

#### 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

<b>TRAVEL/2 Model County-wide Results - All Facilities</b>			
	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	<b>*0.60</b>	<b>*0.62</b>	<b>*3.3%</b>

\*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

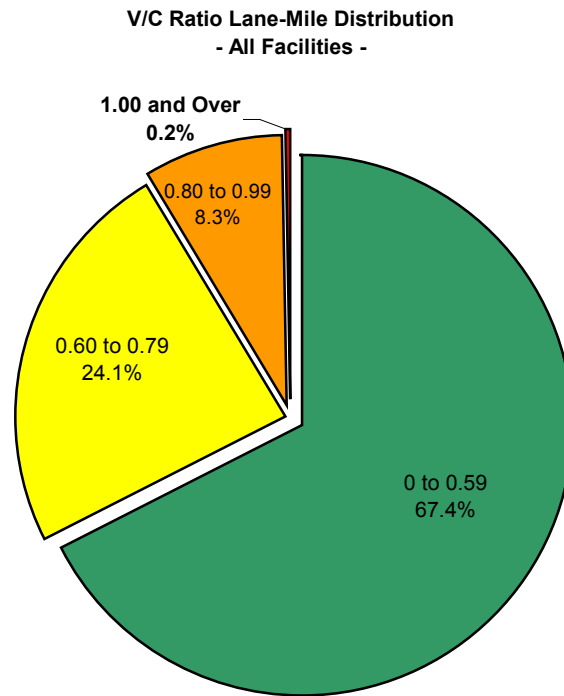


Figure 4.2: 2010 V/C Ratio Lane-Mile Distribution - Countywide

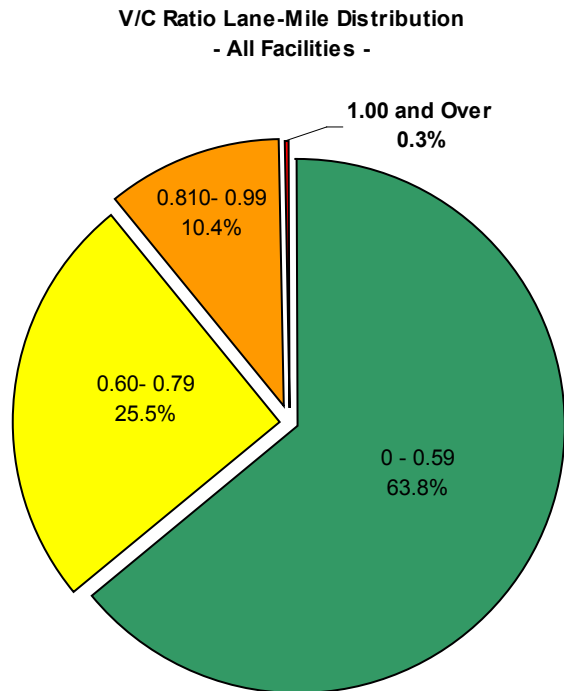


Table 4.2 compares model results for the non-freeway facilities (i.e. major highways, arterials, etc.). The results indicate that the average V/C ratio on these facilities is anticipated to increase 1.8% by the year 2010 relative to the base year. Conversely, the average speed on these facilities is 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

<b>TRAVEL/2 Model Results - Non-freeway Facilities</b>			
	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	<b>*0.57</b>	<b>*0.58</b>	<b>*1.8%</b>
<b>V/C Ratio Lane-Mile Distribution - Non-freeway Facilities</b>			
	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

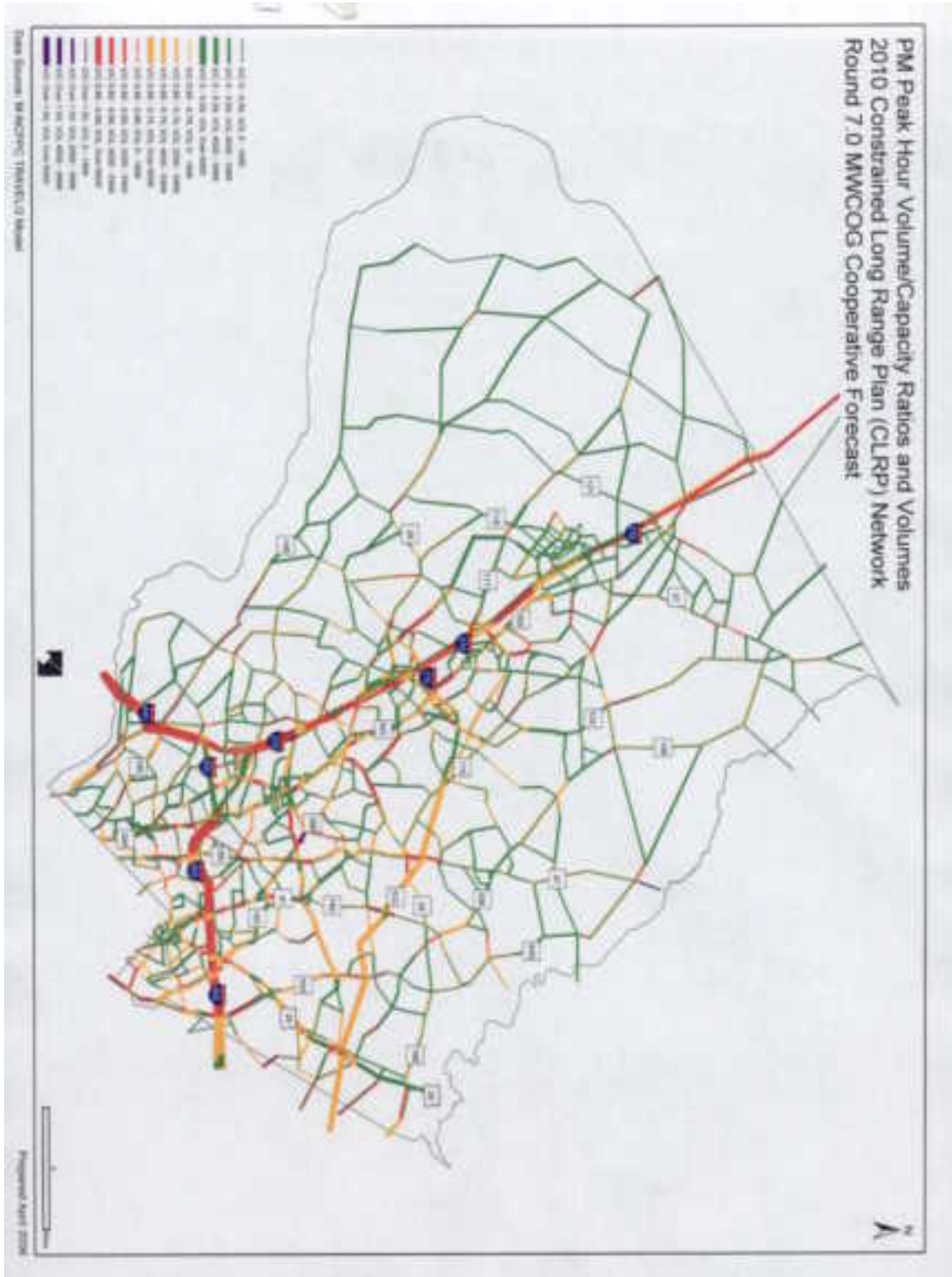


Figure 4.4: Map Showing Difference in Volumes – 1998 vs. 2010

