



MEMORANDUM

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Subject: **Churchmans Crossing Traffic Monitoring**
Fall 2010 Counts

This memo summarizes the latest updates to the Churchmans Crossing traffic monitoring program. Traffic data for the study was collected during October and November 2010. This represents the twelfth time the intersections have been counted since the annual traffic monitoring program began in 2000. The number of intersections studied in 2010 was nine; the same nine locations were studied in 2005-2009.

The intersections studied in 2010 are listed below. The number in parentheses behind the intersection name is the identification number that the intersection has been referenced by in previous years.

- SR 2 / Harmony Road (1)
- SR 7 / SR 4 (Stanton Split) (4)
- SR 4 / SR 7 / J.P. Morgan (5)
- SR 4 / Harmony Road (8)
- SR 273 / Harmony Road (14)
- SR 273 / Chapman Road / Eagle Run Road (15)
- SR 273 / Old Baltimore Pike (16)
- SR 7 / SR 273 (17)
- SR 2 / Red Mill Road / Polly Drummond Hill Road (22)

This update also includes changes to the programs and software packages used to provide intersection LOS and delay results. Previously, Highway Capacity Software HCS+ 5.4 and SYNCHRO Version 7 (Build 773, Rev 8) were used. For this update, the newest version of HCS+ (version 5.5) was used. The same version of SYNCRHO software was used in this report.

Key Findings from 2010 CLV Analysis

- In 2010, one intersection operated at a better level of service in the AM peak than in 2009, and one intersection operated at a better level of service in the PM peak.
- In 2010, two intersections operated at a worse level of service in the AM peak than in 2009, and six intersections operated at a worse level of service in the PM peak.

- The most significant change in level of service from 2009 to 2010 was observed at the SR 4 / Harmony Road intersection where, during the AM peak, the level of service declined from LOS D to LOS F.

Other Considerations in 2010

Last year's Churchman Crossing traffic counts were collected while a bridge deck replacement project on SR 2 (east of Upper Pike Creek Road) was underway. That project was completed before the start of the 2010 traffic counts.

Two projects that may have affected the Fall 2010 Churchmans Crossing volumes were a repaving project on SR 273 that was underway (from Chapman Road to the SR 1 interchange) and construction at the Newark Toll Plaza on I-95 during the collection of traffic data in the study area. On I-95, the reduced capacity at the toll plaza may have resulted in fluctuation in traffic patterns on surrounding roads. For example, the increase in eastbound and westbound traffic on SR 273 at Harmony Road may have been due to traffic attempting to bypass the toll plaza. On SR 273, according to a DelDOT press release, no lanes were closed during the peak hours; however, the rough road conditions present in the work zone may have affected traffic levels on SR 273.

AM Peak Summary

Attached to this memo are turning movement count data tables by intersection with the respective Level of Service (LOS) and volume to capacity ratio computed using the Critical Lane Volume (CLV) analysis method; also included are intersection LOS and delay in seconds computed using HCS+ and SYNCHRO Version 7. A comparison between the AM peak hour Levels of Service (LOS) computed using the three analysis methods for the 2009 and 2010 counts indicate that:

- Four (4) intersections operated at the same LOS as the previous year for all analysis methods:
 - SR 2 / Harmony Road (1)
 - SR 7 / SR 4 (Stanton Split) (4)
 - SR 273 / Chapman Road / Eagle Run Road (15)
 - SR 7 / SR 273 (17)
- Two (2) intersections operated at an improved LOS for at least one analysis methods:
 - SR 4 / SR 7 / J.P. Morgan (5)
 - SR 273 / Harmony Road (14)
- Three (3) intersections operated at a worse LOS for at least one analysis method:
 - SR 4 / Harmony Road (8)
 - SR 273 / Old Baltimore Pike (16)
 - SR 2 / Red Mill Road / Polly Drummond Hill Road (22)

Table 1 shows the Level of Service (LOS) for the Fall 2010 counts for each of the five intersections that experienced a change in LOS during the AM peak; the change from 2009 to 2010 is also shown. The results in Table 1 indicate some slight variation in the level of service calculated using each of the three methods. These slight differences are reasonably expected when comparing multiple analysis methods due to the different approaches and assumptions about capacity found in these methods. The trends and comparisons with prior counts that follow are based primarily on the CLV results:

Traffic trends during the AM peak on SR 2 varied on the corridor. While SR 2 eastbound traffic at Polly Drummond Hill/Red Mill Road increased significantly compared to 2009, resulting in a decline in level of service (from LOS C to LOS E), SR 2 traffic levels were relatively consistent at Harmony Road, where the LOS was unchanged from 2009.

Similar variations in traffic trends in the AM peak were observed on the SR 4/SR 7 corridor. AM peak hour traffic increased on all approaches of the intersection at SR 4 at Harmony Rd, resulting in a significant decline in level of service (from LOS D to LOS F), while traffic levels decreased at SR 4/SR 7/J.P. Morgan,

resulting in an improvement of LOS from LOS B to LOS A. Traffic was nearly unchanged at the intersection of SR 7/SR 4 Stanton Split, where no change in level of service (LOS C) was reported.

AM peak traffic trends on both directions of SR 273 were generally consistent with 2009 levels. No change in level of service was reported at the SR 273 intersections with Harmony Road (LOS E), Chapman Road/Eagle Run Road (LOS D), Old Baltimore Pike (LOS D), and SR 7 (LOS D).

Table 1			
AM Peak Hour			
Intersection Level of Service (LOS) Comparison			
For All Intersections Experiencing a Change in AM Peak LOS			
	Fall 2010 LOS		
	(Change in LOS from 2009 to 2010)		
	CLV	HCS	SYNCHRO
SR 4 / SR 7 / J.P. Morgan (5)	A (+)	C (+)	C ()
SR 4 / Harmony Road (8)	F (--)	E (-)	E (-)
SR 273 / Harmony Road (14)	E ()	C (+)	C (+)
SR 273 / Old Baltimore Pike (16)	D ()	D ()	D (-)
SR 2 / Red Mill Road / Polly Drummond Hill Road (22)	E (--)	E (-)	E (-)
() No change in LOS (+) Improved by 1 LOS (-) Declined by 1 LOS (--) Declined by 2 LOS			

PM Peak Summary

A comparison between the PM peak hour Levels of Service (LOS) for the Fall 2009 and Fall 2010 counts indicates that:

- Two (2) intersections operated at the same LOS as the previous year for all analysis methods:
 - SR 2 / Harmony Road (1)
 - SR 2 / Red Mill Road / Polly Drummond Hill Road (22)
- One (1) intersection operated at a better LOS for one analysis method:
 - SR 273 / Old Baltimore Pike (16)
- Six (6) intersections operated at a worse LOS for at least one analysis method:
 - SR 7 / SR 4 (Stanton Split) (4)
 - SR 4 / SR 7 / J.P. Morgan (5)
 - SR 4 / Harmony Road (8)
 - SR 273 / Harmony Road (14)
 - SR 273 / Chapman Road / Eagle Run Road (15)
 - SR 7 / SR 273 (17)

Table 2 shows the Level of Service (LOS) computed by each analysis method for the Fall 2010 counts for the seven intersections that experienced a change in LOS during the PM peak; the change in LOS from 2009 to 2010 is also shown. The following trends and comparisons with prior counts are based primarily on the CLV results:

Traffic trends during the PM peak on SR 2 indicated minimal changes compared to 2009, resulting in no changes to levels of service at the intersections of SR 2 at Red Mill Road/Polly Drummond Hill Road (LOS E) and SR 2 at Harmony Road (LOS D).

PM peak trends indicated slight increases in traffic on SR 4/SR 7 and its cross-streets along the corridor between Harmony Road and the Stanton Split. Declines in level of service were reported for all study intersections on the SR 4/SR 7 corridor: at Harmony Road (from LOS D to LOS E), at J.P. Morgan (from LOS D to LOS E) and at the Stanton Split (from LOS E to LOS F).

Traffic trends varied along SR 273, where three out of the four intersections on the corridor reported declines in level of service and one intersection reported an improvement in level of service. At the intersection of SR 273 and Harmony Road, traffic on westbound and eastbound SR 273 increased compared to 2009 levels, resulting in a decline in level of service from LOS E to LOS F. At the intersections of SR 273/Chapman Road/Eagle Run Road and SR 7/SR 273, increased levels of traffic on the eastbound approach and cross-streets contributed to a decline in level of service from LOS D to LOS E and from LOS C to LOS D, respectively. At the intersection of SR 273 and Old Baltimore Pike, relatively unchanged levels of traffic on SR 273 and decreased levels of traffic on Old Baltimore Pike resulted in an improvement of level of service from LOS E to LOS D.

Table 2			
PM Peak Hour			
Intersection Level of Service (LOS) Comparison			
For All Intersections Experiencing a Change in PM Peak LOS			
	Fall 2010 LOS (Change in LOS from 2009 to 2010)		
	CLV	HCS	SYNCHRO
SR 7 / SR 4 (Stanton Split) (4)	F (-)	F ()	E ()
SR 4 / SR 7 / J.P. Morgan (5)	E (-)	F(-)	C (-)
SR 4 / Harmony Road (8)	E (-)	E (-)	D ()
SR 273 / Harmony Road (14)	F (-)	E (-)	E (-)
SR 273 / Chapman Road / Eagle Run Road (15)	E (-)	D ()	D ()
SR 273 / Old Baltimore Pike (16)	D (+)	D ()	D ()
SR 7 / SR 273 (17)	D (-)	E (-)	E (-)
() No change in LOS (+) Improved by 1 LOS (-) Declined by 1 LOS			

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Fall 2010 Traffic Summary

NOTE: LOS comparisons based on Critical Lane Volume (CLV) analyses

1. SR 2 / Harmony Road

AM: Level of service remains unchanged at LOS C ($V/C = 0.72$). The intersection has operated at LOS C or D for the past 11 years. Left-turning and right-turning northbound traffic from Harmony Road increased 15% and 14%, respectively, resulting in an overall 14% increase (+88 vehicles) for the approach during the AM peak hour. Eastbound right-turns from SR 2 increased 14% (+58 vehicles). Overall approach volumes on eastbound and westbound SR 2 are generally consistent with 2009 volumes.

PM: Level of service remained constant at LOS D ($V/C = 0.86$ to 0.85). This intersection has operated at LOS D or E for the duration of this traffic monitoring program. Left-turning and right-turning northbound traffic from Harmony Road increased 16% and 9%, respectively, resulting in an overall 12% increase (+132 vehicles) for the approach. Eastbound through traffic on SR 2 decreased 6% (-67 vehicles). Overall traffic volumes on the eastbound and westbound approaches are generally consistent with 2009 volumes.

4. SR 7 / SR 4 (Stanton Split)

AM: Level of service remained the same at LOS C (same $V/C = 0.79$). Except for in 2006 (LOS D), this intersection has operated at LOS C consistently during this traffic monitoring program. Eastbound left-turning traffic from SR 4/SR 7 increased 9% (+80 vehicles). Eastbound through traffic from SR 4/SR 7 decreased 6% (-53 vehicles). Westbound right-turning traffic from SR 4 increased 12% (+28 vehicles). Southbound traffic from SR 7 and westbound through traffic remained relatively constant.

PM: Level of service worsened from LOS E ($V/C = 0.98$) to LOS F ($V/C = 1.09$), marking the fifth year the intersection has been reported to operate at LOS F since 2000. Traffic during the PM peak hour on the southbound approach from SR 7 increased 13% (+209 vehicles). Traffic on the eastbound approach from SR 4-SR 7 increased 14% (+353 vehicles). Traffic on the westbound SR 4 approach remained relatively unchanged.

5. SR 4 / SR 7 / J.P. Morgan

AM: Level of service improved from LOS B to LOS A ($V/C = 0.63$ to 0.58), marking the first time during this traffic monitoring program that the intersection has reported to operate at LOS A. Northbound right-turning traffic from SR 7 increased 24% (+69 vehicles) to its highest reported AM peak hour volume during this traffic monitoring program. However, overall traffic on the northbound and eastbound approaches remained relatively constant, while southbound traffic on SR 7 decreased 7% (-190 vehicles).

PM: Level of service worsened from LOS D ($V/C = 0.86$) to LOS E ($V/C = 0.92$). The intersection has operated at LOS D or E for the past six years. Traffic volume on the northbound and westbound approaches increased both 22% (+365 and +103 vehicles, respectively). Eastbound left-turning traffic from SR 4 decreased 11% (-93 vehicles) and eastbound right-turning traffic increased 12% (+64 vehicles).

8. SR 4 / Harmony Road

AM: Level of service worsened from LOS D ($V/C = 0.82$) to LOS F ($V/C = 1.01$), marking the first time during this traffic monitoring program that the intersection has been reported to operate LOS F. All approaches reported overall traffic volume increases of 15% and over. On Harmony Road, the northbound and southbound approaches reported a 24% (+156 vehicles) and 33% (+357 vehicles)

increase, respectively. On SR 4, the eastbound and westbound approaches reported 23% (+273 vehicles) and 15% (+118 vehicles) increases, respectively.

PM: Level of service worsened from LOS D ($V/C = 0.85$) to LOS E ($V/C = 0.97$). The intersection has operated at LOS D or E during the entire traffic monitoring program. Overall traffic increased for all approaches, with significant PM peak hour increases for southbound Harmony Road (27%, +218 vehicles), eastbound SR 4 (23%, +201 vehicles) and northbound Harmony Road (13%, +72 vehicles). At the westbound approach from SR 4, the left-turning movement reported a 27% increase (+49 vehicles), while the through movement (6%, +75 vehicles) and right-turning movement (-7%, -55 vehicles) reported less significant changes.

14. SR 273 / Harmony Road

AM: Level of service remained unchanged at LOS E ($V/C = 0.93$ to 0.91). Northbound traffic from Gerard Drive during the AM peak hour decreased 52% (-48 vehicles). Southbound traffic from Harmony Road decreased 5% (-27 vehicles). Overall traffic on the eastbound SR 273 approach remained relatively constant. On the westbound SR 273 approach, the left-turning and through movements remained relatively unchanged while the right-turning movement increased 25% (+125 vehicles).

PM: Level of service worsened from LOS E ($V/C = 0.95$) to LOS F ($V/C = 1.09$), marking the fifth year the intersection has been reported to operate at LOS F since 2000. Northbound Gerald Drive and southbound Harmony Road experienced small increases in volume (7%, +6 vehicles; and 2%, +12 vehicles; respectively). Overall traffic on the eastbound approach of SR 273 increased 12% (+249 vehicles). Overall traffic on the westbound approach increased 24% (+482 vehicles).

15. SR 273 / Chapman Road / Eagle Run Road

AM: Level of service remained constant at LOS D ($V/C = 0.89$ to 0.88). The intersection has operated at LOS D or E for the entire duration of the traffic monitoring program. Southbound left-turning traffic from Eagle Run Road increased 265% (+45 vehicles) while the southbound through and right-turning traffic remained relatively unchanged. Overall traffic from the northbound approach of Chapman Road decreased 6% (-39 vehicles). On SR 273, AM peak hour traffic volumes from both eastbound and westbound were relatively unchanged from 2009 levels.

PM: Level of service worsened from LOS D ($V/C = 0.89$) to LOS E ($V/C = 0.94$). The intersection has operated at LOS D or E for the past four years. Traffic increased on the northbound (12%, +120 vehicles), southbound (16%, +34 vehicles), and eastbound (17%, +351 vehicles) approaches, while traffic on the westbound SR 273 approach remained relatively unchanged.

16. SR 273 / Old Baltimore Pike

AM: Level of service remained constant at LOS D ($V/C = 0.88$ to 0.85). The intersection has operated at LOS D for seven of the past nine years. The northbound and southbound through movements experienced significant increases during the AM peak hour (193%, +281 vehicles; 67%, +16 vehicles; respectively), while overall traffic on the SR 273 eastbound and westbound approaches remained relatively unchanged.

PM: Level of service improved from LOS E ($V/C = 0.99$) to LOS D ($V/C = 0.89$). The intersection has operated at LOS D or E for the past six years. Traffic on the northbound approach from Old Baltimore Pike decreased 21% (-187 vehicles). The southbound approach experienced a 5% decrease (-17 vehicles). Traffic on the eastbound and westbound approaches of SR 273 remained relatively constant.

17. **SR 273 / SR 7**

AM: Level of service remained at LOS D ($V/C = 0.84$ to 0.87). The intersection has operated at LOS E or better for the past 10 years. Overall traffic on northbound SR 7 during the AM peak hour increased 16% (+234 vehicles). On southbound SR 7, overall traffic decreased 42% (-48 vehicles). The SR 273 eastbound through movement traffic volumes have decreased to the lowest level observed since the start of this traffic monitoring program (814 vehicles compared to 1,320 vehicles in 2001). Overall traffic on the eastbound approach of SR 273 decreased 5% (-54 vehicles) while on the westbound approach, traffic increased 5% (+51 vehicles).

PM: Level of service worsened from LOS C ($V/C = 0.76$) to LOS D ($V/C = 0.82$). The intersection has operated at LOS D or better in seven of the past nine years. Traffic on the northbound SR 7 approach increased 16% (+121 vehicles). On the southbound approach, traffic increased 21% (+41 vehicles). On SR 273, eastbound traffic increased 5% (+82 vehicles) while westbound traffic remained relatively unchanged.

22. **SR 2 / Red Mill Road / Polly Drummond Hill Road**

AM: Level of service worsened from LOS C ($V/C = 0.81$) to LOS E ($V/C = 0.97$). The intersection previously operated at LOS D or better for three consecutive years. Traffic increased significantly on the eastbound SR 2 approach (24%, +378 vehicles) while smaller traffic increases were reported for the northbound Red Mill Road (10%, +79 vehicles) and westbound SR 2 (7%, +60 vehicles) approaches. Traffic on the southbound Polly Drummond Hill Road approach remained relatively unchanged.

PM: Level of service remained the same at LOS E ($V/C = 0.98$ to 0.99). The intersection has operated at LOS E for five of the past six years. Traffic on the northbound, southbound, and westbound approaches was relatively unchanged, while PM peak hour traffic on the eastbound SR 2 approach increased 17% (+290 vehicles).

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Churchmans Crossing Volume and Level of Service Comparison - AM Peak Hour

NOTE:

Volumes shown in the following table represent the peak hour volumes at each intersection (e.g., they are not the peak volumes of an entire corridor). Therefore, the peak hours may vary among intersections, even between adjacent intersections. For example, the peak hour at SR 2 / Harmony Road was found to occur between 4:30 and 5:30 PM. However, the nearby intersection at SR 4 / Harmony Road was found to occur between 4:45 and 5:45 PM. As a result, the volumes in the following table may not balance between intersections.

SR 2 / HARMONY ROAD

1

		1993 Count	1997 Count	2000 Count	2001 (Feb) Count	2001 (Oct) Count	2002 (Oct) Count	2003 (Oct) Count	2004 (Oct) Count	2005 (Oct) Count	2006 (Oct) Count	2007 (Oct) Count	2008 (Oct) Count	2009 (Oct) Count	2010 (Oct) Count	Notes
NB Harmony	L T	341	518	253	262	220	279	244	259	230	234	228	224	195	225	
	R	310	607	419	321	417	545	456	547	448	524	676	507	422	480	
SB	L T															
	R															
EB SR 2	U T	1077	1673	1105	963	1,010	1,155	1,125	1,063	1,081	1,186	1,141	1,013	941	869	
	R	689	587	507	462	355	682	426	432	355	417	415	460	414	472	
WB SR 2	L T	506	536	723	604	537	651	618	616	548	572	569	503	520	546	
	R	863	985	956	902	929	883	930	981	778	897	877	880	812	840	
CLV LOS v/c		D 0.99	F 1.11	E 0.93	C 0.81	C 0.77	D 0.90	D 0.86	D 0.85	C 0.80	D 0.85	D 0.83	C 0.75	C 0.72	C 0.72	
HCS LOS Delay		N/A N/A	D 47	C 34	C 26	B 18	D 38	C 24	B 20	C 21	C 24	B 20	B 18	B 17	B 19	
Synchro LOS Delay		N/A N/A	D 40	C 21	B 15	B 14	B 19	B 15	B 15	B 15	B 14	B 17	B 16	B 16	B 17	

*SR 2 intersections analyzed as pretimed in SYNCHRO due to large distance between signals.

SR 2 / DELAWARE PARK BOULEVARD

2

		1993 Count	1997 Count	2000 Count	2001 (Feb) Count	2001 (Oct) Count	2002 (Oct) Count	2003 (Oct) Count	2004 (Oct) Count	2005 (Oct) Count	2006 (Oct) Count	2007 (Nov) Count	2008 (Oct) Count	2009 (Oct) Count	2010 (Oct) Count	Notes
NB Del Park	L T	-	230	223	190	229	227	230	197							Right Turns into gas station were not counted Fall 2002. Shared NBL was added before 10/02 and NB/SB approaches are split phased. Intersection not counted in Fall 2005.
	R	-	59	90	80	55	88	72	59							
SB Gas	L T	-	15	23	13	7	12	24	16							
	R	-	7	9	11	6	9	3	9							
EB SR 2	L T	-	1563	1731	1631	1,599	1,543	1,621	1,641							
	R	-	118	145	191	257	210	195	195							
WB SR 2	L T	-	79	93	123	130	163	170	129							
	R	-	1073	1130	1165	1,201	1,201	1,134	1,323							
CLV LOS v/c		N/A N/A	B 0.69	C 0.76	C 0.77	C 0.78	C 0.73	C 0.76	C 0.73							
HCS LOS Delay		N/A N/A	B 18	B 18	C 21	B 17	C 21	C 20	C 21							
Synchro LOS Delay		N/A N/A	B 16	B 16	B 18	B 15	B 18	B 16	B 16							

Churchmans Crossing Volume and Level of Service Comparison - AM Peak Hour

SR 7 / SR 2

3

		1993 Count	1997 Count	2000 Count	2001 (Feb) Count	2001 (Oct) Count	2002 (Oct) Count	2003 (Oct) Count	2004 (Oct) Count	2005 (Oct) Count	2006 (Oct) Count	2007 (Nov) Count	2008 (Oct) Count	2009 (Oct) Count	2010 (Oct) Count	Notes
NB SR 7	L	175	193	181	157	212	164	291	150							Before 10/02, all free rights, except for the WBR were removed to accommodate 2nd EB & WB left turn lanes on SR 2. Intersection not counted in Fall 2005.
	T	540	551	687	690	707	711	602	656							
	R	308	347	427	396	396	381	518	418							
SB SR 7	L	754	622	700	527	617	644	597	568							
	T	1838	1070	1137	1122	1,049	1,158	1,156	1,097							
	R	48	57	49	65	70	43	54	47							
	L	115	98	154	133	138	129	112	122							
EB SR 2	T	1341	1402	1601	1268	1,384	1,508	1,571	1,355							
	R	198	191	153	189	187	139	180	147							
WB SR 2	L	297	290	312	290	403	298	374	393							
	T	1289	721	832	656	812	863	835	749							
	R	207	251	266	265	285	239	264	255							
	CLV LOS v/c	F 1.21	E 0.97	F 1.10	E 0.93	F 1.07	E 0.98	F 1.04	E 0.93							
HCS LOS Delay	N/A	E 55	E 78	E 56	E 77	E 56	E 69	E 66								
Synchro LOS Delay	N/A	D 48	E 69	D 45	E 66	D 47	E 58	D 53								

SR 7 / SR 4 (Stanton Split)

4

		1993 Count	1997 Count	2000 Count	2001 (Feb) Count	2001 (Oct) Count	2002 (Oct) Count	2003 (Oct) Count	2004 (Oct) Count	2005 (Oct) Count	2006 (Oct) Count	2007 (Nov) Count	2008 (Oct) Count	2009 (Oct) Count	2010 (Oct) Count	Notes
NB Mill Road	L	-														
	T	-														
	R	-		5		5	4	5	6	3	4	5	7	4	4	
SB SR 7	L	-	407	397	355	359	256	348	361	310	314	327	301	316	306	
	T	-		1		1		1	2	0	0	0	1	2	0	
	R	-	1091	1057	1178	1,154	1,123	1,213	1,247	1,218	1,326	1,280	1,252	1,363	1,360	
	L	-	835	956	915	932	912	1,015	966	1,006	991	953	945	873	953	
EB SR 4/SR 7	T	-	948	1001	1085	1,158	1,164	1,339	1,148	1,287	1,256	1,176	1,136	900	847	
	R	-		4		2	2	0	2	1	2	1	2	1	0	
WB SR 4	L	-														
	T	-	822	751	810	887	997	848	916	891	1,002	909	909	803	802	
	R	-	243	302	282	349	239	259	238	245	271	218	211	234	262	
	CLV LOS v/c	N/A	C 0.72	C 0.74	C 0.73	C 0.78	C 0.78	C 0.80	C 0.81	C 0.79	D 0.84	C 0.80	C 0.79	C 0.79	C 0.79	
HCS LOS Delay	N/A	C 27	C 28	C 27	C 29	D 36	C 31	C 32	C 30	C 34	C 29	C 28	C 26	C 29		
Synchro LOS Delay	N/A	C 38	C 34	C 34	D 36	D 39	D 38	D 38	D 37	D 40	D 36	D 39	D 39	D 40		

Churchmans Crossing Volume and Level of Service Comparison - AM Peak Hour

SR 4 / SR 7 / J.P. MORGAN

5

		1993 Count	1997 Count	2000 Count	2001 (Feb) Count	2001 (Oct) Count	2002 (Oct) Count	2003 (Oct) Count	2004 (Oct) Count	2005 (Oct) Count	2006 (Oct) Count	2007 (Nov) Count	2008(Oct) Count	2009 (Oct) Count	2010 (Oct) Count	Notes
NB SR 7	L	19	41	78	114	156	170	279	271	186	227	225	237	267	236	Only two lanes per direction open on NB and SB SR 7 during February 2000 count. NB and EB left turn lanes added prior to 2004 counts.
	T	1421	1492	1395	1672	1,728	1,671	2,380	1,935	1,716	1,742	1,998	1,549	1,507	1,460	
	R	119	125	70	137	167	177	105	227	226	275	200	231	284	353	
SB SR 7	L	126	174	213	174	201	202	159	192	212	183	180	189	203	189	
	T	1563	1473	1242	1261	1,512	1,450	1,538	1,550	1,400	1,444	1,583	1,684	1,667	1,551	
	R	441	595	693	708	754	690	782	887	777	561	767	816	776	716	
EB SR 4	L	323	369	437	424	402	535	537	507	550	575	474	529	384	346	
	T	57	113	145	92	117	121	92	127	183	135	113	118	97	120	
	R	28	46	53	26	31	38	51	43	53	64	64	83	54	71	
WB J.P. Morgan	L	23	32	15	9	11	8	6	11	9	11	11	9	11	5	
	T	8	7	6	11	11	7	10	20	13	16	4	9	10	5	
	R	8	8	5	6	14	5	10	14	9	9	0	3	4	1	
CLV LOS v/c		A 0.58	B 0.63	C 0.78	B 0.69	B 0.71	C 0.75	D 0.90	C 0.75	C 0.72	C 0.72	C 0.75	B 0.66	B 0.63	A 0.58	
HCS LOS Delay		N/A N/A	C 23	C 26	C 26	C 25	C 35	D 42	C 30	D 38	D 38	D 41	D 35	D 35	C 34	
Synchro LOS Delay		N/A N/A	C 24	C 26	C 24	C 25	C 30	D 37	C 24	C 25	C 23	C 23	C 24	C 23	C 21	

SR 4 / CHURCHMANS ROAD / DELAWARE PARK

6

		1993 Count	1997 Count	2000 Count	2001 (Feb) Count	2001 (Oct) Count	2002 (Oct) Count	2003 (Oct) Count	2004 (Oct) Count	2005 (Oct) Count	2006 (Oct) Count	2007 (Nov) Count	2008(Oct) Count	2009 (Oct) Count	2010 (Oct) Count	Notes
NB Churchmans	L	-	550	543	546	706	736	800	840							Intersection not counted in Fall 2005.
	T	-	47	23	41	35	18	45	49							
	R	-	14	38	34	46	42	51	52							
SB Del Park	L	-	5	5	7	19	4	4	6							
	T	-	11	7	18	16	15	18	22							
	R	-	6	8	16	4	24	10	16							
EB SR 4	L	-	37	30	51	35	73	51	61							
	T	-	440	575	505	552	845	688	725							
	R	-	595	704	613	613	871	715	661							
WB SR 4	L	-	71	97	100	97	88	92	83							
	T	-	451	467	529	563	649	707	747							
	R	-	4	10	10	7	10	18	16							
CLV LOS v/c		N/A N/A	A 0.43	A 0.48	A 0.47	A 0.52	A 0.62	A 0.60	A 0.62							
HCS LOS Delay		N/A N/A	C 22	C 22	C 23	C 24	C 25	C 29	C 33							
Synchro LOS Delay		N/A N/A	C 22	C 21	C 24	C 23	C 21	C 25	C 26							

Churchmans Crossing Volume and
Level of Service Comparison - AM Peak Hour

SR 4 / CHRISTIANA HOSPITAL / HYGIEIA DRIVE

7

		1993 Count	1997 Count	2000 Count	2001 (Feb) Count	2001 (Oct) Count	2002 (Oct) Count	2003 (Oct) Count	2004 (Oct) Count	2005 (Oct) Count	2006 (Oct) Count	2007 (Nov) Count	2008 (Oct) Count	2009 (Oct) Count	2010 (Oct) Count	Notes
NB Hospital	L	-	-	75	73	75	77	95	148							Intersection not counted in Fall 2005.
	T	-	-	3	10	12	7	17								
	R	-	-	32	25	33	35	53	58							
SB Hygeia	L	-	-	28	33	47	45	50	44							
	T	-	-	5	4	9	11	12	2							
	R	-	-	18	22	25	38	35	28							
EB SR 4	L	-	-	183	125	197	215	229	203							
	T	-	-	1249	836	1,140	1,376	1,213	1,301							
WB SR 4	R	-	-	336	219	344	474	488	411							
	L	-	-	110	191	154	157	165	136							
WB SR 4	T	-	-	706	1098	944	1,009	994	1,198							
	R	-	-	202	369	239	244	248	264							
CLV LOS v/c		N/A	N/A	A	A	A	B	A	B							
		N/A	N/A	0.55	0.50	0.54	0.63	0.59	0.63							
HCS LOS		N/A	N/A	N/A	N/A	N/A	N/A	B	B							
Delay		N/A	N/A	N/A	N/A	N/A	N/A	11	14							
Synchro LOS		N/A	N/A	N/A	N/A	N/A	N/A	A	B							
Delay		N/A	N/A	N/A	N/A	N/A	N/A	10	14							

SR 4 / HARMONY ROAD

8

		1993 Count	1997 Count	2000 Count	2001 (Feb) Count	2001 (Oct) Count	2002 (Oct) Count	2003 (Oct) Count	2004 (Oct) Count	2005 (Oct) Count	2006 (Oct) Count	2007 (Nov) Count	2008 (Oct) Count	2009 (Oct) Count	2010 (Oct) Count	Notes
NB Harmony	L	-	145	118	112	114	90	135	112	99	123	77	97	83	114	
	T	-	315	310	275	235	261	270	277	262	290	270	275	232	241	
	R	-	377	384	316	282	302	302	433	374	279	371	369	338	323	
SB Harmony	L	-	654	668	684	705	774	785	704	775	755	838	792	734	934	
	T	-	553	382	346	250	305	279	274	337	295	269	287	238	417	
WB SR 4	R	-	158	162	174	223	219	191	154	156	139	88	102	106	84	
	L	-	148	168	121	186	231	220	214	233	220	213	201	148	209	
EB SR 4	T	-	731	1171	1128	1,099	1,225	1,252	1,330	1,214	1,375	1,311	1,255	1,014	1,227	
	R	-	110	97	96	66	66	50	83	67	62	45	65	47	46	
WB SR 4	L	-	64	81	95	52	78	83	79	73	84	75	73	78	139	
	T	-	332	391	531	550	587	527	638	588	582	453	493	450	481	
WB SR 4	R	-	301	215	197	272	290	231	351	284	282	203	242	248	274	
	CLV LOS v/c		N/A	C	D	D	D	E	E	E	E	E	E	E	D	
		N/A	0.73	0.90	0.88	0.82	0.93	0.95	0.94	0.92	0.99	0.98	0.95	0.82	1.01	
HCS LOS		N/A	D	E	D	D	E	E	E	E	E	D	D	D	E	
Delay		N/A	54	61	55	51	66	68	72	61	80	54	54	45	60	
Synchro LOS		N/A	D	D	D	D	D	D	D	D	D	D	D	D	E	
Delay		N/A	37	47	42	41	51	44	45	42	53	50	46	38	55	

Churchmans Crossing Volume and
Level of Service Comparison - AM Peak Hour

CHURCHMANS ROAD / CONTINENTAL DRIVE

9

		1993 Count	1997 Count	2000 Count	2001 (Feb) Count	2001 (Oct) Count	2002 (Oct) Count	2003 (Oct) Count	2004 (Oct) Count	2005 (Oct) Count	2006 (Oct) Count	2007 (Nov) Count	2008 (Oct) Count	2009 (Oct) Count	2010 (Oct) Count	Notes
NB	L	-	-	16	29	31	28									Churchmans Road under construction in 2000; finished by 2001 count. Before the 10/02 count, left turn lanes were added to NB & SB Continental Dr. / Churchmans Place. Intersection was not counted in Fall 2003.
	T	-	-	14	6	10	4									
Continental	R	-	-	159	128	161	68									
	L	-	-	44	41	31	38									
SB	T	-	-	31	103	86	68									
	R	-	-	10	0	8	8									
Churchmans Place	L	-	-	37	5	7	6									
	T	-	-	566	650	662	556									
EB	R	-	-	60	146	107	95									
	L	-	-	510	595	611	467									
WB	T	-	-	996	1277	1,319	1,402									
	R	-	-	66	41	31	46									
Churchmans																
CLV LOS		N/A	N/A	A	A	A	A									
v/c		N/A	N/A	0.42	0.50	0.51	0.42									

SR 7 / CHURCHMANS ROAD (Ramp A)

10

		1993 Count	1997 Count	2000 Count	2001 (Feb) Count	2001 (Oct) Count	2002 (Oct) Count	2003 (Oct) Count	2004 (Oct) Count	2005 (Oct) Count	2006 (Oct) Count	2007 (Nov) Count	2008 (Oct) Count	2009 (Oct) Count	2010 (Oct) Count	Notes
NB	L	-	581													Churchmans Road under construction in 2000; finished by 2001 count. Intersection was not counted in Fall 2003.
	T	-	1441													
SR 7	R	-	192													
	L	-	371	149	230	169	180									
SB	T	-	1084	379	406	414	522									
	R	-	103	95	69	113	96									
EB	L	-	130													
	T	-	392	332	382	285	344									
Churchmans	R	-	573	437	540	442	446									
	L	-	326	231	232	294	252									
WB	T	-	1170	1572	1856	1,942	1,839									
	R	-	653													
Churchmans																
CLV LOS		N/A	F	D	B	B	B									
v/c		N/A	1.09	0.85	0.72	0.63	0.64									

Churchmans Crossing Volume and
Level of Service Comparison - AM Peak Hour

SR 7 / CHURCHMANS ROAD (Ramp B/C)

11

		1993 Count	1997 Count	2000 Count	2001 (Feb) Count	2001 (Oct) Count	2002 (Oct) Count	2003 (Oct) Count	2004 (Oct) Count	2005 (Oct) Count	2006 (Oct) Count	2007 (Nov) Count	2008 (Oct) Count	2009 (Oct) Count	2010 (Oct) Count	Notes
NB SR 7	L	-	581													Churchmans Road under construction in 2000; finished by 2001 count. Intersection was not counted in Fall 2003.
	T	-	1441													
	R	-	192													
SB SR 7	L	-	371	147	178	163	153									
	T	-	1084	11	16	24	18									
	R	-	103	509	658	669	609									
EB Churchmans	L	-	130	24	34	44	29									
	T	-	392	456	548	462	448									
	R	-	573	14	18	26	18									
WB Churchmans	L	-	326	33	26	31	32									
	T	-	1170	1654	1489	1,492	1,510									
	R	-	653	153	316	368	331									
CLV LOS v/c		N/A N/A	F 1.09	D 0.89	C 0.78	C 0.79	C 0.76									

CHURCHMANS ROAD / DEL TECH

12

		1993 Count	1997 Count	2000 Count	2001 (Feb) Count	2001 (Oct) Count	2002 (Oct) Count	2003 (Oct) Count	2004 (Oct) Count	2005 (Oct) Count	2006 (Oct) Count	2007 (Nov) Count	2008 (Oct) Count	2009 (Oct) Count	2010 (Oct) Count	Notes
NB Driveway	L	-	-	64	73	109	75									Churchmans Road under construction in 2000; finished by 2001 count. Intersection was not counted in Fall 2003.
	T	-	-	6	12	11	46									
	R	-	-	28	20	21	23									
SB Del Tech	L	-	-	112	77	65	26									
	T	-	-	-	-	-	-									
	R	-	-	22	21	6	31									
EB Churchmans	L	-	-	98	159	80	150									
	T	-	-	494	512	458	430									
	R	-	-	11	24	10	27									
WB Churchmans	L	-	-	-	-	-	-									
	T	-	-	1700	1687	1,732	1,769									
	R	-	-	469	593	379	435									
CLV LOS v/c		N/A N/A	N/A N/A	C 0.74	A 0.60	A 0.57	A 0.59									

Churchmans Crossing Volume and Level of Service Comparison - AM Peak Hour

CHURCHMANS ROAD / COUNTRY CLUB DRIVE

13

		1993 Count	1998 Count	2000 Count	2001 (Feb) Count	2001 (Oct) Count	2002 (Oct) Count	2003 (Oct) Count	2004 (Oct) Count	2005 (Oct) Count	2006 (Oct) Count	2007 (Nov) Count	2008(Oct) Count	2009 (Oct) Count	2010 (Oct) Count	Notes
NB c.c.	L	-	-	190	220	223	190									Intersection was not counted in Fall 2003.
	T	-	-													
	R	-	-	108	78	67	75									
SB	L	-	-													
	T	-	-													
	R	-	-													
EB Churchmans	L	-	-													
	T	-	-	662	704	600	554									
	R	-	-	44	40	48	52									
WB Churchmans	L	-	-	22	20	14	17									
	T	-	-	405	492	489	530									
	R	-	-													
CLV LOS v/c		N/A	N/A	A	A	A	A									
		N/A	N/A	0.55	0.59	0.52	0.48									

SR 273 / HARMONY ROAD

14

		1993 Count	1998 Count	2000 Count	2001 (Feb) Count	2001 (Oct) Count	2002 (Oct) Count	2003 (Oct) Count	2004 (Oct) Count	2005 (Oct) Count	2006 (Oct) Count	2007 (Nov) Count	2008(Oct) Count	2009 (Oct) Count	2010 (Oct) Count	Notes
NB Gerald Drive	L	-	18	24	21	27	23	22		19	21	10	14	23	10	Before 10/02, an exclusive WB right turn lane was added. Intersection was not counted in 10/04.
	T	-	30	23	18	18	17	18		22	26	25	53	19	14	
	R	-	160	157	102	166	132	160		142	118	103	102	98	68	
SB Harmony	L	-	682	665	547	392	450	400		455	461	367	449	457	436	
	T	-	6	17	15	7	9	14		9	13	8	15	8	15	
	R	-	18	15	38	18	17	13		21	26	28	28	29	16	
EB SR 273	L	-	26	30	22	9	62	69		40	42	51	27	62	41	
	T	-	1530	1675	1598	1,889	1,695	1,898		1,945	2,063	1,721	1,790	1,958	1,998	
	R	-	14	30	30	22	26	31		66	41	31	38	31	9	
WB SR 273	L	-	34	27	30	29	27	38		31	21	22	28	30	26	
	T	-	1624	1905	1899	2,007	1,912	2,048		1,945	1,892	1,815	1,792	1,755	1,780	
	R	-	925	786	637	575	622	700		661	555	639	643	501	628	
CLV LOS v/c		N/A	E	F	E	E	E	F		E	E	D	D	E	E	
		N/A	0.95	1.04	0.95	0.95	0.96	1.00		0.96	0.98	0.86	0.89	0.93	0.91	
HCS LOS Delay		N/A	E	E	D	E	D	E		E	E	C	D	D	C	
		N/A	56	71	49	58	50	72		67	65	31	38	38	33	
Synchro LOS Delay		N/A	D	E	D	D	D	E		E	E	C	D	D	C	
		N/A	45	61	43	52	45	65		62	63	31	37	38	32	

Churchmans Crossing Volume and
Level of Service Comparison - AM Peak Hour

SR 273 / CHAPMAN ROAD / EAGLE RUN ROAD

15

		1993 Count	1997 Count	2000 Count	2001 (Feb) Count	2001 (Oct) Count	2002 (Oct) Count	2003 (Oct) Count	2004 (Oct) Count	2005 (Oct) Count	2006 (Oct) Count	2007 (Nov) Count	2008 (Oct) Count	2009 (Oct) Count	2010 (Oct) Count	Notes
NB Chapman	L	-	10	490	563	498	578	566		543	591	528	462	530	513	NBL in 1997 was affected by something unknown. No count performed in 2004 due to ongoing construction at I-95 / SR 273 Interchange. Interchange was not counted in 10/04.
	T	-	2	21	22	16	42	36		28	41	39	35	31	29	
	R	-	160	187	206	218	188	179		180	220	133	169	134	114	
SB Eagle Run	L	-	26	34	29	51	38	43		35	39	34	25	17	62	
	T	-	23	16	20	35	28	22		11	18	35	17	19	15	
	R	-	83	61	81	56	81	86		75	65	79	100	76	72	
EB SR 273	L	-	232	195	267	147	242	261		182	166	193	172	167	189	
	T	-	775	893	898	1,260	1,002	1,212		948	929	892	838	825	767	
	R	-	859	773	910	711	701	555		735	594	598	632	524	569	
WB SR 273	L	-	358	344	326	302	326	283		295	247	248	216	202	247	
	T	-	1655	1878	1862	1,688	1,763	1,916		1,887	2,026	1,726	1,726	1,786	1,759	
	R	-	91	92	108	89	121	109		96	122	76	74	66	77	
CLV LOS v/c		N/A N/A	N/A N/A	E 0.91	E 0.96	D 0.84	E 0.93	E 0.98		E 0.93	E 0.99	D 0.89	D 0.84	D 0.89	D 0.88	
HCS LOS Delay		N/A N/A	C 33	E 70	F 118	D 46	E 75	F 87		E 69	F 82	D 40	D 37	D 44	D 39	
Synchro LOS Delay		N/A N/A	B 20	D 44	D 53	D 36	D 46	E 59		D 55	E 65	C 34	C 34	D 40	D 36	

SR 273 / OLD BALTIMORE PIKE

16

		1993 Count	1998 Count	2000 Count	2001 (Feb) Count	2001 (Oct) Count	2002 (Oct) Count	2003 (Oct) Count	2004 (Oct) Count	2005 (Oct) Count	2006 (Oct) Count	2007 (Nov) Count	2008 (Oct) Count	2009 (Oct) Count	2010 (Oct) Count	Notes
NB Old Balt	L	-	788	875	868	638	802	780	699	746	939	656	846	1,018	836	Main Street was closed 10/01. Intersection operates as split phased in the northbound/southbound directions during the 2002 counts.
	T	-	127	123	142	187	169	142	160	157	173	110	142	145	426	
	R	-	441	442	614	358	476	460	530	438	386	382	403	337	361	
SB Old Balt	L	-	9	13	52	14	12	13	18	14	12	6	12	8	7	
	T	-	35	21	22	43	36	35	34	43	43	40	40	24	40	
	R	-	63	55	10	156	39	65	53	43	67	59	43	59	59	
EB SR 273	L	-	25	16	8	282	30	42	47	34	58	70	66	37	32	
	T	-	1380	842	882	1,056	848	918	951	850	792	784	742	685	663	
	R	-	168	155	219	192	199	213	181	182	199	245	181	151	168	
WB SR 273	L	-	173	192	215	157	230	171	239	164	155	160	153	181	134	
	T	-	1333	1351	835	1,215	1,331	1,464	1,481	1,476	1,422	1,231	1,217	1,223	1,320	
	R	-	8	25	55	23	15	15	11	13	20	8	8	5	7	
CLV LOS v/c		N/A N/A	D 0.90	D 0.82	D 0.88	E 0.96	D 0.82	D 0.88	D 0.86	D 0.86	E 0.95	C 0.78	D 0.83	D 0.88	D 0.85	
HCS LOS Delay		N/A N/A	D 47	D 48	E 67	E 73	E 55	E 59	E 65	D 50	E 62	C 30	D 37	D 37	D 40	
Synchro LOS Delay		N/A N/A	D 43	D 48	D 39	D 52	D 51	D 43	D 40	D 42	D 47	C 27	C 33	C 34	D 36	

Churchmans Crossing Volume and Level of Service Comparison - AM Peak Hour

SR 7 / SR 273

17

		1993 Count	1997 Count	2000 Count	2001 (Feb) Count	2001 (Oct) Count	2002 (Oct) Count	2003 (Oct) Count	2004 (Oct) Count	2005 (Oct) Count	2006 (Oct) Count	2007 (Nov) Count	2008(Oct) Count	2009 (Oct) Count	2010 (Oct) Count	Notes
NB SR 7	L	500	736	558	790	586	659	657	637	661	609	656	613	549	651	An additional WBL was added to the intersection prior to the 2001 count.
	T	48	66	47	126	146	111	130	106	161	180	149	131	98	132	
	R	698	885	1064	1112	830	859	718	575	895	718	913	985	828	926	
SB SR 7	L	39	47	43	52	78	37	57	36	57	51	35	55	55	33	
	T	20	22	19	29	43	20	29	18	21	25	16	29	45	19	
R	3	7	13	9	14	8	11	10	10	4	5	6	14	13	13	
EB SR 273	L	12	15	11	8	16	7	12	10	7	6	10	8	10	10	
	T	822	747	1309	1320	1,120	1,068	1,112	1,194	1,090	971	1,118	898	874	814	
R	190	200	268	188	211	241	229	163	184	183	273	212	194	200		
WB SR 273	L	157	221	204	229	175	239	247	214	251	204	209	197	217	242	
	T	499	767	961	853	836	908	979	1,018	1,005	892	764	848	818	824	
R	38	58	45	92	92	25	58	58	58	74	70	37	77	70	90	
CLV LOS v/c		C 0.73	D 0.83	F 1.13	F 1.19	E 0.93	E 0.92	D 0.85	C 0.78	E 0.95	C 0.80	E 0.97	E 0.95	D 0.84	D 0.87	
HCS LOS Delay		N/A	F 180	F 130	F 237	F 117	F 144	F 118	F 92	F 165	F 121	F 102	F 105	F 82	F 97	
Synchro LOS Delay		N/A	F 170	F 138	F 162	F 126	F 139	F 122	F 103	F 138	F 124	F 92	F 111	F 90	F 104	

SR 273 / SB SR 1 RAMP

18

		1993 Count	1997 Count	2000 Count	2001 (Feb) Count	2001 (Oct) Count	2002 (Oct) Count	2003 (Oct) Count	2004 (Oct) Count	2005 (Oct) Count	2006 (Oct) Count	2007 (Nov) Count	2008(Oct) Count	2009 (Oct) Count	2010 (Oct) Count	Notes
NB	L	-	-					-	-							Intersection was not counted in Fall 2005.
	T	-	-					-	-							
	R	-	-					-	-							
SB SR 1	L	-	-	119	129	180	146	153	165							
	T	-	-	1	157	156	170	-	-							
R	-	-	116	157	156	170	170	199	199							
EB SR 273	L	-	-					-	-							
	T	-	-	2259	1132	1,811	1,699	1,774	1,988							
R	-	-	157	130	153	179	157	237	237							
WB SR 273	L	-	-	76	67	92	64	71	84							
	T	-	-	1134	1279	1,013	1,066	1,075	1,105							
R	-	-					-	-								
CLV LOS v/c		N/A	N/A	D 0.90	A 0.54	C 0.79	C 0.73	C 0.76	D 0.86							
HCS LOS Delay		N/A	N/A	N/A	N/A	N/A	N/A	B 12	B 14							
Synchro LOS Delay		N/A	N/A	N/A	N/A	N/A	N/A	A 9	A 9							

Churchmans Crossing Volume and
Level of Service Comparison - AM Peak Hour

SR 273 / NB SR 1 RAMP

19

		1993 Count	1997 Count	2000 Count	2001 (Feb) Count	2001 (Oct) Count	2002 (Oct) Count	2003 (Oct) Count	2004 (Oct) Count	2005 (Oct) Count	2006 (Oct) Count	2007 (Nov) Count	2008 (Oct) Count	2009 (Oct) Count	2010 (Oct) Count	Notes	
NB SR 1	L	-	-	294	351	388	368	372	373							Intersection was not counted in Fall 2005.	
	T	-	-					-	-								
	R	-	-	280	390	353	362	345	370								
SB	L	-	-					-	-								
	T	-	-					-	-								
	R	-	-					-	-								
EB SR 273	L	-	-	615	542	570	597	546	524								
	T	-	-	1763	1306	1,351	1,279	1,403	1,633								
	R	-	-					-	-								
WB SR 273	L	-	-					-	-								
	T	-	-	916	758	780	813	781	779								
	R	-	-	340	397	375	341	340	370								
CLV LOS v/c		N/A N/A	N/A N/A	D 0.88	D 0.84	D 0.87	D 0.88	D 0.84	D 0.83								
HCS LOS Delay		N/A N/A	N/A N/A	N/A N/A	N/A N/A	N/A N/A	N/A N/A	D 37	C 33								
Synchro LOS Delay		N/A N/A	N/A N/A	N/A N/A	N/A N/A	N/A N/A	N/A N/A	C 29	C 27								

SB SR 1 RAMPS / ROAD A

20

		1993 Count	1997 Count	2000 Count	2001 (Feb) Count	2001 (Oct) Count	2002 (Oct) Count	2003 (Oct) Count	2004 (Oct) Count	2005 (Oct) Count	2006 (Oct) Count	2007 (Nov) Count	2008 (Oct) Count	2009 (Oct) Count	2010 (Oct) Count	Notes	
NB	L	-	153	104	68	58	70									Intersection was not counted in Fall 2003.	
	T	-															
	R	-	2	12	6	12	19										
SB SR 1	L	-															
	T	-															
	R	-															
EB Road A	L	-															
	T	-	178	192	342	277	213										
	R	-	23	26	7	14	15										
WB Road A	L	-	13	26	25	28	31										
	T	-	76	81	36	37	28										
	R	-															
CLV LOS v/c		N/A N/A	A 0.22	A 0.20	A 0.27	A 0.23	A 0.20										

Churchmans Crossing Volume and
Level of Service Comparison - AM Peak Hour

NB SR 1 RAMPS / ROAD A

21

		1993 Count	1997 Count	2000 Count	2001 (Feb) Count	2001 (Oct) Count	2002 (Oct) Count	2003 (Oct) Count	2004 (Oct) Count	2005 (Oct) Count	2006 (Oct) Count	2007 (Nov) Count	2008 (Oct) Count	2009 (Oct) Count	2010 (Oct) Count	Notes
NB SR 1	L	-	59	45	34	25	14									Intersection was not counted in Fall 2003.
	T	-	97	334	624	770	540									
	R	-	-	-	-	-	-	-								
SB Mall	L	-	-	-	-	-	-									
	T	-	9	13	16	21	17									
	R	-	34	27	29	29	29									
EB Road A	L	-	45	99	181	159	134									
	T	-	-	-	-	-	-									
	R	-	124	108	167	137	122									
WB	L	-	-	-	-	-	-									
	T	-	-	-	-	-	-									
	R	-	-	-	-	-	-									
CLV LOS		N/A	A	A	A	A	A									
v/c		N/A	0.11	0.27	0.50	0.58	0.43									

SR 2 / RED MILL ROAD / POLLY DRUMMOND HILL ROAD

22

		1993 Count	1997 Count	2000 Count	2001 (Feb) Count	2001 (Oct) Count	2002 (Oct) Count	2003 (Oct) Count	2004 (Oct) Count	2005 (Oct) Count	2006 (Oct) Count	2007 (Nov) Count	2008 (Oct) Count	2009 (Oct) Count	2010 (Oct) Count	Notes
NB Red Mill	L	-	-	335	384	323	357	496	412	335	343	317	355	343	401	
	T	-	-	308	357	319	309	298	319	289	309	325	313	316	299	
	R	-	-	139	161	107	104	144	117	135	126	131	93	101	139	
SB Polly	L	-	-	278	328	233	297	364	250	214	266	258	251	250	274	
	T	-	-	481	514	579	409	480	479	443	577	428	489	437	482	
	R	-	-	376	333	247	269	264	281	266	263	337	320	334	309	
EB SR 2	L	-	-	283	250	491	239	337	291	232	301	280	251	234	324	
	T	-	-	1115	931	1,253	1,020	1,095	1,109	1,012	1,223	1,132	966	976	1,256	
	R	-	-	396	417	436	406	358	424	367	306	363	433	345	353	
WB SR 2	L	-	-	199	173	204	136	180	157	115	158	126	106	104	135	
	T	-	-	951	906	944	865	1,066	967	840	861	900	887	764	813	
	R	-	-	42	83	147	79	131	122	56	91	111	96	110	96	
CLV LOS		N/A	N/A	E	E	F	D	F	E	D	F	D	D	C	E	
v/c		N/A	N/A	0.93	0.93	1.11	0.84	1.06	0.97	0.84	1.01	0.87	0.90	0.81	0.97	
HCS LOS		N/A	N/A	E	E	F	D	E	E	D	E	D	E	D	E	
Delay		N/A	N/A	66	66	87	55	79	63	52	69	53	57	53	65	
Synchro LOS		N/A	N/A	D	D	E	D	E	D	D	E	D	D	D	E	
Delay		N/A	N/A	47	49	70	42	63	49	40	57	48	55	51	62	

Churchmans Crossing Volume and
Level of Service Comparison - AM Peak Hour

SR 7 / SCHOOL BELL ROAD

24

		1993 Count	1997 Count	2000 Count	2001 (Feb) Count	2001 (Oct) Count	2002 (Oct) Count	2003 (Oct) Count	2004 (Oct) Count	2005 (Oct) Count	2006 (Oct) Count	2007 (Nov) Count	2008 (Oct) Count	2009 (Oct) Count	2010 (Oct) Count	Notes	
NB SR 7	L	-	-	-	-	-	-									Intersection was not counted in Fall 2003.	
	T	-	-	1,349	-	-	1,361										
SB SR 7	R	-	-	69	-	-	71										
	L	-	-	60	-	-	79										
EB -	T	-	-	379	-	-	403										
	R	-	-	-	-	-	-										
WB School	L	-	-	31	-	-	31										
	T	-	-	-	-	-	-										
	R	-	-	181	-	-	223										
CLV LOS		N/A	N/A	E	N/A	N/A	E										
v/c		N/A	N/A	0.96	N/A	N/A	0.99										

SR 4 / TELEGRAPH ROAD

25

		1993 Count	1997 Count	2000 Count	2001 (Feb) Count	2001 (Oct) Count	2002 (Oct) Count	2003 (Oct) Count	2004 (Oct) Count	2005 (Oct) Count	2006 (Oct) Count	2007 (Nov) Count	2008 (Oct) Count	2009 (Oct) Count	2010 (Oct) Count	Notes	
NB Happy Harry's	L	-	-	-	-	-	-	-	5							Intersection was not counted in Fall 2005.	
	T	-	-	-	-	-	-	-	-								
SB Telegraph	R	-	-	-	-	-	-	-	1								
	L	-	-	-	-	-	-	-	204								
EB SR 4	T	-	-	-	-	-	-	-	556								
	R	-	-	-	-	-	-	-	239								
WB SR 4	L	-	-	-	-	-	-	-	1,911								
	T	-	-	-	-	-	-	-	9								
	R	-	-	-	-	-	-	-	4								
									1,997								
CLV LOS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	C								
v/c		N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.72								
HCS LOS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	C								
Delay		N/A	N/A	N/A	N/A	N/A	N/A	N/A	32								
Synchro LOS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	B								
Delay		N/A	N/A	N/A	N/A	N/A	N/A	N/A	16								

Churchmans Crossing Volume and
Level of Service Comparison - AM Peak Hour

SR 2 / ST. JAMES CHURCH ROAD

26

		1993 Count	1997 Count	2000 Count	2001 (Feb) Count	2001 (Oct) Count	2002 (Oct) Count	2003 (Oct) Count	2004 (Oct) Count	2005 (Oct) Count	2006 (Oct) Count	2007 (Nov) Count	2008 (Oct) Count	2009 (Oct) Count	2010 (Oct) Count	Notes
NB St. James Church	L	-	-	-	-	-	-	-	80							Intersection was not counted in Fall 2005.
	T	-	-	-	-	-	-	-	31							
	R	-	-	-	-	-	-	-	85							
SB Griffin Drive	L	-	-	-	-	-	-	-	54							
	T	-	-	-	-	-	-	-	60							
	R	-	-	-	-	-	-	-	37							
EB SR 2	L	-	-	-	-	-	-	-	59							
	T	-	-	-	-	-	-	-	1,698							
	R	-	-	-	-	-	-	-	150							
WB SR 2	L	-	-	-	-	-	-	-	16							
	T	-	-	-	-	-	-	-	899							
	R	-	-	-	-	-	-	-	114							
CLV LOS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	A							
v/c		N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.61							
HCS LOS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	C							
Delay		N/A	N/A	N/A	N/A	N/A	N/A	N/A	30							
Synchro LOS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	C							
Delay		N/A	N/A	N/A	N/A	N/A	N/A	N/A	28							

Churchmans Crossing Volume and Level of Service Comparison - PM Peak Hour

NOTE:

Volumes shown in the following table represent the peak hour volumes at each intersection (e.g., they are not the peak volumes of an entire corridor). Therefore, the peak hours may vary among intersections, even between adjacent intersections. For example, the peak hour at SR 2 / Harmony Road was found to occur between 4:30 and 5:30 PM. However, the nearby intersection at SR 4 / Harmony Road was found to occur between 4:45 and 5:45 PM. As a result, the volumes in the following table may not balance between intersections.

SR 2 / HARMONY ROAD

1

		1993 Count	1997 Count	2000 Count	2001 (Feb) Count	2001 (Oct) Count	2002 (Oct) Count	2003 (Oct) Count	2004 (Oct) Count	2005 (Oct) Count	2006 (Oct) Count	2007 (Nov) Count	2008 (Oct) Count	2009 (Oct) Count	2010 (Oct) Count	Notes
NB Harmony	L	647	433	544	475	447	586	454	545	417	430	405	471	423	490	
	R	542	662	632	655	673	944	792	754	703	672	1,399	695	716	781	
SB	L															
	R															
EB SR 2	U	13		28	17	5	28	14	16	19	19	22	21	9	4	
	R	1157	1258	1063	1078	1,126	1,314	1,103	1,093	1,190	1,040	1,055	1,062	1,055	988	
WB SR 2	L	507	503	626	500	607	548	598	651	501	623	646	531	536	526	
	R	1409	1367	1441	1340	1,313	1,205	1,382	1,301	1,265	1,265	1,503	1,337	1,215	1,207	
CLV LOS v/c		F 1.12	E 0.94	E 0.96	D 0.86	E 0.93	E 1.00	E 0.92	E 0.99	D 0.88	E 0.91	E 0.92	D 0.87	D 0.86	D 0.85	
HCS LOS		N/A	C	C	C	C	D	C	D	D	C	C	C	C	C	
Delay		N/A	30	33	30	28	38	29	38	37	29	23	22	22	22	
Synchro LOS		N/A	C	C	B	C	C	C	C	C	B	C	C	C	C	
Delay		N/A	21	23	19	20	26	20	31	29	19	21	21	21	20	

SR 2 / DELAWARE PARK BOULEVARD

2

		1993 Count	1997 Count	2000 Count	2001 (Feb) Count	2001 (Oct) Count	2002 (Oct) Count	2003 (Oct) Count	2004 (Oct) Count	2005 (Oct) Count	2006 (Oct) Count	2007 (Nov) Count	2008 (Nov) Count	2009 (Oct) Count	2010 (Oct) Count	Notes
NB Del Park	L	149	277	292	289	329	326	349	331							Right Turns into gas station were not counted Fall 2002. Shared NBL was added before 10/02 and NB/SB approaches are split phased. Intersection was not counted in Fall 2005.
	R	311	122	129	121	90	154	150	149							
SB Gas Station	L	20	14	30	20	8	16	19	24							
	R	50	50	59	66	37	47	56	70							
EB SR 2	L	50	19	55	41	32	52	69	46							
	R	1628	1297	1389	1356	1,670	1,494	1,468	1,505							
WB SR 2	L	354	176	184	154	205	188	187	176							
	R	1922	2084	1981	1874	1,883	1,972	1,892	1,955							
CLV LOS v/c		D 0.86	D 0.89	D 0.85	D 0.87	E 0.92	D 0.85	D 0.83	D 0.84							
HCS LOS		N/A	C	B	B	B	B	B	C							
Delay		N/A	25	17	17	19	16	16	31							
Synchro LOS		N/A	B	B	B	B	B	B	C							
Delay		N/A	20	16	15	17	16	15	29							

Churchmans Crossing Volume and Level of Service Comparison - PM Peak Hour

SR 7 / SR 2

3

		1993 Count	1997 Count	2000 Count	2001 (Feb) Count	2001 (Oct) Count	2002 (Oct) Count	2003 (Oct) Count	2004 (Oct) Count	2005 (Oct) Count	2006 (Oct) Count	2007 (Nov) Count	2008 (Nov) Count	2009 (Oct) Count	2010 (Oct) Count	Notes
NB SR 7	L	372	266	272	276	338	248	392	237							Before 10/02, all free rights, except for the WBR were removed to accommodate 2nd EB & WB left turn lanes on SR 2. Intersection was not counted in Fall 2005.
	T	1047	802	914	969	941	958	904	977							
	R	423	451	452	404	458	365	538	587							
SB SR 7	L	436	403	539	358	502	409	427	399							
	T	785	743	768	727	802	805	815	864							
EB SR 2	R	118	88	113	93	113	124	101	83							
	L	220	224	259	217	237	285	321	312							
WB SR 2	T	1044	1059	1073	996	1,097	1,097	1,197	1,054							
	R	273	187	143	144	166	187	228	207							
WB SR 2	L	426	417	458	490	471	572	634	696							
	T	1554	1898	2060	1648	1,542	1,832	1,620	1,650							
CLV LOS v/c	R	1017	622	478	540	518	535	661	596							
	F	1.05	1.04	1.20	1.02	1.08	1.05	1.01	1.01							
HCS LOS Delay	F	N/A	E	F	E	E	E	E	F							
	N/A	N/A	65	98	69	78	66	63	84							
Synchro LOS Delay	N/A	N/A	E	F	E	E	E	E	E							
	N/A	N/A	59	87	64	70	60	59	62							

SR 7 / SR 4 (Stanton Split)

4

		1993 Count	1997 Count	2000 Count	2001 (Feb) Count	2001 (Oct) Count	2002 (Oct) Count	2003 (Oct) Count	2004 (Oct) Count	2005 (Oct) Count	2006 (Oct) Count	2007 (Nov) Count	2008 (Nov) Count	2009 (Oct) Count	2010 (Oct) Count	Notes
NB Mill Road	L	BAD DATA														
	T															
	R		8	6	8	2	6	6	4	3	5	4	8			
SB SR 7	L	923?	311	311	340	279	272	295	254	231	218	329	257	251	305	
	T		3	3	2	5	3	9	3	4	2	3	1	4		
EB SR 4/SR 7	R	431?	1028	972	1128	1,002	1,159	1,266	1,426	1,356	1,272	1,370	1,301	1,320	1,472	
	L	351?	1261	1226	1274	1,078	1,341	1,213	1,259	1,260	1,101	1,257	1,195	1,316	1,565	
WB SR 4	T	955?	1044	990	1213	1,213	1,266	1,271	1,204	1,173	1,182	1,178	1,246	1,146	1,251	
	R		6	6	2	1	4	0	2	1	3	6	5	5	4	
WB SR 4	L	1316?	1033	1031	1044	1,024	1,254	1,163	1,288	1,299	1,292	1,222	1,056	1,152	1,135	
	T	0?	342	316	384	294	291	306	241	232	198	241	247	302	304	
CLV LOS v/c	R	N/A	D	D	E	D	F	E	F	F	E	F	D	E	F	
	N/A	N/A	0.91	0.89	0.92	0.86	1.03	0.96	1.01	1.00	0.94	1.01	0.90	0.98	1.09	
HCS LOS Delay	N/A	N/A	E	E	E	D	F	E	F	F	E	F	E	F	F	
	N/A	N/A	76	72	75	50	100	74	95	95	75	87	66	89	127	
Synchro LOS Delay	N/A	N/A	D	D	E	D	E	D	E	E	E	D	D	E	E	
	N/A	N/A	54	48	58	41	67	51	68	65	58	54	50	60	78	

Churchmans Crossing Volume and
Level of Service Comparison - PM Peak Hour

SR 4 / SR 7 / J.P. MORGAN

5

		1993 Count	1997 Count	2000 Count	2001 (Feb) Count	2001 (Oct) Count	2002 (Oct) Count	2003 (Oct) Count	2004 (Oct) Count	2005 (Oct) Count	2006 (Oct) Count	2007 (Nov) Count	2008 (Nov) Count	2009 (Oct) Count	2010 (Oct) Count	Notes
NB SR 7	L	35	28	57	55	61	65	87	68	93	82	121	88	108	166	Only two lanes per direction open on NB and SB SR 7 during February 2000 count. New EB and NB left turn lanes added prior to 2004 counts.
	T	1693	1581	1360	1501	1,464	1,572	1,660	1,527	1,473	1,361	1,919	1,517	1,519	1,822	
	R	3	15	3	5	6	5	3	6	7	6	8	6	14	18	
SB SR 7	L	7	11	14	21	18	16	19	11	12	21	7	10	15	14	
	T	1552	1653	1435	1670	1,896	1,959	2,238	2,762	2,253	1,922	2,066	2,038	2,092	2,081	
	R	476	690	500	532	511	542	631	677	716	562	606	542	569	576	
EB SR 4	L	607	655	690	807	828	879	950	903	811	824	773	811	791	884	
	T	6	11	35	12	17	16	7	22	22	14	16	15	13	17	
	R	47	87	82	241	358	478	554	571	501	461	375	474	530	466	
WB J.P. Morgan	L	244	307	147	171	214	177	138	202	214	200	245	137	172	241	
	T	49	88	87	95	108	94	97	126	121	131	143	85	119	128	
	R	103	244	167	218	174	166	147	162	215	103	242	110	188	213	
CLV LOS v/c		E 0.92	D 0.82	D 0.88	D 0.88	E 0.92	E 0.93	F 1.03	F 1.05	E 0.91	D 0.83	D 0.88	D 0.83	D 0.86	E 0.92	
HCS LOS Delay		N/A N/A	D 48	D 40	E 59	E 79	F 90	F 127	F 134	F 85	E 63	F 94	E 74	E 78	F 88	
Synchro LOS Delay		N/A N/A	C 30	C 31	D 39	D 45	D 48	E 62	E 67	C 32	C 22	C 24	B 20	C 21	C 26	

SR 4 / CHURCHMANS ROAD / DELAWARE PARK

6

		1993 Count	1997 Count	2000 Count	2001 (Feb) Count	2001 (Oct) Count	2002 (Oct) Count	2003 (Oct) Count	2004 (Oct) Count	2005 (Oct) Count	2006 (Oct) Count	2007 (Nov) Count	2008 (Nov) Count	2009 (Oct) Count	2010 (Oct) Count	Notes
NB Churchmans	L	1009	809	808	709	793	1016	814	782							Intersection not counted in Fall 2005.
	T	3	22	56	70	69	90	41	73							
	R	69	66	115	130	158	238	156	142							
SB Del Park	L	0	4	4	18	19	45	42	54							
	T	38	57	87	85	81	117	157	136							
	R	2	44	66	73	69	120	118	130							
EB SR 4	L	4	20	35	47	70	71	67	79							
	T	536	522	542	730	775	1023	917	1,054							
	R	688	655	747	630	532	836	767	749							
WB SR 4	L	17	8	79	37	40	38	35	40							
	T	523	383	551	513	563	521	614	619							
	R	0	1	8	12	15	13	14	19							
CLV LOS v/c		A 0.59	A 0.62	A 0.60	B 0.67	B 0.65	D 0.86	C 0.76	C 0.80							
HCS LOS Delay		N/A N/A	C 24	C 25	C 27	C 29	D 44	C 33	D 35							
Synchro LOS Delay		N/A N/A	B 19	C 22	C 21	C 23	C 30	C 29	C 32							

Churchmans Crossing Volume and
Level of Service Comparison - PM Peak Hour

SR 4 / CHRISTIANA HOSPITAL / HYGIEIA DRIVE

7

		1993 Count	1997 Count	2000 Count	2001 (Feb) Count	2001 (Oct) Count	2002 (Oct) Count	2003 (Oct) Count	2004 (Oct) Count	2005 (Oct) Count	2006 (Oct) Count	2007 (Nov) Count	2008 (Nov) Count	2009 (Oct) Count	2010 (Oct) Count	Notes
NB Hospital	L	-	-	393	395	376	447	353	377							Intersection not counted in Fall 2005.
	T	-	-	12	18	17	12	17	21							
	R	-	-	133	173	138	239	214	168							
SB Hygeia	L	-	-	229	252	213	229	238	246							
	T	-	-	10	13	16	10	13	28							
	R	-	-	202	232	183	182	227	211							
EB SR 4	L	-	-	96	70	63	78	113	117							
	T	-	-	763	905	1,021	1,242	1,213	1,328							
WB SR 4	R	-	-	102	140	110	116	102	85							
	L	-	-	36	47	48	63	52	36							
	T	-	-	1174	1190	1,165	1,453	1,308	1,457							
	R	-	-	133	94	73	116	110	97							
CLV LOS v/c		N/A	N/A	B	B	C	D	C	D							
		N/A	N/A	0.72	0.71	0.75	0.83	0.75	0.83							
HCS LOS		N/A	N/A	N/A	N/A	N/A	N/A	B	C							
Delay		N/A	N/A	N/A	N/A	N/A	N/A	19	22							
Synchro LOS		N/A	N/A	N/A	N/A	N/A	N/A	B	C							
Delay		N/A	N/A	N/A	N/A	N/A	N/A	17	23							

SR 4 / HARMONY ROAD

8

		1993 Count	1997 Count	2000 Count	2001 (Feb) Count	2001 (Oct) Count	2002 (Oct) Count	2003 (Oct) Count	2004 (Oct) Count	2005 (Oct) Count	2006 (Oct) Count	2007 (Nov) Count	2008 (Nov) Count	2009 (Oct) Count	2010 (Oct) Count	Notes
NB Harmony	L	118	98	108	112	131	173	139	130	99	111	109	115	113	126	
	T	673	489	425	395	397	303	333	333	317	311	329	307	332	353	
	R	124	123	109	104	97	131	107	132	135	103	157	153	121	159	
SB Harmony	L	453	406	360	424	325	454	436	359	411	388	421	419	393	522	
	T	651	496	348	354	261	308	260	302	215	263	288	257	272	340	
EB SR 4	R	96	143	208	186	254	220	211	260	219	243	144	213	146	167	
	L	190	253	287	287	302	294	321	331	305	280	273	252	196	276	
WB SR 4	T	624	715	683	760	775	1,068	800	832	824	803	853	829	610	719	
	R	289	282	113	121	100	188	94	113	82	91	73	67	59	71	
	L	250	267	223	233	182	178	200	196	164	179	204	174	179	228	
	T	759	899	1087	1020	1,199	1,192	1,322	1,329	1,383	1,438	1,314	1,279	1,219	1,294	
	R	731	742	662	530	505	613	672	712	794	698	635	699	830	772	
	CLV LOS v/c		E	D	D	E	D	D	E	E	E	E	E	D	D	
		0.96	0.87	0.88	0.92	0.90	0.88	0.95	0.92	0.94	0.94	0.92	0.88	0.85	0.97	
HCS LOS		N/A	F	E	E	E	D	E	E	F	E	D	D	D	E	
Delay		N/A	94	62	60	56	52	58	66	84	77	47	43	43	56	
Synchro LOS		N/A	D	D	D	D	D	D	D	D	D	D	D	D	D	
Delay		N/A	52	44	43	43	39	45	44	46	46	42	38	38	48	

Churchmans Crossing Volume and
Level of Service Comparison - PM Peak Hour

CHURCHMANS ROAD / CONTINENTAL DRIVE

9

		1993 Count	1997 Count	2000 Count	2001 (Feb) Count	2001 (Oct) Count	2002 (Oct) Count	2003 (Oct) Count	2004 (Oct) Count	2005 (Oct) Count	2006 (Oct) Count	2007 (Nov) Count	2008 (Nov) Count	2009 (Oct) Count	2010 (Oct) Count	Notes
NB Continental	L	-	-	61	179	184	163									Churchmans Road under construction in 2000; finished by 2001 count. Before the 10/02 count, left turn lanes were added to NB & SB Continental Dr. / Churchmans Place. Intersection was not counted in Fall 2003.
	T	-	-	69	71	87	80									
	R	-	-	491	500	540	324									
SB Churchmans Pl.	L	-	-	185	73	91	92									
	T	-	-	10	11	9	11									
	R	-	-	45	1	7	13									
EB Churchmans	L	-	-	127	22	22	50									
	T	-	-	1032	1212	1,407	1,344									
WB Churchmans	R	-	-	17	45	38	31									
	L	-	-	214	120	150	130									
	T	-	-	619	1005	990	985									
	R	-	-	201	50	26	59									
CLV LOS		N/A	N/A	C	B	C	A									
v/c		N/A	N/A	0.78	0.67	0.75	0.60									

SR 7 / CHURCHMANS ROAD (Ramp A)

10

		1993 Count	1997 Count	2000 Count	2001 (Feb) Count	2001 (Oct) Count	2002 (Oct) Count	2003 (Oct) Count	2004 (Oct) Count	2005 (Oct) Count	2006 (Oct) Count	2007 (Nov) Count	2008 (Nov) Count	2009 (Oct) Count	2010 (Oct) Count	Notes
NB SR 7	L	317	429													Churchmans Road under construction in 2000; finished by 2001 count. Intersection was not counted in Fall 2003.
	T	1057	1057													
	R	222	335													
SB SR 7	L	270	290	90	128	190	180									
	T	1455	1956	429	678	677	789									
WB Churchmans	R	98	12	70	78	154	88									
	L	182	317													
EB Churchmans	T	459	693	511	652	960	745									
	R	1161	1335	1277	871	734	1,037									
WB Churchmans	L	430	405	484	560	1,046	483									
	T	854	975	958	1194	1,209	1,150									
	R	500	641													
	L															
CLV LOS		F	F	E	E	E	E									
v/c		1.39	1.66	0.98	0.96	0.97	0.91									

During the October 2001 PM period count, several eastbound right-turns were made from the eastbound right-most through lane. The volumes are shown below. These vehicles have been included in the eastbound right-turn volume above.

4:00 PM	7	5:00 PM	19
4:15 PM	13	5:15 PM	14
4:30 PM	9	5:30 PM	13
4:45 PM	10	5:45 PM	6

Churchmans Crossing Volume and
Level of Service Comparison - PM Peak Hour

SR 7 / CHURCHMANS ROAD (Ramp B/C)

11

		1993 Count	1997 Count	2000 Count	2001 (Feb) Count	2001 (Oct) Count	2002 (Oct) Count	2003 (Oct) Count	2004 (Oct) Count	2005 (Oct) Count	2006 (Oct) Count	2007 (Nov) Count	2008 (Nov) Count	2009 (Oct) Count	2010 (Oct) Count	Notes
NB SR 7	L	317	429													Churchmans Road under construction in 2000; finished by 2001 count. Intersection was not counted in Fall 2003.
	T	1057	1057													
	R	222	335													
SB SR 7	L	270	290	117	186	167	152									
	T	1455	1956	72	69	97	74									
	R	98	12	276	300	326	326									
EB Churchmans	L	182	317	67	97	111	138									
	T	459	693	455	595	576	663									
	R	1161	1335	62	77	129	100									
WB Churchmans	L	430	405	134	141	116	127									
	T	854	975	1355	1266	1,289	1,274									
	R	500	641	286	340	363	378									
CLV LOS v/c		F 1.39	F 1.66	B 0.64	A 0.50	A 0.53	A 0.52									

CHURCHMANS ROAD / DEL TECH

12

		1993 Count	1997 Count	2000 Count	2001 (Feb) Count	2001 (Oct) Count	2002 (Oct) Count	2003 (Oct) Count	2004 (Oct) Count	2005 (Oct) Count	2006 (Oct) Count	2007 (Nov) Count	2008 (Nov) Count	2009 (Oct) Count	2010 (Oct) Count	Notes
NB Driveway	L	-	-	217	251	396	247									Churchmans Road under construction in 2000; finished by 2001 count. Intersection was not counted in Fall 2003.
	T	-	-	23	18	17	17									
	R	-	-	44	55	80	47									
SB Del Tech	L	-	-	131	128	102	106									
	T	-	-	-	-	-	-									
	R	-	-	108	78	140	73									
EB Churchmans	L	-	-	29	125	58	112									
	T	-	-	489	613	762	620									
	R	-	-	54	76	69	62									
WB Churchmans	L	-	-	-	-	-	-									
	T	-	-	1600	1486	1,515	1,399									
	R	-	-	133	192	143	209									
CLV LOS v/c		N/A N/A	N/A N/A	C 0.74	A 0.62	A 0.62	A 0.58									

Churchmans Crossing Volume and
Level of Service Comparison - PM Peak Hour

CHURCHMANS ROAD / COUNTRY CLUB DRIVE

13

		1993 Count	1998 Count	2000 Count	2001 (Feb) Count	2001 (Oct) Count	2002 (Oct) Count	2003 (Oct) Count	2004 (Oct) Count	2005 (Oct) Count	2006 (Oct) Count	2007 (Nov) Count	2008 (Nov) Count	2009 (Oct) Count	2010 (Oct) Count	Notes
NB c.c.	L	-	96	90	80	106	96									Intersection was not counted in Fall 2003.
	T	-														
SB	R	-	56	47	39	40	36									
	L	-														
EB Churchmans	T	-	564	586	683	716	729									
	R	-	179	172	155	186	199									
WB Churchmans	L	-	67	78	59	50	72									
	T	-	710	771	844	785	780									
CLV LOS v/c	R	-														
		N/A	A	A	A	A	A									
		N/A	0.50	0.54	0.58	0.56	0.56									

SR 273 / HARMONY ROAD

14

		1993 Count	1998 Count	2000 Count	2001 (Feb) Count	2001 (Oct) Count	2002 (Oct) Count	2003 (Oct) Count	2004 (Oct) Count	2005 (Oct) Count	2006 (Oct) Count	2007 (Nov) Count	2008 (Nov) Count	2009 (Oct) Count	2010 (Oct) Count	Notes
NB Gerald Drive	L	-	18	7	12	10	10	11		14	22	13	9	12	23	Before 10/02, an exclusive WB right turn lane was added. No count performed in 2004 due to ongoing construction at I-95 / SR 273 interchange. Intersection was not counted in Fall 2004.
	T	-	17	19	10	6	20	27		34	14	10	6	17	16	
	R	-	89	99	72	94	80	57		63	66	68	57	52	56	
SB Harmony	L	-	829	675	701	478	504	501		498	465	457	472	506	521	
	T	-	21	31	21	20	14	17		18	13	11	8	13	16	
EB SR 273	R	-	17	10	14	16	5	25		14	13	31	24	20	14	
	L	-	36	20	27	27	30	44		15	31	58	27	42	42	
WB SR 273	T	-	1612	1653	1925	2,156	1,613	2,157		2,099	2,082	2,062	1,856	2,049	2,294	
	R	-	15	14	19	25	27	23		28	25	16	18	16	20	
WB SR 273	L	-	55	75	65	79	66	113		70	74	69	53	38	107	
	T	-	1700	1873	1647	1,972	1,816	1,919		1,877	2,022	1,793	1,805	1,546	1,884	
CLV LOS v/c	R	-	767	574	602	513	495	620		555	547	524	522	464	539	
		N/A	E	E	F	F	D	F		F	E	E	D	E	F	
		N/A	0.99	1.00	1.02	1.03	0.89	1.04		1.00	0.98	0.96	0.88	0.95	1.09	
HCS LOS Delay		N/A	E	E	E	F	D	E		E	E	C	C	D	E	
		N/A	67	62	61	82	45	67		76	72	35	33	38	58	
Synchro LOS Delay		N/A	D	D	E	E	D	F		E	E	D	C	D	E	
		N/A	54	52	55	75	41	83		74	72	36	31	37	58	

Churchmans Crossing Volume and
Level of Service Comparison - PM Peak Hour

SR 273 / CHAPMAN ROAD / EAGLE RUN ROAD

15

		1993 Count	1997 Count	2000 Count	2001 (Feb) Count	2001 (Oct) Count	2002 (Oct) Count	2003 (Oct) Count	2004 (Oct) Count	2005 (Oct) Count	2006 (Oct) Count	2007 (Nov) Count	2008 (Nov) Count	2009 (Oct) Count	2010 (Oct) Count	Notes
NB Chapman	L	626	753	755	722	890	792	718		766	706	704	672	606	674	No counts performed in 2004 due to ongoing construction on I-95 / SR 273 interchange. Intersection was not counted in Fall 2004.
	T	31	6	21	27	9	29	18		30	18	22	47	24	37	
SB Eagle Run	R	332	384	407	370	375	466	405		435	428	415	353	339	378	
	L	142	42	68	61	60	66	59		56	50	52	44	58	63	
EB SR 273	T	59	22	22	18	12	20	25		14	16	11	17	12	13	
	R	347	73	132	149	119	150	114		147	100	130	119	146	174	
WB SR 273	L	58	51	69	92	41	96	66		49	47	48	39	49	54	
	T	1400	1643	1614	1590	1,709	1,626	1,817		1,691	1,898	1,672	1,675	1,626	1,757	
CLV LOS v/c	R	717	892	393	728	653	640	610		539	615	485	639	431	646	
	L	154	230	197	161	228	233	249		214	244	269	260	248	214	
HCS LOS Delay	T	841	902	1219	1121	1,578	1,240	1,297		1,387	1,566	1,269	1,166	1,160	1,168	
	R	21	18	18	16	6	31	30		40	24	30	24	58	27	
Synchro LOS Delay	D	0.85	0.95	0.93	0.89	1.07	1.00	1.03		0.96	1.02	0.95	0.94	0.89	0.94	
	N/A	N/A	F	E	E	F	F	F		E	F	D	D	D	D	
Synchro LOS Delay	N/A	N/A	99	66	66	86	77	86		74	94	49	45	45	52	
	N/A	E	D	D	E	D	E		D	E	D	D	D	D		

*Assume SB count in 1997 was affected by something unknown.

SR 273 / OLD BALTIMORE PIKE

16

		1993 Count	1998 Count	2000 Count	2001 (Feb) Count	2001 (Oct) Count	2002 (Oct) Count	2003 (Oct) Count	2004 (Oct) Count	2005 (Oct) Count	2006 (Oct) Count	2007 (Nov) Count	2008 (Nov) Count	2009 (Oct) Count	2010 (Oct) Count	Notes
NB Old Balt	L	-	280	259	297	294	318	318	312	300	361	254	378	416	324	Main Street was closed 10/01. Intersection operates as split-phased in the northbound/southbound directions during the 2002 counts.
	T	-	104	97	67	131	188	171	150	142	138	132	131	146	127	
SB Old Balt	R	-	293	302	388	297	528	358	574	385	367	292	302	333	257	
	L	-	35	22	68	26	43	24	11	18	23	27	23	17	17	
EB SR 273	T	-	143	135	95	155	249	163	158	200	189	187	168	184	178	
	R	-	51	32	13	259	125	80	175	149	191	143	119	165	154	
WB SR 273	L	-	23	15	2	220	91	135	105	116	127	131	110	114	98	
	T	-	1323	1341	920	1,240	1,269	1,385	1,324	1,335	1,322	1,142	1,277	1,393	1,316	
CLV LOS v/c	R	-	662	551	654	681	747	698	740	718	793	797	774	732	818	
	L	-	418	346	669	362	479	380	555	414	422	398	384	374	296	
HCS LOS Delay	T	-	1046	1042	1088	1,089	1,144	1,293	1,154	1,076	1,225	1,173	1,078	1,004	1,172	
	R	-	26	46	74	8	14	31	8	21	77	22	21	81	22	
Synchro LOS Delay	D	N/A	D	C	C	E	F	D	F	E	E	D	D	E	D	
	N/A	N/A	0.84	0.79	0.75	0.93	1.00	0.89	1.02	0.94	0.99	0.85	0.90	0.99	0.89	
Synchro LOS Delay	N/A	D	D	E	F	F	E	F	F	F	F	C	D	D	D	
	N/A	41	53	79	89	105	56	102	83	86	32	36	45	40		
Synchro LOS Delay	N/A	B	C	D	D	D	D	C	E	D	D	C	D	D	D	
	N/A	20	21	47	42	55	26	60	37	40	32	36	45	36		

Churchmans Crossing Volume and
Level of Service Comparison - PM Peak Hour

SR 7 / SR 273

17

		1993 Count	1997 Count	2000 Count	2001 (Feb) Count	2001 (Oct) Count	2002 (Oct) Count	2003 (Oct) Count	2004 (Oct) Count	2005 (Oct) Count	2006 (Oct) Count	2007 (Nov) Count	2008 (Nov) Count	2009 (Oct) Count	2010 (Oct) Count	Notes
NB SR 7	L	313	410	345	393	350	472	340	460	352	321	372	332	303	369	An additional WBL was added to the intersection prior to the 2001 count.
	T	64	57	49	76	74	70	64	83	52	86	88	93	69	85	
	R	318	511	416	715	459	501	480	301	465	433	510	484	370	409	
SB SR 7	L	67	62	112	71	119	113	116	99	113	124	113	100	91	109	
	T	156	111	165	120	136	197	102	111	123	153	129	142	99	119	
	R	3	27	24	6	56	5	36	39	20	23	20	12	10	13	
EB SR 273	L	5	3	7	13	10	6	12	10	11	12	7	3	6	5	
	T	777	1190	1530	1114	959	1,036	1,157	1,300	1,154	1,140	1,176	1,027	1,003	958	
	R	592	365	871	859	643	771	665	565	644	558	608	588	499	627	
WB SR 273	L	580	650	562	647	695	606	826	646	710	708	858	878	668	780	
	T	635	1083	1153	1161	1,026	1,110	1,528	1,297	1,200	1,300	1,265	1,081	1,236	1,089	
	R	70	90	84	85	89	66	58	112	85	102	89	85	69	133	
CLV LOS v/c		B 0.65	F 1.01	F 1.06	D 0.87	C 0.79	D 0.84	D 0.89	E 0.91	D 0.85	D 0.85	E 0.93	D 0.87	C 0.76	D 0.82	
HCS LOS Delay		N/A N/A	F 138	F 124	F 82	E 64	E 79	F 91	E 71	F 115	F 103	F 89	E 79	D 50	E 58	
Synchro LOS Delay		N/A N/A	F 100	E 77	F 92	E 68	E 73	E 73	D 52	E 66	E 63	E 78	F 85	D 54	E 62	

SR 273 / SB SR 1 RAMP

18

		1993 Count	1997 Count	2000 Count	2001 (Feb) Count	2001 (Oct) Count	2002 (Oct) Count	2003 (Oct) Count	2004 (Oct) Count	2005 (Oct) Count	2006 (Oct) Count	2007 (Nov) Count	2008 (Nov) Count	2009 (Oct) Count	2010 (Oct) Count	Notes
NB	L	-														Intersection was not counted in Fall 2005.
	T	-														
	R	-														
SB SR 1	L	-	266	324	303	315	271	371	338							
	T	-		11	4											
	R	-	204	331	446	502	438	434	468							
EB SR 273	L	-														
	T	-	1353	1864	1581	1,264	1,242	1,410	1,452							
	R	-	191	194	218	283	312	293	375							
WB SR 273	L	-	152	214	182	203	181	195	228							
	T	-	1601	1585	980	1,474	1,520	1,538	1,671							
	R	-														
CLV LOS v/c		N/A N/A	C 0.73	E 0.98	E 0.94	D 0.88	D 0.81	D 0.88	E 0.93							
HCS LOS Delay		N/A N/A	N/A N/A	N/A N/A	N/A N/A	N/A N/A	N/A N/A	C 27	D 39							
Synchro LOS Delay		N/A N/A	N/A N/A	N/A N/A	N/A N/A	N/A N/A	N/A N/A	C 22	C 30							

Churchmans Crossing Volume and Level of Service Comparison - PM Peak Hour

SR 273 / NB SR 1 RAMP

19

		1993 Count	1997 Count	2000 Count	2001 (Feb) Count	2001 (Oct) Count	2002 (Oct) Count	2003 (Oct) Count	2004 (Oct) Count	2005 (Oct) Count	2006 (Oct) Count	2007 (Nov) Count	2008 (Nov) Count	2009 (Oct) Count	2010 (Oct) Count	Notes
NB SR 1	L	-	130	141	162	181	203	209	208							Intersection was not counted in Fall 2005.
	T	-														
SB	R	-	106	114	139	147	171	189	178							
	L	-														
EB SR 273	T	-	260	315	297	376	305	385	313							
	R	-	1358	1873	1204	1,172	1,288	1,428	1,406							
WB SR 273	L	-														
	T	-	1623	1658	1456	1,518	1,512	1,532	1,668							
SR 273	R	-	229	286	330	353	365	335	315							
	CLV LOS v/c	N/A	C	D	C	D	D	D	D							
HCS LOS Delay	N/A	N/A	N/A	N/A	N/A	N/A	N/A	C	D							
	N/A	N/A	N/A	N/A	N/A	N/A	N/A	30	46							
Synchro LOS Delay	N/A	N/A	N/A	N/A	N/A	N/A	N/A	C	D							
	N/A	N/A	N/A	N/A	N/A	N/A	N/A	25	41							

SB SR 1 RAMPS / ROAD A

20

		1993 Count	1997 Count	2000 Count	2001 (Feb) Count	2001 (Oct) Count	2002 (Oct) Count	2003 (Oct) Count	2004 (Oct) Count	2005 (Oct) Count	2006 (Oct) Count	2007 (Nov) Count	2008 (Nov) Count	2009 (Oct) Count	2010 (Oct) Count	Notes
NB SR 1	L	126	149	144	94	104	136									Intersection was not counted in Fall 2003.
	T															
SB	R	11	6	29	49	70	66									
	L															
EB Road A	T	263	256	283	337	491	353									
	R	30	47	70	49	84	65									
WB Road A	L	196	199	236	280	456	326									
	T	120	108	199	227	336	200									
Road A	R															
	CLV LOS v/c	A	A	A	A	B	A									
		0.37	0.38	0.41	0.44	0.66	0.51									

Churchmans Crossing Volume and
Level of Service Comparison - PM Peak Hour

NB SR 1 RAMPS / ROAD A

21

		1993 Count	1997 Count	2000 Count	2001 (Feb) Count	2001 (Oct) Count	2002 (Oct) Count	2003 (Oct) Count	2004 (Oct) Count	2005 (Oct) Count	2006 (Oct) Count	2007 (Nov) Count	2008 (Nov) Count	2009 (Oct) Count	2010 (Oct) Count	Notes
NB SR 1	L	10	20	20	12	16	11									Intersection was not counted in Fall 2003.
	T	187	214	269	297	344	358									
	R															
SB Mall	L	94	100	163	194	236	264									
	R	212	278	416	484	557	518									
EB Road A	L	81	136	200	253	262	314									
	R	120	174	114	124	149	106									
WB	L															
	T															
	R															
CLV LOS v/c		A 0.17	A 0.23	A 0.29	A 0.34	A 0.38	A 0.43									

SR 2 / RED MILL ROAD / POLLY DRUMMOND HILL ROAD

22

		1993 Count	1997 Count	2000 Count	2001 (Feb) Count	2001 (Oct) Count	2002 (Oct) Count	2003 (Oct) Count	2004 (Oct) Count	2005 (Oct) Count	2006 (Oct) Count	2007 (Nov) Count	2008 (Nov) Count	2009 (Oct) Count	2010 (Oct) Count	Notes
NB Red Mill	L	-	-	218	238	254	194	296	199	208	274	215	206	253	250	
	T	-	-	374	426	412	434	421	312	359	401	391	435	418	389	
	R	-	-	72	102	108	90	97	69	119	92	139	100	82	118	
SB Polly	L	-	-	233	171	312	177	200	209	189	201	200	186	216	189	
	R	-	-	245	253	298	246	246	241	251	281	323	274	261	287	
EB SR 2	L	-	-	411	346	368	352	381	282	358	353	369	323	375	401	
	R	-	-	1091	1024	1,169	1,172	1,142	1,164	997	993	1,129	995	950	1,113	
WB SR 2	L	-	-	210	202	254	214	260	196	180	204	226	314	203	186	
	R	-	-	1259	1207	1,305	1,107	1,326	1,305	1,270	1,326	1,306	1,189	1,158	1,219	
CLV LOS v/c		N/A N/A	N/A N/A	F 1.01	E 0.96	F 1.06	E 0.95	F 1.03	D 0.90	E 0.96	F 1.01	E 1.00	E 0.95	E 0.98	E 0.99	
HCS LOS Delay		N/A N/A	N/A N/A	E 67	E 63	E 79	E 56	E 67	D 52	E 58	E 71	E 59	D 54	E 60	E 62	
Synchro LOS Delay		N/A N/A	N/A N/A	D 54	D 47	E 61	D 42	D 53	D 39	D 44	D 54	D 53	D 52	E 56	E 59	

Churchmans Crossing Volume and Level of Service Comparison - PM Peak Hour

SR 7 / SCHOOL BELL ROAD

24

		1993 Count	1997 Count	2000 Count	2001 (Feb) Count	2001 (Oct) Count	2002 (Oct) Count	2003 (Oct) Count	2004 (Oct) Count	2005 (Oct) Count	2006 (Oct) Count	2007 (Nov) Count	2008 (Nov) Count	2009 (Oct) Count	2010 (Oct) Count	Notes
NB SR 7	L	-	-	-	-	-	-									Intersection was not counted in Fall 2003.
	T	-	-	752	-	-	787									
SB SR 7	R	-	-	42	-	-	66									
	L	-	-	117	-	-	216									
EB -	T	-	-	1,198	-	-	1,345									
	R	-	-	-	-	-	-									
WB School	L	-	-	58	-	-	68									
	T	-	-	-	-	-	-									
CLV LOS v/c	R	-	-	58	-	-	184									
		N/A	N/A	C	N/A	N/A	D									
		N/A	N/A	0.79	N/A	N/A	0.88									

SR 4 / TELEGRAPH ROAD

25

		Count 118	Count 98	Count 108	Count 112	Count 131	Count 173	2003 (Oct) Count	2004 (Oct) Count	2005 (Oct) Count	2006 (Oct) Count	2007 (Nov) Count	2008 (Nov) Count	2009 (Oct) Count	2010 (Oct) Count	Notes
NB Happy Harry's	L	-	-	-	-	-	-	-	14							Intersection was not counted in Fall 2005.
	T	-	-	-	-	-	-	-	-							
SB Telegraph	R	-	-	-	-	-	-	-	27							
	L	-	-	-	-	-	-	-	129							
EB SR 4	T	-	-	-	-	-	-	-	299							
	R	-	-	-	-	-	-	-	508							
WB SR 4	L	-	-	-	-	-	-	-	2,309							
	T	-	-	-	-	-	-	-	54							
CLV LOS v/c	R	-	-	-	-	-	-	-	11							
		N/A	N/A	N/A	N/A	N/A	N/A	N/A	E							
		N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.00							
HCS LOS Delay		N/A	N/A	N/A	N/A	N/A	N/A	N/A	D							
Synchro LOS Delay		N/A	N/A	N/A	N/A	N/A	N/A	N/A	49							
		N/A	N/A	N/A	N/A	N/A	N/A	N/A	C							
		N/A	N/A	N/A	N/A	N/A	N/A	N/A	34							

*HCS results based on pretimed signal (not actuated-coordinated) and do not account for upstream signal impacts. SYNCHRO results based on actuated-coordinated signal system on SR 4.

Churchmans Crossing Volume and
Level of Service Comparison - PM Peak Hour

SR 2 / ST. JAMES CHURCH ROAD

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		Count 118	Count 98	Count 108	Count 112	Count 131	Count 173	2003 (Oct) Count	2004 (Oct) Count	2005 (Oct) Count	2006 (Oct) Count	2007 (Nov) Count	2008 (Nov) Count	2009 (Oct) Count	2010 (Oct) Count	Notes	
NB St. James	L	-	-	-	-	-	-	-	204							Intersection was not counted in Fall 2005.	
	T	-	-	-	-	-	-	-	53								
	R	-	-	-	-	-	-	-	152								
SB Griffin Drive	L	-	-	-	-	-	-	-	111								
	T	-	-	-	-	-	-	-	70								
	R	-	-	-	-	-	-	-	98								
EB SR 2	L	-	-	-	-	-	-	-	120								
	T	-	-	-	-	-	-	-	1,436								
	R	-	-	-	-	-	-	-	84								
WB SR 2	L	-	-	-	-	-	-	-	237								
	T	-	-	-	-	-	-	-	1,700								
	R	-	-	-	-	-	-	-	32								
CLV LOS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	B								
v/c		N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.68								
HCS LOS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	D								
Delay		N/A	N/A	N/A	N/A	N/A	N/A	N/A	38								
Synchro LOS		N/A	N/A	N/A	N/A	N/A	N/A	N/A	C								
Delay		N/A	N/A	N/A	N/A	N/A	N/A	N/A	29								