IV. FUTURE CONGESTION

Year 2013 Forecasted Volume-to-Capacity (V/C) Ratios

For the purpose of this report, the traffic forecast results derived from the year 2013 Policy Area Mobility Review (PAMR) analysis were used to report future traffic conditions. This analysis was performed using the Department's TRAVEL/3 model. This tool is an adaptation of the Metropolitan Washington Council of Governments (MWCOG) modeling process and has been applied in support of various growth policy and master planning studies undertaken by the Department.

Regarding land use for the 2013 PAMR analysis, development assumptions inside Montgomery County were updated to reflect the existing base plus pipeline of approved development as of January 1, 2009. Land use assumed outside the County is an estimate of development by the year 2013 based on MWCOG's Round 7.1 cooperative land use forecast.

Within Montgomery County, the current pipeline of approved but un-built development includes some 24,000 households and 123,000 jobs. Nearly two-thirds of this development is in the northern half of the I-270 corridor, from Rockville City north to Clarksburg, including the following ten policy areas:

- Clarksburg
- Germantown West, Town Center, and East
- North Potomac
- Gaithersburg City
- Montgomery Village/Airpark
- Derwood
- R&D Village
- Rockville City

These ten policy areas currently have roughly one-third of the County's jobs and households.

The 2013 PAMR land use scenario also reflects assumed Base Realignment and Closures (BRAC)-related employment totals at the Naval Medical Center in Bethesda as well as anticipated employment development at the Food and Drug Administration in White Oak associated with Federal consolidation plans at that location.

Regarding the 2013 PAMR transportation network, projects considered to be fully-funded within the first four years of the current County Capital Improvement Program (CIP) and the State Consolidated Transportation Program (CTP) , plus those projects conditioned to be built by the private sector as part of development pipeline approvals, were assumed inside Montgomery County. In this regard, no significant changes relative to last year's 2012 PAMR analysis were identified. However, the deferral of the Intercounty Connector (ICC) "Contract D" project in the CTP resulted in the exclusion of the planned collector-distributor roadways between the ICC and MD 198 in Prince George's County from the 2013 network. This is a key change relative to the 2012 PAMR network assumed last year. For the remainder of the network located outside Montgomery County, this analysis incorporates projects identified in the MWCOG Constrained Long-Range Plan (CLRP) network that are anticipated to be completed by the year 2010.

Project planning studies are currently underway for the both the I-270 / US 15 corridor, and the Capital Beltway (from the I-270 Spur to the American Legion Bridge). However, the proposed capacity improvements associated with these facilities were not included in the year 2013 model scenario. In addition, planning studies for both the Corridor Cities Transitway (CCT) and the Purple Line (Bi-County

Transitway) projects are underway. However, their anticipated completion dates are beyond the 2013 horizon; therefore these projects were excluded from the model run as well. The PM peak period results were analyzed and compared to that of the year 2005 model run results for discussion purposes, with the primary focus on the non-freeway facilities.

Table 4.1 shows a comparison of the model run results for the year 2005 and 2013 scenarios. It should be noted that the levels of development assumed in these two scenarios are markedly different. For 2005, countywide totals for households and jobs are 347,000 and 500,000, respectively. For 2013, the countywide total for households is assumed to be 383,459 (a 10.5% increase relative to 2005). The year 2013 countywide total for jobs is assumed to be 628,153 (a 25.6% increase). Based on the results, the average volume-to-capacity (V/C) ratio on the County's transportation system is anticipated to increase by 2.6% by the year 2013. In addition, both the vehicle-miles traveled (VMT) and the vehicle-hours traveled (VHT) are anticipated to increase by 11.6% and 16.1%, respectively. Furthermore, the model predicts a 25.1% increase in the amount of congested lane-miles (V/C ratio of 1.00 or higher) during the PM peak period by the year 2013. The Intercounty Connector (ICC) and other future road improvements will account for an 8.6% increase in the roadway network's total lane-miles. These figures indicate that, although more vehicles are predicted to travel the County's roadways for longer periods of time by the year 2013, planned capacity improvements are anticipated to sufficiently accommodate future traffic resulting from planned development throughout the County and surrounding areas, as reflected in the slight increase in the average V/C ratio countywide.

Table 4.1: Comparison of County-wide 2005 and 2013 TRAVEL/3 Model Results

	2005 Network	2013 PAMR Network	% Chg from 2005
Households*	347,000	383,459	10.5%
Jobs*	500,000	628,153	25.6%
Total Lane-Miles	2,751	2,988	8. 6%
Vehicle-Miles Traveled (in 000s)	5498.5	6133.6	11.6%
Vehicle-Hours Traveled (in 000s)	317.0	367.9	16.1%
Average Speed (mph)	17.4	16.8	-3.5%
Average V/C Ratio	0.76	0.78	2.6%

*Assumed for modeling purposes

Table 4.2 compares and summarizes the model results for both the freeway and non-freeway facilities. Based on the results, the forecasted increase in the average V/C ratio is higher for the non-freeway facilities (3.3%) versus that of the freeway facilities (1.3%). Conversely, the increases in VMT and VHT on the freeway facilities (22% and 19.8% respectively) are forecasted to be higher than that of the non-

freeway facilities (6.9% and 13.4% respectively). One of the main reasons for the smaller increase in the average V/C ratio on the freeway facilities, compared to that of the non-freeway facilities, is that the ICC accounts for a significant increase in total capacity (total lane-miles) for this particular facility type.

Table 4.2: Comparison of 2005 and 2013 TRAVEL/3 Model Results – Non-freeway vs. Freeway Facilities

	Non-freeway facilities			Freeway facilities		
	2005 Network	2013 PAMR Network	% Chg	2005 Network	2013 PAMR Network	% Chg
Total Lane-Miles	2,362	2,508	6.2%	389	479	23.1%
Vehicle-Miles Traveled (in 000s)	3790.2	4050.0	6.9%	1708.3	2083.6	22.0%
Vehicle-Hours Traveled (in 000s)	238.7	270.6	13.4%	78.2	93.7	19.8%
Average Speed (mph)	15.9	14.9	-5.7%	21.9	22.3	1.8%
Average V/C Ratio	0.76	0.79	3.3%	0.76	0.77	1.3%

Figure 4.1 maps the PM peak period V/C ratios and volumes forecasted for the year 2013 on the County's transportation system. The model results indicate that 26.1% of the congested lane-miles will be located along the freeway facilities (i.e. I-495 and I-270), while the remaining 73.9% will be located along the major non-freeway facilities such as; Columbia Pike (US 29), Georgia Ave (MD 97), and Connecticut Ave (MD 185). These results help to reinforce the future need for additional capacity on some of the County's major facilities that will be needed to accommodate the anticipated increases in traffic.

Figure 4.2 provides a map depicting the forecasted PM peak period traffic volume differences between 2005 and 2013. A number of road and intersection improvements are anticipated to be completed by the year 2013. In some cases, the forecast indicates that these facilities will see an increase in their three-hour PM peak period volumes as a result of added capacity. More specifically, the model results indicate that sections of Woodfield Rd (MD 124), which has a planned widening associated with this roadway, are anticipated to see an increase of at least 4000 vehicles during the three-hour PM peak period. Similarly, Airpark Rd, between Muncaster Mill Rd (MD 115) and Woodfield Rd, is forecasted to see an increase of at least 3000 vehicles during the PM peak period.

In contrast to these findings, the opening of some new facilities is anticipated to have a beneficial effect on roadways located in the immediate vicinity, as the model results indicate a decrease in the PM peak period volumes for these facilities. The addition of the ICC as the primary east-west route alternative, is predicted to reduce PM peak period volumes on a number of major roadways in the immediate vicinity of the ICC such as; Norbeck Rd (MD 28), Spencerville Rd (MD 198), Muncaster Mill Rd (MD 115), and sections of Olney-Laytonsville Rd (MD 108). These findings demonstrate that east-west mobility in the County will be enhanced with the addition of this facility.

Figure 4.1: Map of 2013 PM Peak Hour V/C Ratios and Volumes

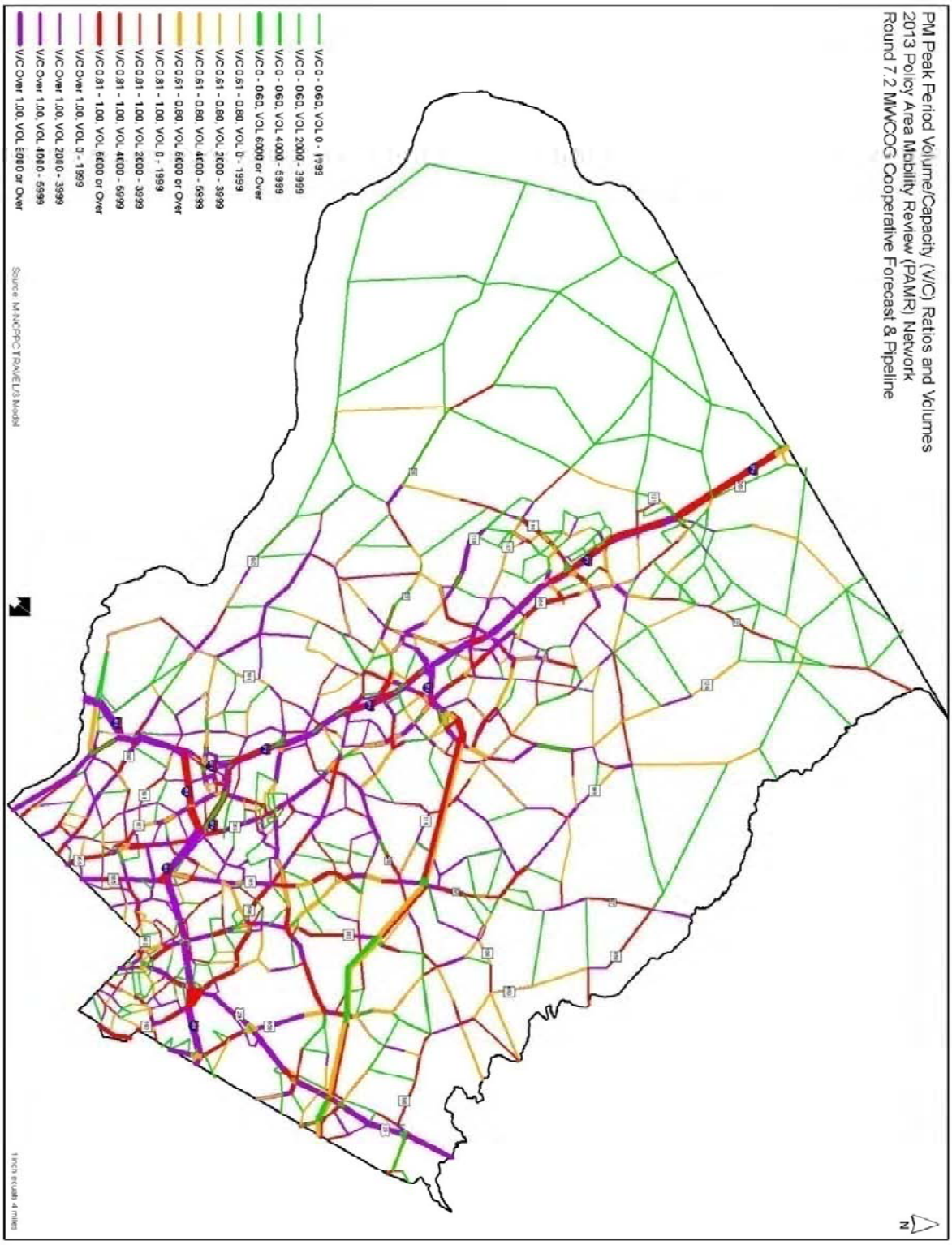

Figure 4.2: Map Showing Difference in PM Peak Volumes – 2005 vs. 2013