I. EXECUTIVE SUMMARY

Recommendations from Staff

Staff recommends that the Planning Board support the following actions regarding the 2009 Highway Mobility Report:

- Transmit the 2009 Highway Mobility Report (HMR) to the County Council, to provide background information for the consideration of recommended modifications to the County's Capital Improvement Program (CIP) priorities.
- Incorporate the Highway Mobility Report congested corridors into the ranking system for FY 2011-2016 Capital Improvement Program prioritization efforts, as incorporated in the Staff Draft of the 2009-2011 Growth Policy.
- Pursue further development and integration of multimodal measures of effectiveness into the next Highway Mobility Report, scheduled for production in Spring 2011 as part of the next biennial Growth Policy and CIP development cycle.

Key Findings

The Highway Mobility Report contains information and data about patterns of mobility in the County. The current report, confirms many of the findings in the 2008 report; congestion is generally most severe in down-county areas, the "priority corridors" continue to experience the most significant levels of congestion and should be targeted for congestion relief, and between 15 and 20 percent of the intersections in the County have congestion levels that are worse than their current Local Area Transportation Review (LATR) Growth Policy standards.

- National and regional trends indicating a decline in travel and congestion since 2006 are less prevalent on the Montgomery County arterial system than they are for national data, due in part to the fact that the County has weathered the economic effects of the recession better than many other parts of the region and the Country.
- The overall level of arterial system traffic volumes, travel speeds, and intersection congestion in spring 2009 is essentially unchanged from 2008 (observed reductions of up to one percent per year).
- Priority corridors for mobility improvements include the radial routes MD 355, Connecticut Avenue, Georgia Avenue and US 29 throughout the County. East-west priority routes include Veirs Mill Road and MD 28. Eight of this year's "top ten" most congested intersections are along these routes. The Intercounty Connector (ICC) is expected to provide congestion relief for MD 28.
- The Growth Policy definition of a three-hour peak period remains appropriate.
- While auto travel has decreased slightly during the current recession, transit travel has increased, with total Metrorail boardings in Montgomery County 5% higher in 2009 than in 2006.
- Observed pedestrian activity on the arterial system is concentrated along roadways with high transit ridership, particularly in the Veirs Mill Road and University Boulevard corridors connecting Rockville, Wheaton, and Takoma Park.

Highlights

At the direction of staff, and in concert with this report, 130 intersection counts were taken during the late winter and early spring of 2009. The infusion of these counts into the Transportation Division intersection database has provided an update to older counts at key intersections in the County. In addition to the importance of the new data at intersections monitored in past reports, these counts also provide some new information for locations not previously counted. The expanded breadth of the intersection data has both confirmed previous congestion trends, and highlighted the conditions near and around several intersections that are routinely the most congested in the County.

In accordance with findings in the 2008 HMR, infrastructure improvements including grade-separations and widening have made a significant impact on conditions at many of the county's most congested intersections. Congestion continues to be most severe along priority corridors in the County. Scheduled improvements at locations along these congested primary arterials including US 29 (Colesville Road/Columbia Pike), MD 355 (Wisconsin Avenue/Rockville Pike) and MD 185 (Connecticut Avenue) will play an important role in the nature of congestion at these locations in the future. The addition of bus rapid transit along priority corridors (e.g. Veirs Mill Road/MD 586) is also expected to help address locations of chronic congestion.

Critical Lane Volume (CLV) to Local Area Transportation Review (LATR) standards ratios at signalized intersections indicate more congestion than in the 2008 report with 16 percent of intersections exceeding their LATR standard in 2009 compared with 14 percent in 2008. Current year data is not the most severe on record, however. Roughly 22 percent of intersections in 2005 had a CLV to LATR standards ratio greater than 1.00 (where the CLV exceeds the LATR standard).

Travel time samples based on Global Positioning System (GPS) surveys of arterial roadways in the 2009 report continue to demonstrate the importance of high frequency sampling in the peak travel period. Data for 2009 includes roughly twice the number of measurements included in the 2008 report (and conducted in the summer of 2007). Roadway segments sampled in 2009 are also longer than in 2008, and therefore illustrate the change in conditions across Policy Areas (2008 samples were confined to Policy Area boundaries for the most part). The enhanced data set in this report has enabled the creation of both travel time versus distance graphs and travel time versus time of day graphs for each priority corridor. The time of day graphs help to illustrate the nature of peak travel along the corridors while the distance graphs detail locations of congestion for each corridor segment.

Beyond auto based mobility measurements, significant analysis is included in this document relating to transit and pedestrian activity. Analysis of vehicle miles traveled is coordinated with the discussion of transit mobility. As noted in the Key Findings section above, Metrorail ridership has increased in recent years despite the down turn in the economy and declines in overall vehicle miles traveled.

Purpose

The purpose of the Highway Mobility Report (HMR) is to document the Department's annual analysis of barriers and constraints to mobility within Montgomery County. Constraints to mobility are represented here in the form of historical, current, and future motor vehicle traffic congestion trends and patterns. Current congestion measurements included in this study are Critical Lane Volume (CLV) and arterial travel time for priority intersections and corridors in the County. Future congestion data is derived from volume to capacity ratios (V/C) as portrayed by the Department's regional transportation model, TRAVEL/3. These transportation indicators are intended for use by the Planning Board and County

Council to inform their commentary on this year's State Consolidated Transportation Program (CTP) project priorities. The last version of this report was completed in May of 2008.

Historically, this report has focused on vehicular mobility. In order to describe a more holistic analysis of transportation in the report, pedestrian count, bus movement and other transit data have been identified. These new data sources will become integrated into this mobility report, as the constraints and validity of the data are vetted by Department staff. Broader mobility measurements will therefore be incorporated in the Highway Mobility Report on an ongoing basis.

Changes from 2008 HMR Report

Several changes to the 2008 report format were made in 2009. Beyond vehicular mobility covered in previous HMR reports, this document contains analysis of transit data including Montgomery County Ride On bus and Metrorail information as well as pedestrian crossing counts. A discussion of national, state and local trends in vehicle miles traveled has also been added. Other enhancements to the 2009 HMR include more extensive travel time analysis with greater number of samples along on priority corridors, improving the quality of the data and ensuring that peak travel time is captured, and new traffic counts at roughly 130 key intersections (as identified by MNCPPC staff) which were conducted in support of this report in the late winter and early spring of 2009.

II. CURRENT CONGESTION

Measures of Congestion

The status of congestion on the County's major highway and arterials is a primary indicator of vehicle mobility. For this reason, two key performance measurements were used to report on current congestion; Critical Lane Volumes (CLVs), and GPS-based Arterial Travel Times and Speeds.

Observed Critical Lane Volumes (CLVs): The Department's Intersection Traffic Count Database contains the essential data needed to calculate and identify levels of congestion at signalized intersections throughout the County. The CLV is calculated mathematically using the following variables for a particular intersection: (a) throughput and conflicting movement traffic volume data, (b) geometric configuration information, and (c) traffic signal phasing specifications. This calculation uses the lane configuration and lane use factors for each of the intersection's approach legs to determine the north/south and east/west peak direction flow of traffic, which are also referred to as the "critical movements". The intersection's signal phasing then specifies whether or not the approach traffic on a specific leg of the intersection moves independently from the traffic approaching from the opposite direction. This information is used to determine whether or not a potential turning movement (i.e. left turn) conflict exists. These conflicting movements are taken into consideration for the purpose of calculating the intersection's CLV.

Observed Travel Times and Speeds: During February and March of 2009, roughly 85% of the County's major State highways (excluding roads located in the rural policy areas) were surveyed via GPS-equipped probe vehicles in order to obtain PM peak-period travel time and speed samples. This type of data has been collected for the Department since 2004 for congestion monitoring purposes in various sample sizes. This data continues to be a useful resource in terms of measuring levels of congestion along some of the County's most heavily traveled routes and corridors, and is used to represent the degree of mobility observed along various roadway sections, also referred to as "arterial mobility". Arterial Mobility is determined by comparing the congested travel time along a particular roadway to the uncongested travel time, hence the need to also observe non-peak period travel times and speeds. In