SEPTEMBER
2008

A FRAMEWORK FOR ACTION

Healthy and Sustainable Communities

MONTGOMERY COUNTY PLANNING DEPARTMENT

in cooperation with
MONTGOMERY COUNTY DEPARTMENT OF ENVIRONMENTAL PROTECTION

THE MARYLAND-NATIONAL CAPITAL
PARK AND PLANNING COMMISSION

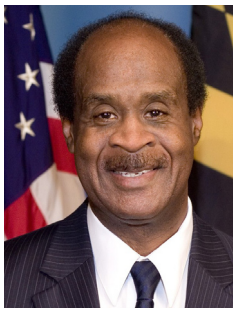
SEPTEMBER
2008

A FRAMEWORK FOR ACTION

Healthy and Sustainable Communities

THE MARYLAND-NATIONAL CAPITAL
PARK AND PLANNING COMMISSION
8787 Georgia Avenue
Silver Spring, Maryland 20910

www.MontgomeryPlanning.org




September 2008

We are pleased to present the work of the Planning Board and the County Executive to the County Council on draft goals and indicators for Healthy and Sustainable Communities. This has been an exciting and fruitful effort of staff from the Department of Environmental Protection and the Planning Department.

Montgomery County has had a long history of progressive environmental planning, programs and policies. In recent years, we've stepped up our environmental efforts with sweeping green building legislation, planned new walkable communities near Metro, dramatically increased funding for enhanced stormwater management, expanded recycling programs, and established the first-of-its-kind clean energy rebate program. By mid-January, the Sustainability Working Group will produce a Climate Protection Plan that will provide the framework and direction for greenhouse gas reductions of 80 percent by 2050.

We should take great pride in these accomplishments. But the fact is we need to do far more. With help from nationally-recognized content experts and the community at large, we have defined indicators that will measure the degree to which we are moving toward a Healthy and Sustainable Community. We are also working together on indicators for Housing, Transportation, Public Safety, Education and the Economy.

The goals, indicators and actions in this report are only a beginning. Discussions with the County Council and continuing dialogue with the Sustainability Working Group and the community at large will only strengthen this approach.

We recognize that everyone has a part to play and these efforts must be coordinated and complementary to be effective. Having these goals and indicators to measure progress will give all of us the ability to examine all of our programs to see how they can be enhanced or refocused to attain these goals.

We look forward to continuing working together and measuring our progress as we move toward healthy and sustainable communities.

Sincerely,

Isiah Leggett
County Executive

Royce Hanson
Planning Board Chairman

TABLE OF CONTENTS

KEY TERMS

Goal

A condition of well-being for people and communities stated in simple language. Goals can be easily understood by policymakers, voters, and taxpayers.

Why Is This Important?

A brief background of the subject of the goal and why we chose it.

What Do People Think?

This is a list of root causes that stakeholders and staff think have the greatest influence, positive and negative, on the trend lines of the indicators. These are not necessarily thoroughly researched, documented or prioritized; however, the general perception is that dealing with these factors will have an effect on the trend of the indicator.

What Can We Do?

These are the actions and policy options that work best to change or accelerate the curve of an indicator's trend line in the desired direction. Each item should be the focus of policymakers and other stakeholders seeking to influence the root causes. Some will be more suited to government action and others to voluntary or business ventures. Working together as community members, business leaders, policy makers, and government agencies, we will be better able to reach our goals.

Indicators

Indicators measure our effectiveness in meeting our goals. For example, the number of days when the County experiences poor air quality is a measure of clean air or the percent of development near transit is a measure of smart communities. With enough data over a long enough period of time, trend lines develop that indicate how effective our actions are in reaching the goal.

For each goal, we chose indicators that are effective and meaningful.

- Does this indicator communicate to different audiences?
- Does this indicator say something important about the goal? Does it reflect the effect of our actions? Can it act as a representative of other data?
- Is there consistent and reliable data for this indicator through time? Data must also be available at the relevant scale—regional, county, or neighborhood.

Other Potential Indicators

These are indicators with strong communication and proxy power, but there is no available data. They can be included over time as data and funds are available.

EXECUTIVE SUMMARY

This report is the result of a cooperative effort between the Montgomery County Planning Board and the Montgomery County Executive to develop an environmental policy framework of goals, actions, and indicators that measure our progress toward healthy and sustainable communities. This initiative will help policymakers and community members judge how their policies, programs, and individual actions contribute to achieving environmental goals and will guide the development of specific future plans on a wide variety of environmental and energy issues. The report's menu of issues and approaches are a starting point for future plans. The indicators will help determine how successful these efforts are over time.

A sustainable community meets the needs of the present without compromising the potential of future generations. This means preserving and restoring our local environment and reducing our impact on regional air quality and the Chesapeake Bay. Environmental justice is an overarching goal since all people in the County should benefit equally from environmental protection and healthy communities regardless of race, income or social class. We aim to reduce our carbon footprint while we raise the quality of life and place, measuring our success as we go.

Ultimately, the success of this initiative will be determined by the community's actions—local government, citizens, businesses, and interest groups. To support the community in developing effective strategies for both collective and individual actions, this report presents:

- proposed environmental goals
- corresponding indicators with which to measure our progress toward those goals
- suggested actions that will help us to reach the goals.

BACKGROUND

When adopting the 2007 Growth Policy, the County Council asked the Planning Board to work with the Executive and the public to "develop a set of sustainable quality of life indicators that address issues of environment, social equity and economy. These indicators must be suitable to guide land use and other public policy decision-making, including capital programming and design of public facilities."

The Council requested that an initial set of indicators be prepared to inform the 2009 Growth Policy. They also asked that we develop a conceptual environmental policy framework that could guide planning efforts such as the Climate Protection Plan, the Water Resources Plan, and the Green Infrastructure Plan.

The County Executive is taking the lead on developing indicators for most aspects of social equity and economy (including transportation and affordable housing), so this report focuses on the environment and land use planning associated with the Executive's Healthy and Sustainable Communities initiative.

A FOCUS ON RESULTS

At the heart of this initiative and report is a focus on results, reflected in this principle:

Decision making should start with clearly defined, measurable ends and work backwards, transparently, systematically, and with data, to determine how to achieve them.

This principle underlies the report, which in each section starts with a goal and provides a framework for working toward that goal using data systematically to determine the means—the strategy or actions—for achieving the goal.

The indicators in this report are shaped by conversations held at the June 2008 workshop and contributed online at http://mcparkandplanning.org/environment/sustainable. Independent experts and community stakeholders brought the best current thinking about sustainability into lively discussions.

FOLLOW THROUGH

This effort will only succeed if local government, citizens, businesses, and interest groups keep the goals of sustainability in the forefront. Working in coordination with regional, state, and federal efforts, we will fulfill the promise of a sustainable environment that improves social equity and boosts our economy.

The effect of growth on our environment and in our communities is a constant theme of this dialogue. However, we recommend absolute reductions in total carbon emissions and pollutant discharges on a comprehensive, not just on a per capita basis. Discussions of the best place for regional growth are beyond the scope of this effort, but growth will remain a key factor in sustainability.

This report is the first step toward developing sustainability goals local policy-makers can strive toward—and measure their progress in achieving. We recommend that progress on these indicators be revisited every two years at the beginning of the Growth Policy review process.

Throughout the remainder of 2008 and into 2009, the Board and the County Executive will examine our draft strategies and prepare specific actions and policies we can adopt to accomplish our goals. Health indicators, such as obesity rates, will be prepared by the County Executive with the Health and Human Services Department. The Sustainability Working Group, established by County law, will help make recommendations, particularly as part of the Climate Protection Plan. Another important step will be to integrate these goals into the General Plan for Montgomery County. The Planning Board will begin that effort this fall.

CONCLUSION

Looking at the indicators, it is obvious that Montgomery County has made substantial progress in many areas, but we are still far from achieving our goals. We will all need to redouble our efforts to provide healthy and sustainable communities for future generations.

As we took our ideas to the community, several common themes emerged. Everyone emphasized the importance of outreach and education, of listening and teaching. It is clear that coordinating important messages and listening to all people who live, work, and play in the County is essential in finding the most efficient and effective ways of achieving healthy and sustainable communities.

Planning and fostering communities where people can live without cars or reduce their auto use was seen as essential to creating smart communities with clean air and water. Likewise, preserving tree canopy in developed communities, planting more trees, and creating networks of forests, streams and fields were mentioned in many contexts.

New development of more compact, mixed-use communities and institutions will help to address some of these needs, but older suburban areas pose a bigger challenge. We must focus greater efforts on making our existing communities more sustainable, livable, and affordable, while building better communities for the future.

This report will be further enriched as discussions continue with the Planning Board, Executive departments, stakeholders and the County Council. The indicators in this report serve as a starting point. More investigation and discussion is needed to refine them and develop the data sources necessary for the additional indicators. This activity will take place over the next year as these indicators are tested in growth policy and budget discussions.

CLEAN AIR AND CLIMATE PROTECTION

Goal:
Air Quality: Protect and improve air quality to meet federal standards.

Goal:
Climate Protection: Stop increasing greenhouse gas emissions by 2010 and reduce them by 80 percent of 2005 levels by 2050.

Why Is This Important?

Air quality has direct public health impacts and air pollutants contribute to global warming.

The Clean Air Act establishes standards that identify pollutants considered harmful to public health and the environment. The Washington, D.C. region, including Montgomery County, doesn't meet the standards for ground-level ozone and particulate matter. Both of these pollutants affect breathing, especially in children and other sensitive groups. The Metropolitan Washington Council of Governments coordinates regional air quality efforts, including declaring Ozone Action Days (Code Orange and Red) when the region's ozone level exceeds the standards and put people with difficulty breathing at risk. While measured ozone levels have declined, the standards for declaring Ozone Action Days have been tightened, resulting in more violations. As the effect of ground level ozone on human health is studied and updated, federal standards for Code Red or Orange days change. Our indicators keep pace with and reflect those changes.

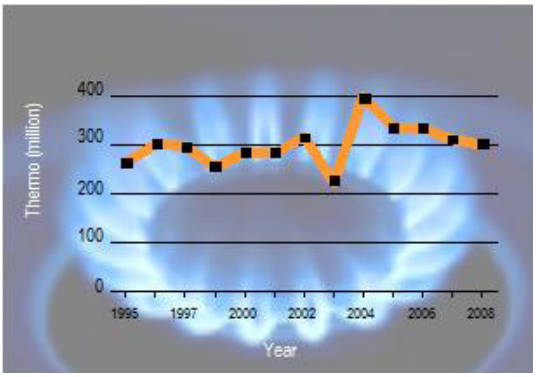
Greenhouse gasses such as carbon dioxide and methane contribute to global warming. According to studies, the level of several major greenhouse gases (GHG) in the atmosphere have increased by about 25 percent since large-scale industrialization began in the mid-1800s. In Montgomery County, greenhouses gases come primarily from man-made sources, including transportation, electricity production, industrial activities, building energy use (including electricity), solid waste management, and agriculture. Natural sources include livestock and decomposing organic matter.

What Do People Think?

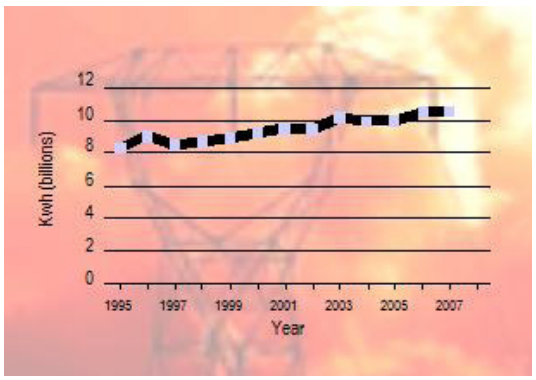
- Only a small percentage of commercial and residential buildings are energy efficient.
- Not everyone is aware of the important relationship between energy use and air quality.
- People prefer the convenience and comfort of autos to public transit.
+ Emission standards for most vehicles continue to be strengthened.
- Residential and commercial electricity consumption has increased by 25 percent since 1995, while population has increased only by 19 percent.
- Over half of our energy comes from coal-fired plants in neighboring states. The pollution from these plants contributes to our carbon footprint and unhealthy air quality.
- Lawn equipment and other combustion engines contribute a significant amount of emissions.
- Pollution from many small activities such as gasoline service stations, small paint shops, and consumer use of solvents are growing and difficult to control.

INDICATORS:

NATURAL GAS USE

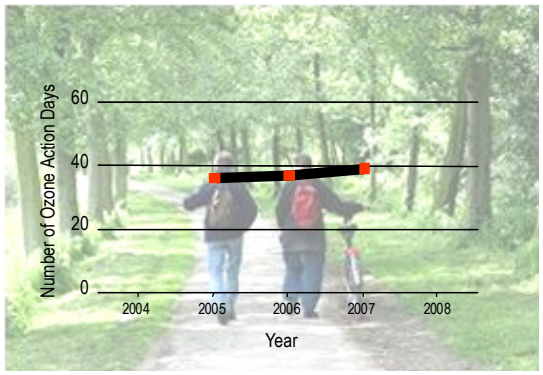


ELECTRICITY USE

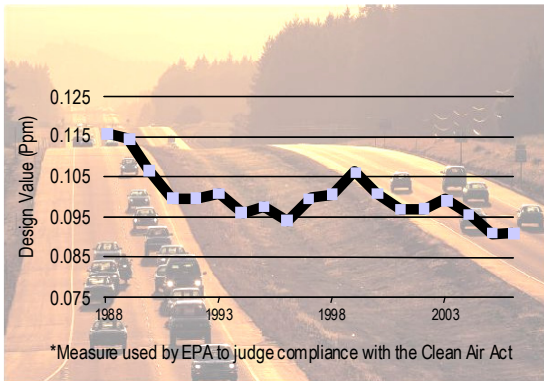


INDICATORS:

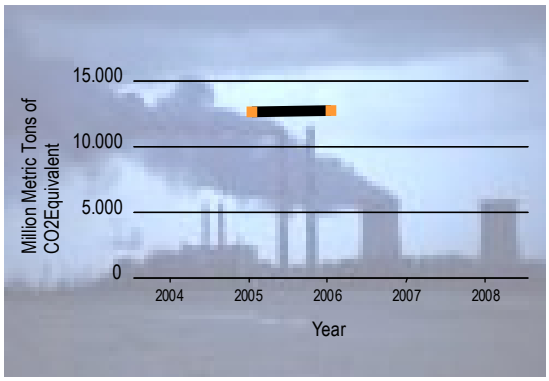
NUMBER OF OZONE ACTION DAYS



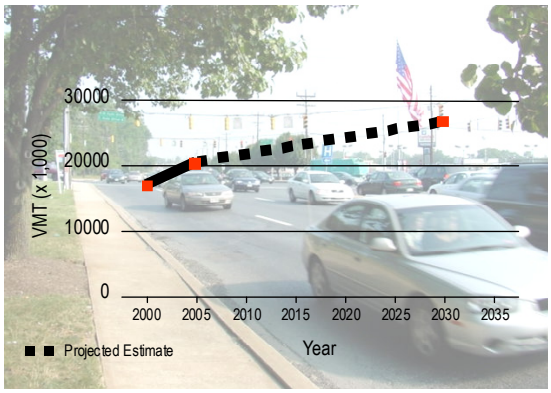
OZONE LEVELS



GREENHOUSE GAS EMISSIONS



VEHICLE MILES TRAVELED



What Can We Do?

- Encourage the location of housing, employment, and shopping near each other and in areas served by transit facilities.
- Update the building code to reflect the latest standards for energy efficiency.
- Provide incentives for consumers and businesses to use and generate renewable energy.
- Plant more trees and retain existing forest.
- Develop wind power and other alternative energies.
- Develop an incentive program for energy producers to reduce emissions.
- Participate in a "cap and trade" program that establishes an emissions limit and issues allowances to each company that requires an emissions permit. Allowances may be traded among companies, so long as the limit is not exceeded.
- Increase the proportion of renewable energy as part of County operations.
- Conduct broad based public education, including through the school system and retailers.
- Promote energy auditing to help people lower their energy use.
- Improve public transit options and reduce costs to riders.
- Promote the development of facilities that encourage cycling, walking, and the use of transit and other high-occupancy vehicles.
- Encourage residents to reduce the number of trips taken per day by car.
- Recommend energy conservation practices during master planning and the review of public and private projects.

Other Potential Indicators

- Percentage of electricity and natural gas use by sector, source, and income level
- Percentage of renewable energy used (e.g. corn, solar power, wind)
- Energy efficiency of buildings

Montgomery County emitted more than 12 million tons of carbon dioxide into the atmosphere in 2004 — an amount greater than the sum of Bolivia and Nicaragua combined.

CLEAN WATER

Goal: Clean Water

Protect and improve County water resources and drinking water. Reduce damage to stream ecology and reduce the amount of pollutants that flow into the Chesapeake Bay.

Why Is This Important?

More than 15 million people live within the Chesapeake Bay watershed, the nation's largest inland estuary. For centuries, it has supported both the people and the wildlife that live in or by its waters. However, the health of the Chesapeake Bay is increasingly compromised by runoff and development. Crab populations are crashing and oysters have been at low levels for years.

All of Montgomery County's runoff flows to the Chesapeake Bay. In recent years, the County has spent millions to reduce its discharge to the Bay. While we've reduced the County's share of pollutants to the Bay, as indicated by nitrogen, sediment, and phosphorus levels, we remain a long way from achieving the goals we have set.
High-quality streams help maintain fish populations, reduce flooding and erosion, provide recreation, and protect our water supply. But even with some of the most advanced stormwater management requirements in the country, land development stresses our streams. Redeveloping older areas of the County will upgrade stormwater management to our current high standards, will make use of existing infrastructure, and will improve stream quality while accommodating homes and businesses as Montgomery County grows.

What Do People Think?

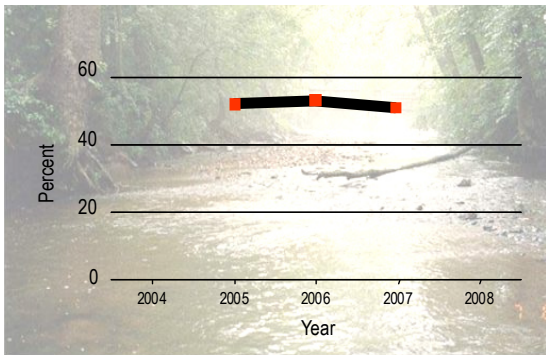
- \- Stormwater management practices are improving, but still don't entirely eliminate pollution.
- \+ Areas developed without stormwater management are being redeveloped or new stormwater control projects are being built.
- \- Impervious surfaces limit natural stormwater filtering, increasing pollutants flowing into steams.
- \- Past patterns of sprawl development have used large areas of land.
- \- Some natural resources are protected, however, resource loss and damage continues.
- \+ National/state/local standards for stormwater management and pollutant loads in streams are being tightened.
- \+ Increasing public awareness and education are modifying behavior (such as excessive lawn fertilization, dumping of oil, etc.) that harms our streams and the Bay.
- \- Agricultural activities and residential landscaping practices contribute nutrients to streams and the Bay.

What Can We Do?

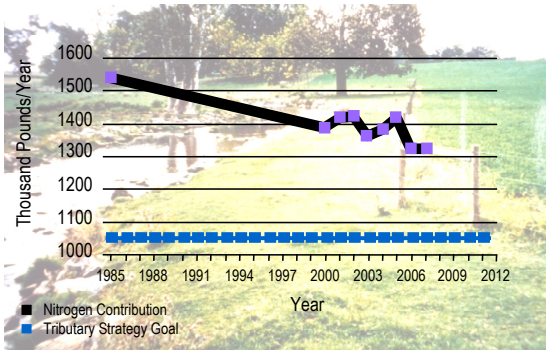
- Provide support, resources, and education for citizens, farmers, developers and the media.
- Limit sprawl by encouraging redevelopment and compact development.
- Increase forest and wetland areas, forested stream and wetland buffers, and urban tree canopy cover.
- Reduce wetland loss due to land use changes that cut off water supplies.
- Facilitate sustainable agricultural and residential landscaping practices.

INDICATORS:

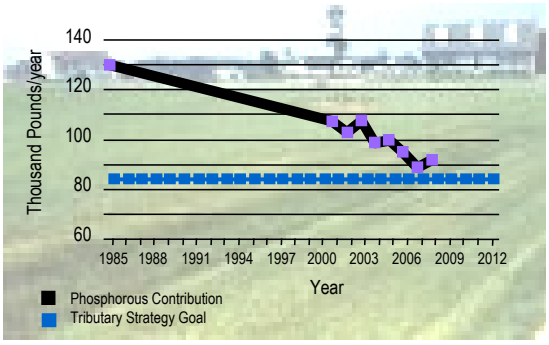
PERCENT OF STREAMS RATED GOOD TO EXCELLENT



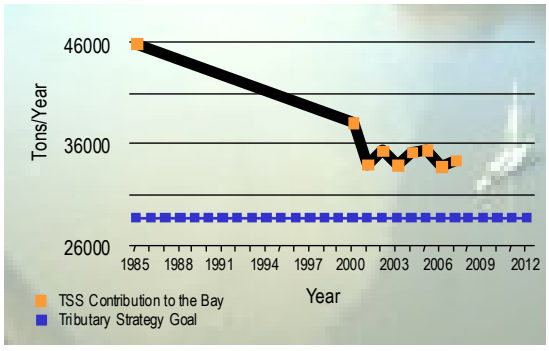
NITROGEN CONTRIBUTION TO THE BAY *



PHOSPHOROUS CONTRIBUTION TO THE BAY *



SEDIMENT CONTRIBUTION TO THE BAY *



** EPA Bay Program estimates from land use model*

Other Potential Indicators

- Actual counts of fish and other species living in our streams (Index of Biological Indicator scores)
- Degraded waters as designated by the State
- Stormwater runoff volumes
- Percent of streams rated good to excellent analyzed by community income levels

Montgomery County has one of the strongest water quality protection programs in the country and yet 500 of our 1,200 miles of streams are rated in fair or poor condition.

GREEN ECONOMY

Goal: Green Economy

Foster an economy in which businesses compete to create, produce, distribute, and recycle goods made from recycled or rapidly renewable natural resources. Encourage businesses that provide services for renewable energy or energy efficiency, and adopt environmentally healthy business practices.

Why Is This Important?

There is a growing consensus that traditional business practices and models of economic growth are undermining the health and ecological balance of the planet's resources. Technologies and practices that encourage the sustainable use of resources have risen to the top of the public agenda–locally, nationally, and internationally. A green economy promotes businesses that use less energy, generate less waste, or that offer products that allow others to be more sustainable. Green business practices can also contribute to healthier workplaces and businesses that focus on community concerns.

Green building construction is one area in which a green economy can flourish. This type of development incorporates energy efficiency, uses recycled and recyclable materials, enables alternative energy generation, takes advantage of the site to access transit, and reduces harmful runoff. Industries that use or supply products for green buildings could grow significantly as developers use new products that reduce carbon emissions through energy efficiency, recycled materials, and renewable energy sources.

A green economy is also one that promotes local production of most goods and services to reduce the need for transportation and dependence on distant sources while creating local jobs.

What Do People Think?

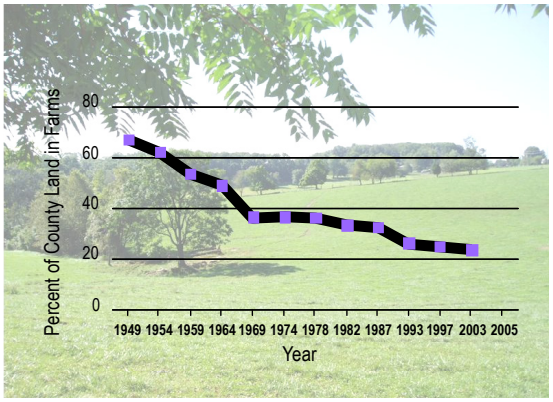
+ LEED certification on all new commercial development is a County requirement.
- Businesses don't have a common understanding of what sustainable practices they can use.
- Development pressure continues to threaten local farmland, although the Agricultural Reserve limits development in almost one-third of the County.
+ There is a growing awareness of and demand for environmentally friendly business practices.

What Can We Do?

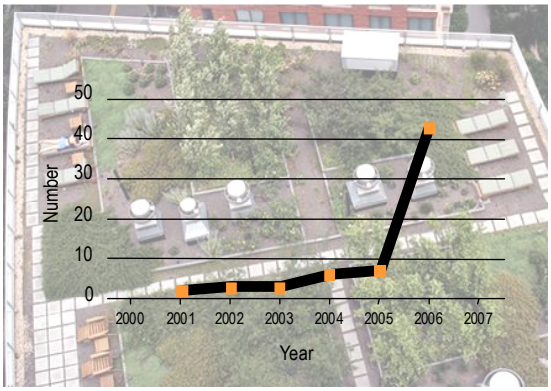
- Define and promote sustainable business practices, products, and services.
- Provide training and education to promote sustainable businesses and employment.
- Provide incentives for businesses to develop sustainable practices.
- Provide residents with information on local green and sustainable businesses, products and services.
- Link with the sustainability programs of unions, trade organizations, and professional societies.
- Support local farms and food producers.

INDICATORS:

FARM LAND



LEED BUILDINGS



Other Potential Indicators

- Percent of residential buildings that are green certified
- Percent of green jobs in low- and high-income areas
- Number and percent of businesses that are green-certified

All new buildings over 10,000 square feet in the County are required to meet LEED certification, all public buildings—LEED silver, yet over one third of carbon dioxide is produced by energy use in existing buildings.

GREEN INFRASTRUCTURE

Goal: Green Infrastructure

Preserve, manage, and increase natural areas, tree canopy, and wildlife habitat. Conserve and expand forests and natural systems while reducing impervious surfaces.

Why Is This Important?

Forests and trees have multiple benefits. They provide habitat for our region's plants and animals, including rare species. They also moderate climate, lowering summer temperatures by shading the soil and paved areas to limit heat build-up. Forests stabilize the water supply. Their leaves and branches retain rainwater, reducing the amount of runoff that must be treated and channeled to storm drains. The forest floor acts like a sponge, soaking up rainwater, filtering it, and gradually releasing it to groundwater and streams.

Forests affect air quality and global warming by consuming carbon dioxide and releasing oxygen, holding carbon in their wood. Even in decay, carbon in the rotting leaves and wood is taken up by new trees and other plants, further reducing the potential for global warming.

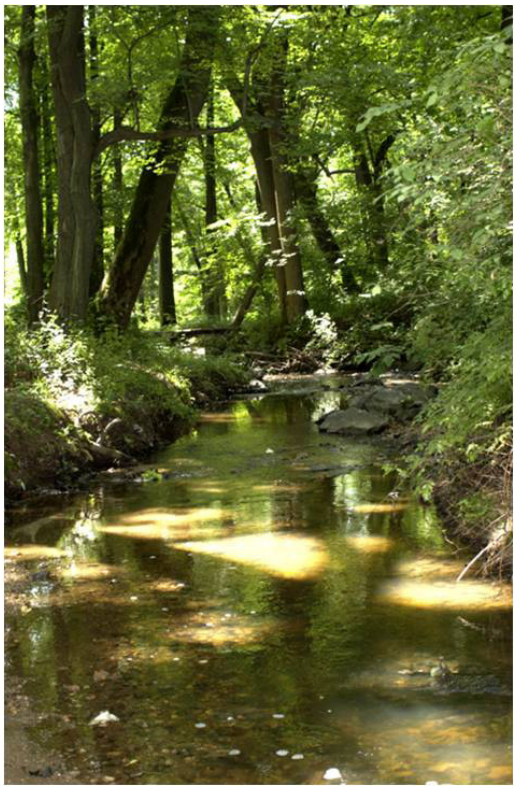
Forest cover in Montgomery County is about 30 percent, not including urban tree canopy. Many experts agree that trees and forest should cover about 40 percent of the land. We are in the process of developing accurate maps for urban tree canopy in the County.

The Planning Board is preparing a Green Infrastructure Functional Master Plan that will identify the connected network of forests, wetlands, and meadows that help purify our air and water while providing recreational and restorative green spaces for residents and visitors. Once this network is defined, a level of protection can be added as an indicator.

Impervious surfaces—paving and buildings—cause rainwater to carry dirt and pollutants directly to streams and stormwater management ponds. We catch some of those pollutants through stormwater management structures such as ponds and sand filters, but even the best systems don't remove as many pollutants as natural forest canopy and forest floor.

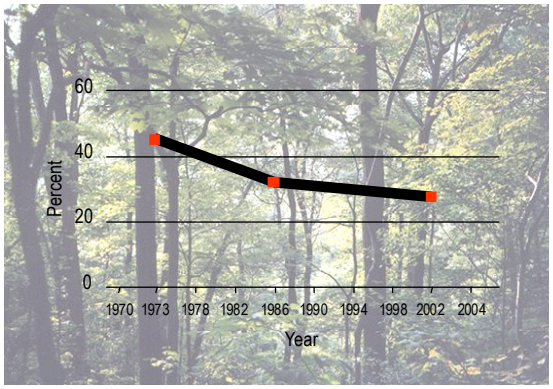
What Do People Think?

- \- Our population is growing and space is needed for new residents and businesses. Property owners seek economic value through development, often removing trees.
- \+ Natural resources are protected if they're publicly owned as conservation parkland or legally constrained through easements.
- \- Protecting land and natural resources can limit land supply for housing.
- \- Redevelopment of older areas often removes urban tree canopy.
- \- A large area of the County's undeveloped land is still zoned for low-density residential development that often needs a high per unit amount of paving for roads and driveways.
- \- Not everyone knows the value of natural resources and the risk of losing them.
- \- Non-native invasive plants are overwhelming existing and newly planted forest.

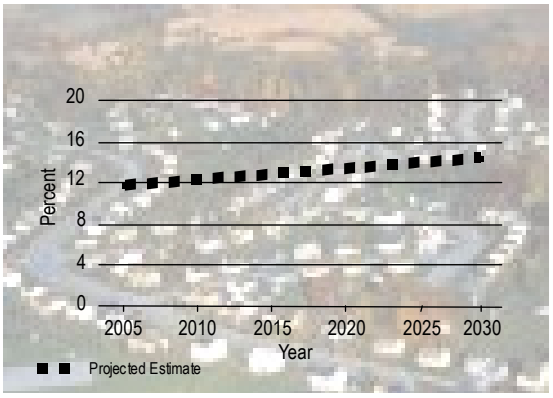


INDICATORS:

FOREST COVER



PAVING AND BUILDING



What Can We Do?

- Educate homeowners and developers on efficient redevelopment through public advocacy, government programs, the media, and schools.
- Complete the Green Infrastructure Functional Master Plan.
- Expand the Weed Warrior program to control non-native invasive plants.
- Create an impervious surface tax credit for mitigation.
- Promote neighborhood tree-planting contests.
- Offer coupons for residential tree-planting from local nurseries.
- Adopt a tree protection ordinance to retain more individual trees and smaller groves of trees.
- Encourage use of pervious materials where appropriate.

Other Potential Indicators

- Urban tree canopy
- A connected network of natural areas including forests, wetlands, and meadows
- Paving and buildings without stormwater control
- Tree canopy and impervious surface in low-income communities

Over 17 percent of Montgomery County is public parkland, including an extensive network of protected stream valley parks, yet over half of the County's forest is on private land subject to development.

SMART COMMUNITIES

Goal: Smart Communities

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

Why Is This Important?

Land uses in truly sustainable communities provide housing, offices, shopping, schools, community gathering spaces, recreation, and transportation choices within easy and safe walking distance. With necessities and amenities nearby, all residents benefit from improved physical health, a reduced carbon footprint, and strengthened community connections.

Transit access is increasingly important as roadways become more congested and fuel prices escalate. People who can walk or bike to a bus stop or Metro station have more transportation choices and get more exercise. When more people use public transit, we see less traffic congestion, fewer greenhouse gases, fewer people suffering from respiratory illness, and improved bicyclist and pedestrian safety.

The relative speed of auto and transit trips can affect the willingness of people to live in compact communities. As growth in the County is focused around transit corridors, mobility for automobiles will decrease and transit speed relative to automobile trip speed will increase.

Smart communities indicators can examine the differences between accessibility of low- and high-income groups. Access to transit for both groups is gradually increasing, and more people with lower incomes have easy access to transit. Access to parks is exactly the same for both groups.

What Do People Think?

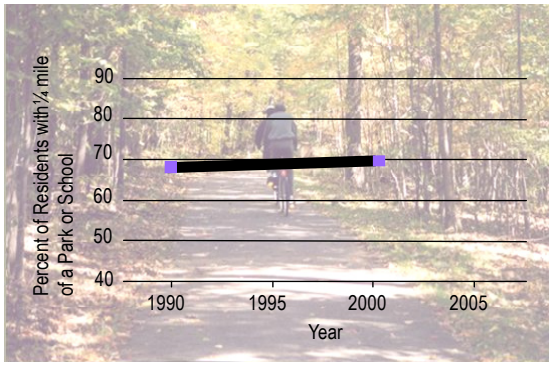
+ There is greater planning emphasis and market pressure for more compact development with a mix of uses.
- Financing for mixed use development is more difficult.
- Many suburban communities don't have sufficient density to support frequent transit service.
- Funding policies have favored road construction and auto-oriented development.
- Public transit, bike facilities, and sidewalks aren't funded to serve all areas of the County.

What Can We Do?

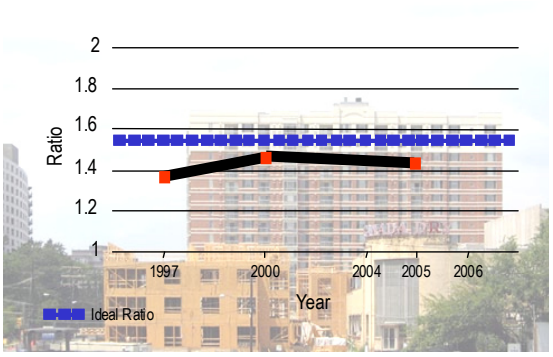
- Increase public outreach and education about Smart Communities.
- Revise the County's building and zoning codes to require energy efficiency and promote higher densities.
- Increase the range of community types to create lifestyle choices.
- Redirect funding to subsidize Smart Growth.
- Rebuild "the commons"—public spaces and natural areas.
- Redevelop neighborhood shopping centers to include mixed-uses.
- Fund additional modes of travel—bike paths, affordable public transit, and sidewalks.
- Improve accessibility—do an accessibility audit of each community and respond to its needs.
- Reduce parking required for new development to encourage alternative transportation.

INDICATORS:

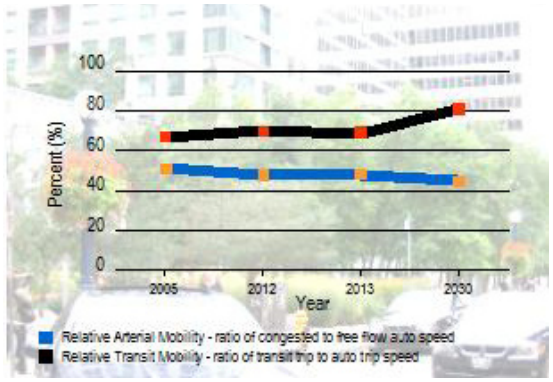
ACCESS TO PARKS



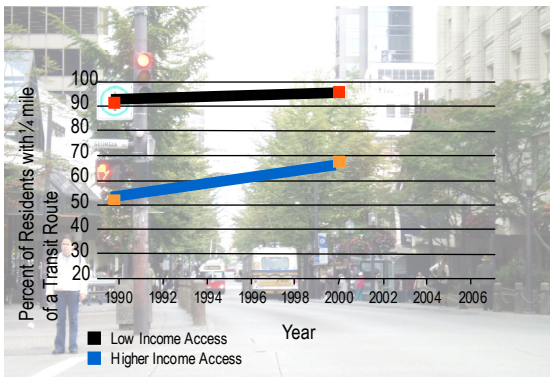
JOBS/HOUSING RATIO



RELATIVE MOBILITY



ACCESS TO PUBLIC TRANSIT*



Other Potential Indicators

- Percent of daily trips (the average is seven per day) using walking or transit
- Percent of people within walking or transit distance of their everyday activities (groceries, libraries, parks, schools, cultural events, etc.)
- Availability of affordable housing

The County's Ride On bus fleet served more than 26 million people in FY07, yet only 72 percent of the County's population lives within one fourth mile of a bus route or Metro station.

** Low-income includes households with incomes 80 percent or less of the median income. High-income is greater than 80 percent of the median.*

PHOTO CREDITS

American Lung Association
Marion Clark
Coalition for Smart Growth
Eric Coffman
Environmental Protection Agency
Flickr
Sam Hummel
Net_efekt
Ron Vaughn
Doug Weisburger

DATA SOURCES

Montgomery County Department of Economic Development
Montgomery County Department of Environmental Protection
Montgomery County Department of Transportation
Montgomery County Planning Department
Montgomery County Department of Parks
Metropolitan Washington Council of Governments
Maryland Department of the Environment
U. S. Environmental Protection Agency
U. S. Census Bureau

A FRAMEWORK FOR ACTION

Healthy and Sustainable Communities

THE MARYLAND-NATIONAL CAPITAL
PARK AND PLANNING COMMISSION
8787 Georgia Avenue
Silver Spring, Maryland 20910

www.MontgomeryPlanning.org