Growth Policy Study: Draft Report   4/23/09
                         Appendix D – Sustainability Indicators
                         (Resolution 16-376 F11)

Lead Staff: Mary Dolan

_____

Objective:

To show the distribution of the Healthy and Sustainable Communities Indicators across Policy Areas

_____

Progress Report:

A Framework for Action

Healthy and Sustainable Communities Report
September 8, 2008

Background:

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 are not directly tied to community planning or growth policy and are not included 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 and the National Center for Smart Growth Research and Education measures transportation, environmental, 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). Some indicators that are included that may be useful in adapting to 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:
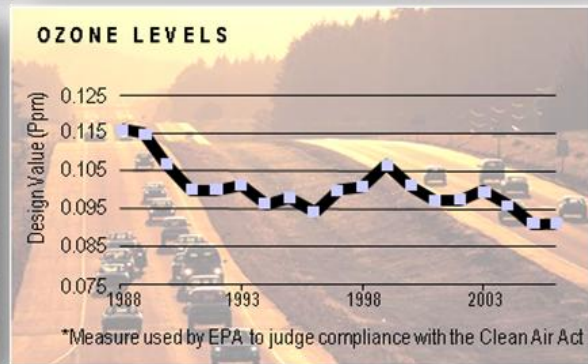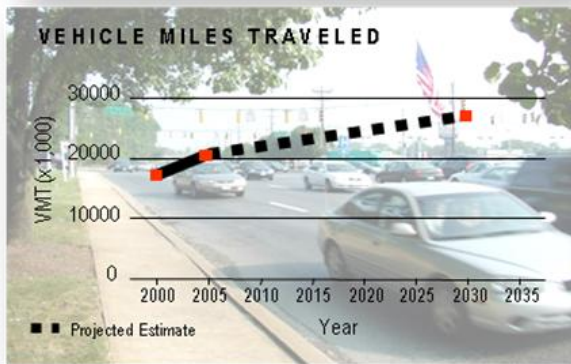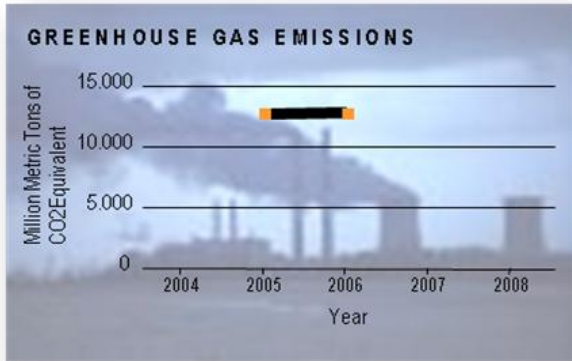
- Year-to-year reporting or even every two years for purposes of the Growth Policy may show little or no change in some indicators, depending on the data source, how often it is collected, and at what scale.

- 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 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 large areas of the county. This means that figures 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. Even with these considerations, some patterns emerge that are worth discussing as part of the Growth Policy.
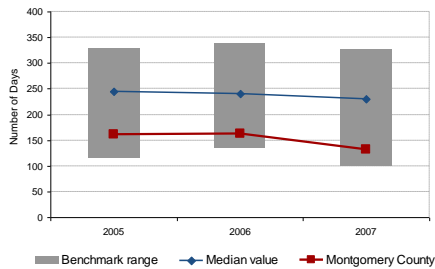
The following report shows the indicators chosen by the Planning Board, related indicators used by the Executive, and those that could be further broken down to show distribution across Policy Areas.

Clean Air and Climate Protection:

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

GREENHOUSE GAS EMISSIONS

NUMBER OF OZONE ACTION DAYS

VEHICLE MILES TRAVELED

■ ■ Projected Estimate

OZONE LEVELS

*Measure used by EPA to judge compliance with the Clean Air Act

---

Number of "good" air quality days
National Benchmark

Benchmark range   Median value   Montgomery County

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.
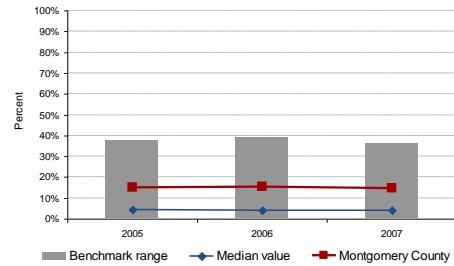
Source: Air Quality Index, EPA

CountyStat

47

Percent of People Taking Public Transportation to Work
National Benchmark

Benchmark range   Median value   Montgomery County

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

27

The measures used to indicate 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 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.

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 is being prepared.

Vehicle Miles Traveled (VMT) Per 100,000 Population
Regional Benchmark
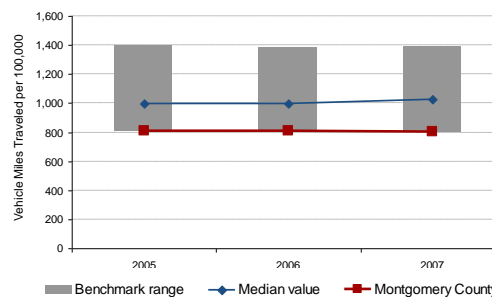
In 2007, there were 803 million Vehicle Miles Traveled in Montgomery County. The median value was 1.025 million. Montgomery Co, MD had the lowest value.   Howard Co, MD had the highest value.
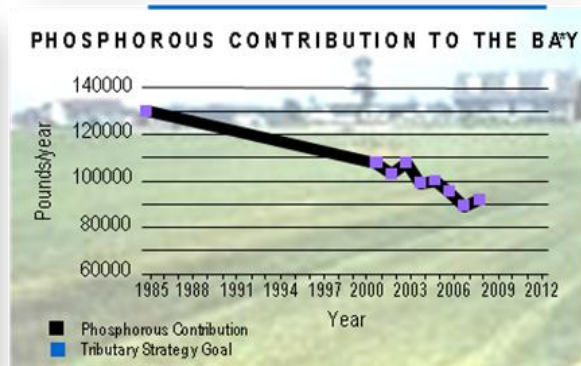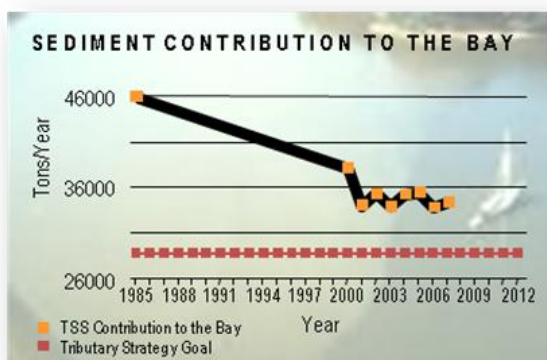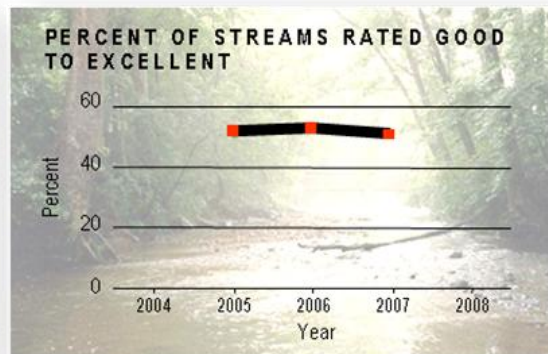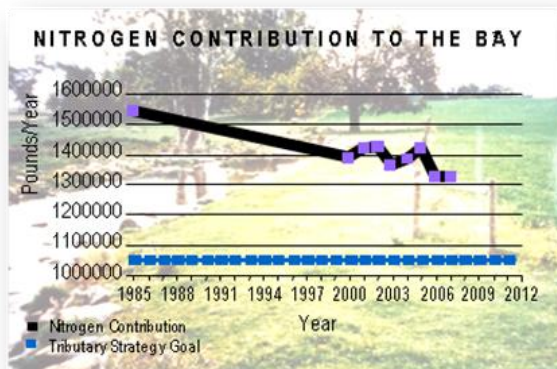
Source: Maryland State Highway Administration; Virginia Department of Transportation   CountyStat

28

5

Clean Water:

Protect and improve county water resources and drinking water.


Unfortunately, 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.
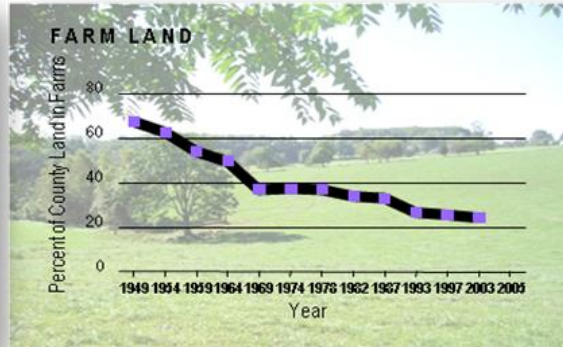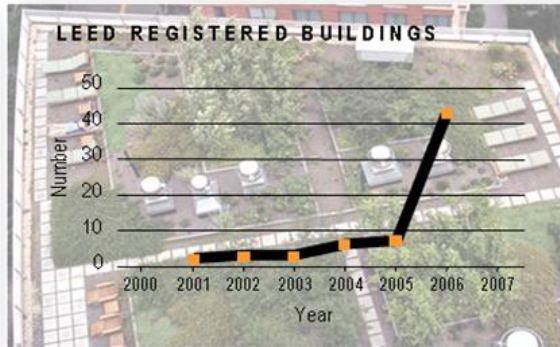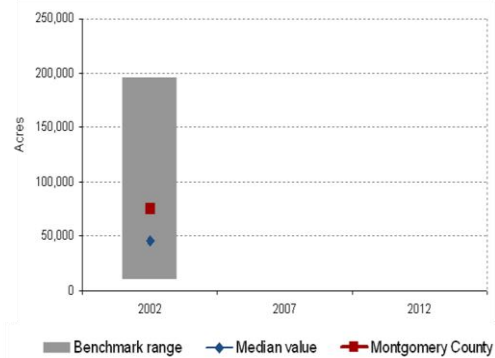

Acres of farmland
National Benchmark
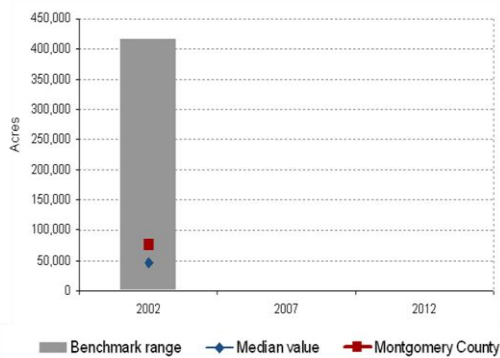
In 2002, there were 75,077 acres of farmland in Montgomery County. The median value was 46,330 acres. Nassau Co, NY had the lowest value; Fort Bend, TX had the highest value.

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 clearly no 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 across the County.

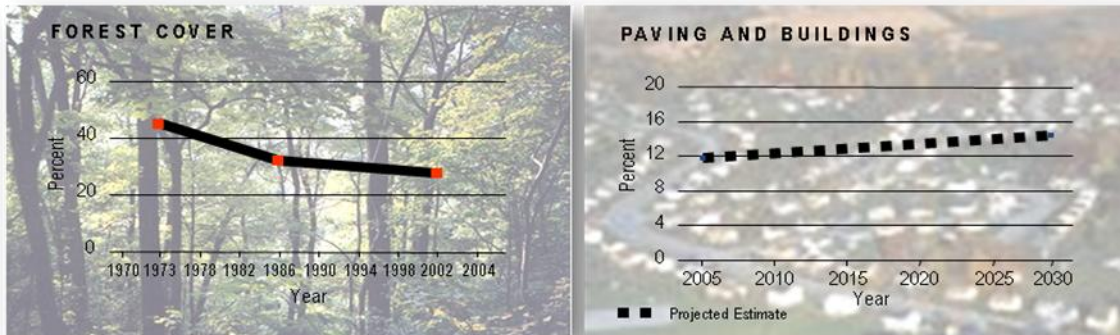We will continue to explore ways to get better information for to monitor the green economy. Below is a map depicting the distribution of green building projects registered with the U.S. Green Building Council. Only five projects have been built and fully certified, two in Silver Spring, two in Gaithersburg and two in Rockville. However the large number of registered projects indicates that many more will be built in the future.

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

Damascus
LEED Buildings: 0

Rural East
LEED Buildings: 2

Clarksburg
LEED Buildings: 0

Germantown East
LEED Buildings: 1

Germantown Town Center
LEED Buildings: 0

Montgomery Village/Airpark
LEED Buildings: 3

Rural West
LEED Buildings: 3

Germantown West
LEED Buildings: 4

Gaithersburg City
LEED Buildings: 5

Derwood
LEED Buildings: 17

Olney
LEED Buildings: 4

Shady Grove Metro Station
LEED Buildings: 0

Rockville Town Center
LEED Buildings: 70

Glenmont
LEED Buildings: 0

Cloverly
LEED Buildings: 0

North Potomac
LEED Buildings: 7

R&D Village
LEED Buildings: 2

Aspen Hill
LEED Buildings: 3

Rockville City
LEED Buildings: 23

Wheaton CBD
LEED Buildings: 0

Fairland/White Oak
LEED Buildings: 8

Twinbrook
LEED Buildings: 1

Grosvenor
LEED Buildings: 0

Kensington/Wheaton
LEED Buildings: 20

North Bethesda
LEED Buildings: 7

White Flint
LEED Buildings: 0

Potomac
LEED Buildings: 4

Bethesda CBD
LEED Buildings: 1

Silver Spring/Takoma Park
LEED Buildings: 9

Bethesda/Chevy Chase
LEED Buildings: 29

Silver Spring CBD
LEED Buildings: 1

Friendship Heights
LEED Buildings: 0

Number of LEED Buildings by Policy Area**

| 0 - 2 | 3 - 9 | 10 - 29 | 30 - 70 |

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
O (Mukherjee-V)\Projects\Growth_Policy\Indicators Project
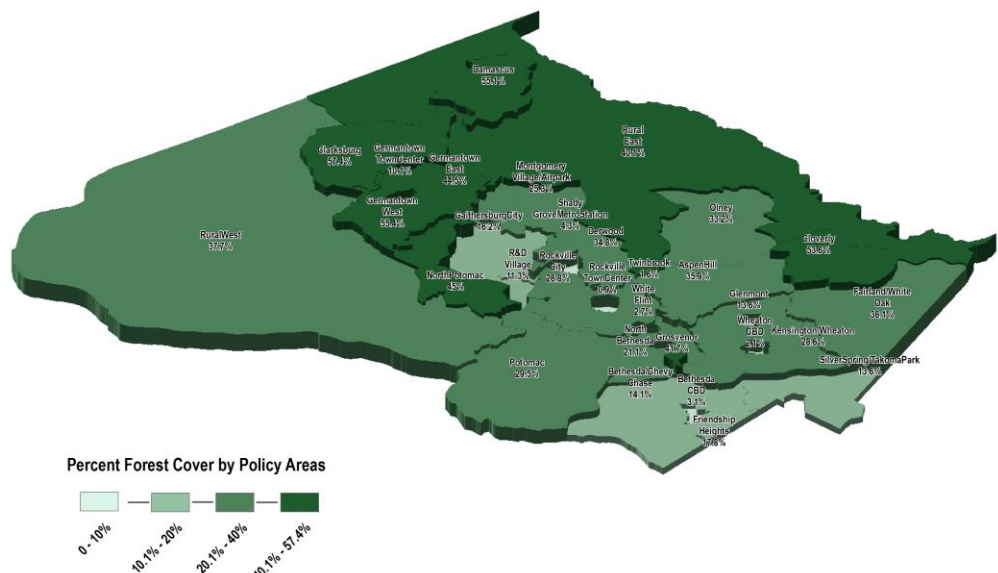
Green Infrastructure:

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

Montgomery County is still very green, with almost 30% in forest cover. 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 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.

Two indicators are still under development. One will measure urban tree canopy (which will recognize the importance of trees in the built-up areas of the county) and the other is the Green Infrastructure layer which combines forest with other important habitats that function as part of an interconnected green

network. Once the Green Infrastructure plan is approved and adopted, we intend to use this indicator to provide a yearly accounting of how much of the Green Infrastructure is protected.

The second measure of green infrastructure is its opposite, imperviousness. This pattern clearly follows the more developed areas of the county.

While the goal is to reduce impervious surface, it is projected to grow in total area, however, all our policies are aimed at reducing the per capita amount and effect of paving and building footprints. Redevelopment of older areas brings new control of both the amount of water that runs off and the pollutants it contains.
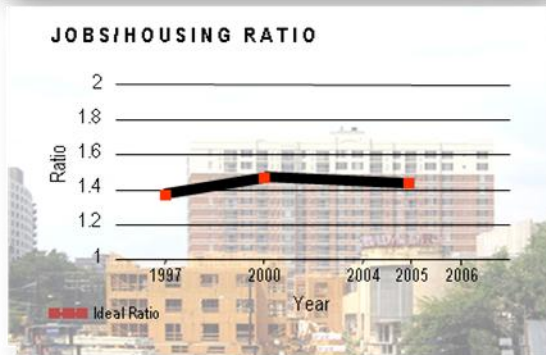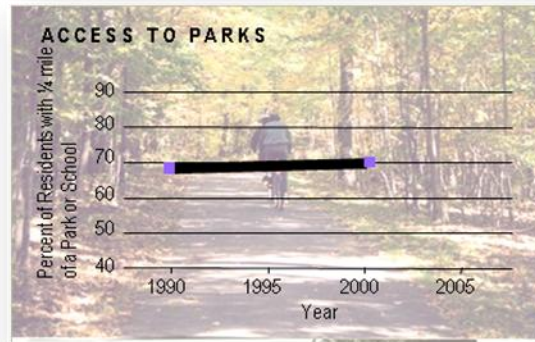
In combination with the County

Impervious Surface Percentages in Montgomery County
2006 Estimates by Policy Areas

Percent Imperviousness by Policy Areas

3% - 15%   15.1% - 30%   30.1% - 50%   50.1% - 72.9%

Source: Montgomery County Planning Department, Research & Technology Center

Prepared by the Research and Technology Center, April 2008
D:\Mukherjee-V\Projects\Growth_Policy\Impervious Surface Analysis

Executive's efforts to restore streams and add controls where possible to neighborhoods where change is not anticipated we can limit the total effect of human activity on our streams and the Chesapeake Bay.
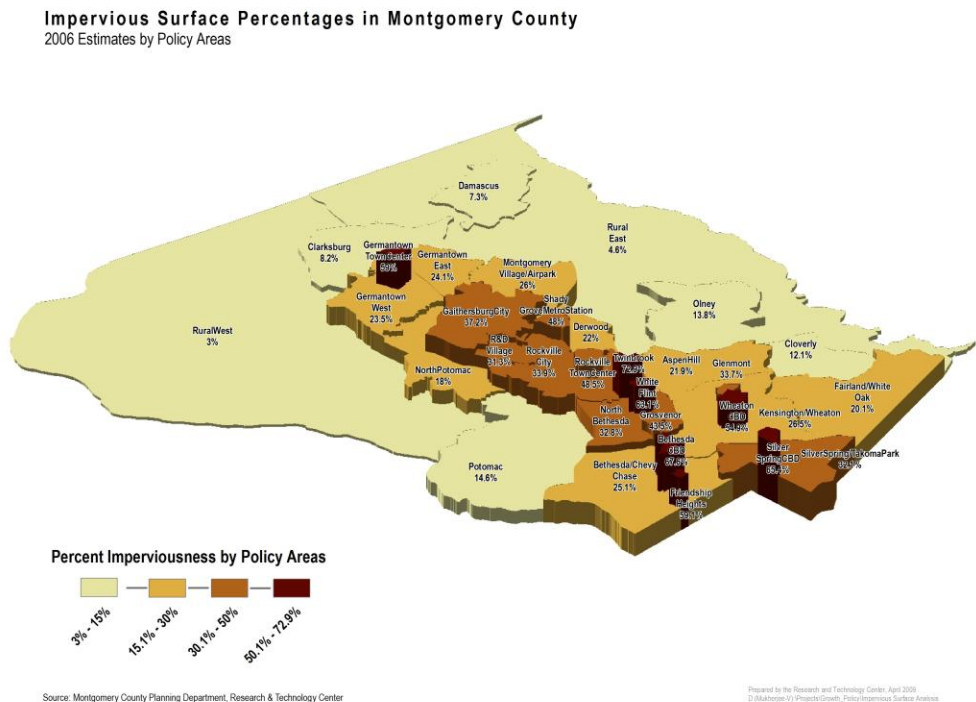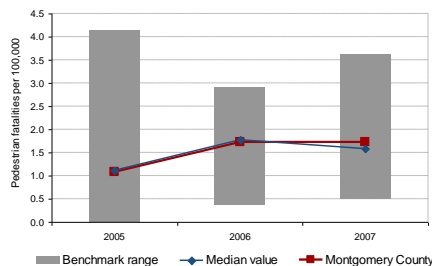
Smart Communities:

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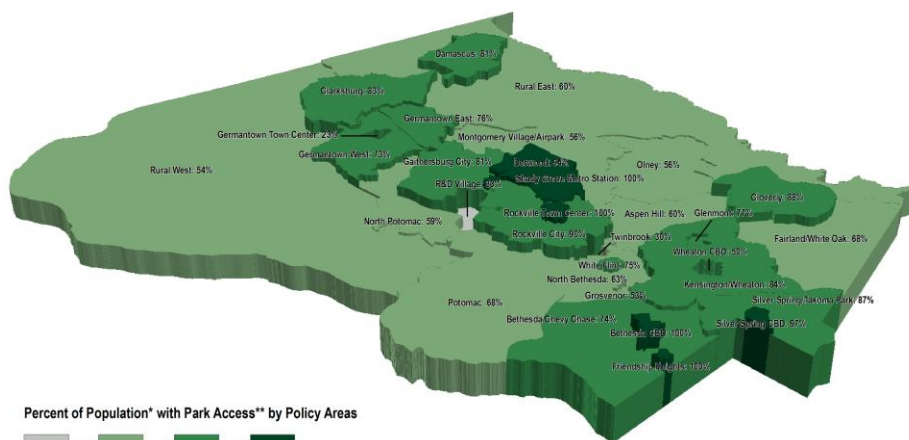

The Executive included an indicator for pedestrian fatality rate countywide. It is possible that this information could be obtained at a more detailed level if the Board feels it is a useful measure of smart communities.

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.

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.

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

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

| 23.3 - 35% | 35.1% - 70% | 70.1% - 90% | 90.1% - 100% |
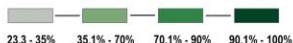
* Population calculated using Census 2000 block data
** Park access defined as a quarter mile from existing 2000 parks and schools

NOTE:
- Percentage calculated by dividing population within quarter mile buffer from existing parks and schools by total policy area population
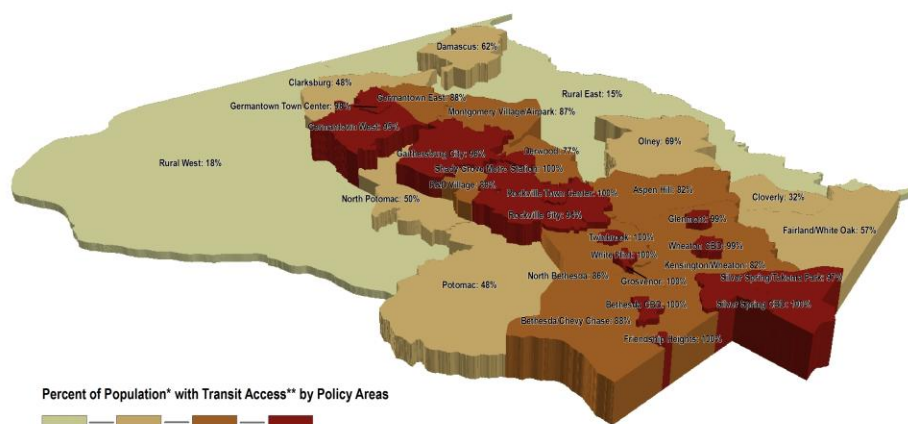
SOURCE:
- US Department of Census, 2000 Census
- Montgomery County Planning Department, Research and Technology Center and Environmental Planning
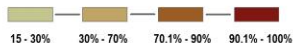
Prepared by Montgomery County Planning Department
Research & Technology Center, April 2005
D:\Mukherjee-V\Projects\Growth_Policy\Census Block Analysis

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

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

| 15 - 30% | 30% - 70% | 70.1% - 90% | 90.1% - 100% |

** Population calculated using Census 2000 block data
** Transit access defined as a quarter mile from existing RideOn routes, Metroline 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:
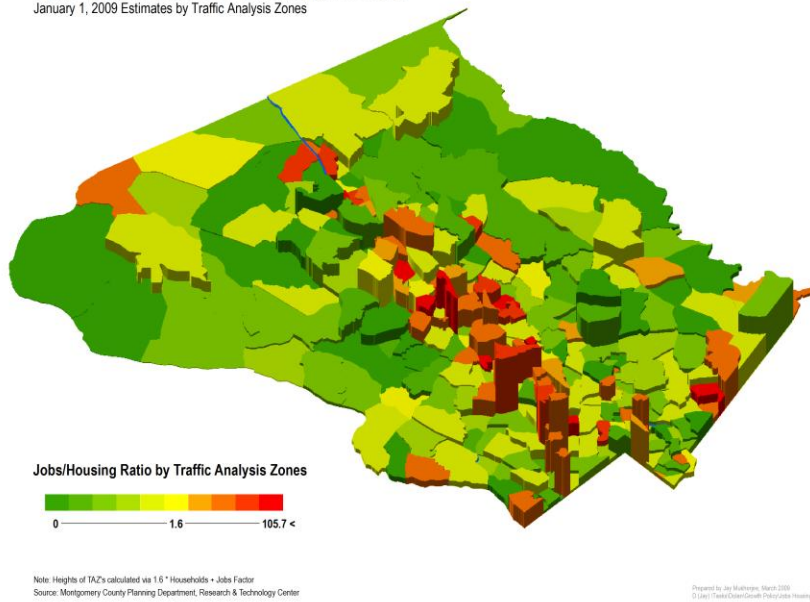- US Department of Census, 2000 Census
- Montgomery County Planning Department, Research and Technology Center and Environmental Planning

Prepared by Montgomery County Planning Department
Research & Technology Center, April 2005
D:\Mukherjee-V\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.

In addition, the income data is only available for block groups and only in the ten-year census data.

Jobs - Housing Ratio in Montgomery County
January 1, 2009 Estimates by Traffic Analysis Zones

Jobs/Housing Ratio by Traffic Analysis Zones

0 —————— 1.6 —————— 105.7 <

Note: Heights of TAZ's calculated via 1.6 * Households + Jobs Factor
Source: Montgomery County Planning Department, Research & Technology Center

Conclusions:

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.