Road / Middle Driveway

Evening Peak Hour	Existing Conditions	Total Conditions
Intersection	**A(7.1 Sec/veh)**	**A(7.2 sec/veh)**
EB Approach	A (6.7 sec/Veh)	A (7.0 sec./veh)
NB Approach	A(7.4 sec. /veh)	A(7.5 sec./veh)
SB Approach	A (6.8 sec./veh)	A(6.8 sec./veh)

As shown in Table 3 above, all approaches of the studied intersection are projected to operate at Level of Service A during the evening peak hour under existing and total traffic conditions.

In summary, the results of the additional operational studies confirm that the addition of the trips associated with the proposed 900 MD 355 retail building will not have an adverse impact on the operation of the service road or the middle service road driveway intersection with MD 355, assuming the northern driveway is not available. The results clearly demonstrate that the two service drive intersections with MD 355 are projected to operate well within the range of acceptable standards bases on the City criteria and that the additive affect of the 900 MD 355 trip is extremely minor.

The quantitative findings of this review are consistent with the initial field observation conclusions summarized in our December 19, 2023 letter.

If you have any questions or need additional information, please let me know.

Sincerely,

David A. Nelson

David A. Nelson, P.E., P.T.O.E.
President

Critical Lane Volume (CLV) Worksheet

Project: 900 Rockville Pike
Intersection: MD 355 @ Middle Service Drive
Scenario: Existing
Time Period: Morning Peak

Rockville
CLV Standard: 1424

MD 355

R	Right	Thru	Left	
	13	1751	11	VPH
	0	3	1	# Lanes

Signal Phasing
N-S Split Phase? no
E-W Split Phase? yes

	VPH	# Lanes
Left	2	0
Thru	0	1
Right	8	0
R		

Intersection CLV:	**664**	
CLV Standard:	**1424**	
Intersection LOS:	**B or better**	
Better Than CLV Standard		

# Lanes	VPH	R	
0	1	Right	Middle Access Drive
1	0	Thru	
0	0	Left	

Analyst: STS
Organization: STS
Date of Analysis:03/24

# Lanes	0	3	0	
VPH	0	510	2	
	Left	Thru	Right	R

CLV (EB)	10
CLV (WB)	1
CLV (NB)	200
CLV (SB)	653
CLV (N-S)	653
CLV (E-W)	11

Critical Lane Volume (CLV) Worksheet

Project: 900 Rockville Pike
Intersection: MD 355 @ Middle Service Drive
Scenario: Existing
Time Period: Evening Peak

Brandywine
CLV Standard: 1424

MD 355

R	Right	Thru	Left	
	30	1464	24	VPH
	0	3	1	# Lanes

Signal Phasing
N-S Split Phase? no
E-W Split Phase? yes

	VPH	# Lanes
Left	2	0
Thru	0	1
Right	12	0
R		

Intersection CLV:	**739**	
CLV Standard:	**1424**	
Intersection LOS:	**B or better**	
Better Than CLV Standard		

# Lanes	VPH	R
0	37	Right
1	0	Thru
0	3	Left

Middle Access Drive

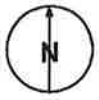
Analyst: STS
Organization: STS
Date of Analysis:03/24

# Lanes	0	3	0	
VPH	1	1783	2	R
	Left	Thru	Right	

CLV (EB)	14
CLV (WB)	40
CLV (NB)	685
CLV (SB)	554
CLV (N-S)	685

Critical Lane Volume (CLV) Worksheet

Project: 900 Rockville Pike
Intersection: MD 355 @ Middle Service Drive
Scenario: Existing plus Site
Time Period: Morning Peak



MD 355

R	Right	Thru	Left	
	13	1751	15	VPH
	0	3	1	# Lanes

Brandywine
CLV Standard: 1424

Signal Phasing
N-S Split Phase? no
E-W Split Phase? yes

Edmonston

	VPH	# Lanes
Left	2	0
Thru	0	1
Right	8	0
R		

Intersection CLV:	**668**
CLV Standard:	**1424**
Intersection LOS:	**B or better**
Better Than CLV Standard	

# Lanes	VPH	R	
0	4	Right	Middle Access Drive
1	0	Thru	
0	1	Left	

Analyst: STS
Organization: STS
Date of Analysis:03/24

# Lanes	0	3	0	
VPH	0	510	4	
	Left	Thru	Right	R

CLV (EB)	10
CLV (WB)	5
CLV (NB)	205
CLV (SB)	653
CLV (N-S)	653
CLV (E-W)	15

Project: 900 Rockville Pike
Intersection: MD 355 @ Middle Service Drive
Scenario: Existing plus Site
Time Period: Evening Peak

Brandywine
CLV Standard: 1424

MD 355

R	Right	Thru	Left	
	30	1464	34	VPH
	0	3	1	# Lanes

Signal Phasing
N-S Split Phase? no
E-W Split Phase? yes

	VPH	# Lanes
Left	2	0
Thru	0	1
Right	12	0
R		

Intersection CLV:	765
CLV Standard:	1424
Intersection LOS:	B or better
Better Than CLV Standard	

# Lanes	VPH	R
0	50	Right
1	0	Thru
0	5	Left

Analyst: STS
Organization: STS
Date of Analysis:03/24

# Lanes	0	3	0	
VPH	1	1783	6	
	Left	Thru	Right	R

CLV (EB)	14
CLV (WB)	55
CLV (NB)	696
CLV (SB)	554
CLV (N-S)	696
CLV (E-W)	69

Instructions:

Project: 900 Rockville Pike
Intersection: MD 355 @ Middle Service Drive
Scenario: Existing plus Site
Time Period: Evening Peak

Brandywine
CLV Standard: 1424

MD 355

R	Right	Thru	Left	
	30	1464	34	VPH
	0	3	1	# Lanes

Signal Phasing
N-S Split Phase? no
E-W Split Phase? yes

	VPH	# Lanes
Left	2	0
Thru	0	1
Right	12	0
R		

Intersection CLV:	765
CLV Standard:	1424
Intersection LOS:	B or better
Better Than CLV Standard	

# Lanes	VPH	R
0	50	Right
1	0	Thru
0	5	Left

Analyst: STS
Organization: STS
Date of Analysis:03/24

	Left	Thru	Right	R
# Lanes	0	3	0	
VPH	1	1783	6	

CLV (EB)	14
CLV (WB)	55
CLV (NB)	696
CLV (SB)	554
CLV (N-S)	696
CLV (E-W)	69

Instructions:

Critical Lane Volume (CLV) Worksheet

Project: 900 Rockville Pike
Intersection: MD 355 @ North Service Drive
Scenario: Existing
Time Period: Morning Peak

Rockville
CLV Standard: 1424

MD 355

R	Right	Thru	Left	
	0	0	0	VPH
	0	0	0	# Lanes

Signal Phasing
N-S Split Phase? no
E-W Split Phase? yes

	VPH	# Lanes
Left	0	0
Thru	0	0
Right	0	0
R		

Intersection CLV:	**297**
CLV Standard:	**1424**
Intersection LOS:	**B or better**
Better Than CLV Standard	

# Lanes	VPH	R	
0	1	Right	North Access Drive
1	0	Thru	
0	0	Left	

Analyst: STS
Organization: STS
Date of Analysis:03/24

	Left	Thru	Right	R
# Lanes	0	3	0	
VPH	0	799	1	

CLV (EB)	0
CLV (WB)	1
CLV (NB)	296
CLV (SB)	0
CLV (N-S)	296
CLV (E-W)	1

Created by Ed Axler
Created on: 9/14/87
Updated 6/22/92

If any questions:
Call Ed Axler
at 1-301-495-4525
8787 Georgia Ave
Silver Spring, MD 20910-3760

Lane Utilization Factors:

Approach No. Lanes	Left	Thru	Rght
1 Lane	1.00	1.00	1.00
2 Lanes	0.60	0.53	0.53
3 Lanes	0.45	0.37	0.37
4 Lanes	0.29	0.30	0.30
5 Lanes	0.25	0.25	0.25

Pg=2

LOS:	CLV>=	<CLV
A	0	978
A/B	977	1023
B	1022	1128
B/C	1127	1173
C	1172	1278
C/D	1277	1323
D	1322	1428
D/E	1427	1473
E	1472	1578
E/F	1577	1623
F	1622	9999

\p {Calc}{Calc} v-Setup String vary w/printer
/ppos{esc}\027E\027(s16.66H~ <-as HP DeskJet
bra1.a1~bca1.a20~qrb2.n20~agq{Quit} now!

Turning Factors:	N(sb)	S(nb)	E(wb)	W(eb)		-Rights-	-RTOR-	-%RTOR
Right Turns	1.0	1.0	1.0	1.0	N,sb	0	0	0%
Through Cars	1.0	1.0	1.0	1.0	S,nb	1	1	100%
Left Turns	1.0	1.0	1.0	1.0	E,wb	1	0	0%
					W,eb	0	0	0%

C:/LotusDta/Counts/CLVFUL14a.WK4 =Critical Lane Volume-FULl intersection, version #14a

Created by Ed Axler
Created on: 9/14/87
Updated 1/12/89
Updated 2/24/89
Updated 8/18/89
Updated 8/30/89

Does Consider Split Phasing
Does Right Turn Checks, too!!
With Streamline Format !
If #Lns=5,Use Factor=.25
Improve Alt "P" Macro
Vary Turning Factors

Pg=3

LOS:	Pointer er <--
A	0
A/B	0

Updated 9/25/89-10	8/9	Vary Lane use Factors	B	0
Updated 1/31/90-11a	8/9	Vary LOS for CLV Value	B/C	0
Updated 2/14/90-11b	9	For MDSHA,0.6=2 Lft Lanes	C	0
Updated 2/20/90-11c	9b	Fix CLV-Split Calc, ?#22	C/D	0
Updated 2/22/90-11d	11a	Add "YES" to use Split	D	0
Updated 5/17/90-11d	11a	Add "MUST hit CALC"	D/E	0
Updated 9/26/90-11e	11a	Fix Doc.of Equations	E	0
Update 11/27/90-11f	11b	Thru can have 0 Lanes!!	E/F	0
Updated 5/31/91-12	11c	Check # Receiving Lanes	F	0
Updated 6/18/91-13(a)		for Merging Rt w/Thru	LOS=	Error
Updated 8/6/91-cch	11d	To Write Alt "S" Macro		
Updated 8/12/91-13b	11d	cell k33 1428 to 1427		

[Continued Below on Page 4]

C:/LotusDta/Counts/CLVFUL14a.WK4 =Critical Lane Volume-FULl intersection, version #14a

	11d	Fix Doc.of Equations	Pg=4
	11e	Fix cell O/U/R/X-22	
	&	24 for RTOR w/labels	
	11f	Fix O/U/R/X-22, from >= to <	
	12	Clarify lane use coding in J17 & J18	
	13a	Add receiving lane as part of RTOR check	
	&	Fix cells Q17 U17 W17 Z17,if Split & heavy rght	
	&	Add "R","r" or" " to permit RTOR, otherwise not	
	cch	Simplify display for those with CLV & lotus	
		experience by request of Craig Hedberg	
	13b	Improve receiving lanes display as in CLVCCH	
Updated 9/4/91-13c	13c	Show on page 2, % RTOR @ each intersection	
Updated 1/14/92-13d	13d	Fix cell R,U,X,AA 23: Calculation of Opp. Lefts	
		even if Thru lanes=0	
Updated 6/22/92-13e	13e	Fix cells Q,T,W,Z 17 (Rt#5)=> Add receiving	
		lane(s) to create possible free right & fix	
Note: 13f is 13e for		related cells R,U,X,AA 22 & doc. PLUS Fix	
Macro5.wk1		cells N37-N40 to correct divide by zero error	
Updated 3/23/93-13g	13g	Fix cell U23 "@IF(V4+S4..." from "T4+S4"	

C:/LotusDta/Counts/CLVFUL13j.WK4 =Critical Lane Volume-FULl intersection, version #13j

Update 3/11/94-13h	13h	Fix cells R,U,X,AA23 <= to > since "<="	Pg=5
		no good for opposing lefts with free rights	
		Fix cells Q,T,W,Z 17 <= to > since "<=" no good	
		for opposing throughs with free rights	
Update 5/25/94-13j	13j	Fix cells R,U,X,AA 23 delete rec'g lane check	
Update 4/27/98-14a	14a	Lane use factors 0.55> 0.53 & 0,40 > 0.37 per new LATR Guidelines	
Update 8/9/01-13k	13k	Remove LOS cells on main display	

C:/L/CLVFUL14a.WK1 =Critical Lane Volume-FULl intersection, version #14a

Pg=6

```
\s      {goto}ae65~Type the name of the file to be saved as:{down}{?}~
        {contents b67,ae66#and#"~r~"}
        {goto}ae67~Enter '1' if saving whole file or '2' only input data:{down}{?}~
        {if g68=2} {goto}b69~
```

```
\fs{esc}{esc}{esc}
C:\l\clvful11.wk1
~r~
{goto}b73
\fxf{esc}{esc}
      0
~a1..l20~
{quit}
{contents b67,g66&"~r~"}
{Let b67,+b74}{Let b71,+g66+b74}
```

Critical Lane Volume (CLV) Worksheet

Project: 900 Rockville Pike
Intersection: MD 355 @ North Service Drive
Scenario: Existing
Time Period: Evening Peak

Brandywine
CLV Standard: 1424

MD 355

R	Right	Thru	Left	
	0	0	0	VPH
	0	0	0	# Lanes

Signal Phasing
N-S Split Phase? no
E-W Split Phase? yes

	VPH	# Lanes
Left	0	0
Thru	0	0
Right	0	0
R		

Intersection CLV:	**757**
CLV Standard:	**1424**
Intersection LOS:	**B or better**
Better Than CLV Standard	

	# Lanes	VPH	R
	0	18	Right
	1	0	Thru
	0	0	Left

North Access Drive

Analyst: STS
Organization: STS
Date of Analysis:03/24

	Left	Thru	Right	R
# Lanes	0	3	0	
VPH	0	1996	2	

CLV (EB)	0
CLV (WB)	18
CLV (NB)	739
CLV (SB)	0
CLV (N-S)	739
CLV (E-W)	18

Critical Lane Volume (CLV) Worksheet

Project: 900 Rockville Pike
Intersection: MD 355 @ North Service Drive
Scenario: Existing plus Site
Time Period: Morning Peak

MD 355

R	Right	Thru	Left	
	0	0	0	VPH
	0	0	0	# Lanes

Brandywine
CLV Standard: 1424

Signal Phasing
N-S Split Phase? no
E-W Split Phase? yes

Edmonston

	VPH	# Lanes
Left	0	0
Thru	0	0
Right	0	0
R		

Intersection CLV:	303
CLV Standard:	1424
Intersection LOS:	B or better
Better Than CLV Standard	

North Access Drive

# Lanes	VPH	R	
0	5	Right	
1	0	Thru	
0	0	Left	

Analyst: STS
Organization: STS
Date of Analysis:03/24

# Lanes	0	3	0	
VPH	0	799	7	
	Left	Thru	Right	R

CLV (EB)	0
CLV (WB)	5
CLV (NB)	298
CLV (SB)	0
CLV (N-S)	298
CLV (E-W)	5

Critical Lane Volume (CLV) Worksheet

Project: 900 Rockville Pike
Intersection: MD 355 @ North Service Drive
Scenario: Existing plus Site
Time Period: Evening Peak

MD 355

	R	Right	Thru	Left	
Brandywine		0	0	0	VPH
CLV Standard: 1424		0	0	0	# Lanes

Signal Phasing
N-S Split Phase? no
E-W Split Phase? yes

	VPH	# Lanes
Left	0	0
Thru	0	0
Right	0	0
R		

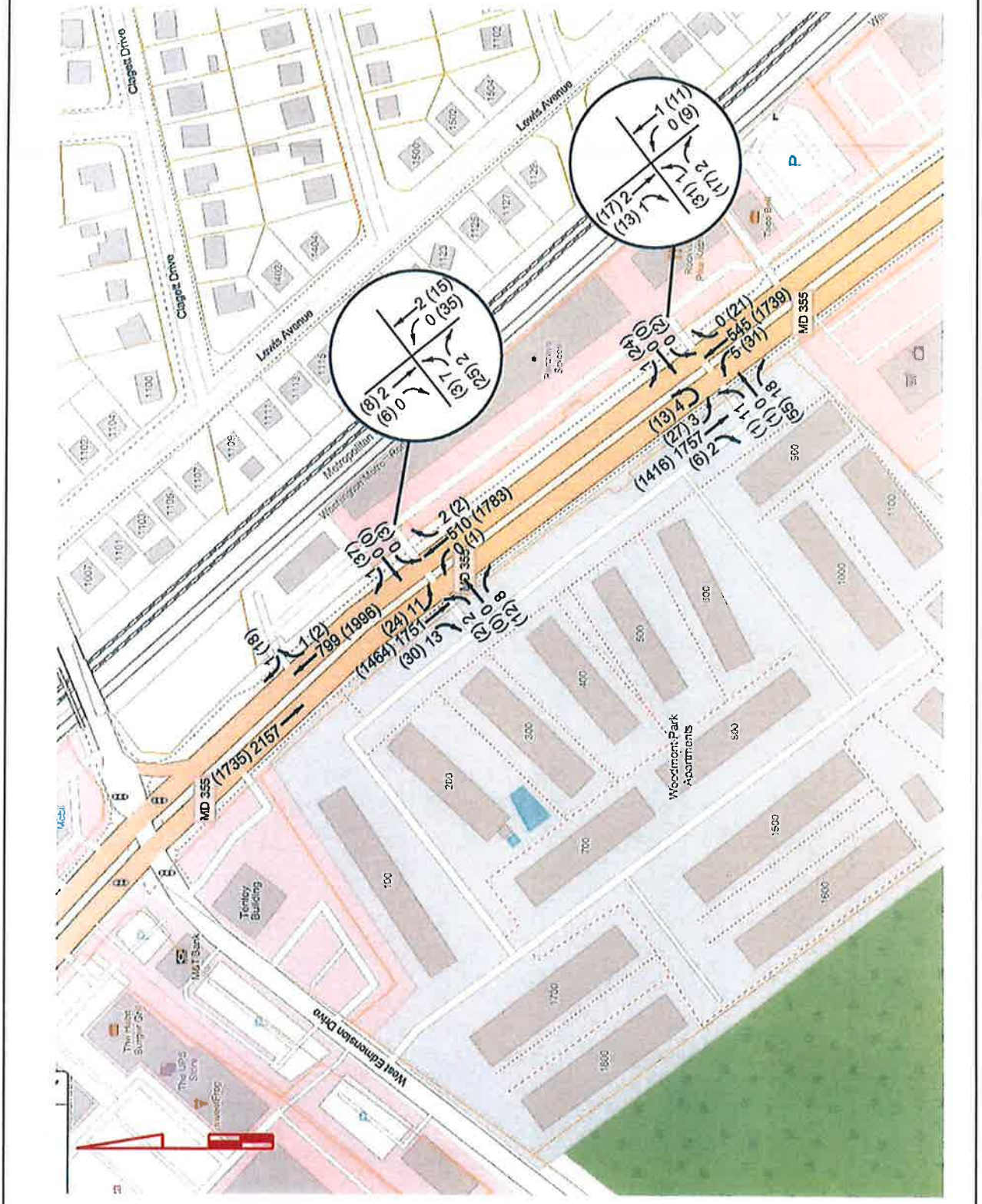
Intersection CLV:	777
CLV Standard:	1424
Intersection LOS:	B or better
Better Than CLV Standard	

# Lanes	VPH	R	
0	33	Right	North Access Drive
1	0	Thru	
0	0	Left	

Analyst: STS
Organization: STS
Date of Analysis:03/24

	Left	Thru	Right	R
# Lanes	0	3	0	
VPH	0	1996	16	

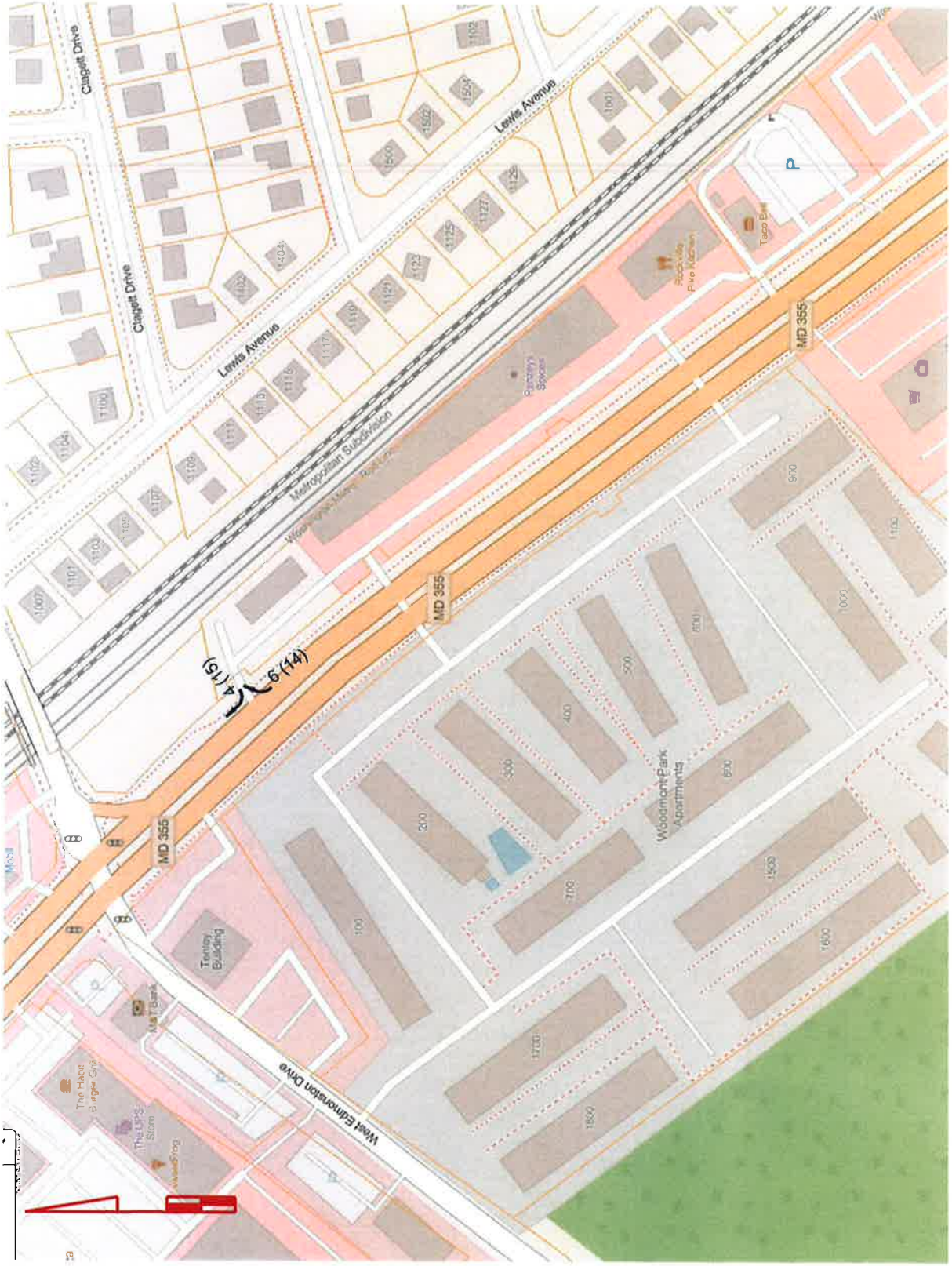
CLV (EB)	0
CLV (WB)	33
CLV (NB)	744
CLV (SB)	0
CLV (N-S)	744
CLV (E-W)	33



900 MD 355
SERVICE DRIVE STUDY

EXHIBIT 1
EXISTING VOLUMES

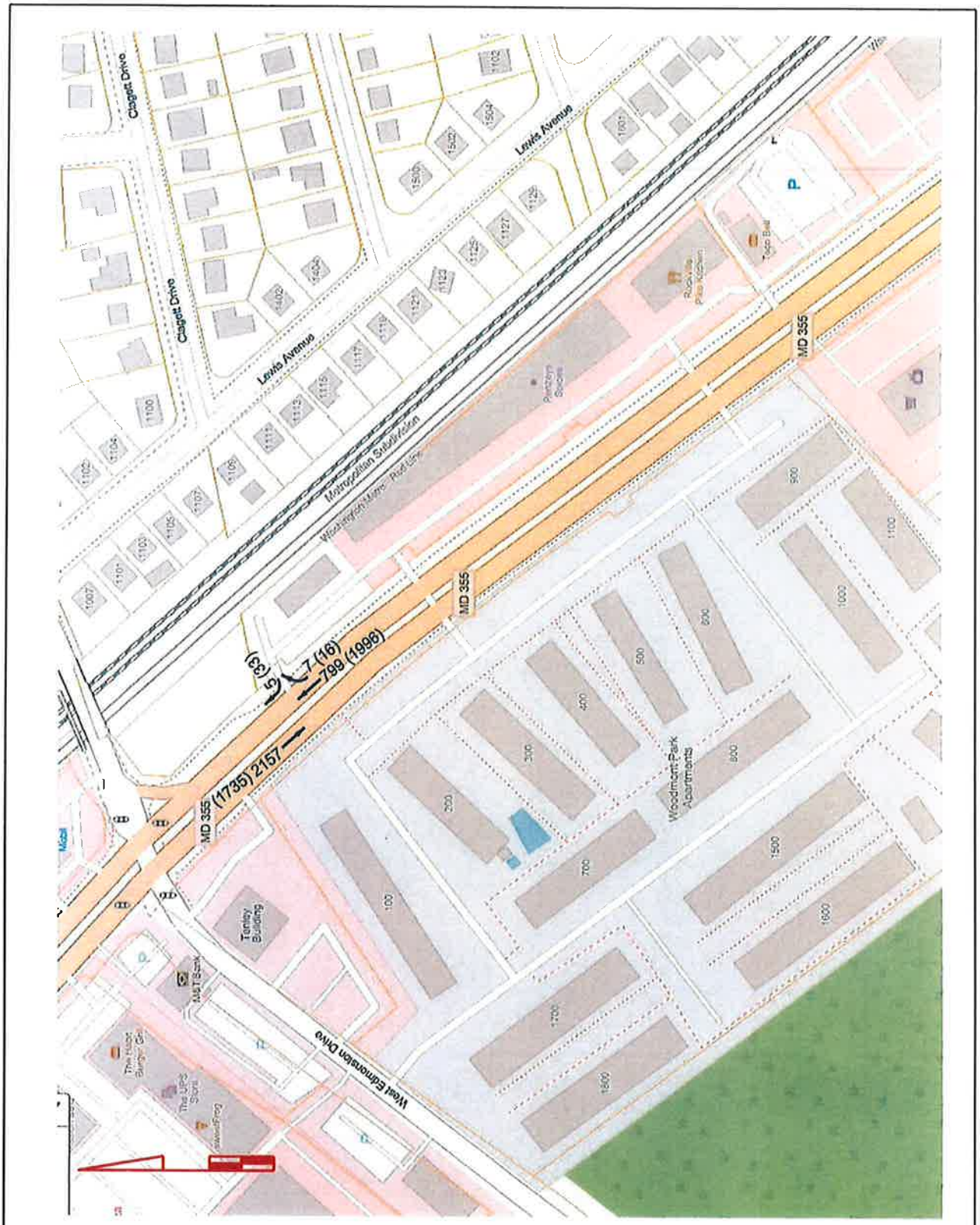
STREET TRAFFIC STUDIES, LTD.



900 MD 355
SERVICE DRIVE STUDY

EXHIBIT 2
SITE VOLUMES
OPTION 1: NORTH DRIVE

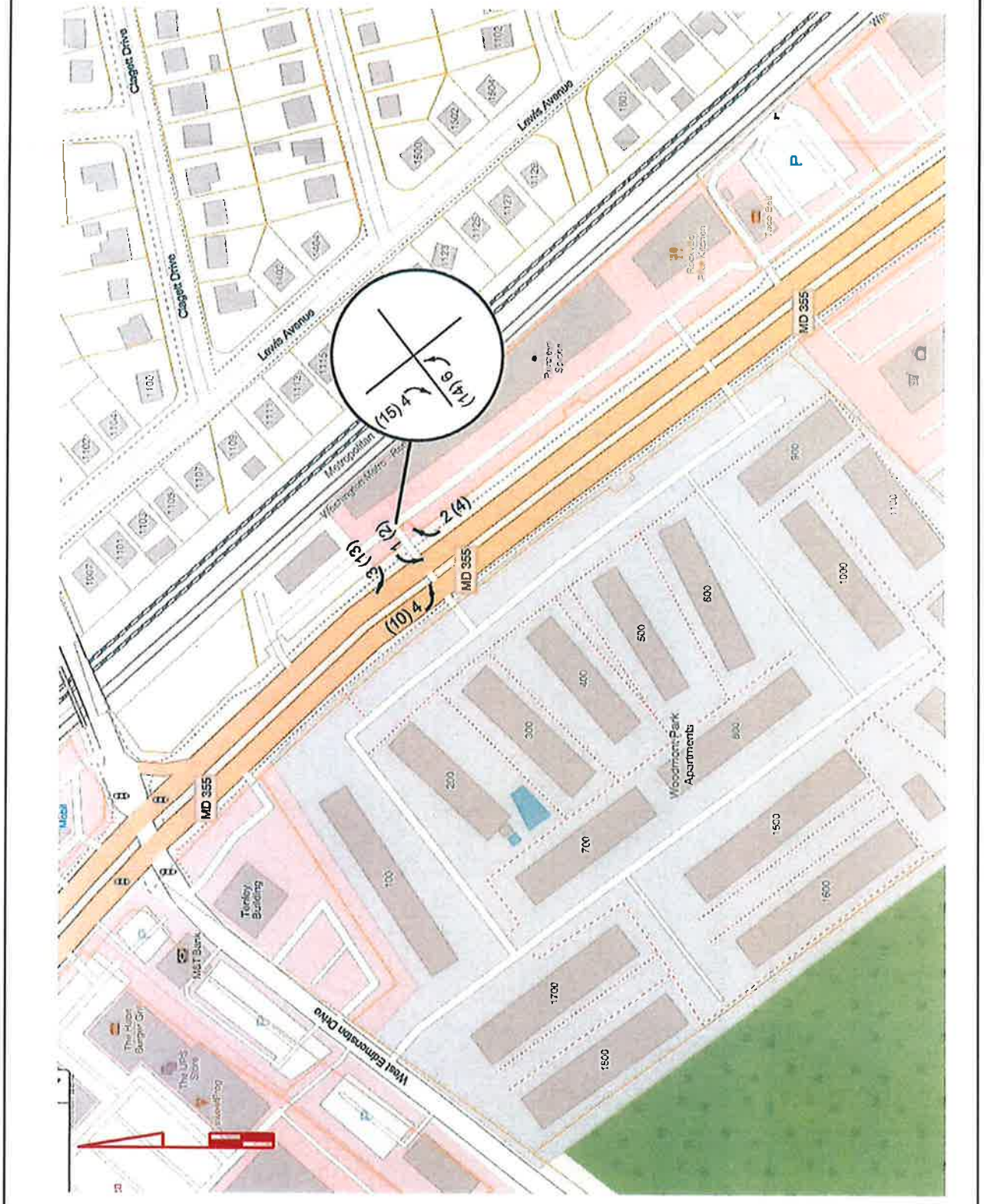
STREET TRAFFIC STUDIES, LTD.



900 MD 355
SERVICE DRIVE STUDY

EXHIBIT 3
TOTAL VOLUMES
OPTION 1: NORTH DRIVE

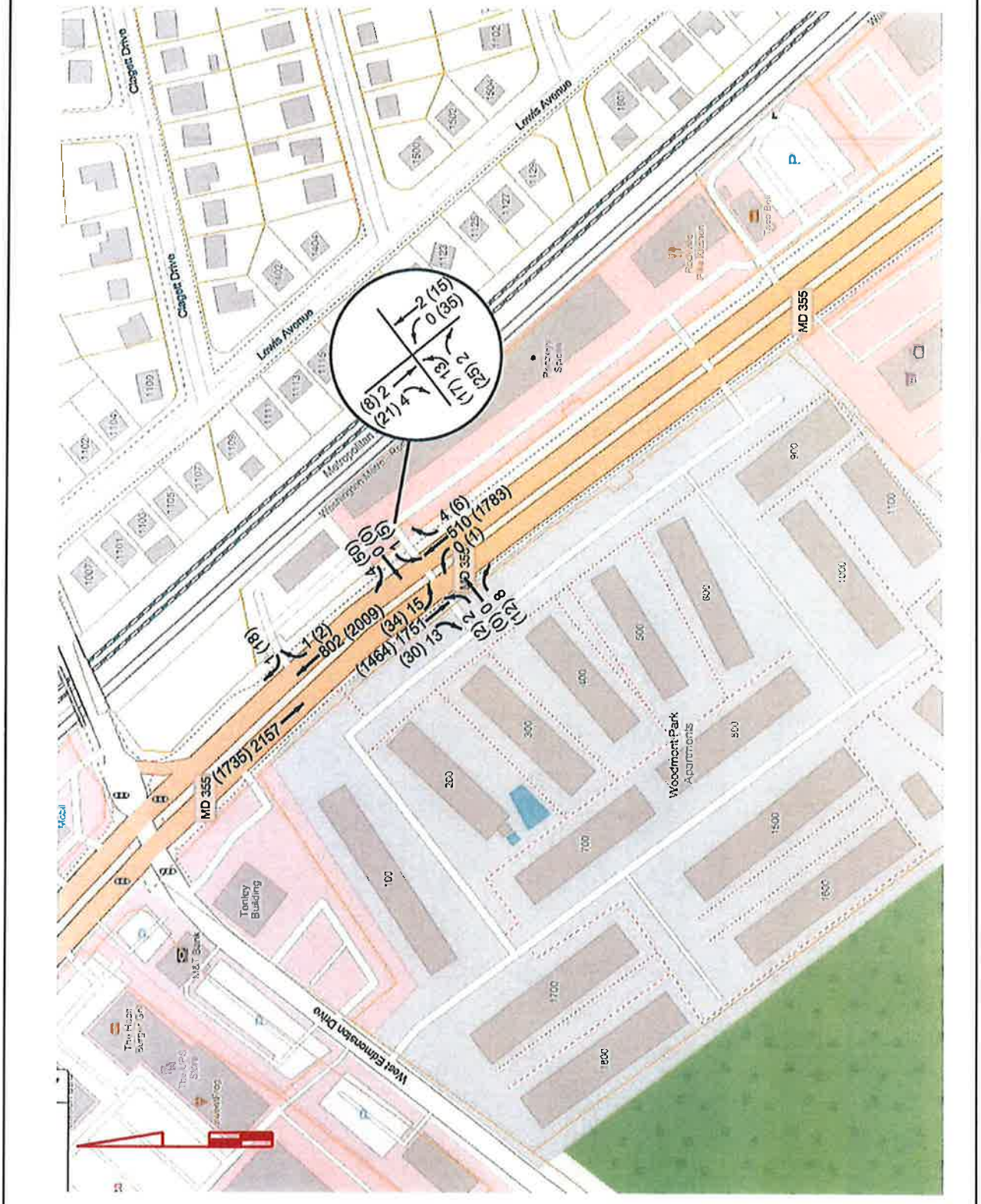
STREET TRAFFIC STUDIES, LTD.



900 MD 355
SERVICE DRIVE STUDY

EXHIBIT 4
SITE VOLUMES
OPTION 2: MIDDLE DRIVE

STREET TRAFFIC STUDIES, LTD.



900 MD 355
SERVICE DRIVE STUDY

EXHIBIT 5
TOTAL VOLUMES
OPTION 2: MIDDLE DRIVE

STREET TRAFFIC STUDIES, LTD.

O. R. GEORGE & ASSOCIATES, INC.

Intersection Turning Movement Count Data Summary

Project: Street Traffic Studies, Ltd. (Task # 78)
Location: Rockville Pike @ Shopping ENT. ⇩
Area/County: Rockville, Montgomery
Day/Date Surveyed: Tuesday (January 30, 2024)

Weather: Mild, Dry
Field Techs: SA/CL
Reviewed by: ORG

15-Minute Interval (Ending)	Vehicle Volumes																				Interval Total
	Rockville Pike From North					Rockville Pike From South					Shopping ENT ⇩ From East					From West					
	Left	Thru	Right	U-Turn	Total	Left	Thru	Right	U-Turn	Total	Left	Thru	Right	U-Turn	Total	Left	Thru	Right	U-Turn	Total	
7:15	0	323	0	0	323	0	117	0	0	117	0	0	0	0	0	0	0	0	0	0	440
7:30	0	390	0	0	390	0	90	0	0	90	0	0	1	0	1	0	0	0	0	0	481
7:45	0	490	0	0	490	0	139	0	0	139	0	0	0	0	0	0	0	0	0	0	629
8:00	0	572	0	0	572	0	163	1	0	164	0	0	0	0	0	0	0	0	0	0	736
8:15	0	588	0	0	588	0	180	1	0	181	0	0	0	0	0	0	0	0	0	0	769
8:30	0	583	0	0	583	0	186	0	0	186	0	0	0	0	0	0	0	0	0	0	769
8:45	0	484	0	0	484	0	194	0	0	194	0	0	1	0	1	0	0	0	0	0	679
9:00	0	502	0	0	502	0	239	0	0	239	0	0	0	0	0	0	0	0	0	0	741
11:15	0	334	0	0	334	0	268	1	0	269	0	0	2	0	2	0	0	0	0	0	605
11:30	0	385	0	0	385	0	258	0	0	258	0	0	1	0	1	0	0	0	0	0	644
11:45	0	408	0	0	408	0	326	0	0	326	0	0	0	0	0	0	0	0	0	0	734
12:00	0	432	0	0	432	0	338	0	0	338	0	0	6	0	6	0	0	0	0	0	776
AM Peak Hour Total	**0**	**2157**	**0**	**0**	**2157**	**0**	**799**	**1**	**0**	**800**	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**2958**
AM Peak PHF	**#DIV/0!**	**0.94**	**#DIV/0!**	**#DIV/0!**	**0.94**	**#DIV/0!**	**1.23**	**0.25**	**#DIV/0!**	**1.22**	**#DIV/0!**	**#DIV/0!**	**0.25**	**#DIV/0!**	**0.25**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**	**1.00**
12:15	0	385	0	0	385	0	346	0	0	346	0	0	7	0	7	0	0	0	0	0	738
12:30	0	404	0	0	404	0	349	1	0	350	0	0	0	0	0	0	0	0	0	0	754
12:45	0	416	0	0	416	0	405	0	0	405	0	0	1	0	1	0	0	0	0	0	822
13:00	0	447	0	0	447	0	326	0	0	326	0	0	3	0	3	0	0	0	0	0	776
16:15	0	373	0	0	373	0	449	0	0	449	0	0	2	0	2	0	0	0	0	0	824
16:30	0	361	0	0	361	0	437	0	0	437	0	0	2	0	2	0	0	0	0	0	800
16:45	0	382	0	0	382	0	431	1	0	432	0	0	2	0	2	0	0	0	0	0	816
17:00	0	402	0	0	402	0	476	0	0	476	0	0	3	0	3	0	0	0	0	0	881
17:15	0	422	0	0	422	0	490	0	0	490	0	0	7	0	7	0	0	0	0	0	919
17:30	0	425	0	0	425	0	511	0	0	511	0	0	5	0	5	0	0	0	0	0	941
17:45	0	437	0	0	437	0	493	1	0	494	0	0	4	0	4	0	0	0	0	0	935
18:00	0	451	0	0	451	0	502	1	0	503	0	0	2	0	2	0	0	0	0	0	956
18:15	0	373	0	0	373	0	440	0	0	440	0	0	1	0	1	0	0	0	0	0	814
18:30	0	397	0	0	397	0	425	0	0	425	0	0	2	0	2	0	0	0	0	0	824
18:45	0	351	0	0	351	0	450	0	0	450	0	0	1	0	1	0	0	0	0	0	802
19:00	0	312	0	0	312	0	395	1	0	396	0	0	1	0	1	0	0	0	0	0	709
PM Peak Hour Total	**0**	**1735**	**0**	**0**	**1735**	**0**	**1996**	**2**	**0**	**1998**	**0**	**0**	**18**	**0**	**18**	**0**	**0**	**0**	**0**	**0**	**3751**
PM Peak PHF	**0.00**	**0.96**	**0.00**	**0.00**	**0.96**	**0.00**	**0.98**	**0.50**	**0.00**	**0.98**	**0.00**	**0.00**	**0.64**	**#DIV/0!**	**0.64**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.98**
Hour Total	**0**	**11829**	**0**	**0**	**11829**	**0**	**9423**	**8**	**0**	**9431**	**0**	**0**	**54**	**0**	**54**	**0**	**0**	**0**	**0**	**0**	**21314**

O. R. GEORGE & ASSOCIATES, INC.

Intersection Turning Movement Count Data Summary

Project: Street Traffic Studies, Ltd. (Task # 78)
Location: Rockville Pike @ Shopping Ent. 2
Area/County: Rockville, Montgomery
Day/Date Surveyed: Tuesday (January 30, 2024)

Weather: Mild, Dry
Field Techs: SA/CL
Reviewed by: ORG

15-Minute Interval (Ending)	Vehicle Volumes																				Interval Total
	Rockville Pike From North					Rockville Pike From South					Shopping Ent. 2 From East					Woodmont ENT. 2 From West					
	Left	Thru	Right	U-Turn	Total	Left	Thru	Right	U-Turn	Total	Left	Thru	Right	U-Turn	Total	Left	Thru	Right	U-Turn	Total	
7:15	**3**	**318**	**2**	**0**	**323**	**0**	**117**	**0**	**0**	**117**	**0**	**0**	**0**	**0**	**0**	**5**	**0**	**1**	**0**	**6**	**446**
7:30	**2**	**385**	**3**	**0**	**390**	**0**	**90**	**0**	**0**	**90**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**2**	**482**
7:45	**1**	**486**	**3**	**0**	**490**	**0**	**138**	**1**	**0**	**139**	**0**	**0**	**1**	**0**	**1**	**1**	**0**	**3**	**0**	**4**	**634**
8:00	**5**	**562**	**5**	**0**	**572**	**0**	**165**	**1**	**0**	**166**	**0**	**0**	**0**	**0**	**0**	**4**	**0**	**4**	**0**	**8**	**746**
8:15	4	581	3	0	588	0	176	0	0	176	0	0	4	0	4	3	0	3	0	6	774
8:30	1	581	1	0	583	0	184	0	0	184	1	0	1	0	2	1	0	1	0	2	771
8:45	6	476	2	0	484	0	192	0	0	192	0	0	0	0	0	1	0	4	0	5	681
9:00	6	492	4	2	504	0	238	1	0	239	0	0	0	0	0	1	0	1	0	2	745
11:15	7	324	3	1	335	0	266	3	0	269	2	0	6	0	8	0	1	2	0	3	615
11:30	14	369	2	0	385	0	256	0	0	256	2	0	3	0	5	0	0	3	0	3	649
11:45	12	394	2	3	411	0	318	2	0	320	0	0	10	0	10	1	0	1	0	2	743
12:00	11	414	7	3	435	0	334	2	0	336	1	0	5	0	6	0	0	4	0	4	781
AM Peak Hour Total	**11**	**1751**	**13**	**0**	**1775**	**0**	**510**	**2**	**0**	**512**	**0**	**0**	**1**	**0**	**1**	**12**	**0**	**8**	**0**	**20**	**2308**
AM Peak PHF	**0.55**	**0.78**	**0.65**	**#DIV/0!**	**0.78**	**#DIV/0!**	**0.77**	**0.50**	**#DIV/0!**	**0.77**	**#DIV/0!**	**#DIV/0!**	**0.25**	**#DIV/0!**	**0.25**	**0.60**	**#DIV/0!**	**0.50**	**#DIV/0!**	**0.63**	**0.77**
12:15	11	371	3	1	386	0	343	0	2	345	0	1	7	0	8	0	0	3	0	3	742
12:30	11	392	1	2	406	0	346	2	0	348	1	0	6	0	7	0	0	2	0	2	763
12:45	10	406	0	5	421	0	339	2	0	341	1	0	10	0	11	0	0	1	0	1	774
13:00	10	433	4	0	447	0	315	1	1	317	1	0	11	0	12	1	0	2	0	3	779
16:15	**4**	**357**	**12**	**6**	**379**	**0**	**444**	**0**	**1**	**445**	**0**	**0**	**6**	**0**	**6**	**0**	**0**	**5**	**0**	**5**	**835**
16:30	**11**	**344**	**6**	**1**	**362**	**0**	**425**	**0**	**0**	**425**	**0**	**0**	**13**	**0**	**13**	**2**	**0**	**1**	**0**	**3**	**803**
16:45	**5**	**370**	**7**	**1**	**383**	**0**	**445**	**0**	**0**	**445**	**3**	**0**	**12**	**0**	**15**	**0**	**0**	**2**	**0**	**2**	**845**
17:00	**4**	**393**	**5**	**3**	**405**	**1**	**469**	**2**	**1**	**473**	**0**	**0**	**6**	**0**	**6**	**0**	**0**	**4**	**0**	**4**	**888**
17:15	6	410	6	1	423	0	485	4	2	491	3	0	6	0	9	3	0	5	0	8	931
17:30	8	415	2	1	426	0	501	1	1	503	1	0	6	0	7	0	0	1	0	1	937
17:45	4	427	6	3	440	0	487	1	1	489	0	0	8	0	8	1	0	2	0	3	940
18:00	7	441	3	0	451	1	497	6	5	509	0	0	7	0	7	1	0	2	0	3	970
18:15	4	365	4	2	375	1	432	1	1	435	0	0	9	0	9	1	0	1	0	2	821
18:30	7	385	5	4	401	1	419	2	0	422	0	0	13	0	13	0	0	3	0	3	839
18:45	10	337	4	3	354	1	440	2	1	444	1	0	9	0	10	2	0	4	0	6	814
19:00	5	303	4	0	312	0	380	1	0	381	0	0	9	0	9	0	0	3	0	3	705
PM Peak Hour Total	**24**	**1464**	**30**	**11**	**1529**	**1**	**1783**	**2**	**2**	**1788**	**3**	**0**	**37**	**0**	**40**	**2**	**0**	**12**	**0**	**14**	**3371**
PM Peak PHF	**0.55**	**0.93**	**0.63**	**0.46**	**0.94**	**0.25**	**0.95**	**0.25**	**0.50**	**0.95**	**0.25**	**#DIV/0!**	**0.71**	**#DIV/0!**	**0.67**	**0.25**	**#DIV/0!**	**0.60**	**#DIV/0!**	**0.70**	**0.95**
Hour Total	**189**	**11531**	**109**	**42**	**11871**	**5**	**9241**	**35**	**16**	**9297**	**17**	**1**	**168**	**0**	**186**	**30**	**1**	**68**	**0**	**99**	**21453**

O. R. GEORGE & ASSOCIATES, INC.
Intersection Turning Movement Count Data Summary

Project: Street Traffic Studies, Ltd. (Task # 78)
Location: Drive Aisle @ Shopping ENT. 2
Area/County: Rockville, Montgomery
Day/Date Surveyed: Tuesday (January 30, 2024)

Weather: Mild, Dry
Field Techs: SA/CL
Reviewed by: ORG

15-Minute Interval (Ending)	Vehicle Volumes																				Interval Total
	Drive Aisle From North					Drive Aisle From South					From East					Shopping ENT. 2 From West					
	Left	Thru	Right	U-Turn	Total	Left	Thru	Right	U-Turn	Total	Left	Thru	Right	U-Turn	Total	Left	Thru	Right	U-Turn	Total	
7:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	2	2
7:30	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2	0	0	0	2	3
7:45	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2	3
8:00	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0	3	0	1	0	4	6
8:15	0	0	1	0	1	4	0	0	0	4	0	0	0	0	0	1	0	2	0	3	8
8:30	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	1	0	1	0	2	4
8:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	4	0	7	7
9:00	0	1	0	0	1	0	2	0	0	2	0	0	0	0	0	8	0	0	0	8	11
11:15	0	2	2	0	4	6	4	0	0	10	0	0	0	0	0	6	0	3	0	9	23
11:30	0	1	1	0	2	4	0	0	0	4	0	0	0	0	0	7	0	8	0	15	21
11:45	0	0	0	0	0	8	5	0	0	13	0	0	0	0	0	2	0	11	2	15	28
12:00	0	1	0	0	1	5	3	0	0	8	0	0	0	0	0	5	0	6	1	12	21
AM Peak Hour Total	0	2	0	0	2	0	2	0	0	2	0	0	0	0	0	7	0	2	1	10	14
AM Peak PHF	#DIV/0!	0.50	#DIV/0!	#DIV/0!	0.50	#DIV/0!	0.50	#DIV/0!	#DIV/0!	0.50	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.58	#DIV/0!	0.50	0.25	0.63	0.58
12:15	0	0	3	0	3	6	2	0	0	8	0	0	0	0	0	3	0	6	2	11	22
12:30	0	1	4	0	5	1	7	0	0	8	0	0	0	0	0	4	0	6	0	10	23
12:45	0	0	2	0	2	7	3	0	0	10	0	0	0	0	0	4	0	8	3	15	27
13:00	0	2	1	0	3	18	4	0	0	22	0	0	0	0	0	3	0	8	0	11	36
16:15	0	1	2	0	3	9	3	0	0	12	0	0	0	0	0	1	0	4	0	5	20
16:30	0	2	2	0	4	10	7	0	0	17	0	0	0	0	0	1	0	10	0	11	32
16:45	0	2	1	0	3	11	3	0	0	14	0	0	0	0	0	1	0	5	0	6	23
17:00	0	3	1	0	4	5	2	0	0	7	0	0	0	0	0	0	0	6	0	6	17
17:15	0	2	2	0	4	10	2	0	0	12	0	0	0	0	0	3	0	5	0	8	24
17:30	0	2	1	0	3	5	2	0	0	7	0	0	0	0	0	3	0	6	0	9	19
17:45	0	1	2	0	3	8	3	0	0	11	0	0	0	0	0	2	0	2	0	4	18
18:00	0	4	1	0	5	6	5	0	0	11	0	0	0	0	0	5	0	8	0	13	29
18:15	0	2	1	0	3	8	2	0	0	10	0	0	0	0	0	0	0	3	0	3	16
18:30	0	0	3	0	3	8	5	0	0	13	0	0	0	0	0	3	0	6	0	9	25
18:45	0	0	3	0	3	7	5	0	0	12	0	0	0	0	0	3	0	8	0	11	26
19:00	0	1	3	0	4	7	2	0	0	9	0	0	0	0	0	0	0	6	0	6	19
PM Peak Hour Total	0	8	6	0	14	35	15	0	0	50	0	0	0	0	0	3	0	25	0	28	92
PM Peak PHF	#DIV/0!	0.67	0.75	#DIV/0!	0.88	0.80	0.54	#DIV/0!	#DIV/0!	0.74	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.75	#DIV/0!	0.63	#DIV/0!	0.64	0.72
Hour Total	0	30	36	0	66	155	73	0	0	228	0	0	0	0	0	76	0	134	9	219	513

O. R. GEORGE & ASSOCIATES, INC.

Intersection Turning Movement Count Data Summary

Project: Street Traffic Studies, Ltd. (Task # 78)
Location: Rockville Pike @ Shopping ENT. 3
Area/County: Rockville, Montgomery
Day/Date Surveyed: Tuesday (January 30, 2024)

Weather: Mild, Dry
Field Techs: SA/CL
Reviewed by: ORG

15-Minute Interval (Ending)	Vehicle Volumes																				Interval Total
	Rockville Pike From North					Rockville Pike From South					Shopping Ent. 3 From East					Woodmont Ent. 1 From West					
	Left	Thru	Right	U-Turn	Total	Left	Thru	Right	U-Turn	Total	Left	Thru	Right	U-Turn	Total	Left	Thru	Right	U-Turn	Total	
7:15	1	319	0	0	320	3	116	0	0	119	0	0	0	0	0	3	0	0	0	3	442
7:30	0	387	0	0	387	1	132	0	0	133	0	0	0	0	0	4	0	8	0	12	532
7:45	0	490	1	1	492	0	136	0	1	137	0	0	1	0	1	1	0	4	0	5	635
8:00	2	561	1	0	564	1	161	0	1	163	0	0	0	0	0	3	0	6	0	9	736
8:15	3	582	1	0	586	7	179	1	1	188	0	0	0	0	0	1	0	7	0	8	782
8:30	3	583	0	0	586	3	216	0	2	221	1	0	1	0	2	2	0	6	0	8	817
8:45	0	480	0	0	480	2	187	0	0	189	0	0	0	0	0	1	0	6	0	7	676
9:00	4	482	0	2	488	3	234	0	2	239	1	0	0	0	1	0	0	8	0	8	736
11:15	3	334	0	4	341	1	256	3	3	263	0	0	2	0	2	1	0	6	0	7	613
11:30	8	366	0	0	374	2	260	2	2	266	1	0	3	0	4	1	0	7	0	8	652
11:45	13	379	2	1	395	4	313	5	5	327	0	0	2	0	2	0	0	3	0	3	727
12:00	10	412	0	1	423	3	324	5	2	334	3	0	7	0	10	2	0	2	0	4	771
AM Peak Hour Total	3	1757	2	4	1763	5	545	0	2	552	0	0	1	0	1	11	0	18	0	29	2345
AM Peak PHF	0.38	0.78	0.50	1.00	0.78	0.42	0.85	#DIV/0!	0.50	0.85	#DIV/0!	#DIV/0!	0.25	#DIV/0!	0.25	0.69	#DIV/0!	0.56	#DIV/0!	0.60	0.80
12:15	9	367	2	2	380	4	344	5	3	356	2	0	4	0	6	0	0	2	0	2	744
12:30	10	379	0	4	393	2	336	1	3	342	2	0	8	0	10	1	0	5	0	6	751
12:45	8	394	0	2	404	4	333	14	5	356	1	0	5	0	6	1	0	4	0	5	771
13:00	11	430	4	1	446	7	308	11	1	327	2	0	5	0	7	1	0	5	0	6	786
16:15	7	349	2	5	363	4	429	3	2	438	1	0	6	0	7	0	0	3	0	3	811
16:30	6	327	0	5	338	10	408	7	3	428	0	0	5	0	5	0	0	9	0	9	780
16:45	10	363	1	3	377	10	451	6	1	468	0	0	6	0	6	1	0	11	0	12	863
17:00	4	377	3	0	384	7	451	6	2	466	1	0	7	0	8	0	0	10	0	10	868
17:15	6	404	1	4	415	7	489	3	1	500	0	0	6	0	6	0	0	2	0	2	923
17:30	8	410	0	1	419	8	493	3	1	505	2	0	10	0	12	0	0	7	0	7	943
17:45	7	409	0	2	418	9	464	3	1	477	2	0	6	0	8	0	0	3	0	3	906
18:00	8	431	2	2	443	6	468	6	4	484	1	0	8	0	9	0	0	8	0	8	944
18:15	4	356	0	2	362	11	423	12	2	448	2	0	7	0	9	0	1	3	0	4	823
18:30	9	378	1	1	389	11	416	6	2	435	0	0	3	0	3	1	0	4	0	5	832
18:45	7	341	0	1	349	4	440	8	4	456	0	0	9	0	9	1	0	6	0	7	821
19:00	10	284	1	0	295	9	350	4	5	368	3	0	5	0	8	0	0	3	0	3	674
PM Peak Hour Total	27	1416	6	13	1462	31	1739	22	8	1800	2	0	24	0	26	1	0	33	0	34	3322
PM Peak PHF	0.68	0.94	0.50	0.65	0.95	0.78	0.96	0.79	0.67	0.96	0.50	#DIV/0!	0.86	#DIV/0!	0.81	0.25	#DIV/0!	0.75	#DIV/0!	0.71	0.96
Hour Total	171	11374	22	44	11611	143	9117	114	59	9433	25	0	116	0	141	25	1	148	0	174	21359

O. R. GEORGE & ASSOCIATES, INC.

Intersection Turning Movement Count Data Summary

Project: Street Traffic Studies, Ltd. (Task # 78)
Location: Drive Aisle @ Shopping ENT. 3
Area/County: Rockville, Montgomery
Day/Date Surveyed: Tuesday (January 30, 2024)

Weather: Mild, Dry
Field Techs: SA/CL
Reviewed by: ORG

15-Minute Interval (Ending)	Vehicle Volumes																				Interval Total
	Drive Aisle From North					Drive Aisle From South					From East					Shopping ENT. 3 From West					
	Left	Thru	Right	U-Turn	Total	Left	Thru	Right	U-Turn	Total	Left	Thru	Right	U-Turn	Total	Left	Thru	Right	U-Turn	Total	
7:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
7:30	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
7:45	0	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
8:00	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	2	3
8:15	0	1	0	0	1	0	2	0	0	2	0	0	0	0	0	2	0	2	0	4	7
8:30	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	3	0	3	5
8:45	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
9:00	0	1	1	0	2	0	3	0	0	3	0	0	0	0	0	1	0	3	0	4	9
11:15	0	2	2	0	4	0	2	0	0	2	0	0	0	0	0	4	0	2	0	6	12
11:30	0	3	3	0	6	1	0	0	0	1	0	0	0	0	0	4	0	6	0	10	17
11:45	0	2	1	0	3	1	4	0	0	5	0	0	0	0	0	10	0	8	0	18	26
12:00	0	7	4	0	11	5	5	0	0	10	0	0	0	0	0	7	0	4	1	12	33
AM Peak Hour Total	0	2	1	0	3	0	1	0	0	1	0	0	0	0	0	1	0	2	0	3	7
AM Peak PHF	#DIV/0!	0.50	0.25	#DIV/0!	0.38	#DIV/0!	0.25	#DIV/0!	#DIV/0!	0.25	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.25	#DIV/0!	0.50	#DIV/0!	0.38	0.58
12:15	0	2	3	0	5	3	1	0	0	4	0	0	0	0	0	7	0	7	0	14	23
12:30	0	0	3	0	3	6	1	0	0	7	0	0	0	0	0	4	0	6	1	11	21
12:45	0	6	1	0	7	3	1	0	0	4	0	0	0	0	0	16	0	5	2	23	34
13:00	0	8	3	0	11	3	3	0	0	6	0	0	0	0	0	13	0	7	1	21	38
16:15	0	2	4	0	6	1	1	0	0	2	0	0	0	0	0	3	0	7	0	10	18
16:30	0	5	2	0	7	2	3	0	0	5	0	0	0	0	0	11	0	2	0	13	25
16:45	0	3	3	0	6	3	1	0	0	4	0	0	0	0	0	11	0	4	1	16	26
17:00	0	7	4	0	11	3	6	0	0	9	0	0	0	0	0	6	0	4	1	11	31
17:15	0	3	4	0	7	2	0	0	0	2	0	0	0	0	0	4	0	5	0	9	18
17:30	0	3	5	0	8	6	7	0	0	13	0	0	0	0	0	4	0	3	0	7	28
17:45	0	3	3	0	6	3	1	0	0	4	0	0	0	0	0	7	0	1	2	10	20
18:00	0	5	4	0	9	3	1	0	0	4	0	0	0	0	0	6	0	4	1	11	24
18:15	0	3	5	0	8	3	3	0	0	6	0	0	0	0	0	16	0	0	1	17	31
18:30	0	1	1	0	2	2	3	0	0	5	0	0	0	0	0	7	0	5	1	13	20
18:45	0	3	5	0	8	3	2	0	0	5	0	0	0	0	0	8	0	4	1	13	26
19:00	0	0	4	1	5	3	0	0	0	3	0	0	0	0	0	9	0	4	0	13	21
PM Peak Hour Total	0	17	13	0	30	9	11	0	0	20	0	0	0	0	0	31	0	17	2	50	100
PM Peak PHF	#DIV/0!	0.61	0.81	#DIV/0!	0.68	0.75	0.46	#DIV/0!	#DIV/0!	0.56	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.70	#DIV/0!	0.61	0.50	0.78	0.81
Hour Total	0	74	66	1	141	58	51	0	0	109	0	0	0	0	0	161	0	98	13	272	522

HCS Two-Way Stop-Control Report

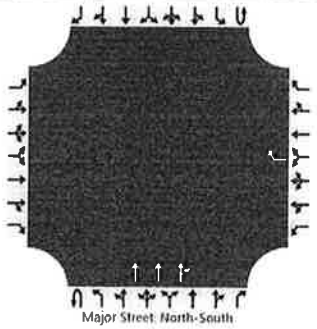
General Information

Analyst	Nelson
Agency/Co.	
Date Performed	3/1/2024
Analysis Year	2024
Time Analyzed	AM Peak Existing
Intersection Orientation	North-South
Project Description	900 MD 355 Access Study

Site Information

Intersection	Option 1 North Driveway
Jurisdiction	Rockville
East/West Street	North Driveway
North/South Street	MD 355
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	0	1	0	0	3	0	0	0	0	0
Configuration								R			T	TR				
Volume (veh/h)								1			799	1				
Percent Heavy Vehicles (%)								3								
Proportion Time Blocked																
Percent Grade (%)						0										
Right Turn Channelized						No										
Median Type | Storage		Left + Thru								1						

Critical and Follow-up Headways

Base Critical Headway (sec)								7.1								
Critical Headway (sec)								7.16								
Base Follow-Up Headway (sec)								3.9								
Follow-Up Headway (sec)								3.93								

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)								1								
Capacity, c (veh/h)								485								
v/c Ratio								0.00								
95% Queue Length, Q_{95} (veh)								0.0								
95% Queue Length, Q_{95} (ft)								0.0								
Control Delay (s/veh)								12.4								
Level of Service (LOS)								B								
Approach Delay (s/veh)						12.4										
Approach LOS						B										

HCS Two-Way Stop-Control Report

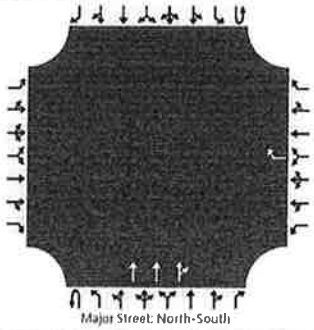
General Information

Analyst	Nelson
Agency/Co.	
Date Performed	3/1/2024
Analysis Year	2024
Time Analyzed	AM Peak + site trips
Intersection Orientation	North-South
Project Description	900 MD 355 Access Study

Site Information

Intersection	Option 1 North Driveway
Jurisdiction	Rockville
East/West Street	North Driveway
North/South Street	MD 355
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	0	1	0	0	3	0	0	0	0	0
Configuration								R			T	TR				
Volume (veh/h)								5			799	7				
Percent Heavy Vehicles (%)								3								
Proportion Time Blocked																
Percent Grade (%)						0										
Right Turn Channelized						No										
Median Type | Storage		Left + Thru								1						

Critical and Follow-up Headways

Base Critical Headway (sec)								7.1								
Critical Headway (sec)								7.16								
Base Follow-Up Headway (sec)								3.9								
Follow-Up Headway (sec)								3.93								

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)								5								
Capacity, c (veh/h)								482								
v/c Ratio								0.01								
95% Queue Length, Q_{95} (veh)								0.0								
95% Queue Length, Q_{95} (ft)								0.0								
Control Delay (s/veh)								12.6								
Level of Service (LOS)								B								
Approach Delay (s/veh)						12.6										
Approach LOS						B										

HCS Two-Way Stop-Control Report

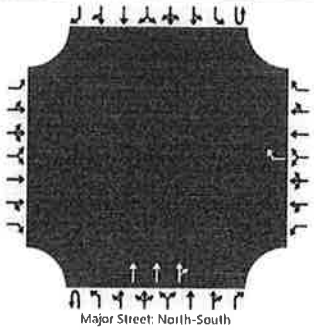
General Information

Analyst	Nelson
Agency/Co.	
Date Performed	3/1/2024
Analysis Year	2024
Time Analyzed	PM Peak Existing
Intersection Orientation	North-South
Project Description	900 MD 355 Access Study

Site Information

Intersection	Option 1 North Driveway
Jurisdiction	Rockville
East/West Street	North Driveway
North/South Street	MD 355
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	0	1	0	0	3	0	0	0	0	0
Configuration								R			T	TR				
Volume (veh/h)								18			2009	2				
Percent Heavy Vehicles (%)								3								
Proportion Time Blocked																
Percent Grade (%)						0										
Right Turn Channelized						No										
Median Type | Storage		Left + Thru								1						

Critical and Follow-up Headways

Base Critical Headway (sec)								7.1								
Critical Headway (sec)								7.16								
Base Follow-Up Headway (sec)								3.9								
Follow-Up Headway (sec)								3.93								

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)								20								
Capacity, c (veh/h)								178								
v/c Ratio								0.11								
95% Queue Length, Q_{95} (veh)								0.4								
95% Queue Length, Q_{95} (ft)								10.2								
Control Delay (s/veh)								27.6								
Level of Service (LOS)								D								
Approach Delay (s/veh)						27.6										
Approach LOS						D										

HCS Two-Way Stop-Control Report

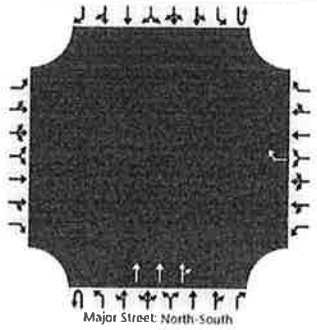
General Information

Analyst	Nelson
Agency/Co.	
Date Performed	3/1/2024
Analysis Year	2024
Time Analyzed	PM Peak w/ site trips -
Intersection Orientation	North-South
Project Description	900 MD 355 Access Study

Site Information

Intersection	Option 1 North Driveway
Jurisdiction	Rockville
East/West Street	North Driveway
North/South Street	MD 355
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	0	1	0	0	3	0	0	0	0	0
Configuration								R			T	TR				
Volume (veh/h)								33			2009	18				
Percent Heavy Vehicles (%)								3								
Proportion Time Blocked																
Percent Grade (%)						0										
Right Turn Channelized						No										
Median Type | Storage		Left + Thru								1						

Critical and Follow-up Headways

Base Critical Headway (sec)								7.1								
Critical Headway (sec)								7.16								
Base Follow-Up Headway (sec)								3.9								
Follow-Up Headway (sec)								3.93								

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)								36								
Capacity, c (veh/h)								176								
v/c Ratio								0.20								
95% Queue Length, Q_{95} (veh)								0.7								
95% Queue Length, Q_{95} (ft)								17.9								
Control Delay (s/veh)								30.6								
Level of Service (LOS)								D								
Approach Delay (s/veh)						30.6										
Approach LOS						D										

HCS Two-Way Stop-Control Report

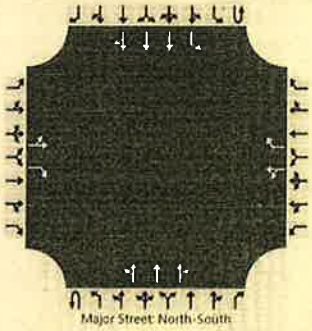
General Information

Analyst	Nelson
Agency/Co.	
Date Performed	2/6/2024
Analysis Year	2024
Time Analyzed	am peak
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	MD 355 - Middle Driveway
Jurisdiction	rockville
East/West Street	Middle Drive
North/South Street	MD 355
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	1		0	1	1	0	0	3	0	0	1	3	0
Configuration		LT		R		LT		R		LT	T	TR		L	T	TR
Volume (veh/h)		2	0	12		0	0	1		0	510	2	0	11	1751	13
Percent Heavy Vehicles (%)		3	3	3		3	3	3		3			3	3		
Proportion Time Blocked		0.000	0.000	0.000			0.000	0.000						0.000		
Percent Grade (%)		0				0										
Right Turn Channelized		No				No										
Median Type | Storage		Left + Thru								4						

Critical and Follow-up Headways

Base Critical Headway (sec)		6.4	6.5	7.1		6.4	6.5	7.1		5.3				5.3		
Critical Headway (sec)		6.46	6.56	7.16		6.46	6.56	7.16		5.36				5.36		
Base Follow-Up Headway (sec)		3.8	4.0	3.9		3.8	4.0	3.9		3.1				3.1		
Follow-Up Headway (sec)		3.83	4.03	3.93		3.83	4.03	3.93		3.13				3.13		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		2		13		0		1		0				12		
Capacity, c (veh/h)		41		220		0		611		136				633		
v/c Ratio		0.05		0.06				0.00		0.00				0.02		
95% Queue Length, Q_{95} (veh)		0.2		0.2				0.0		0.0				0.1		
95% Queue Length, Q_{95} (ft)		5.1		5.1				0.0						2.6		
Control Delay (s/veh)		98.4		22.4				10.9		31.5	0.0			10.8		
Level of Service (LOS)		F		C				B		D	A			B		
Approach Delay (s/veh)		33.3								0.0				0.1		
Approach LOS		D								A				A		

HCS Two-Way Stop-Control Report

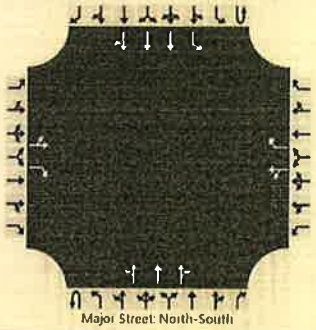
General Information

Analyst	Nelson
Agency/Co.	
Date Performed	2/6/2024
Analysis Year	2024
Time Analyzed	am peak + Site Traffic
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	MD 355 - Middle Driveway
Jurisdiction	rockville
East/West Street	Middle Drive
North/South Street	MD 355
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	1		0	1	1	0	0	3	0	0	1	3	0
Configuration		LT		R		LT		R		LT	T	TR		L	T	TR
Volume (veh/h)		2	0	12		1	0	4		0	510	4	0	15	1751	13
Percent Heavy Vehicles (%)		3	3	3		3	3	3		3			3	3		
Proportion Time Blocked		0.000	0.000	0.000		0.000	0.000	0.000						0.000		
Percent Grade (%)		0				0										
Right Turn Channelized		No				No										
Median Type | Storage		Left + Thru								4						

Critical and Follow-up Headways

Base Critical Headway (sec)		6.4	6.5	7.1		6.4	6.5	7.1		5.3				5.3		
Critical Headway (sec)		6.46	6.56	7.16		6.46	6.56	7.16		5.36				5.36		
Base Follow-Up Headway (sec)		3.8	4.0	3.9		3.8	4.0	3.9		3.1				3.1		
Follow-Up Headway (sec)		3.83	4.03	3.93		3.83	4.03	3.93		3.13				3.13		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		2		13		1		4		0				16		
Capacity, c (veh/h)		40		220		272		610		136				632		
v/c Ratio		0.05		0.06		0.00		0.01		0.00				0.03		
95% Queue Length, Q_{95} (veh)		0.2		0.2		0.0		0.0		0.0				0.1		
95% Queue Length, Q_{95} (ft)		5.1		5.1		0.0		0.0						2.6		
Control Delay (s/veh)		100.5		22.4		18.3		10.9		31.5	0.0			10.8		
Level of Service (LOS)		F		C		C		B		D	A			B		
Approach Delay (s/veh)		33.6				12.4				0.0				0.1		
Approach LOS		D				B				A				A		

HCS Two-Way Stop-Control Report

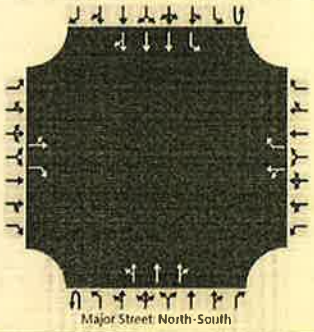
General Information

Analyst	Nelson
Agency/Co.	
Date Performed	2/6/2024
Analysis Year	2024
Time Analyzed	pm peak
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	MD 355 - Middle Driveway
Jurisdiction	rockville
East/West Street	Middle Drive
North/South Street	MD 355
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	1		0	1	1	0	0	3	0	0	1	3	0
Configuration		LT		R		LT		R		LT	T	TR		L	T	TR
Volume (veh/h)		2	0	12		3	0	37		1	1783	2	0	24	1464	30
Percent Heavy Vehicles (%)		3	3	3		3	3	3		3			3	3		
Proportion Time Blocked		0.000	0.000	0.000		0.000	0.000	0.000		0.000				0.000		
Percent Grade (%)		0				0										
Right Turn Channelized		No				No										
Median Type | Storage		Left + Thru								4						

Critical and Follow-up Headways

Base Critical Headway (sec)		6.4	6.5	7.1		6.4	6.5	7.1		5.3				5.3		
Critical Headway (sec)		6.46	6.56	7.16		6.46	6.56	7.16		5.36				5.36		
Base Follow-Up Headway (sec)		3.8	4.0	3.9		3.8	4.0	3.9		3.1				3.1		
Follow-Up Headway (sec)		3.83	4.03	3.93		3.83	4.03	3.93		3.13				3.13		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		2		13		3		40		1				26		
Capacity, c (veh/h)		53		275		41		216		191				132		
v/c Ratio		0.04		0.05		0.08		0.19		0.01				0.20		
95% Queue Length, Q_{95} (veh)		0.1		0.1		0.2		0.7		0.0				0.7		
95% Queue Length, Q_{95} (ft)		2.6		2.6		5.1		17.9		0.0				17.9		
Control Delay (s/veh)		76.2		18.8		101.2		25.5		23.9	0.2			38.7		
Level of Service (LOS)		F		C		F		D		C	A			E		
Approach Delay (s/veh)		27.0				31.2				0.2				0.6		
Approach LOS		D				D				A				A		

HCS Two-Way Stop-Control Report

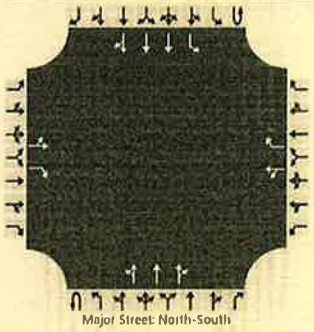
General Information

Analyst	Nelson
Agency/Co.	
Date Performed	2/6/2024
Analysis Year	2024
Time Analyzed	pm peak +side trips
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	MD 355 - Middle Driveway
Jurisdiction	rockville
East/West Street	Middle Drive
North/South Street	MD 355
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	1		0	1	1	0	0	3	0	0	1	3	0
Configuration		LT		R		LT		R		LT	T	TR		L	T	TR
Volume (veh/h)		2	0	12		5	0	50		1	1783	6	0	34	1464	30
Percent Heavy Vehicles (%)		3	3	3		3	3	3		3			3	3		
Proportion Time Blocked		0.000	0.000	0.000		0.000	0.000	0.000		0.000				0.000		
Percent Grade (%)		0				0										
Right Turn Channelized		No				No										
Median Type | Storage		Left + Thru								4						

Critical and Follow-up Headways

Base Critical Headway (sec)		6.4	6.5	7.1		6.4	6.5	7.1		5.3				5.3		
Critical Headway (sec)		6.46	6.56	7.16		6.46	6.56	7.16		5.36				5.36		
Base Follow-Up Headway (sec)		3.8	4.0	3.9		3.8	4.0	3.9		3.1				3.1		
Follow-Up Headway (sec)		3.83	4.03	3.93		3.83	4.03	3.93		3.13				3.13		

Delay, Queue Length, and Level of Service

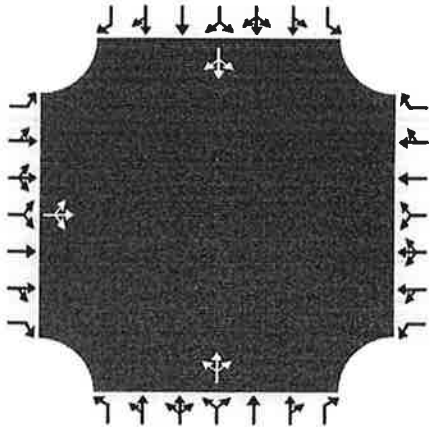
Flow Rate, v (veh/h)		2		13		5		54		1				37		
Capacity, c (veh/h)		46		275		40		215		191				132		
v/c Ratio		0.05		0.05		0.13		0.25		0.01				0.28		
95% Queue Length, Q_{95} (veh)		0.1		0.1		0.4		1.0		0.0				1.1		
95% Queue Length, Q_{95} (ft)		2.6		2.6		10.2		25.6		0.0				28.2		
Control Delay (s/veh)		87.9		18.8		107.2		27.3		23.9	0.2			42.6		
Level of Service (LOS)		F		C		F		D		C	A			E		
Approach Delay (s/veh)		28.6				34.6				0.2				0.9		
Approach LOS		D				D				A				A		

HCS All-Way Stop Control Report

General and Site Information

Analyst	Nelson
Agency/Co.	
Date Performed	3/1/2024
Analysis Year	2024
Analysis Time Period (hrs)	0.25
Time Analyzed	PM Peak Existing
Project Description	900 MD 355 Serivce Road Study
Intersection	Serivce Rd Middle Drive
Jurisdiction	Rockville
East/West Street	
North/South Street	
Peak Hour Factor	0.92

Lanes



Turning Movement Demand Volumes

Approach	Eastbound			Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Volume (veh/h)	3	0	25				35	15	0	0	8	6
% Thrus in Shared Lane												

Lane Flow Rate and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	LTR						LTR			LTR		
Flow Rate, v (veh/h)	30						54			15		
Percent Heavy Vehicles	2						2			2		
Initial Departure Headway, h_d (s)	3.20						3.20			3.20		
Initial Degree of Utilization, x	0.027						0.048			0.014		
Final Departure Headway, h_d (s)	3.57						4.15			3.79		
Final Degree of Utilization, x	0.030						0.063			0.016		
Move-Up Time, m (s)	2.0						2.0			2.0		
Service Time, t_s (s)	1.57						2.15			1.79		

Capacity, Delay and Level of Service

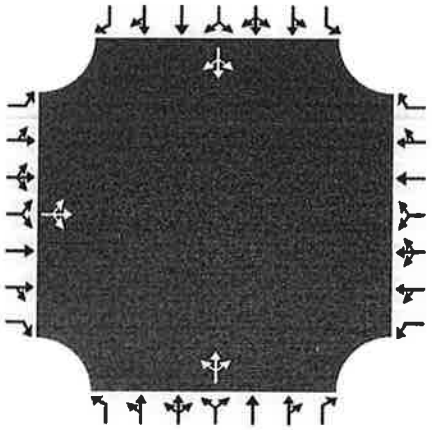
Approach	Eastbound			Westbound			Northbound			Southbound		
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	LTR						LTR			LTR		
Flow Rate, v (veh/h)	30						54			15		
Capacity (veh/h)	1009						868			950		
95% Queue Length, Q_{95} (veh)	0.1						0.2			0.0		
95% Queue Length, Q_{95} (ft)	2.5						5.1			0.0		
Control Delay (s/veh)	6.7						7.4			6.8		
Level of Service, LOS	A						A			A		
Approach Delay (s/veh) | LOS	6.7	A					7.4	A		6.8	A	
Intersection Delay (s/veh) | LOS	7.1						A					

HCS All-Way Stop Control Report

General and Site Information

Analyst	Nelson
Agency/Co.	
Date Performed	3/1/2024
Analysis Year	2024
Analysis Time Period (hrs)	0.25
Time Analyzed	PM Peak Total
Project Description	900 MD 355 Serivce Road Study
Intersection	Serivce Rd Middle Drive
Jurisdiction	Rockville
East/West Street	
North/South Street	
Peak Hour Factor	0.92

Lanes



Turning Movement Demand Volumes

Approach	Eastbound			Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Volume (veh/h)	17	0	25				35	15	0	0	8	21
% Thrus in Shared Lane												

Lane Flow Rate and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	LTR						LTR			LTR		
Flow Rate, v (veh/h)	46						54			32		
Percent Heavy Vehicles	2						2			2		
Initial Departure Headway, h_d (s)	3.20						3.20			3.20		
Initial Degree of Utilization, x	0.041						0.048			0.028		
Final Departure Headway, h_d (s)	3.84						4.20			3.65		
Final Degree of Utilization, x	0.049						0.063			0.032		
Move-Up Time, m (s)	2.0						2.0			2.0		
Service Time, t_s (s)	1.84						2.20			1.65		

Capacity, Delay and Level of Service

Approach	Eastbound			Westbound			Northbound			Southbound		
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	LTR						LTR			LTR		
Flow Rate, v (veh/h)	46						54			32		
Capacity (veh/h)	938						858			987		
95% Queue Length, Q_{95} (veh)	0.2						0.2			0.1		
95% Queue Length, Q_{95} (ft)	5.1						5.1			2.5		
Control Delay (s/veh)	7.0						7.5			6.8		
Level of Service, LOS	A						A			A		
Approach Delay (s/veh) | LOS	7.0	A					7.5	A		6.8	A	
Intersection Delay (s/veh) | LOS	7.2						A					