

Growth Policy Study: Appendix D – Sustainability Indicators
(Resolution 16-376 F11)

Lead Staff: Mary Dolan

Summary:

The areas of the County where greatest growth is forecast are also those with some of the greatest accessibility to public resources such as parks and transit services. These developed areas also tend to have the least forest cover and the highest percentage of impervious surface. The suburban pattern of the last three decades has produced both a strong pattern of more densely developed areas with good access and services, as well as a massive amount of lower-density development that consumed much land and resources.

A Framework for Action

Healthy and Sustainable Communities Report
September 8, 2008



On October 1, 2008, the Planning Board and the County Executive delivered a report on potential indicators of Healthy and Sustainable Communities that could be used to help plan and monitor sustainability in Montgomery County in accordance with Resolution 16-376 F11. Following that, the Executive prepared a larger set of indicators to address other areas of interest that:

- Reflect the “Results Areas” highlighted by the Executive in his Transition Report
- Could be benchmarked regionally and/or nationally
- Are collected by a single data source (such as federal agency or national interest group)

The Executive’s version of Healthy and Sustainable Communities Indicators includes several measures of health that we did not include in our report:

- Percent of adults with health care coverage
- Infant mortality rate
- Injury-related death rate
- Chlamydia case rate per 100,000
- Percent of adults who are heavy drinkers
- Percent of adults who are current smokers

These measures have not been directly tied to community planning or growth policy and are not discussed in this report. A few other indicators from other “results areas” such as transportation and public safety are included where appropriate. This report focuses on the indicators from both efforts that best help guide the Planning Board in Growth Policy and master planning efforts.

In addition, the state is measuring some indicators related to the Chesapeake Bay through the “Baystat” program. The National Center for Smart Growth Research and Education measures transportation, environment, land preservation and other activities. They are using many of the same indicators that we have chosen as well others that are more appropriate (such as blue crab abundance, mid-channel clarity, bus miles travelled, etc) for statewide programs. Some indicators that are included that may be useful to adapt for Montgomery County (at least countywide) are acreage of land approved for single family homes outside the Priority Funding Area and amount of land protected by easement.

Analysis of Results by Policy Area

All the indicators that had data for different areas across the county were analyzed, to the degree possible, by policy area. The following issues were discovered and should be considered when reviewing the results:

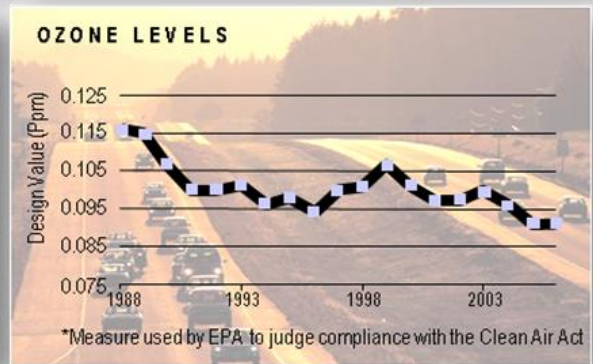
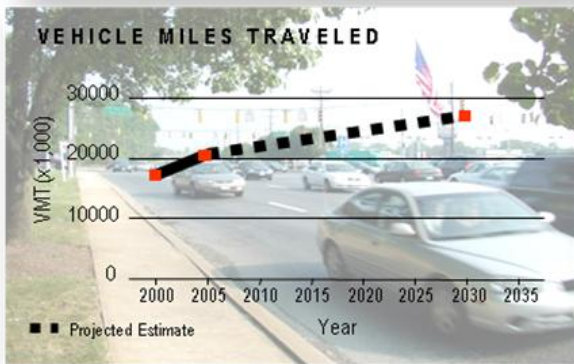
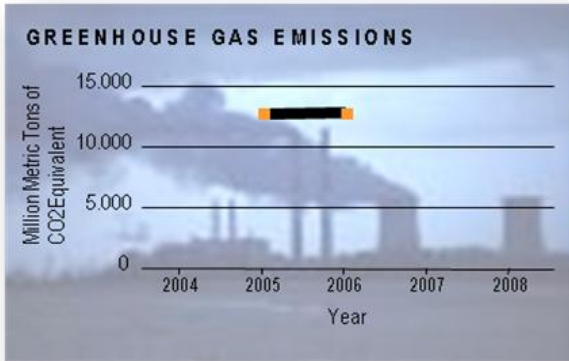
- Year-to-year reporting or even reporting every two years for purposes of the Growth Policy may show little or no change in some indicators, depending on the data source, how often it is collected, and at what scale.
- Data sources are from different years, depending on the most recent data available. Unfortunately, the more detailed census data is available once a decade. Some information is contained in the census updates, but not the full range of variables needed for some indicators.
- Some data sources are based on modeling and estimates, while others have data from aerial photos and more detailed monitoring.
- The Policy Areas are of various sizes and some cover very large and very small areas of the county. This means that indicators are generally factored by area or population in order to get comparative data. In some cases, the data had to be geographically “sliced” to get data by policy area assuming a unified distribution of population or acreage over the underlying geography. For example, data by census block data had to be proportionately allocated to the Policy Areas, when their boundaries were not within one Policy Area.

All these considerations mean that general patterns are to be observed, but some anomalies exist either from the processing of the data or the boundaries of the Policy Areas. For instance, the transit station areas are drawn so small, they may have few residences and no parks, but both may be in abundance just over the boundary. Even with these considerations, some patterns emerge that are worth discussing as part of the Growth Policy.

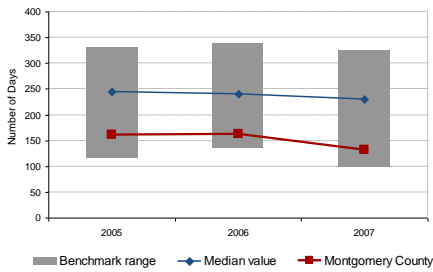
The following report shows the indicators chosen by the Planning Board, related indicators used by the Executive, and those that could be further broken down to show distribution across Policy Areas. Time did not permit detailed analysis, and some breakdowns are not yet available depending on other timelines.

Clean Air and Climate Protection:

Stop increasing Carbon Emissions by 2010, reduce by 80% by 2050



**Number of "good" air quality days
National Benchmark**



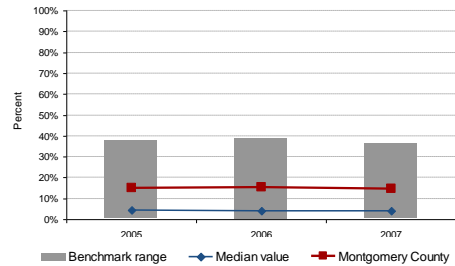
In 2007, there were 148 "good" air quality days in Montgomery County. The median value was 259 days. Hamilton Co, IN had the lowest value; Monmouth Co, NJ and Nassau Co, NY had the highest value.



Source: Air Quality Index, EPA

CountyStat

**Percent of People Taking Public Transportation to Work
National Benchmark**



In 2007, 14.6% residents took public transportation to work in Montgomery County. The median value was 4.2 percent. Hamilton Co., IN had the lowest value, and the District of Columbia had the highest value.



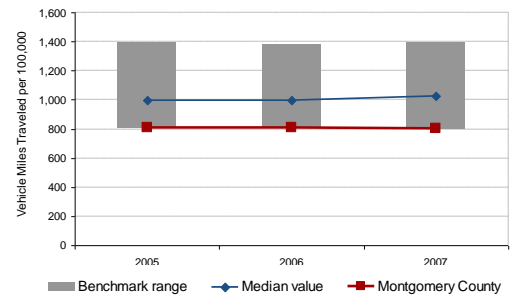
Source: U.S. Census Bureau, American Community Survey

CountyStat

Air Quality has been improving (in terms of ozone) due to improved emission controls for vehicles and power plants, however, at the same time the standards for declaring ozone action days have been tightened. Carbon emissions continue to increase and will continue to rise unless vehicle miles traveled and building energy use remain key factors. Clean air and climate protection are influenced by many factors over which we have little control and are uniform throughout the county. The number of ozone action days or “good air” days is measured across the region and is affected by activities both in and beyond the region. Much of the energy we use is produced outside the region, and while more choices for renewable energy are available to individual, corporate and government users via the grid and on-site energy generation, there is little available data to allow a breakdown on who is using renewable energy sources. Weather also plays a role, increasing conditions that favor the formation of ozone.

Vehicles miles traveled can be measured and influenced through land use planning and zoning. The distribution of vehicle miles traveled (VMT) across the county by Policy Area shows the familiar of more miles travelled by people living in the suburban and rural areas of the county.

Vehicle Miles Traveled (VMT) Per 100,000 Population Regional Benchmark



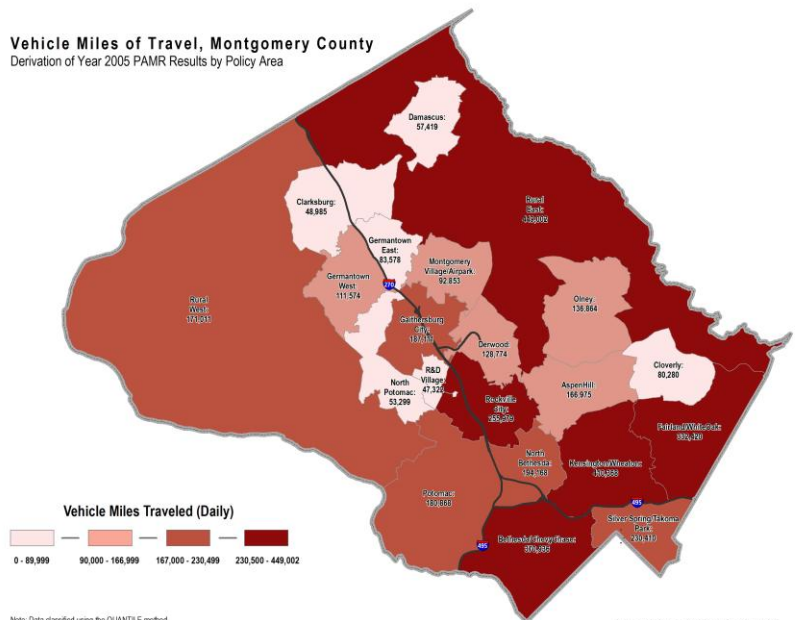
In 2007, there were 803 million Vehicle Miles Traveled in Montgomery County. The median value was 1,025 million. Montgomery Co, MD had the lowest value. Howard Co, MD had the highest value.



Source: Maryland State Highway Administration; Virginia Department of Transportation



Vehicle Miles of Travel, Montgomery County
Derivation of Year 2005 PAMR Results by Policy Area

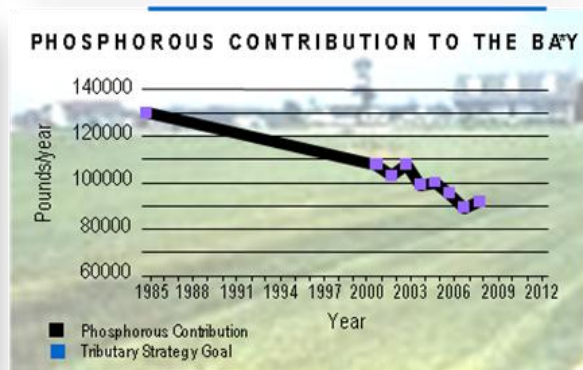
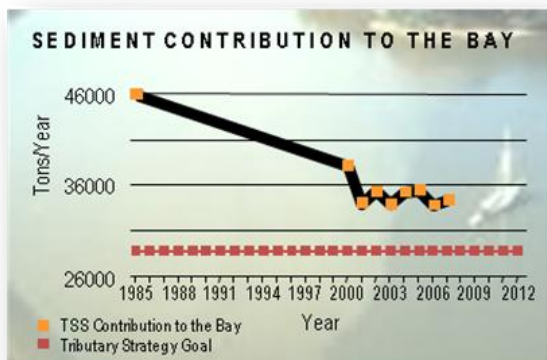
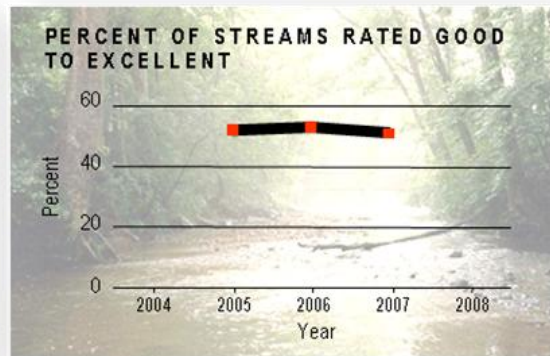
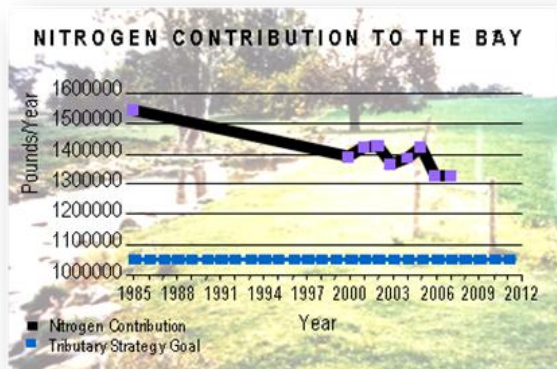


Note: Data classified using the QUANTILE method.
Source: MNCPPC - Montgomery County Planning Department, Transportation Planning

Prepared by the Montgomery County Planning Department, May 2008
© Washington 10 Project/Growth, Policy/VMT Analysis/MS

Clean Water:

Protect and improve county water resources and drinking water:

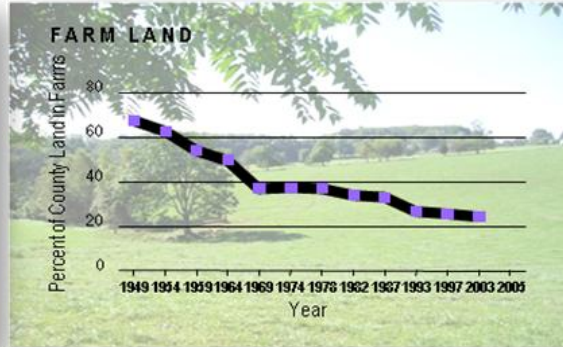
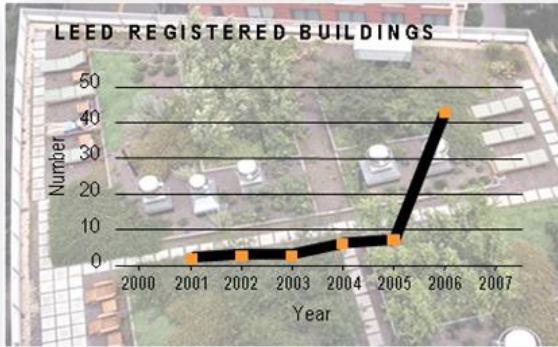


This information is not yet available at the Policy Area level. We are currently analyzing this information by watershed for the Water Resources Element of the General Plan. We also plan to work with the Department of Environmental Protection to develop a numerical measure for local stream quality that could be analyzed by policy area.

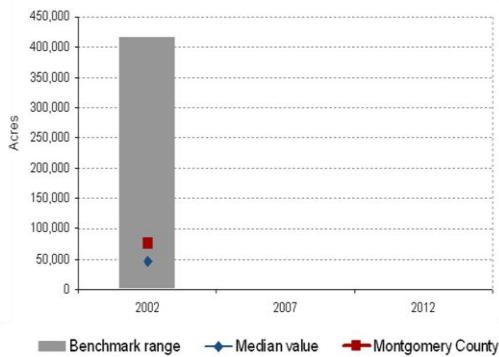
The results for nitrogen, sediment, and phosphorous are estimated from the land use factors as determined by the EPA Chesapeake Bay Program model of Bay inputs. Indirect measurement through modeling is likely to continue, although we will be developing more accurate estimates using local data through the Water Resources Element of the General Plan.

Green Economy:

Foster an economy in which businesses compete to create, produce, distribute, and recycle goods made from recycled or rapidly renewable natural resources.



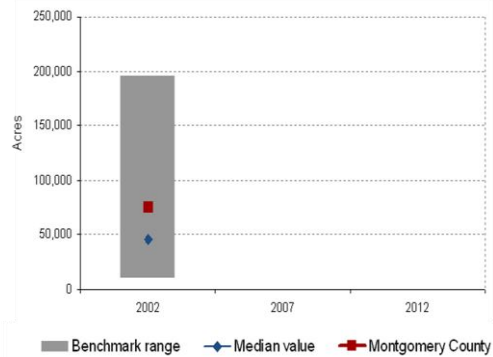
Acres of farmland
National Benchmark



In 2002, there were 75,077 acres of farmland in Montgomery County. The median value was 46,330 acres. Nassau Co, NY had the lowest value; Fort Bend, TX had the highest value.

Source: USDA Agricultural Census, Note: Census is conducted every 5 years

Acres of farmland
Regional Benchmark



In 2002, there were 75,077 acres of farmland in Montgomery County. The median value was 45,462 acres. Fairfax Co, VA had the lowest value; Frederick Co, MD had the highest value.

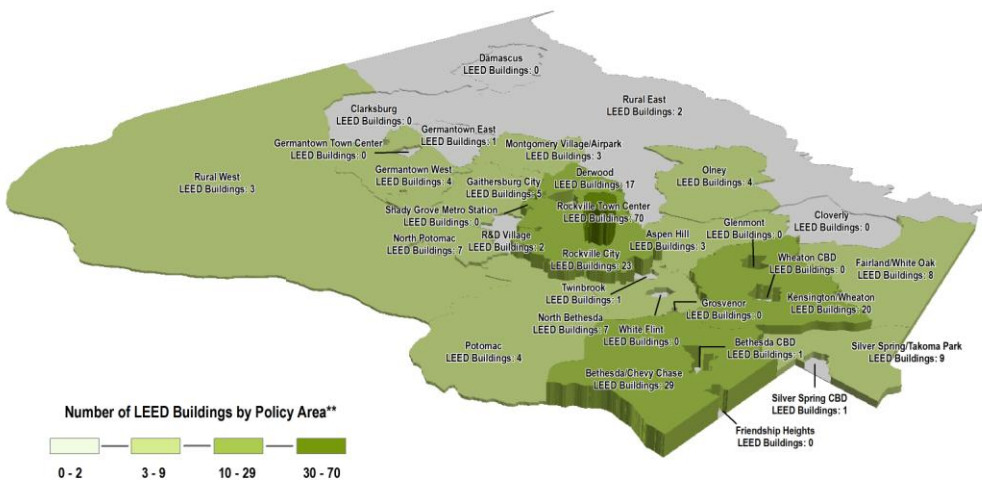
Source: USDA Agricultural Census, Note: Census is conducted every 5 years

While we have good data on farmland and LEED registered buildings, we are far from a good measure of how “green” is our local economy and there is little national guidance as yet on this emerging field.

The Executive has started a certification program that recognizes businesses that conserve resources, prevent pollution and protect environmental and public health. The program is expected to include tiered recognition so that businesses can be certified in a specific environmental category, such as energy conservation, pollution prevention or stormwater management, and then advance to higher levels of certification for more comprehensive actions. As the Executive builds the program, we can track the number of businesses in those categories across the County.

We will continue to explore ways to get better information for to monitor the green economy. The graphic below shows the distribution of green building projects registered with the U.S. Green Building Council. Only five projects have been built and fully certified, two in Silver Spring, two in Gaithersburg and two in Rockville. However the large number of registered projects indicates that many more will be built in the future. Most of the registered projects are in the 355 and Georgia Avenue corridors and in the urban ring.

LEED Registered* Buildings, Montgomery County
2009 Estimates by Policy Areas



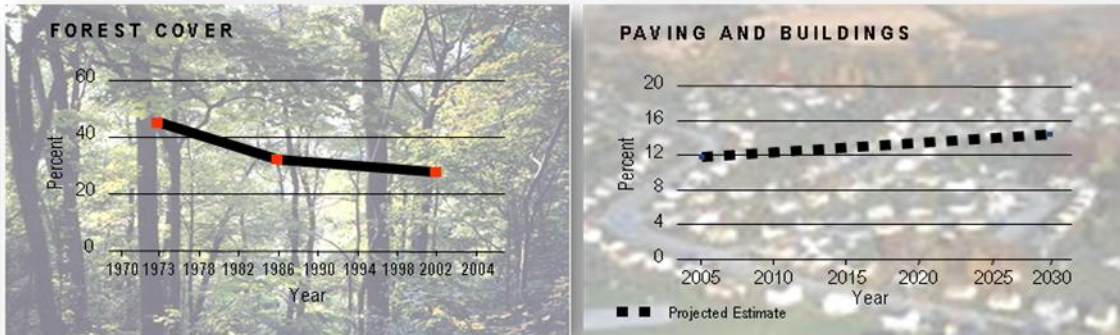
Note:
* LEED Registered projects are in planning, construction or built. Only five projects are fully completed and LEED certified in Montgomery according to the US Green Building Council online database
**Aggregated to Policy Area via Zip Code data

Source: US Green Building Council

Prepared by the Montgomery County Planning Department, April 2009
© (Muhlerje W./Project/Growth, Policy/Indicators Project)

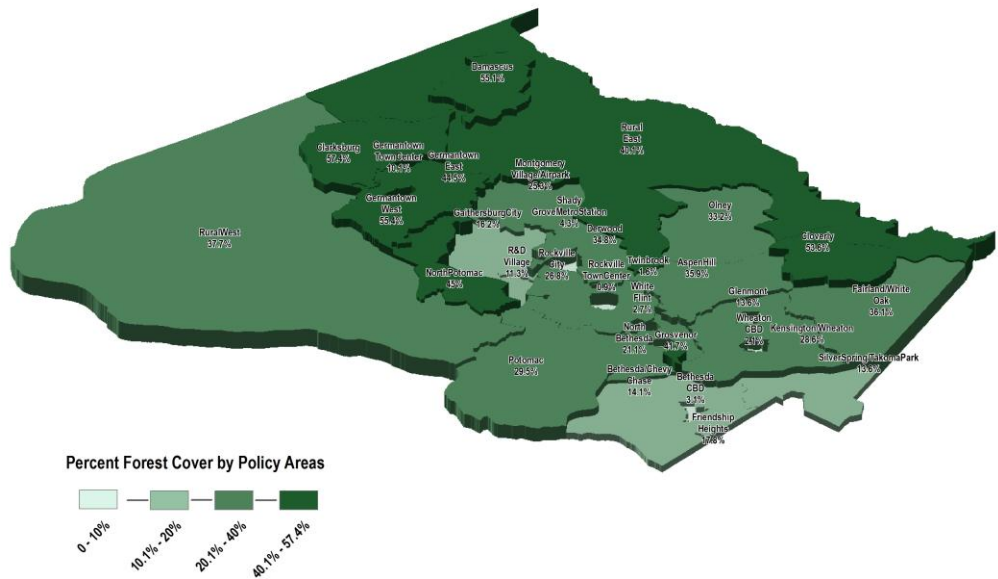
Green Infrastructure:

Preserve, manage and increase natural areas, tree canopy, and wildlife habitat.



Montgomery County is still very green, with almost 30% in forest cover. While the forest cover has been declining since the 1970's, it is about the same amount of forest as it was in the 1950's, when much of the county was farmed. The forest in Montgomery County is clearly influenced by the large blocks of forest preserved in parkland. The North Potomac, Germantown, Clarksburg and Damascus Policy Areas contain the Seneca Creek State and stream valley parks as well as a Little Bennett Park. Cloverly benefits from the protection of forest in Upper Paint Branch and the Rural policy areas benefit from the Patuxent State Park and the large federal holdings along the Potomac River as well as the large amount of forest remaining on private land in the Agricultural Reserve.

Forest Cover Percentages in Montgomery County
2008 Estimates by Policy Areas

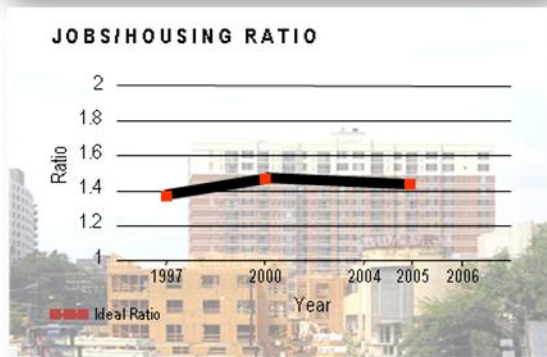
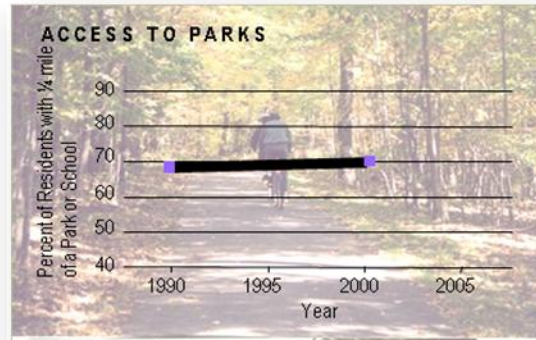
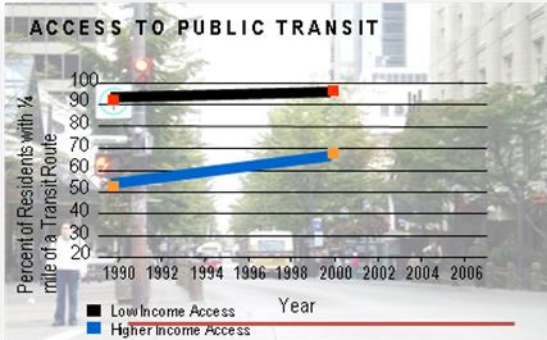


Source: Montgomery County Planning Department, Environmental Planning

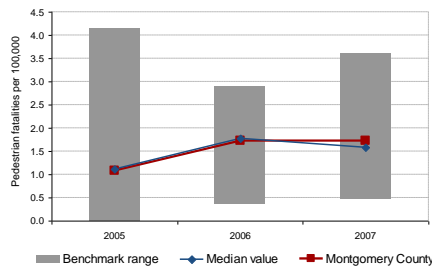
Prepared by the Research and Technology Center, April 2008
© Montgomery County Planning Department, Policy/Forest Cover Analysis/Graphic

Smart Communities:

Ensure that Montgomery County's communities have a sense of place and are affordable, healthy, and energy-efficient.



Pedestrian Fatality Rate Per 100,000 Population Regional Benchmark



In 2007, the median pedestrian fatality rate was 0.99 fatalities per 100,000 people. Montgomery County's rate was 1.72. Prince George's County, MD had the highest rate; and Arlington County, VA had the lowest.



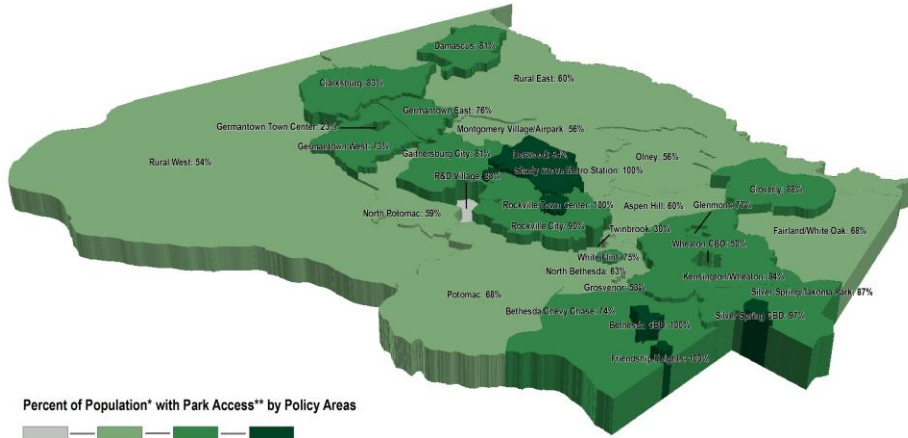
The Executive included an indicator for pedestrian fatality rate countywide. It is possible that this information could be obtained at a more detailed level if the Board feels it is a useful measure of smart communities.

The breakdown of the relative mobility data will be added later when the data is available.

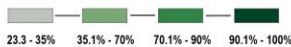
The graphics on the following pages depict the Jobs/Housing Ratio by Traffic Zone and the Access to Parks and Access to Transit indicators. These

graphic clearly illustrate the pattern of jobs, mobility and access to parks that follows from the General Plan. Services and facilities are greatest in the 355 and Georgia Avenue corridor and the urban ring, tapering off in other areas.

Population with Park Access, Montgomery County
2000 Estimates by Policy Areas



Percent of Population* with Park Access** by Policy Areas



* Population calculated using Census 2000 block data

** Park access defined as a quarter mile from existing 2000 parks and schools

NOTE:

- Percentage calculated by dividing population within quarter mile buffer from existing parks and schools by total policy area population

SOURCE:

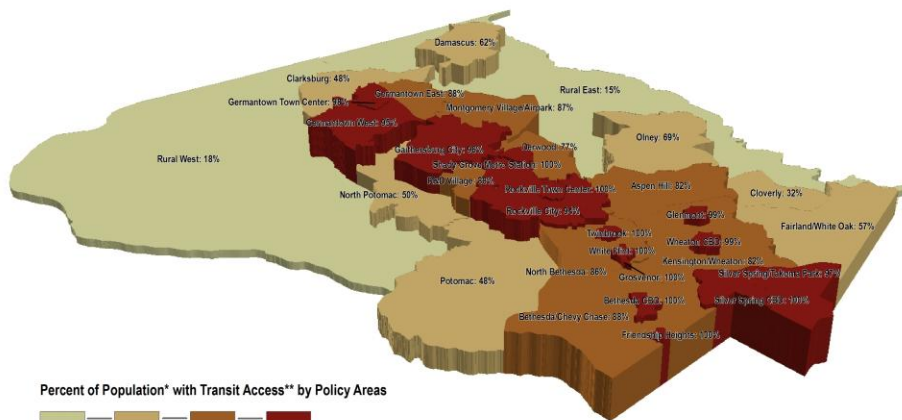
- US Department of Census, 2000 Census

- Montgomery County Planning Department, Research and Technology Center and Environmental Planning

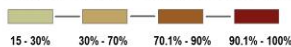
Prepared by Montgomery County Planning Department
Research & Technology Center, April 2005
D:\Matterpage\1\Projects\Growth_Policy\Census Block Analysis

In our original countywide analysis we analyzed both park access and transit access by block groups with average low and higher incomes as attempt to examine environmental justice issues. Countywide access to parks was the same for all groups, but block groups with lower average incomes tended to be closer to transit than those with average higher incomes. We were unable to break down the data by policy area because so many block groups were split by policy area, fragmenting the data.

Population with Transit Access, Montgomery County
2000 Estimates by Policy Areas



Percent of Population* with Transit Access** by Policy Areas



** Population calculated using Census 2000 block data

** Transit access defined as a quarter mile from existing RideOn routes, Metroliner routes, Metrobus routes and Railroad routes

NOTE:

- Percentage calculated by dividing population within quarter mile buffer from transit access by total policy area population

SOURCE:

- US Department of Census, 2000 Census

- Montgomery County Planning Department, Research and Technology Center and Environmental Planning

Prepared by Montgomery County Planning Department
Research & Technology Center, April 2005
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In addition, the income data is only available for block groups and only in the ten-year census data.

Conclusions:

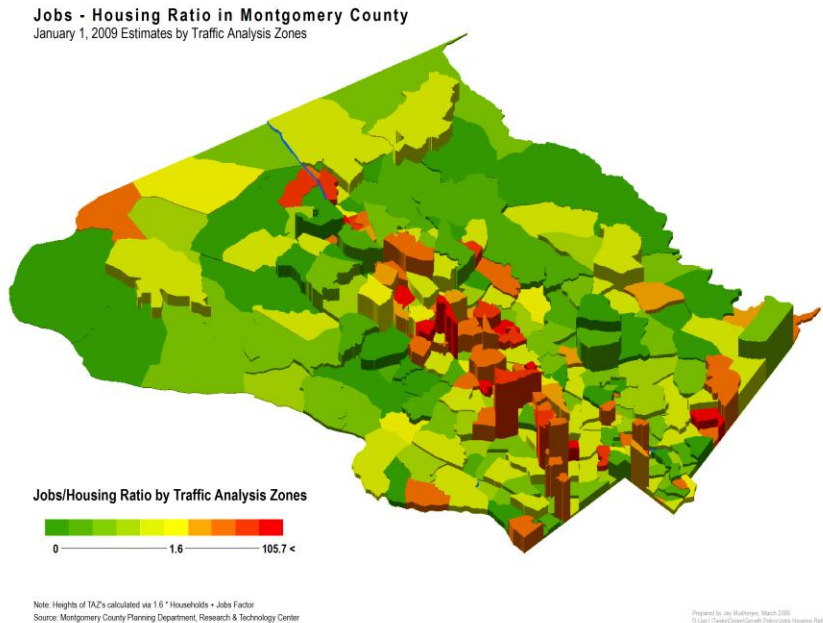
The areas of the County where greatest growth is forecast are also those with some of the greatest accessibility to public resources such as parks and transit services. These developed areas also tend to have the least forest cover and the highest percentage of impervious surface. The suburban pattern of the last three decades has produced both a strong pattern of more densely developed areas with good access and services, as

well as a massive amount of lower-density development that consumed much land and resources.

More discussion is needed about what indicators are useful to track both for the Growth Policy and master planning. The following questions arise:

- Should we continue to monitor all these indicators?
- Should we analyze the data by policy area or by other geographies?
- Are other indicators more appropriate?
- Is data that can only be obtained every ten years really useful? Is there any way to get this information more frequently?
- Should additional staff effort be devoted to tracking indicators that the Executive is not and to analyze them on smaller geographies to assist growth policy and master planning?

Staff looks forward to discussion of the data and these issues with the Planning Board.



Growth Policy Study: Appendix E- Addendum to the 2008 Master Plan Implementation Status Report (Resolution 16-376 F11)

Lead Staff: Glenn Kreger

Summary:

The addendum to the 2008 Master Plan Implementation Status Report contains the following information:

- Status Report for the December 2008 Twinbrook Sector Plan
- Shady Grove Sector Plan Implementation
- Clarksburg Staging and Buildout
- Policy Areas Map
- Status of Capital Facilities (matrices)

The report, in its entirety, can be found on the GrowingSmarter.Org website under *Resources*.

http://www.montgomeryplanning.org/research/growth_policy/growth_policy09/agp_growing_smarter.shtm

Growth Policy Study: Appendix F – Biennial Highway Mobility Report
(Resolution 16-376 F11)

Lead Staff: Justin Clarke

Summary:

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 LATR Growth Policy standards. See Figure 2 for a chart of the CLV/LATR ratio for the intersections in this year’s report. The remaining notable findings in the 2009 HMR report are listed below.

- 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 County.
- 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 ICC is expected to provide relief for MD 28.
- The Growth Policy definition of a three-hour peak period remains appropriate.
- While auto travel has decreased slightly during the recession, transit travel has increased, with total Metrorail boardings in Montgomery County 5% higher in 2009 than in 2006. See Figure 4, Metrorail ridership 2006-2009.

- 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. Nearly every transit rider needs to cross the street at least once in their daily commute.
- The value of the Highway Mobility report series becomes most evident in examining travel and congestion trends over time. The discussion of data variability at the July 20 T&E Committee meeting underscores the need to provide sufficient data collection resources for the 2011 edition of the Highway Mobility Report.

Priority corridors and top intersections identified as containing high levels of congestion in the 2009 Highway Mobility Report have been included in the ranking system for public facility improvements described in Appendix G. The final Highway Mobility Report can be found on the MNCPPC–MC website at the following link:

<http://www.montgomeryplanning.org/transportation/index.shtm>