Final Draft
June 2006

Montgomery County, Maryland
Highway Mobility Report

Maryland-National Capital Park and Planning Commission
Montgomery County Department of Park and Planning

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I. EXECUTIVE SUMMARY

Staff Recommendation

Transmit the 2006 Highway Mobility Report (HMR) to the County Council, in accordance with Council Resolution #15-375 Section F4.

Key Findings

- In general, the findings in this report indicate that the patterns of congestion observed throughout the County this year closely resemble those reported in the chapter on Highway Mobility, which was included as part of the 2005 Annual Growth Policy (AGP) Report, excluding some locations where either infrastructure improvements have been implemented or areas where pronounced levels of development have occurred.

- The following areas and corridors continue to experience significant levels of congestion and should be targeted for near-term congestion relief:

    - Clarksburg
    - Rockville Pike / Hungerford Dr / Frederick Rd (MD 355)
        - From the Bethesda CBD to the Capital Beltway (I-495)
        - In the City of Rockville
        - From Montgomery Village Ave (MD 124) to Ridge Rd (MD 27)
    - Georgia Ave (MD 97)
        - From the Silver Spring CBD to the Wheaton CBD
    - East-West routes
        - Norbeck Rd (MD 28)
        - Montrose Road

- When compared to the information reported in the 2005 HMR, this year's data indicates that Georgia Ave (MD 97), from Glenmont to the Olney Town Center, is experiencing increased levels of congestion and should be monitored with a high level of scrutiny for future reporting purposes.

- State and County transportation infrastructure improvements, as well as improvements associated with approved development, continue to help reduce congestion levels in various areas of the County.

- There continues to be the need for additional resources to aid the provision of speed and travel time data for more detailed analysis purposes.

- As reflected in the year 2010 traffic forecasts, east-west travel mobility in the County will be enhanced with the inclusion of the ICC as part of the transportation network.

Changes to the Report

The format for this year's report is similar to that of the 2005 HMR. However, this report includes the analysis of year 2010 forecasted volume-to-capacity (V/C) ratios as a measure of future congestion. In addition, for analysis purposes, this report excludes the use of observed traffic data that predates January 1, 2003. These changes were made based on staff discussions with Council staff following the completion of last year's report, in addition to various internal staff discussions, which took place prior to beginning work on this year's report.

Highlights

This marks the third consecutive year that an annual report on the status of congestion in Montgomery County has been assembled. Overall, the congested locations observed this year closely resemble those, which were reported in the 2005 Highway Mobility Report (HMR). However, the implementation of both infrastructure and operational improvements have helped to reduce Critical Lane Volumes (CLVs), as well as improve travel times and speeds in some areas of the County.

Staff found that 15% of the signalized intersections sampled for this report had CLVs, which exceeded their Local Area Transportation Review (LATR) standard. In addition, increases in CLVs and travel times, as well as decreases in speeds were observed along some of the sampled routes and corridors. In most cases, much of this increase in congestion can be attributed to the pronounced levels of development in the vicinity of these routes and corridors. However, staff also observed increases in CLVs, as well as longer travel times and decreased speeds along some of the other sampled corridors that were the direct result of infrastructure improvements requiring on-street work zones, which often reduced roadway capacity. This report also identifies some intersections that have seen a recent spike in their CLVs resulting from the opening of a new or extended roadway, in or adjacent to that particular area.

Seven of this year's 10 most congested intersections in the County appear on the list for the second consecutive year. Three of these intersections were ranked in or near the top 10 in the 2004 ADAC Report, which indicates a consistent recurrence of congestion at these locations. Staff feels that these locations should be targeted for improvement via State and County improvements, master plan recommendations, as well as developer-funded improvements where possible.

The GPS-based travel time and speed data samples acquired this year suggests that recently completed infrastructure improvements have helped to reduce traffic queues during the AM peak, which were reported in 2005, for sections of Frederick Rd (MD 355) between Comus Rd and Montgomery Village Ave. Analysis of these data samples further suggest that congestion observed along the surveyed sections of MD 355 are a result of traffic growth directly related to development in the Clarksburg area. Additional data acquired for the Norbeck Rd / Spencerville Rd (MD 28 / MD 198) indicates that sections of Norbeck Rd (MD 28) between MD 355 and New Hampshire Ave (MD 650) continue to experience significant delays during the PM peak period, particularly in the eastbound direction.

The results of the year 2010 model run conducted for this report conclude that under the current Constrained Long Range Plan (CLRP) for the year 2010, which includes the Intercounty County Connector (ICC), nearly all of the roadway segments in the County's transportation network are forecasted to have V/C ratios under 1.00. This indicates that the future demand is anticipated to be less than the planned capacity for the network.

Planned land use development, coupled with the planned transportation infrastructure identified in the CLRP, will help to account for a 20.6% increase in vehicle-miles traveled (VMT) relative to the 1998 base year conditions. Most of this increase in VMT will occur on the freeways. Despite a significant increase in VMT countywide, the average V/C ratio is anticipated to have increased marginally by the year 2010 (vs. 1998 base year network). Furthermore, the forecasted average V/C ratio countywide for 2010 indicates that the planned capacity improvements will help to regulate the increase in VMT and result in a manageable increase in the percentage of congested lane-miles.

II. BACKGROUND

Purpose

The purpose of this report is to provide an annual update on the status of congestion in Montgomery County, as required by Council resolution #15-375 Section F4 passed by the County Council on October 28, 2003. This report serves as a follow-up to the 2005 Highway Mobility Report (HMR), which was included as Chapter 3 in the 2005 AGP Report. This report contains information on historical, current, and future congestion trends and patterns, which is to be used by the Planning Board and County Council to comment on this year's State Consolidated Transportation Program (CTP) project priorities.

In contrast to the previous two years, this year's report will be transmitted to the County Council by June 15th, as opposed to September 1st. The revised schedule will provide the Board and Council with additional time to consider the findings in the report, prior to commenting on this year's CTP project priorities. In addition, copies of this report will be distributed to the State Highway Administration (SHA) and the Montgomery County Department of Public Works and Transportation (DPW&T) prior the development of this year's draft CTP.

Performance Measurements

Similar to the 2005 HMR, this report aims to describe the status of congestion on the County's major highway and arterials. For this reason, two key performance measurements were used to report on current congestion:
(1) Critical Lane Volumes (CLVs), and
(2) GPS Arterial Travel Times and Speeds

In addition, this year's report re-introduces the use of forecasted volume-to-capacity (V/C) ratios, as a measure of the near-term future performance of the County's transportation

network. This particular measure was initially used in the 2004 ADAC Report to describe forecasted traffic congestion for the year 2010.

Critical Lane Volume (CLV) data continues to be the ideal means for identifying levels of congestion at signalized intersections throughout the County. This measure of congestion is calculated mathematically using throughput and conflicting movement volume data, in conjunction with information on the geometric configuration and signal phasing for a particular intersection, as the major variables.

Although data collection resources were limited for this year's report, the GPS arterial travel time and speed data that was acquired for the purposes of this report, once again proved to be useful in terms of measuring levels of congestion along two of the County's most heavily traveled routes and corridors. This particular measure uses travel time and speed data collected via GPS technology as routes are driven, to determine how a particular corridor performs during the peak periods of the day, relative to the off-peak period.

As mentioned in the 2005 HMR, the Department continues to transition from the current TRAVEL/2 model to the new TRAVEL/3 model, which employs the COG modeling process. Because the validation of the TRAVEL/3 model has yet to be completed, staff used output from the Department's TRAVEL/2 model for the purposes of this report. Therefore, a revised year 2010 model run was conducted, using MWCOG Round 7.0 cooperative land-use forecasts, in addition to an updated version of the Constrained Long Range Plan (CLRP) model network as the key inputs. The results of this model run were compared to the model run results for the TRAVEL/2 validation year (1998) network for analysis purposes.

Most of the County's freeway system continues to undergo project planning at the Maryland Department of Transportation (MDOT). The I-270 / US 15 Corridor Study, the Capital Beltway (I-495) HOV Study, and the Intercounty Connector (ICC) project, were all referenced in the 2005 HMR report and continue to be monitored and studied for planning purposes. Therefore, as with the scope of work for last year's report, staff once again elected to focus its resources on evaluating the major highway and arterials, where the Planning Board and County Council can work to address mobility issues in the near-term. However, it should be noted that MWCOG released a report on February 15, 2006 entitled, *Traffic Quality on the Metropolitan Washington Area Freeway System*, which describes traffic conditions on the region's freeways. Those wishing to view the report in its entirety should visit the following address on the MWCOG website to download a copy of the report:
http://www.mwcog.org/news/press/detail.asp?NEWS_ID=189

Data Sources and Reliability Issues

Information provided in reports of this nature is only as reliable as its particular data source(s). There are a number of factors that will consistently contribute to certain inaccuracies in the collected source data. These factors can include device failure, human error, poor survey conditions (i.e. weather, time of day, time season), and/or unforeseen circumstances such as traffic incidents. The inevitability of these factors should always be taken into consideration when evaluating potential traffic data sources.

The data stored in the Department's intersection analysis database provides the framework for the discussion on Critical Lane Volumes (CLVs) at signalized intersections, as a measure of performance. A majority of the CLV data stored in the database was derived from either turning movement count data acquired from SHA, or data gathered by consultants for traffic study purposes as required by the Department's LATR Guidelines. SHA's 13-hour (6:00 am - 7:00pm) turning movement count standard remains effective, while the Department continues to require 6-hour (6:30 am – 9:30 am, 4:00 pm – 7:00pm) turning movement counts for LATR purposes. It is also worth noting that the Department periodically receives and utilizes turning movement count data collected and provided by DPWT, which are conducted as part of the County's Transportation Demand Management (TDM) program. These counts tend to vary in duration from 4-hours (7:00 am – 9:00 am, 4:00 pm – 6:00 pm) to 6-hours (7:00 am – 9:00 am, 11:00 am – 1:00 pm, 4:00 pm – 6:00 pm).

As seen in the previous two years of the report, the analysis results indicate that the County's transportation system exhibits characteristics of great dynamics. Because CLVs at most intersections tend to fluctuate roughly 10% within a given 2-3 year period, staff has identified this as being the *normal variability* seen in data of this nature. That being said, it is more desirable to have more frequent count samples for locations that have CLVs that exceed what is considered to be the normal variability within a 2-3 year period. In the previous two years of the report, some citizens have raised concerns regarding the lack of monitoring of the off-peak and weekend traffic conditions along some heavily commercial corridors (e.g., MD 355). Although staff, along with various elected officials, recognize significant patterns of congestion along these roadways during these periods, the status quo remains that travel conditions continue to be far worse during the AM and PM peak periods than during the off-peak and weekends in most areas of the County. If warranted, the provision of future resources would grant staff the ability to monitor conditions outside of the typical peak periods.

With regards to the arterial travel time and speed data samples, there were very limited resources available this year either to: (a) collect and analyze new primary data and/or (b) gather and analyze new secondary travel time and speed data from other sources. New primary data was collected for only two corridors: (1) Frederick Road (MD 355) between Montgomery Village Avenue (MD 124) and Comus Road, and (2) the combined corridor of First Street (MD 911), Norbeck Road (MD 28), and the MD 29-198 Connector between Rockville Pike (MD 355) and New Hampshire Avenue (MD 650). Secondary sources, based on Global Position System (GPS) equipped probe vehicle samples conducted by other agencies, continue to be available. More specifically, a substantial amount of samples were made available by these agencies following the completion of last year's report. However, the resources to effectively analyze and summarize all of the secondary data were also limited for the purposes of this report. As a result, some of this secondary data will be retained for possible future trend analysis provided that sufficient funding is available in the future.

Staff currently uses the Department's TRAVEL/2 model to conduct both long and short-range travel forecasts. The model utilizes forecasted land use data as a key input to estimate future traffic to be generated on the County's transportation system. As both land use forecasts and the County's planned transportation infrastructure change over time, the model results will

change accordingly. In addition, significant modifications in the model's key inputs must occur before major differences will be seen in the model results. For these reasons, modeled traffic data tends to be more useful in terms of analyzing significant changes in traffic trends over longer periods of time, versus using the data to observe year-to-year variations. Traffic forecasts are *estimates* of future traffic conditions, which are based on assumptions about land use patterns and the County's transportation network for the future. Therefore, this information is generally not as useful as information based on observed (current) traffic conditions for near-term planning purposes.

Future Data Sources

As mentioned in the 2005 HMR, staff continues to coordinate with SHA and DPWT on the development of a Memorandum of Understanding (MOU) in which all three agencies would enter into an agreement to use the SHA traffic count guidelines which require the collection of turning movement counts for a 13-hour duration. This process has been placed on hold, as SHA must first resolve some internal coordination issues prior to the development of the MOU. Provided that this initiative moves forward, the Department will be required to revise its current LATR guidelines in order to accommodate the terms of this agreement.

The 2005 HMR also alluded to the potential 24/7/365 availability of archived electronic traffic data, which is continuing to be developed by the University of Maryland Center for Advanced Transportation Technology Laboratory (UMD-CATT Lab) for SHA's Coordinated Highways Action Response Team (CHART). Staff recently provided the UMD-CATT Lab with traffic data obtained from the County's Advanced Transportation Management System (ATMS), which the Department had been archiving (under the now defunct "DASH system") for analysis purposes. When available, these combined data sources will allow a much more detailed investigation of the variability in traffic volumes along some of the County's major highways and arterials. Because the UMD-CATT Lab has the work program, staff, and resources that will allow the maintenance of an archiving system of this nature, staff remains optimistic about the availability of data from this particular source for future reports.

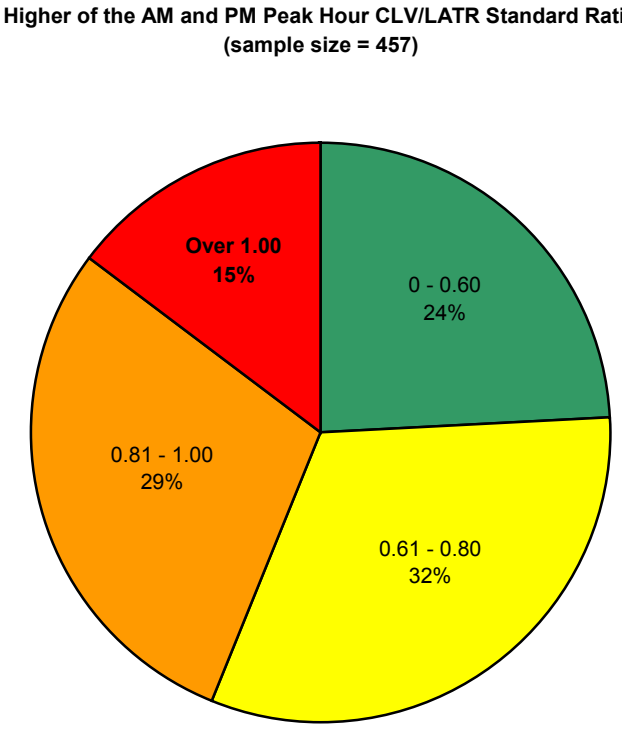
III. CURRENT CONGESTION

Critical Lane Volumes (CLVs) at Signalized Intersections

The Department's intersection database currently contains count samples for 506 of the 762 (both existing and planned) signalized intersections in the County, which date back to March 1, 2001. The total number of samples is up from the 435 samples that were in the database at the time of last year's report. The Priority Funding Areas (PFAs) continue to be well monitored as roughly 71% of the intersections located in these areas have been sampled in recent years. Staff feels that it is acceptable to utilize turning movement count data dating as far back as 3 years for reporting purposes, primarily because the percent change in CLV seen at most locations during this time frame tends to fall within what is considered the be the normal variability. In addition, the Department routinely utilizes CLV data dating back the same length of time to conduct intersection trend analyses for LATR purposes. That being said, staff elected to remove data from this year's sampling, which was dated prior to January 1, 2003. Therefore, only 457 of the 506 intersections were sampled for the purposes of this report (see Appendix 5.1A for the complete list of samples in the database). Staff acknowledges that some count samples, which are dated prior to 2003, may hold some degree relevancy to the current-day traffic conditions. However, it is preferred that more up-to-date samples for these locations are obtained prior to re-reporting on them. It should be noted however that a small set of count data samples, which predate 2003, were used to analyze CLV trends at some locations for this report. Prior to assembling this year's report, staff was able to acquire updated turning movement count data for 49 intersections located along some of the major State roads from SHA's database. These counts were all conducted between the dates of 1/1/2004 and 12/31/2005.

The findings in this year's study indicate that approximately 15% of the 457 intersections sampled had a CLV that exceeded their respective LATR standard, or a CLV/LATR ratio of greater than 1.00. In addition, staff found that 29% of the intersections sampled had a CLV/LATR ratio between 0.80 and 1.00. Figure 3.1 shows the full distribution of CLV/LATR ratios for all of the intersections sampled. It should be noted that 13 of the 47 intersections in the database, which have count samples predating 2003, had CLVs that exceeded their designated LATR standard. Therefore, staff plans to acquire more recent count data for these locations before re-reporting on their status.

Figure 3.1: CLV/LATR Ratio Distribution



It is worth noting that, last year's report indicated that 22% of the 435 intersections sampled had a CLV that exceeded its respective LATR standard. The 7% decrease (between 2005 and 2006) in the number of intersections with a CLV/LATR ratio of greater than 1.00 can be explained in several ways. Roadway and intersection infrastructure improvements (i.e. the new US 29 interchanges) performed by both the State and County, as well as improvements related to development; have helped to reduce CLVs at a number of problematic locations. These locations will be discussed in greater detail later in this report. Also, prior to assembling this report, staff conducted an audit of a small set of CLV data in the database, which either appeared to be questionable, or had values that were found to be incorrect. After performing a thorough quality assurance and control (QA/QC) exercise, it was found that some of this CLV data had been previously miscalculated, as a result of incorrect input parameters and/or erroneous raw count data. Therefore, staff proceeded to revise input parameters (i.e. geometrics, signal phasing, number of lanes, etc.) for the intersections in question, prior to re-calculating their CLVs. Another reason for this decrease has to do with the range of dates for which the most recent counts were sampled. By excluding all counts from the sample set that predate January 1, 2003, a number of questionable counts, as well as counts with CLVs that may no longer reflect current day conditions, were removed from the sample set. A number of the earlier counts in the database were collected before the Department had stringent QA/QC measures in place that would ensure the validity of the counts, as well as the CLV data.

A majority of the change in CLVs over the last 2-3 years is within the normal variability of 10%. However, it is important to note that when comparing this year's CLV/LATR ratios to

those reported in the 2005 report, notable differences are seen particularly in the upper two class ranges (0.81 – 1.00, and Over 1.00) (see figure 3.2). According to this year's data, the total number of intersections with a CLV/LATR of greater than 1.00 decreased by roughly 7% when compared to the data presented in last year's report. In contrast, the number of intersections with a CLV/LATR ratio between 0.81 and 1.00 increased by roughly 5.5% since last year. This would indicate that some of the locations that were extremely congested the previous year have seen their CLV/LATR ratios decrease to less than 1.00. As mentioned earlier, much of this contrast in year-to-year variation of CLV/LATR ratios can be attributed to the impact of infrastructure improvements, a more refined data sampling, and the re-calculation of CLVs at a few locations.

Figure 3.2: Year-to-Year Comparison of CLV/LATR ratios

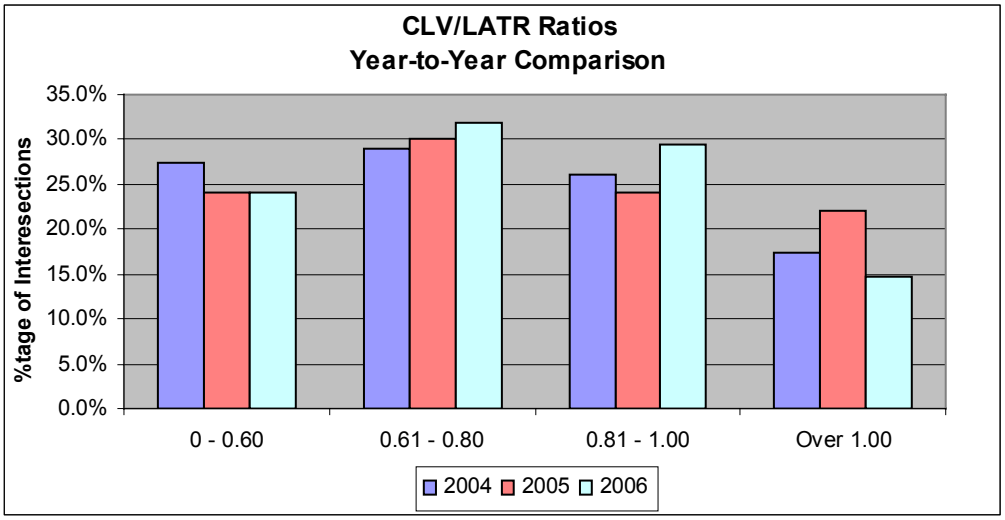


Table 3.1 shows the LATR congestion standards for all (34) policy areas of the County. Nine of the County's 34 policy areas are designated Central Business Districts (CBDs). County policy promotes high levels of growth and development in the CBDs, mainly because these areas have the transportation infrastructure to accommodate higher levels of congestion, hence a LATR standard of 1800.

Table 3.1: LATR Congestion Standards

Congestion (CLV) Standard	Policy Area
1400	Rural Areas (Poolesville, Damascus, Goshen, Patuxent, Darnestown / Travilah)
1450	Clarksburg, Damascus, Gaithersburg City, Germantown East, Germantown Town Center, Germantown West, Montgomery Village / Airpark
1475	Cloverly, Derwood, Olney, North Potomac, Potomac, R&D Village
1500	Aspen Hill, Fairland / White Oak, Rockville City
1550	North Bethesda
1600	Bethesda / Chevy Chase, Kensington / Wheaton, Silver Spring / Takoma Park
1800	Bethesda CBD, Friendship Heights CBD, Glenmont, Grosvenor, Shady Grove, Silver Spring CBD, Twinbrook, Wheaton CBD, White Flint

Table 3.2 lists the 10 most congested intersections in the County, as of April 28, 2006. As seen in the previous two reports, the intersections are ranked by absolute CLV as opposed to the CLV/LATR standard ratio. Staff has concluded in previous years that absolute CLV tends to be a better determinant of the severity of congestion. That is, a CLV of 1500 typically indicates some degree of congestion, but may not be viewed as severe in some policy areas (e.g. CBDs) when compared to less stringent standards. See figure 3.3 for a detailed map of these locations.

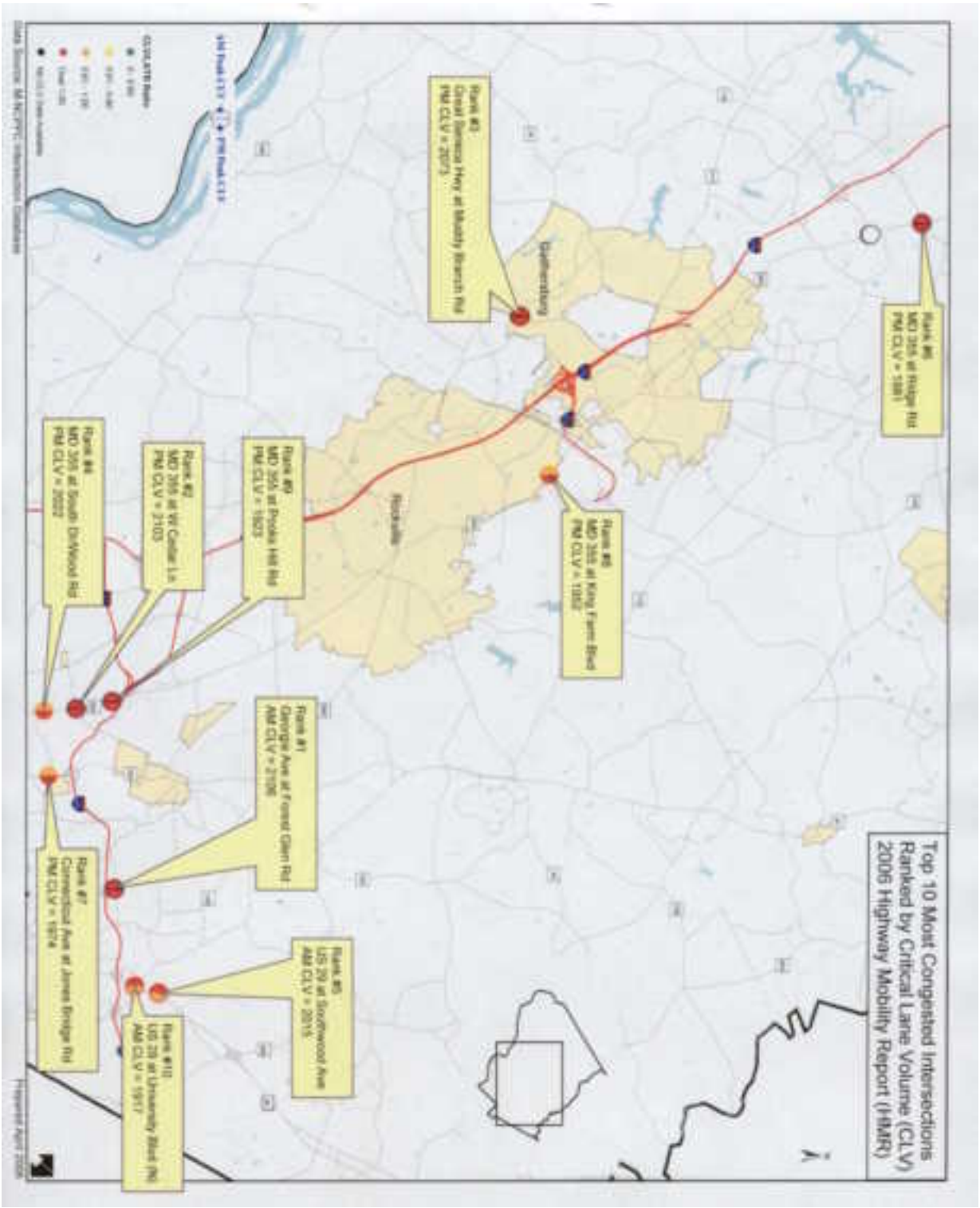
Table 3.2: Top 10 Most Congested Intersections in 2006
- Revised May 30, 2006 (after the staff draft was published) -

RANKING			INTERSECTION NAME	COUNT DATE	CLV	LATR STAN	POLICY AREA
2006	2005	2004					
1	*2*	*	*Georgia Ave at Forest Glen Rd*	*8/28/2003*	*2106*	*1600*	*Kensington/Wheaton*
2	*3*	*1*	*Rockville Pike at W Cedar Ln*	*4/5/2005*	*2103*	*1600*	*Bethesda/Chevy Chase*
3	*11*	*64*	*Great Seneca Hwy at Muddy Branch Rd*	*10/5/2005*	*2073*	*1450*	*Gaithersburg City*
4	5	*	Rockville Pike at South/Wood/NNMC	6/9/2004	2022	1600	Bethesda/Chevy Chase
5	6	11	Columbia Pike at Southwood Ave	10/28/2004	2015	1600	Kensington/Wheaton
6	*7*	*81*	*Frederick Rd at Ridge Rd*	*9/8/2004*	*1981*	*1450*	*Germantown East*
7	8	9	Connecticut Ave at Jones Bridge Rd	6/11/2003	1974	1600	Bethesda/Chevy Chase
8	10	*	Frederick Rd (MD 355) at King Farm Blvd	4/15/2004	1952	1800	Shady Grove
9	13	53	Rockville Pike (MD 355) at Pooks Hill Rd	6/8/2004	1923	1600	Bethesda/Chevy Chase
10	14	66	Colesville Rd at University Blvd (N)	10/28/2004	1917	1600	Kensington/Wheaton

* Intersection was unranked either b/c data was unavailable
Entries in *italics* indicates special notes for this particular location

Notes for Table 3.2 (by rank)
Intersection #1: Signal phasing changed since the count was taken
Intersection #2: Grade-separated interchange recommended in MP
Intersection #3: Roadway improvement was nearing completion when count was taken
Intersection #6: Grade-separated interchange recommended in MP

Figure 3.3: Map of the Top 10 Most Congested Intersections
- Revised May 30, 2006 (after the staff draft was published) -



Great Seneca Hwy (MD 119) at Muddy Branch Rd has moved into the list of the 10 most congested intersections at #4 from a #11 ranking last year. As a result of increased volumes along both Great Seneca Hwy and Muddy Branch Rd, the CLV at this location increased 6.4% between 2004 and 2005 (most recent count). The increase in volumes along these roads can be partially attributed to some of the recently completed office and commercial development concentrated in the R&D village. In addition, the recently completed widening of Great Seneca Hwy has more than likely contributed to the increased volumes along this roadway. Further monitoring of this location will be necessary in order to determine the degree to which the widening will impact the CLV over time. The intersection of Rockville Pike (MD 355) and Pooks Hill Rd / Bellevue Dr has also moved into this year's list at #9 after being ranked #13 during the previous year. This location, which has a calculated CLV of 1923, is located just to the north of two intersections (MD 355 at Cedar Ln, MD 355 at South Dr / Wood Rd) that are ranked among the top 10 most congested for the second consecutive year. The consistent increase in volumes along MD 355 during both the AM and PM peaks, have helped to sustain this corridor as one of the most congested in the County. The third intersection to move into this year's list is Colesville Rd (US 29) at University Blvd (N). This intersection is appearing on the list at #10 after being ranked #14 last year. This intersection is located in the heavily congested Four Corners section of the Silver Spring. The severe levels of congestion observed at this intersection during the AM peak can be primarily attributed to the large volumes of traffic that access the Capital Beltway (westbound I-495) via southbound US 29 on a daily basis.

Tables 3.3 and 3.4 rank the remaining intersections that have CLVs, which exceed their respective LATR standard. It is important to note that 29 of the 70 intersections listed in these tables either have recommended improvements, or ongoing/recently completed improvements associated with them, which could impact or have impacted the CLVs at these locations. See appendix 5.3 in the back of the report for the complete list of planned, active, and recently completed State and County infrastructure improvements. Similar to the table (above), which ranks the top 10 most congested intersections, these tables display the ranking (by absolute CLV) for each intersection by year. By doing so, staff was able to highlight intersections that shifted significantly in the rankings as a result of both past and recent infrastructure improvements. In addition, staff was able to identify locations that shifted in the rankings (from a CLV standpoint) as a result of on-street work zones related to ongoing infrastructure improvements, which ultimately reduced mobility at these locations.

Table 3.3: Congested Intersections (11-30)
- Revised May 30, 2006 (after the staff draft was published) -

RANKING			INTERSECTION NAME	COUNT DATE	CLV	LATR STAN	POLICY AREA
2006	2005	2004					
11	*41*	*	*Colesville Rd at Sligo Creek Pkwy/St Andrews*	*12/8/2005*	*1917*	*1600*	*Silver Spring/Takoma Park*
12	*16*	*	*Georgia Ave at Norbeck Rd*	*9/11/2003*	*1896*	*1500*	*Aspen Hill*
13	*25*	*	*Columbia Pike at Stewart/NB Slip Ramp*	*1/29/2003*	*1849*	*1500*	*Fairland/White Oak*
14	*28*	*30*	*Connecticut Ave at East West Hwy*	*3/18/2004*	*1831*	*1600*	*Bethesda/Chevy Chase*
15	*29*	*32*	*Veirs Mill Rd at First St*	*3/18/2003*	*1818*	*1500*	*Rockville City*
16	*	*	Norbeck Rd (MD 28) at Avery Rd	10/12/2005	1815	1500	Rockville City
17	*30*	*55*	*Colesville Rd at University Blvd (S)*	*10/28/2004*	*1810*	*1600*	*Kensington/Wheaton*
18	31	139	MD 355 at Indianola Dr/Watkins Pond	10/6/2004	1789	1500	Rockville City
19	*34*	*89*	*Columbia Pike at Briggs Chaney Rd*	*2/4/2004*	*1770*	*1500*	*Fairland/White Oak*
20	*35*	*92*	*Darnestown Rd at Riffle Ford Rd*	*11/9/2004*	*1769*	*1475*	*North Potomac*
21	48	43	Old Georgetown Rd at Tuckerman Ln	5/26/2005	1746	1550	North Bethesda
22	*38*	*77*	*Veirs Mill Rd at Twinbrook Pkwy*	*6/9/2004*	*1743*	*1550*	*North Bethesda*
23	39	*	Georgia Ave at Emory Ln	9/9/2003	1741	1475	Olney
24	40	*	Hungerford Dr at N Washington St	7/8/2004	1736	1500	Rockville City
25	*	*	Key West Ave at Shady Grove Rd	9/27/2005	1733	1500	Rockville City
26	*	*	Georgia Ave at MD 108	12/14/2005	1722	1475	Olney
27	*43*	*8*	*Connecticut Ave at Veirs Mill Rd*	*3/3/2004*	*1717*	*1600*	*Kensington/Wheaton*
28	*27*	*21*	*Norbeck Rd at Bauer Dr*	*10/20/2005*	*1710*	*1500*	*Aspen Hill*
29	*	*	Piney Branch Rd at Philadelphia Ave	4/20/2005	1704	1600	Silver Spring/Takoma Park
30	45	35	Columbia Pike at Lockwood Dr	10/26/2004	1699	1500	Fairland/White Oak

* Intersection was unranked either b/c data was unavailable or CLV did not exceed standard
Entries in *italics* indicates special notes for this particular location

Notes for Table 3.3 (by rank)
Intersection #11: Work zone existed north of intersection when count this was taken
Intersection #12: Grade-separated interchange in project planning
Intersection #13: Grade-separated interchange under study
Intersection #14: Count taken prior to intersection improvement
Intersection #15: Grade-separated interchange/intersection improvements under study
Intersection #17: Work zone existed south of intersection when this count was taken
Intersection #19: Grade-separated interchange under construction
Intersection #20: Roadway has been improved since this count was taken
Intersection #22: Road improvements south of intersection have been completed since this count was taken
Intersection #27: Intersection improvements completed since this count was taken
Intersection #28: Intersection improvements recommended in MP

Table 3.4: Congested Intersections (31-70)
- Revised May 30, 2006 (after the staff draft was published) -

31	*47*	*37*	*University Blvd at Piney Branch Rd*	*5/3/2005*	*1676*	*1600*	*Silver Spring/Takoma Park*
32	49	145	Rockville Pike at Wilson/NIH	6/10/2004	1675	1600	Bethesda/Chevy Chase
33	50	51	Old Georgetown Rd at Beech St	10/5/2004	1675	1600	Bethesda/Chevy Chase
34	*	*	*Colesville Rd at Franklin Ave*	*4/13/2005*	*1670*	*1600*	*Silver Spring/Takoma Park*
35	*	*	*Georgia Ave at Arcola Ave*	*5/3/2005*	*1661*	*1600*	*Kensington/Wheaton*
36	*52*	*7*	*Hungerford Ln (MD 355) at Gude Dr*	*10/26/2004*	*1656*	*1500*	*Rockville City*
37	93	68	Frederick Rd at Clarksburg Rd	8/24/2005	1653	1450	Clarksburg
38	*	*	*New Hampshire Ave at Lockwood Dr*	*11/17/2004*	*1644*	*1500*	*Fairland/White Oak*
39	*	*	*Montrose Rd at Tildenwood Ln*	*3/9/2005*	*1643*	*1550*	*North Bethesda*
40	54	47	Old Georgetown Rd at W Cedar Ln	4/30/2003	1639	1600	Bethesda/Chevy Chase
41	59	56	Muncaster Rd at MD 108	6/3/2004	1638	1400	Patuxent
42	*	*	Layhill Rd at Belpre/Bonifant Rd	9/15/2005	1633	1500	Aspen Hill
43	55	17	Connecticut Ave at Randolph Rd	3/3/2004	1631	1600	Kensington/Wheaton
44	42	29	Georgia Ave at Columbia Blvd/Seminary Ln	5/10/2005	1631	1600	Silver Spring/Takoma Park
45	*56*	*	*Columbia Pk at Burtonsville Xing SC*	*6/2/2004*	*1628*	*1400*	*Patuxent*
46	57	52	Georgia Ave at Plyers Mill Rd	11/18/2003	1626	1600	Kensington/Wheaton
47	*58*	*80*	*Woodfield Rd at Fieldcrest/Hadley Farms*	*3/10/2005*	*1620*	*1450*	*Montgomery Village/Airpark*
48	*4*	*5*	*Montrose Rd at E Jefferson St*	*3/9/2005*	*1617*	*1550*	*North Bethesda*
49	*60*	*269*	*Mont. Village Ave at Chris/Lost Knife*	*11/4/2004*	*1613*	*1450*	*Montgomery Village/Airpark*
50	*	*	Georgia Ave at Connecticut Ave	2/19/2004	1611	1500	Aspen Hill
51	*63*	*60*	*Veirs Mill Rd at Aspen Hill Rd*	*3/22/2003*	*1608*	*1500*	*Aspen Hill*
52	*	*	First St at Baltimore Rd	1/13/2005	1602	1500	Rockville City
53	67	*	Cherry Hill Rd at Broadbirch/Calverton Blvd	5/18/2004	1589	1500	Fairland/White Oak
54	72	75	MD 355 at Edmondston Ln	3/20/2003	1556	1500	Rockville City
55	*	*	Olney-Laytons Rd at Queen Elizabeth Dr	12/15/2005	1555	1475	Olney
56	75	71	E Gude Dr at Southlawn Ln	9/28/2004	1545	1500	Rockville City
57	*77*	*38*	*Columbia Pike at Fairland Rd*	*11/20/2003*	*1541*	*1500*	*Fairland/White Oak*
58	78	*	Frederick Rd at Montgomery Village Ave	3/3/2004	1540	1450	Gaithersburg City
59	79	113	Rockville Pike at Congressional Ln	6/3/2004	1538	1500	Rockville City
60	*83*	*	*Columbia Pike at Greencastle Rd*	*2/5/2004*	*1524*	*1500*	*Fairland/White Oak*
61	*	*	Shady Grove Rd at Epsilon/Tupelo	4/6/2005	1518	1475	Derwood
62	*	*	Muncaster Mill Rd at Needwood Rd	4/12/2005	1510	1400	Rock Creek
63	66	61	Midcounty Hwy at Washington Grove Ln	3/22/2005	1508	1475	Derwood
64	*84*	*149*	*Great Seneca Hwy at Quince Orchard Rd*	*3/9/2004*	*1507*	*1450*	*Gaithersburg City*
65	86	*	Hungerford Dr (MD 355) at Manakee St	10/27/2004	1504	1500	Rockville City
66	36	31	Georgia Ave at Old Baltimore Rd	4/7/2005	1498	1475	Olney
67	91	247	New Hampshire Ave at Bonifant/Good Hope	5/25/2004	1476	1475	Cloverly
68	*	*	Georgia Ave at New Hampshire Ave	2/14/2006	1457	1400	Patuxent
69	92	*	Great Seneca Hwy at Kentlands Blvd	5/11/2005	1454	1450	Gaithersburg City
70	95	*	Sandy Spring Rd at McKnew Rd	9/10/2003	1401	1400	Patuxent

* Intersection was unranked either b/c data was unavailable or CLV did not exceed standard
Entries in *italics* indicates special notes for this particular location

Notes for Table 3.4 (by rank)
Intersection #31: Work zone existed north of intersection when this count was taken
Intersection #34: Work zone existed north of intersection when this count was taken
Intersection #35: Intersection improvements in project planning
Intersection #36: Grade separated interchange recommended in MP
Intersection #38: Intersection/roadway improvements completed since this count was taken
Intersection #39: Intersection improvement under construction
Intersection #45: Grade-separated interchange completed at US 29/MD198 after count was taken
Intersection #47: Roadway improvement under study
Intersection #48: Intersection improvement was nearing completion when count was taken
Intersection #49: Intersection improvements completed since this count was taken
Intersection #51: Intersection improvements completed since this count was taken
Intersection #57: Grade-separated interchange in project planning
Intersection #60: Grade-separated interchange in MP
Intersection #64: Intersection improvements completed since this count was taken

The availability of archived count data enabled staff to conduct a CLV trend analysis for a selected group of intersections. This analysis was done primarily to illustrate the impact of infrastructure improvements on CLVs. Table 3.5 lists locations where CLVs decreased as a result of infrastructure improvements by at most 15% over a 4-year period. State (SHA) improvements such as; the widening of Darnestown Rd (MD 28) and Great Seneca Hwy (MD 119), have helped to significantly reduce CLVs at a number of intersections located in the Gaithersburg and R & D Village areas of the County. Improvements related to development such as; the improvement of the intersection at Wayne Ave and Cedar St (in the Silver Spring CBD) helped to reduce the CLV at this location by roughly 40% between late 2003 and late 2005. Analyses of this nature helps to further justify the need for and effectiveness of various forms of infrastructure improvements.

Table 3.5: CLV % Change <= -15%

INTERSECTION	CLV	DATE	O CLV	O DATE	PCT CHG	JUSTIFICATION/REASONING
Darnestown Rd (MD 28) at Key West Ave	1111	9/21/2005	2225	5/8/2001	-100%	MD 28 widening was completed just prior to ’05 count
Wisconsin Ave (MD 355) at Jones Bridge/Center Dr	1536	12/22/2005	2299	4/24/2003	-49%	Result of '04 intersection improvements
Wayne Ave at Cedar St	776	4/12/2005	1094	6/5/2003	-40%	Development-related improvements made at Wayne/Fenton prior to '05 count
Rockville Pike (MD 355) at Marinelli Rd	998	3/8/2005	1394	6/12/2003	-39%	White Flint Metro parking garage was relocated just prior to ’05 count
Darnestown Rd (MD 28) at Muddy Branch Rd	1178	12/20/2005	1505	2/24/2004	-27%	MD 28 and MD 119 widenings were completed prior to ’05 count
Montrose Rd at Executive/E Jefferson St	1617	3/9/2005	2061	5/22/2003	-27%	Intersection improvement was nearing completion when ’05 count was taken
Great Seneca Hwy (MD 119) at Key West Ave (MD 28)	1230	9/27/2005	1556	2/11/2003	-26%	MD 119 widening, reconstruction was being completed when ’05 count was taken
Veirs Mill Rd (MD 586) at Randolph Rd	1314	9/29/2005	1613	10/31/2002	-22%	Intersection improvement was nearing completion when ’05 count was taken
Connecticut Ave (MD 185) at Veirs Mill Rd (MD 586)	1717	3/3/2004	1975	9/19/2001	-15%	MD185/MD586 improvement was nearing completion when ’04 count was taken

The availability of archived data also allowed staff to identify locations where CLVs have increased as the result of new development, or the expansion of existing development. Staff was also able to identify locations where CLVs have increased as result of on-street work zones related to ongoing construction, which typically decrease roadway capacity, and ultimately impact traffic flow. It is important to note that despite the increases in CLVs as a result of development, traffic mitigation measures have been implemented at a number of these locations. Moreover, the absence of these traffic mitigation measures would have resulted in much more drastic increases in CLVs at these locations. Table 3.6 lists locations where CLVs have increased by at least 15% between 2001 and 2005. The CLV at the intersection of Key West Ave (MD 28) and W Gude Dr increased roughly 49% between 2004 and 2005, as a result of the opening of Falls Grove Dr as the northbound leg of the intersection. Comparably, the CLV at Democracy Blvd and Rockledge Dr increased 35% between 2004 and 2005 as a result of the opening of the Rockledge Dr extension to I-270.

Table 3.6: CLV % Change >= 15%

INTERSECTION	CLV	DATE	O CLV	O DATE	PCT CHG	JUSTIFICATION/REASONING
Fenton St at Ellsworth Ave	503	4/19/2005	253	6/12/2003	49%	Eastbound Ellsworth Ave was reopened prior to '05 count
Key West Ave (MD 28) at W Gude Dr	1231	9/28/2005	616	12/8/2004	49%	Falls Grove Dr (new) opened prior to '05 count
Fenton St at Cameron St	644	11/16/2005	394	5/26/2005	38%	Fenton St garage exit re-opened prior to '05 count
Muncaster Mill Rd (MD 115) at Needwood Rd	1510	4/12/2005	955	1/17/2001	36%	MD 115 safety, geometric improvements were underway when ’05 count was taken
Democracy Blvd at Rockledge Dr	1013	4/21/2005	650	2/26/2004	35%	Rockledge Dr (new) was opened prior to '05 count
Fenton St at Thayer St	930	4/14/2005	636	5/20/2003	31%	CBD work zones along Fenton St removed prior to '05 count
Key West (MD 28) at Shady Grove Rd	1733	1/26/2005	1222	10/29/2002	30%	Traffic resulting from development in the R&D Village
Fenton St at Sligo Ave	1087	9/27/2005	770	5/20/2003	29%	CBD work zones along Fenton St removed prior to '05 count
Burlington Ave (MD 410) at Fenton St	1169	3/3/2005	861	6/9/2004	26%	CBD work zones along Fenton St removed prior to '05 count
Coleseville Rd at 2nd/Wayne Ave	1088	5/12/2005	849	6/10/2004	21%	Traffic resulting from ongoing development in Silver Spring CBD prior to '05 count
Old Georgetown Rd at Rock Spring Dr	1368	5/25/2005	1099	6/2/2004	19%	Rockledge Dr (new) was opened prior to '05 count
Old Georgetown Rd at Executive Blvd	1620	3/10/2005	1341	5/22/2003	17%	Traffic resulting from ongoing development at LCOR site seen in ’05 count
Rockville Pike (MD 355) at Tuckerman Lane (N)	1586	5/10/2005	1314	3/25/2003	17%	I-495/270 PM bail-out traffic; development impacts at Strathmore site seen in ’05 count
Darnestown Rd (MD 28) at Riffle Ford Rd/Seurat Dr	1769	11/9/2004	1493	4/24/2001	15%	MD 28 widening was underway when ’04 count was taken
Old Georgetown Rd (MD 187) at Democracy Blvd	1440	4/19/2005	1234	6/2/2004	14%	MD 187 safety, resurfacing improvements were underway when ’04 count was taken

Using this year’s available CLV data, staff has assembled a list of locations that exhibit definitive patterns of congestion. Based on this information, it is discernable that this year’s congested locations tend to mirror those seen in the 2005 Highway Mobility Report (HMR). These corridors tend to have a significant number of intersections, which have CLVs that either are exceeding or are close to exceeding their LATR standard. As seen in the previous two reports, these intersections tend to be located along the major thoroughfares (e.g. State routes), which provide linkages to the various activity centers (e.g. CBDs) of the County. In some instances, some congested intersections are located at the gateway points to the major job and activity centers. There are a number of projects that are either master-planned, or already in project planning, which should help to improve mobility in these areas. Based on this year’s analysis, the following areas and corridors are experiencing significant levels of congestion:

- **Rockville Pike (MD 355)** between the Capital Beltway (I-495) and the intersection of Jones Bridge Rd / Center Dr, where four signalized intersections (Pooks Hill Rd / Bellvue Dr, Cedar Ln / W Cedar Ln, Wilson Dr / NIH, South Dr / Wood Rd) all have CLVs exceeding the LATR standard. Three of these intersections (Cedar Ln / W Cedar Ln, South Dr / Wood Rd, Pooks Hill Rd / Bellvue Dr) rank among the 10 most congested intersections in the County with CLVs of 2103, 2022, and 1923 respectively. The intersection of Rockville Pike and Cedar Ln / W Cedar Ln is ranked among the 10 most congested intersections in the County for the third consecutive year. The master-planned grade-separated interchange for this location was recommended by the County Executive, for addition to the State's Development & Evaluation (D&E) program in the fall of 2005.

- **Rockville Pike / Hungerford Dr / Frederick Rd (MD 355)** between Shady Grove Rd and Twinbrook Pkwy / Rollins Ave, where five intersections (King Farm Blvd, Gude Dr, N Washington St, Edmonston Ln, Congressional Ln) all have CLVs that exceed their respective LATR standard. All, but one of these intersections (King Farm Blvd), are located in the **City of Rockville**. The City of Rockville has its own review procedures and is not subject to the County's LATR guidelines. However, the Department uses the LATR standard for travel monitoring purposes within the city limits. The master-planned grade-separated interchange for the MD 355/Gude Dr intersection was recommended by the County Executive, for addition to the State's Development & Evaluation (D&E) program in the fall of 2005. It should also be noted that Twinbrook Pkwy / Rollins Ave intersection improvement project is currently in the property acquisition phase.

- **Frederick Rd (MD 355)** from Montgomery Village Ave (MD 124) in the **City of Gaithersburg** to points north (Germantown, Clarksburg), where four intersections (Montgomery Village Ave, Christopher St, Ridge Rd (MD 27), Clarksburg Rd (MD 121)) all have CLVs, which exceed their respective LATR standards. The CLVs at these intersections have increased uniformly over the past few years as a result of ongoing development in Clarksburg and the surrounding vicinities. Therefore, this corridor should continue to be monitored with the highest level of scrutiny, as a significant amount of development in this area has been approved, but has yet to be built. There is a significant amount of additional transportation infrastructure planned for these areas, both developer-funded and through traditional funding sources, but travel conditions will likely worsen until those facilities are actually constructed. Staff should note that the Stringtown Rd extension project recently began construction, while the Midcounty Hwy (M-83) extension project from Montgomery Village Ave north to Ridge Rd is currently in phase I facility planning by DPWT.

- **Colesville Road / Columbia Pike (US 29)**, where 10 intersections from the Howard County line to Sligo Creek Pkwy have CLVs exceeding their respective LATR standards. Construction of the new grade-separated interchanges at Sandy Spring Rd (MD 198) and Randolph Rd / Cherry Hill Rd were completed in late 2005. Construction of the new grade-separated interchange at Briggs Chaney Rd is to be completed by mid-to-late 2007. Four additional grade-separated interchanges

(Blackburn Rd, Fairland Rd / Musgrove Rd, Greencastle Rd, Stewart Ln, Tech Rd) are either master planned or in project planning. However, in accordance with the Council Master Plan guidance, SHA is conducting a monitoring program in the vicinity of and downstream from the new interchanges before additional interchanges are funded for construction.

- **Georgia Avenue (MD 97)** between the Wheaton and Silver Spring CBDs, where four intersections (Columbia Blvd / Seminary Ln, Forest Glen Rd, Plyers Mill Rd) all have CLVs exceeding their LATR standard. The intersection at Arcola Ave also has a CLV that exceeds its LATR standard. Five intersections (Connecticut Ave (MD 185), Norbeck Rd (MD 28), Emory Ln, Old Baltimore Rd, Olney-Sandy Spring Rd (MD 108)) from the Glenmont area to the Olney Town Center also have CLVs that exceed their respective LATR standards. New grade-separated interchanges for the Randolph Rd and Norbeck Rd intersections are currently in project planning by SHA. Intersection improvements for Georgia Ave (MD 97) at Arcola Ave are also in project planning. The Forest Glen Road intersection, which ranks #2 on the list of the most congested intersections for the second consecutive year with a CLV of 2106, had its signal phasing plan updated following its most recent count and conditions have improved following the new phasing plan, but a new count with a current CLV is not yet available.

- **Norbeck Rd (MD 28)** from Georgia Ave (MD 97) to Veirs Mill Rd (MD 586), where 5 of the 10 signalized intersections (Georgia Ave, Bauer Dr, Avery Rd, Baltimore Rd, Veirs Mill Rd) have CLVs that exceed their LATR standard. A grade-separated interchange for the Georgia Ave intersection is currently in project planning by SHA. In addition, at-grade and grade-separated improvement options for the Norbeck Rd / First St / Veirs Mill Rd intersection are currently under study by SHA

- **Veirs Mill Rd (MD 586)** from Georgia Ave to Norbeck Rd / First St, where four intersections (Georgia Ave, Aspen Hill Rd, Twinbrook Pkwy, Norbeck Rd / First St) all have CLVs exceeding their respective LATR standards. The master-planned widening of Veirs Mill Rd from Randolph Rd to Twinbrook Pkwy was recommended by the County Executive, for addition to the State's Development & Evaluation (D&E) program in the fall of 2005.

- **Montrose Rd** where the intersections at Tildenwood Ln and E Jefferson St both have CLVs, which exceed their LATR standard. The intersection at E Jefferson St was recently improved with the additions of a second southbound right turn lane, and a second eastbound left turn lane. Therefore, staff will need to obtain new data for this intersection to determine the effectiveness the recent improvements. The County recently began construction of the new Montrose Pkwy West (from Tildenwood Ln to Old Georgetown Rd), which will serve as a bypass around the existing Montrose / Randolph Rd. This project also involves the widening of an existing segment of Montrose Rd between Tower Oaks Blvd and Tildenwood Ln. The Montrose Parkway East (from Old Georgetown Rd to Veirs Mill Rd (MD 586)) extension of this project is currently in phase II facility planning by DPWT. A grade-separated interchange for the

intersection at Rockville Pike (MD 355) and the CSX railroad crossing is currently in project planning by SHA.

- **River Road (MD 190)** from Seven Locks Rd to Winston Dr / Whittier Blvd, where four signalized intersections (Seven Locks Rd, I-495 E access ramp, Beech Tree Rd / Nevis Rd, Winston Dr / Whittier Blvd) all have CLVs exceeding the their LATR standard. The counts for these intersections all predate 2003. Therefore, staff would like to obtain more recent count data for these locations to determine the accuracy of the reported conditions, for future reporting purposes.

Although CLV data is useful for identifying levels of congestion at signalized intersections and along some of the more heavily signalized corridors, it does not always clearly describe the issue of congestion at the link or roadway segment level. In some cases, an intersection may have a CLV, which indicates that it is performing at an acceptable level relative to the LATR standard. However, if the approach volume at that intersection is being impeded or diminished by the lack of flow along the approaching link or links, then the issue of congestion can be attributed to conditions along the link. The next section of this report discusses the results of GPS travel time and speed runs, which were conducted for a selected group of well-traveled routes and corridors throughout the County. The information to be discussed in this section will help to identify congestion at the link level along some of the aforementioned congested corridors.

Arterial Travel Times and Speeds

This performance measure was introduced in the 2004 ADAC Report and was perceived as an indicator that could be easily understood by transportation system users. People are usually very aware of the travel times and speeds that they experience while traveling from place-to-place at different times of the day, during different days of the week. GPS-equipped probe vehicles are used to conduct structured samples of different roadways at specific times of the day to yield measures such as representative speeds and travel times, variations in speeds and travel times, and average speed and travel times over specific sampling periods. Because roadway users experience and internalize these measures of traffic congestion during their own travel, they can understand how well the results of sampling and characterization of congestion levels agree with their own experiences.

The Planning Board has expressed sentiments in previous reviews that the cumulative summary of collected GPS-based travel time and speed data provides a good enough representation of the overall traffic congestion patterns in the County to support continuing data collection efforts with slight variations in the study scope from year to year. For the previous two reports, the consultant had structured the travel time and speed samples to include many well-traveled routes and reported the results on a route-by-route basis, so that readers could easily check the range of the results against their own travel experiences. The summaries tend to emphasize the variations in congestion in terms of: (a) its duration over time, (b) extent along the route, and (c) its intensity at different places and times. The analysis is less concerned with average conditions and recognizes that congestion can have many causes. A significant amount of congestion does not recur from day-to-day; rather it can be

associated with incidents that occur somewhat randomly, as well as periodic events that take place from time-to-time. Such non-recurring, incident-based congestion is often observed in the speed and travel time samples.

In 2004, the Department analyzed the performance of the County's arterial network by reviewing travel times and speeds along selected routes, as surveyed by a series of GPS-equipped probe vehicles. With the assistance of the consultant (Motion Maps, LLC) and the subcontractor (MCV), a series of data samples were collected along the freeways, a series of major arterial corridors, and a few minor arterials throughout most of the County during weekday AM and PM peak periods. Those samples were structured to emphasize greater spatial coverage rather than having more samples over the peak period for a particular roadway, although some repeated sampling was done along certain routes. Additional secondary GPS-based travel time and speed data was obtained from the Metropolitan Washington Council of Governments (MWCOG), as they perform collection of travel time and speed data samples on a three-year cycle for a selected set of arterials in the region, including a significant amount in Montgomery County.

In 2005, the Department conducted a similar set of travel time and speed samples using the same consultant team. However, based upon feedback received following the 2004 report, the 2005 sampling focused on: (a) a selection of County and State arterials, (b) getting more frequent samples within each peak period, and (c) establishing an ability to track year-to-year changes in congestion patterns based on archived travel time and speed data. Fourteen route-corridors were sampled in 2005. Each of these route-corridors was sampled in 2004 as well, although some had a small set of samples at that time. In 2005, an increased number of secondary source GPS-based travel time and speed runs (in Montgomery County) were made available. In addition to the fourteen route-corridors associated with the primary data collection, the secondary data source samples included four additional corridors. The availability of the secondary data sources enabled the primary data collection to cover a few different corridors that might have otherwise been excluded due to resource limitations. Secondary data was available from two new sources: (1) the State Highway Administration (SHA), and (2) the Montgomery County Department of Public Works and Transportation (DPWT), as well as from the prior year source of the MWCOG. Specific documentation of the corridors sampled by the primary and secondary sources was provided in the 2005 report. For the primary and secondary routes sampled in 2005, there was an overall total of about 550 travel time and speed samples. For the typical route-corridor sampled, there were a total of about 28 travel time runs on average, or about 7 travel time runs per direction and time period.

Readers should recognize that there is a high degree of variability in the congestion along a route during the peak periods of congested or slow traffic – at any given time, some segments may be congested and others not; and at any given place, the congestion may peak at a time different than other places along a corridor. In other words, congestion particularly on arterials can be localized and intense. Yet at other locations along that arterial, the congestion may be most intense at a different time or for a different duration. For some arterials, the slowness can be very directional, but for other arterials, the slowness can be more evenly distributed bi-directionally. For that reason and the practicality of conducting the probe samples, each corridor is typically sampled in both directions during both the AM and the PM peak periods to

capture both the peak and off-peak directional flows according to the following general procedures:

- **Sample Frequency per Hour**: The more travel time and speed samples that are collected, the easier it is to capture such variability and the full range of congested conditions. Yet, more samples require more resources to collect the data, and given the general limitations of Department's resources, there is a limit to the number of observations that can be performed. The sampling approach attempts to obtain between two and four observations per hour per direction for the corridors. Between one and three probes are used to sample each corridor and direction by driving back and forth along the route. The field supervision tries to have a somewhat even time spacing between the probes when more than one probe is used.
- **Sampling Duration per Peak Period**: Three probes are typically used on longer more congested routes, while one probe tends to be used on shorter less congested routes. However, to get to the start or return from the end of a particular route, at times it is more feasible to use a route that is being sampled on a different day, referred to as a "deadheading sample". The duration of the sampling per peak period is generally about two and a half to three hours, but sometimes more or sometimes less. The field supervision generally tries to start the first sample and stop the last sample as a full sample of the corridor, but this is not always the most practical approach

The following discussion and illustrations presents the results of the travel time and speed samples for two specific corridors. As mentioned earlier, new primary data was collected for only two corridors: (1) Frederick Road (MD 355) between Montgomery Village Avenue (MD 124) and Comus Road, and (2) the combined corridor of First Street (MD 911) and Norbeck Road (MD 28) / MD 28-198 Connector between Rockville Pike (MD 355) and New Hampshire Avenue (MD 650). In addition, some secondary GPS-based travel time and speed data was available for 2006 for adjacent sections of these two corridors. The results of the travel time and speed data analysis are discussed below:

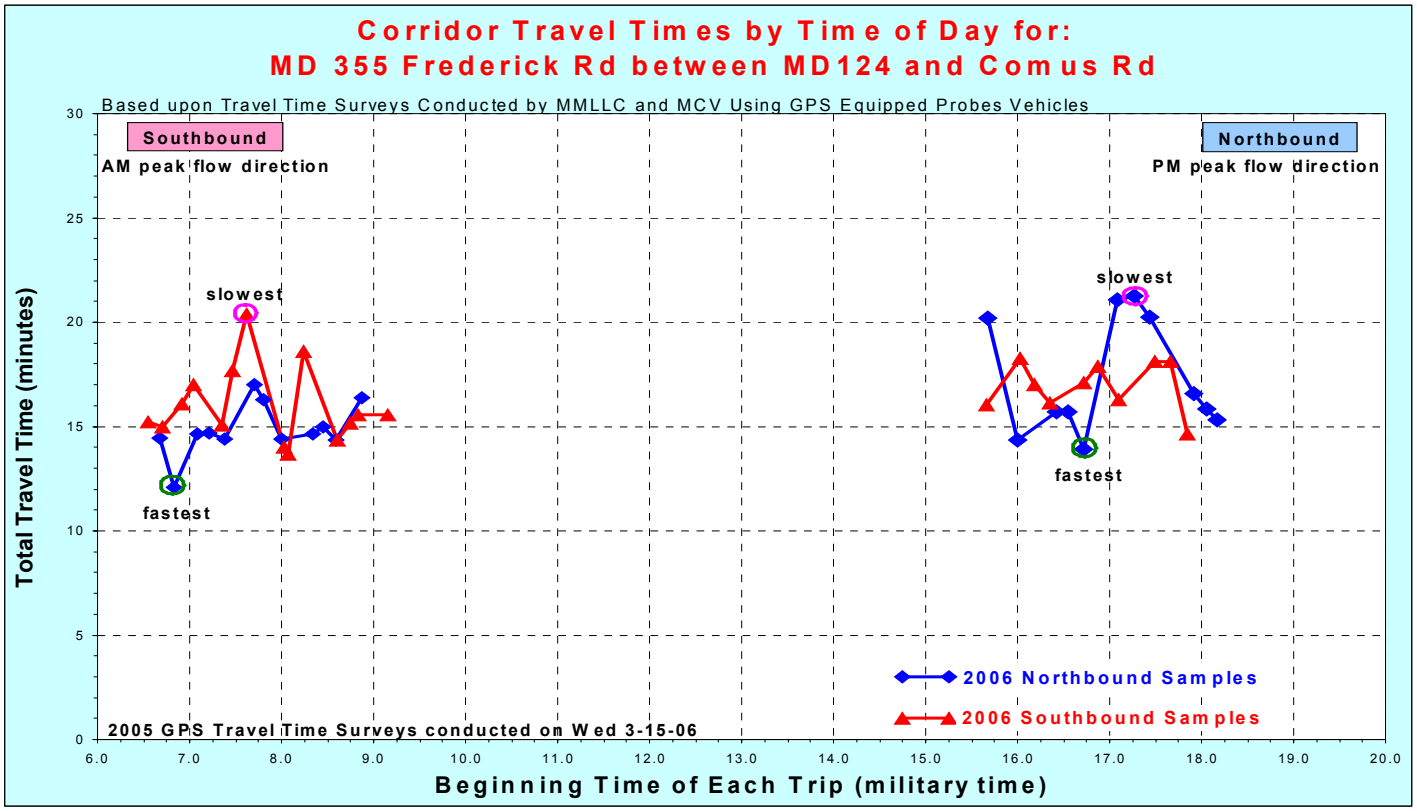
Frederick Road (MD 355) from Montgomery Village Avenue (MD 124) to Comus Road: In the 2005 report, the MD 355 corridor between Montgomery Village Avenue and Comus Road was presented as an example to illustrate the impact on congestion levels associated with growth and development. Figure 3.4 presents a summary of the travel time results by time-of-day graphically for the data collected in 2006. Comus Rd intersects MD 355 on the north side of the Clarksburg area. This approximately 8.4 mile roadway segment passes through the Gaithersburg, Germantown, and Clarksburg areas on the east side of the I-270 Corridor. This roadway segment serves an area of the County that has experienced and will continue to experience a significant pace of development, especially of recent in sections of Clarksburg.

In Figure 3.4, the horizontal axis gives the time of day (in military time) for the start of each travel time sample, the vertical axis gives the total travel time from the start to the end of the particular corridor. The results of each of the travel time samples are shown as the points in the Figure. Figure 3.4 shows that there were 47 completed directional travel time samples in 2006 for this corridor, with 12 during the AM peak-period northbound, 14 during the AM peak-period southbound, 11 during the PM peak-period northbound, and 10 during the PM

peak-period southbound. The figure shows that from this collection of data samples, the slowest southbound AM peak travel time was about 20.4 minutes for the sample that started about 7:37 AM, while the slowest northbound PM peak travel time was about 21.2 minutes for a sample that started at about 5:16 PM. No traffic related incidents were observed that would have affected these travel times.

The fastest northbound sample observed was about 12.1 minutes while the slowest northbound sample observed was about 21.2 minutes. When contrasting these two samples, there is a resulting travel-time-ratio of about 1.8 of the slowest northbound time to the fastest northbound time. The fastest southbound sample observed was about 13.7 minutes, and when contrasted to the slowest southbound sample of 20.4 minutes, the result is a travel-time-ratio of about 1.5 of the slowest southbound time to the fastest southbound time.

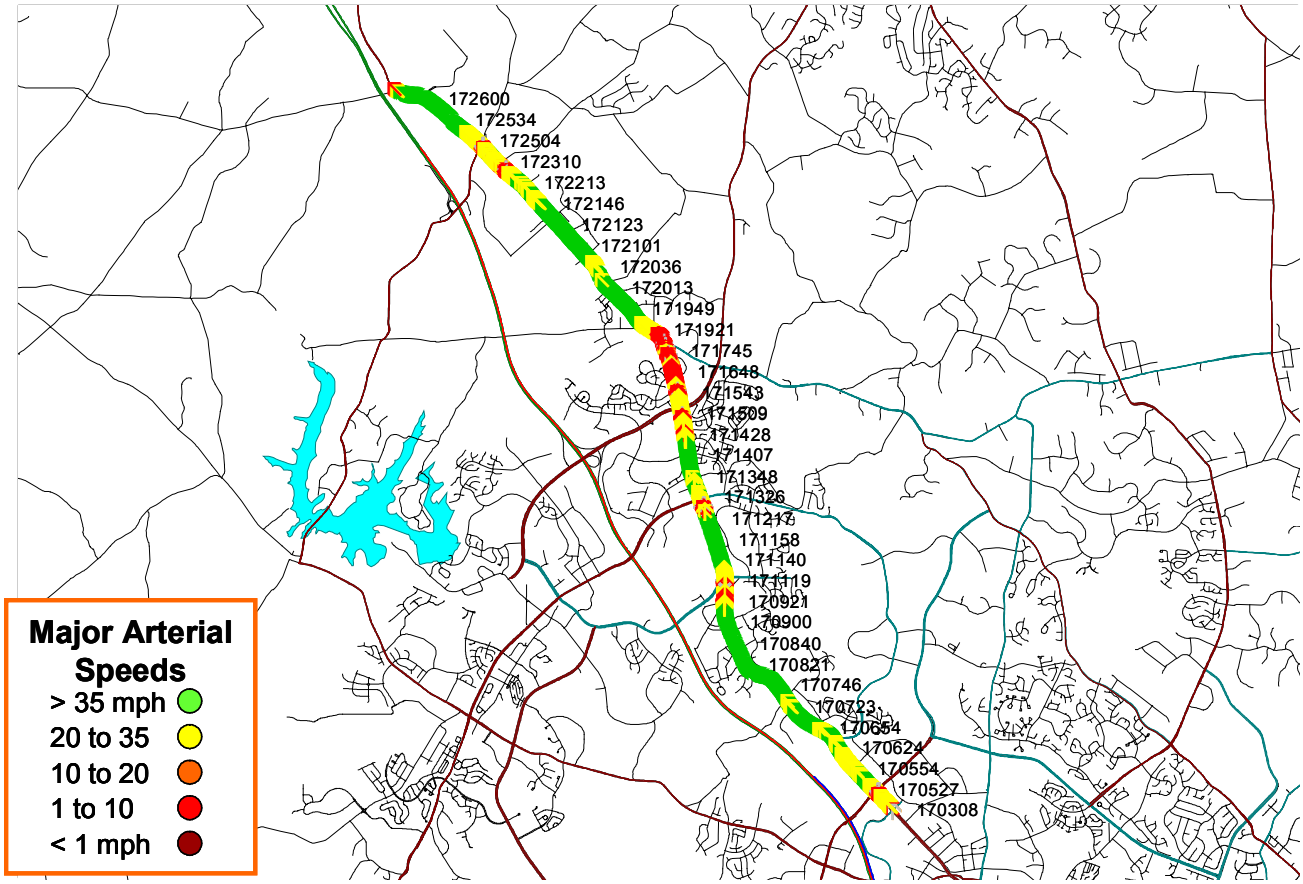
Figure 3.4: Frederick Rd (MD 355) Travel Time Samples - Results



It should be noted that for that slowest AM southbound trip, the slowest speeds and congestion were experienced at two main locations: (1) the north end of this corridor approaching Clarksburg Road (MD 121), and continuing south to Stringtown Road, and (2) the south end of the corridor from Watkins Mill Road through Montgomery Village Avenue. For other southbound samples earlier that morning, queues were observed stretching north from Clarksburg Road to as far north as Comus Road.

A similar review of the specific results of the northbound samples for the PM peak period as well as the AM peak period, presents a somewhat different set of congestion patterns. Some for which, certain potential short-term roadway improvements are seen as perhaps being appropriate from the perspective of reducing traffic congestion conditions and improving safety. Based on the 2005 data, it was noted in last year's report that for the slowest PM northbound sample, and the others before and after, the slow speeds and congestion were experienced starting at Ridge Road (MD 27) and generally continued as a rolling delay until the intersection with Clarksburg Road was cleared. The sample further indicated that it took roughly 15 min to travel this 3.2-mile long stretch of road, at an average speed of about 13 mph. In late 2005, a new traffic signal was installed at Stringtown Road and vertical curvature improvements were under construction during the 2006 sampling. The very long queues observed in 2005 were not observed in the 2006 samples, and the slowest PM peak northbound travel time in 2006 was about 3 minutes and 45 seconds faster than the slowest sample observed in 2005. However, significant northbound queues of very slow traffic were observed during several 2006 samples that started between about 5 and 6 PM. One of these, that for the longest queue and nearly the slowest travel time sample, is given in Figure 3.5 for the sample that started at about 5:05 PM at MD 124.

Figure 3.5: Northbound Frederick Rd (MD 355) PM Congestion



The longer queues observed in 2005 perhaps masked an interesting aspect of the queue shown in Figure 3.5 – as the congestion appears to be associated with traffic conditions found at the intersection of West Old Baltimore Road with Frederick Road. The congested conditions are compounded by the nearby intersection with Brink Road, as well as the lack of shoulders in the northbound direction along Frederick Road at West Old Baltimore Road. A detailed version of the same queue is presented in Figure 3.6, which shows 5 distinct stop or near-stoppages in the queue as the probe vehicle moved north. For the northbound samples in the AM peak period, 8 of the 12 samples observed delay at that location as shown in one example in Figure 3.7.

Given the lack of a northbound left-turn lane from Frederick Road onto West Old Baltimore Road, the heavy southbound flows in the AM peak period observed before 7 AM as shown in Figure 3.7, and no shoulder for a northbound vehicle to use to bypass a left turning vehicle, together these factors can result in a queue of several vehicles if just one vehicle wants to make that left turn. The heavier PM peak period flows can cause the queue to extend back south of Brink Road, which has its own queue of traffic merging onto MD 355. It is likely that some of this traffic is making the immediate left turn onto West Old Baltimore Road. The queue, which extends south along MD 355 a few hundred feet south of Brink Road, marks the end of the transition area where the two-northbound lanes on MD 355 to the south become one

Figure 3.6: Frederick Rd (MD 355) at W Old Baltimore Rd PM Congestion

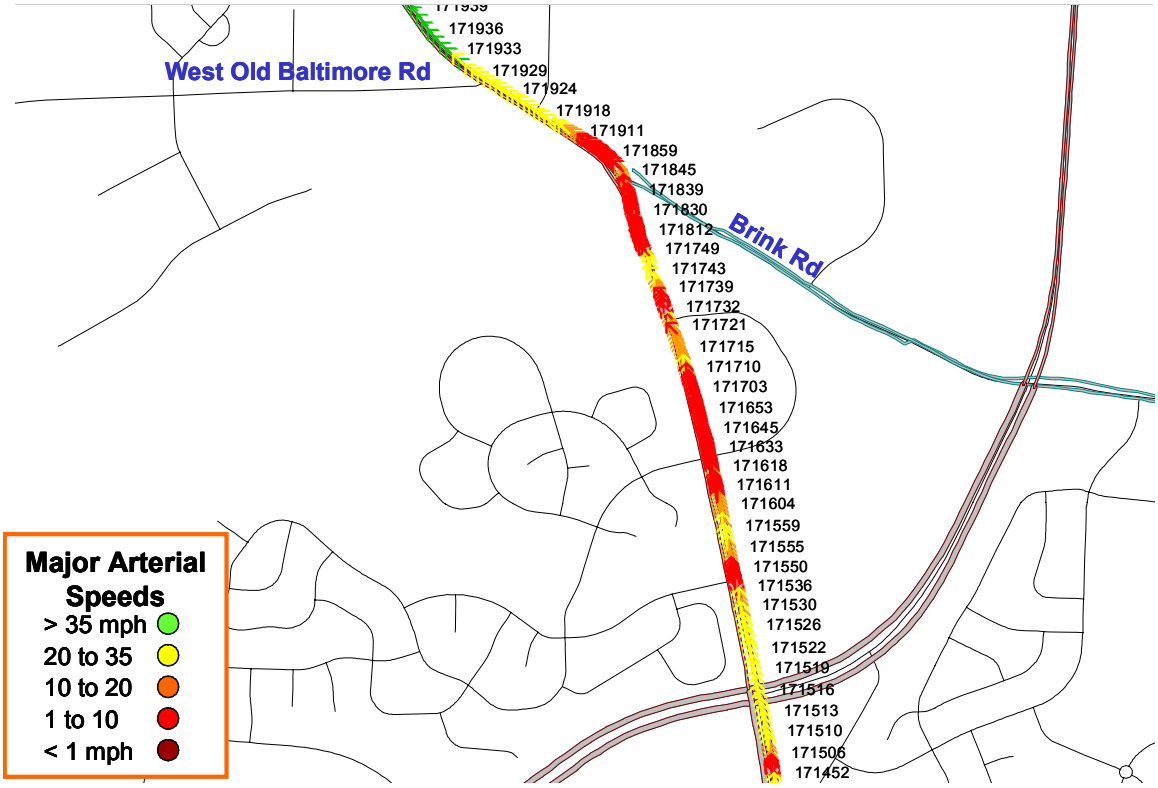
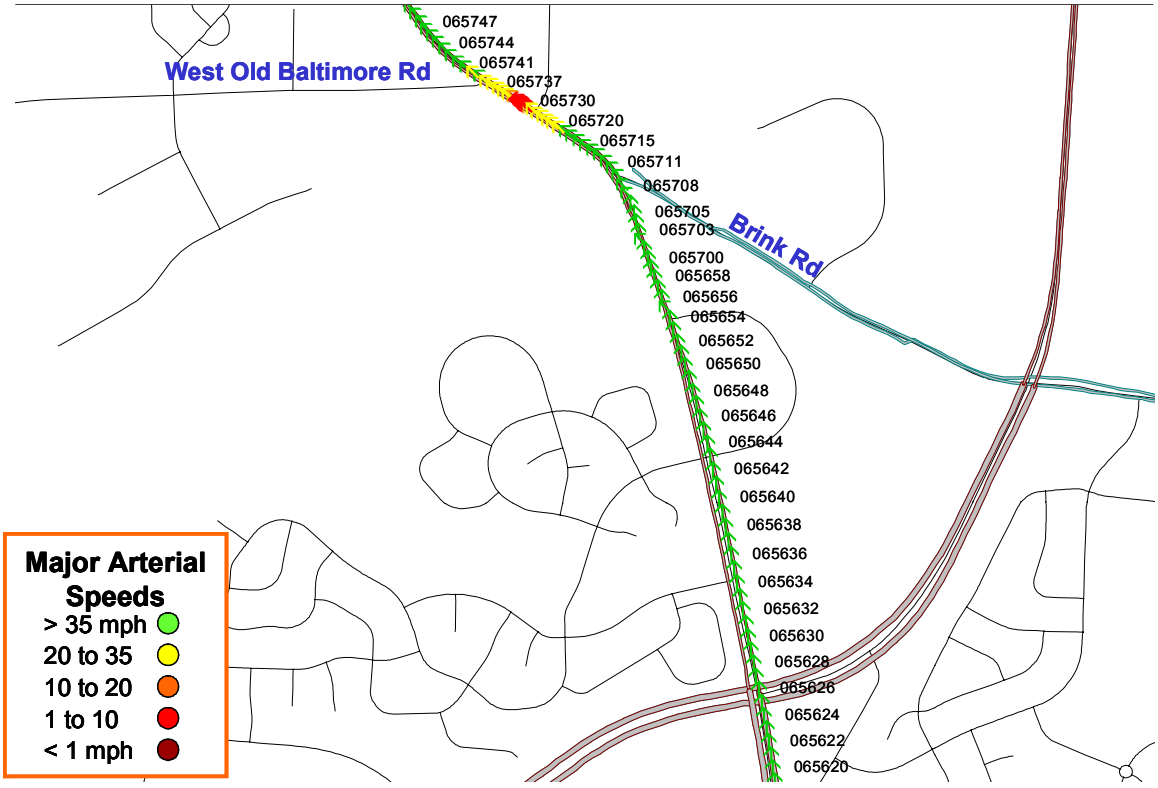


Figure 3.7: Frederick Rd (MD 355) at W Old Baltimore Rd AM Congestion



northbound lane. The transition down to one-northbound lane, when the traffic flow is heavy enough such as at that time of day, then further results in the queue extending to the south, as shown in the example in Figure 3.6. At the very least, consideration should be given to developing an appropriate intersection improvement to address the conditions at the West Old Baltimore intersection with MD 355 to be included in the State's Consolidated Transportation Program (CTP) or Spot Improvement Program.

In the 2005 report, discussion was presented that compared the sample from 2004 with those observed in 2005 for this roadway corridor. The next set of figures refines that analysis and examines the trends over the three-year period of 2004 through 2006. To make it easier for the reader to discern the trends, the year-to-year changes in the corridor travel times by time-of-day (for the start of each sample) are shown separately for the southbound and northbound directions in Figures 3.8 and 3.9, respectively. These two figures are similar to the previous Figure 3.4 displayed above.

In Figure 3.8 which shows the southbound samples for the morning peak period; (1) the 2005 and 2006 samples both show markedly slower travel times than the samples for 2004, and (2) while the 2006 versus the 2005 samples seem to show little, if any, discernable differences in the corridor travel time by time of day. Moreover, the reported travel times for the 2006 data samples are somewhat faster overall. For the southbound samples during the evening peak period, the 2006 data samples appear to be consistently slower, by about one to three minutes, than the comparable samples from 2004 and most of the samples for 2005. It is also interesting to note that for just the 2006 data, the evening samples are just as generally slow as the morning samples, with the exception of two of the fourteen observations in the morning peak period. Conversely, several of the southbound morning samples are faster than the fastest southbound samples in the evening. These differences may be the result of some of the traffic signal retiming and traffic flow optimization measures that have been implemented in this corridor, as an attempt to alleviate congestion in the interim.

In Figure 3.9 showing the northbound samples for the evening peak period, the 2006 data samples are considerably faster than the comparable samples from 2005, and are more consistent with and similar to those of 2004. This appears to be the case although several (four) of the samples were considerably slower than the limited number of samples in 2004. For the northbound samples in the morning peak period, the same general observation can be made – that the 2006 samples are consistently faster than the comparable samples from 2005 and are more in line and similar to those of 2004, although several (three) of them were slower than the limited number of samples in 2004. Again, these differences may be the result of some of the traffic signal retiming and traffic flow optimization measures that have been implemented in this corridor. These differences may also be the result of the intersection improvements that were underway at the MD 355 at Stringtown Rd intersection.

Figure 3.8: Southbound MD 355 Corridor Travel Time Trend Analysis

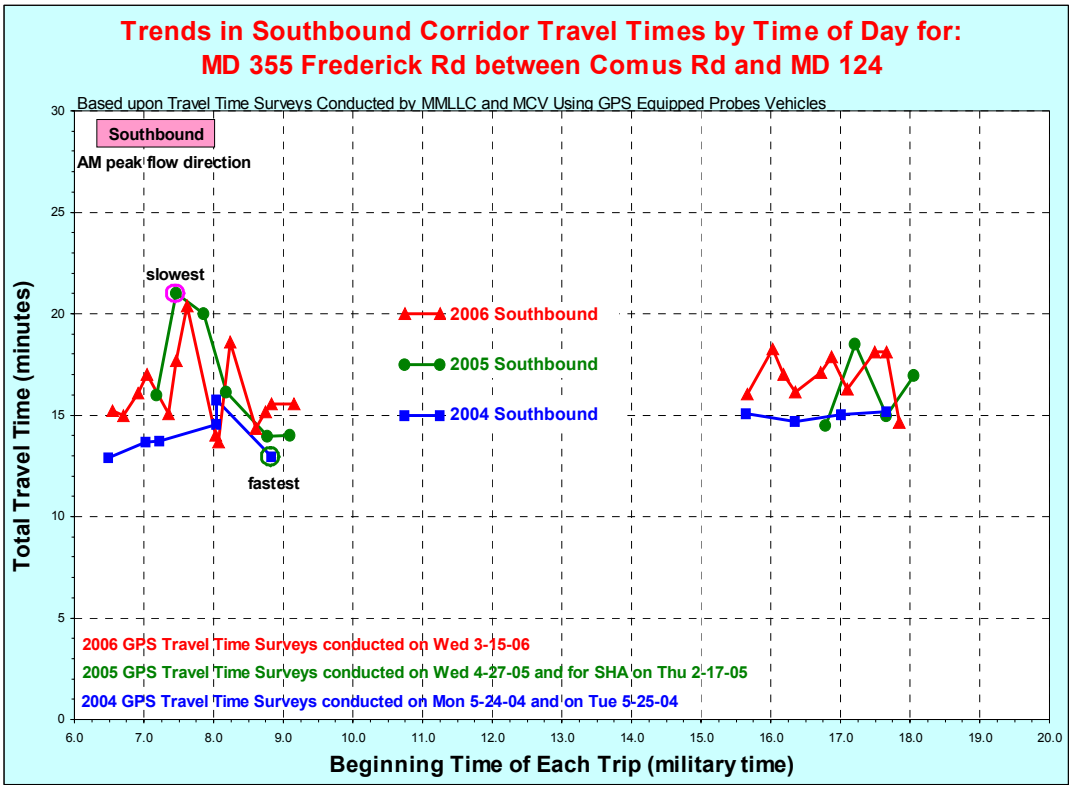
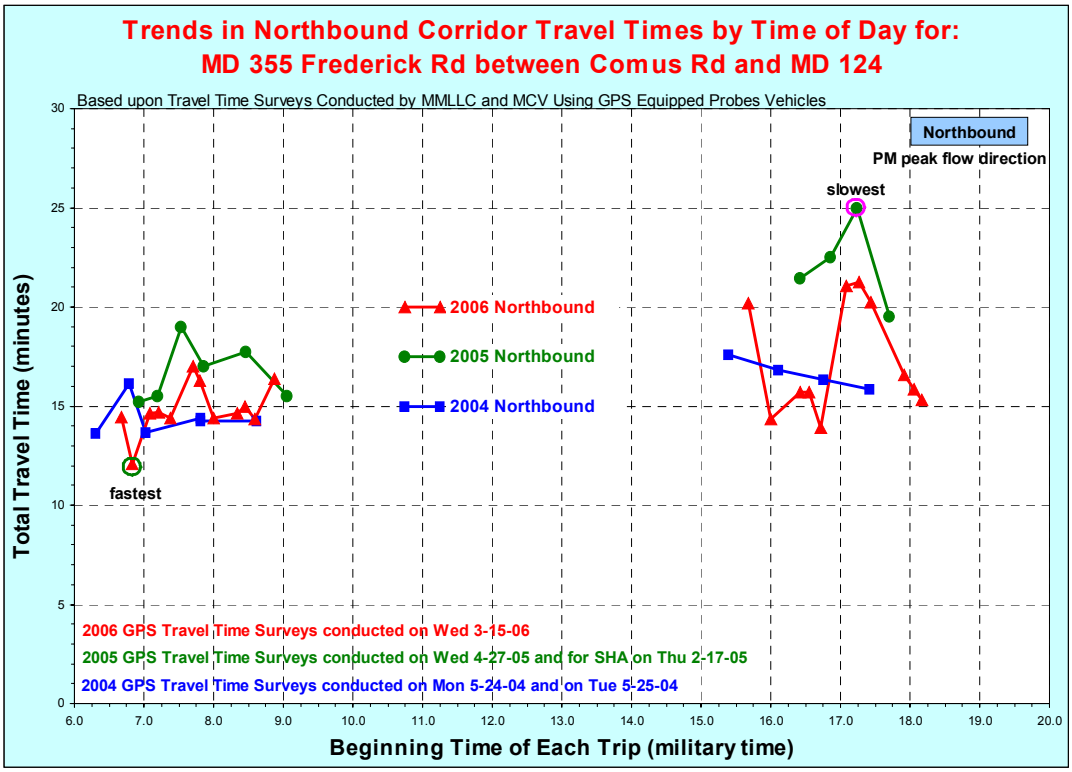


Figure 3.9: Northbound MD 355 Corridor Travel Time Trend Analysis



Norbeck Road (MD 28) / Spencerville Road (MD 198) – MD 28 / 198 Connector: In the 2005 report, the results of the data sampling for the MD 28 / MD 198 corridor showed the impacts associated with having a sparse transportation network resulting in: (a) limited route alternatives and excessive congestion, and (b) having travelers being severely inconvenienced when parts of the system break down due to incidents. Figure 3.10 summarizes the results for just the eastbound travel time data collected in 2005 and 2006. The results are displayed in a time-of-day graph for the combined routes of MD 28 and MD 198, which consists of several route segments traveling from west to east for: (a) First Street, (b) Norbeck Road, (c) MD28-198 Connector, and (d) Spencerville Road, between MD 355 in Rockville and Riding Stable Road (just before the Prince George's County Line). The combined length of the set of travel route segments is approximately 14.1 miles.

The graph showing the corridor travel times for the nine AM samples (for the 2005 data set) has somewhat of a "bell shaped" curve, even though the westbound flows are the peak flows in the AM. The data samples shown here have the benefit of including some very early morning pre-AM peak and late morning post-AM peak observations, which were obtained in support of another data collection project focusing on travel to and/or from the Baltimore area. These data samples indicated that the ambient, un-congested travel time was about 20 to 21 minutes for this 14.1-mile travel corridor, or an average speed of about 41 to 42 miles per hour. The observed peak travel time of about 40 minutes is about 2.0 times more than the ambient travel time. The well-defined peak for this data sample indicates the presence of excessive congestion. The duration of the peak-slower travel time of about 25 to 30 minutes lasted from about 7 to 9 AM.

Figure 3.10 also shows the evening corridor travel times observed in 2005 and 2006. In 2005, a series of significant incidents occurred during the day the sample was conducted, which resulted in very congested travel times of more than 50 minutes. In contrast, two samples conducted on different days in 2005 suggest that the peak eastbound travel times were considerably faster during conditions free of incidents. Two sets of samples were conducted in 2006: (a) directly for this report between Rockville Pike (MD 355) and New Hampshire Avenue MD (650), and (b) by the staff of MWCOG between New Hampshire Avenue (MD 650) into Prince George's County, as part of their annual Congestion Management Program activities. The MNCPPC samples were coordinated with the MWCOG samples to take place on the same day during the same general time period but for a lesser duration. There were 9 samples conducted for MNCPPC and 24 conducted by MWCOG. By selecting specific pairs of travel time samples, the combined travel times for the two data sets were combined, as if the probe vehicles continued driving onto the next segment. The combined 2006 eastbound PM data shows a peak-slowest travel time of over 37 minutes, and a fastest travel time of about 25 minutes. No significant incident conditions were observed during the time period in which this sample was conducted. Moreover, this combined data set is generally consistent with the two-non-incident samples from 2005.

Figure 3.10: Eastbound MD 28 / MD 198 Corridor Travel Time Trend Analysis

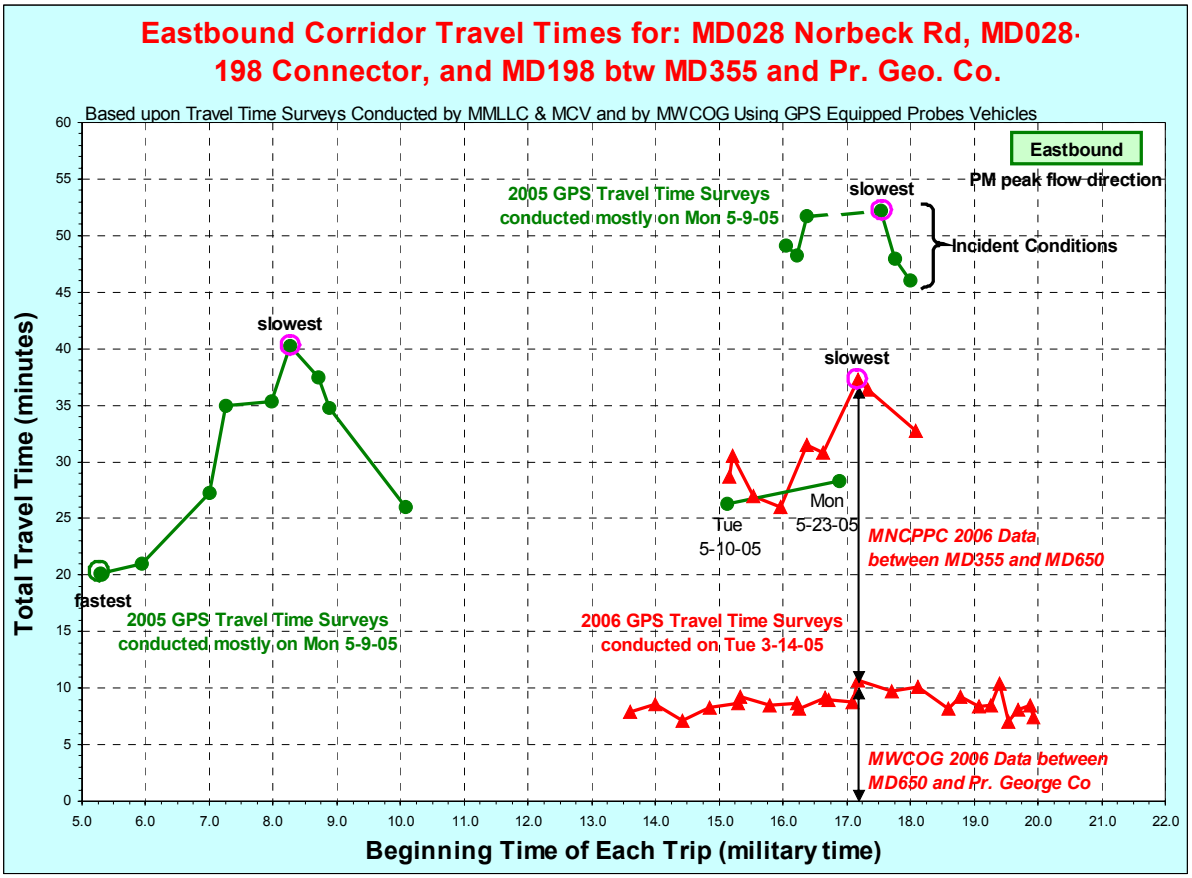
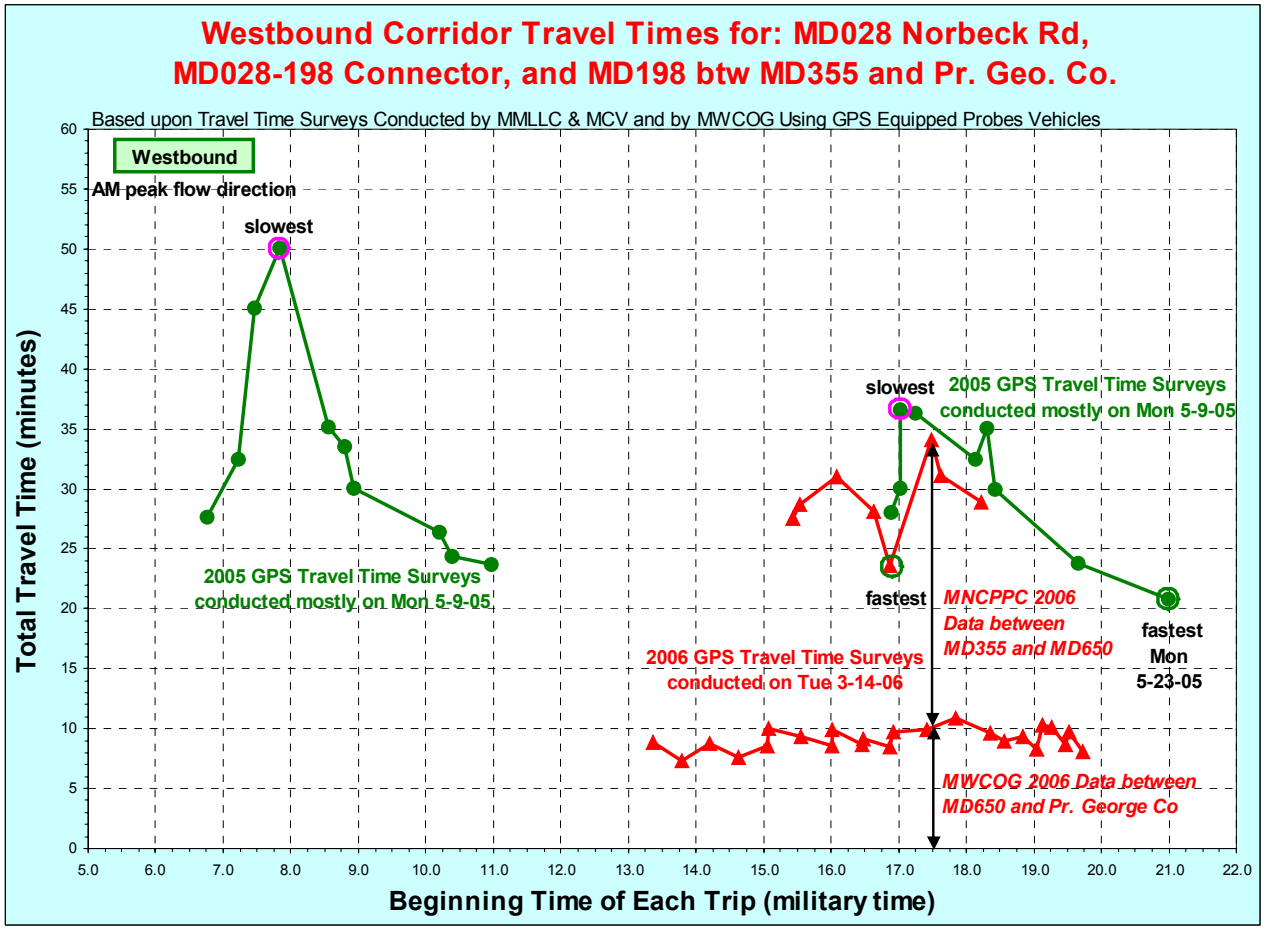


Figure 3.11 shows the results for just the westbound travel time data collected in 2005 and 2006, in a time-of-day graph for the combined routes of MD 28 / MD 198. The 2005 AM travel time data collection results revealed that the slowest westbound AM peak travel time was about 50 minutes. The ten AM westbound travel time samples show a very distinct, consistent, and peaked "bell shaped" curve for this peak flow direction travel and time period. The PM data showed that the ambient, un-congested travel time was 21 minutes for this 14.1-mile travel corridor, or an average speed of about 42 miles per hour. The observed peak travel time of about 50 minutes is about 2.5 times more than the un-congested westbound travel time in the late PM.

The 2006 westbound travel time data, also shown in Figure 3.11, for the PM time period is again the combination of: (a) primary data collected for MNCPPC between Rockville Pike (MD 355) and New Hampshire Avenue (MD 650), and (b) secondary data collected by staff of MWCOG between New Hampshire Avenue (MD 650) into Prince George's County. The samples were coordinated in the same fashion as the samples that were conducted for the eastbound travel runs. The combined 2006 westbound PM data shows a peak-slowest travel time of about 34 minutes and a fastest travel time of about 23 minutes. No significant incident conditions were observed during that this sampling period, although there was a stalled vehicle in the left approach lane to Muncaster Mill Road (MD 115) for about a half hour that was quickly moved into the left turning lane and towed away shortly afterwards.

Figure 3.11: Westbound MD 28 / MD 198 Corridor Travel Time Trend Analysis



The sample of combined westbound PM travel times consistently show about 10% faster travel times (roughly 3 minutes) when compared to similar data for 2005. In late 2005, the new grade-separate interchange at US 29 and Spencerville Rd / Sandy Spring Rd (MD 198) was completed, which resulted in the re-direction of the north and southbound through-traffic around the former intersection via an overpass. While this improvement should have resulted in improved conditions for traffic traveling along Spencerville Road (MD 198), it is not clear solely from this comparison of travel time and speed data trends that the observed differences are *different* in a statistical sense.

IV. FUTURE CONGESTION

Year 2010 Forecasted Volume-to-Capacity (V/C) Ratios

For the purposes of this report, a year 2010 traffic forecast was conducted using the Department's current TRAVEL/2 model. Although the process by which this model run was conducted was similar to that of the model run that was completed for the 2004 ADAC Report, there were some notable changes in this year's process as a result of new assumptions about future conditions. One of the most notable changes in this year's process was the incorporation of MWCOG Round 7.0 cooperative land use forecasts. This input assumption is an update of the Round 6.3 land use forecasts that were used for the model run that was done in 2004. Another key input data refinement to this year's modeling process was the use of an updated version of the Constrained Long-Range Plan (CLRP) network, which consists of all projects of regional significance that are anticipated to be completed by the year 2010. The CLRP network used for this model run now includes the Intercounty Connector (ICC), along with some other smaller-scale road capacity improvement projects. Similar to the previous model run for 2010 (conducted for the ADAC Report), this model run also reports results for the PM peak period only. These results were compared to the model run results for the 1998 base year for analysis purposes, focusing particularly on the non-freeway facilities.

Table 4.1 shows a comparison of model run results for the 1998 base year and 2010 CLRP networks. Based on the model results, the average V/C ratio countywide is anticipated to increase by 3.3% relative to the base year by 2010. In addition, the vehicle-miles traveled (VMT), and the vehicle-hours traveled (VHT) are anticipated to increase by 20.6% and 25.8%, respectively. State and County capacity improvements such as; road widenings, new roads (i.e. the ICC) and interchanges will help to account for an 10.2% increase in the County's total lane-miles by the year 2010 relative to the base year.

Table 4.1: Comparison of County-wide TRAVEL/2 Model Results

TRAVEL/2 Model County-wide Results - All Facilities			
	Base Year (1998) Network	2010 CLRP Network	% Chg From Base
Total Lane-Miles	2,474	2,725	10.2%
Vehicle-Miles Traveled (in 000s)	1495.2	1803.4	20.6%
Vehicle-Hours Traveled (in 000s)	55	69.2	25.8%
Average Speed (mph)	27.2	26	-4.4%
Average V/C Ratio	***0.60**	***0.62**	***3.3%**

*****Recalculated (after the staff draft was published) using an Average Congestion Index (ACI) - V/C Ratio weighted by VMT

Figures 4.1 and 4.2 show the V/C ratio lane-mile distribution for all facilities countywide for the years 1998 and 2010, respectively. A majority of the increase in the percentage of lane-miles with a V/C ratio of 0.80 to 0.99 can be attributed to the addition of the ICC to the County's transportation network. Despite the increase in the total amount of congested lane-miles, the V/C ratio lane-mile distribution does not differ much from that of the base year, as indicated in the graphics below. This illustrates how well the planned infrastructure for the year 2010 should help to regulate the anticipated percentage increase in congested lane-miles countywide. Refer to appendices 5.2A, 5.2C – 5.2D to view the complete V/C ratio lane mile distribution.

Figure 4.1: 1998 V/C Ratio Lane-Mile Distribution – Countywide

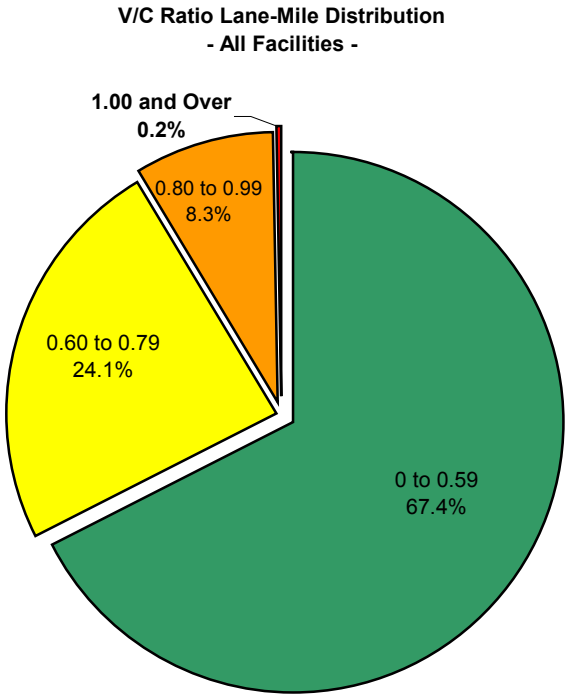


Figure 4.2: 2010 V/C Ratio Lane-Mile Distribution - Countywide

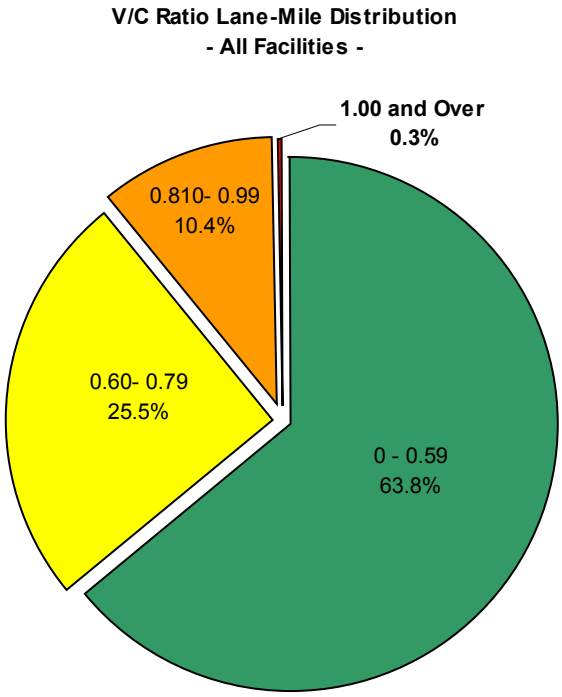


Table 4.2 compares model results for the non-freeway facilities (i.e. major highways, arterials, etc.). The results indicate that the average V/C ratio on these facilities is anticipated to increase 1.8% by the year 2010 relative to the base year. Conversely, the average speed on these facilities is forecasted to have decreased 2.7% by the horizon year. Despite an increase in the average V/C ratio and a decrease in the average speed on these facilities, most of the non-freeway roadways are anticipated to perform reasonably well during the PM peak period, as roughly 93% of the total lane-miles are forecasted to have a V/C ratio 0.79 or lower. Furthermore, the non-freeway facilities, when compared to the freeways, are anticipated to have a lower average V/C ratio (0.58 compared to 0.71). Table 5.2B in the appendix shows the model results for the freeways.

Table 4.2: Comparison of Model Results – Non-freeway Facilities

TRAVEL/2 Model Results - Non-freeway Facilities			
	Base Year (1998) Network	2010 CLRP Network	% Chg From Base
Total Lane-Miles	2,162	2,327	7.7%
Vehicle-Miles Traveled (in 000s)	1030.3	1202.8	16.7%
Vehicle-Hours Traveled (in 000s)	40.6	50.5	24.4%
Average Speed (mph)	29.3	28.5	-2.7%
Average V/C Ratio	***0.57**	***0.58**	***1.8%**
V/C Ratio Lane-Mile Distribution - Non-freeway Facilities			
	Base Year (1998) Network	2010 CLRP Network	
% of lane-mi w/ V/C 0 to 0.59	71.7%	69.3%	
% of lane-mi w/ V/C 0.60 to 0.79	22.9%	23.7%	
% of lane-mi w/ V/C 0.80 to 0.99	4.9%	6.8%	
% of lane-mi w/ V/C 1.00 and up	0.5%	0.3%	

***** Recalculated (after the staff draft was published) using an Average Congestion Index (ACI) - V/C Ratio weighted by VMT

Figure 4.3 shows a map of the forecasted PM peak V/C ratios and volumes on the County's transportation network for the year 2010. For reference purposes, appendix 5.2E shows a map of the same information for the 1998 base year network. Based on the model results for 2010, planned widenings for sections of Clopper Rd (MD 117), Woodfield Rd (MD 124), Father Hurley Blvd, Goshen Rd and Longdraft Rd, are forecasted to result in V/C ratios of 0.70 or less on these roadways. Recently widened sections of Darnestown Rd (MD 28) and Great Seneca Hwy (MD 119) are anticipated to have V/C ratios between 0.60 and 0.89. In addition, the

planned extension of Stringtown Rd from Frederick Rd (MD 355) to I-270 / MD 121 is forecasted to have a V/C ratio of 0.60 or less. A number of planned streets and extensions of existing local streets in the White Flint and Gaithersburg areas are all forecasted to have V/C ratios of 0.59 or lower. Figure 4.4 shows the difference in volumes between the base year and 2010 CLRP networks. The graphic indicates that increases of 550 vehicles or more is anticipated on the new and newly widened facilities including Clopper Rd, Great Seneca Hwy, Darnestown Rd, Woodfield Rd, Midcounty Hwy, and Montrose Pkwy. The V/C ratios reported on these roads indicate that they should have remaining capacity, despite experiencing significant increases in volume. It should be noted that the addition of the ICC as an east-west travel alternative is anticipated to improve traffic conditions on some parallel major highways and arterials in the Eastern County.

There are a number of roads for which, there are no capacity improvements planned in the CLRP. Understandably, these roadways are forecasted to have V/C ratios of 0.80 or higher in the year 2010. The section of Ridge Rd between Brink Rd and Sweepstakes Rd is forecasted to have a V/C ratio of at least 0.80. Comparably, sections of River Rd (MD 190) extending from Piney Meetinghouse Rd to the Capital Beltway (I-495) are also forecasted to have a V/C ratio of 0.80 or higher. The 2010 forecast also suggests that sections of Georgia Ave (MD 97) between Glenmont and the Silver Spring CBD are anticipated to have V/C ratios ranging from 0.60 - 0.99. The model results along US 29 indicate that the roadway segments between the new Briggs Chaney Rd and Randolph Rd / Cherry Hill Rd interchanges are anticipated to experience V/C ratios ranging from 0.60 to 0.99. The planned interchange at Fairland Rd, which is to be completed by 2015, should help to alleviate congestion along this section of US 29.

Figure 4.3: Map of 2010 PM Peak Hour V/C Ratios and Volumes

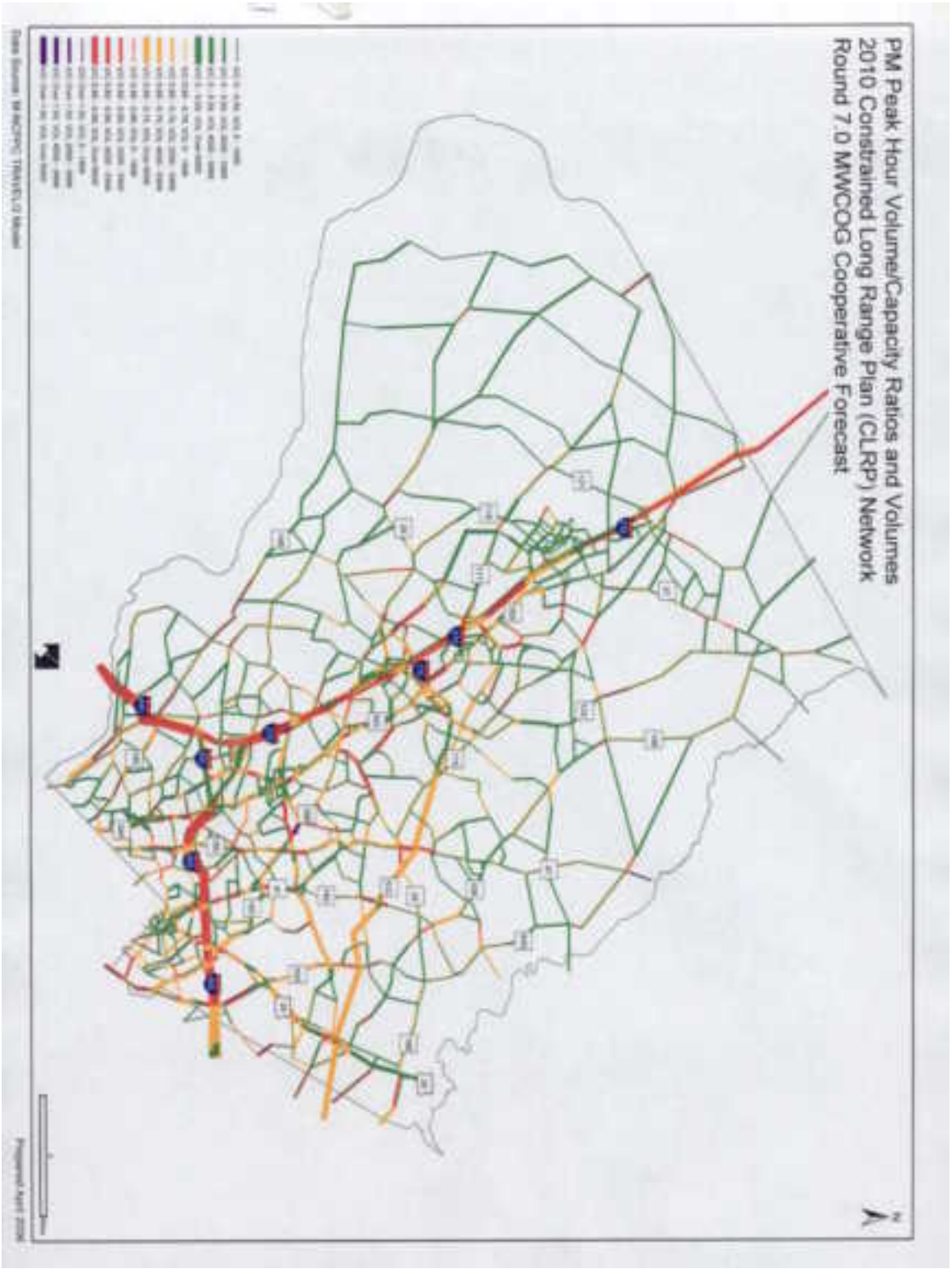
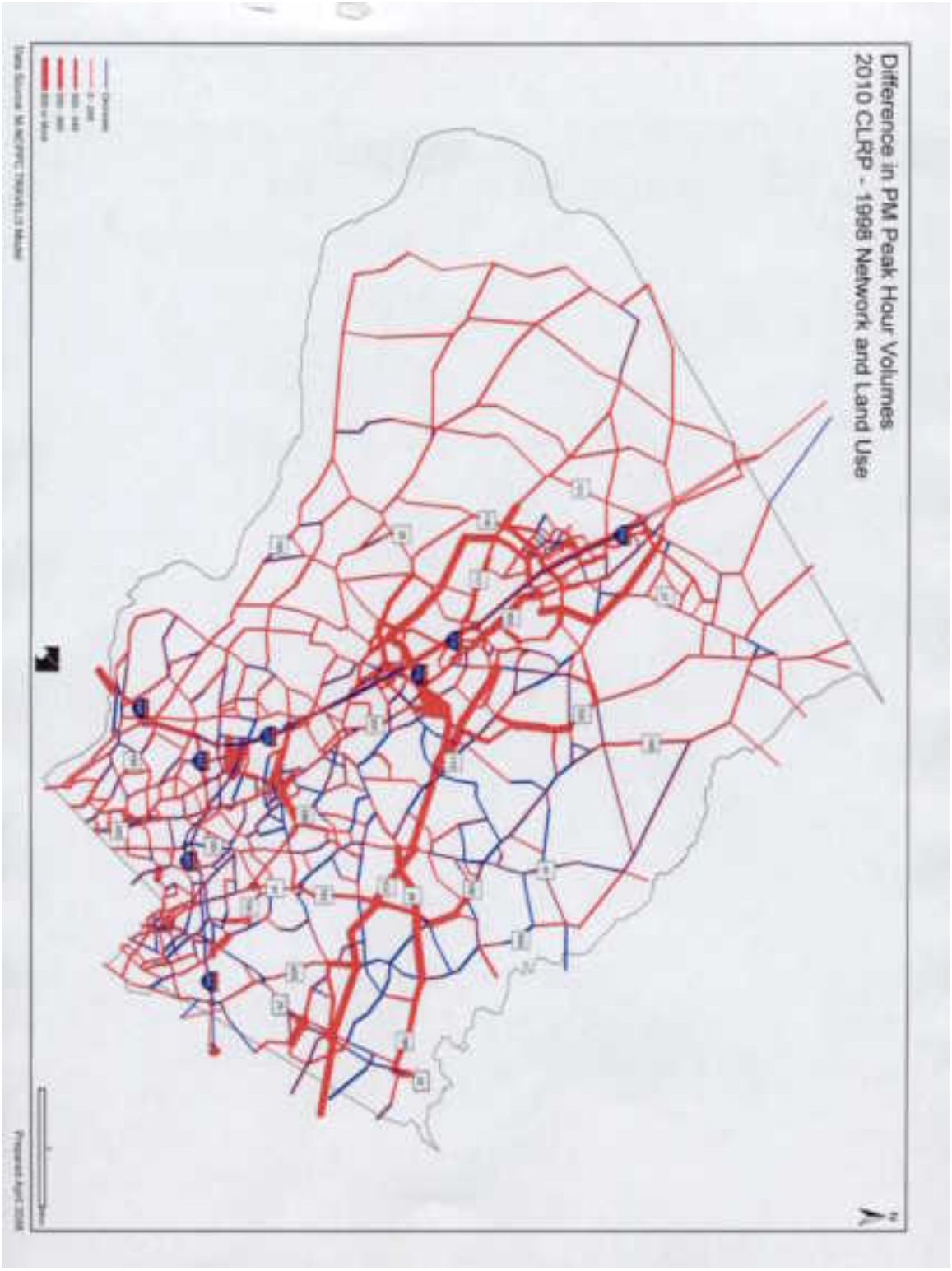


Figure 4.4: Map Showing Difference in Volumes – 1998 vs. 2010



V. APPENDICES

Appendix 5.1A: Critical Lane Volumes at Signalized Intersections

INTERSECTION NAME	COUNT DATE	AM CLV	PM CLV	LATR STAN	POLICY AREA
16th St at 2nd Ave/Elkhart	6/8/2004	906	749	1600	Silver Spring/Takoma Park
16th St at Spring St	4/19/2005	700	943	1600	Silver Spring/Takoma Park
2nd Ave at Apple Ave/Cameron St	4/14/2005	486	496	1800	Silver Spring CBD
355-Somerset Ter	4/27/2005	779	830	1800	Friendship Heights
Arcola Ave at Kemp Mill Rd	5/11/2004	1020	1290	1600	Kensington/Wheaton
Arlington Rd at Bethesda Ave	4/9/2003	841	1039	1800	Bethesda CBD
Arlington Rd at Edgemoor Ln	9/14/2005	611	769	1800	Bethesda CBD
Arlington Rd at Elm St	9/14/2005	673	855	1800	Bethesda CBD
Arlington Rd at Little Falls Pkwy	10/31/2003	420	552	1600	Bethesda/Chevy Chase
Bel Pre Rd at Beaverwood Dr	3/15/2005	1037	862	1500	Aspen Hill
Bel Pre Rd at Homecrest Dr	3/16/2005	1265	865	1500	Aspen Hill
Bickerstaff/Diamondback/Story	6/9/2004	714	742	1450	Gaithersburg City
Bonifant Rd at Pebblestone Dr	3/10/2005	1325	1240	1475	Cloverly
Bou Ave at Chapman Ave	11/1/2005	535	721	1550	North Bethesda
Bradley Blvd at Arlington Rd	4/10/2003	1041	1146	1800	Bethesda CBD
Bradley Blvd at Fernwood Rd	12/8/2005	1211	1455	1600	Bethesda/Chevy Chase
Bradley Blvd at Goldsboro Rd	6/10/2003	1052	1091	1600	Bethesda/Chevy Chase
Bradley Blvd at Hill/Leland	4/1/2003	752	875	1800	Bethesda CBD
Bradley Blvd at Huntington Pkwy	6/11/2003	980	1321	1600	Bethesda/Chevy Chase
Bradley Blvd at Wilson Ln	6/10/2003	1404	1455	1600	Bethesda/Chevy Chase
Briggs Chaney Rd at Automobile/Castle	10/18/2005	889	1244	1500	Fairland/White Oak
Briggs Chaney Rd at Old Columbia Pike	2/5/2004	1237	1115	1500	Fairland/White Oak
Cherry Hill Rd at Calverton Blvd/Broadbirch	5/18/2004	1187	1589	1500	Fairland/White Oak
Capitol View Ave at Forest Glen/Seminary	2/12/2004	937	900	1600	Kensington/Wheaton
Carroll Ave (MD 195) at Tulip Ave	8/5/2004	512	553	1600	Silver Spring/Takoma Park
Cedar St at Pershing Ln	6/4/2003	304	422	1800	Silver Spring CBD
Cherry Hill Rd at Plum Orchard/Clover Patch	5/18/2004	934	1230	1500	Fairland/White Oak
Cherry Hill Rd at Prosperity Dr	5/18/2004	970	1050	1500	Fairland/White Oak
Clopper Rd at Great Seneca Hwy	3/30/2004	1053	1169	1450	Germantown West
Clopper Rd at Hopkins Ln	11/19/2003	1039	751	1450	Germantown West
Clopper Rd at Kingsview Rd	2/5/2004	962	1037	1450	Germantown West
Clopper Rd at Longdraft Rd	3/16/2004	914	1069	1475	North Potomac
Clopper Rd at Mateney Rd	3/30/2004	1041	1026	1450	Germantown West
Clopper Rd at Metropolitan Grove Rd	4/19/2005	819	1069	1450	Gaithersburg City
Clopper Rd at Quince Orchard Rd	3/4/2004	1350	1152	1450	Gaithersburg City
Clopper Rd at Watkins Mill/Pheasant	3/11/2004	726	1017	1450	Gaithersburg City
Colesville Rd at 2nd/Wayne	5/12/2005	1088	1029	1800	Silver Spring CBD
Colesville Rd at Dale Dr	4/7/2005	1464	1453	1600	Silver Spring/Takoma Park

INTERSECTION NAME	COUNT DATE	AM CLV	PM CLV	LATR STAN	POLICY AREA
Colesville Rd at East West Hwy	6/2/2004	1022	1061	1800	Silver Spring CBD
Colesville Rd at Fenton St	5/24/2005	696	848	1800	Silver Spring CBD
Colesville Rd at Franklin Ave	4/13/2005	1670	1502	1600	Silver Spring/Takoma Park
Colesville Rd at Georgia Ave	6/8/2004	1305	1145	1800	Silver Spring CBD
Colesville Rd at Sligo Creek Pkwy/St Andrews	12/8/2005	1702	1917	1600	Silver Spring/Takoma Park
Colesville Rd at Spring St	5/26/2005	1144	1418	1800	Silver Spring CBD
Colesville Rd at University Blvd (N)	10/28/2004	1917	1561	1600	Kensington/Wheaton
Colesville Rd at University Blvd (S)	10/28/2004	1810	1370	1600	Kensington/Wheaton
Columbia Pike at Briggs Chaney Rd	2/4/2004	1770	1538	1500	Fairland/White Oak
Columbia Pike at Burnt Mills Ave	10/7/2004	1374	1246	1500	Fairland/White Oak
Columbia Pike at Fairland Rd	11/20/2003	1541	1485	1500	Fairland/White Oak
Columbia Pike at Greencastle Rd	2/5/2004	1524	1321	1500	Fairland/White Oak
Columbia Pike at Industrial Pkwy	5/18/2004	1355	1182	1500	Fairland/White Oak
Columbia Pike at Lockwood Dr	10/26/2004	1699	1374	1500	Fairland/White Oak
Columbia Pike at Milestone/Stewart	11/18/2004	1287	1354	1500	Fairland/White Oak
Columbia Pike at Musgrove Rd	5/18/2004	1423	1204	1500	Fairland/White Oak
Columbia Pike at Prelude Dr	11/16/2004	1470	1259	1500	Fairland/White Oak
Columbia Pike at Southwood Dr	10/28/2004	2015	1483	1600	Kensington/Wheaton
Columbia Pike at Stewart/NB Slip Ramp	1/29/2003	1831	1849	1500	Fairland/White Oak
Columbia Pike at Tech Rd	5/18/2004	1372	1235	1500	Fairland/White Oak
Columbia Pike at Burtonsville Xing SC	6/2/2004	1628	1310	1400	Patuxent
Connecticut Ave at Adams	3/11/2004	1362	859	1600	Kensington/Wheaton
Connecticut Ave at Aspen Hill Rd	3/3/2004	1481	1276	1500	Aspen Hill
Connecticut Ave at Bel Pre Rd	2/15/2005	1262	1051	1500	Aspen Hill
Connecticut Ave at Bradley Ln	3/13/2003	1382	1400	1600	Bethesda/Chevy Chase
Connecticut Ave at Chevy Chase Lake Dr	4/28/2004	950	1080	1600	Bethesda/Chevy Chase
Connecticut Ave at Denfield	2/12/2004	1273	1173	1600	Kensington/Wheaton
Connecticut Ave at Dunlop St	2/2/2006	1025	999	1600	Bethesda/Chevy Chase
Connecticut Ave at East West Hwy	3/18/2004	1732	1831	1600	Bethesda/Chevy Chase
Connecticut Ave at I-495 (N)	3/9/2004	1283	1245	1600	Kensington/Wheaton
Connecticut Ave at I-495 (S)	3/10/2004	1515	1100	1600	Bethesda/Chevy Chase
Connecticut Ave at Independence	10/8/2002	1063	880	1500	Aspen Hill
Connecticut Ave at Jones Bridge Rd	6/11/2003	1533	1974	1600	Bethesda/Chevy Chase
Connecticut Ave at Knowles Ave	9/4/2002	1433	1274	1600	Kensington/Wheaton
Connecticut Ave at Manor Rd	4/27/2004	1324	1299	1600	Bethesda/Chevy Chase
Connecticut Ave at Perry	2/11/2004	1188	1018	1600	Kensington/Wheaton
Connecticut Ave at Randolph Rd	3/3/2004	1631	1550	1600	Kensington/Wheaton
Connecticut Ave at Raymond/Rosemary	4/14/2004	1126	860	1600	Bethesda/Chevy Chase
Connecticut Ave at Saul Rd	2/5/2004	1002	990	1600	Kensington/Wheaton
Connecticut Ave at University Blvd	10/18/2005	1335	974	1600	Kensington/Wheaton
Connecticut Ave at Veirs Mill Rd	3/3/2004	1717	1404	1600	Kensington/Wheaton
Connecticut Ave at Washington St	5/26/2005	1034	819	1600	Kensington/Wheaton
Connecticut Ave at Weller Rd	12/7/2004	1286	1175	1600	Kensington/Wheaton

INTERSECTION NAME	COUNT DATE	AM CLV	PM CLV	LATR STAN	POLICY AREA
Crabbs Branch Way at Indianola Dr	10/27/2005	1158	885	1800	Shady Grove
Dale Dr at Wayne Ave	4/21/2005	809	965	1600	Silver Spring/Takoma Park
Darnestown Rd at Beallsville Rd	10/5/2005	989	892	1400	Poolesville
Darnestown Rd at Darnestown-G'town Rd	10/5/2005	1291	1060	1400	Darnestown/Travilah
Darnestown Rd at Muddy Branch Rd	12/20/2005	1166	1178	1475	North Potomac
Darnestown Rd at Potomac Valley Drwy	10/6/2005	814	806	1450	Gaithersburg City
Darnestown Rd at Quince Orchard HS	10/6/2005	744	832	1475	North Potomac
Darnestown Rd at Quince Orchard Rd	3/16/2004	1190	1080	1475	North Potomac
Darnestown Rd at Riffle Ford Rd	11/9/2004	1558	1769	1475	North Potomac
Darnestown Rd at Seneca Rd (MD 112)	10/11/2005	1085	1139	1400	Darnestown/Travilah
Darnestown Rd at Shady Grove Rd	12/20/2005	1030	1310	1500	Rockville City
Darnestown Rd at Tschiffely Square Rd	10/20/2005	1370	943	1475	North Potomac
Darnestown-Germantown Rd at Clopper Rd	11/18/2003	880	899	1450	Germantown West
Darnestown-Germantown Rd at Middlebrook	3/20/2003	1089	1195	1450	Germantown Town Center
Darnestown-Germantown Rd at Observation	12/3/2002	867	762	1450	Germantown East
Darnestown-Germantown Rd at Wisteria Dr	3/13/2003	894	1356	1450	Germantown Town Center
Deer Park Dr at Railroad Ave	5/6/2003	1060	1034	1475	Derwood
Democracy Blvd at Falls Rd/S Glen Rd	12/9/2003	1390	1204	1475	Potomac
Democracy Blvd at Fernwood Rd	4/14/2005	1205	1314	1550	North Bethesda
Democracy Blvd at I-270	6/3/2004	1184	1371	1475	Potomac
Democracy Blvd at Rockledge Dr	4/21/2005	724	1013	1550	North Bethesda
Democracy Blvd at Seven Locks Rd	6/3/2003	977	1311	1475	Potomac
Democracy Blvd at Westlake Terrace	5/24/2005	835	869	1475	Potomac
E Gude Dr at Calhoun Dr	10/27/2005	1175	1084	1475	Derwood
E Gude Dr at Crabbs Branch/Cecil	10/27/2005	1395	1135	1475	Derwood
E Gude Dr at Southlawn Ln	9/28/2004	1545	1211	1500	Rockville City
E Randolph Rd at Fairland Rd/Octagon La	12/9/2003	1045	1333	1500	Fairland/White Oak
E Randolph Rd at Old Columbia Pike	5/18/2004	1315	1032	1500	Fairland/White Oak
E Randolph Rd at Serpentine Way	12/3/2002	704	713	1500	Fairland/White Oak
E Randolph Rd at Tamarack Ln	10/29/2003	633	589	1500	Fairland/White Oak
E Wayne Ave at Flower Ave	5/18/2005	861	954	1600	Silver Spring/Takoma Park
East Diamond Ave at Summit Ave	4/24/2003	840	1051	1450	Gaithersburg City
East West Hwy at Newell/Blair Mill	1/26/2005	586	674	1800	Silver Spring CBD
East-West Hwy at 16th St	6/2/2005	1496	1289	1600	Silver Spring/Takoma Park
East-West Hwy at Chelton	2/2/2006	1060	661	1800	Bethesda CBD
East-West Hwy at Grubb Rd	11/5/2003	1249	1177	1600	Silver Spring/Takoma Park
East-West Hwy at Meadowbrook Ln	2/13/2002	1091	1268	1600	Silver Spring/Takoma Park
East-West Hwy at Montgomery Ave	2/2/2006	1101	725	1800	Bethesda CBD
East-West Hwy at Pearl St	4/8/2003	1104	899	1800	Bethesda CBD
East-West Hwy at Sundale/Washington	9/15/2005	922	851	1600	Silver Spring/Takoma Park
East-West Hwy at Waverly	10/30/2003	823	978	1800	Bethesda CBD
Ethan Allen Ave (MD 410) at Carroll Ave	12/21/2005	1251	774	1600	Silver Spring/Takoma Park
Executive Blvd at Marinelli Rd	3/10/2005	376	569	1800	White Flint

INTERSECTION NAME	COUNT DATE	AM CLV	PM CLV	LATR STAN	POLICY AREA
Executive Blvd at Nicholson Ln	3/10/2005	755	751	1800	White Flint
Falls Rd at Bells Mill Rd	5/29/2003	885	995	1475	Potomac
Falls Rd at Dunster/Falls Chapel	10/23/2001			1500	Rockville City
Falls Rd at Kersey	10/18/2001	1068	1009	1500	Rockville City
Falls Rd at Tuckerman Ln/Falls Chapel	4/27/2004	1338	1388	1475	Potomac
Falls Rd at Wootton Pkwy	10/20/2004	1309	835	1500	Rockville City
Father Hurley Blvd at Middlebrook Rd	3/11/2003	1070	1275	1450	Germantown West
Fenton St at Bonifant St	4/6/2005	677	836	1800	Silver Spring CBD
Fenton St at Burlington Ave	3/3/2005	1169	1046	1800	Silver Spring CBD
Fenton St at Cameron St	11/16/2005	473	644	1800	Silver Spring CBD
Fenton St at Ellsworth Ln	4/19/2005	279	503	1800	Silver Spring CBD
Fenton St at Silver Spring Ave	4/13/2005	711	903	1800	Silver Spring CBD
Fenton St at Sligo Ave	1/26/2005	988	1087	1800	Silver Spring CBD
Fenton St at Thayer Ave	4/14/2005	703	930	1800	Silver Spring CBD
Fenton St at Wayne Ave	4/12/2005	973	1014	1800	Silver Spring CBD
Fernwood Rd at Rock Spring Dr/Marriott	6/3/2004	554	627	1550	North Bethesda
Fernwood Rd at Rockledge Dr/Westlake Ter	6/3/2004	761	635	1550	North Bethesda
First St at Baltimore Rd	1/13/2005	1193	1602	1500	Rockville City
Frederick Ave at Education Blvd	10/27/2004	1324	944	1450	Gaithersburg City
Frederick Ave at Plummer Dr	12/7/2005	999	959	1450	Germantown East
Frederick Ave at Travis	10/13/2004	1056	1212	1450	Gaithersburg City
Frederick Rd (MD 355) at King Farm Blvd	4/15/2004	1639	1952	1800	Shady Grove
Frederick Rd (MD 355) at Lockheed / IBM	11/16/2004	991	876	1450	Gaithersburg City
Frederick Rd (MD 355) at Milestone CtrS	10/14/2004	1054	955	1450	Germantown East
Frederick Rd at Chestnut St	9/30/2004	1260	1204	1450	Gaithersburg City
Frederick Rd at Christopher St	11/9/2004	1237	1566	1450	Gaithersburg City
Frederick Rd at Clarksburg Rd	8/24/2005	1653	1455	1450	Clarksburg
Frederick Rd at Deer Park Dr	3/10/2004	1381	1192	1475	Derwood
Frederick Rd at Gunners Branch Rd	10/19/2004	940	937	1450	Germantown East
Frederick Rd at Henderson Corner Rd	11/4/2004	1088	854	1450	Germantown East
Frederick Rd at Lakeforest/Perry	3/10/2004	995	974	1450	Gaithersburg City
Frederick Rd at Montgomery Village Ave	3/3/2004	1409	1540	1450	Gaithersburg City
Frederick Rd at Odenhal Ave	11/10/2004	1049	1372	1450	Gaithersburg City
Frederick Rd at Old Hundred Rd (MD 109)	10/12/2004	708	613	1400	Goshen
Frederick Rd at Redland Rd	10/19/2004	1542	1418	1800	Shady Grove
Frederick Rd at Ridge Rd	9/8/2004	1790	1981	1450	Germantown East
Frederick Rd at Shady Grove Rd	3/10/2005	1649	1497	1800	Shady Grove
Frederick Rd at Shakepeare Blvd	4/15/2004	1269	1018	1450	Germantown East
Frederick Rd at Solid Waste Drwy	9/21/2004	1280	1102	1800	Shady Grove
Georgia Ave at 16th St	6/2/2005	1075	1270	1600	Silver Spring/Takoma Park
Georgia Ave at Arcola Ave	5/3/2005	1393	1661	1600	Kensington/Wheaton
Georgia Ave at August Dr	11/19/2003	1221	1002	1600	Kensington/Wheaton
Georgia Ave at Blueridge	5/12/2005	1179	1413	1800	Wheaton CBD

INTERSECTION NAME	COUNT DATE	AM CLV	PM CLV	LATR STAN	POLICY AREA
Georgia Ave at Bonifant St	5/11/2005	905	885	1800	Silver Spring CBD
Georgia Ave at Cameron St	11/16/2005	1081	866	1800	Silver Spring CBD
Georgia Ave at Columbia Blvd/Seminary Ln	5/10/2005	1631	1542	1600	Silver Spring/Takoma Park
Georgia Ave at Connecticut Ave	2/19/2004	1611	1241	1500	Aspen Hill
Georgia Ave at Dennis Ave	5/1/2001	1863	1585	1600	Kensington/Wheaton
Georgia Ave at East-West/Burlington/13th	1/26/2005	1768	1556	1800	Silver Spring CBD
Georgia Ave at Emory Ln	9/9/2003	1741	1568	1475	Olney
Georgia Ave at Forest Glen Rd	8/28/2003	2106	1643	1600	Kensington/Wheaton
Georgia Ave at Glenallen Ave	1/9/2003	963	1232	1800	Glenmont
Georgia Ave at Gold Mine Rd	5/12/2005	1008	965	1475	Olney
Georgia Ave at Hathaway Dr	12/8/2004	1142	940	1600	Kensington/Wheaton
Georgia Ave at Hewitt Ave	1/12/2005	807	876	1600	Kensington/Wheaton
Georgia Ave at Hines/Prince Phillip	11/18/2003	1210	1315	1475	Olney
Georgia Ave at I-495 ramps	11/20/2003	1142	1206	1600	Kensington/Wheaton
Georgia Ave at International	12/18/2003	931	1012	1500	Aspen Hill
Georgia Ave at King William Dr	12/9/2003	1192	1095	1475	Olney
Georgia Ave at Layhill Rd	9/15/2005	1200	1071	1800	Glenmont
Georgia Ave at MD 108	12/14/2005	1334	1722	1475	Olney
Georgia Ave at Morningwood/Spartan	1/8/2002	1069	1293	1475	Olney
Georgia Ave at New Hampshire Ave	2/14/2006	1457	1356	1400	Patuxent
Georgia Ave at Norbeck Rd	9/11/2003	1896	1774	1500	Aspen Hill
Georgia Ave at Old Baltimore Rd	4/7/2005	1498	1170	1475	Olney
Georgia Ave at Plyers Mill Rd	11/18/2003	1626	1248	1600	Kensington/Wheaton
Georgia Ave at Prince Phillip/Queen Eliz	5/12/2005	1046	1144	1475	Olney
Georgia Ave at Randolph Rd	9/13/2005	1762	1684	1800	Glenmont
Georgia Ave at Reedie Dr	5/5/2005	1074	1136	1800	Wheaton CBD
Georgia Ave at Rossmoor Ln	11/18/2003	1468	1401	1500	Aspen Hill
Georgia Ave at Seminary	4/7/2005	1462	1374	1600	Silver Spring/Takoma Park
Georgia Ave at Shorefield Ln	9/20/2005	1277	1223	1600	Kensington/Wheaton
Georgia Ave at Sligo Ave	5/10/2005	716	1057	1800	Silver Spring CBD
Georgia Ave at Spring St	11/17/2005	1176	1080	1800	Silver Spring CBD
Georgia Ave at Thayer St	5/10/2005	905	885	1800	Silver Spring CBD
Georgia Ave at University Blvd	4/27/2005	1426	1441	1800	Wheaton CBD
Georgia Ave at Urbana Ln	11/19/2003	783	778	1800	Glenmont
Georgia Ave at Veirs Mill Rd	5/11/2005	1258	922	1800	Wheaton CBD
Georgia Ave at Wayne Ave	5/11/2005	1161	1197	1800	Silver Spring CBD
Georgia Ave at Windham Ln	5/16/2005	1305	1239	1800	Wheaton CBD
Germantown Rd at Dawson Farm Rd	2/14/2002	1244	1108	1450	Germantown West
Goshen Rd at Centerway Rd	9/19/2002	1214	1212	1450	Montgomery Village/Airpark
Goshen Rd at E Village Ave	3/25/2004	1025	891	1450	Montgomery Village/Airpark
Goshen Rd at Girard/Odenhal	12/9/2003	893	1210	1450	Montgomery Village/Airpark
Goshen Rd at Snouffer School/Wightman	3/25/2004	1087	1193	1450	Montgomery Village/Airpark
Goshen Rd at Warfield Rd	3/25/2004	1078	1105	1450	Montgomery Village/Airpark

INTERSECTION NAME	COUNT DATE	AM CLV	PM CLV	LATR STAN	POLICY AREA
Great Seneca Hwy at Clopper Mill/Richter	12/14/2004	1082	836	1450	Germantown West
Great Seneca Hwy at Darnestown Rd	12/10/2003	1370	1024	1475	R&D Village
Great Seneca Hwy at Dawson Farm Rd	10/25/2005	608	708	1450	Germantown West
Great Seneca Hwy at Kentlands Blvd	5/11/2005	1454	1277	1450	Gaithersburg City
Great Seneca Hwy at Key West Ave	9/27/2005	1230	1126	1475	R&D Village
Great Seneca Hwy at Mateney Rd (S)	3/31/2004	1146	1288	1450	Germantown West
Great Seneca Hwy at Middlebrook Rd	5/13/2003	950	1274	1450	Germantown West
Great Seneca Hwy at Muddy Branch Rd	10/5/2005	1958	2073	1450	Gaithersburg City
Great Seneca Hwy at Queenstown La	12/14/2004	887	764	1450	Germantown West
Great Seneca Hwy at Quince Orchard Rd	3/9/2004	1507	1286	1450	Gaithersburg City
Great Seneca Hwy at Sam Eig Hwy	8/31/2005	1234	1203	1475	R&D Village
Great Seneca Hwy at Wisteria Dr	5/14/2003	729	930	1450	Germantown West
Gude Dr at Dover	6/17/2003	1148	1436	1475	Derwood
Hungerford Dr (MD 355) at Campus Dr	10/28/2004	1496	980	1500	Rockville City
Hungerford Dr (MD 355) at Manakee St	10/27/2004	1504	1027	1500	Rockville City
Hungerford Dr at Beall St	10/14/2004	839	965	1500	Rockville City
Hungerford Dr at College Pkwy	10/27/2004	1382	958	1500	Rockville City
Hungerford Dr at Middle Ln/Park Rd	10/21/2004	1352	1370	1500	Rockville City
Hungerford Dr at Monroe Pl/Church St	10/21/2004	1217	1055	1500	Rockville City
Hungerford Dr at N Washington St	7/8/2004	1345	1736	1500	Rockville City
Hungerford Ln (MD 355) at Gude Dr	10/26/2004	1656	1447	1500	Rockville City
Jones Bridge Rd at Manor Rd	11/19/2002	679	676	1600	Bethesda/Chevy Chase
Jones Bridge Rd at Platt Ridge Dr	11/19/2002	773	963	1600	Bethesda/Chevy Chase
Key West Ave at Broschart/Diamondback	9/21/2005	1397	1140	1475	R&D Village
Key West Ave at Darnestown Rd	9/21/2005	1111	1016	1475	North Potomac
Key West Ave at Medical Ctr/Omega Dr	8/31/2005	1195	1197	1475	R&D Village
Key West Ave at Shady Grove Rd	9/27/2005	1378	1733	1500	Rockville City
Key West Ave at W Gude Dr	9/28/2005	947	1231	1500	Rockville City
Knowles Ave at Summit Ave	9/5/2002	1078	1492	1600	Kensington/Wheaton
Layhill Rd at Belpre/Bonifant	9/15/2005	1633	1255	1500	Aspen Hill
Layhill Rd at Ednor Rd/Norwood Rd	6/12/2003	1366	1049	1475	Olney
Layhill Rd at Glenallen Ave	9/15/2005	828	980	1600	Kensington/Wheaton
Layhill Rd at Middlevale	3/11/2005	1002	800	1600	Kensington/Wheaton
Laytonsville Rd at Brink/Sundown	5/25/2004	1273	1375	1400	Goshen
Main St Damascus at Woodfield Rd	9/1/2005	556	921	1450	Damascus
Massachusetts Ave at Biltmore	3/3/2005	1201	856	1600	Bethesda/Chevy Chase
Massachusetts Ave at Cromwell	3/2/2005	675	530	1600	Bethesda/Chevy Chase
Massachusetts Ave at Little Falls Pkwy	3/2/2005	1176	883	1600	Bethesda/Chevy Chase
Massachusetts Ave at Westbard Ave	3/4/2004	940	878	1600	Bethesda/Chevy Chase
MD 108 at Norwood Rd	4/29/2004	1328	1295	1475	Olney
MD 108 at Spartan	11/10/2004	1062	1072	1475	Olney
MD 118 at Crystal Rock Dr	2/12/2002	1035	1212	1450	Germantown Town Center
MD 124 at Airpark Rd	2/28/2002	1048	1341	1450	Montgomery Village/Airpark

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MD 124 at Girard	5/12/2004	573	521	1450	Gaithersburg City
MD 124 at I-270 SB Ramp	9/13/2001	808	975	1450	Gaithersburg City
MD 124 at Twinlakes	5/21/2003	765	1363	1450	Gaithersburg City
MD 355 at Cordell	5/17/2005	702	740	1800	Bethesda CBD
MD 355 at Edmondston Ln	3/20/2003	1556	1437	1500	Rockville City
MD 355 at Elm/Waverly	6/2/2004	762	841	1800	Bethesda CBD
MD 355 at Frederick Ave	10/26/2004	1035	1063	1500	Rockville City
MD 355 at Halpine	11/1/2005	1103	1277	1500	Rockville City
MD 355 at Indianola/Watkins Pond	10/6/2004	1789	1522	1800	Shady Grove
MD 355 at Middlebrook (N)	4/29/2004	992	1351	1450	Germantown East
MD 355 at Professional	10/20/2004	1232	1184	1450	Gaithersburg City
MD 355 at S_Westland	4/7/2005	1006	1147	1475	Derwood
MD 355 at Summit Ave	3/9/2004	1194	1246	1450	Gaithersburg City
MD 355 at Tuckerman (S)	4/27/2005	943	894	1800	Grosvenor
MD 355 at Watkins Mill Rd	3/16/2004	784	1057	1450	Gaithersburg City
MD 355 at Willard/Wisconsin Circle	5/18/2005	998	863	1800	Friendship Heights
MD 355 at Woodmont Ave	5/17/2005	1235	1049	1600	Bethesda/Chevy Chase
Md.28-Hurley	9/22/2004	830	998	1500	Rockville City
Md.28-Research	11/1/2005	941	1307	1500	Rockville City
Md28-I270-Nelson	11/3/2005	964	1371	1500	Rockville City
Midcounty Hwy at Goshen Rd	3/16/2004	1140	1255	1450	Montgomery Village/Airpark
Midcounty Hwy at Montgomery Village Ave	3/9/2004	1158	885	1450	Montgomery Village/Airpark
Midcounty Hwy at Washington Grove Ln	3/22/2005	1508	1196	1475	Derwood
Midcounty Hwy at Woodfield/Saybrooke	3/16/2004	1150	838	1450	Gaithersburg City
Middlebrook Rd at Waring Station Dr	10/28/2004	959	1081	1450	Germantown West
Mont. Village Ave at Chris/Lost Knife	11/4/2004	1249	1613	1450	Montgomery Village/Airpark
Montgomery Ave at Waverly St	6/3/2003	703	1051	1800	Bethesda CBD
Montgomery Ln at Pearl St	4/15/2003	655	1046	1800	Bethesda CBD
Montgomery Village Ave at Apple Ridge Rd	1/16/2002	752	784	1450	Montgomery Village/Airpark
Montgomery Village Ave at Centerway Rd	9/18/2002	1012	1171	1450	Montgomery Village/Airpark
Montgomery Village Ave at Russell Ave	12/13/2001	1266	1891	1450	Gaithersburg City
Montrose Rd at E Jefferson St	3/9/2005	1534	1617	1550	North Bethesda
Montrose Rd at Falls Rd	6/4/2002	1026	1014	1475	Potomac
Montrose Rd at Old Old Georgetown Rd	3/9/2005	713	926	1550	North Bethesda
Montrose Rd at Seven Locks Rd	5/30/2002	1260	1032	1500	North Potomac
Montrose Rd at Tildenwood Ln	3/9/2005	1643	1575	1550	North Bethesda
Montrose Rd at Tower Oaks Blvd	6/5/2002	1521	1388	1550	North Bethesda
Muddy Branch Rd at Diamondback Dr	9/7/2005	904	1083	1450	Gaithersburg City
Muncaster Mill Rd at Avery Rd	4/12/2005	1258	1246	1400	Rock Creek
Muncaster Mill Rd at Bowie Mill Rd	4/12/2005	1314	1263	1400	Rock Creek
Muncaster Mill Rd at Needwood Rd	4/12/2005	1397	1510	1400	Rock Creek
Muncaster Rd at MD 108	6/3/2004	1638	1277	1400	Patuxent
MVA at Lakeforest Mall	11/10/2004	876	999	1450	Montgomery Village/Airpark

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New Hampshire Ave at Adelphi/Dilston	1/13/2004	1253	1450	1600	Silver Spring/Takoma Park
New Hampshire Ave at Bonifant/Good Hope	5/25/2004	1476	1227	1475	Cloverly
New Hampshire Ave at Briggs Chaney Rd	5/25/2004	776	1092	1475	Cloverly
New Hampshire Ave at Cape May Rd	2/1/2005	1459	1207	1500	Fairland/White Oak
New Hampshire Ave at Chalmers	9/19/2001	1347	1184	1500	Fairland/White Oak
New Hampshire Ave at Columbia Pk Ramps	10/23/2001	1121	1452	1500	Fairland/White Oak
New Hampshire Ave at Ednor Rd	12/11/2001	1524	1277	1475	Cloverly
New Hampshire Ave at I-495/Elton Rd	12/14/2005	1318	1111	1500	Fairland/White Oak
New Hampshire Ave at Lockwood Dr	11/17/2004	1644	1282	1500	Fairland/White Oak
New Hampshire Ave at MD 108	5/27/2004	1302	1334	1400	Patuxent
New Hampshire Ave at Midland Dr	2/3/2005	991	1060	1500	Fairland/White Oak
New Hampshire Ave at Norwood Rd	5/26/2004	1019	1121	1475	Cloverly
New Hampshire Ave at Oakview	1/24/2006	1591	1492	1600	Silver Spring/Takoma Park
New Hampshire Ave at Powder Mill Rd	1/31/2006	1305	1316	1500	Fairland/White Oak
New Hampshire Ave at Schindler/Mahan	2/12/2004	1270	872	1500	Fairland/White Oak
New Hampshire Ave at Spencerville Rd	4/24/2003	883	1103	1475	Cloverly
New Hampshire Ave at Wolf	3/2/2005	1144	1180	1500	Fairland/White Oak
Nicholson Ln at Huff Ct	9/15/2004	579	752	1800	White Flint
Nicholson Ln at Nebel St	6/2/2004	832	1188	1550	North Bethesda
Nicholson Ln at Woodglen	5/18/2005	554	735	1800	White Flint
Norbeck Rd (MD 28) at Avery Rd	10/12/2005	1815	1629	1500	Rockville City
Norbeck Rd at Bauer Dr	10/20/2005	1710	1405	1500	Aspen Hill
Norbeck Rd at Bel Pre Rd	10/26/2005	1224	1183	1500	Aspen Hill
Norbeck Rd at E Gude Dr	10/12/2005	1185	1365	1500	Rockville City
Norbeck Rd at Layhill Rd	2/17/2005	858	828	1475	Cloverly
Norbeck Rd at Muncaster Mill Rd	9/11/2003	1446	1383	1500	Aspen Hill
Norbeck Rd at Norbeck Blvd	10/27/2005	1189	1368	1500	Aspen Hill
Oiney-Laytonsville Rd at Olney Mill Rd	6/3/2004	1017	972	1475	Olney
Old Columbia Pike at Spencerville Rd	6/2/2004	1114	1306	1400	Patuxent
Old Georgetown Rd at Battery Ln	4/29/2003	1192	1325	1800	Bethesda CBD
Old Georgetown Rd at Beech St	10/5/2004	1675	1668	1600	Bethesda/Chevy Chase
Old Georgetown Rd at Cheshire Ln	10/29/2003	1076	1264	1550	North Bethesda
Old Georgetown Rd at Democracy Blvd	4/19/2005	1440	1299	1550	North Bethesda
Old Georgetown Rd at Edson/Poindexter	3/10/2005	976	1181	1550	North Bethesda
Old Georgetown Rd at Executive Blvd	3/10/2005	1620	1405	1800	White Flint
Old Georgetown Rd at Huntington Pkwy	2/10/2005	1289	953	1600	Bethesda/Chevy Chase
Old Georgetown Rd at I-270 (N)	5/27/2004	775	962	1550	North Bethesda
Old Georgetown Rd at Lone Oak	6/7/2001	1146	984	1550	North Bethesda
Old Georgetown Rd at Nicholson/Tilden	3/10/2005	1191	1222	1800	White Flint
Old Georgetown Rd at Rock Spring Dr	5/25/2005	1238	1368	1550	North Bethesda
Old Georgetown Rd at South/Greentree	8/19/2004	980	957	1600	Bethesda/Chevy Chase
Old Georgetown Rd at Tuckerman Ln	5/26/2005	1746	1406	1550	North Bethesda
Old Georgetown Rd at W Cedar Ln	4/30/2003	1358	1639	1600	Bethesda/Chevy Chase

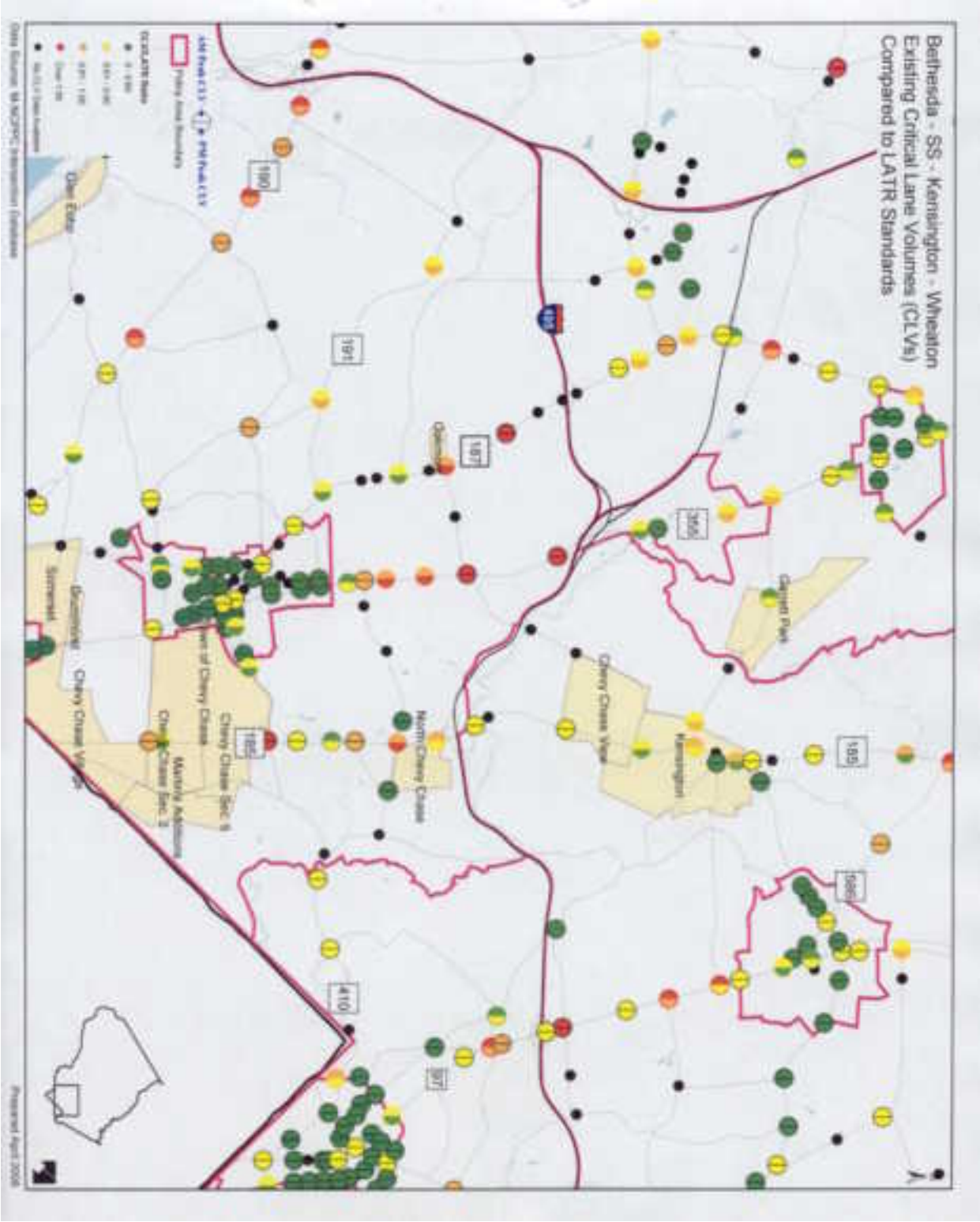
INTERSECTION NAME	COUNT DATE	AM CLV	PM CLV	LATR STAN	POLICY AREA
Old Georgetown Rd at Wilson/Arlington	5/1/2003	1347	1452	1800	Bethesda CBD
Old Georgetown Rd at Woodmont Ave	9/9/2003	717	818	1800	Bethesda CBD
Old G'town Rd (MD 187) at Mid Pike Plz	3/9/2005	633	625	1800	White Flint
Old.Georgetown Rd at I-270 (S)	5/26/2004	968	1160	1550	North Bethesda
Olney-Laytons Rd at Queen Elizabeth Dr	12/15/2005	1555	1321	1475	Olney
Olney-Sandy Sprg Rd at Old Baltimore Rd	4/5/2005	1291	1044	1475	Olney
Olney-Sandy Sprg Rd at Prince Philip Dr	12/21/2005	883	964	1475	Olney
Olney-Sandy Spring Rd at Doctor Bird Rd	6/12/2003	786	904	1475	Olney
Olney-Sandy Spring Rd at Olney Vil. Mart	1/12/2005	995	941	1475	Olney
Olney-Sandy Spring Rd at Sherwood HS	2/12/2002	1205	1163	1400	Patuxent
Parklawn Dr at Braxfield	3/1/2001	784	603	1550	North Bethesda
Parklawn Dr at Twinbrook Pkwy	6/9/2004	1003	1112	1800	Twinbrook
Philadelphia Ave (MD 410) at Carroll Ave	4/12/2005	930	1477	1600	Silver Spring/Takoma Park
Philadelphia Ave (MD 410) at Maple Ave	5/19/2005	693	1102	1600	Silver Spring/Takoma Park
Philadelphia Ave (MD 410) at Takoma Ave	1/26/2005	679	755	1600	Silver Spring/Takoma Park
Piney Branch Rd at Philadelphia Ave	4/20/2005	1244	1704	1600	Silver Spring/Takoma Park
Piney Branch Rd at Arliss St	9/20/2005	855	771	1600	Silver Spring/Takoma Park
Piney Branch Rd at Barron St	6/24/2003	1048	1044	1600	Silver Spring/Takoma Park
Piney Branch Rd at Carroll Ave	9/16/2003	706	774	1600	Silver Spring/Takoma Park
Piney Branch Rd at Dale Dr/Devon Rd	12/18/2001	873	1067	1600	Silver Spring/Takoma Park
Piney Branch Rd at Flower Ave	9/15/2005	855	807	1600	Silver Spring/Takoma Park
Piney Branch Rd at Sligo Ave/Hilltop	5/8/2003	922	917	1600	Silver Spring/Takoma Park
Pleasant/Shady-Grove/I370	3/5/2003	1277	1017	1800	Shady Grove
Plyers Mill Rd at Metropolitan Ave	9/21/2005	687	866	1600	Kensington/Wheaton
Quince Orchard Rd at Bank/North	2/5/2003	758	1056	1450	Gaithersburg City
Quince Orchard Rd at Longdraft Rd	2/20/2002	562	1022	1475	North Potomac
Quince Orchard Rd at Sioux	12/10/2003	734	768	1450	Gaithersburg City
Randolph Rd (W) at Parklawn Dr	3/9/2005	1342	1218	1550	North Bethesda
Randolph Rd at Colie Dr	5/6/2004	919	949	1600	Kensington/Wheaton
Randolph Rd at Gaynor/Rockinghorse	6/7/2005	1202	1339	1550	North Bethesda
Randolph Rd at Glenallen Ave	9/13/2005	1309	1026	1600	Kensington/Wheaton
Randolph Rd at Kemp Mill Rd	9/13/2005	1263	1270	1600	Kensington/Wheaton
Randolph Rd at Lauderdale	3/6/2001	1388	1663	1550	North Bethesda
Randolph Rd at Maple Ave	3/9/2005	861	1008	1550	North Bethesda
Randolph Rd at Nebel St	3/9/2005	757	1060	1550	North Bethesda
Randolph Rd at New Hampshire Ave	10/23/2002	1882	1548	1500	Fairland/White Oak
Randolph Rd at Tivoli	9/14/2005	1040	789	1600	Kensington/Wheaton
Randolph Rd at Veirs Mill Rd	9/29/2005	1314	1216	1600	Kensington/Wheaton
Redland Rd at Crabbs Branch Way	3/10/2005	1664	1628	1800	Shady Grove
Ridge Rd at Bethesda Church Rd	10/19/2004	874	1183	1450	Damascus
Ridge Rd at High Corner St/Shop Ctr	12/21/2005	826	1070	1450	Damascus

INTERSECTION NAME	COUNT DATE	AM CLV	PM CLV	LATR STAN	POLICY AREA
Ridge Rd at Kings Valley Rd	9/6/2001	1599	1322	1450	Clarksburg
Ridge Rd at Lewis Dr/Locust Dr	12/22/2005	917	942	1450	Damascus
Ridge Rd at Main St (MD 108)	12/14/2005	893	1276	1450	Damascus
Ridge Rd at Observation Dr	1/6/2005	1000	1179	1450	Germantown East
Ridge Road at Sweepstakes/Marlboro	12/3/2003	1301	1369	1450	Damascus
River Rd at Beech Tree/Nevis Rd	9/26/2002	1853	1465	1600	Bethesda/Chevy Chase
River Rd at Bradley Blvd	9/26/2002	1421	1282	1475	Potomac
River Rd at Brookside/Ridgefield	11/4/2003	1202	1071	1600	Bethesda/Chevy Chase
River Rd at Counselman	10/3/2002	1417	926	1475	Potomac
River Rd at Goldsboro Rd	10/20/2005	1141	1289	1600	Bethesda/Chevy Chase
River Rd at I-495 (E)	11/7/2002	1703	1503	1600	Bethesda/Chevy Chase
River Rd at Little Falls Pkwy	6/11/2003	1484	1537	1600	Bethesda/Chevy Chase
River Rd at Piney Meetinghouse Rd	10/29/2002	1404	1135	1475	Potomac
River Rd at Royal Dominion/Holton Arms	2/24/2004	1591	1358	1600	Bethesda/Chevy Chase
River Rd at Seven Locks Rd	9/17/2002	1565	1103	1475	Potomac
River Rd at Springfield-Kc	10/3/2002	1134	883	1600	Bethesda/Chevy Chase
River Rd at Whittier/Winston	10/2/2002	1776	1329	1600	Bethesda/Chevy Chase
River Rd at Willard Ln/Greenway	6/8/2004	1003	1191	1600	Bethesda/Chevy Chase
River Rd at Wilson Ln	10/18/2005	1392	1484	1600	Bethesda/Chevy Chase
Rock Spring Dr at Rockledge Dr	6/2/2004	835	814	1550	North Bethesda
Rockville Pike (MD 355) at Mid Pike Plz	3/8/2005	992	1335	1800	Grosvenor
Rockville Pike (MD 355) at Pooks Hill Rd	6/8/2004	1621	1923	1600	Bethesda/Chevy Chase
Rockville Pike at Bou Ave	11/1/2005	1123	1288	1550	North Bethesda
Rockville Pike at Congressional Ln	6/3/2004	1108	1538	1500	Rockville City
Rockville Pike at E Jefferson/Veirs Mill	10/26/2004	1438	1305	1500	Rockville City
Rockville Pike at East-West/Old G'town	12/8/2005	1236	1411	1800	Bethesda CBD
Rockville Pike at Edson/White Flint Mall	6/8/2005	979	1212	1550	North Bethesda
Rockville Pike at Fed Plz / Pike Ctr	11/2/2005	852	1064	1550	North Bethesda
Rockville Pike at Hubbard	11/2/2005	1167	1527	1550	North Bethesda
Rockville Pike at Jones Bridge/Center	12/22/2005	1306	1536	1600	Bethesda/Chevy Chase
Rockville Pike at Marinelli Rd	3/8/2005	1067	998	1800	White Flint
Rockville Pike at Montrose/Randolph	3/8/2005	1501	1452	1550	North Bethesda
Rockville Pike at Nicholson Ln	3/8/2005	1155	1385	1800	White Flint
Rockville Pike at Old Georgetown Rd	3/8/2005	1179	1188	1800	White Flint
Rockville Pike at South/Wood/NNMC	6/9/2004	1507	2022	1600	Bethesda/Chevy Chase
Rockville Pike at Strathmore Ave	4/5/2005	1235	1493	1550	North Bethesda
Rockville Pike at Tuckerman Ln (N)	5/10/2005	1249	1586	1800	Grosvenor
Rockville Pike at W Cedar Ln	4/5/2005	1833	2103	1600	Bethesda/Chevy Chase
Rockville Pike at Wilson/NIH	6/10/2004	1424	1675	1600	Bethesda/Chevy Chase
Rockville Pike at Woodmont CC/Best Buy	6/8/2004	1229	1155	1500	Rockville City
Rockville Pike at Grosvenor/Beach	5/18/2004	1244	977	1800	Grosvenor

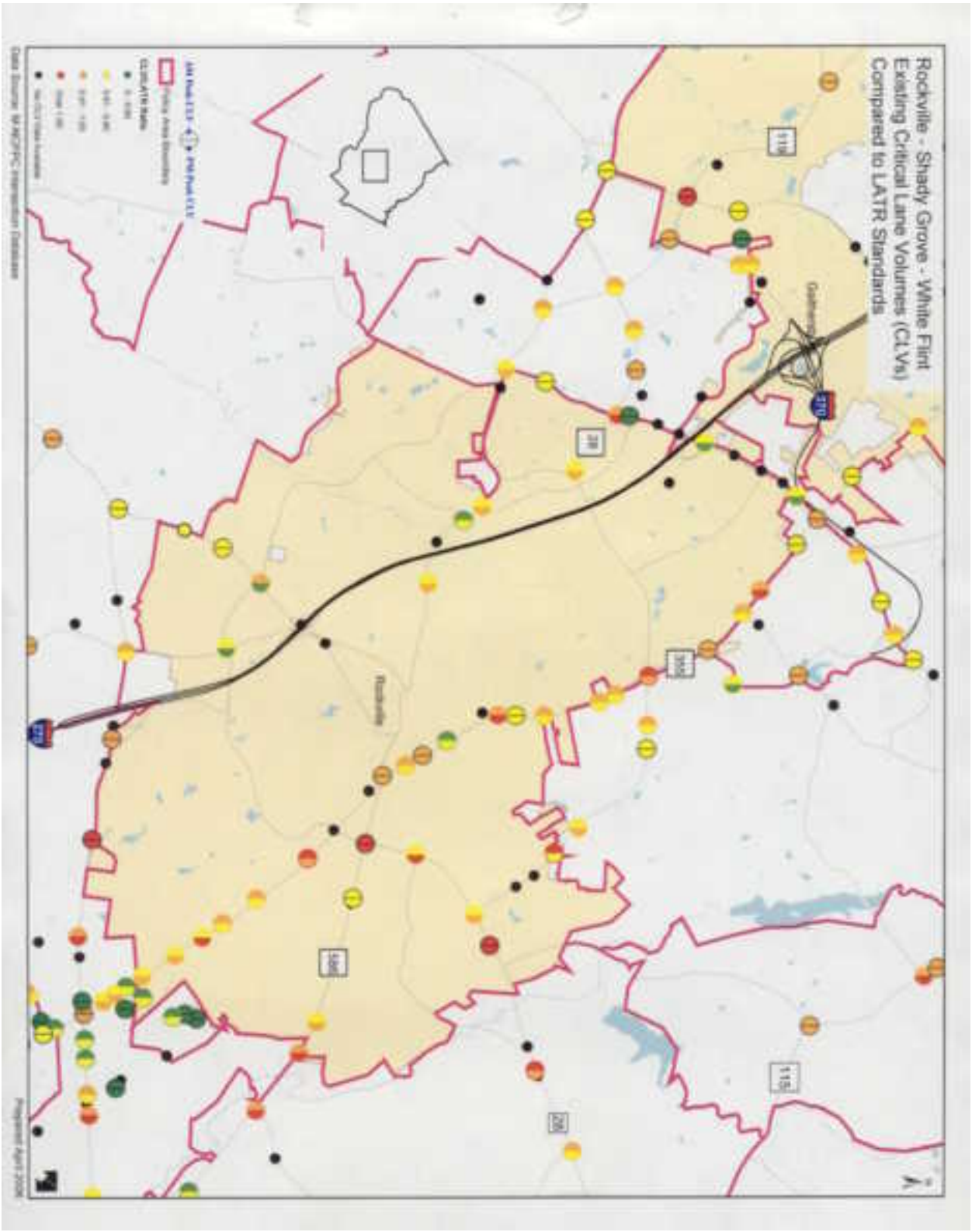
INTERSECTION NAME	COUNT DATE	AM CLV	PM CLV	LATR STAN	POLICY AREA
Rockville Pike at Security Ln	3/8/2005	922	994	1550	North Bethesda
Rockville Pike at Templeton Pl	6/8/2004	1272	1214	1500	Rockville City
Rockville-Pike/Twinbrook/Rollins	11/2/2005	1131	1450	1500	Rockville City
Sam Eig Hwy at Diamondback Dr	8/30/2005	1447	1155	1475	R&D Village
Sam Eig Hwy at Fields Rd	8/30/2005	1246	1004	1475	R&D Village
Sandy Spring Rd at McKnew	9/10/2003	1401	1260	1400	Patuxent
Second St at Fenwick Ln	5/19/2005	271	447	1800	Silver Spring CBD
Seminary Rd at 2nd Ave/Linden Ln	3/25/2004	741	1054	1600	Silver Spring/Takoma Park
Seven Locks Rd and Wootton Pkwy	6/6/2002	970	910	1500	Rockville City
Seven Locks Rd at Gainsborough	10/29/2003	1355	1328	1475	Potomac
Seven Locks Rd at Tuckerman Ln	5/28/2002	1552	1529	1475	Potomac
Shady Grove Rd and Crabbs Branch Way	3/8/2005	1203	1115	1800	Shady Grove
Shady Grove Rd at Epsilon/Tupelo	4/6/2005	1518	1359	1475	Derwood
Shady Grove Rd at I-270 Ramp NB/Redland	12/20/2005	945	687	1500	Rockville City
Shady Grove Rd at Medical Center Dr	9/21/2005	1059	1069	1500	Rockville City
Shady Grove Rd at Metro (N)	4/5/2005	1276	1298	1800	Shady Grove
Shady Grove Rd at Metro (S)	4/5/2005	1467	1375	1800	Shady Grove
Shady Grove Rd at Midcounty Hwy	5/10/2001	1961	1242	1475	Derwood
Shady Grove Rd at Oakmont	4/5/2005	1345	992	1800	Shady Grove
Shady Grove Rd at Research Blvd	12/15/2005	776	640	1475	R&D Village
Snouffer School Rd at Centerway Rd	9/11/2002	1483	844	1450	Montgomery Village/Airpark
Spring St at 2nd Ave	4/14/2005	933	817	1800	Silver Spring CBD
Spring St at Cameron St	11/17/2005	534	778	1800	Silver Spring CBD
Spring St at Cedar/Ellsworth	6/11/2003	251	400	1800	Silver Spring CBD
Tuckerman Ln at Gainsborough Rd	4/27/2004	996	964	1475	Potomac
Tuckerman Ln at Westlake Terr	5/17/2005	507	1021	1475	Potomac
Twinbrook Pkwy at Ardennes Ave	9/11/2003	959	762	1800	Twinbrook
Twinbrook Pkwy at Chapman Ave	11/2/2005	785	1101	1500	Rockville City
Twinbrook Pkwy at Fishers Ln	6/9/2004	701	1048	1800	Twinbrook
University at Caddington/Gable	12/4/2003	896	940	1600	Kensington/Wheaton
University Blv at Newport Mill/Lexington	10/18/2005	703	772	1600	Kensington/Wheaton
University Blvd (MD 193) at Reedie Dr	11/15/2005	531	584	1800	Wheaton CBD
University Blvd at Amherst Ave	5/2/2005	888	1089	1800	Wheaton CBD
University Blvd at Arcola Ave	12/4/2003	1029	1280	1600	Kensington/Wheaton
University Blvd at Buckingham/Wayne	10/29/2003	773	760	1600	Silver Spring/Takoma Park
University Blvd at Carroll Ave	10/20/2005	1250	1156	1600	Silver Spring/Takoma Park
University Blvd at Dennis Ave	12/8/2005	841	978	1600	Kensington/Wheaton
University Blvd at East Ave	4/26/2005	583	707	1800	Wheaton CBD
University Blvd at Franklin Ave	5/10/2005	1512	1328	1600	Silver Spring/Takoma Park
University Blvd at Grandview Ave	4/19/2005	813	809	1800	Wheaton CBD
University Blvd at Inwood	9/9/2003	577	846	1600	Kensington/Wheaton

INTERSECTION NAME	COUNT DATE	AM CLV	PM CLV	LATR STAN	POLICY AREA
University Blvd at Lexington	10/5/2005	777	902	1600	Kensington/Wheaton
University Blvd at Metro/Valley View Ave	5/10/2005	394	734	1800	Wheaton CBD
University Blvd at Midvale	6/4/2003	387	421	1800	Wheaton CBD
University Blvd at Piney Branch Rd	5/3/2005	1676	1582	1600	Silver Spring/Takoma Park
University Blvd at Sligo Creek Pkwy	12/13/2005	751	909	1600	Kensington/Wheaton
University Blvd at Veirs Mill Rd	4/26/2005	1202	1239	1800	Wheaton CBD
University Blvd at Williamsburg	12/13/2005	801	955	1600	Kensington/Wheaton
Veirs Mill Rd at Aspen Hill Rd	3/22/2003	1476	1608	1500	Aspen Hill
Veirs Mill Rd at Atlantic Ave	5/17/2005	1042	1424	1500	Rockville City
Veirs Mill Rd at Edmonston Dr (W)	11/9/2005	1110	1095	1500	Rockville City
Veirs Mill Rd at Ferrara Ave	10/27/2005	886	944	1600	Kensington/Wheaton
Veirs Mill Rd at First St	3/18/2003	1598	1818	1500	Rockville City
Veirs Mill Rd at Gaynor/Parkland	11/10/2005	1191	1237	1500	Aspen Hill
Veirs Mill Rd at Gridley	9/27/2005	1077	1189	1600	Kensington/Wheaton
Veirs Mill Rd at Newport	4/12/2005	1482	1339	1600	Kensington/Wheaton
~~Veirs Mill Rd at Reedie Dr~~	~~4/28/2005~~	~~608~~	~~761~~	~~1800~~	~~Wheaton CBD~~
Veirs Mill Rd at Robindale	11/9/2005	818	1054	1500	Aspen Hill
Veirs Mill Rd at Twinbrook Pkwy	6/9/2004	1508	1743	1550	North Bethesda
Veirs Mill Rd at Westfield Wheaton Drwy	3/23/2004	600	909	1800	Wheaton CBD
W Diamond Ave at Muddy Branch/Chestnut	3/9/2004	1039	1227	1450	Gaithersburg City
Wayne Ave at Cedar St	4/12/2005	657	776	1800	Silver Spring CBD
Wayne Ave at Ramsey	5/28/2003	368	585	1800	Silver Spring CBD
Willard Ave at Friendship Blvd	4/27/2005	723	898	1800	Friendship Heights
Wisconsin Ave at Battery/Rosedale	5/17/2005	926	943	1800	Bethesda CBD
Wisconsin Ave at Bethesda/Willow	6/5/2003	968	929	1800	Bethesda CBD
Wisconsin Ave at Bradley Blvd	4/16/2003	1564	1432	1800	Bethesda CBD
Wisconsin Ave at Cheltenham	6/2/2004	935	1039	1800	Bethesda CBD
Wisconsin Ave at Dorset Ave	6/19/2003	825	777	1600	Bethesda/Chevy Chase
Wisconsin Ave at Elm St (S)	6/2/2004	787	872	1800	Bethesda CBD
Wisconsin Ave at Leland St	9/9/2003	917	961	1800	Bethesda CBD
Wisconsin Ave at Montgomery St/S Park Av	4/27/2005	767	753	1800	Friendship Heights
Woodfield Rd at Cypress Hill Dr	9/14/2005	895	1109	1450	Montgomery Village/Airpark
Woodfield Rd at Fieldcrest/Hadley Farms	3/10/2005	1390	1620	1450	Montgomery Village/Airpark
Woodfield Rd at Muncaster Mill Rd	9/17/2002	1038	1127	1450	Montgomery Village/Airpark
Woodfield Rd at Sweepstakes Rd	12/4/2003	1128	1076	1450	Damascus
Woodmont Ave at Battery Ln	5/18/2005	926	693	1800	Bethesda CBD
Woodmont Ave at Bethesda Ave	4/8/2003	691	924	1800	Bethesda CBD
Woodmont Ave at Cheltenham/Norfolk	7/26/2005	691	541	1800	Bethesda CBD
Woodmont Ave at Cordell Ave	5/18/2005	562	560	1800	Bethesda CBD
Woodmont Ave at Elm St	9/9/2003	499	777	1800	Bethesda CBD
Woodmont Ave at Hampden Ln	9/14/2005	453	576	1800	Bethesda CBD
Woodmont Ave at Montgomery Ln	6/10/2003	396	461	1800	Bethesda CBD

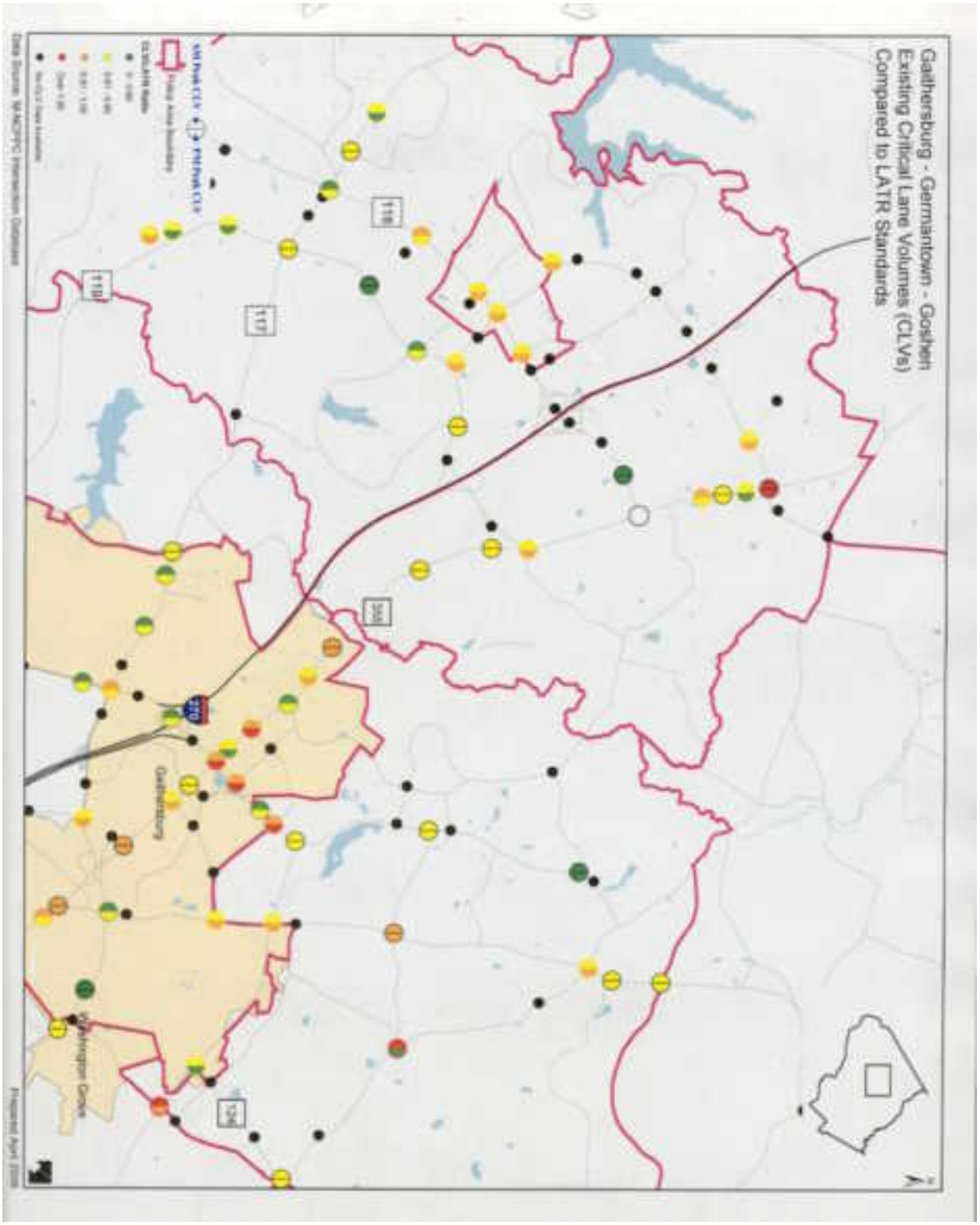
Appendix 5.1B: Map of CLVs for Bethesda – Silver Spring - Kensington
- Revised May 30, 2006 (after the staff draft was published) -



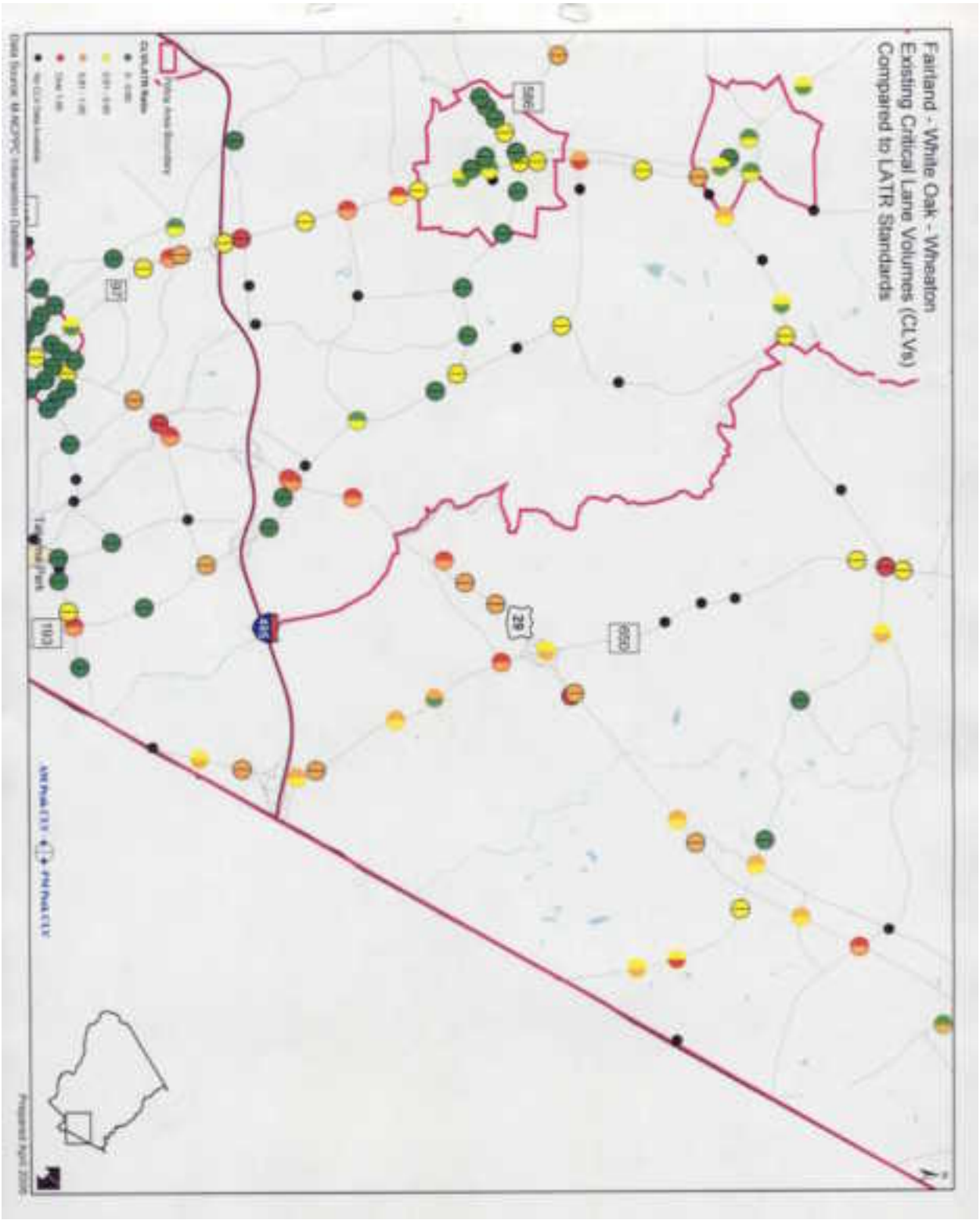
Appendix 5.1C: Map of CLVs for Rockville – Shady Grove – White Flint



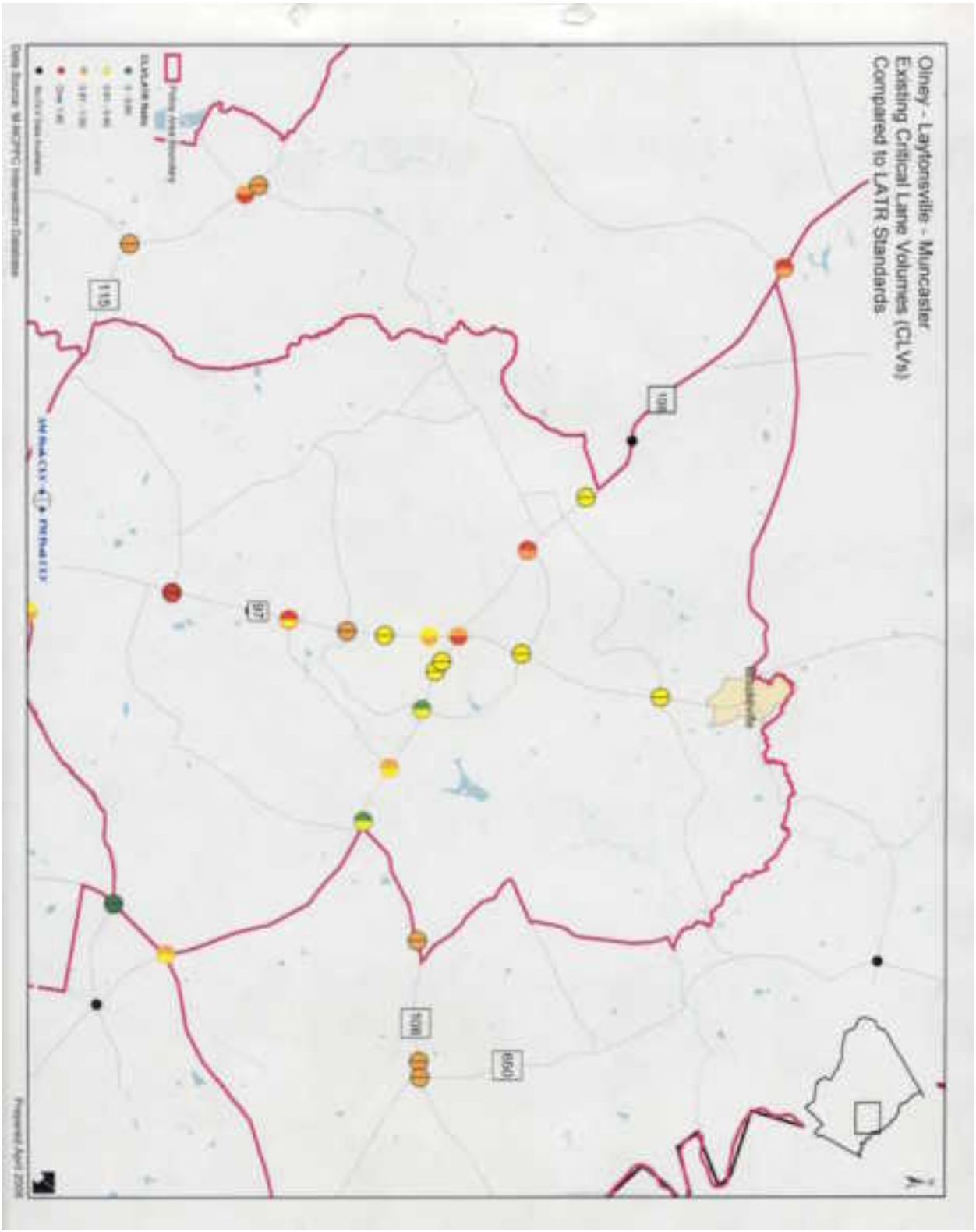
Appendix 5.1D: Map of CLVs for Gaithersburg – Germantown – Goshen



Appendix 5.1E: Map of CLVs for Fairland – White Oak – Wheaton



Appendix 5.1F: Map of CLVs for Olney – Laytonsville – Muncaster



Appendix 5.2A: V/C Ratio Lane-Mile Distribution for All Facilities

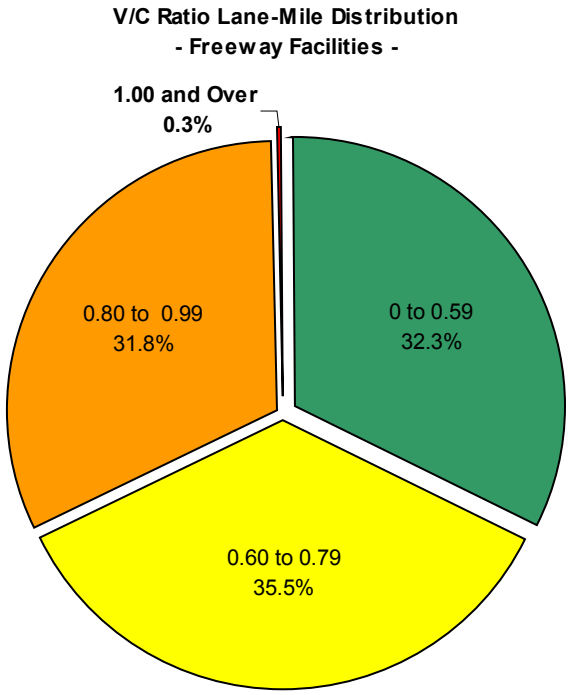
	Base Year (1998) Network	2010 CLRP Network	
% of lane-mi w/ V/C 0 to 0.59	67.4%	63.8%	
% of lane-mi w/ V/C 0.60 to 0.79	24.1%	25.5%	
% of lane-mi w/ V/C 0.80 to 0.99	8.3%	10.4%	
% of lane-mi w/ V/C 1.00 and up	0.2%	0.3%	

Appendix 5.2B: TRAVEL/2 Model Results for the Freeway Facilities

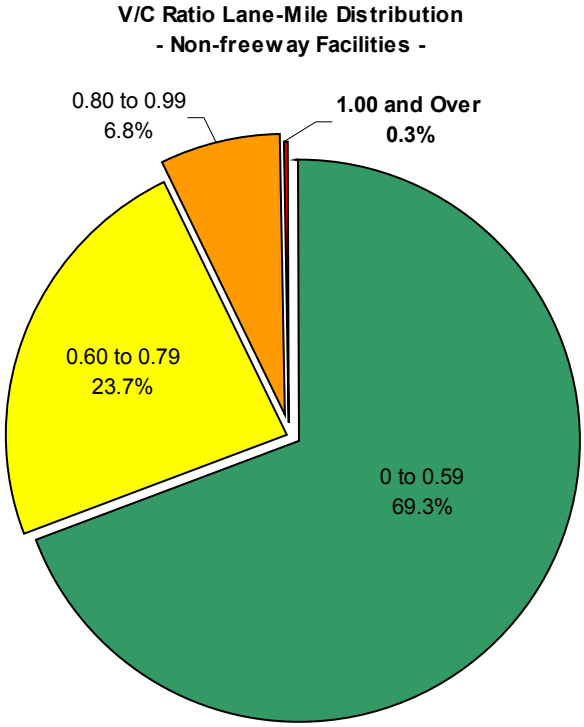
TRAVEL/2 Model Results - Freeway Facilities			
	Base Year (1998) Network	2010 CLRP Network	% Chg From Base
Total Lane-Miles	312	398	27.4%
Vehicle-Miles Traveled (in 000s)	470.1	600.6	27.8%
Vehicle-Hours Traveled (in 000s)	14.9	18.66	25.5%
Average Speed (mph)	39.8	40.7	2.3%
Average V/C Ratio*	***0.65**	***0.71**	***9.2%**
V/C Ratio Lane-Mile Distribution - Freeway Facilities			
	Base Year (1998) Network	2010 CLRP Network	
% of lane-mi w/ V/C 0 to 0.59	30.0%	32.3%	
% of lane-mi w/ V/C 0.60 to 0.79	36.2%	35.5%	
% of lane-mi w/ V/C 0.80 to 0.99	33.3%	31.8%	
% of lane-mi w/ V/C 1.00 and up	0.5%	0.3%	

***** Recalculated (after the staff draft was published) using an Average Congestion Index (ACI) - V/C Ratio weighted by VMT

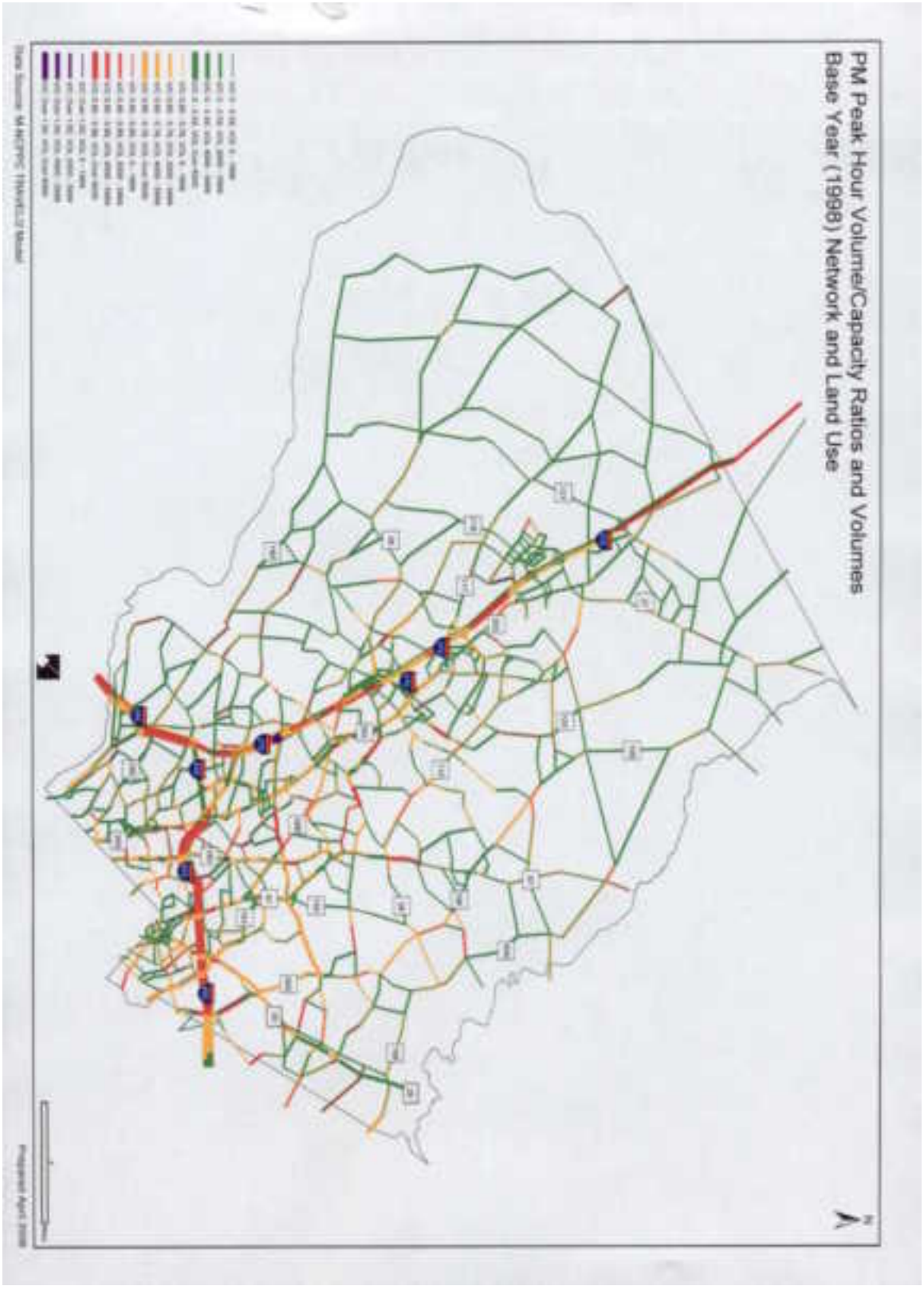
Appendix 5.2C: TRAVEL/2 V/C Ratio Lane-Mile Distribution - Freeway Facilities



Appendix 5.2D: TRAVEL/2 V/C Ratio Lane-Mile Distribution – Non-freeway Facilities



Appendix 5.2E: Map of 1998 PM Peak Hour V/C Ratios and Volumes



Appendix 5.3: Active or Recently Completed Transportation Projects

As of April 2006				
Sources: SHA & DPWT monthly status reports (CTP, CIP) - June 2005 to February 2006, FY 06-11 MD CTP and FY 07-12 County CIP catalogs				
Capacity, intersection, and spot improvements				
Construction Projects (State & County)				
PROJECT NAME	**LOCATION/LIMITS**	**AGENCY**	**DETAILS**	**% comp/status**
MD 547	Kenilworth Ave to Weymouth	State	neighborhood conservation project	97%
MD 650/FDA	Powder Mill Rd to N of US 29	State	intersection improvements	96%
MD 355	Rand. Rd to Maple/Chapman	State	phase I utilities	90%
MD 115	MD 28 to Muncaster Rd/Redland Rd	State	safety, geometrics	75%
US 29 @ Briggs Chaney Rd	intersection vicinity	State	new interchange	56%
Briggs Chaney Rd	Automobile Blvd to E of Ashton Manor Dr	County	widen from 2 to 4 lanes	37%
MD 28	Muddy Branch Rd to 1000' east of intersection	State	noise abatement	29%
Valley Park Dr	1130' section	County	extension	25%
Stringtown Rd extended	Gateway Center Dr to MD 355	County	extension (participation)	15%
MD 396	MD 614 to Onodaga Rd	State	safety, resurfacing	14%
Skylark Road	adjacent to Ovid Hazen Wells Park	County	road construction	13%
Montrose Pky West	E of Tildenwood to MD 187	County	new 4 lane highway	12%
Stringtown Rd extended	MD 355 to I-270	County	extension	5%
Muncaster Road	Rock Creek Bridge vicinity	County	road 3300', bridge reconstruction	0%
Old Columbia Pike	Perrywood Drive	County	reconstruction (roundabout)	0%
Park Lane	Battery Ln & Maple Ridge Rd	County	reconstruction	0%
MD 28 @ Wintergate Dr	intersection vicinity	State	add MD 28 WB left turn lane	0%
MD 97	I-495 to MD 586 (Veirs Mill Rd)	State	safety, resurfacing	0%
MD 193	MD 320 to Lebanon Street	State	safety, resurfacing	0%

SHA Development & Evaluation (D&E)				
I-495 @ MD 355**	interchange ramps	State	widen ramp from I-495 onto SB MD 355 to 2 lanes	PP-TBA
MD 108 @ MD 650**	intersection	State	intersection improvements	PP-TBA
MD 124**	Midcounty Hwy @ Goshen Rd	State	second EB left turn lane addition	PP-TBA
MD 193 (University Blvd)@ I-495**	I-495 Ramps	State	widening, I-495 NB ramp; left turn to SB MD 193	PP-TBA
MD 198 (Spencerville Rd) @**	Kruhm Rd, Good Hope Rd & MD 650	State	intersection improvements	PP-TBA
MD 650/Holton Lane**	to Merrimac Dr 800' e/w of MD 650	State	NB left turn lane addition; safety improvements	PP-TBA
MD 80 (Kemptown Rd)**	Frederick Co line to MD 27	State	safety, resurfacing	PP-TBA
I-270 @ Watkins Mill Rd extended	future interchange @ Watkins Mill extended	State	new interchange	PP
I-270/US 15 multi-modal study	Shady Grove Rd to N Biggs Rd	State	multi-modal improvements	PP
I-495 Ramps @ University Blvd**	intersection vicinity	State	interchange reconstruction	PP
I-495 Ramps @ Georgia Ave**	SB MD 97 (Georgia Ave)	State	widen EB I-495 ramp to SB MD 97 to 2 lanes	PP
I-495/I-95 HOV-lane study	Wilson Bridge to American Legion Bridge	State	widening for HOV-lanes	PP
InterCounty Connector	I-270 to Rt 1 (Laurel)	State	new freeway facility	PP
MD 117 (Clopper Rd)/Diamond Ave**	Great Seneca Pk to I-270 (three phases)	State	intersection improvements, widen to 4/6 lanes	PP
MD 124 (Woodfield Rd) phase III**	S. of Fieldcrest to Warfield Rd	State	widen to 6-lane divided highway	PP
MD 124 (Woodfield Rd) phase I**	S. of Airpark Rd to n. of Fieldcrest Rd	State	widen to 6-lane divided highway	PP
MD 124 (Woodfield Rd) phase II**	Midcounty Hwy to s. of Airpark Rd	State	widen to 6-lane divided highway	PP
MD 28/MD 355/MD 586/MD 911	intersection vicinity	State	new interchange	PP
MD 28/MD198 corridor study	MD 355 to US 29	State	widen to 4/6 lanes, upgrade, etc.	PP
MD 355 @ Randolph Rd/CSX rail	intersection vicinity	State	new interchange	PP
MD 97 (Brookeville Bypass)	MD 97 to N of Town of Brookeville	State	new bypass roadway	PP
MD 97 @ Arcola Ave	intersection vicinity	State	SB left turn lane addition	PP
MD 97 @ MD 28	intersection vicinity	State	new interchange	PP
MD 97 @ Randolph Rd	intersection vicinity	State	new interchange	PP
US 29 @ Blackburn Rd	intersection vicinity	State	new interchange	PP
US 29 @ Fairland/Musgrove Rd	intersection vicinity	State	new interchange	PP
US 29 @ Greencastle La	intersection vicinity	State	new interchange	PP
US 29 @ Stewart La	intersection vicinity	State	new interchange	PP
US 29 @ Tech Rd	intersection vicinity	State	new interchange	PP

County DPWT Facility Planning				
Fairland Rd**	US 29 to Prince George's County line	County	widen from 2 to 3 lanes	TBA
Greencastle Rd**	Greencastle Ridge Terrace to Fairland Park	County	widen from 2 to 4 lanes	TBA
Citadel Ave	Marinelli Rd to Nicholson La	County	extension to Nicholson La	Property acquisition
MD 355 @ Twinbrook Pkwy	intersection vicinity	County	NB right turn lane addition	Property acquisition
Nebel Street	Chapman Ave to Randolph Rd	County	extension to Randolph Rd	Property acquisition
Century Blvd**	Father Hurley Blvd to Crystal Rock Dr	County	extension to Crystal Rock Dr	Participation project
Burtonsville Access Rd	MD 198 to School Access Rd	County	new 2-lane road	Phase II FP (design)
Dale Dr & Colesville Rd**	intersection vicinity	County	construct EB/WB approach lanes	Phase II FP (design)
Father Hurley Blvd**	Wisteria Dr to MD 118	County	extension to MD 118	Phase II FP (design)
Goshen Rd**	Odendhal Ave to Warfield Rd	County	widen from 2 to 4/6 lanes	Phase II FP (design)
MD 650 @ Oakview Dr**	intersection vicinity	County	intersection improvements	Phase II FP (design)
Randolph Rd	Gaynor Rd to Charles Rd	County	safety improvements	Phase II FP (design)
Redland Rd	Crabbs Branch Way to Needwood Rd	County	intersection improvements	Phase II FP (design)
S. Glen Rd @ Falls Rd**	intersection vicinity	County	EB right turn lane addition @ Falls Rd	Phase II FP (design)
Shady Grove Rd (North)**	Shady Grove Road ne. of I-270	County	noise barriers	Phase II FP (design)
Travilah Rd - phase 1	MD 28 to Dufief Mill Rd	County	reconstruction, improvements	Phase II FP (design)
Warfield Rd @ Plum Creek Dr**	intersection vicinity	County	intersection improvements	Phase II FP (design)
Woodfield Rd Ext (A-12)**	Main St to MD 27	County	new 2 lane roadway	Phase II FP (design)
Chapman Ave	N. of MD 187 to Randolph Rd	County	extension to Randolph Rd	Phase II FP
Montrose Pkwy East	MD 187 to MD 586	County	new 4-lane divided highway	Phase II FP
Quince Orchard Rd (MD 124)	MD 28 to Horse Center Way	County	safety spot improvements	Phase II FP
E. Deer Park**	bridge over RR	County	align new bridge with proposed A-255	Phase I FP
Longdraft Rd	MD 124 to MD 117	County	widen from 2 to 4 lanes	Phase I FP
Midcounty Hwy @ Middlebrook Rd	Montgomery Village Ave to MD 27	County	new 4/6 lane divided highway	Phase I FP
Observation Dr	Water Discover Rd to s. of Stringtown Rd	County	extension to s. of Stringtown Rd	Phase I FP
Snouffer School Rd	Goshen Rd to MD 124	County	widen from 2 to 4 lanes	Phase I FP
Watkins Mill Rd	E. of I-270 to w. of I-270	County	extension E/W of I-270	Phase I FP

Completed Projects (State & County)				
new roads/interchanges:				
*US 29 @ Cherry Hill/Randolph Rd	new interchange	State		
*US 29 @ MD 198 to N. of Dustin Rd	new interchange	State		
Bordly Dr	extension to MD 97	County		
MD 118	Scenary Dr to Watkins Mill Rd	State		
road widenings:				
*MD 117	I-270 to Muddy Branch (phase 1)	State		
*MD 119	Muddy Branch Rd to Sam Eig	State		
MD 28	MD 119 to Riffle Ford Rd	State		
Shady Grove Rd	Briardale Rd to MD 115	County		
grade-separated interchange impr:				
I-270 @ Democracy Blvd		State		
I-270 @ Democracy/Westlake Terr		State		
I-270 @ Fernwood Rd		State		
I-270 @ MD 117		State		
I-270 @ MD 187/Rockledge Dr		State		
I-495 @ MD 187		State		
intersection improvements:				
*Arcola Ave @ MD 97		County		
*E. Jefferson St @ Montrose Rd		County		
*MD 115 @ Avery Rd		State		
*MD 117 @ MD 124		State		
*MD 185 @ Armory Ave		State		
*MD 586 @ Randolph/MD 185		State		
Father Hurley Blvd @ Waters Landing Dr		County		

MD 124 (M.V. Ave) @ Lost Knife Rd		State		
MD 124 @ Midcounty Hwy		State		
MD 187 @ Democracy Blvd		State		
MD 187 @ Tuckerman La		State		
MD 189 @ MD 190		State		
MD 355 @ Jones Bridge Rd		State		
MD 355 @ MD 187		State		
MD 355 @ Shady Grove Rd		State		
MD 410 @ MD 185		State		
MD 410 @ MD 390		State		
MD 586 @ Aspen Hill Rd		State		
MD 97 @ Tilton Dr		State		
resurfacing/rehabiliation:				
*MD 187	I-495 to Rock Spring, Tuckerman to MD 355	State		
*MD 195	MD 193 to Garland Ave	State		
*MD 320	MD 193 to MD 650	State		
*MD 586	N of Randolph Rd to Parkland Cemetary	State		
*US 29	MD 97 to I-495	State		
*US 29 at I-495	bridge over I-495	State		
MD 117	I-270 to Summitt Ave	State		
MD 189	MD 190 to no. of Glenolden Dr	State		
Wilson La	MD 190 to Moorland La	State		
safety/spot improvements:				
MD 119 @ MD 124 (turn lanes)		State		

*Denotes projects completed after May 2005

**Denotes newly added project or change in status

Key: PP = Project Planning, TBA = awaiting start of construction, Property acquisition = property acquisition phase, Phase I FP = Phase I Facility Planning, Phase II FP = Phase II Facility Planning, Design = plans 35 to 100% complete

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