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FEASIBILITY ANALYSIS FOR MD 355 MANAGED LANES

Technical Memorandum

December 18, 2015



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INTRODUCTION

SCOPE

The Montgomery County Department of Transportation (MCDOT) requested a preliminary study to determine the feasibility of the repurposing of one general traffic lane along a 14-mile long segment of MD 355, without widening, for exclusive Public Transit use, High Occupancy Vehicles (HOV), and right turning vehicles during weekday AM and PM peak hours. MD 355 is a north-south corridor. The study corridor extends along MD 355 from the intersection of MD 124 in Gaithersburg to the intersection of MD 410 in Bethesda. This assessment had a primary objective of determining the traffic impacts of the implementation of the managed lane in terms of capacity. If deemed feasibility based on this cursory analysis, then detailed analysis of traffic operations in terms of travel times, delays, queues, and levels of service may be performed in the future as a separate task. This technical memorandum summarizes the methodology and results of the feasibility study, as well as any identified potential problems that may require consideration during the planning of the project.

METHODOLOGY:

The study corridor has a typical six-lane configuration with three lanes in each direction. However, a few short sections of the study corridor have different lane configurations, such as a separate right turn lanes, or two lanes in a specific direction of travel. This study identified that those segments are not representative of the overall operations of the study corridor. As a result, it was assumed that all study segments share the same lane configuration. The study corridor was broken into ten study segments with endpoints at critical intersections between MD 124 and MD 410. The following intersection represent the endpoints of the ten segments:

- MD 355 at MD 124
- MD 355 at S Summit Avenue
- MD 355 at Shady Grove Road
- MD 355 at E/W Gude Drive
- MD 355 at N Washington Street
- MD 355 at MD 28 (Veirs Mill Road)
- MD 355 at Rollins Ave/Twinbrook Parkway
- MD 355 at Nicholson Lane
- MD 355 at Grosvenor Lane
- MD 355 at Cedar Lane
- MD 355 at MD 410 (East-West Highway/Old Georgetown Road)

Vehicle Occupancy data was collected at ten locations along the study corridor, from 7:00 AM – 8:00 AM and from 4:00 PM to 5:00 PM on Tuesday and Wednesday, November 17-18, 2015. The occupancy count locations are located between the critical intersections of the study corridor. Counts were observed downstream of the intersections to include free-flowing vehicles turning left or right onto MD 355 from the cross-streets. Count locations are listed below:

- Perry Parkway/ Lakeforest Boulevard
- Deer Park Road

- Ridgemont Avenue
- College Parkway
- Beall Avenue
- Halpine Road
- Marinelli Road
- Strathmore Avenue
- Bellevue Drive/Alta Vista Road
- Jones Bridge Road

Figure 1 illustrates a typical cross section of the study corridor. However, there are locations at which the cross section changes.

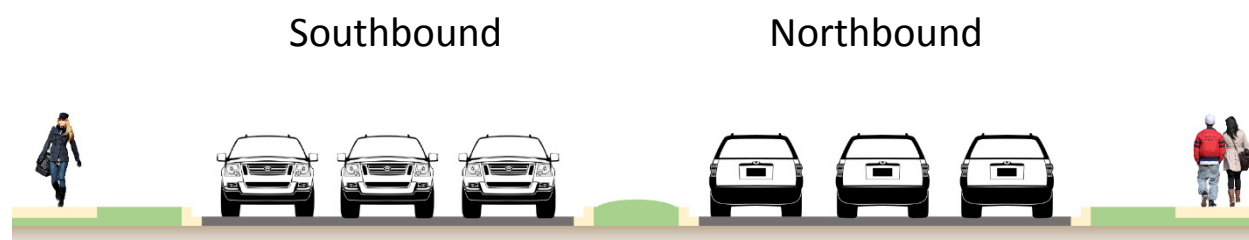


Figure 1 - Typical Cross Section of the Study Corridor

Southbound vehicles were observed during the AM peak hour, while northbound vehicles were observed during the PM peak hour. The counts allowed to determine Single Occupancy Vehicles (SOV), HOV2, and HOV3+ volumes for each of the study segments during the AM and PM peak hours, southbound and northbound, respectively.

Also, recent intersection turning movement count data was obtained from the State Highway Administration (SHA) Internet Traffic Monitoring System (i-TMS). This data was used to determine the volume of right-turning vehicles at locations within the study corridor that represent the typical right-turn conditions along each of the study segments. Detailed Average Daily Traffic (ADT) volume data at specific locations on each study segment was provided by SHA to determine the current lane-by-lane traffic distribution. Recent (2012) transit ridership estimates for bus routes along the study corridor for both MCDOT Ride-On and Washington Metropolitan Area Transit Agency (WMATA) buses was obtained from data in the Institute for Transportation and Development Policy (ITDP) and LOGIT Montgomery County Bus Ridership Demand Report. For consistency, peak hour periods for all collected data were assumed to be from 7:00 AM to 8:00 AM and from 4:00 PM and 5:00 PM.

Synchro files of the study corridor were provided by MCDOT and were used to determine the effective green time to cycle length (g/C) ratio at the limits of each of the study segments, as well as the saturation flow rates at the count locations for the southbound AM and northbound PM peak hour through movements.

The data was then entered in a lane distribution analysis spreadsheet (initially developed by Sabra, Wang and Associates and provided to RK&K specifically for use on this MCDOT project) to determine the capacity flow, volume per lane, and volume to capacity ratios for each of the travel lanes. These calculations were

performed for both existing conditions and the proposed managed lanes alternative. A sensitivity analysis was then performed to determine the degree of mode shift from SOV to HOV required to achieve an acceptable v/c-ratio in each of the general traffic lanes under the proposed managed lanes alternative. **Figure 2** shows a typical cross section for the proposed alternative for the study corridor.

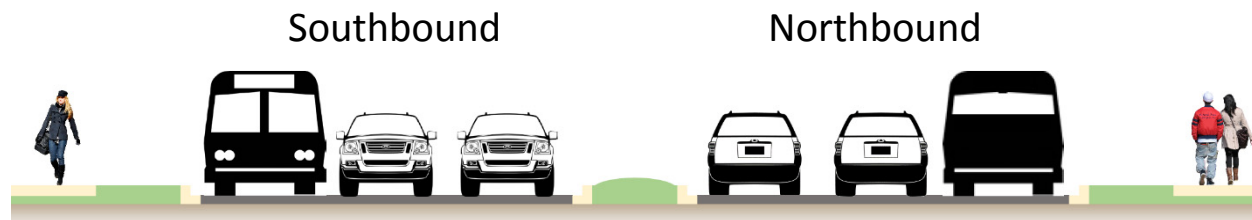


Figure 2 - Proposed Cross Section of the Study Corridor

DATA COMPILATION

PEAK HOUR VOLUMES

Peak hour intersection turning movement counts were obtained from the SHA i-TMS website. The counts were obtained at locations that are representative of the entire length of each of the study segments. These locations were selected based on both the surrounding developments and the intersection geometry. All turning movement counts were used to obtain right turning movements during the AM and PM peak hours in the southbound and northbound directions, respectively. The peak hour intersection turning movement counts are included in **Appendix A**.

LANE UTILIZATION

Lane-by-lane average daily traffic (ADT) volume counts were obtained from SHA staff. Counts were available for only eight of the ten segments along the corridor; therefore, data from two of the counts was used to estimate the lane utilization for the two adjacent segments for which no count data was provided. The locations of the counts were 0.5 miles south of MD 124, between Fairbanks Drive and Education Boulevard, 0.10 miles south of Fields Road, 0.5 miles south of Gude Drive, 0.5 miles south of Rollins Avenue/Twinbrook Parkway, 0.10 miles North of MD 547, 0.2 miles south of I-495, and 0.10 miles north of MD 410. The lane utilization percentages derived from these ADT traffic counts are shown in the analysis tables included in **Appendix B**.

VEHICLE OCCUPANCY

RK&K conducted manual field counts at specific locations along the study corridor. The counts were collected downstream of critical intersections in the southbound direction during the AM peak hour and in northbound direction during the PM peak hour. Vehicles were categorized as single-occupancy vehicles (SOVs), high-occupancy vehicles with one passenger (HOV2), high-occupancy vehicles with 2 or more passengers (HOV3+), and buses. Vehicle occupancy rates along each of the study segments were determined from the representative population studied during the field counts. Lane utilization factors for each of the three travel lanes in each travel direction during the respective peak period were applied to these occupancy counts to determine SOV, HOV2, and HOV3+ volumes per each lane. **Tables 1 through 10** show summaries of the vehicle occupancy volumes and rates for the representative population sampled at the ten locations along the study corridor.

Table 1 – Vehicle Occupancy Summary at Lakeforest Boulevard

Lakeforest Blvd									
Approach	Vehicles					Percent (%)			
	SOV	HOV 2	HOV 3+	Buses	TOTAL	SOV	HOV 2	HOV 3+	Buses
SB AM	1,315	186	18	17	1,536	86%	12%	1%	1%
NB PM	1,169	285	18	7	1,479	79%	19%	1%	0%

Table 2 – Vehicle Occupancy Summary at Deer Park Road

Deer Park Rd									
Approach	Vehicles					Percent (%)			
	SOV	HOV 2	HOV 3+	Buses	TOTAL	SOV	HOV 2	HOV 3+	Buses
SB AM	1,964	354	37	28	2,383	82%	15%	2%	1%
NB PM	1,435	333	41	7	1,816	79%	18%	2%	0%

Table 3 – Vehicle Occupancy Summary at Ridgemont Avenue

Ridgemont Ave									
Approach	Vehicles					Percent (%)			
	SOV	HOV 2	HOV 3+	Buses	TOTAL	SOV	HOV 2	HOV 3+	Buses
SB AM	2,339	354	39	29	2,761	85%	13%	1%	1%
NB PM	1,598	324	44	25	1,991	80%	16%	2%	1%

Table 4 – Vehicle Occupancy Summary at College Parkway

College Pkwy									
Approach	Vehicles					Percent (%)			
	SOV	HOV 2	HOV 3+	Buses	TOTAL	SOV	HOV 2	HOV 3+	Buses
SB AM	2,157	437	44	46	2,684	80%	16%	2%	2%
NB PM	1,490	317	37	33	1,877	79%	17%	2%	2%

Table 5 – Vehicle Occupancy Summary at Beall Avenue

Beall Ave									
Approach	Vehicles					Percent (%)			
	SOV	HOV 2	HOV 3+	Buses	TOTAL	SOV	HOV 2	HOV 3+	Buses
SB AM	1,994	323	12	26	2,355	85%	14%	1%	1%
NB PM	1,506	242	11	17	1,776	85%	14%	1%	1%

Table 6 – Vehicle Occupancy Summary at Halpine Road

Halpine Rd									
Approach	Vehicles					Percent (%)			
	SOV	HOV 2	HOV 3+	Buses	TOTAL	SOV	HOV 2	HOV 3+	Buses
SB AM	1,815	238	24	22	2,099	86%	11%	1%	1%
NB PM	1,525	311	18	11	1,865	82%	17%	1%	1%

Table 7 – Vehicle Occupancy Summary at Marinelli Road

Marinelli Rd									
Approach	Vehicles					Percent (%)			
	SOV	HOV 2	HOV 3+	Buses	TOTAL	SOV	HOV 2	HOV 3+	Buses
SB AM	1,150	239	58	30	1,477	78%	16%	4%	2%
NB PM	1,340	287	41	24	1,692	79%	17%	2%	1%

Table 8 – Vehicle Occupancy Summary at Strathmore Avenue

Strathmore Ave									
Approach	Vehicles					Percent (%)			
	SOV	HOV 2	HOV 3+	Buses	TOTAL	SOV	HOV 2	HOV 3+	Buses
SB AM	1,949	338	39	40	2,366	82%	14%	2%	2%
NB PM	1,607	194	10	27	1,838	87%	11%	1%	1%

Table 9 – Vehicle Occupancy Summary at Bellevue Drive

Bellevue Dr									
Approach	Vehicles					Percent (%)			
	SOV	HOV 2	HOV 3+	Buses	TOTAL	SOV	HOV 2	HOV 3+	Buses
SB AM	2,292	499	68	31	2,890	79%	17%	2%	1%
NB PM	2,270	439	46	23	2,778	82%	16%	2%	1%

Table 10 – Vehicle Occupancy Summary at Jones Bridge Road

Jones Bridge Rd									
Approach	Vehicles					Percent (%)			
	SOV	HOV 2	HOV 3+	Buses	TOTAL	SOV	HOV 2	HOV 3+	Buses
SB AM	1,897	294	65	98	2,354	81%	12%	3%	4%
NB PM	935	176	31	28	1,170	80%	15%	3%	2%

TRANSIT RIDERSHIP

Estimated recent peak hour transit ridership at each of the ten study segments within the study corridor was calculated by averaging the morning and evening peak hour transit ridership data along MD 355. This data was obtained from the Montgomery County Bus Ridership Demand Report by LOGIT and ITDP in 2012. These estimates include all bus transit service along the corridor, including Ride On and WMATA routes. **Table 11** shows the AM and PM peak hour transit ridership in the southbound and northbound directions, respectively.

Table 11 – Recent Transit Ridership Estimates (ITDP/LOGIT)

Segment of MD 355	Peak	Direction	Transit Ridership (Passengers)
MD 124 to S Summit Ave	AM	SB	158
	PM	NB	145
S Summit Ave to Shady Grove Road	AM	SB	191
	PM	NB	168
Shady Grove Road to Gude Drive	AM	SB	192
	PM	NB	151
Gude Drive to N Washington St	AM	SB	133
	PM	NB	180
N Washington St to Veirs Mill Rd	AM	SB	60
	PM	NB	45
Veirs Mill Rd to Twinbrook Pkwy	AM	SB	60
	PM	NB	127
Twinbrook Pkwy to Nicholson Ln	AM	SB	122
	PM	NB	110
Nicholson Ln to Grosvenor Ln	AM	SB	105
	PM	NB	64
Grosvenor Ln to Cedar Ln	AM	SB	158
	PM	NB	215
Cedar Ln to MD 410	AM	SB	195
	PM	NB	286

PERSON THROUGHPUT

The efficiency of each study segment along the corridor under both existing conditions and the proposed managed lanes alternative was determined by calculating the total person throughput of each lane of the segments, during the AM and PM peak periods, southbound and northbound, respectively.

Under existing conditions, all three travel lanes were assumed to be used by a combination of SOVs, HOV2, and HOV3+. However, for simplicity of calculation, it was assumed that all right-turning vehicles using the right travel lane were SOVs. Lane utilization factors from the ADT volume data provided by SHA were applied to volumes from each of the vehicle occupancy categories to determine the total number of vehicles from each vehicle category in each of the travel lanes. Vehicle occupancy factors were applied to the resulting volumes to determine the person throughput of each lane. These numbers were summed to determine the total person throughput of each study segment during the AM and PM peak periods, southbound and northbound, respectively.

Under the proposed managed lanes alternative, it was assumed that only buses, right turning vehicles, HOV2 and HOV3+ are allowed to use the right lane. For consistency with the existing conditions, it was assumed that all right turning vehicles were SOVs. Vehicle occupancy factors were applied to volumes of each of the vehicle types to determine the person throughput of each lane. These values were then summed up to determine the total person throughput of each study segment during the AM and PM peak periods, southbound and northbound, respectively.

Lane-by-lane and total person throughput for each of the study segments was also determined after performing a sensitivity analysis consisting of converting a percentage of SOVs into HOV2 and shifting the converted vehicles to the managed lane.

SPREADSHEET ANALYSIS

INPUTS

Volumes inputted into the lane distribution spreadsheet for analysis were obtained from vehicle occupancy field counts and the provided SHA turning movement counts. The ideal flow rate used in this analysis was 1,900 vehicles per lane per hour. Synchro files of the study corridor were consulted to determine the saturated flow rates for each of the study segments during the AM and PM peak hours, southbound and northbound, respectively. These values represent the estimated capacity per lane for free flowing traffic within each of the study segments.

The g/c ratio differs from signal to signal throughout the study corridor. The g/c ratios used in this analysis were for the through movements at the intersections located at the upstream limit of each study segment. **Table 12** shows the saturated flow rate, g/c ratio, and lane capacity for each of the study segments along the study corridor.

OUTPUTS

The lane distribution spreadsheet outputs volume to capacity (v/c) ratios for each lane and direction during the respective peak hours. The v/c ratios were generated for both existing and proposed conditions. The governing critical lane volume for each segment used to determine the v/c ratio was calculated by multiplying the g/c ratio by the saturated flow rate for each study segment. **Table 13** shows

the v/c ratio output from the analysis. All results of the analysis, including the person throughput analysis, are included in **Appendix B**.

Table 12 – Saturated Flow Rate, g/c Ratio, and Capacity Flow for Each Segment

Segment	Peak	Direction	Saturated Flow Rate (veh per lane per hour)	g/c ratio	Capacity Flow (veh per lane per hour)
MD 124 to S Summit Ave	AM	SB	1,622	0.32	519
	PM	NB	1,896	0.67	1,270
S Summit Ave to Shady Grove Road	AM	SB	1,640	0.73	1,197
	PM	NB	1,651	0.35	578
Shady Grove Road to Gude Drive	AM	SB	1,642	0.55	903
	PM	NB	1,572	0.37	582
Gude Drive to N Washington St	AM	SB	1,893	0.47	890
	PM	NB	1,663	0.48	798
N Washington St to Vers Mill Rd	AM	SB	1,896	0.69	1,308
	PM	NB	1,835	0.43	789
Veirs Mill Rd to Twinbrook Pkwy	AM	SB	1,643	0.49	805
	PM	NB	1,832	0.51	934
Twinbrook Pkwy to Nicholson Ln	AM	SB	1,647	0.62	1,021
	PM	NB	1,663	0.35	582
Nicholson Ln to Grosvenor Ln	AM	SB	1,902	0.46	875
	PM	NB	1,925	0.5	963
Grosvenor Ln to Cedar Ln	AM	SB	1,811	0.54	978
	PM	NB	1,663	0.51	848
Cedar Ln to MD 410	AM	SB	1,805	0.66	1,192
	PM	NB	1,663	0.42	698

EXISTING CONDITIONS

The capacity flow in vehicles per lane per hour green was calculated by multiplying each segment's g/c ratio by its saturated flow rate. The capacity flow is the maximum capacity for each lane per hour. The counted traffic volumes and right turn volumes were multiplied by the lane utilization factors to obtain

lane-by-lane directional volumes. The lane-by-lane directional volumes are then divided by the capacity flow to determine v/c ratios for each lane and direction along the study corridor.

PROPOSED ALTERNATIVE

Under the proposed managed lanes alternative, it was assumed that all HOV2, HOV3+, right turning vehicles, and buses use the right lane in each travel direction. Volumes of each of these vehicle categories were summed up to determine the actual lane volume per hour as well as the projected lane utilization factor of the right lane under the proposed alternative. The remaining volume was distributed evenly between the center and left lanes. The v/c ratios for each lane were then calculated by dividing the lane-by-lane directional volumes by the calculated capacity flow.

Table 13 – Volume to Capacity Ratios for Each Segment under Proposed Conditions

Segment	Peak	Direction	Left Lane	Center Lane	Right Lane (Managed)
Montgomery Village Ave to S Summit Ave	AM	SB	0.85	0.85	0.98
	PM	NB	0.31	0.31	0.44
S Summit Ave to Shady Grove Road	AM	SB	0.61	0.61	0.57
	PM	NB	0.88	0.88	1.08
Shady Grove Road to Gude Drive	AM	SB	1.25	1.25	1.08
	PM	NB	0.90	0.90	1.32
Gude Drive to N Washington St	AM	SB	0.81	0.81	1.13
	PM	NB	0.55	0.55	1.08
N Washington St to Veirs Mill Rd	AM	SB	0.56	0.56	0.48
	PM	NB	0.68	0.68	0.67
Veirs Mill Rd to Twinbrook Pkwy	AM	SB	0.83	0.83	0.67
	PM	NB	0.60	0.60	0.59
Twinbrook Pkwy to Nicholson Ln	AM	SB	0.42	0.42	0.46
	PM	NB	0.84	0.84	0.94
Nicholson Ln to Grosvenor Ln	AM	SB	0.81	0.81	0.81
	PM	NB	0.62	0.62	0.46
Grosvenor Ln to Cedar Ln	AM	SB	0.88	0.88	0.91
	PM	NB	1.00	1.00	0.94
Cedar Ln to MD 410	AM	SB	0.49	0.49	0.83
	PM	NB	0.49	0.49	0.53

SENSITIVITY ANALYSIS

A sensitivity analysis was performed to determine the percentage of mode shift from SOV to HOV2 under the proposed managed lanes alternative that would alleviate congestion in the remaining general traffic lanes under the proposed alternative and allow each of the travel lanes to perform at or below capacity. The results of the sensitivity analysis are shown in **Appendix B**.

Three scenarios were explored under this sensitivity analysis. First, 10% of the SOV volumes were assumed to convert to HOV2 and, therefore, were shifted to the right lane. This 10% mode shift seems achievable, considering up to 20% of the existing vehicles along MD 355 in the study corridor are already HOV2 or HOV3+. Second, a 25% conversion percentage from SOV to HOV2 was applied. This 25% mode shift was based on the magnitude of conversion required to achieve a v/c-ratio of 1.0 on one of the segments (Grosvenor Lane to Cedar Lane) which was shown to be significantly over-capacity under the proposed managed lane alternative without any mode shift. Third, SOV to HOV2 conversion factors that would reduce the v/c ratios for both the center and left lanes to 1.0 or below on several study segments while allowing the right lane to operate at or below an 85% capacity – if it has a smaller v/c ratio in the proposed alternative – were determined. This third analysis method assumes the magnitude of the conversion from SOV to HOV2 will vary from segment to segment according to the capacity needs of each individual segment; whereas the previous two methods assumed a uniform mode shift from SOV to HOV2 along the entire study corridor.

FINDINGS

The following is a summary of the analysis results:

- Volume to capacity ratios greater than 1.0 on MD 355 under existing conditions:
 - Between MD 124 and S. Summit Avenue: The left and center lanes operate 1% and 4% during the AM peak period, respectively
 - Between Shady Grove Road and Gude Drive: The left, center, and right lanes operate 48%, 8%, and 44% above capacity during the AM peak period, respectively
 - Between Gude Drive and N. Washington Street: The left and center lanes operate 3% above capacity during the AM peak period
 - Between Nicholson Lane and Grosvenor Lane: The left lane operates 3% above capacity during the AM peak period
 - Between Grosvenor Lane and Cedar Lane: The left lane operates 6% above capacity during the AM peak period
- Volume to capacity ratios greater than 1.0 on MD 355 under the proposed alternative with no mode shift from SOV to HOV2:
 - Between MD 124 and S. Summit Avenue: The left and center lanes operate 13% above capacity during the AM peak period
 - Between Shady Grove Road and Gude Drive: The left and center lanes operate 67% above capacity during the AM peak period
 - Between Gude Drive and N. Washington Street: The left and center lanes operate 8% above capacity during the AM peak hour

- Between Veirs Mills Road and Twinbrook Parkway: The left and center lanes operate 11% above capacity during the AM peak period
- Between Nicholson Lane and Grosvenor Lane: The left and center lanes operate 8% above capacity during the AM peak period
- Between Grosvenor Lane and Cedar Lane: The left and center lanes operate 17% above capacity during the AM peak period
- Volume to capacity ratios greater than 1.0 under the proposed alternative with a 10% mode shift from SOV to HOV2:
 - Between Montgomery Village Avenue and S. Summit Avenue: The left and center lanes operate 2% above capacity during the AM peak period
 - Between Shady Grove Road and Gude Drive: The left and center lanes operate 50% above capacity during the AM peak period
 - Between Grosvenor Lane and Cedar Lane: The left and center lanes operate 5% above capacity during the AM peak period
- Volume to capacity ratios greater than 1.0 under the proposed alternative with a 25% mode shift from SOV to HOV2:
 - Between Shady Grove Road and Gude Drive: The left and center lanes operate 25% above capacity during the AM peak period. The managed lane operates 8% above capacity during the same peak period.
 - Between Gude Drive and N. Washington Street: The managed lane operates 13% above capacity during the AM peak period.

Under the proposed alternative, there is no level of mode shift from SOV to HOV2 great enough to allow the general traffic lanes or the managed lanes on MD 355 between Shady Grove Road and Gude Drive to operate at or below a v/c-ratio of 1.0.

OTHER FACTORS

Although the results of the spreadsheet-based capacity analyses indicate which of the ten segments along MD 355 would have acceptable volume-to-capacity ratios under the proposed managed lanes alternative with and without a mode shift of single-occupancy vehicles (SOVs) to high-occupancy vehicles (HOV2), there are other factors (primarily geometric) for consideration that may affect the feasibility of implementing managed lanes along MD 355 in this corridor.

- There is an insufficient number of existing lanes along northbound MD 355 between Brookes Avenue and Odendhal Avenue in Gaithersburg to allow the right lane to be repurposed as a managed lane.
- Along southbound MD 355 in Gaithersburg beginning at Chestnut Street and continuing south for a distance of approximately 700 feet, there is an insufficient number of existing lanes to allow the right lane to be repurposed as a managed lane.

- On southbound MD 355 at the ramps to/from MD 117 in Gaithersburg, a channelization island would need to be adjusted to allow the right lane to continue through the ramp intersection, which would allow it to be repurposed as a managed lane.
- On northbound MD 355 at S. Summit Avenue, a channelization island would need to be adjusted to allow the right lane to continue through the intersection, which would allow it to be repurposed as a managed lane.
- Along the segment of MD 355 between Grosvenor Lane and Cedar Lane, there are heavy volume left and right-hand entry and exit movements at the I-495/I-270 interchange. Therefore, a mixture of SOVs and HOVs is likely to be present in all travel lanes on MD 355 at this location.
- Enforcement of managed lane restrictions along all segments of the study corridor may be challenging due to the need for SOVs to use the managed lane to make legal right turns at intersections and at driveways.

RECOMMENDATIONS

Based on the results of the observations and analysis presented in this feasibility study, **the implementation of managed lanes appears most feasible along MD 355 between Gude Drive and the I-495/I-270 interchange.**

Implementing managed lanes south of the I-495/I-270 interchange to MD 410 may also be feasible; however, this segment has a disproportionately high volume of right-turning SOVs due to access to the National Institutes of Health (NIH) and Walter Reed Medical Center campuses.

The segment of MD 355 in Gaithersburg where lane repurposing is not geometrically feasible, along with the over-capacity segment north of Gude Drive, create a disconnect between the long corridor to the south where managed lanes are feasible and a relatively short segment near Lakeforest Mall where they are also feasible. However, since it would not be sensible to have such a short managed lane segment at the northern end of the study corridor that is separated from the rest of the corridor, implementing managed lanes north of Odendhal Avenue is not recommended.

More detailed operational analysis of the proposed alternative should be considered for the segments of the MD 355 study corridor where implementing managed lanes appears most feasible.

Attachments

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Appendix A:

Intersection Turning Movement Counts

Maryland State Highway Administration
Highway Information Services Division
Turning Movement Count Study - Field Sheet

Station ID: S2002150108
Date: Thursday 10/02/2014
Location: MD 355 at LAKE FOREST BLVD/PERRY PKWY

County: Montgomery
Town: none
Weather: Fair, Warm

Comments: LOS AM: .51 (A) PM: .60 (A)

Interval (dd): 60 min

PEAK HOURS	AM PERIOD 6:00AM-12:00PM	Begin	End	Volume	PM PERIOD 12:00PM-19:00PM	Begin	End	Volume
		11:00	12:00	2944		16:00	17:00	3576

Hour	Lakeforest Boulevard From North				Perry Parkway From South				MD 355 From East				MD 355 From West				Grand Total
Begin	L	T	R	TOT	L	T	R	TOT	L	T	R	TOT	L	T	R	TOT	
6:00	85	117	74	276	95	25	14	134	16	371	25	412	29	879	64	972	1794
7:00	154	151	69	374	117	35	36	188	30	455	50	535	90	1321	139	1550	2647
8:00	177	108	111	396	140	90	43	273	77	607	57	741	131	1226	132	1489	2899
9:00	142	113	120	375	158	133	55	346	85	543	53	681	100	737	101	938	2340
10:00	136	220	122	478	235	124	58	417	108	641	87	836	114	587	114	815	2546
11:00	188	211	118	517	301	146	67	514	162	693	91	946	124	687	156	967	2944
12:00	207	194	137	538	309	190	85	584	179	783	90	1052	141	665	201	1007	3181
13:00	211	183	142	536	328	201	80	609	180	763	86	1029	117	693	166	976	3150
14:00	188	181	130	499	308	194	89	591	137	933	92	1162	122	699	145	966	3218
15:00	154	223	201	578	305	209	76	590	153	1035	133	1321	130	775	135	1040	3529
16:00	191	192	193	576	310	258	101	669	145	1088	123	1356	135	698	142	975	3576
17:00	212	244	142	598	334	276	102	712	149	982	116	1247	96	741	153	990	3547
18:00	211	161	113	485	280	284	99	663	165	698	75	938	86	659	159	904	2990
TOTAL	2256	2298	1672	6226	3220	2165	905	6290	1586	9592	1078	12256	1415	10367	1807	13589	38361
AM Peak	188	211	118	517	301	146	67	514	162	693	91	946	124	687	156	967	2944
PM Peak	191	192	193	576	310	258	101	669	145	1088	123	1356	135	698	142	975	3576

Hour	Lakeforest Boulevard North Leg			Perry Parkway South Leg			MD 355 East Leg			MD 355 West Leg		
Ending	Bicycle	PED.	U.T.	Bicycle	PED.	U.T.	Bicycle	PED.	U.T.	Bicycle	PED.	U.T.
6:00	0	5	0	0	2	0	0	1	4	0	0	13
7:00	0	1	0	0	1	0	0	5	12	0	3	42
8:00	0	12	0	0	7	0	0	1	15	0	1	44
9:00	0	16	0	0	10	1	0	5	26	0	2	46
10:00	0	10	0	0	7	1	0	7	22	0	0	50
11:00	0	22	0	0	11	1	0	7	28	0	0	65
12:00	0	29	0	0	4	0	0	14	48	0	3	73
13:00	0	14	1	0	20	0	0	21	42	0	2	58
14:00	0	11	1	0	13	0	0	11	33	0	1	68
15:00	0	18	0	0	17	0	0	13	53	0	0	58
16:00	0	4	0	0	14	0	0	6	32	0	1	64
17:00	0	9	0	0	4	0	0	0	31	0	2	42
18:00	0	3	0	0	14	1	0	2	43	0	0	53
Total	0	154	2	0	124	4	0	93	389	0	15	676
AM Peak	0	22	0	0	11	1	0	7	28	0	0	65
PM Peak	0	4	0	0	14	0	0	6	32	0	1	64

Station ID: S2002150108
Date: Thursday 10/02/2014
Location: MD 355 at LAKE FOREST BLVD/PERRY PKWY

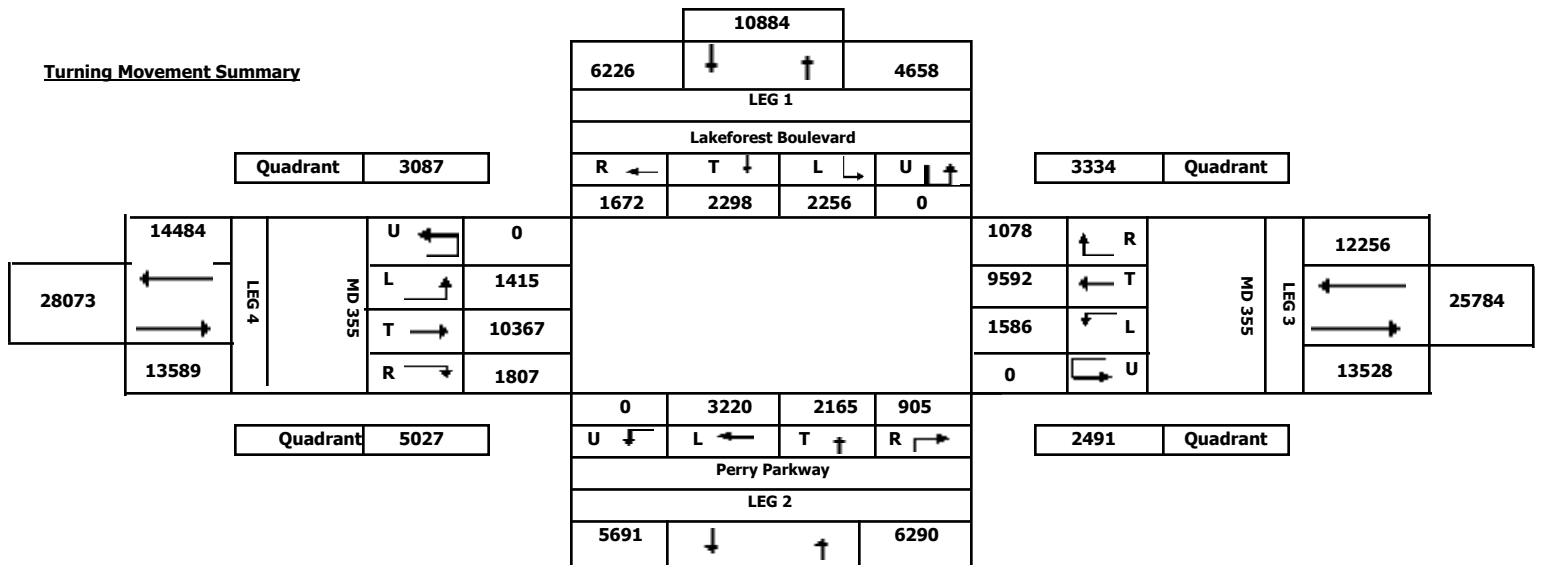
County: Montgomery
Town: none
Weather: Fair, Warm

Comments: LOS AM: .51 (A) PM: .60 (A)

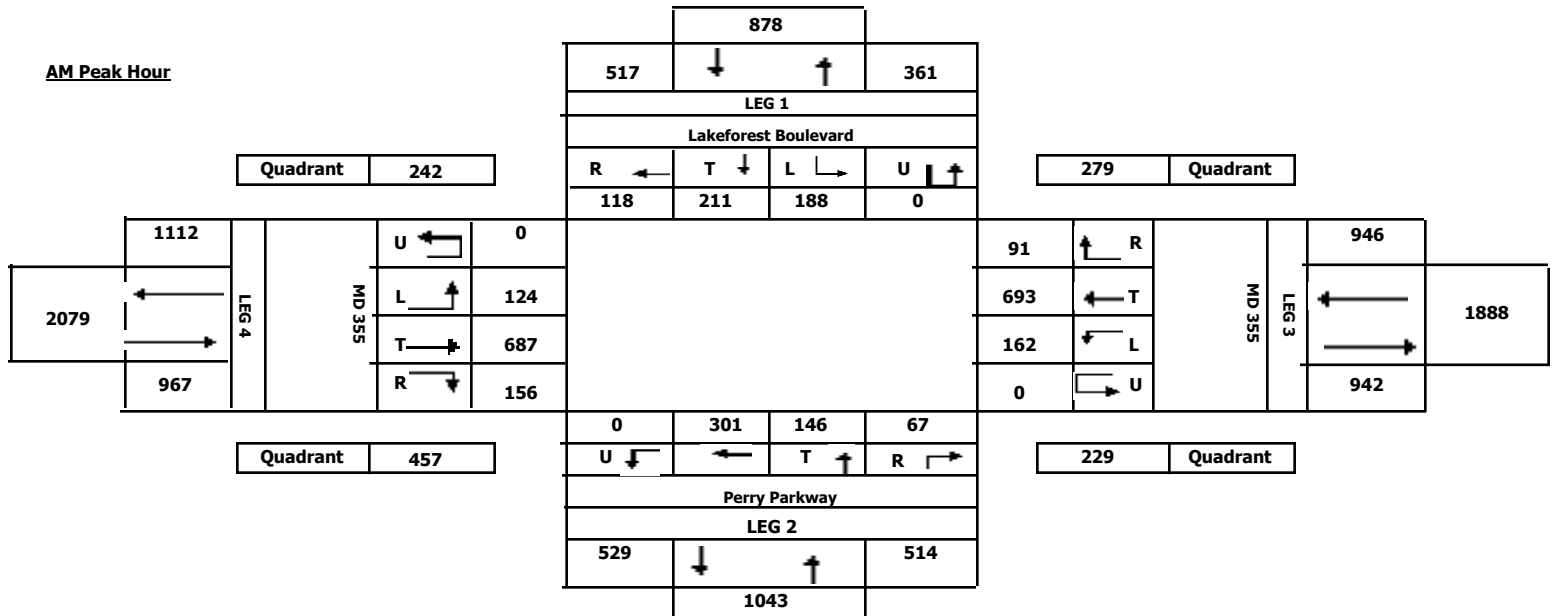
Interval (dd): 60 min

PEAK HOURS	AM PERIOD 6:00AM-12:00PM	Begin	End	Volume	PM PERIOD 12:00PM-19:00PM	Begin	End	Volume
		11:00	12:00	2944		16:00	17:00	3576

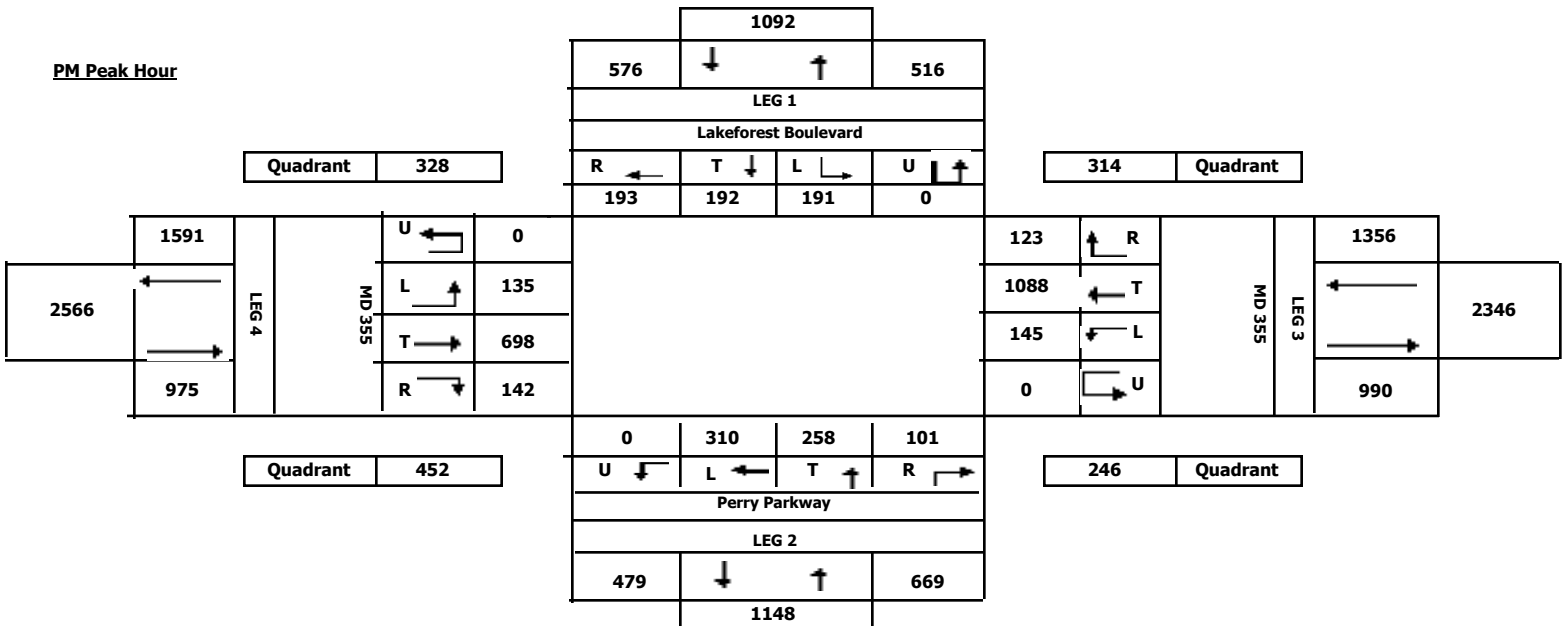
Turning Movement Summary



AM Peak Hour



PM Peak Hour



Maryland State Highway Administration
Highway Information Services Division
Turning Movement Count Study - Field Sheet

Station ID: S1993150027
Date: Tuesday 07/08/2014
Location: MD 355 at W. Deer Park Rd/E. Deer Park Dr

County: Montgomery
Town: none
Weather: Cloudy

Comments: LOS AM:A(0.57) PM:A(0.55)

Interval (dd): 60 min

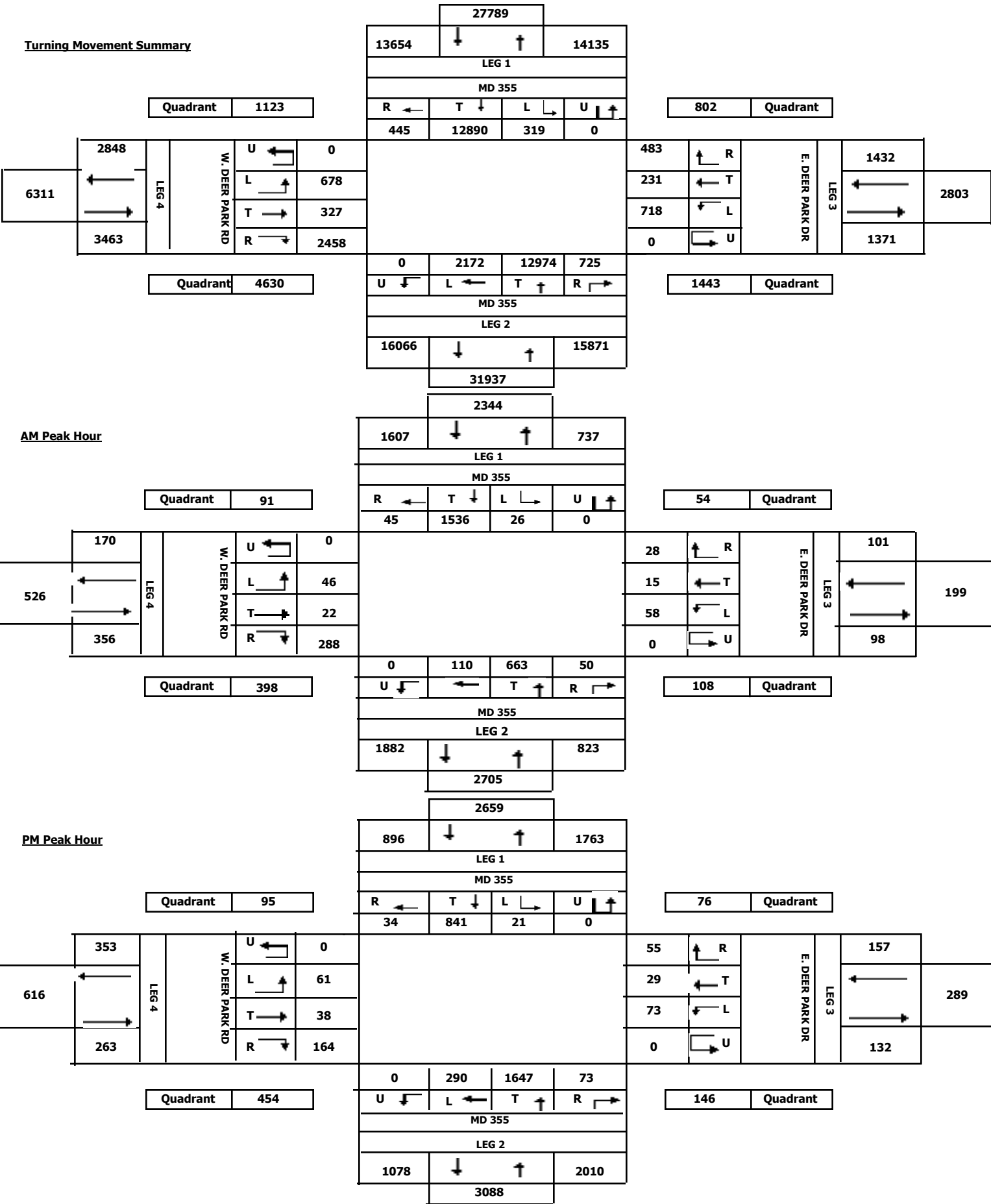
PEAK HOURS	AM PERIOD 6:00AM-12:00PM	Begin	End	Volume	PM PERIOD 12:00PM-19:00PM	Begin	End	Volume
		08:00	09:00	2887		17:00	18:00	3326

Hour	MD 355 From North				MD 355 From South				E. DEER PARK DR From East				W. DEER PARK RD From West				Grand Total
Begin	L	T	R	TOT	L	T	R	TOT	L	T	R	TOT	L	T	R	TOT	
6:00	13	948	11	972	43	248	14	305	49	5	9	63	25	17	238	280	1620
7:00	23	1479	21	1523	99	476	25	600	68	13	27	108	32	29	320	381	2612
8:00	26	1536	45	1607	110	663	50	823	58	15	28	101	46	22	288	356	2887
9:00	34	967	42	1043	119	813	49	981	52	20	35	107	52	22	226	300	2431
10:00	22	745	27	794	101	793	51	945	50	14	24	88	48	13	159	220	2047
11:00	23	807	33	863	135	1003	56	1194	45	11	61	117	52	13	148	213	2387
12:00	30	867	22	919	130	962	54	1146	64	18	43	125	42	18	146	206	2396
13:00	23	975	43	1041	151	1126	53	1330	49	18	40	107	53	26	145	224	2702
14:00	23	1200	36	1259	212	1068	54	1334	53	15	31	99	53	20	138	211	2903
15:00	27	914	46	987	234	1301	81	1616	56	16	38	110	64	34	157	255	2968
16:00	28	791	36	855	264	1432	75	1771	52	31	52	135	61	43	149	253	3014
17:00	21	841	34	896	290	1647	73	2010	73	29	55	157	61	38	164	263	3326
18:00	26	820	49	895	284	1442	90	1816	49	26	40	115	89	32	180	301	3127
TOTAL	319	12890	445	13654	2172	12974	725	15871	718	231	483	1432	678	327	2458	3463	34420
AM Peak	26	1536	45	1607	110	663	50	823	58	15	28	101	46	22	288	356	2887
PM Peak	21	841	34	896	290	1647	73	2010	73	29	55	157	61	38	164	263	3326

Hour	MD 355 North Leg			MD 355 South Leg			E. DEER PARK DR East Leg			W. DEER PARK RD West Leg		
Ending	Bicycle	PED.	U.T.	Bicycle	PED.	U.T.	Bicycle	PED.	U.T.	Bicycle	PED.	U.T.
6:00	0	12	0	0	0	0	0	1	0	0	5	0
7:00	0	17	0	0	1	0	0	3	0	0	7	0
8:00	0	12	0	0	1	0	0	3	0	0	2	0
9:00	0	8	1	0	2	0	0	4	0	0	7	0
10:00	0	6	0	0	0	1	0	11	0	0	6	0
11:00	0	8	0	0	0	2	0	9	0	0	3	0
12:00	0	8	3	0	0	2	0	8	0	0	9	0
13:00	0	7	0	0	0	4	0	5	0	0	7	0
14:00	0	5	3	0	0	3	0	9	0	0	3	0
15:00	0	11	0	0	0	0	0	7	1	0	6	0
16:00	0	9	1	0	0	0	0	5	0	0	4	0
17:00	0	13	3	0	0	0	0	12	0	0	2	0
18:00	0	11	6	0	0	1	0	5	0	0	3	0
Total	0	127	17	0	4	13	0	82	1	0	64	0
AM Peak	0	12	0	0	1	0	0	3	0	0	2	0
PM Peak	0	13	3	0	0	0	0	12	0	0	2	0

Interval (dd): 60 min

PEAK HOURS	AM PERIOD 6:00AM-12:00PM	Begin	End	Volume	PM PERIOD 12:00PM-19:00PM	Begin	End	Volume
		08:00	09:00	2887		17:00	18:00	3326



Maryland State Highway Administration
Highway Information Services Division
Turning Movement Count Study - Field Sheet

Station ID: S1998150362
Date: Wednesday 10/22/2014
Location: MD 355 at Redland Rd/Redland Blvd

County: Montgomery
Town: none
Weather: Rain
Comments: LOS AM: D(.86) PM: C(.79)

Interval (dd): 60 min

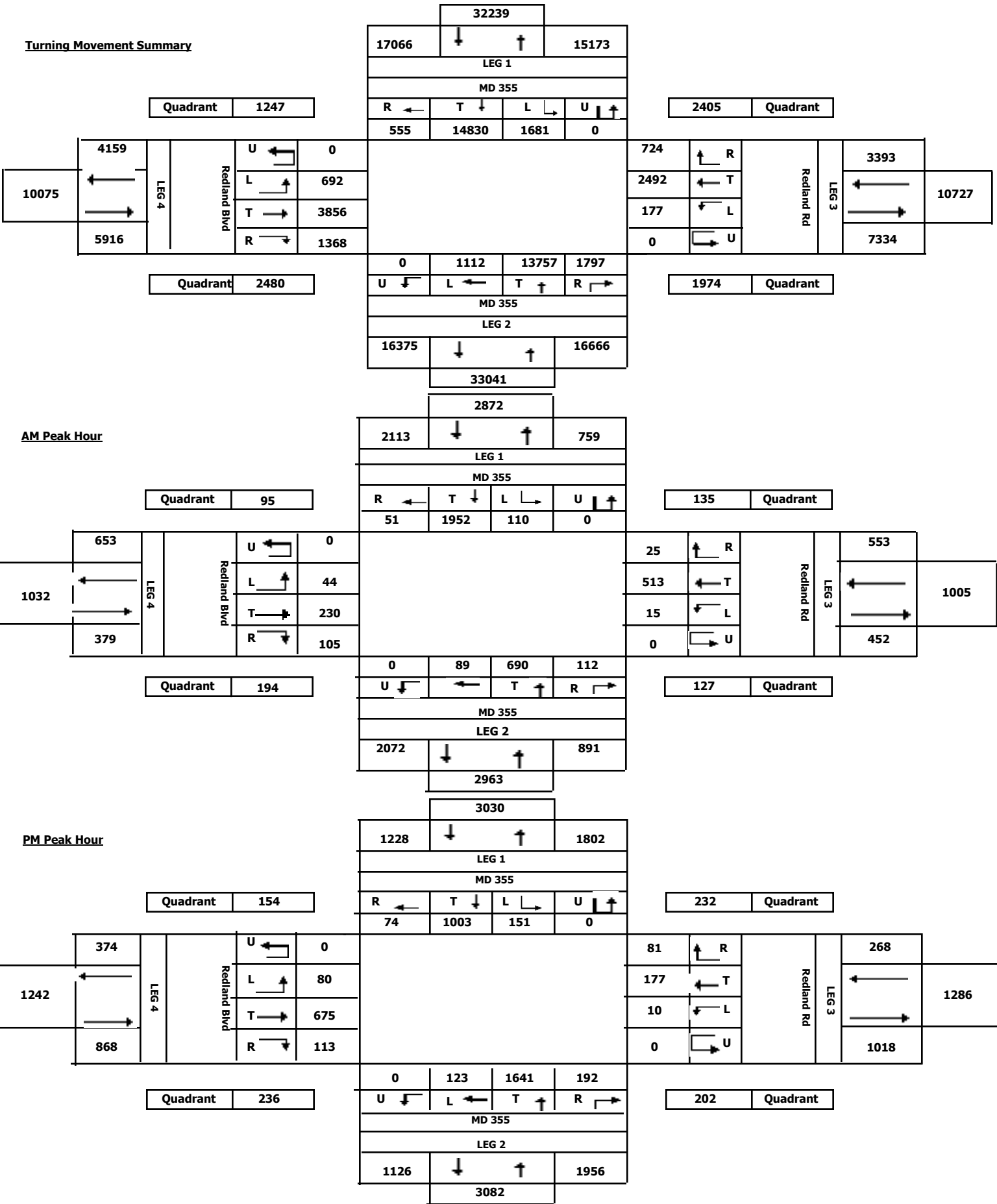
PEAK HOURS	AM PERIOD 6:00AM-12:00PM	Begin	End	Volume	PM PERIOD 12:00PM-19:00PM	Begin	End	Volume
		08:00	09:00	3936		17:00	18:00	4320

Hour	MD 355 From North				MD 355 From South				Redland Rd From East				Redland Blvd From West				Grand Total
Begin	L	T	R	TOT	L	T	R	TOT	L	T	R	TOT	L	T	R	TOT	
6:00	62	1104	19	1185	24	343	59	426	18	82	14	114	25	130	60	215	1940
7:00	105	1699	35	1839	60	535	75	670	14	257	29	300	40	172	92	304	3113
8:00	110	1952	51	2113	89	690	112	891	15	513	25	553	44	230	105	379	3936
9:00	136	1660	60	1856	86	836	125	1047	10	417	42	469	46	210	101	357	3729
10:00	90	1211	39	1340	84	921	109	1114	7	157	59	223	39	179	110	328	3005
11:00	144	1035	32	1211	57	968	162	1187	13	134	74	221	51	184	108	343	2962
12:00	158	909	40	1107	102	1175	141	1418	13	137	64	214	53	219	111	383	3122
13:00	135	859	31	1025	106	1160	134	1400	17	107	62	186	48	240	109	397	3008
14:00	165	886	41	1092	95	1224	151	1470	14	117	80	211	57	261	107	425	3198
15:00	149	856	33	1038	92	1351	162	1605	20	110	63	193	69	347	136	552	3388
16:00	159	840	37	1036	82	1482	199	1763	13	112	57	182	72	518	113	703	3684
17:00	151	1003	74	1228	123	1641	192	1956	10	177	81	268	80	675	113	868	4320
18:00	117	816	63	996	112	1431	176	1719	13	172	74	259	68	491	103	662	3636
TOTAL	1681	14830	555	17066	1112	13757	1797	16666	177	2492	724	3393	692	3856	1368	5916	43041
AM Peak	110	1952	51	2113	89	690	112	891	15	513	25	553	44	230	105	379	3936
PM Peak	151	1003	74	1228	123	1641	192	1956	10	177	81	268	80	675	113	868	4320

Hour	MD 355 North Leg			MD 355 South Leg			Redland Rd East Leg			Redland Blvd West Leg		
Ending	Bicycle	PED.	U.T.	Bicycle	PED.	U.T.	Bicycle	PED.	U.T.	Bicycle	PED.	U.T.
6:00	0	2	0	0	8	18	0	2	0	0	2	0
7:00	0	0	2	0	10	31	0	0	0	0	6	0
8:00	0	4	0	0	13	40	0	1	0	0	13	0
9:00	0	3	1	0	11	49	0	1	0	0	5	0
10:00	0	5	3	0	6	27	0	1	0	0	0	0
11:00	0	8	2	0	5	59	0	2	0	0	2	0
12:00	0	0	10	0	11	72	0	3	0	0	2	0
13:00	0	1	6	0	7	73	0	0	0	0	2	0
14:00	0	0	2	0	13	67	0	1	0	0	2	0
15:00	0	2	3	0	11	27	0	7	0	0	0	0
16:00	0	15	3	0	9	27	0	7	0	0	4	0
17:00	0	13	2	0	8	24	0	11	0	0	2	0
18:00	0	7	1	0	15	22	0	19	0	0	6	0
Total	0	60	35	0	127	536	0	55	0	0	46	0
AM Peak	0	4	0	0	13	40	0	1	0	0	13	0
PM Peak	0	13	2	0	8	24	0	11	0	0	2	0

Interval (dd): 60 min

PEAK HOURS	AM PERIOD 6:00AM-12:00PM	Begin	End	Volume	PM PERIOD 12:00PM-19:00PM	Begin	End	Volume
		08:00	09:00	3936		17:00	18:00	4320



Maryland State Highway Administration
Highway Information Services Division
Turning Movement Count Study - Field Sheet

Station ID: S1995150005
Date: Thursday 10/02/2014
Location: MD 355 at Mannakee St

County: Montgomery
Town: none
Weather: Sunny

Comments: LOS AM: E(.91) PM: A(.61)

Interval (dd): 60 min

PEAK HOURS	AM PERIOD 6:00AM-12:00PM	Begin	End	Volume	PM PERIOD 12:00PM-19:00PM	Begin	End	Volume
		08:00	09:00	3771		17:00	18:00	3912

Hour	MD 355 From North				MD 355 From South				No Entrance From East				Mannakee St From West				Grand Total
Begin	L	T	R	TOT	L	T	R	TOT	L	T	R	TOT	L	T	R	TOT	
6:00	0	1083	35	1118	27	312	0	339	0	0	0	0	12	0	15	27	1484
7:00	0	2380	234	2614	247	706	0	953	0	0	0	0	39	0	79	118	3685
8:00	0	2341	289	2630	262	750	0	1012	0	0	0	0	64	0	65	129	3771
9:00	0	1536	227	1763	283	850	0	1133	0	0	0	0	107	0	147	254	3150
10:00	0	1012	125	1137	222	1076	0	1298	0	0	0	0	148	0	227	375	2810
11:00	0	1197	110	1307	177	1141	0	1318	0	0	0	0	140	0	217	357	2982
12:00	0	1330	196	1526	238	1352	0	1590	0	0	0	0	205	0	288	493	3609
13:00	0	1249	128	1377	221	1303	0	1524	0	0	0	0	179	0	229	408	3309
14:00	0	1243	131	1374	160	1283	0	1443	0	0	0	0	156	0	248	404	3221
15:00	0	1236	136	1372	166	1442	0	1608	0	0	0	0	227	0	225	452	3432
16:00	0	1267	112	1379	149	1774	0	1923	0	0	0	0	202	0	212	414	3716
17:00	0	1373	105	1478	197	1847	0	2044	0	0	0	0	196	0	194	390	3912
18:00	0	1173	156	1329	227	1681	0	1908	0	0	0	0	145	0	182	327	3564
TOTAL	0	18420	1984	20404	2576	15517	0	18093	0	0	0	0	1820	0	2328	4148	42645
AM Peak	0	2341	289	2630	262	750	0	1012	0	0	0	0	64	0	65	129	3771
PM Peak	0	1373	105	1478	197	1847	0	2044	0	0	0	0	196	0	194	390	3912

Hour	MD 355 North Leg			MD 355 South Leg			No Entrance East Leg			Mannakee St West Leg		
Ending	Bicycle	PED.	U.T.	Bicycle	PED.	U.T.	Bicycle	PED.	U.T.	Bicycle	PED.	U.T.
6:00	0	0	0	0	0	2	0	0	0	0	4	0
7:00	0	0	0	0	0	2	0	0	0	0	8	0
8:00	0	0	0	0	0	2	0	0	0	0	7	0
9:00	0	0	0	0	1	4	0	0	0	0	10	0
10:00	0	0	1	0	0	7	0	0	0	0	10	0
11:00	0	8	2	0	0	16	0	0	0	0	10	0
12:00	0	1	2	0	2	31	0	0	0	0	15	0
13:00	0	2	4	0	1	25	0	0	0	0	10	0
14:00	0	3	5	0	0	28	0	0	0	0	9	0
15:00	0	4	1	0	0	11	0	0	0	0	5	0
16:00	0	2	3	0	0	15	0	0	0	0	5	0
17:00	0	2	3	0	0	16	0	0	0	0	12	0
18:00	0	1	8	0	0	25	0	0	0	0	9	0
Total	0	23	29	0	4	184	0	0	0	0	114	0
AM Peak	0	0	0	0	0	2	0	0	0	0	7	0
PM Peak	0	2	3	0	0	16	0	0	0	0	12	0

Station ID: S1995150005
Date: Thursday 10/02/2014
Location: MD 355 at Mannakee St

County: Montgomery
Town: none
Weather: Sunny

Comments: LOS AM: E(.91) PM: A(.61)

Interval (dd): 60 min

PEAK HOURS	AM PERIOD 6:00AM-12:00PM	Begin	End	Volume	PM PERIOD 12:00PM-19:00PM	Begin	End	Volume
		08:00	09:00	3771		17:00	18:00	3912

Turning Movement Summary

										37741						
										20404	↓ ↑	17337				
										LEG 1						
										MD 355						
										R ←	T ↓	L ↘	U ↗			
										1984	18420	0	0			
														0	Quadrant	
8708	4560	LEG 4	Mannakee St	U ↗	0					0	↗ R	No Entrance	LEG 3	0	0	
	L ↖			1820	0					← T	0					
	T →			0	0					↖ L	0					
	R ↘			2328	0					↘ U	0					
										0	2576	15517	0			
										U ↓	L ←	T ↑	R ↘	0	Quadrant	
										Quadrant				4904		

AM Peak Hour

		3444							
		2630	↓ ↑	814					
		LEG 1							
		MD 355							
		R ←	T ↓	L ↘	U ↗	0			
		289	2341	0	0	Quadrant			
680	551	LEG 4	Mannakee St	U ←	0	No Entrance	LEG 3	0	0
	L →			64	↑			0	
	T →			0	←			0	
	R →			65	↘			0	
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PM Peak Hour

		3521							
		1478	↓ ↑	2043					
		LEG 1							
		MD 355							
		R ←	T ↓	L ↘	U ↗	0			
		105	1373	0	0	Quadrant			
692	302	LEG 4	Mannakee St	U ←	0	No Entrance	LEG 3	0	0
	L ↗			196	T ←			0	
	T →			0	L ←			0	
	R ↘			194	U →			0	
		0				0			
		LEG 2							
		MD 355							
		LEG 2							
		1567	↓ ↑	2044					
		3611							

Maryland State Highway Administration
Highway Information Services Division
Turning Movement Count Study - Field Sheet

Station ID: S1998150283
Date: Wednesday 10/01/2014
Location: MD 355 at E&W Gude Dr

County: Montgomery
Town: none
Weather: Sunny
Comments: LOS AM: F(1.02) PM: D(.85)

Interval (dd): 60 min

PEAK HOURS	AM PERIOD 6:00AM-12:00PM	Begin	End	Volume	PM PERIOD 12:00PM-19:00PM	Begin	End	Volume
		08:00	09:00	6067		17:00	18:00	5620

Hour	MD 355 From North				MD 355 From South				E Gude Dr From East				W Gude Dr From West				Grand Total
Begin	L	T	R	TOT	L	T	R	TOT	L	T	R	TOT	L	T	R	TOT	
6:00	295	912	20	1227	41	211	58	310	101	241	96	438	29	267	91	387	2362
7:00	316	1970	43	2329	108	418	110	636	443	532	126	1101	62	466	330	858	4924
8:00	265	2297	34	2596	199	641	171	1011	480	829	136	1445	85	556	374	1015	6067
9:00	419	1954	30	2403	209	750	234	1193	505	784	119	1408	92	504	367	963	5967
10:00	314	1058	71	1443	208	736	213	1157	283	470	167	920	111	435	226	772	4292
11:00	313	712	48	1073	180	929	259	1368	241	292	229	762	104	400	253	757	3960
12:00	330	906	52	1288	240	1037	332	1609	289	372	191	852	118	430	310	858	4607
13:00	305	787	37	1129	275	1067	317	1659	206	275	148	629	103	451	235	789	4206
14:00	358	777	32	1167	232	1103	381	1716	198	462	178	838	115	468	232	815	4536
15:00	380	835	34	1249	217	1329	390	1936	184	404	221	809	82	598	295	975	4969
16:00	385	1000	50	1435	248	1460	329	2037	225	436	289	950	111	686	273	1070	5492
17:00	331	965	35	1331	253	1485	349	2087	281	551	234	1066	116	731	289	1136	5620
18:00	335	872	25	1232	225	1372	314	1911	261	451	267	979	65	508	245	818	4940
TOTAL	4346	15045	511	19902	2635	12538	3457	18630	3697	6099	2401	12197	1193	6500	3520	11213	61942
AM Peak	265	2297	34	2596	199	641	171	1011	480	829	136	1445	85	556	374	1015	6067
PM Peak	331	965	35	1331	253	1485	349	2087	281	551	234	1066	116	731	289	1136	5620

Hour	MD 355 North Leg			MD 355 South Leg			E Gude Dr East Leg			W Gude Dr West Leg		
Ending	Bicycle	PED.	U.T.	Bicycle	PED.	U.T.	Bicycle	PED.	U.T.	Bicycle	PED.	U.T.
6:00	0	0	1	0	0	1	0	3	3	0	0	1
7:00	0	0	1	0	3	2	0	6	0	0	3	0
8:00	0	1	3	0	1	1	0	2	3	0	4	0
9:00	0	0	0	0	2	0	0	1	0	0	5	0
10:00	0	1	10	0	2	0	0	8	4	0	2	0
11:00	0	0	14	0	3	0	0	2	2	0	7	1
12:00	0	0	7	0	6	0	0	2	2	0	3	0
13:00	0	0	4	0	4	0	0	5	1	0	4	0
14:00	0	0	8	0	9	0	0	8	5	0	3	2
15:00	0	0	4	0	1	0	0	1	0	0	0	0
16:00	0	0	6	0	5	1	0	8	2	0	1	0
17:00	0	0	5	0	2	0	0	1	4	0	2	2
18:00	0	0	11	0	3	0	0	11	4	0	0	1
Total	0	2	74	0	41	5	0	58	30	0	34	7
AM Peak	0	1	3	0	1	1	0	2	3	0	4	0
PM Peak	0	0	5	0	2	0	0	1	4	0	2	2

Station ID: S1998150283
Date: Wednesday 10/01/2014
Location: MD 355 at E&W Gude Dr

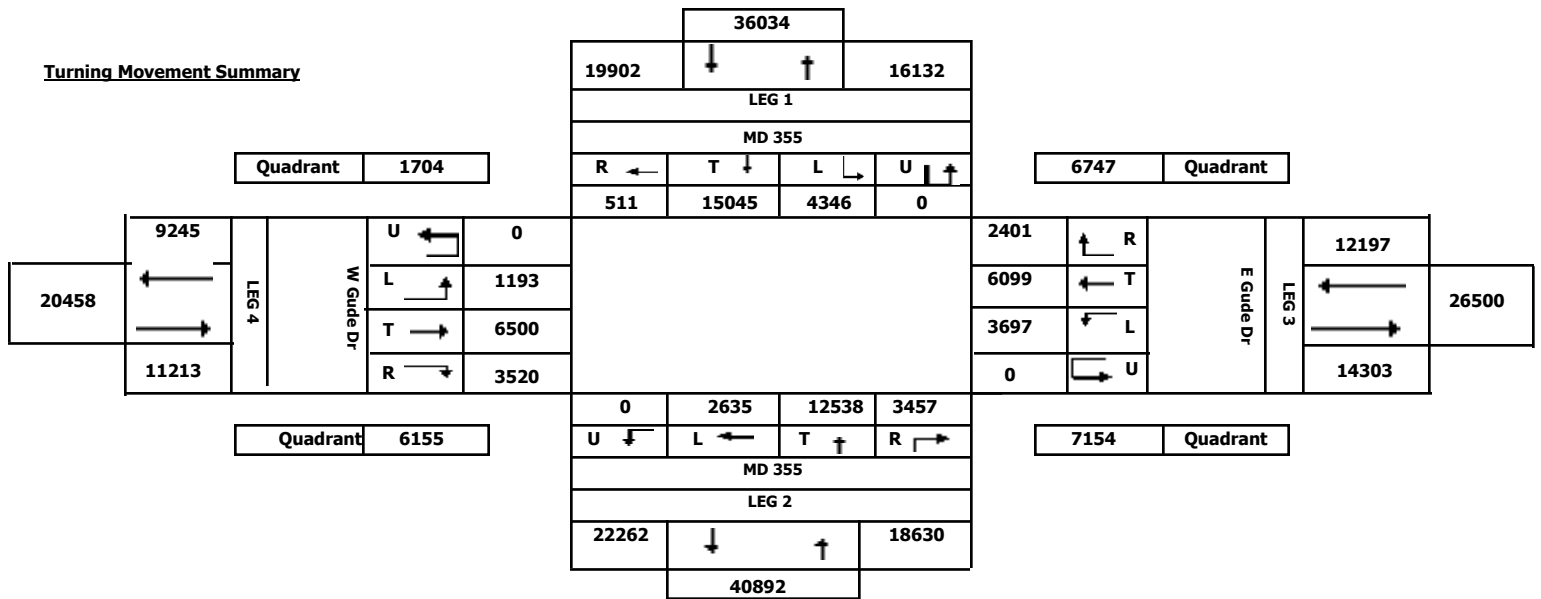
County: Montgomery
Town: none
Weather: Sunny

Comments: LOS AM: F(1.02) PM: D(.85)

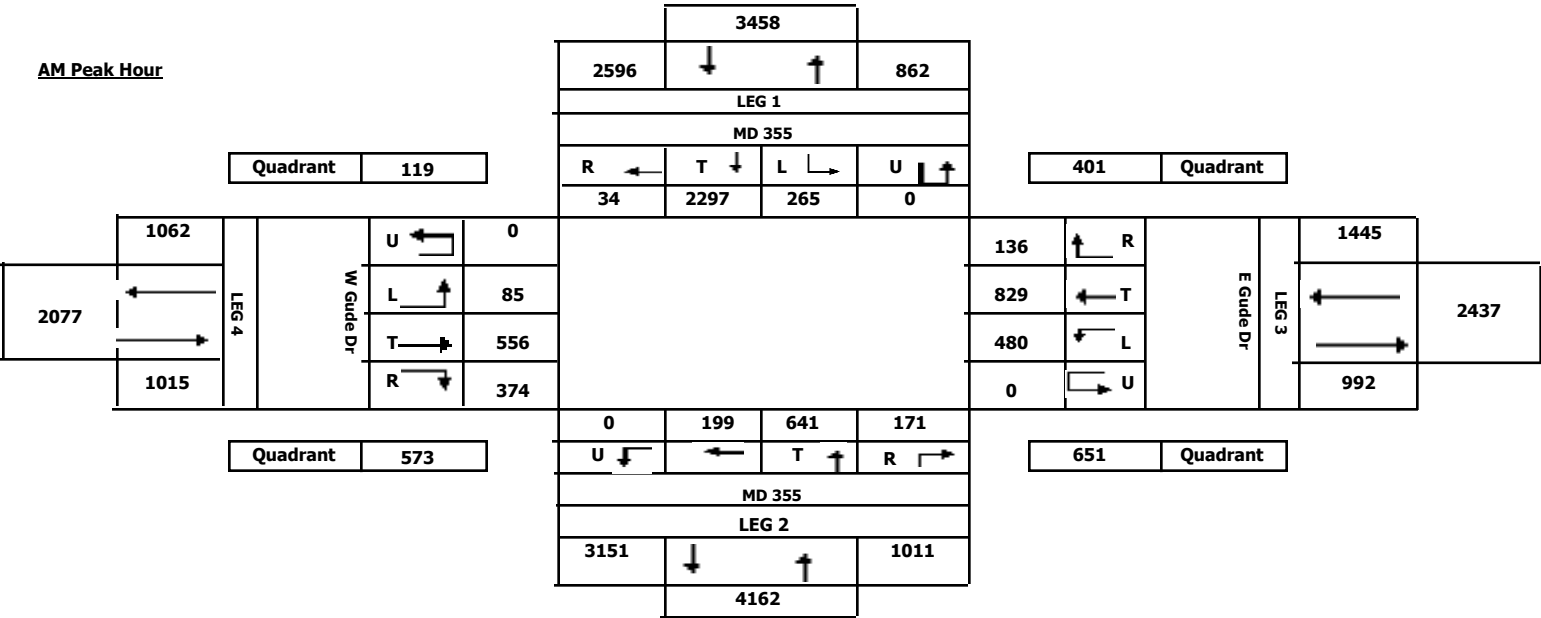
Interval (dd): 60 min

PEAK HOURS	AM PERIOD 6:00AM-12:00PM	Begin	End	Volume	PM PERIOD 12:00PM-19:00PM	Begin	End	Volume
		08:00	09:00	6067		17:00	18:00	5620

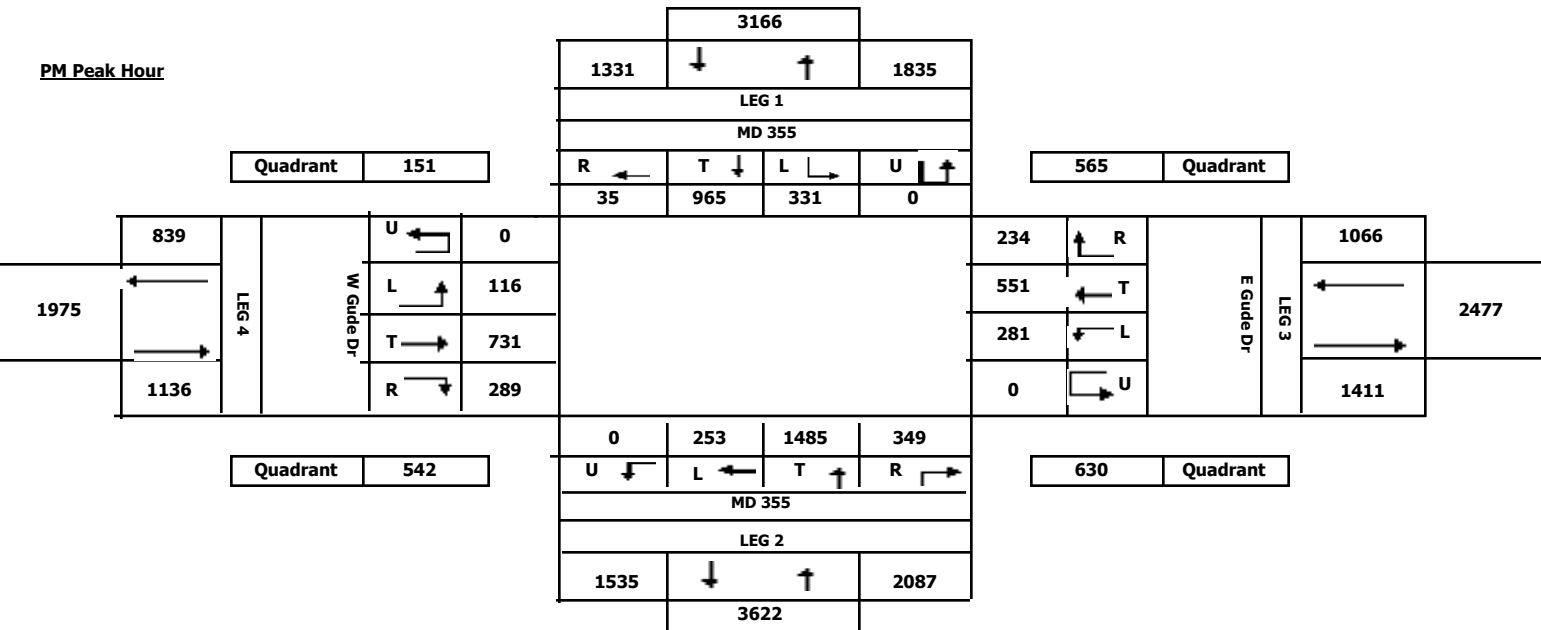
Turning Movement Summary



AM Peak Hour



PM Peak Hour



Maryland State Highway Administration
Highway Information Services Division
Turning Movement Count Study - Field Sheet

Station ID: S1998150308
Date: Wednesday 09/17/2014
Location: MD 355 at E Middle La/Park Rd

County: Montgomery
Town: none
Weather: Sunny
Comments: LOS AM:C(0.80) PM:E(0.92)

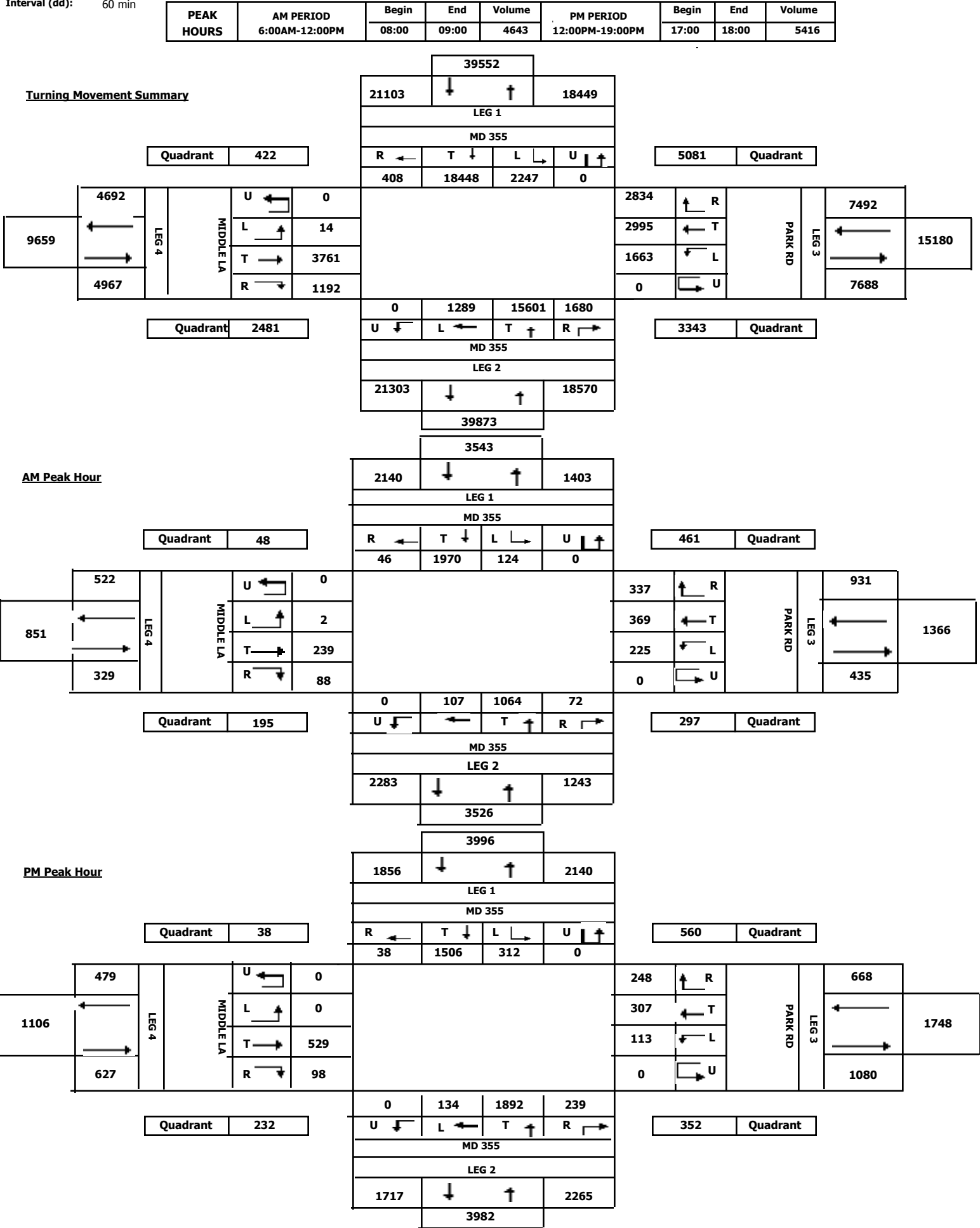
Interval (dd): 60 min

PEAK HOURS	AM PERIOD 6:00AM-12:00PM	Begin	End	Volume	PM PERIOD 12:00PM-19:00PM	Begin	End	Volume
		08:00	09:00	4643		17:00	18:00	5416

Hour	MD 355 From North				MD 355 From South				PARK RD From East				MIDDLE LA From West				Grand Total
Begin	L	T	R	TOT	L	T	R	TOT	L	T	R	TOT	L	T	R	TOT	
6:00	71	929	6	1006	10	342	55	407	95	135	87	317	0	201	28	229	1959
7:00	93	2026	25	2144	89	871	111	1071	253	281	202	736	1	308	49	358	4309
8:00	124	1970	46	2140	107	1064	72	1243	225	369	337	931	2	239	88	329	4643
9:00	138	1625	53	1816	103	1059	86	1248	140	270	281	691	1	213	102	316	4071
10:00	114	1134	30	1278	102	1061	66	1229	100	168	187	455	1	170	84	255	3217
11:00	165	1270	32	1467	112	1087	107	1306	101	178	207	486	1	196	97	294	3553
12:00	196	1294	35	1525	122	1222	113	1457	116	189	239	544	2	272	112	386	3912
13:00	161	1273	35	1469	116	1289	126	1531	91	189	186	466	2	229	85	316	3782
14:00	175	1321	29	1525	82	1163	135	1380	108	204	201	513	3	266	114	383	3801
15:00	200	1301	30	1531	96	1372	170	1638	112	219	237	568	0	352	123	475	4212
16:00	258	1474	24	1756	93	1439	224	1756	104	221	199	524	0	405	117	522	4558
17:00	312	1506	38	1856	134	1892	239	2265	113	307	248	668	0	529	98	627	5416
18:00	240	1325	25	1590	123	1740	176	2039	105	265	223	593	1	381	95	477	4699
TOTAL	2247	18448	408	21103	1289	15601	1680	18570	1663	2995	2834	7492	14	3761	1192	4967	52132
AM Peak	124	1970	46	2140	107	1064	72	1243	225	369	337	931	2	239	88	329	4643
PM Peak	312	1506	38	1856	134	1892	239	2265	113	307	248	668	0	529	98	627	5416

Hour	MD 355 North Leg			MD 355 South Leg			PARK RD East Leg			MIDDLE LA West Leg		
Ending	Bicycle	PED.	U.T.	Bicycle	PED.	U.T.	Bicycle	PED.	U.T.	Bicycle	PED.	U.T.
6:00	0	17	3	0	73	0	0	23	0	0	5	0
7:00	0	25	1	0	84	0	0	53	0	0	22	0
8:00	0	63	4	0	64	0	0	94	0	0	28	0
9:00	0	62	0	0	50	0	0	75	0	0	21	0
10:00	0	34	1	0	46	3	0	57	0	0	18	0
11:00	0	29	5	0	33	0	0	28	0	0	23	0
12:00	0	42	4	0	57	4	0	48	1	0	19	0
13:00	0	37	0	0	33	0	0	31	0	0	20	0
14:00	0	32	0	0	64	0	0	40	0	0	13	0
15:00	0	31	0	0	101	1	0	33	1	0	19	0
16:00	0	67	1	0	66	0	0	61	0	0	19	0
17:00	0	132	0	0	108	0	0	118	0	0	35	0
18:00	0	82	0	0	79	0	0	103	0	0	48	0
Total	0	653	19	0	858	8	0	764	2	0	290	0
AM Peak	0	63	4	0	64	0	0	94	0	0	28	0
PM Peak	0	132	0	0	108	0	0	118	0	0	35	0

Interval (dd): 60 min



Maryland State Highway Administration
Highway Information Services Division
Turning Movement Count Study - Field Sheet

Station ID: S1999150155
Date: Tuesday 10/07/2014
Location: MD 355 at Washington St N/ A St

County: Montgomery
Town: none
Weather: Cloudy
Comments: LOS AM:C(0.76) PM:C(0.79)

Interval (dd): 60 min

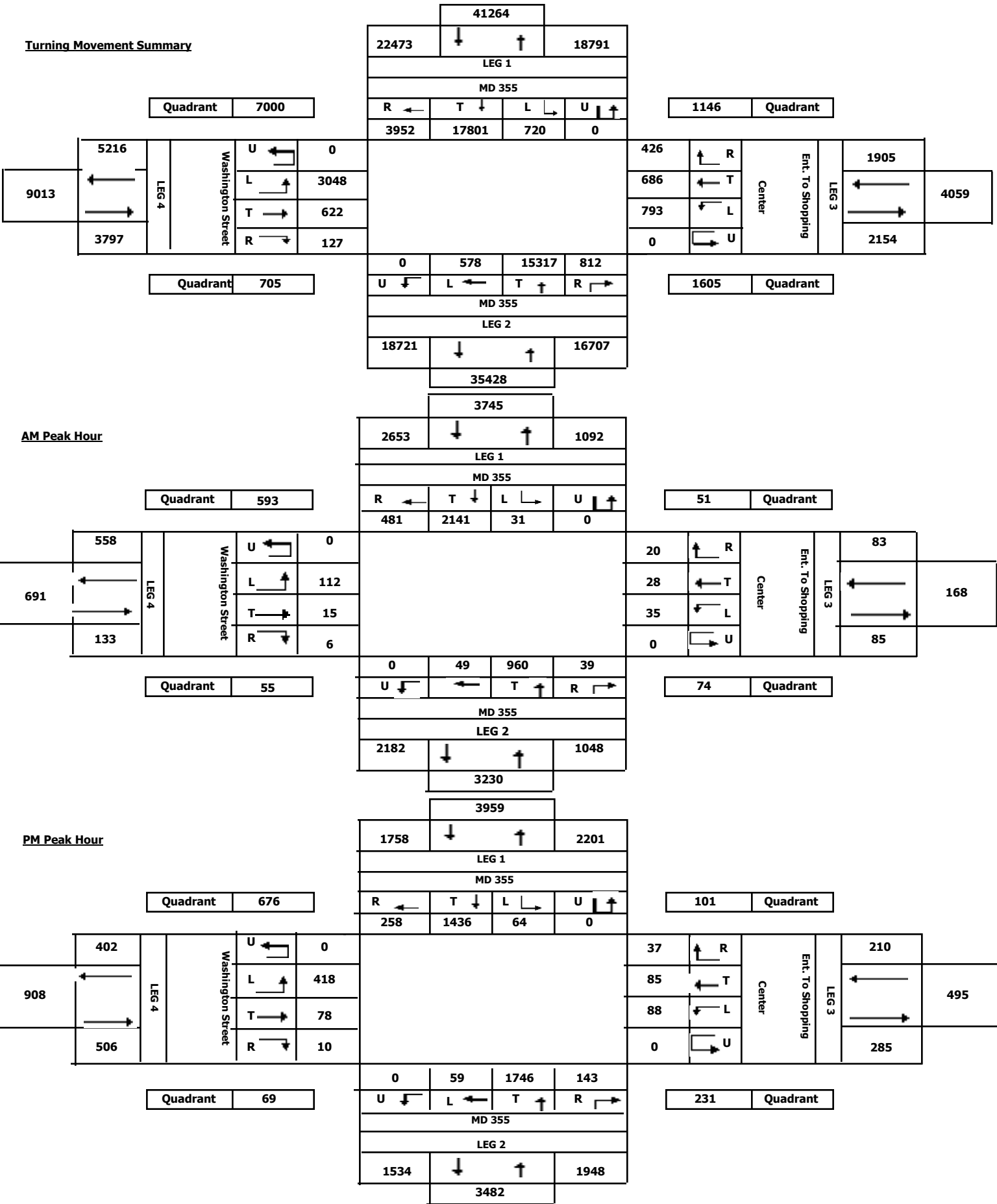
PEAK HOURS	AM PERIOD 6:00AM-12:00PM	Begin	End	Volume	PM PERIOD 12:00PM-19:00PM	Begin	End	Volume
		08:00	09:00	3917		17:00	18:00	4422

Hour	MD 355 From North				MD 355 From South				Ent. To Shopping Center From East				Washington Street From West				Grand Total
Begin	L	T	R	TOT	L	T	R	TOT	L	T	R	TOT	L	T	R	TOT	
6:00	11	929	152	1092	8	309	18	335	9	8	5	22	41	6	2	49	1498
7:00	30	2202	394	2626	38	864	31	933	33	19	7	59	105	15	5	125	3743
8:00	31	2141	481	2653	49	960	39	1048	35	28	20	83	112	15	6	133	3917
9:00	65	1529	278	1872	28	1128	29	1185	46	23	33	102	281	35	7	323	3482
10:00	55	1019	223	1297	42	1040	38	1120	50	47	15	112	213	64	11	288	2817
11:00	65	1201	270	1536	43	1037	70	1150	62	48	38	148	268	60	17	345	3179
12:00	77	1330	408	1815	53	1206	80	1339	73	63	63	199	272	52	14	338	3691
13:00	60	1182	340	1582	50	1350	51	1451	71	60	32	163	263	72	17	352	3548
14:00	65	1224	295	1584	67	1166	62	1295	69	71	34	174	213	53	14	280	3333
15:00	65	1209	291	1565	47	1290	82	1419	87	69	43	199	290	66	11	367	3550
16:00	77	1219	259	1555	48	1735	80	1863	73	74	34	181	322	54	9	385	3984
17:00	64	1436	258	1758	59	1746	143	1948	88	85	37	210	418	78	10	506	4422
18:00	55	1180	303	1538	46	1486	89	1621	97	91	65	253	250	52	4	306	3718
TOTAL	720	17801	3952	22473	578	15317	812	16707	793	686	426	1905	3048	622	127	3797	44882
AM Peak	31	2141	481	2653	49	960	39	1048	35	28	20	83	112	15	6	133	3917
PM Peak	64	1436	258	1758	59	1746	143	1948	88	85	37	210	418	78	10	506	4422

Hour	MD 355 North Leg			MD 355 South Leg			Ent. To Shopping Center East Leg			Washington Street West Leg		
Ending	Bicycle	PED.	U.T.	Bicycle	PED.	U.T.	Bicycle	PED.	U.T.	Bicycle	PED.	U.T.
6:00	0	0	2	0	4	6	0	1	0	0	4	0
7:00	0	1	4	0	11	7	0	9	0	0	5	0
8:00	0	1	10	0	4	6	0	9	0	0	8	0
9:00	0	2	8	0	7	8	0	9	0	0	11	0
10:00	0	8	11	0	10	11	0	7	0	0	6	0
11:00	0	3	20	0	19	20	0	11	0	0	13	0
12:00	0	7	15	0	16	10	0	6	1	0	15	0
13:00	0	6	18	0	15	16	0	10	0	0	9	0
14:00	0	0	31	0	21	20	0	4	0	0	13	1
15:00	0	1	20	0	8	10	0	5	0	0	13	0
16:00	0	2	16	0	14	10	0	3	0	0	9	0
17:00	0	0	17	0	19	8	0	5	0	0	8	1
18:00	0	0	34	0	7	11	0	5	0	0	9	0
Total	0	31	206	0	155	143	0	84	1	0	123	2
AM Peak	0	1	10	0	4	6	0	9	0	0	8	0
PM Peak	0	0	17	0	19	8	0	5	0	0	8	1

Interval (dd): 60 min

PEAK HOURS	AM PERIOD 6:00AM-12:00PM	Begin	End	Volume	PM PERIOD 12:00PM-19:00PM	Begin	End	Volume
		08:00	09:00	3917		17:00	18:00	4422



Maryland State Highway Administration
Highway Information Services Division
Turning Movement Count Study - Field Sheet

Station ID: S2000150046
Date: Thursday 05/19/2011
Location: MD 355 at Rollins Ave/Twinbrook Pkwy

County: Montgomery
Town: none
Weather: P. SUNNY
Comments: LOS AM:C PM:F

Interval (dd): 60 min

PEAK HOURS	AM PERIOD 6:00AM-12:00PM	Begin	End	Volume	PM PERIOD 12:00PM-19:00PM	Begin	End	Volume
		11:00	12:00	4504		17:00	18:00	6292

Hour	MD 355 From North				MD 355 From South				TWINBROOK PKWY From East				ROLLINS AVE From West				Grand Total
Begin	L	T	R	TOT	L	T	R	TOT	L	T	R	TOT	L	T	R	TOT	
6:00	123	945	17	1085	10	274	34	318	1	172	28	201	1	122	30	153	1757
7:00	215	2050	33	2298	36	562	88	686	0	346	58	404	0	249	51	300	3688
8:00	228	1876	37	2141	59	924	126	1109	0	461	98	559	1	290	77	368	4177
9:00	166	1283	48	1497	54	876	105	1035	0	345	82	427	6	282	89	377	3336
10:00	123	1272	54	1449	66	1399	114	1579	0	289	101	390	0	221	83	304	3722
11:00	131	1462	52	1645	88	1834	102	2024	1	390	108	499	3	229	104	336	4504
12:00	181	1862	72	2115	67	1786	112	1965	0	301	142	443	0	318	120	438	4961
13:00	174	1735	68	1977	77	1629	113	1819	0	308	122	430	4	303	98	405	4631
14:00	155	1610	74	1839	102	1503	118	1723	2	290	124	416	0	318	99	417	4395
15:00	161	1631	49	1841	76	1847	126	2049	0	417	118	535	0	346	105	451	4876
16:00	178	1424	53	1655	58	2400	140	2598	0	445	151	596	0	400	84	484	5333
17:00	236	1802	50	2088	87	2814	155	3056	0	489	134	623	2	445	78	525	6292
18:00	167	1630	39	1836	86	2768	134	2988	0	429	140	569	0	389	66	455	5848
TOTAL	2238	20582	646	23466	866	20616	1467	22949	4	4682	1406	6092	17	3912	1084	5013	57520
AM Peak	131	1462	52	1645	88	1834	102	2024	1	390	108	499	3	229	104	336	4504
PM Peak	236	1802	50	2088	87	2814	155	3056	0	489	134	623	2	445	78	525	6292

Hour	MD 355 North Leg			MD 355 South Leg			TWINBROOK PKWY East Leg			ROLLINS AVE West Leg		
Ending	Bicycle	PED.	U.T.	Bicycle	PED.	U.T.	Bicycle	PED.	U.T.	Bicycle	PED.	U.T.
6:00	0	1	3	0	3	1	0	2	0	0	0	0
7:00	0	0	3	0	10	3	0	5	1	0	4	0
8:00	0	0	1	0	19	2	0	3	1	0	1	0
9:00	0	2	7	0	22	3	0	4	0	0	1	0
10:00	0	2	4	0	24	3	0	3	2	0	1	0
11:00	0	4	2	0	38	5	0	1	0	0	3	0
12:00	0	10	16	0	35	2	0	7	1	0	2	0
13:00	0	5	11	0	29	1	0	1	1	0	4	0
14:00	0	2	16	0	31	3	0	9	0	0	5	0
15:00	0	1	7	0	31	0	0	6	0	0	2	0
16:00	0	1	15	0	21	2	0	3	1	0	5	0
17:00	0	0	18	0	33	2	0	7	0	0	2	0
18:00	0	0	12	0	41	2	0	0	0	0	2	0
Total	0	28	115	0	337	29	0	51	7	0	32	0
AM Peak	0	4	2	0	38	5	0	1	0	0	3	0
PM Peak	0	0	18	0	33	2	0	7	0	0	2	0

Location: MD 355 at Rollins Ave/Twinbrook Pkwy

Town: none

Comments: LOS AM:C PM:F

Interval (dd): 60 min

PEAK HOURS	AM PERIOD 6:00AM-12:00PM	Begin	End	Volume	PM PERIOD 12:00PM-19:00PM	Begin	End	Volume
		11:00	12:00	4504		17:00	18:00	6292

Turning Movement Summary

Turning Movement Summary

Quadrant	663
6194	0
11207	17
5013	3912
	1084

Quadrant	1950
0	866
U	L
21670	22949
44619	

Quadrant	3644
1406	6092
4682	
4	7617
0	

Quadrant	1471
0	866
U	L
21670	22949
44619	

AM Peak Hour

<u>AM Peak Hour</u>																																																	
										3590																																							
										1645			1945																																				
										LEG 1																																							
										MD 355																																							
										R	T	L	U																																				
										52	1462	131	0																																				
Quadrant 55										239 Quadrant																																							
530										108										499																													
866 336										LEG 4										ROLLINS AVE										U										0									
																														L										3									
																														T										229									
																														R										104									
Quadrant 192										103 Quadrant																																							

PM Peak Hour

PM Peak Hour									
		Quadrant		52			Quadrant		370
		2088		5038		2950			
		LEG 1		MD 355					
		R	T	L	U				
		50	1802	236	0				
626		LEG 4		ROLLINS AVE		LEG 3		TWINBROOK PKWY	
1151		U	L	T	R	134		623	
		0	2	445	78	489		1459	
525						0		836	
		Quadrant		165			Quadrant		155
		0		87		2814		155	
		U	L	T	R				
		MD 355		LEG 2					
		1880		4936		3056			

Maryland State Highway Administration
Highway Information Services Division
Turning Movement Count Study - Field Sheet

Station ID: S2004150043
Date: Tuesday 09/23/2014
Location: MD 355 at Woodmont Country Club/Ent to Bes

County: Montgomery
Town: none
Weather: CLOUDY 85

Comments: LOS AM:B(0.71) PM:B(0.66) WITH MIOVISION

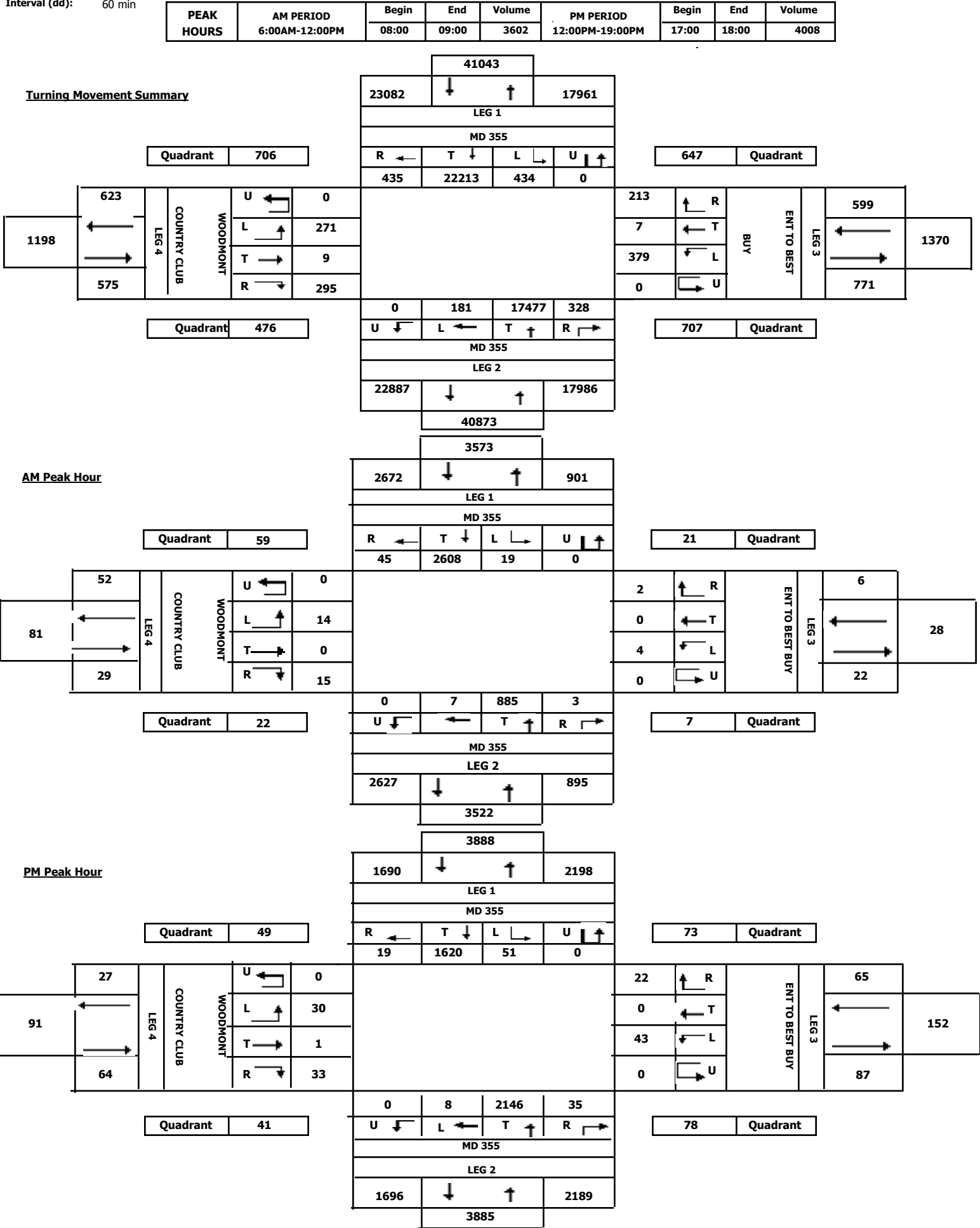
Interval (dd): 60 min

PEAK HOURS	AM PERIOD 6:00AM-12:00PM	Begin	End	Volume	PM PERIOD 12:00PM-19:00PM	Begin	End	Volume
		08:00	09:00	3602		17:00	18:00	4008

Hour	MD 355 From North				MD 355 From South				ENT TO BEST BUY From East				WOODMONT COUNTRY CLUB From West				Grand Total
Begin	L	T	R	TOT	L	T	R	TOT	L	T	R	TOT	L	T	R	TOT	
6:00	14	1249	54	1317	12	252	0	264	2	0	0	2	4	0	3	7	1590
7:00	26	2470	39	2535	7	600	2	609	4	0	0	4	2	1	4	7	3155
8:00	19	2608	45	2672	7	885	3	895	4	0	2	6	14	0	15	29	3602
9:00	22	2063	51	2136	33	941	11	985	11	0	3	14	14	0	10	24	3159
10:00	29	1450	33	1512	9	1047	32	1088	18	0	13	31	11	1	13	25	2656
11:00	43	1589	51	1683	21	1333	31	1385	35	3	17	55	17	2	38	57	3180
12:00	47	1651	31	1729	23	1482	42	1547	56	0	24	80	16	1	26	43	3399
13:00	39	1642	23	1704	18	1657	38	1713	48	1	27	76	20	1	26	47	3540
14:00	42	1501	20	1563	11	1457	35	1503	44	2	26	72	45	2	34	81	3219
15:00	40	1504	27	1571	10	1667	34	1711	43	1	25	69	51	0	34	85	3436
16:00	28	1462	19	1509	11	1938	22	1971	29	0	23	52	33	0	33	66	3598
17:00	51	1620	19	1690	8	2146	35	2189	43	0	22	65	30	1	33	64	4008
18:00	34	1404	23	1461	11	2072	43	2126	42	0	31	73	14	0	26	40	3700
TOTAL	434	22213	435	23082	181	17477	328	17986	379	7	213	599	271	9	295	575	42242
AM Peak	19	2608	45	2672	7	885	3	895	4	0	2	6	14	0	15	29	3602
PM Peak	51	1620	19	1690	8	2146	35	2189	43	0	22	65	30	1	33	64	4008

Hour	MD 355 North Leg			MD 355 South Leg			ENT TO BEST BUY East Leg			WOODMONT COUNTRY CLUB West Leg		
Ending	Bicycle	PED.	U.T.	Bicycle	PED.	U.T.	Bicycle	PED.	U.T.	Bicycle	PED.	U.T.
6:00	0	0	0	0	1	0	0	0	0	0	7	0
7:00	0	0	2	0	0	6	0	0	0	0	5	0
8:00	0	0	6	0	6	6	0	6	0	0	2	0
9:00	0	0	7	0	0	8	0	4	0	0	0	0
10:00	0	0	10	0	2	12	0	1	0	0	2	0
11:00	0	0	8	0	7	10	0	0	0	0	12	0
12:00	0	0	20	0	1	15	0	6	0	0	7	0
13:00	0	0	22	0	7	14	0	0	0	0	13	0
14:00	0	0	13	0	0	16	0	2	0	0	3	0
15:00	0	0	8	0	3	13	0	9	0	0	0	0
16:00	0	0	10	0	0	6	0	1	0	0	0	0
17:00	0	0	23	0	6	15	0	3	0	0	18	0
18:00	0	1	19	0	2	11	0	11	0	0	1	0
Total	0	1	148	0	35	132	0	43	0	0	70	0
AM Peak	0	0	6	0	6	6	0	6	0	0	2	0
PM Peak	0	0	23	0	6	15	0	3	0	0	18	0

Interval (dd): 60 min



Maryland State Highway Administration
Highway Information Services Division
Turning Movement Count Study - Field Sheet

Station ID: S2004150041
Date: Tuesday 09/23/2014
Location: MD 355 at Entrance to Federal Plaza/Pike Cent

County: Montgomery
Town: none
Weather: CLOUDY 85

Comments: LOS AM:A(0.53) PM:B(0.63) WITH MIOVISION

Interval (dd): 60 min

PEAK HOURS	AM PERIOD 6:00AM-12:00PM	Begin	End	Volume	PM PERIOD 12:00PM-19:00PM	Begin	End	Volume
		11:00	12:00	3158		17:00	18:00	3959

Hour	MD 355 From North				MD 355 From South				PIKE CENTER From East				FEDERAL PLAZA From West				Grand Total
Begin	L	T	R	TOT	L	T	R	TOT	L	T	R	TOT	L	T	R	TOT	
6:00	5	951	2	958	13	375	0	388	1	0	6	7	1	0	8	9	1362
7:00	11	1840	3	1854	29	675	3	707	5	1	13	19	2	2	15	19	2599
8:00	23	1894	3	1920	57	931	17	1005	8	5	19	32	16	3	36	55	3012
9:00	37	1401	12	1450	115	1006	21	1142	7	4	31	42	23	7	69	99	2733
10:00	30	1173	18	1221	159	1142	33	1334	15	7	34	56	64	9	115	188	2799
11:00	45	1169	30	1244	189	1312	46	1547	30	16	33	79	97	12	179	288	3158
12:00	54	1352	34	1440	205	1415	53	1673	24	26	51	101	94	13	199	306	3520
13:00	53	1447	23	1523	194	1413	42	1649	39	21	58	118	121	25	228	374	3664
14:00	57	1403	18	1478	198	1318	38	1554	32	15	54	101	104	12	214	330	3463
15:00	40	1350	8	1398	163	1445	53	1661	20	13	61	94	100	14	211	325	3478
16:00	44	1190	30	1264	184	1479	32	1695	34	18	44	96	106	10	172	288	3343
17:00	55	1388	22	1465	196	1830	58	2084	33	20	62	115	106	16	173	295	3959
18:00	46	1231	18	1295	223	1640	58	1921	26	21	59	106	122	14	186	322	3644
TOTAL	500	17789	221	18510	1925	15981	454	18360	274	167	525	966	956	137	1805	2898	40734
AM Peak	45	1169	30	1244	189	1312	46	1547	30	16	33	79	97	12	179	288	3158
PM Peak	55	1388	22	1465	196	1830	58	2084	33	20	62	115	106	16	173	295	3959

Hour	MD 355 North Leg			MD 355 South Leg			PIKE CENTER East Leg			FEDERAL PLAZA West Leg		
Ending	Bicycle	PED.	U.T.	Bicycle	PED.	U.T.	Bicycle	PED.	U.T.	Bicycle	PED.	U.T.
6:00	0	1	3	0	1	2	0	5	0	0	8	0
7:00	0	0	4	0	3	2	0	9	0	0	11	0
8:00	0	6	13	0	5	3	0	8	0	0	18	0
9:00	0	4	17	0	8	2	0	12	0	0	13	0
10:00	0	5	12	0	7	7	0	9	0	0	14	0
11:00	0	15	23	0	15	13	0	12	0	0	29	0
12:00	0	18	26	0	13	11	0	17	0	0	35	0
13:00	0	13	23	0	16	14	0	14	0	0	32	0
14:00	0	7	31	0	21	7	0	10	0	0	19	0
15:00	0	11	24	0	4	9	0	9	0	0	26	0
16:00	0	16	22	0	17	7	0	19	0	0	41	0
17:00	0	6	29	0	14	5	0	21	0	0	46	0
18:00	0	19	24	0	15	5	0	31	0	0	47	0
Total	0	121	251	0	139	87	0	176	0	0	339	0
AM Peak	0	15	23	0	15	13	0	12	0	0	29	0
PM Peak	0	6	29	0	14	5	0	21	0	0	46	0

Station ID: S2004150041

Date: Tuesday 09/23/2014

Location: MD 355 at Entrance to Federal Plaza/Pike Cent

County: Montgomery

Town: none

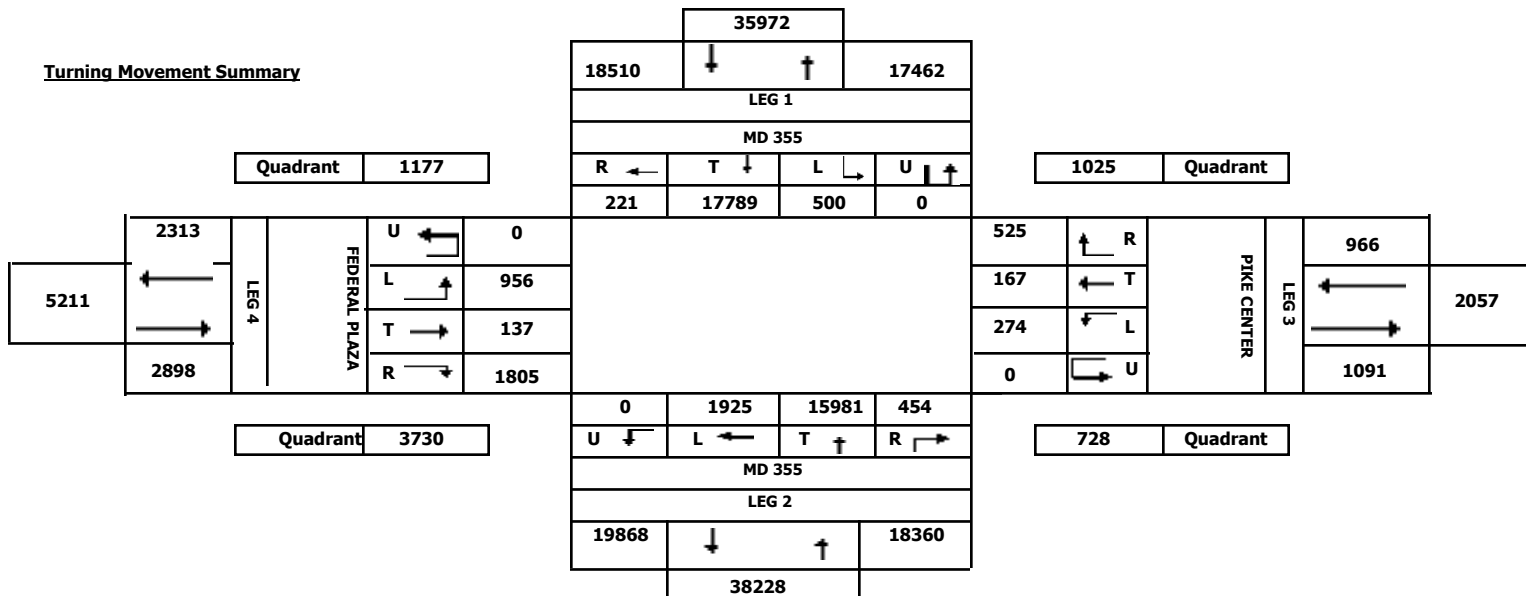
Weather: CLOUDY 85

Comments: LOS AM:A(0.53) PM:B(0.63) WITH MOVISION

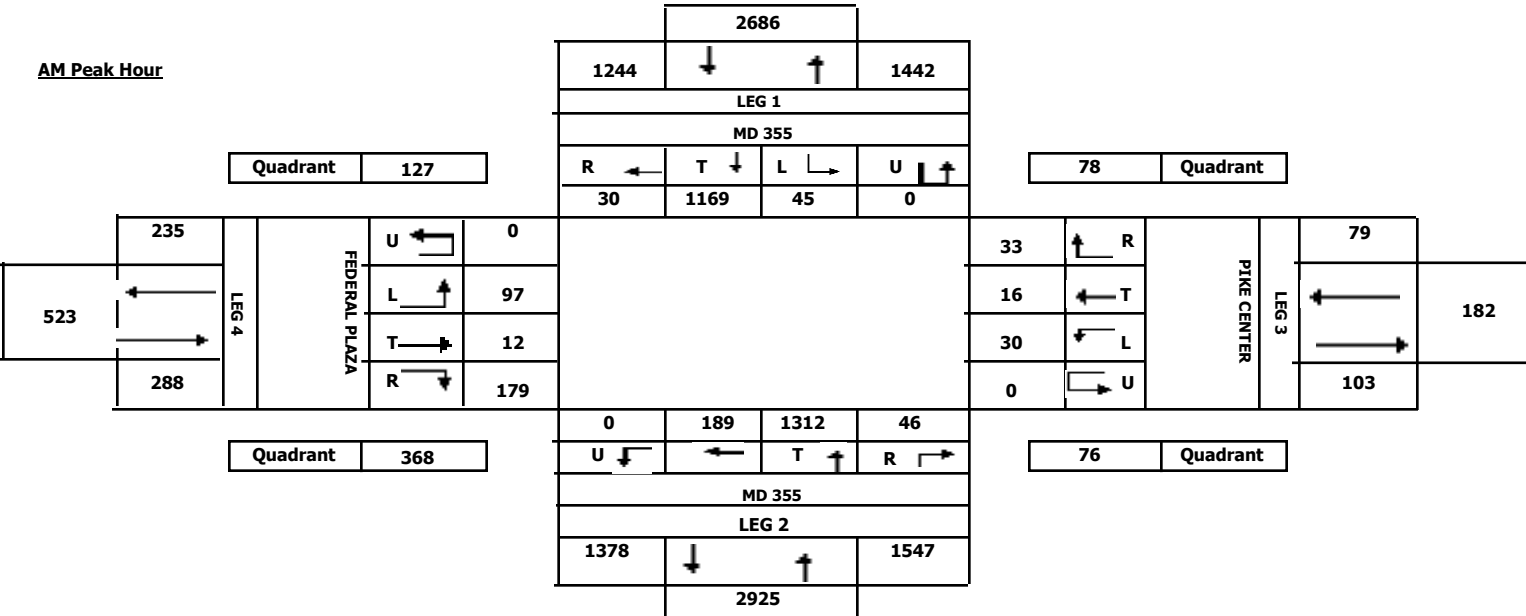
Interval (dd): 60 min

PEAK HOURS	AM PERIOD 6:00AM-12:00PM	Begin	End	Volume	PM PERIOD 12:00PM-19:00PM	Begin	End	Volume
		11:00	12:00	3158		17:00	18:00	3959

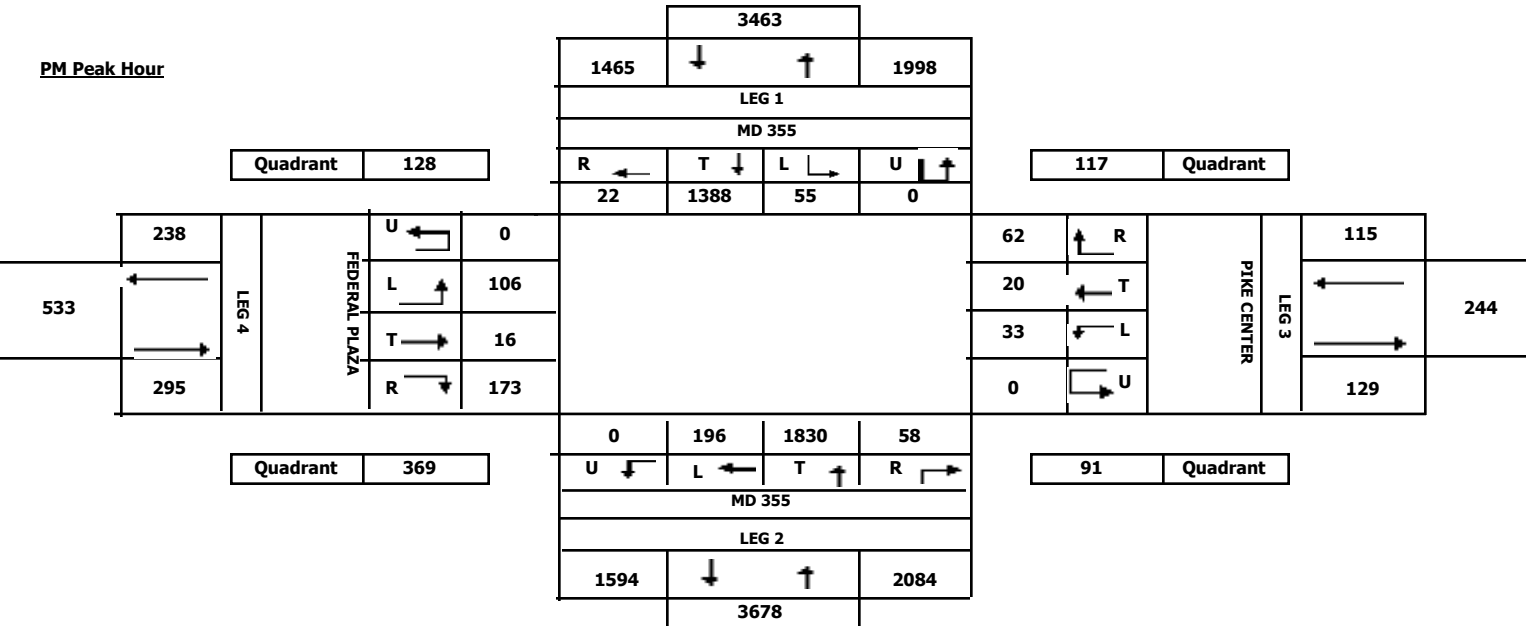
Turning Movement Summary



AM Peak Hour



PM Peak Hour



Maryland State Highway Administration
Highway Information Services Division
Turning Movement Count Study - Field Sheet

Station ID:

S1998150285

Date:

Wednesday 04/01/2015

Location:

MD 355 at MD 187/Old Georgetown Rd

County:

Montgomery

Town:

none

Weather:

Clear

Comments:

LOS AM: B (0.70); PM: C (0.73)

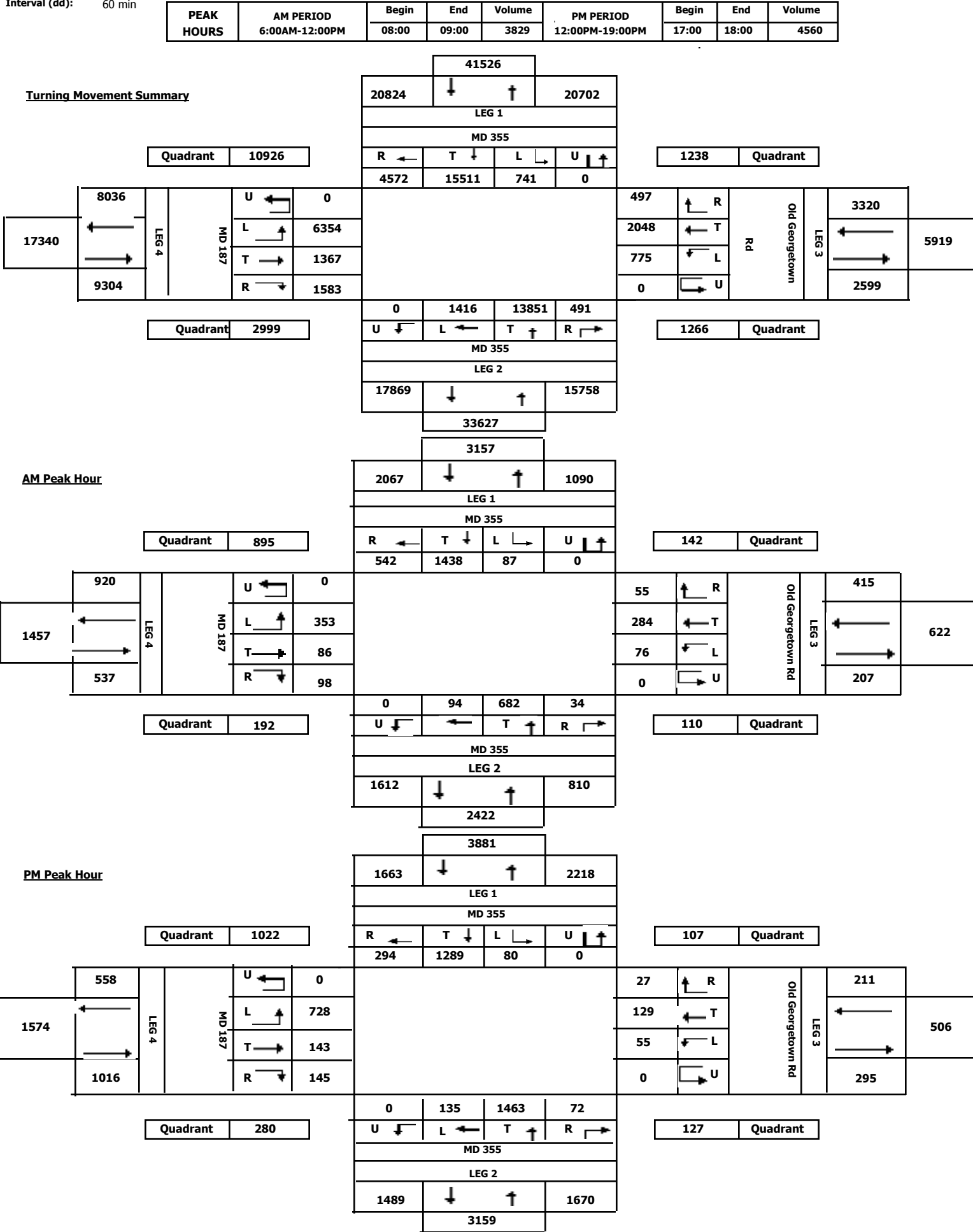
Interval (dd): 60 min

PEAK HOURS	AM PERIOD 6:00AM-12:00PM	Begin	End	Volume	PM PERIOD 12:00PM-19:00PM	Begin	End	Volume
		08:00	09:00	3829		17:00	18:00	4560

Hour	MD 355 From North				MD 355 From South				Old Georgetown Rd From East				MD 187 From West				Grand Total
Begin	L	T	R	TOT	L	T	R	TOT	L	T	R	TOT	L	T	R	TOT	
6:00	43	653	284	980	37	395	28	460	28	122	18	168	76	31	36	143	1751
7:00	82	1365	620	2067	66	559	27	652	87	275	33	395	182	70	61	313	3427
8:00	87	1438	542	2067	94	682	34	810	76	284	55	415	353	86	98	537	3829
9:00	46	1251	388	1685	120	948	28	1096	55	180	34	269	428	79	120	627	3677
10:00	40	935	262	1237	110	1038	24	1172	58	142	30	230	377	71	98	546	3185
11:00	43	1054	260	1357	95	1059	12	1166	76	119	39	234	473	76	126	675	3432
12:00	53	1168	295	1516	108	1293	40	1441	89	132	54	275	553	110	170	833	4065
13:00	65	1417	366	1848	141	1252	45	1438	51	117	37	205	558	124	154	836	4327
14:00	47	1229	331	1607	140	1199	44	1383	36	102	38	176	646	140	145	931	4097
15:00	62	1300	341	1703	105	1190	27	1322	49	134	44	227	668	133	125	926	4178
16:00	40	1261	327	1628	139	1341	31	1511	54	148	46	248	662	145	132	939	4326
17:00	80	1289	294	1663	135	1463	72	1670	55	129	27	211	728	143	145	1016	4560
18:00	53	1151	262	1466	126	1432	79	1637	61	164	42	267	650	159	173	982	4352
TOTAL	741	15511	4572	20824	1416	13851	491	15758	775	2048	497	3320	6354	1367	1583	9304	49206
AM Peak	87	1438	542	2067	94	682	34	810	76	284	55	415	353	86	98	537	3829
PM Peak	80	1289	294	1663	135	1463	72	1670	55	129	27	211	728	143	145	1016	4560

Hour	MD 355 North Leg			MD 355 South Leg			Old Georgetown Rd East Leg			MD 187 West Leg		
Ending	Bicycle	PED.	U.T.	Bicycle	PED.	U.T.	Bicycle	PED.	U.T.	Bicycle	PED.	U.T.
6:00	0	5	5	0	3	0	1	13	0	0	6	3
7:00	0	15	0	0	4	0	1	61	0	1	24	5
8:00	0	4	5	0	7	0	6	31	2	4	26	7
9:00	0	13	6	0	2	3	0	10	1	2	15	10
10:00	0	18	3	0	0	10	0	2	0	0	16	5
11:00	0	24	6	0	15	10	0	32	1	0	36	12
12:00	0	15	2	0	12	27	0	35	0	0	53	9
13:00	0	23	6	0	2	25	0	23	0	0	37	14
14:00	0	21	6	0	1	11	0	6	1	0	16	9
15:00	0	11	13	1	10	9	0	17	0	1	20	7
16:00	0	19	4	0	14	4	1	40	1	4	35	4
17:00	0	35	20	0	7	12	0	31	1	1	29	1
18:00	0	34	16	0	6	3	3	18	1	1	34	11
Total	0	237	92	1	83	114	12	319	8	14	347	97
AM Peak	0	4	5	0	7	0	6	31	2	4	26	7
PM Peak	0	35	20	0	7	12	0	31	1	1	29	1

Interval (dd): 60 min



Maryland State Highway Administration
Highway Information Services Division
Turning Movement Count Study - Field Sheet

Station ID: S2000150017
Date: Thursday 10/31/2013
Location: MD 355 at Edson La/White Flint Mall Entrance

County: Montgomery
Town: none
Weather: Sunny

Comments: LOS AM:A(0.61) PM:D(0.83)

Interval (dd): 60 min

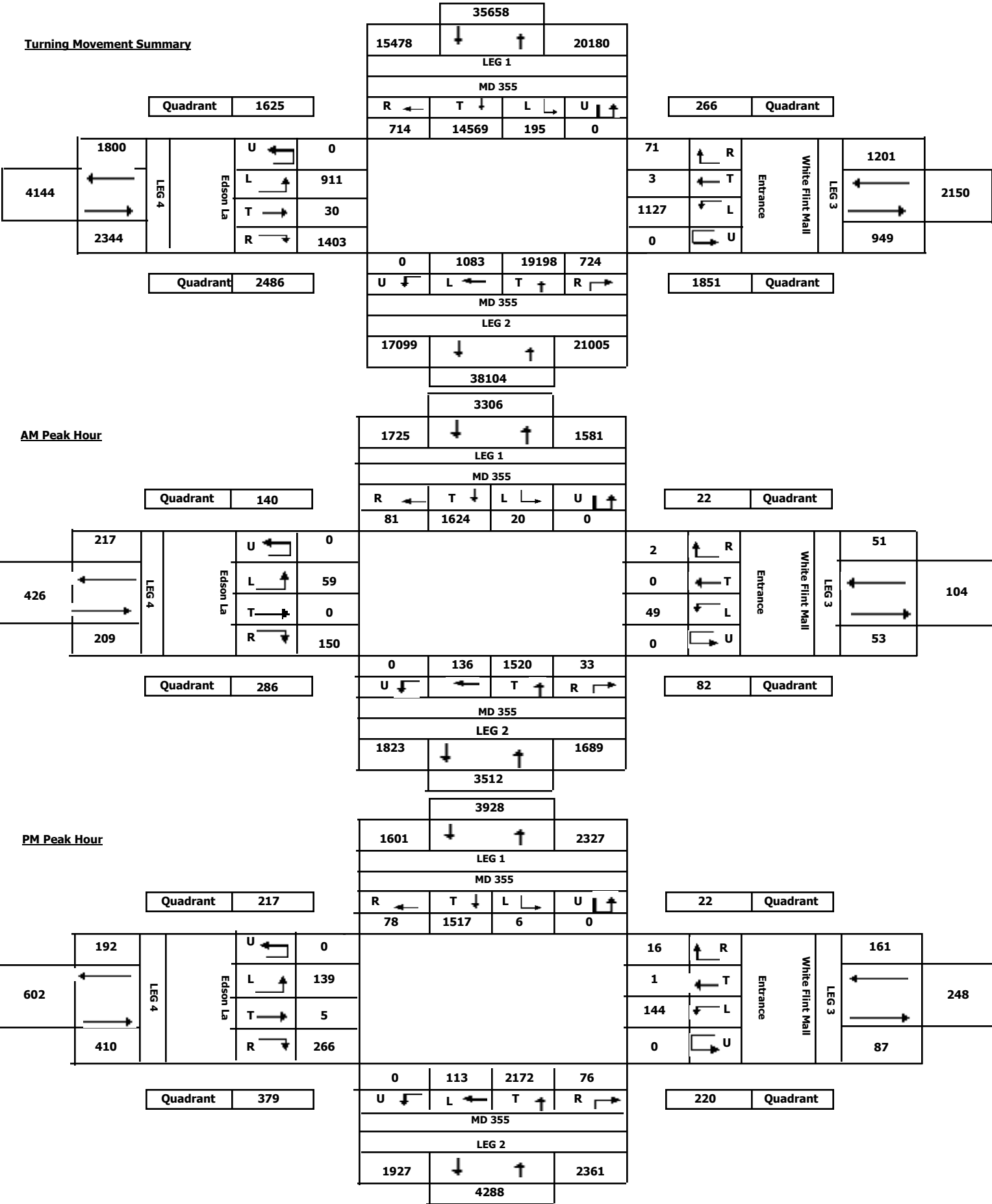
PEAK HOURS	AM PERIOD 6:00AM-12:00PM	Begin	End	Volume	PM PERIOD 12:00PM-19:00PM	Begin	End	Volume
		08:00	09:00	3674		17:00	18:00	4533

Hour	MD 355 From North				MD 355 From South				White Flint Mall Entrance From East				Edson La From West				Grand Total
Begin	L	T	R	TOT	L	T	R	TOT	L	T	R	TOT	L	T	R	TOT	
6:00	2	852	27	881	37	738	18	793	5	0	1	6	9	1	34	44	1724
7:00	11	1507	56	1574	73	1147	14	1234	19	0	3	22	65	0	108	173	3003
8:00	20	1624	81	1725	136	1520	33	1689	49	0	2	51	59	0	150	209	3674
9:00	28	1074	75	1177	112	1641	32	1785	51	0	7	58	53	2	99	154	3174
10:00	11	1013	56	1080	63	1255	18	1336	59	1	4	64	45	0	59	104	2584
11:00	22	939	59	1020	90	1793	75	1958	96	0	5	101	68	1	102	171	3250
12:00	19	940	36	995	72	1751	87	1910	118	0	8	126	82	0	58	140	3171
13:00	31	989	40	1060	71	1205	78	1354	137	0	3	140	84	0	93	177	2731
14:00	15	1059	53	1127	96	1271	49	1416	90	0	7	97	69	0	87	156	2796
15:00	15	863	46	924	89	1575	121	1785	96	0	4	100	80	6	104	190	2999
16:00	9	1173	76	1258	58	1586	67	1711	147	0	5	152	91	9	137	237	3358
17:00	6	1517	78	1601	113	2172	76	2361	144	1	16	161	139	5	266	410	4533
18:00	6	1019	31	1056	73	1544	56	1673	116	1	6	123	67	6	106	179	3031
TOTAL	195	14569	714	15478	1083	19198	724	21005	1127	3	71	1201	911	30	1403	2344	40028
AM Peak	20	1624	81	1725	136	1520	33	1689	49	0	2	51	59	0	150	209	3674
PM Peak	6	1517	78	1601	113	2172	76	2361	144	1	16	161	139	5	266	410	4533

Hour	MD 355 North Leg			MD 355 South Leg			White Flint Mall Entrance East Leg			Edson La West Leg		
Ending	Bicycle	PED.	U.T.	Bicycle	PED.	U.T.	Bicycle	PED.	U.T.	Bicycle	PED.	U.T.
6:00	0	1	0	0	0	0	0	0	0	0	1	0
7:00	0	5	1	0	1	1	0	2	0	0	4	0
8:00	0	10	0	0	0	2	0	4	0	0	9	0
9:00	0	2	2	0	0	1	0	3	0	0	1	0
10:00	0	7	1	0	0	0	0	4	0	0	2	0
11:00	0	12	2	0	0	1	0	4	0	0	2	0
12:00	0	9	5	0	1	2	0	1	0	0	6	0
13:00	0	3	1	0	0	5	0	0	0	0	2	0
14:00	0	4	1	0	0	2	0	0	0	0	6	0
15:00	0	12	0	0	0	1	0	0	0	0	0	0
16:00	0	4	1	0	0	3	0	3	0	0	1	0
17:00	0	6	3	0	0	3	0	2	0	0	12	0
18:00	0	1	1	0	0	0	0	0	0	0	2	0
Total	0	76	18	0	2	21	0	23	0	0	48	0
AM Peak	0	10	0	0	0	2	0	4	0	0	9	0
PM Peak	0	6	3	0	0	3	0	2	0	0	12	0

Interval (dd): 60 min

PEAK HOURS	AM PERIOD 6:00AM-12:00PM	Begin	End	Volume	PM PERIOD 12:00PM-19:00PM	Begin	End	Volume
		08:00	09:00	3674		17:00	18:00	4533



Maryland State Highway Administration
Highway Information Services Division
Turning Movement Count Study - Field Sheet

Station ID: S1999150043
Date: Wednesday 01/30/2008
Location: MD 355 at Wickshire Way/Flanders Ave

County: Montgomery
Town: none
Weather:
Comments: LOS AM:B PM:D

Interval (dd): 60 min

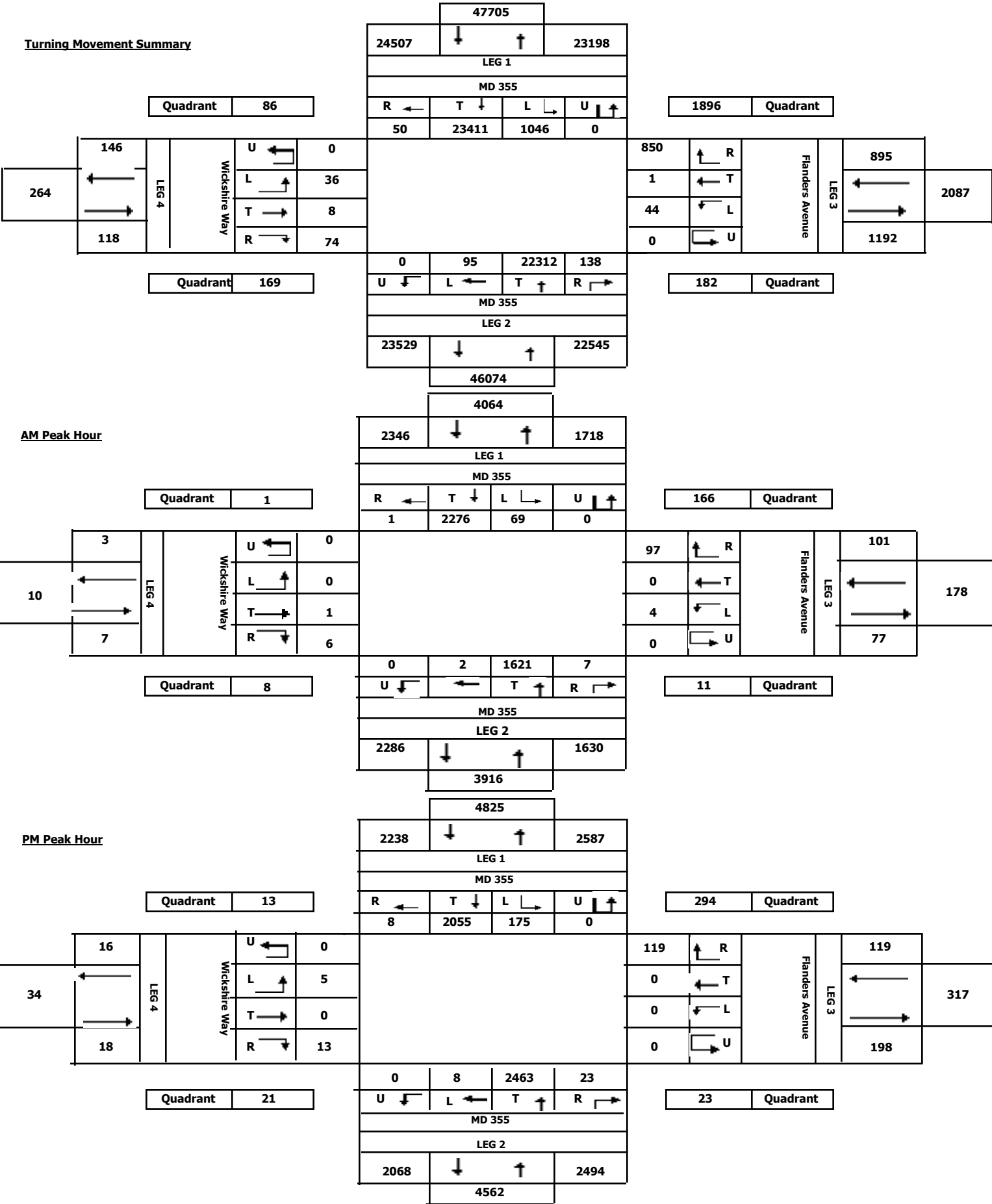
PEAK HOURS	AM PERIOD 6:00AM-12:00PM	Begin	End	Volume	PM PERIOD 12:00PM-19:00PM	Begin	End	Volume
		08:00	09:00	4084		17:00	18:00	4869

Hour	MD 355 From North				MD 355 From South				Flanders Avenue From East				Wickshire Way From West				Grand Total
Begin	L	T	R	TOT	L	T	R	TOT	L	T	R	TOT	L	T	R	TOT	
6:00	6	941	0	947	0	880	0	880	5	0	22	27	0	1	0	1	1855
7:00	45	2164	3	2212	2	1046	17	1065	10	0	69	79	1	1	3	5	3361
8:00	69	2276	1	2346	2	1621	7	1630	4	0	97	101	0	1	6	7	4084
9:00	67	1894	5	1966	15	1708	8	1731	2	0	108	110	3	0	8	11	3818
10:00	76	1247	4	1327	4	1628	7	1639	4	0	35	39	2	1	6	9	3014
11:00	51	913	1	965	7	1320	4	1331	4	0	29	33	1	0	0	1	2330
12:00	49	1869	6	1924	12	1754	6	1772	2	1	53	56	5	1	5	11	3763
13:00	65	1759	0	1824	3	1658	9	1670	1	0	53	54	7	1	5	13	3561
14:00	91	2236	2	2329	7	1990	13	2010	2	0	58	60	7	0	7	14	4413
15:00	91	1880	1	1972	10	1827	7	1844	0	0	59	59	1	0	8	9	3884
16:00	128	2176	9	2313	13	2133	7	2153	8	0	68	76	0	1	3	4	4546
17:00	175	2055	8	2238	8	2463	23	2494	0	0	119	119	5	0	13	18	4869
18:00	133	2001	10	2144	12	2284	30	2326	2	0	80	82	4	1	10	15	4567
TOTAL	1046	23411	50	24507	95	22312	138	22545	44	1	850	895	36	8	74	118	48065
AM Peak	69	2276	1	2346	2	1621	7	1630	4	0	97	101	0	1	6	7	4084
PM Peak	175	2055	8	2238	8	2463	23	2494	0	0	119	119	5	0	13	18	4869

Hour	MD 355 North Leg			MD 355 South Leg			Flanders Avenue East Leg			Wickshire Way West Leg		
Ending	Bicycle	PED.	U.T.	Bicycle	PED.	U.T.	Bicycle	PED.	U.T.	Bicycle	PED.	U.T.
6:00	0	1	3	0	0	0	0	2	0	0	0	0
7:00	0	0	7	0	0	0	0	0	0	0	0	0
8:00	0	0	12	0	0	1	0	1	0	0	0	0
9:00	0	0	2	0	0	0	0	1	0	0	0	0
10:00	0	0	0	0	1	0	0	1	0	0	0	0
11:00	0	0	2	0	0	0	0	2	0	0	0	0
12:00	0	0	1	0	0	2	0	0	0	0	0	0
13:00	0	0	3	0	1	0	0	1	0	0	0	0
14:00	0	0	3	0	0	0	0	1	0	0	1	0
15:00	0	2	1	0	0	0	0	2	0	0	0	0
16:00	0	0	6	0	0	1	0	1	0	0	0	0
17:00	0	0	4	0	0	0	0	8	0	0	0	0
18:00	0	2	6	0	0	0	0	2	0	0	0	0
Total	0	5	50	0	2	4	0	22	0	0	1	0
AM Peak	0	0	12	0	0	1	0	1	0	0	0	0
PM Peak	0	0	4	0	0	0	0	8	0	0	0	0

Interval (dd): 60 min

PEAK HOURS	AM PERIOD 6:00AM-12:00PM	Begin	End	Volume	PM PERIOD 12:00PM-19:00PM	Begin	End	Volume
		08:00	09:00	4084		17:00	18:00	4869



Maryland State Highway Administration
Highway Information Services Division
Turning Movement Count Study - Field Sheet

Station ID: S2000150222
Date: Wednesday 03/23/2005
Location: MD 355 at Broad Brook Dr/Elsmere Ave

County: Montgomery
Town: none
Weather:
Comments: LOS AM:D PM:C

Interval (dd): 60 min

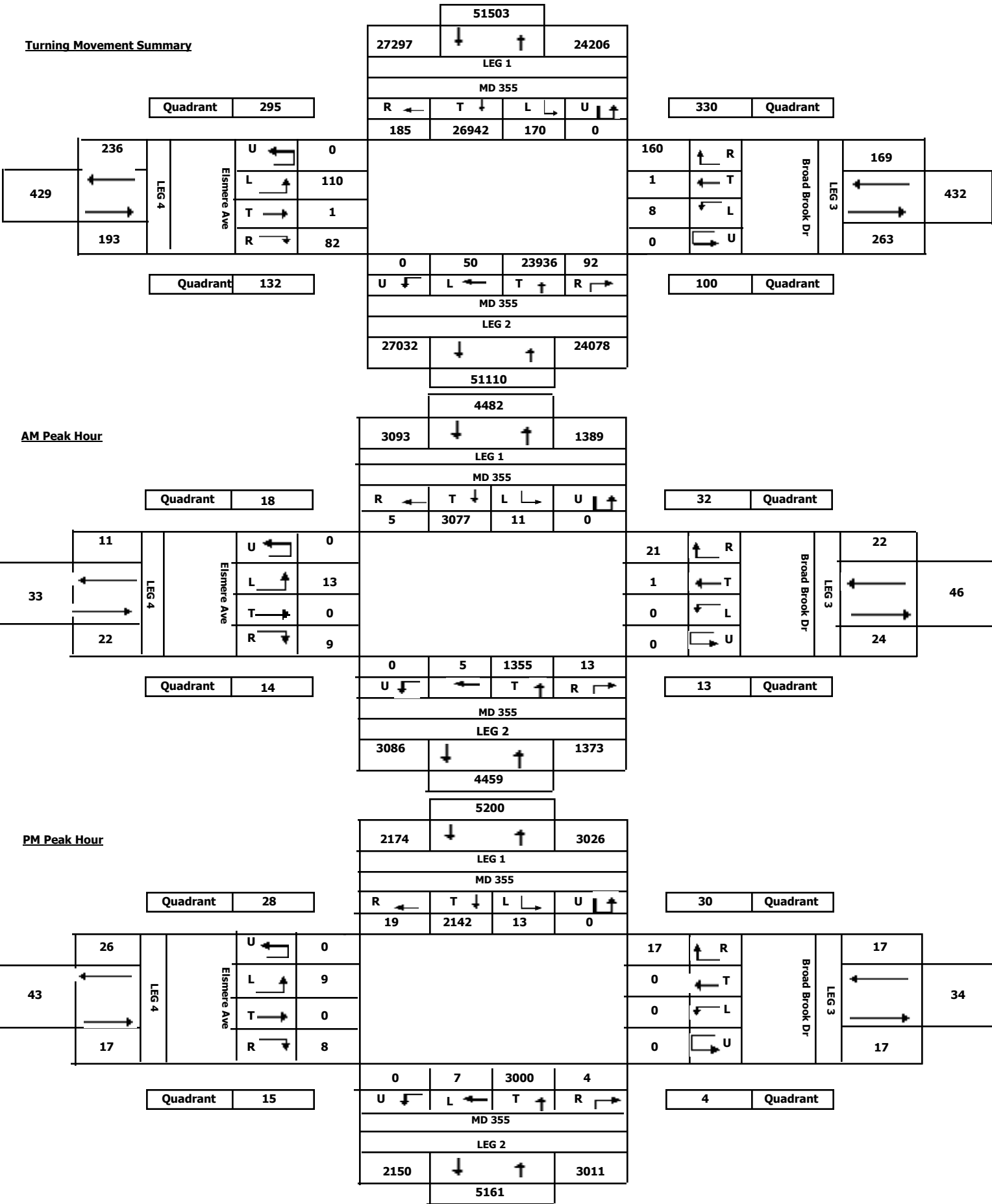
PEAK HOURS	AM PERIOD 6:00AM-12:00PM	Begin	End	Volume	PM PERIOD 12:00PM-19:00PM	Begin	End	Volume
		08:00	09:00	4510		17:00	18:00	5219

Hour	MD 355 From North				MD 355 From South				Broad Brook Dr From East				Elsmere Ave From West				Grand Total
Begin	L	T	R	TOT	L	T	R	TOT	L	T	R	TOT	L	T	R	TOT	
6:00	8	2497	9	2514	1	547	2	550	3	0	7	10	4	0	2	6	3080
7:00	10	2938	3	2951	4	1021	15	1040	2	0	24	26	8	0	10	18	4035
8:00	11	3077	5	3093	5	1355	13	1373	0	1	21	22	13	0	9	22	4510
9:00	9	2614	4	2627	1	1253	9	1263	0	0	11	11	5	0	4	9	3910
10:00	8	1878	14	1900	1	1219	5	1225	0	0	10	10	13	0	3	16	3151
11:00	7	1743	12	1762	2	1706	6	1714	1	0	10	11	7	0	3	10	3497
12:00	5	1698	12	1715	4	1743	6	1753	2	0	8	10	4	0	8	12	3490
13:00	16	1547	18	1581	3	1879	7	1889	0	0	7	7	8	0	4	12	3489
14:00	17	1516	14	1547	1	2165	5	2171	0	0	13	13	11	0	4	15	3746
15:00	27	1575	18	1620	5	2725	8	2738	0	0	6	6	10	0	6	16	4380
16:00	14	1907	20	1941	12	2779	5	2796	0	0	12	12	8	0	10	18	4767
17:00	13	2142	19	2174	7	3000	4	3011	0	0	17	17	9	0	8	17	5219
18:00	25	1810	37	1872	4	2544	7	2555	0	0	14	14	10	1	11	22	4463
TOTAL	170	26942	185	27297	50	23936	92	24078	8	1	160	169	110	1	82	193	51737
AM Peak	11	3077	5	3093	5	1355	13	1373	0	1	21	22	13	0	9	22	4510
PM Peak	13	2142	19	2174	7	3000	4	3011	0	0	17	17	9	0	8	17	5219

Hour	MD 355 North Leg			MD 355 South Leg			Broad Brook Dr East Leg			Elsmere Ave West Leg		
Ending	Bicycle	PED.	U.T.	Bicycle	PED.	U.T.	Bicycle	PED.	U.T.	Bicycle	PED.	U.T.
6:00	0	0	5	0	0	2	0	0	0	0	1	0
7:00	0	0	6	0	1	2	0	2	0	0	1	0
8:00	0	1	6	0	1	2	0	0	0	0	0	0
9:00	0	0	2	0	0	5	0	0	0	0	0	0
10:00	0	0	1	0	0	4	0	0	0	0	1	0
11:00	0	0	2	0	0	1	0	0	0	0	0	0
12:00	0	0	3	0	0	2	0	0	0	0	0	0
13:00	0	0	10	0	0	0	0	0	0	0	0	0
14:00	0	0	10	0	0	0	0	0	0	0	0	0
15:00	0	0	25	0	0	0	0	0	0	0	0	0
16:00	0	0	50	0	1	1	0	0	0	0	0	0
17:00	0	0	51	0	0	1	0	0	0	0	0	0
18:00	0	0	26	0	1	1	0	0	1	0	1	0
Total	0	1	197	0	4	21	0	2	1	0	4	0
AM Peak	0	1	6	0	1	2	0	0	0	0	0	0
PM Peak	0	0	51	0	0	1	0	0	0	0	0	0

Interval (dd): 60 min

PEAK HOURS	AM PERIOD 6:00AM-12:00PM	Begin	End	Volume	PM PERIOD 12:00PM-19:00PM	Begin	End	Volume
		08:00	09:00	4510		17:00	18:00	5219



Maryland State Highway Administration
Highway Information Services Division
Turning Movement Count Study - Field Sheet

Station ID: S2002150011
Date: Tuesday 09/20/2011
Location: MD 355 at WILSON DR

County: Montgomery
Town: none
Weather: Rain in the morning
Comments: LOS AM:C PM:C

Interval (dd): 60 min

PEAK HOURS	AM PERIOD 6:00AM-12:00PM	Begin	End	Volume	PM PERIOD 12:00PM-19:00PM	Begin	End	Volume
		08:00	09:00	3841		17:00	18:00	4096

Hour	MD 355 From North				MD 355 From South				From East				Wilson Drive From West				Grand Total
Begin	L	T	R	TOT	L	T	R	TOT	L	T	R	TOT	L	T	R	TOT	
6:00	0	1384	411	1795	7	498	0	505	0	0	0	0	27	0	11	38	2338
7:00	0	2313	342	2655	9	1083	0	1092	0	0	0	0	45	0	7	52	3799
8:00	0	2320	284	2604	9	1167	0	1176	0	0	0	0	49	0	12	61	3841
9:00	0	2183	261	2444	7	1120	0	1127	0	0	0	0	47	0	18	65	3636
10:00	0	1826	249	2075	3	1133	0	1136	0	0	0	0	70	0	9	79	3290
11:00	0	1288	124	1412	7	1276	0	1283	0	0	0	0	88	0	19	107	2802
12:00	0	1196	100	1296	6	1389	0	1395	0	0	0	0	128	0	22	150	2841
13:00	0	1133	107	1240	6	1478	0	1484	0	0	0	0	150	0	19	169	2893
14:00	0	1132	130	1262	6	1703	0	1709	0	0	0	0	309	0	23	332	3303
15:00	0	1215	51	1266	2	1604	0	1606	0	0	0	0	512	0	17	529	3401
16:00	0	1168	38	1206	0	1676	0	1676	0	0	0	0	561	0	41	602	3484
17:00	0	1382	29	1411	3	2056	0	2059	0	0	0	0	581	0	45	626	4096
18:00	0	1250	42	1292	0	2177	0	2177	0	0	0	0	344	0	17	361	3830
TOTAL	0	19790	2168	21958	65	18360	0	18425	0	0	0	0	2911	0	260	3171	43554
AM Peak	0	2320	284	2604	9	1167	0	1176	0	0	0	0	49	0	12	61	3841
PM Peak	0	1382	29	1411	3	2056	0	2059	0	0	0	0	581	0	45	626	4096

Hour	MD 355 North Leg			MD 355 South Leg			East Leg			Wilson Drive West Leg		
Ending	Bicycle	PED.	U.T.	Bicycle	PED.	U.T.	Bicycle	PED.	U.T.	Bicycle	PED.	U.T.
6:00	0	0	8	0	0	2	0	0	0	0	30	0
7:00	0	2	7	0	0	3	0	0	0	0	31	0
8:00	0	5	2	0	0	1	0	0	0	0	37	0
9:00	0	1	3	0	0	0	0	0	0	0	15	0
10:00	0	0	7	0	0	4	0	0	0	0	5	0
11:00	0	3	5	0	0	6	0	0	0	0	10	0
12:00	0	6	8	0	0	11	0	0	0	0	15	0
13:00	0	3	3	0	0	3	0	0	0	0	11	0
14:00	0	0	0	0	0	4	0	0	0	0	14	0
15:00	0	4	0	0	0	3	0	0	0	0	29	0
16:00	0	2	3	0	0	0	0	0	0	0	21	0
17:00	0	2	0	0	0	1	0	0	0	0	60	0
18:00	0	1	1	0	0	1	0	0	0	0	56	0
Total	0	29	47	0	0	39	0	0	0	0	334	0
AM Peak	0	5	2	0	0	1	0	0	0	0	37	0
PM Peak	0	2	0	0	0	1	0	0	0	0	60	0

Station ID: S2002150011
Date: Tuesday 09/20/2011
Location: MD 355 at WILSON DR

County: Montgomery
Town: none
Weather: Rain in the morning

Comments: LOS AM:C PM:C

Interval (dd): 60 min

PEAK HOURS	AM PERIOD 6:00AM-12:00PM	Begin	End	Volume	PM PERIOD 12:00PM-19:00PM	Begin	End	Volume
		08:00	09:00	3841		17:00	18:00	4096

Turning Movement Summary

				43229										
				21958	↓	↑		21271						
				LEG 1										
				MD 355										
Quadrant				5079					0	Quadrant				
				R	←	T	↓	L	↘	U	↗			
				2168					19790	0	0			
5404	2233	LEG 4	Wilson Drive	U	↖					0	LEG 3			
	←			L	↗					0				
	→			T	→					0				
	3171			R	↘					0				
				0	65	18360	0							
Quadrant				325	U	↓	L	←	T	↑	R	↗		
				MD 355										
				LEG 2										
				20050	↓	↑		18425						
				38475										

AM Peak Hour

				3820														
				2604	↓ ↑				1216									
				LEG 1														
				MD 355														
Quadrant				333	R	←	T	↓	L	↘	U	↗	0		Quadrant			
					284	2320		0		0								
354	293	LEG 4	Wilson Drive	U	←							0	↑	R	LEG 3	0	0	
	←			L	↑							←	T	←		L		←
	→			T	→							→	L	→		U		→
	61			R	→							↓	→	U		→		
Quadrant				21	0	9	1167	0										
					U	↓	←	T	↑	R	↗	0				Quadrant		
				MD 355														
				LEG 2														
				2332	↓ ↑		1176											
				3508														

PM Peak Hour

				4048										
				1411	↓	↑		2637						
				LEG 1										
				MD 355										
				R	←	T	↓	L	↘	U	↗			
				29					1382	0	0			

Maryland State Highway Administration
Highway Information Services Division
Turning Movement Count Study - Field Sheet

Station ID: S1997150100
Date: Tuesday 07/01/2014
Location: MD 355 at SOUTH DR/SOUTHWOOD DR

County: Montgomery
Town: none
Weather: Clear
Comments: LOS: AM B(0.67); PM A(0.53)

Interval (dd): 60 min

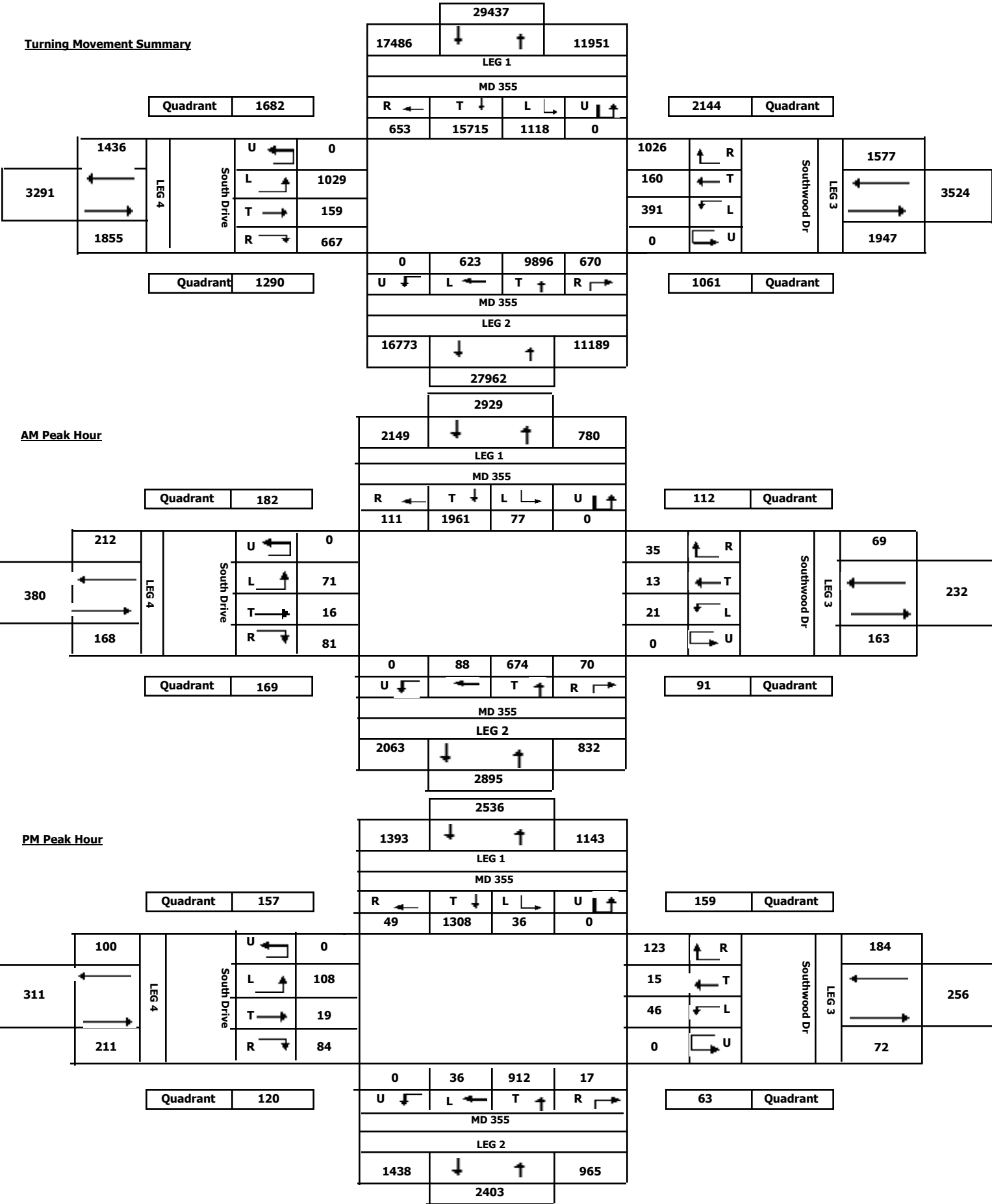
PEAK HOURS	AM PERIOD 6:00AM-12:00PM	Begin	End	Volume	PM PERIOD 12:00PM-19:00PM	Begin	End	Volume
		08:00	09:00	3218		15:00	16:00	2753

Hour	MD 355 From North				MD 355 From South				Southwood Dr From East				South Drive From West				Grand Total
Begin	L	T	R	TOT	L	T	R	TOT	L	T	R	TOT	L	T	R	TOT	
6:00	244	853	55	1152	115	262	90	467	13	11	54	78	29	14	36	79	1776
7:00	168	1609	108	1885	61	522	89	672	26	21	63	110	70	17	63	150	2817
8:00	77	1961	111	2149	88	674	70	832	21	13	35	69	71	16	81	168	3218
9:00	82	1570	81	1733	62	662	70	794	26	8	30	64	59	15	42	116	2707
10:00	84	1139	45	1268	38	732	53	823	26	8	83	117	54	7	26	87	2295
11:00	83	1146	38	1267	29	821	62	912	44	11	104	159	59	8	29	96	2434
12:00	105	1026	23	1154	19	969	67	1055	28	5	108	141	60	13	38	111	2461
13:00	72	907	34	1013	28	940	44	1012	28	10	130	168	89	13	46	148	2341
14:00	63	925	10	998	44	929	42	1015	43	12	123	178	87	5	36	128	2319
15:00	36	1308	49	1393	36	912	17	965	46	15	123	184	108	19	84	211	2753
16:00	29	1475	39	1543	35	584	20	639	36	18	40	94	92	17	53	162	2438
17:00	26	955	44	1025	35	917	17	969	21	16	51	88	125	7	57	189	2271
18:00	49	841	16	906	33	972	29	1034	33	12	82	127	126	8	76	210	2277
TOTAL	1118	15715	653	17486	623	9896	670	11189	391	160	1026	1577	1029	159	667	1855	32107
AM Peak	77	1961	111	2149	88	674	70	832	21	13	35	69	71	16	81	168	3218
PM Peak	36	1308	49	1393	36	912	17	965	46	15	123	184	108	19	84	211	2753

Hour	MD 355 North Leg			MD 355 South Leg			Southwood Dr East Leg			South Drive West Leg		
Ending	Bicycle	PED.	U.T.	Bicycle	PED.	U.T.	Bicycle	PED.	U.T.	Bicycle	PED.	U.T.
6:00	0	0	4	0	592	15	0	2	0	0	3	0
7:00	0	0	0	0	656	14	0	4	0	0	12	0
8:00	0	0	2	0	281	17	0	1	0	0	16	0
9:00	0	0	1	0	215	14	0	0	0	0	3	0
10:00	0	0	3	0	122	8	0	1	0	0	2	0
11:00	0	0	1	0	129	9	0	1	0	0	3	0
12:00	0	0	2	0	118	11	0	0	0	0	0	0
13:00	0	1	0	0	77	8	0	0	0	0	3	0
14:00	0	0	3	0	182	10	0	0	0	0	0	0
15:00	0	0	1	0	422	4	0	0	0	0	0	0
16:00	0	0	3	0	466	4	0	0	0	0	0	0
17:00	0	0	2	0	235	6	0	0	0	0	0	0
18:00	0	0	4	0	98	1	0	0	0	0	0	0
Total	0	1	26	0	3593	121	0	9	0	0	42	0
AM Peak	0	0	2	0	281	17	0	1	0	0	16	0
PM Peak	0	0	1	0	422	4	0	0	0	0	0	0

Interval (dd): 60 min

PEAK HOURS	AM PERIOD 6:00AM-12:00PM	Begin	End	Volume	PM PERIOD 12:00PM-19:00PM	Begin	End	Volume
		08:00	09:00	3218		15:00	16:00	2753



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Appendix B: **Analysis Spreadsheets**

Rummel, Klepper & Kahl, LLP

81 Mosher St
Baltimore MD, 21217

Responsive People/Creative Solutions

Location: MD 355 south of Lakeforest Blv

County: Montgomery

Weather: Clear

Counters: DC Office

File Name : MD 355 at Lakeforest Blvd

Site Code : 13184141

Start Date : 11/18/2015

Page No : 1

Groups Printed- Vehicle Occupancy

[illegible]

Rummel, Klepper & Kahl, LLP

81 Mosher St
Baltimore MD, 21217

Responsive People/Creative Solutions

File Name : MD 355 Lakeforest Blvd

Site Code : 13184141

Start Date : 11/18/2015

Page No : 2

[illegible]

Peak Hour Analysis From 12:00 PM to 04:45 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 04:00 PM

[illegible]

Rummel, Klepper & Kahl, LLP

81 Mosher St
Baltimore MD, 21217

Responsive People/Creative Solutions

Location: MD 355 south of Deer Park Rd

County: Montgomery

Weather: Clear

Counters: DC Office

File Name : MD 355 at Deer Park Rd

Site Code : 13184141

Start Date : 11/18/2015

Page No : 1

Groups Printed- Vehicle Occupancy

[illegible]

*** BREAK ***

[illegible]

Rummel, Klepper & Kahl, LLP

81 Mosher St
Baltimore MD, 21217

Responsive People/Creative Solutions

File Name : MD 355 at Deer Park Rd

Site Code : 13184141

Start Date : 11/18/2015

Page No : 2

[illegible]

Peak Hour Analysis From 12:00 PM to 05:00 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 04:15 PM

[illegible]

Rummel, Klepper & Kahl, LLP

81 Mosher St
Baltimore MD, 21217

Responsive People/Creative Solutions

Location: MD 355 south of Ridgemont Ave
County: Montgomery
Weather: Clear
Counters: DC Office

File Name : MD 355 at Ridgemont Ave
Site Code : 13184141
Start Date : 11/18/2015
Page No : 1

Groups Printed- Vehicle Occupancy

[illegible]

Rummel, Klepper & Kahl, LLP

81 Mosher St
Baltimore MD, 21217

Responsive People/Creative Solutions

File Name : MD 355 at Ridgemont Ave

Site Code : 13184141

Start Date : 11/18/2015

Page No : 2

[illegible]

Peak Hour Analysis From 12:00 PM to 04:45 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 04:00 PM

[illegible]

Rummel, Klepper & Kahl, LLP

81 Mosher St
Baltimore MD, 21217

Responsive People/Creative Solutions

Location: MD 355 south of College Pkwy
County: Montgomery
Weather: Clear
Counters: DC Office

File Name : MD 355 at College Pkwy
Site Code : 13184141
Start Date : 11/18/2015
Page No : 1

Groups Printed- Vehicle Occupancy

[illegible]

Rummel, Klepper & Kahl, LLP

81 Mosher St
Baltimore MD, 21217

Responsive People/Creative Solutions

File Name : MD 355 at College Pkwy

Site Code : 13184141

Start Date : 11/18/2015

Page No : 2

[illegible]

Peak Hour Analysis From 12:00 PM to 04:45 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 04:00 PM

[illegible]

Rummel, Klepper & Kahl, LLP

81 Mosher St
Baltimore MD, 21217

Responsive People/Creative Solutions

Location: MD 355 south of Beall Ave
County: Montgomery
Weather: Clear
Counters: DC Office

File Name : MD 355 at Beall Ave
Site Code : 1318414
Start Date : 11/18/2015
Page No : 1

Groups Printed- Vehicle Occupancy

[illegible]

Rummel, Klepper & Kahl, LLP

81 Mosher St
Baltimore MD, 21217

Responsive People/Creative Solutions

File Name : MD 355 at Beall Ave

Site Code : 1318414

Start Date : 11/18/2015

Page No : 2

[illegible]

Peak Hour Analysis From 12:00 PM to 04:45 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 04:00 PM

[illegible]

Rummel, Klepper & Kahl, LLP

81 Mosher St
Baltimore MD, 21217

Responsive People/Creative Solutions

Location: MD 355 south of Halpine Rd
County: Montgomery
Weather: Clear
Counters: DC Office

File Name : MD 355 at Halpine Rd
Site Code : 13184141
Start Date : 11/17/2015
Page No : 1

Groups Printed- Vehicle Occupancy

[illegible]

Rummel, Klepper & Kahl, LLP

81 Mosher St
Baltimore MD, 21217

Responsive People/Creative Solutions

File Name : MD 355 at Halpine Rd

Site Code : 13184141

Start Date : 11/17/2015

Page No : 2

[illegible]

Peak Hour Analysis From 12:00 PM to 04:45 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 04:00 PM

[illegible]

Rummel, Klepper & Kahl, LLP

81 Mosher St
Baltimore MD, 21217

Responsive People/Creative Solutions

Location: MD 355 south of Marinelli Rd

County: Montgomery

Weather: Clear

Counters: DC Office

File Name : MD 355 at Marinelli Rd

Site Code : 13184141

Start Date : 11/17/2015

Page No : 1

Groups Printed- Vehicle Occupancy

[illegible]

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[illegible]

Rummel, Klepper & Kahl, LLP

81 Mosher St
Baltimore MD, 21217

Responsive People/Creative Solutions

File Name : MD 355 at Marinelli Rd

Site Code : 13184141

Start Date : 11/17/2015

Page No : 2

[illegible]

Peak Hour Analysis From 12:00 PM to 04:45 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 04:00 PM

[illegible]

Rummel, Klepper & Kahl, LLP

81 Mosher St
Baltimore MD, 21217

Responsive People/Creative Solutions

File Name : MD 355 at Strathmore Ave

Site Code : 13184141

Start Date : 11/17/2015

Page No : 1

Location: MD 355 south of Strathmore

County: Montgomery

Weather: Clear

Counters: DC Office

Groups Printed- Vehicle Occupancy

[illegible]

*** BREAK ***

[illegible]

Rummel, Klepper & Kahl, LLP

81 Mosher St
Baltimore MD, 21217

Responsive People/Creative Solutions

File Name : MD 355 at Strathmore Ave

Site Code : 13184141

Start Date : 11/17/2015

Page No : 2

[illegible]

Peak Hour Analysis From 11:00 AM to 04:45 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 04:00 PM

[illegible]

Rummel, Klepper & Kahl, LLP

81 Mosher St
Baltimore MD, 21217

Responsive People/Creative Solutions

Location: MD 355 South of Bellvue
County: Montgomery
Weather: Clear
Counters: DC Office

File Name : MD 355 at Bellevue
Site Code : 1318414
Start Date : 11/17/2015
Page No : 1

Groups Printed- Vehicle Occupancy

[illegible]

Rummel, Klepper & Kahl, LLP

81 Mosher St
Baltimore MD, 21217

Responsive People/Creative Solutions

File Name : MD 355 at Bellevue

Site Code : 13184141

Start Date : 11/17/2015

Page No : 2

[illegible]

Peak Hour Analysis From 12:00 PM to 04:45 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 04:00 PM

[illegible]

Rummel, Klepper & Kahl, LLP

81 Mosher St
Baltimore MD, 21217

Responsive People/Creative Solutions

Location: MD 355 south of Jones Bridge Rd
County: Montgomery
Weather: Clear
Counters: DC Office

File Name : MD 355 at Jones Bridge Rd
Site Code : 13184141
Start Date : 11/17/2015
Page No : 1

Groups Printed- Vehicle Occupancy

[illegible]

Rummel, Klepper & Kahl, LLP

81 Mosher St
Baltimore MD, 21217

Responsive People/Creative Solutions

File Name : MD 355 at Jones Bridge Rd

Site Code : 13184141

Start Date : 11/17/2015

Page No : 2

[illegible]

Peak Hour Analysis From 12:00 PM to 04:45 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 04:00 PM

[illegible]

MD 355 Managed Lanes Feasibility Study					12/18/2015	Calculate Vehicle Capacity per Lane Lane per Hour of Green Time				Calculate Actual Lane Volume per Hour												Volume to Capacity Ratios		
Corridor	Segment	Peak	Direction	Scenario	Ideal Flow per Lane (veh per lane per hour)	Saturated Flow Rate (veh per lane per hour)	critical intersection g/c ratio	Capacity Flow (veh per lane per hour green)	Total Volume	Bus Volumes	Right Turn Volumes	HOV Volumes		Managed Lane Volumes	Lane Utilization Factor			Actual Lane Volume per Hour			Left Lane	Center Lane	Right Lane	
												HOV2	HOV3+		Left Lane	Center Lane	Right Lane	Left Lane	Center Lane	Right Lane				
MD 355	Montgomery Village Ave to S Summit Ave	AM	SB	Existing Mixed Traffic	1900	1622	0.32	519	1536	17	139	186	18	-	0.34	0.35	0.31	522	538	476	101%	104%	92%	
				Curb Lane Bus/ BRT/ Right Turns only	1900	1622	0.32	519	1536	17	139	186	18	360	0.38	0.38	0.23	588	588	360	113%	113%	69%	
				Difference	-	-	-	-	-	-	-	-	-	-	4%	3%	-8%	65.76	50.4	-116.16	13%	10%	-22%	
				10% Conversion from SOV to HOV2	1900	1622	0.32	519	1536	17	139	186	18	360	36%	36%	28%	529	529	419	102%	102%	81%	
				25% Conversion from SOV to HOV2	1900	1622	0.32	519	1536	17	139	186	18	360	32%	32%	37%	441	441	507	85%	85%	98%	
				12% Conversion from SOV to HOV2	1900	1622	0.32	519	1536	17	139	186	18	360	35%	35%	29%	519	519	429	100%	100%	83%	
		PM	NB	Existing Mixed Traffic	1900	1896	0.67	1270	1479	7	123	285	18	-	0.34	0.35	0.31	503	518	458	40%	41%	36%	
				Curb Lane Bus/ BRT/ Right Turns only	1900	1896	0.67	1270	1479	7	123	285	18	433	0.35	0.35	0.29	523	523	433	41%	41%	34%	
				Difference	-	-	-	-	-	-	-	-	-	-	1%	0%	-2%	20.14	5.35	-25.49	2%	0%	-2%	
				10% Conversion from SOV to HOV2	1900	1896	0.67	1270	1479	7	123	285	18	433	33%	33%	34%	471	471	485	37%	37%	38%	
				25% Conversion from SOV to HOV2	1900	1896	0.67	1270	1479	7	123	285	18	433	29%	29%	42%	392	392	564	31%	31%	44%	
	S Summit Ave to Shady Grove Road	AM	SB	Existing Mixed Traffic	1900	1640	0.73	1197	2383	28	21	354	37	-	0.37	0.36	0.27	882	858	643	74%	72%	54%	
				Curb Lane Bus/ BRT/ Right Turns only	1900	1640	0.73	1197	2383	28	21	354	37	440	0.41	0.41	0.18	972	972	440	81%	81%	37%	
				Difference	-	-	-	-	-	-	-	-	-	-	4%	5%	-9%	89.79	113.62	-203.41	8%	9%	-17%	
				10% Conversion from SOV to HOV2	1900	1640	0.73	1197	2383	28	21	354	37	440	38%	38%	23%	874	874	537	73%	73%	45%	
				25% Conversion from SOV to HOV2	1900	1640	0.73	1197	2383	28	21	354	37	440	34%	34%	32%	729	729	683	61%	61%	57%	
		PM	NB	Existing Mixed Traffic	1900	1651	0.35	578	1816	7	75	333	41	-	0.30	0.37	0.33	545	672	599	94%	116%	104%	
				Curb Lane Bus/ BRT/ Right Turns only	1900	1651	0.35	578	1816	7	75	333	41	456	0.37	0.37	0.25	680	680	456	118%	118%	79%	
				Difference	-	-	-	-	-	-	-	-	-	-	7%	0%	-8%	135.2	8.08	-143.28	23%	1%	-25%	
				10% Conversion from SOV to HOV2	1900	1651	0.35	578	1816	7	75	333	41	456	35%	35%	30%	612	612	524	106%	106%	91%	
				25% Conversion from SOV to HOV2	1900	1651	0.35	578	1816	7	75	333	41	456	31%	31%	38%	510	510	626	88%	88%	108%	
				5% Conversion from SOV to HOV2	1900	1651	0.35	578	1816	7	75	333	41	456	36%	36%	28%	645	645	491	112%	112%	85%	
	Shady Grove Road to Gude Drive	AM	SB	Existing Mixed Traffic	1900	1642	0.42	690	2761	29	35	354	39	-	0.37	0.27	0.36	1022	745	994	148%	108%	144%	
				Curb Lane Bus/ BRT/ Right Turns only	1900	1642	0.42	690	2761	29	35	354	39	457	0.42	0.42	0.17	1152	1152	457	167%	167%	66%	
				Difference	-	-	-	-	-	-	-	-	-	-	5%	15%	-19%	130.43	406.53	-536.96	19%	59%	-78%	
				10% Conversion from SOV to HOV2	1900	1642	0.42	690	2761	29	35	354	39	457	39%	39%	22%	1037	1037	572	150%	150%	83%	
				25% Conversion from SOV to HOV2	1900	1642	0.42	690	2761	29	35	354	39	457	35%	35%	30%	864	864	745	125%	125%	108%	
		PM	NB	Existing Mixed Traffic	1900	1572	0.37	582	1991	25	199	324	44	-	0.38	0.36	0.26	757	717	518	130%	123%	89%	
				Curb Lane Bus/ BRT/ Right Turns only	1900	1572	0.37	582	1991	25	199	324	44	592	0.35	0.35	0.30	700	700	592	120%	120%	102%	
				Difference	-	-	-	-	-	-	-	-	-	-	-3%	-1%	4%	-57.08	-17.26	74.34	-10%	-3%	13%	
				10% Conversion from SOV to HOV2	1900	1572	0.37	582	1991	25	199	324	44	592	33%	33%	34%	630	630	662	108%	108%	114%	
				25% Conversion from SOV to HOV2	1900	1572	0.37	582	1991	25	199	324	44	592	29%	29%	42%	525	525	767	90%	90%	132%	
	Gude Drive to N Washington St	AM	SB	Existing Mixed Traffic	1900	1893	0.47	890	2684	46	234	437	44	-	0.34	0.34	0.32	913	913	859	103%	103%	97%	
				Curb Lane Bus/ BRT/ Right Turns only	1900	1893	0.47	890	2684	46	234	437	44	761	0.36	0.36	0.28	962	962	761	108%	108%	86%	
				Difference	-	-	-	-	-	-	-	-	-	-	2%	2%	-4%	48.94	48.94	-97.88	6%	6%	-11%	
				10% Conversion from SOV to HOV2	1900	1893	0.47	890	2684	46	234	437	44	761	33%	33%	33%	865	865	857	97%	97%	96%	
				25% Conversion from SOV to HOV2	1900	1893	0.47	890	2684	46	234	437	44	761	30%	30%	41%	721	721	1001	81%	81%	113%	
		PM	NB	Existing Mixed Traffic	1900	1663	0.48	798	1877	33	329	317	37	-	0.32	0.25	0.43	601	469	807	75%	59%	101%	
				Curb Lane Bus/ BRT/ Right Turns only	1900	1663	0.48	798	1877	33	329	317	37	716	0.31	0.31	0.38	581	581	716	73%	73%	90%	
				Difference	-	-	-	-	-	-	-	-	-	-	-1%	6%	-5%	-20.14	111.25	-91.11	-3%	14%	-11%	
				10% Conversion from SOV to HOV2	1900	1663	0.48	798	1877	33	329	317	37	716	29%	29%	43%	522	522	774	65%	65%	97%	
				25% Conversion from SOV to HOV2	1900	1663	0.48	798	1877	33	329	317	37	716	25%	25%	50%	435	435	861	55%	55%	108%	

MD 355 Managed Lanes Feasibility Study					12/18/2015	Calculate Actual Lane Volume per Hour												Lane Person Throughput		
Corridor	Segment	Peak	Direction	Scenario							Lane Utilization Factor			Actual Lane Volume per Hour						
					HOV Volumes					Managed		Left Lane	Center Lane	Right Lane	Left Lane	Center Lane				Right Lane
					Total Volume	Bus Volumes	Right Turn Volumes	HOV2	HOV3+	Lane Volumes	Bus Ridership									
MD 355	Montgomery Village Ave to S Summit Ave	AM	SB	Existing Mixed Traffic	1536	17	139	186	18	-	158	0.34	0.35	0.31	522	538	476	545	561	794
				Curb Lane Bus/ BRT/ Right Turns only	1536	17	139	186	18	360	158	0.38	0.38	0.23	588	588	360	588	588	723
				Difference	-	-	-	-	-	-	-	4%	3%	-8%	65.76	50.4	-116.16	43	27	-71
				10% Conversion from SOV to HOV2	1536	17	139	186	18	360	158	0.34	0.34	0.27	529	529	419	529	529	841
				25% Conversion from SOV to HOV2	1536	17	139	186	18	360	158	0.29	0.29	0.33	441	441	507	441	441	1017
		PM	NB	Existing Mixed Traffic	1479	7	123	285	18	-	145	0.34	0.35	0.31	503	518	458	568	585	786
				Curb Lane Bus/ BRT/ Right Turns only	1479	7	123	285	18	433	145	0.35	0.35	0.29	523	523	433	523	523	892
				Difference	-	-	-	-	-	-	-	1%	0%	-2%	20.14	5.35	-25.49	-45	-62	106
				10% Conversion from SOV to HOV2	1479	7	123	285	18	433	145	0.32	0.32	0.33	471	471	485	471	471	997
				25% Conversion from SOV to HOV2	1479	7	123	285	18	433	145	0.27	0.27	0.38	392	392	564	392	392	1154
	S Summit Ave to Shady Grove Road	AM	SB	Existing Mixed Traffic	2383	28	21	354	37	-	191	0.37	0.36	0.27	882	858	643	1022	994	958
				Curb Lane Bus/ BRT/ Right Turns only	2383	28	21	354	37	440	191	0.41	0.41	0.18	972	972	440	972	972	1031
				Difference	-	-	-	-	-	-	-	4%	5%	-9%	89.79	113.62	-203.41	-50	-23	73
				10% Conversion from SOV to HOV2	2383	28	21	354	37	440	191	0.37	0.37	0.23	874	874	537	874	874	1226
				25% Conversion from SOV to HOV2	2383	28	21	354	37	440	191	0.31	0.31	0.29	729	729	683	729	729	1517
		PM	NB	Existing Mixed Traffic	1816	7	75	333	41	-	168	0.30	0.37	0.33	545	672	599	645	795	952
				Curb Lane Bus/ BRT/ Right Turns only	1816	7	75	333	41	456	168	0.37	0.37	0.25	680	680	456	680	680	1032
				Difference	-	-	-	-	-	-	-	7%	0%	-8%	135.2	8.08	-143.28	35	-115	80
				10% Conversion from SOV to HOV2	1816	7	75	333	41	456	168	0.34	0.34	0.29	612	612	524	612	612	1168
				25% Conversion from SOV to HOV2	1816	7	75	333	41	456	168	0.28	0.28	0.34	510	510	626	510	510	1372
	Shady Grove Road to Gude Drive	AM	SB	Existing Mixed Traffic	2761	29	35	354	39	-	192	0.37	0.27	0.36	1022	745	994	1158	845	1353
				Curb Lane Bus/ BRT/ Right Turns only	2761	29	35	354	39	457	192	0.42	0.42	0.17	1152	1152	457	1152	1152	1052
				Difference	-	-	-	-	-	-	-	5%	15%	-19%	130.43	406.53	-536.96	-6	307	-301
				10% Conversion from SOV to HOV2	2761	29	35	354	39	457	192	0.38	0.38	0.21	1037	1037	572	1037	1037	1282
				25% Conversion from SOV to HOV2	2761	29	35	354	39	457	192	0.31	0.31	0.27	864	864	745	864	864	1628
		PM	NB	Existing Mixed Traffic	1991	25	199	324	44	-	151	0.38	0.36	0.26	757	717	518	828	784	916
				Curb Lane Bus/ BRT/ Right Turns only	1991	25	199	324	44	592	151	0.35	0.35	0.30	700	700	592	700	700	1130
				Difference	-	-	-	-	-	-	-	-3%	-1%	4%	-57.08	-17.26	74.34	-129	-85	213
				10% Conversion from SOV to HOV2	1991	25	199	324	44	592	151	0.32	0.32	0.33	630	630	662	630	630	1269
				25% Conversion from SOV to HOV2	1991	25	199	324	44	592	151	0.26	0.26	0.39	525	525	767	525	525	1479
	Gude Drive to N Washington St	AM	SB	Existing Mixed Traffic	2684	46	234	437	44	-	133	0.34	0.34	0.32	913	913	859	996	996	1304
				Curb Lane Bus/ BRT/ Right Turns only	2684	46	234	437	44	761	133	0.36	0.36	0.28	962	962	761	962	962	1373
				Difference	-	-	-	-	-	-	-	2%	2%	-4%	48.94	48.94	-97.88	-34	-34	69
				10% Conversion from SOV to HOV2	2684	46	234	437	44	761	133	0.32	0.32	0.32	865	865	857	865	865	1565
				25% Conversion from SOV to HOV2	2684	46	234	437	44	761	133	0.27	0.27	0.37	721	721	1001	721	721	1853
		PM	NB	Existing Mixed Traffic	1877	33	329	317	37	-	180	0.32	0.25	0.43	601	469	807	610	477	1328
				Curb Lane Bus/ BRT/ Right Turns only	1877	33	329	317	37	716	180	0.31	0.31	0.38	581	581	716	581	581	1254
Difference				-	-	-	-	-	-	-	-1%	6%	-5%	-20.14	111.25	-91.11	-29	104	-75	
10% Conversion from SOV to HOV2				1877	33	329	317	37	716	180	0.28	0.28	0.41	522	522	774	522	522	1370	
25% Conversion from SOV to HOV2				1877	33	329	317	37	716	180	0.23	0.23	0.46	435	435	861	435	435	1544	

MD 355 Managed Lanes Feasibility Study					12/18/2015	Calculate Actual Lane Volume per Hour												Lane Person Throughput		
Corridor	Segment	Peak	Direction	Scenario							Lane Utilization Factor			Actual Lane Volume per Hour						
											Left Lane	Center Lane	Right Lane	Left Lane	Center Lane	Right Lane				
					Total Volume	Bus Volumes	Right Turn Volumes	HOV2	HOV3+	Managed Lane Volumes							Bus Ridership			
MD 355	N Washington St to Vers Mill Rd	AM	SB	Existing Mixed Traffic	2355	26	25	323	12	-	60	0.34	0.34	0.32	801	801	754	901	901	933
				Curb Lane Bus/ BRT/ Right Turns only	2355	26	25	323	12	386	60	0.42	0.42	0.16	985	985	386	985	985	767
				Difference	-	-	-	-	-	-	-	8%	8%	-16%	183.8	183.8	-367.6	83	83	-166
				10% Conversion from SOV to HOV2	2355	26	25	323	12	386	60	0.38	0.38	0.21	886	886	484	886	886	964
				25% Conversion from SOV to HOV2	2355	26	25	323	12	386	60	0.31	0.31	0.27	738	738	632	738	738	1259
		PM	NB	Existing Mixed Traffic	1776	17	80	242	11	-	45	0.32	0.25	0.43	568	444	764	622	486	960
				Curb Lane Bus/ BRT/ Right Turns only	1776	17	80	242	11	350	45	0.40	0.40	0.20	713	713	350	713	713	642
				Difference	-	-	-	-	-	-	-	8%	15%	-23%	144.68	269	-413.68	91	227	-318
				10% Conversion from SOV to HOV2	1776	17	80	242	11	350	45	0.36	0.36	0.24	642	642	421	642	642	785
				25% Conversion from SOV to HOV2	1776	17	80	242	11	350	45	0.30	0.30	0.30	535	535	528	535	535	999
	Vers Mill Rd to Twinbrook Pkwy	AM	SB	Existing Mixed Traffic	2099	22	33	238	24	-	60	0.34	0.35	0.31	714	735	651	792	816	815
				Curb Lane Bus/ BRT/ Right Turns only	2099	22	33	238	24	317	60	0.42	0.42	0.15	891	891	317	891	891	641
				Difference	-	-	-	-	-	-	-	8%	7%	-16%	177.34	156.35	-333.69	99	76	-174
				10% Conversion from SOV to HOV2	2099	22	33	238	24	317	60	0.38	0.38	0.19	802	802	406	802	802	819
				25% Conversion from SOV to HOV2	2099	22	33	238	24	317	60	0.32	0.32	0.26	668	668	540	668	668	1087
		PM	NB	Existing Mixed Traffic	1865	11	22	311	18	-	127	0.34	0.32	0.34	634	597	634	741	697	890
				Curb Lane Bus/ BRT/ Right Turns only	1865	11	22	311	18	362	127	0.40	0.40	0.19	752	752	362	752	752	825
				Difference	-	-	-	-	-	-	-	6%	8%	-15%	117.4	154.7	-272.1	11	54	-65
				10% Conversion from SOV to HOV2	1865	11	22	311	18	362	127	0.36	0.36	0.23	676	676	437	676	676	975
				25% Conversion from SOV to HOV2	1865	11	22	311	18	362	127	0.30	0.30	0.29	564	564	550	564	564	1201
	Twinbrook Pkwy to Nicholson Ln	AM	SB	Existing Mixed Traffic	1477	30	3	239	58	-	122	0.34	0.35	0.31	502	517	458	612	630	682
				Curb Lane Bus/ BRT/ Right Turns only	1477	30	3	239	58	330	122	0.39	0.39	0.22	574	574	330	574	574	777
				Difference	-	-	-	-	-	-	-	5%	4%	-9%	71.32	56.55	-127.87	-38	-56	94
				10% Conversion from SOV to HOV2	1477	30	3	239	58	330	122	0.35	0.35	0.26	516	516	387	516	516	891
				25% Conversion from SOV to HOV2	1477	30	3	239	58	330	122	0.29	0.29	0.32	430	430	473	430	430	1063
		PM	NB	Existing Mixed Traffic	1692	24	31	287	41	-	110	0.34	0.32	0.34	575	541	575	682	642	823
				Curb Lane Bus/ BRT/ Right Turns only	1692	24	31	287	41	383	110	0.39	0.39	0.23	655	655	383	655	655	838
				Difference	-	-	-	-	-	-	-	5%	7%	-11%	79.22	113.06	-192.28	-28	13	15
				10% Conversion from SOV to HOV2	1692	24	31	287	41	383	110	0.35	0.35	0.27	589	589	448	589	589	969
				25% Conversion from SOV to HOV2	1692	24	31	287	41	383	110	0.29	0.29	0.32	491	491	547	491	491	1165
	Nicholson Ln to Grosvenor Ln	AM	SB	Existing Mixed Traffic	2366	40	56	338	39	-	105	0.38	0.32	0.30	899	757	710	1021	860	967
				Curb Lane Bus/ BRT/ Right Turns only	2366	40	56	338	39	473	105	0.40	0.40	0.20	947	947	473	947	947	954
				Difference	-	-	-	-	-	-	-	2%	8%	-10%	47.42	189.38	-236.8	-74	87	-13
				10% Conversion from SOV to HOV2	2366	40	56	338	39	473	105	0.36	0.36	0.24	852	852	568	852	852	1143
				25% Conversion from SOV to HOV2	2366	40	56	338	39	473	105	0.30	0.30	0.30	710	710	710	710	710	1427
		PM	NB	Existing Mixed Traffic	1838	27	7	194	10	-	64	0.31	0.33	0.36	570	607	662	626	666	797
				Curb Lane Bus/ BRT/ Right Turns only	1838	27	7	194	10	238	64	0.44	0.44	0.13	800	800	238	800	800	489
				Difference	-	-	-	-	-	-	-	13%	11%	-23%	230.22	193.46	-423.68	174	134	-308
				10% Conversion from SOV to HOV2	1838	27	7	194	10	238	64	0.39	0.39	0.17	720	720	318	720	720	649
				25% Conversion from SOV to HOV2	1838	27	7	194	10	238	64	0.33	0.33	0.24	600	600	438	600	600	889

MD 355 Managed Lanes Feasibility Study					12/18/2015	Calculate Actual Lane Volume per Hour												Lane Person Throughput		
Corridor	Segment	Peak	Direction	Scenario							Lane Utilization Factor			Actual Lane Volume per Hour						
											Left Lane	Center Lane	Right Lane	Left Lane	Center Lane	Right Lane				
					Total Volume	Bus Volumes	Right Turn Volumes	HOV2	HOV3+	Managed Lane Volumes	Bus Ridership									
MD 355	Grosvenor Ln to Cedar Ln	AM	SB	Existing Mixed Traffic	2890	31	3	499	68	-	158	0.36	0.32	0.32	1040	925	925	1257	1117	1278
				Curb Lane Bus/ BRT/ Right Turns only	2890	31	3	499	68	601	158	0.40	0.40	0.21	1145	1145	601	1145	1145	1363
				Difference	-	-	-	-	-	-	-	4%	8%	-11%	104.1	219.7	-323.8	-112	27	85
				10% Conversion from SOV to HOV2	2890	31	3	499	68	601	158	0.36	0.36	0.25	1030	1030	715	1030	1030	1591
				25% Conversion from SOV to HOV2	2890	31	3	499	68	601	158	0.30	0.30	0.31	858	858	887	858	858	1935
		PM	NB	Existing Mixed Traffic	2778	23	5	439	46	-	215	0.42	0.31	0.27	1167	861	750	1378	1017	1106
				Curb Lane Bus/ BRT/ Right Turns only	2778	23	5	439	46	513	215	0.41	0.41	0.18	1133	1133	513	1133	1133	1236
				Difference	-	-	-	-	-	-	-	-1%	10%	-9%	-34.26	271.32	-237.06	-246	115	130
				10% Conversion from SOV to HOV2	2778	23	5	439	46	513	215	0.37	0.37	0.23	1019	1019	626	1019	1019	1463
				25% Conversion from SOV to HOV2	2778	23	5	439	46	513	215	0.31	0.31	0.29	849	849	796	849	849	1802
	Cedar Ln to MD 410	AM	SB	Existing Mixed Traffic	2354	98	342	294	65	-	195	0.35	0.38	0.27	824	895	636	818	888	1168
				Curb Lane Bus/ BRT/ Right Turns only	2354	98	342	294	65	799	195	0.33	0.33	0.34	778	778	799	778	778	1320
				Difference	-	-	-	-	-	-	-	-2%	-5%	7%	-46.4	-117.02	163.42	-41	-111	152
				10% Conversion from SOV to HOV2	2354	98	342	294	65	799	195	0.30	0.30	0.37	700	700	877	700	700	1476
				25% Conversion from SOV to HOV2	2354	98	342	294	65	799	195	0.25	0.25	0.42	583	583	993	583	583	1709
		PM	NB	Existing Mixed Traffic	1170	28	20	176	31	-	286	0.33	0.47	0.20	386	550	234	449	639	578
				Curb Lane Bus/ BRT/ Right Turns only	1170	28	20	176	31	255	286	0.39	0.39	0.22	458	458	255	458	458	751
				Difference	-	-	-	-	-	-	-	6%	-8%	2%	71.4	-92.4	21	9	-182	173
				10% Conversion from SOV to HOV2	1170	28	20	176	31	255	286	0.35	0.35	0.26	412	412	301	412	412	842
				25% Conversion from SOV to HOV2	1170	28	20	176	31	255	286	0.29	0.29	0.32	343	343	369	343	343	979