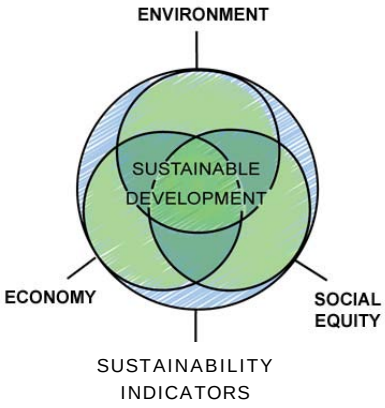
A Vision of Sustainable Development for Montgomery County

Executive Summary and Recommendations



Sustainability became a common term through a 1987 United Nation's World Commission on Environment and Development report titled *Our Common Future.* [1] Since its inception, the notion of "Sustainability" has provided a holistic worldview of how social equity, economic, and environmental forces work together to create the world in which we live and, more importantly, how we may harness these forces to create something better. This paper proposes that we use this definition to guide future growth and development in Montgomery County:

> *Sustainable Development meets the needs of the present without compromising the ability of future generations to meet their own needs. It recognizes the fundamental inextricable interdependence between the economy, the environment, and social equity, and works to promote each to the benefit of all.*

The concept of sustainability allows us to discuss policies and plans in relationship to one another as plans and development proposals are considered. In this way, we can explore the advantages, conflicts and trade-offs associated with each proposal. Without this examination and measures or targets for sustainability, we will continue to approve development based on the rules it doesn't violate rather than on the goals, objectives and targets it achieves.

The growth management policy in Montgomery County should incorporate sustainability as a guiding principle. The growth it guides should contribute to the sustainability of the county's environment, economy and social well-being, and it should be updated regularly to account for better information as well as changes in people's concerns and priorities. The sustainability principle should be applied to both new growth and changes in existing development.

The risk of not including sustainability in the growth policy is that growth will continue to be managed only in terms of how and when infrastructure is provided rather than on how well it serves the county's overall needs as a community and as a responsible part of the national effort to address the sustainability problem

This paper discusses how well the General Plan Refinement (GPR) expresses principles and goals that support sustainability, and finds that the General Plan

[1] Report of the Brundtland Commission, Our Common Future, Oxford University Press, 1987.

already identifies most, although not all, of the principles needed to guide Montgomery County towards coming to the forefront of the sustainability movement. We suggest how the goals of the GPR can be modified to reflect sustainability more comprehensively.

Our survey of what other local governments are doing to implement sustainability plans around the country shows that many use “indicators” to establish specific targets and evaluate progress in meeting specified goals. Indicators allow residents and decision makers to track and monitor select social, economic and environmental conditions by measuring progress toward specific quantifiable goals or targets. Indicators simplify vast amounts of information and data, and thus provide a common ground on which communities create relationships, build trust and consensus, and base decisions.

Communities take different approaches in developing suitable indicators, but the dialogue between stakeholders both informs the process and engages the public to offer clear direction for the future. Generating a sustainability indicators program offers a logical compliment to effective growth policy. These tools provide a means to accurately gauge the economic, environmental and social conditions within a community over the long term, allowing for more effective and informed decision-making.

The Planning Department currently is exploring how the broader perspective of the sustainability principle may be applied to the 355/I270 Corridor Study. Of necessity, this initial effort at applying this broad principle to a local land use exercise will be conceptual in nature. But it is expected that the product will yield some insights useful to the further refinement and practical application of this new approach.

The Water Resources Element required by state law (HB 1141) presents another opportunity to explore sustainability. This law requires that we demonstrate how planned growth will be supplied with drinking water and wastewater treatment capacity and show how our streams can accommodate the anticipated stormwater runoff while protecting local streams and the Chesapeake Bay.

Recommendations

We face a tremendous challenge in the next decade: how to assure that all policy changes and physical investments in Montgomery County direct growth and development in a way that is sustainable. We suggest the following actions to begin meeting that challenge:

- Work towards adopting a definition of sustainability tailored to the needs of Montgomery County for use in our County programs.
- Expand the goals of the General Plan Refinement to include appropriate sustainability principles.
- Incorporate into the Planning Board’s existing 2007 work program initial efforts at further refining sustainability principles for application to land use

related plans and studies, such as the 355/I270 Corridor Study and the State mandated Water Resources Element, to be undertaken in FY 2008.

- Using this experience, undertake a public involvement process to establish countywide indicators and targets as soon as feasible within upcoming fiscal year budgets.
- Apply sustainability principles and goals to the analysis and evaluation of trends and actions that are part of the ongoing Growth Policy and Capital Improvements Program evaluation process.

Introduction to Growth and Sustainability

This report holistically addresses the specific questions raised by the County Council in the Growth Policy resolution to include a concept that extends beyond growth to the development and well being of the county, its residents and its relationship to larger systems. It contains specific recommendations, some of which may be appropriate in the short term, but some that will require further study and interaction with the community. The concept of sustainability is examined in the context of the General Plan Refinement. We examined the overall concepts, goals and objectives in terms of sustainability and sought examples from other jurisdictions about how to adapt the General Plan Refinement and its implementing mechanisms to achieve sustainability.

Sustainability and the General Plan

In order for growth in Montgomery County to be sustainable, new development should reflect the principles of sustainability and be measured in those terms. The General Plan Refinement contains most of the elements of a plan for sustainability, but is not focused clearly on that goal.

The County's General Plan, "On Wedges and Corridors," first adopted in 1964, set the County on a visionary path to preserve open space while channeling growth into carefully defined areas. Updated in 1993, the General Plan Refinement (GPR) explicitly recognizes the connections between transportation and land use, between the built environment and the natural, between employment and housing. To balance these at times competing concerns, the 1993 General Plan Refinement (GPR) established goals objectives and strategies intended to guide the County's land use and development.

But since the refinement and numeration of these goals, the concepts it was based on have been refined as communities throughout the world struggle to holistically improve quality of life. Now called sustainable development or sustainable prosperity, the concept can really be viewed as a different way of looking at achieving the goals and objectives that County has sought for decades.

The Agricultural Reserve and the Priority Funding Areas have reinforced the geographic components of the Wedges and Corridors plan to serve smart growth principles. These principles are similar in many ways to elements of sustainable development, making the transition from the GPR to a more comprehensive sustainability program a relatively small step.

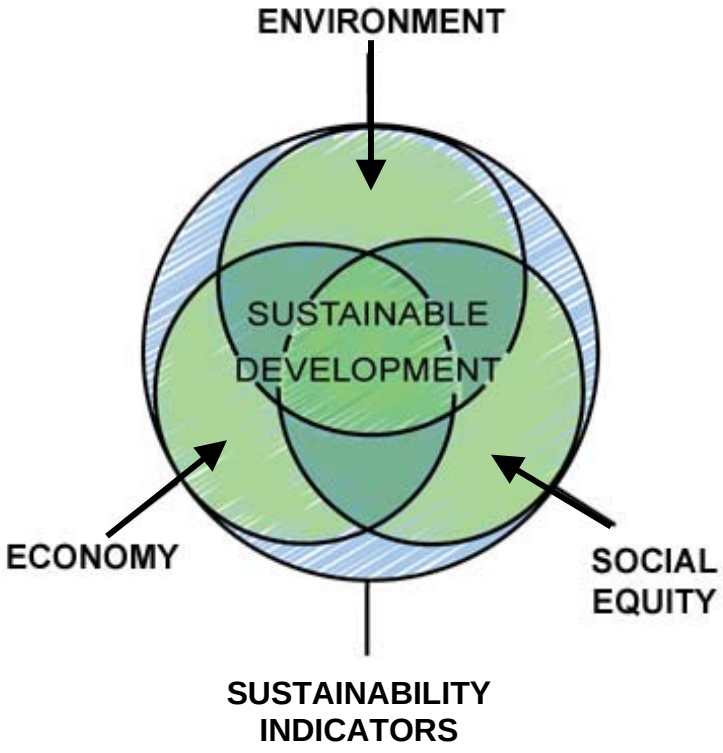
Definition of Sustainability

Since its inception, the notion of "Sustainability" has been nothing less than a holistic worldview of how social, economic, and environmental forces work together to create the world in which we live and, more importantly, how we may harness these forces to create something better. Sustainability is not a thing, but rather *a way of looking at things*.

With this in mind, we propose that the County, as a first step, adopt the following basic definition of Sustainable Development

> *Sustainable Development meets the needs of the present without compromising the ability of future generations to meet their own needs. It recognizes the fundamental inextricable interdependence between the economy, the environment, and social equity, and works to promote each to the benefit of all.*

This definition builds upon the Brundtland definition[2], incorporating lessons learned from jurisdictions around the nation and highlighting the essential elements of economy, environment, and social equity. The graphic below illustrates this relationship, and shows how indicators can measure the larger context.



Examples of Sustainable Development

Though the fundamental basis of sustainable development is the recognition of the interdependence of the three elements, the three "E's", it is helpful to look at some county programs that already promote elements of sustainable development. Programs that are currently addressing only one "E" (depicted in the lighter shaded parts of the circles) include actions like tax breaks for certain kinds of businesses

[2] Report of the Brundtland Commission, Our Common Future, Oxford University Press, 1987.

(economy), health screening (equity) and fish migration barrier removal (environment). Programs that address two "E's" (the darker shaded portions of the circles) include stormwater management charges (environment and economy), MPDU's (economy and equity) and air pollution control (environment and equity). But the most progress towards balanced sustainability results from solutions that address all three "E's" at once:

- Walkable, bikeable, transit friendly concentrations of mixed income housing and employment and services with pleasant green open spaces linked to the countywide green infrastructure.
- Rural areas with limited development around small communities, profitable farms that offer employment and support food production, agricultural activities, green infrastructure and protected water supplies.

While the GPR embraces most of these concepts, the inherent difficulties of meeting all its goals and objectives at the same time are not reconciled. We have included smart growth principles such as the Agricultural Reserve, TDR's, the Priority Funding Area, Forest Conservation and environmental guidelines to provide reinforcement of our "sustainability" goals. Each master and sector plan determines the emphasis, balance and compromise among the many objectives of the GPR. Decision makers determine the unique mix of actions recommended in these plans with input from stakeholders. In order for growth to be sustainable, sustainability should also be expressly addressed in master and sector plans.

Why Include Sustainability in the Growth Policy?

Sustainability should be a goal for both growth and the improvement of existing developed areas. The preferred term is "sustainable development" which does not pre-suppose growth, but looks at all changes in a community to improve sustainability. Regardless of growth, sustainability requires changes to existing development as well. Just regulating new development cannot attain improvements in sustainability, but new development and redevelopment should be together in the vanguard, demonstrating principles of sustainability and forming the foundation for the future.

The concept of sustainability allows the functional areas of the GPR and master plans to be discussed in relationship to one another as development proposals are considered. In this way, we can explore the advantages, conflicts and trade-offs associated with each proposal. Without this examination and measures or targets for sustainability, we will continue to approve development based on the rules it doesn't violate rather than on the goals, objectives and targets it achieves.

The risk of not including sustainability in the growth policy is that growth will continue to be managed only in terms of how and when infrastructure is provided rather than on how well it serves the county's larger future needs as the implications of global warming and the global economy are increasingly understood. Here are a few examples of questions that the sustainability perspective can bring to our attention:

- Will we be able to maintain or reduce our electricity demand in the future to avoid the need for new major transmission lines?
- Can the older infrastructure of the developed areas sustain the increased density needed to accommodate growth? When and where do we reach a tipping point and who pays?
- Can we continue to develop on the edges of the sewer envelope using pressure sewers? Do we want to expand the gravity sewer system into whole new stream valleys?
- Should we be spending money on building a new water supply intake in the Potomac River or cleaning up the tributaries that are causing us to move the intake?
- How can we balance parking and transit in ways that reduce automobile use and provide increased accessibility for residents, workers and visitors?

How Are We Doing?

In order to examine how well the County's existing and projected development adheres to Smart Growth principles and the County's General Plan, we produced two sets of maps. The County's household and employment 2005 existing development and 2030 Round 7.0 Forecast is mapped showing households or jobs per acre by traffic zone with the Priority Funding Area and Agricultural Reserve boundaries as well as the boundaries of the five General Plan Areas.

The maps show that the County's densities of existing and future household and employment development are in sync with the goals of the General Plan. The denser development is occurring within the Urban Ring, the I-270 Corridor, and villages like Olney and Damascus and less dense development is occurring in the Suburban Communities, Residential Wedge, and the Agricultural Wedge as defined in the General Plan.

Households

- Almost all of the traffic zones with household densities greater than one household-per-acre are within or partly within the Priority Funding areas.
- Most of the densest household development, traffic zones with densities greater than five households-per-acre, is within the Urban Ring and the I-270 Corridor as defined in the General Plan.
- This density improves multi-modal serviceability and can support local-serving retail and community facilities, significantly reducing the need to drive.[3]
- These areas are scattered within the Priority Funding Area, not forming a consistent pattern.

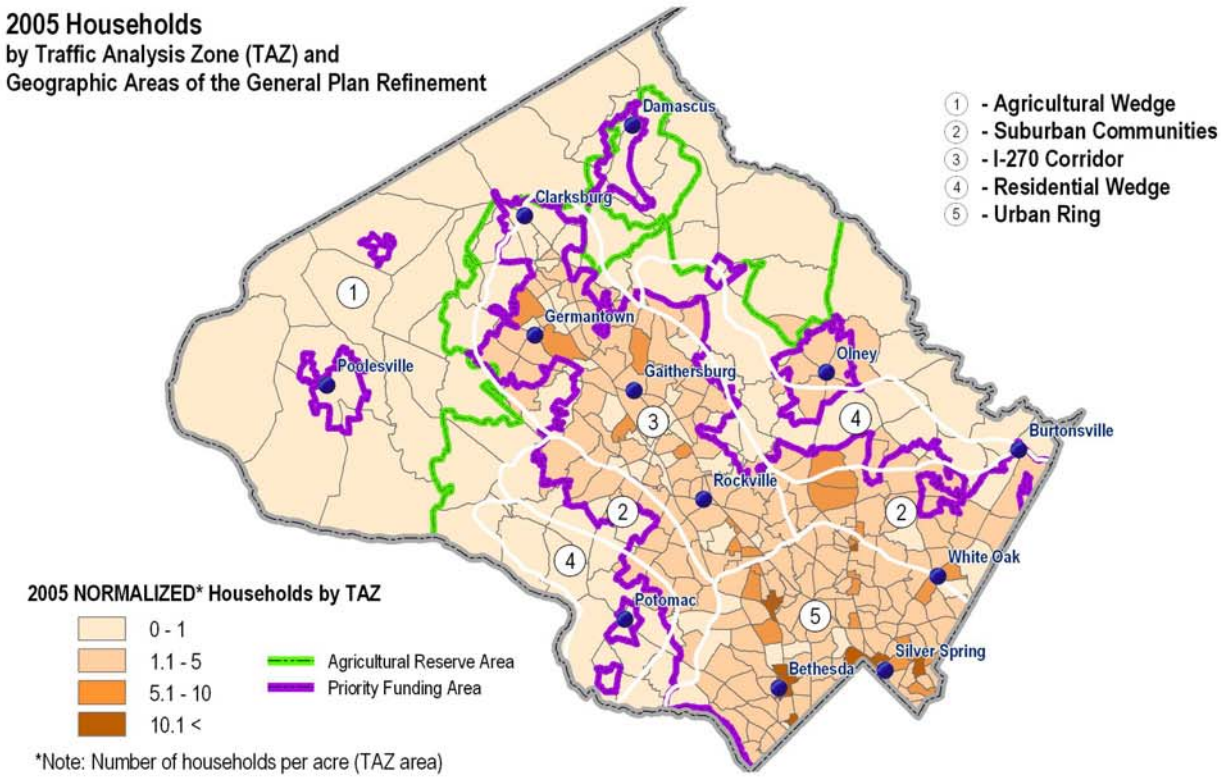
[3] Gordon Price, Simon Frasier University, Vancouver British Columbia. Partners for Smart Growth Conference, 2007.

- In 2030, the County's 441,000 households are likely to have a similar pattern under existing trends.
    - Between 2005 and 2030 the County has traffic zones increasing in density within the Priority Funding areas, especially within the Urban Ring and the I-270 Corridor.
    - Some areas increasing in household density are: the Silver Spring CBD, the Wheaton Metro Station area, White Flint, Twinbrook, Rockville Town Center, the Shady Grove Metro Station area, the Crown Farm, Watkins Mill Town Center, and Clarksburg.

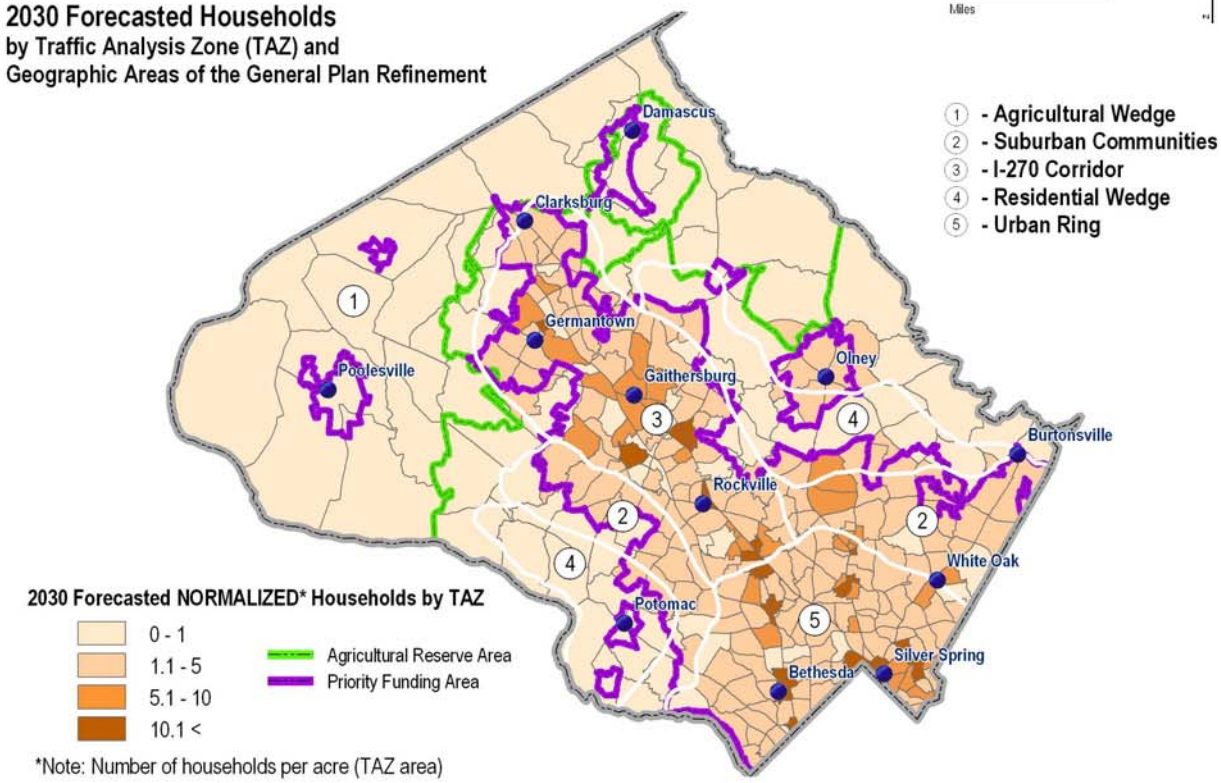
Employment

- In 2005, the highest concentrations of the County's 500,000 jobs are located within the Priority Funding areas and as defined in the General Plan; the Urban Ring, I-270 Corridor, and the eastern Suburban Communities (along MD 29).
- The highest job densities, greater than 10 jobs-per-acre, are found within the Urban Ring and the I-270 Corridor.
- In 2030, the highest concentrations of the County's 670,000 jobs remain in the Priority Funding areas, mainly in the Urban Ring and the I-270 Corridor.
    - By 2030, more traffic zones in the northern I-270 Corridor, Gaithersburg, Germantown, and Clarksburg have job densities greater than 10 jobs-per-acre.
    - The Food and Drug Administration's consolidation at White Oak and the development of the proposed Technology Park in Calverton will created job densities greater than 10 jobs-per-acre at the fringe of the Urban Ring and in the eastern Suburban Communities along MD 29.

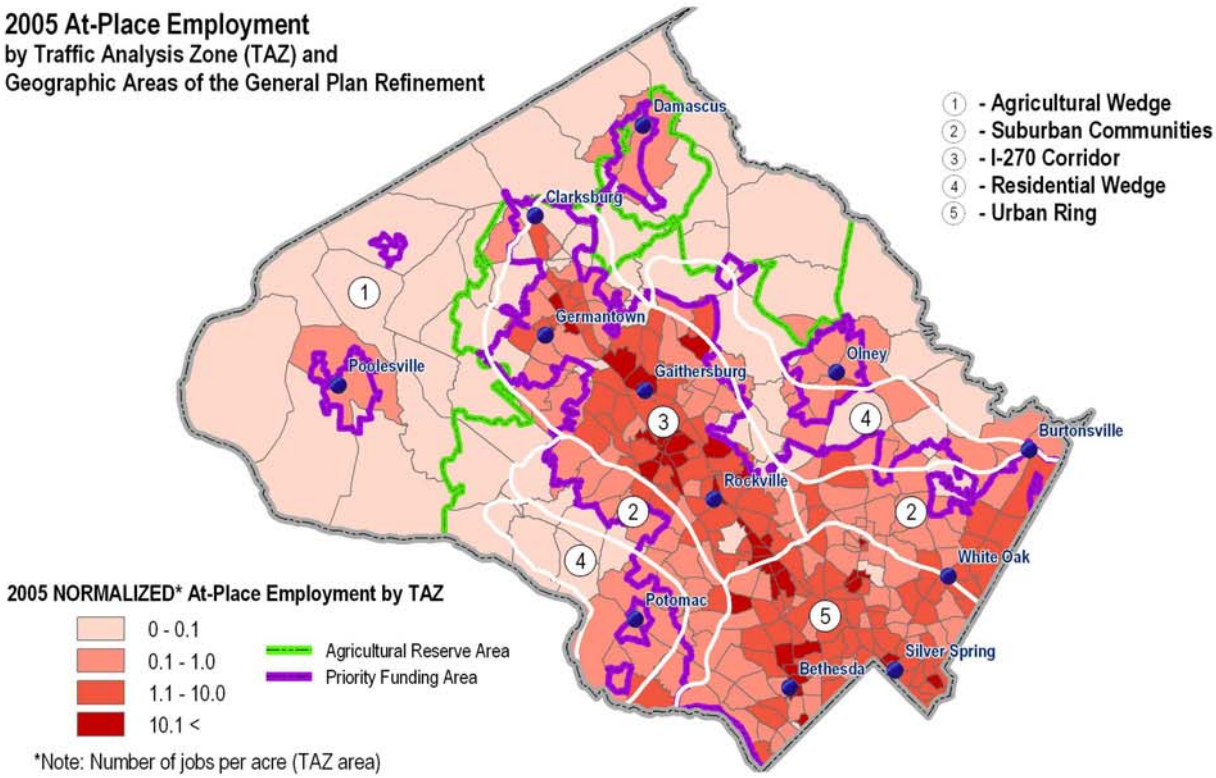
2005 Households
by Traffic Analysis Zone (TAZ) and
Geographic Areas of the General Plan Refinement



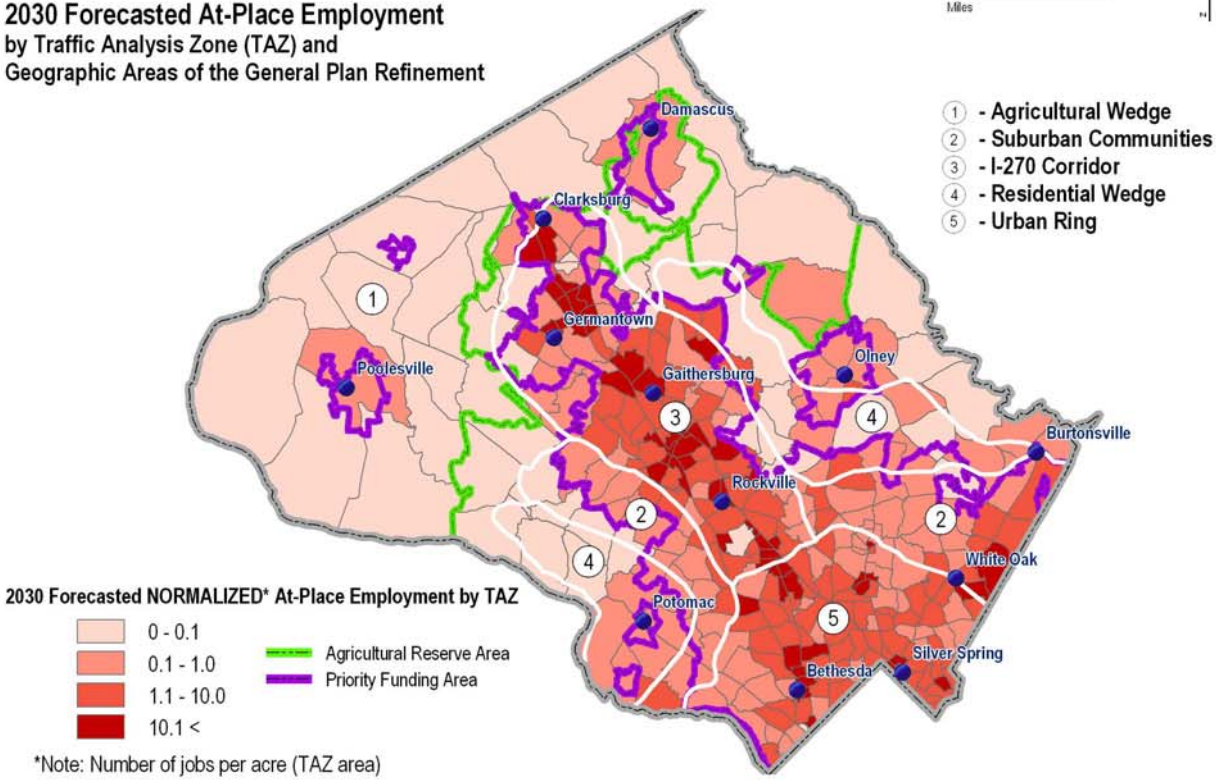
2030 Forecasted Households
by Traffic Analysis Zone (TAZ) and
Geographic Areas of the General Plan Refinement



2005 At-Place Employment
by Traffic Analysis Zone (TAZ) and
Geographic Areas of the General Plan Refinement



2030 Forecasted At-Place Employment
by Traffic Analysis Zone (TAZ) and
Geographic Areas of the General Plan Refinement



Other Jurisdictions: Common Themes and Elements

Our staff investigation included an examination of plans of other local jurisdictions that are focused on sustainability and/or smart growth. Our review focused on how other communities define the concept, how it is applied, and how it guides planning efforts. The communities we reviewed offer a useful starting point for any future discussion; closer review is needed to determine how applicable the approaches used by other jurisdictions are to Montgomery County. These plans featured several common themes and elements. They universally recognize the interconnectivity and interdependence of the economy, the environment, and the community, and the need for an integrated holistic approach to development planning to promote the sustainability of each of these forces.

For a definition of Sustainable Development, many included some version of the original from the Brundtland Commission -, i.e., development that meets the needs of the present without compromising the ability of future generations to meet their own needs. Beyond this, many included the Three E's – Economy, Environment, and Equity – as a shorthand way of recognizing their inextricable overlapping links.

The principles of sustainable development contained in the reviewed plans represented two approaches: the conceptual commitment and the call to action. For example, Marin County, California's principles offer an excellent model of a broad-based, yet policy-area-specific approach that is able to address concept, policy, and implementation. The concepts of sustainability are incorporated explicitly in the County's General Plan.

From there, Marin offers its residents policies aimed at improving sustainability, particularly in terms of reducing environmental impact. The County also examines housing affordability, transportation and land use within the context of sustainability using a graphic very similar to that provided here. Marin's General Plan also instructs the County to develop design guidelines to foster development that complements community character and provides walkable, livable spaces.

King County, Washington does not explicitly recognize sustainability. However, it does offer a growth policy that includes design, environmental considerations and social equity considerations (such as housing affordability). Cities are also quite active in developing sustainability policies. For example, a non-profit organization in Seattle developed a set of sustainability criteria to help guide Seattle, and ultimately the surrounding King County, towards sustainability. Sustainable Seattle offers a complex set of community indicators to measure progress towards this goal.

Santa Monica also instituted a sustainability initiative. It centers on nine guiding principles articulated through eight goal areas (e.g., resource conservation, environment and public health, and economic development, etc.). For each goal, Santa Monica offers indicators and targets that it uses to evaluate its success with advancing sustainability.

The definitions of sustainability in our reviewed materials generally offer an overarching vision, an end-state, to which communities strive. That vision addresses all aspects of a community: the built and natural environment, economy and community. These three broad areas provide sufficient breadth to include the multitude of aspects determining community quality of life. But the specific policies and mechanisms to achieve these goals vary. For example, while San Mateo County provides broad policy statements to achieve sustainability, King County explicitly includes housing, and historic preservation, transportation, and environmental protection as part of its growth management policy.

Our research to date hasn't identified, at the County level, any policies or plans that consistently apply the concepts of sustainability to the full range of applicable growth policies. Though King County offers the most comprehensive growth policy by addressing such topics as transportation, environment, land use, affordable housing and design, and includes performance indicators, it does not explicitly pursue its goals under the concept of sustainability. And while many jurisdictions pursue smart growth, focusing on the location and design of development, this doesn't necessarily reflect the broader vision of sustainability, examining concepts such as whether or not suitable employment opportunities exist or whether housing remains affordable.

What Are the Obstacles to Sustainable Development?

By exploring what success looks like, impediments to that success emerge. The County should understand these obstacles and work together to overcome them.

- Lack of shared vision of Sustainable Development
- Lack of understanding of interdependence of economy, environment, and equity
- Limited transit access and choice
- Centers without sufficient mix and density
- Single-use development/Euclidean zoning
- Lack of affordable housing and transit options
- Development that does not respect community context.

How Can We Use the General Plan to Promote Sustainable Development?

The 1993 General Plan Refinement and the subsequent Master and Sector Plans embody Montgomery County's on-going commitment community development, smart growth, and environmental protection. Each of the elements of sustainable development is already to be found, implicitly or explicitly, in the General Plan Refinement (GPR), especially in the Guiding Principles and the Goals, Objectives and Strategies.

The Guiding Principles of the GPR

1. *Wedges and Corridors Concept*
   The Wedges and Corridors concept has shaped the County by channeling growth into the development corridors and an Urban Ring around Washington, DC. At the same time, Wedges of open space, farmland, and lower density residential uses have been preserved.

2. *Master and Sector Plans*
   The spirit and intent of the General Plan Refinement (GPR) is embodied and embellished by these plans. Each plan should attempt to provide a unique balance among all the goals of the GPR that are appropriate to its specific location and character within the composite framework of the county as a whole.

3. *Physically Concentrated Centers*
   The GPR encourages an efficient land use pattern of jobs, housing, and other uses within centers. The Refinement promotes mixed-use development and sensitive increases in intensity within appropriate boundaries in centers to control sprawl, to reduce energy consumption and pollution, to contain infrastructure needs, and to reduce development pressure on rural open space areas and farmland.

4. *Community Identity*
   The GPR recognizes the human need for social interaction and for communities that create a sense of pride, a sense of place, and a hometown atmosphere. It encourages public and private development whose architecture and design address these needs by incorporating individuality, civic features, and the opportunity for social interaction.

5. *Transit Serviceability*
   The GPR encourages land use patterns that can be served effectively by the County's integrated multi-modal transportation system. It emphasizes increased opportunities for alternatives to single-occupant auto travel and attention to the needs of pedestrians. Favoring transit can make more efficient use of the existing roadway network, reduce air pollution and increase access.

6. *Compatibility*
   The GPR encourages new development that will harmonize with the existing built environment and the natural environment. In some cases, this is a matter of scale and intensity. In other cases, compatibility is a question of location, function, or style.

7. *Variety and Choice in Housing, Jobs, and Transportation*
   The GPR supports the concepts of variety and choice to promote a strong and diverse economy, to meet the housing and employment needs of

current and future Montgomery County citizens, and to encourage effective and efficient transportation options.

8. *Resource Management*
   The GPR seeks to attain the most efficient and socially beneficial management of all Montgomery County resources, ranging from the natural environment to public and private finances, and the land itself.

9. *Environmental Protection*
   The GPR calls on development to protect the land, air and water resources that provide vital services, avoiding or mitigating potential negative impacts in order to balance the human need for places to live, work, and play.

10. *Public Investment*
    The GPR recognizes the importance of public investment to implement the Wedge and Corridor concepts of the Refinement.

Goals, Objectives, and Strategies

The Goals, Objectives, and Strategies of the GPR build upon the foundation of the guiding Principles, fleshing out their intent to define a position of growth directed and controlled to serve a larger public vision. When compared against the definition and elements of Sustainable Development, many of the goals and objectives fall short of the mark. This section reviews the GPR goals and objectives, and suggests a way to restate them that helps bridge the gap. The first part of each section quotes the specific wording of the GPR goal, then the relevant objectives are reviewed along with comments about missing sustainability elements and finally, a potential restatement of the goal is indicated in italics that better reflects issues of sustainability for that subject.

Land Use

> Achieve a wide variety of land use and development densities consistent with the “Wedges and Corridors” pattern. (p. 45)

This goal promotes sustainable development by focusing development at locations where infrastructure and density efficiencies begin to promote mixed-use, transit-oriented, and pedestrian-friendly communities. Several of the objectives begin to move towards a vision of sustainable communities by encouraging “identifiable centers of community activity” (Objective 2), the preservation of farmland and rural open space (Objective 4), and the provision of parks, recreation, and open space within developments (Objective 8). Objective 7, which encourages the coordination of housing, jobs, and retail in mixed-use areas, needs only to add transit to the mix to achieve the goal.

What is missing is a definitive statement of preference to focus future development at centers that combine housing, jobs, transit and recreation. Though implicit in the objectives, the development of mixed-use centers is essential to guiding sustainable development within the wedges and corridors scheme. The following principle of sustainable development makes that commitment explicit:

> *The County will reinforce sustainable land use patterns, promoting sustainable development as appropriate everywhere in the County, refining the "wedges and corridors" concept to a "wedges, corridors, centers," and links approach that focuses an active mix of uses in pedestrian friendly n community, town, and city centers that are interconnected with multi-modal transportation linkages.*

Housing

> Encourage and maintain a wide choice of housing types and neighborhoods for people of all incomes, ages, lifestyles, and physical capabilities at appropriate densities and locations. (p. 52)

It is supported by several objectives that encourage sustainable development by promoting affordable housing (Objective 4), housing options sufficient to allow aging-in-place (Objective 2), and mixed-use (again minus the essential transit component) communities (Objective 3).

Our proposed refinement makes explicit the need for affordable housing, but looks closer at the housing to make sure it responds well to its environment, both built and natural. Beyond the "sticks and bricks" of the housing itself, this principle of sustainable development emphasizes the necessity of that housing's proximity to transit and places to work and play:

> *A full range of housing options is vital to sustainable development. County development regulations, programs, and policies will seek to realize a diversity of well-designed, energy-efficient housing types and densities, linked closely to jobs, transit, and services for a mix of incomes and needs.*

Employment/Economic Activity

> Promote a healthy economy, including a broad range of business, service, and employment opportunities at appropriate locations. (p. 57)

Economic development is an essential component to sustainable development. Objective 3 encourages mixed-use opportunities to improve proximity between work and home and to promote small business. The proposed principle of sustainable

development elevates these essential concerns and specifies which are the most "appropriate" locations. It reinforces the idea that economy, environment, and social equity are inextricably linked:

> *The County continues to support a broad range of economic opportunities, from local entrepreneurs and national firms, by closely linking jobs with transit, housing, and services.*

Transportation

> Enhance mobility by providing a safe and efficient transportation system offering a wide range of alternatives that serve the environmental, economic, social, and land use needs of the County and provide a framework for development. (p. 63)

The expansion and integration of multi-modal transit opportunities linking housing, jobs, and retail is another key component of sustainable development. Three of the objectives in the GPR begin to actively support this goal by providing a transit system that is a viable alternative to single-occupant vehicle travel (Objective 4), includes pedestrian- and bike-friendly transportation and recreation options (Objective 6), and prevents further degradation of the overall quality of the air, land, and water in the provision and use of the transportation system (Objective 7). These goals and objectives work, as far as they go. Our proposed principle of sustainable development focuses on linking mixed-use civic centers, making central previously secondary ideas about convenience and affordability and begins to address the shared public/private responsibility for implementing sustainable development:

> *The County will work cooperatively with the private sector and all relevant public agencies to expand and enhance our public transit system to better connect jobs, housing, shopping, and recreation, focusing especially on community, town, and civic centers. Affordable and convenient multi-modal transportation and mobility options should be enhanced to reduce our dependence on single-occupancy driving, conserve resources, improve air quality, and reduce traffic congestion.*

Environment

> Conserve and protect natural resources to provide a healthy and beautiful environment for present and future generations. Manage the impacts of human activity on our natural resources in a balanced manner to sustain human, plant, and animal life. (p. 70)

Protection, maintenance, restoration, and enhancement of the natural environment are well defined and supported within the Goals, Objectives and Strategies. . The

proposed principle of sustainable development refines these goals by highlighting some of the central impediments to environmental sustainability and how sustainable development policies, programs, and projects might address them:

> *The County will protect the biological integrity of our natural resources to maintain a healthy and diverse ecosystem for present and future generations. County policies and projects will utilize the Principles of Sustainable Development, including resource efficiency, and land and resource conservation and protection to promote biodiversity, limit greenhouse gas emissions, and improve water and air quality.*

Community Identity & Design

> Although the role of government in creating community is limited, Montgomery County can establish the framework on which communities can evolve. This goal is one that guides the County's physical development so that it is conducive to the nurturing of community pride, social interaction, and identity. (p. 74)

Essential to creating sustainable communities is fostering a sense of place, an identity that encourages more day-to-day activities to occur locally. Each of the Objectives under this Goal strongly supports this. The GPR does not contain a Goal for Community Identity and Design as such, but the text begins to define a direction and intent about the role good design plays in supporting and building (literally and figuratively) sustainable communities. This proposed principle of sustainable development makes explicit the importance of this central role:

> *Design is the process by which we shape the built environment for living, working, and playing. Design excellence ensures that the form of the public realm not only facilitates function, but also creates an identity of place and a sense of community. This identity helps realize vibrant, sustainable communities, creating streets, neighborhoods, and cities where people can afford to live and want to live.*

Regionalism

> Promote regional cooperation and solutions to problems of mutual concern to Montgomery County, its neighbors, and internal municipalities. (p. 81)

As with some of the other goals, this one is strong in direction but limited in scope, both at the smaller and larger scales. At the smaller scale, many of the elements of sustainable development are administered by multiple agencies that have not established a common vision about the development in general, let alone

sustainable development. Their coordination and cooperation will be indispensable to implementing these principles. At the larger scale, we can no longer ignore the fact that development decisions we make in Montgomery County have impacts far beyond neighboring counties, indeed to the country and by extension the world. This proposed principle again refines and makes explicit the recognition of these relationships and shows a path forward:

> *The sustainable development of Montgomery County cannot be separated from its broader regional, national, and global contexts. The County recognizes the need for cooperation between County agencies addressing the diversity of issues involved in implementing sustainable development, and continues coordination and cooperation with its internal and neighboring municipalities in the Baltimore-Washington-Northern Virginia region and beyond.*

How Can We Move Forward?

To move closer to realizing sustainable development, the County should take three steps:

- Prepare principles of Sustainable Development to guide future review and revision of regulations, programs, and policies
- Identify a toolbox of opportunities to suggest how these principles can be realized
- Develop a set of indicators to provide an understanding of what is working and what is not

The previous section showed how the GPR principles could be redefined to focus on sustainability (see Table 1).

Table 1. Principles of Sustainable Development

1. Land Use
The County will reinforce sustainable land use patterns, promoting sustainable development everywhere in the County, refining the "wedges and corridors" concept to a "wedges, corridors, and centers*" approach that focuses density, transit, and an active mix of uses on community, town, and city centers.*

2. Housing
A full range of housing options is vital to sustainable development. County development regulations, programs, and policies will realize a diversity of well-designed, energy-efficient housing types and densities, linked closely to jobs, transit, and services for a mix of incomes and needs.

3. Economic Development
The County continues to support a broad range of economic opportunities, from local entrepreneurs and national firms, by closely linking jobs with transit, housing, and services.

4. Transportation
The County will work cooperatively with the private sector to expand and enhance our public transit system to better connect jobs, housing, shopping, and recreation, focusing especially on community, town, and civic centers. Affordable and convenient multi-modal transportation and mobility options help reduce our dependence on single-occupant driving, conserve resources, improve air quality, and reduce traffic congestion.

5. Environment
The County will protect the biological integrity of our natural resources to maintain a healthy and diverse ecosystem for present and future generations.. County policies and projects will utilize these Principles of Sustainable Development, including resource efficiency and land and resource conservation and protection, to promote biodiversity, limit greenhouse gas emissions, and improve water and air quality.

6. Design Excellence
Design is the process by which we shape the built environment for living, working, and playing. Design excellence ensures that the form of the public realm not only facilitates function, but also creates an identity of place and a sense of community. This identity helps realize vibrant, sustainable communities, creating streets, neighborhoods, and cities where people can afford to live and want to live.

7. County and Regional Cooperation
The sustainable development of Montgomery County cannot be separated from its broader regional, national, and global contexts. The County recognizes the need for cooperation between County agencies addressing the diversity of issues involved in implementing sustainable development, and continues coordination and cooperation with its internal and neighboring municipalities in the Baltimore-Washington-Northern Virginia region and beyond.

Sustainability and Growth Policy

One of the more challenging aspects of growth management is insuring: (1) that principles of sustainability are reflected in both policy and implementation, (2) that there is a mechanism for measuring the extent of our success in accomplishing that objective, and (3) that the process for accomplishing (1) and (2) is straight-forward and understandable.

In our work on sustainability, our group has reviewed this issue and is of the general opinion that growth management is one “bridge” between policy and implementation and is influenced over time by the principles of sustainability derived from our Community Based Plans *on a broader policy level* and by an established and credible indicator monitoring program *at a more narrow level closer to implementation*.

Applying Sustainability to Planning Policy

Currently the master and sector planning process is guided by the principles established in the General Plan Refinement and earlier generations of master plans. Historically, master and sector plan recommendations have mirrored the GPR format with recommendations by functional area (Land Use, Transportation, etc.). However, as the County progresses, master and sector plans should provide comprehensive and strategic guidance to address growth, specifically emphasizing sustainable development, to rationalize how multiple objectives are achieved and priorities chosen from among the many competing goals of the GPR.

A specific section or chapter that focuses on sustainable development should be included in all master and sector plans. This dedicated focus on sustainable development addresses specific choices made in each geographic area when implementing public projects and private development. Having master and sector plans address sustainability also provides the added emphasis that any anticipated growth in the future will be sustainable.

But growth policy also centers on the provision of adequate public facilities. So the question remains: how can the County best apply the concepts of sustainability to provide infrastructure that simultaneously addresses environmental, economic and equity concerns? The research suggests that measurable and incremental indicators play an important role as communities embrace sustainability, providing the opportunity to establish specific targets and evaluate progress in meeting specified goals. The indicators employed necessarily vary depending on the scale of application. In other words, the sustainability indicators relevant at the County level may be broader than those used at the city or neighborhood level.

Toolbox of Opportunities

Opportunities exist for the County to apply sustainability in a number of policies and ordinances that to ensure practical application of this broad concepts. Examples include:

County Wide Initiatives

- Capital Improvement Program
- Forest Conservation Program
- Green Infrastructure Functional Plan (including parks and conservation areas)
- Water Resources Element (required by HB 1141)
- Moderated Price Dwelling Units (MPDUs) and Workforce Housing
- Transferable Development Rights (TDRs) and Agricultural easements
- Local, Regional and Recreational parks
- Stream valley and conservation parks
- Jobs to housing balance
- Roadway system: highways, residential primary, arterials etc.
- Bikeway and path system: Class I (Shared Use), Class II etc
- Environmental Resource Inventories

Community/Neighborhood

- *Community Master and Sector Plans*: Specific areas in the County with recommendations on land use, transportation, public facilities, parks and open space, environment and implementation procedures.
- *Urban design*: Specific designs for streets and public spaces
- *Historic resources*: Preserving local and regional buildings, vitas or open spaces for future generations
- *Public facilities*: New facilities that serve existing and future communities
- *Transportation management*: Efforts to encourage residents use of transit-rail and bus-and reduce single-occupancy travel
- *Road network*: Proposed new roads or expanded street standards

Indicators

Many communities pursuing sustainability measure progress towards their goals using specific community indicators. The American Planning Association[4] defines community indicators as bits of information that, when combined, generate a picture of what is happening in a local system. They provide insight into the overall direction

[4] *Community Indicators.* Planning Advisory Service Report 517. December, 2003.

of a community, whether it is improving, declining, staying the same, or varying depending on a given measure. A combination of indicators offers a measuring system to provide information about past trends, current realities, and future direction to facilitate decision-making.

The APA report identifies four broad categories of community indicators:

1) Quality of life: indicators that can be used to monitor what constitutes a "good life" or "good society."

2) Sustainable development: indicators that measure progress toward sustainable development (as defined by the *Brundtland Commission*[5] in 1987), offering an opportunity to move beyond standard economic indicators, such as gross domestic product, to fully assess well-being.

3) Performance Evaluation: indicators that measure how efficiently an organization, such as local or state government, provides specific services or addresses key issues.

4) Healthy Communities: indicators that build on the World Health Organization's (WHO) Healthy Cities program that evaluates air quality, access to health care, and nutrition to compare citizens' health in different areas.

What Indicators Provide

A survey by the American Planning Association identified several key benefits that from the development and use of indicators. For example, indicators democratize information for its use by many constituencies. They also can embody the inherent values of a community, encouraging public sector responses that reflect these values.

Indicators represent a method to accurately gauge the economic, environmental and social conditions within a community over the long term, allowing for more effective and informed decision-making. Lastly, indicator systems or projects, when effectively designed and implemented, can improve evaluation of planning policy and actions by helping establish causality between planning interventions and outcomes.

Developing Community Indicators

While many communities have already developed community indicators, these are generally local initiatives that should reflect the specific attributes and concerns of a community. Based on the experiences of other jurisdictions, developing useful indicators requires extensive public involvement. Sustainability also requires

[5] The *Brundtland Commission* defined sustainable development as: development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

governmental support. For example, Santa Monica established an expert task force of community and business leaders appointed by the City Council. For Seattle, a non-profit organization leads development of indicators, with a board of directors composed of civic and business leaders and Seattle city government staff. In short, while different models may be used, each had support and participation from business, citizens, and the highest levels of local government.

But while communities take different approaches in developing suitable indicators, the dialogue between stakeholders both informs the process and engages the public to offer clear direction for the future. Generating a sustainability indicators program offers a logical compliment to effective growth policy by offering a means to accurately gauge the economic, environmental and social conditions within a community over the long term. And this ultimately allows for more effective and informed decision-making.

Creating an Indicator Program

A useful set of indicators should be able tell us whether urban quality and performance is improving or deteriorating in relation to desired targets. While it sounds simple, developing an indicators program that reflects the environmental, social and economic values of our residents, business leaders and politicians can be daunting, especially given our diverse population. First and foremost, creating a program should be as grassroots as possible with numerous opportunities for public input and involvement.

The County initially should establish a committee comprised of a broad cross-section of stakeholders to support the program's development and implementation. It is desirable that the County select core indicators for which data will be continually available and that allows the County to compare its progress to other jurisdictions, especially those in the Washington D.C. area. However, data availability should not be a limiting factor. Sustainable Seattle stresses that a lack of data on a key sustainability or livability issue may itself be an indicator that the issue has to-date received insufficient attention.

Generating a sustainability indicators program offers a logical compliment to effective growth policy. An indicators program could be used in many different ways including:

- Providing the basis for addressing issues of global climate change
- Improving the process for achieving the proper balance among the many county plans and policies
- Providing a compilation of information to be used by decision makers on an informal basis
- Becoming an extension of the Growth Policy trends analysis to monitor how well projects are assisting progress towards sustainability goals.

The Planning Department currently is exploring how the broader perspective of the sustainability principle may be applied to the 355/I270 Corridor Study. Of necessity, this initial effort at applying this broad principle to a local land use exercise will be conceptual in nature. But it is expected that the produce will yield some insights useful to the further refinement and practical application of this new approach.

Another place where sustainability principles have relevance is the Water Resources Element (WRE) of HB 1141. This legislation requires the County to amend its General Plan to address water resources-related planning issues. As the County's land use and zoning authority in Montgomery County, M-NCPPC will be the lead agency in coordinating and developing a Water Resources Functional Master Plan that will amend the General Plan and serve as an umbrella for all the area and sector master plans.

The plan will need to address how expected growth, as described in the General Plan will affect and be affected by local water-related limiting factors such as water supply, wastewater, stormwater, non-point source pollution, and water quality of receiving streams. This planning will help the County identify methods and strategies to address these limitations, which will avoid building moratoriums, public health hazards, and adverse environmental impacts. Phasing of growth, changes in growth plans, or changes in methods to address deficiencies may be necessary if there are growth limitations based on water resources-based considerations. This presents an opportunity to further explore sustainability as it relates to water resources and planned growth.

Recommendations

We face a tremendous challenge in the next decade: how to assure that all policy changes and physical investment in Montgomery County direct growth and development that is sustainable. We suggest the following actions to begin meeting that challenge:

- Work towards adopting a definition of sustainability tailored to the needs of Montgomery County for use in our County programs.
- Expand the goals of the General Plan Refinement to include appropriate sustainability principles.
- Incorporate into the Planning Board's existing 2007 work program initial efforts at further refining sustainability principles for application to land use related plans and studies, such as the 355/I270 Corridor Study and the State mandated Water Resources Element.
- Using this experience, undertake a public involvement process to establish countywide indicators and targets as soon as feasible within upcoming fiscal year budgets.
- Apply sustainability principles and goals to the analysis and evaluation of trends and actions that are part of the ongoing Growth Policy and Capital Improvements Program evaluation process.

APPENDIX

What have other American communities done?
Montgomery County is not alone in considering "growth" within the larger community-based framework of Sustainable Development. Indeed, it was the United Nations World Commission on Environment and Development that first undertook to demonstrate the interdependence of economic growth, social development, and environmental protection by defining Sustainable Development in the 1987 Brundtland Commission Report Our Common Future:

> Humanity has the ability to make development sustainable – to ensure that it meets the needs of the present without compromising the ability of future generations to meet their own needs.

In the United States, several large municipalities have utilized this basic definition to guide their development in more holistic terms. Below are five examples, three from California, one from Florida and one from Colorado. These examples illustrate how sustainability has been defined and how it can be used to guide planning decisions.

Marin County, CA
Marin Countywide Plan
Marin County defines Sustainability as:

> Aligning our built environment and socioeconomic activities with the natural systems that support life. In the long run, sustainability means adapting human activities to the constraints and opportunities of nature. Central to this definition is meeting the needs of both the present and the future.[6]

To implement this definition, the plan states twelve Guiding Principles "to design a sustainable future":

1. **Link equity, economy, and the environment locally, regionally, and globally.**
   We will improve the vitality of our community, economy, and environment. We will seek innovations that provide multiple benefits.

2. **Minimize the use of finite resources and use all resources efficiently and effectively.**
   We will reduce overall and individual consumption, and reuse and recycle resources. We will reduce waste by optimizing the full life-cycle of products and processes.

3. **Reduce the use and minimize the release of hazardous materials.**

[6] http://www.co.marin.ca.us/pub/fm/CWP05_WEB/CWP_Intro.pdf

We will continue to make progress toward eliminating the release of substances that cause damage to natural systems. We will use a precautionary approach to prevent environmentally caused diseases.

4. **Reduce greenhouse gas emissions that contribute to global warming.**
   We will join other communities addressing climate change by lowering our greenhouse gas emissions. We will increase the use of renewable resources, which do not have a negative impact on the earth's climate.

5. **Preserve our natural assets.**
   We will continue to protect and restore open space, wilderness, and damaged ecosystems, and enhance habitats for bio-diversity.

6. **Protect our agricultural assets.**
   We will protect agricultural lands and work to maintain our agricultural heritage. We will support the production and marketing of healthy, fresh, locally-grown food.

7. **Provide efficient and effective transportation.**
   We will expand our public transportation system to better connect jobs, housing, schools, shopping and recreational facilities. We will provide affordable and convenient transportation alternatives that reduce our dependence on single-occupancy vehicles, conserve resources, improve air quality, and reduce traffic congestion.

8. **Supply housing affordable to the full range of our members of the workforce and diverse community.**
   We will provide and maintain well-designed, energy-efficient, diverse housing close to job centers, shopping and transportation links. We will pursue innovative opportunities to finance senior, workforce, and special needs housing, promote infill development, and reuse and redevelop underused sites.

9. **Foster businesses that create economic, environmental, and social benefits.**
   We will support locally owned businesses and retain, expand, and attract a diversity of businesses that meet the needs of our residents and strengthen our economic base. We will partner with local employers to address transportation and housing needs.

10. **Educate and prepare our workforce and residents.**
    We will make high-quality education, workforce preparation, and lifelong learning opportunities available to all sectors of our community. We will help all children succeed in schools, participate in civic affairs, acquire and retain meaningful employment, and achieve economic independence.

11. **Cultivate ethnic, cultural, and socioeconomic diversity.**
    We will honor our past, celebrate our cultural diversity, and respect human dignity. We will build vibrant communities, and foster programs to maintain, share and appreciate our cultural differences and similarities.

12. **Support public health, safety, and social justice.**
    We will live in healthy, safe communities and provide equal access to amenities and services. We will particularly protect and nurture our children, our elders, and the more vulnerable members of our community.

Marin County provides an excellent example of aggressive visionary Sustainable Development Principles that address the conceptual as well as the policy area issues.

City of Santa Monica, CA

Santa Monica Sustainable City Plan

Santa Monica uses the Brundtland Commission definition of Sustainable Development as part of their Guiding Principles to "provide the basis from which effective and sustainable decisions can be made."[7]

1. **The Concept of Sustainability Guides City Policy**
   Santa Monica is committed to meeting its existing needs without compromising the ability of future generations to meet their own needs. The long-term impacts of policy choices will be considered to ensure a sustainable legacy.

2. **Protection, Preservation, and Restoration of the Natural Environment is a High Priority of the City**
   Santa Monica is committed to protecting, preserving and restoring the natural environment. City decision-making will be guided by a mandate to maximize environmental benefits and reduce or eliminate negative environmental impacts. The City will lead by example and encourage other community stakeholders to make a similar commitment to the environment.

3. **Environmental Quality, Economic Health and Social Equity are Mutually Dependent**
   Sustainability requires that our collective decisions as a city allow our economy and community members to continue to thrive without destroying the natural environment upon which we all depend. A healthy environment is integral to the city's long-term economic and societal interests. In achieving a healthy environment, we should ensure that inequitable burdens are not placed on any one geographic or socioeconomic sector of the population and that the benefits of a sustainable community are accessible to all members of the community.

[7] http://santa-monica.org/epd/scp/guiding.htm

4. **All Decisions Have Implications to the Long-term Sustainability of Santa Monica**
   The City will ensure that each of its policy decisions and programs are interconnected through the common bond of sustainability as expressed in these guiding principles. The policy and decision-making processes of the City will reflect our sustainability objectives. The City will lead by example and encourage other community stakeholders to use sustainability principles to guide their decisions and actions.

5. **Community Awareness, Responsibility, Participation and Education are Key Elements of a Sustainable Community**
   All community members, including individual citizens, community-based groups, businesses, schools and other institutions must be aware of their impacts on the environmental, economic and social health of Santa Monica, must take responsibility for reducing or eliminating those impacts, and must take an active part in community efforts to address sustainability concerns. The City will therefore be a leader in the creation and sponsorship of education opportunities to support community awareness, responsibility and participation in cooperation with schools, colleges and other organizations in the community.

6. **Santa Monica Recognizes Its Linkage with the Regional, National, and Global Community**
   Local environmental, economic and social issues cannot be separated from their broader context. This relationship between local issues and regional, national and global issues will be recognized and acted upon in the City's programs and policies. The City's programs and policies should therefore be developed as models that can be emulated by other communities. The City will also act as a strong advocate for the development and implementation of model programs and innovative approaches by regional, state and federal government that embody the goals of sustainability.

7. **Those Sustainability Issues Most Important to the Community Will be Addressed First, and the Most Cost-Effective Programs and Policies Will be Selected**
   The financial and human resources which are available to the City are limited. The City and the community will reevaluate its priorities and its programs and policies annually to ensure that the best possible investments in the future are being made. The evaluation of a program's cost-effectiveness will be based on a complete analysis of the associated costs and benefits, including environmental and social costs and benefits.

8. **The City is Committed to Procurement Decisions which Minimize Negative Environmental and Social Impacts**
   The procurement of products and services by the City and Santa Monica residents, businesses and institutions results in environmental, social and economic impacts both in this country and in other areas of the world. The City will develop and abide by an environmentally and socially responsible

procurement policy that emphasizes long-term values and will become a model for other public as well as private organizations. The City will advocate for and assist other local agencies, businesses and residents in adopting sustainable purchasing practices.

9. **Cross-sector Partnerships Are Necessary to Achieve Sustainable Goals** Threats to the long-term sustainability of Santa Monica are multi-sector in their causes and require multi-sector solutions. Partnerships among the City government, businesses, residents and all community stakeholders are necessary to achieve a sustainable community.

These principles function largely as a statement of commitment to the goals and general implementation of Sustainable Development. While the guiding principles remain conceptual, Santa Monica has developed eight areas for which it has set performance goals and measurement indicators:

1. Resource Conservation
2. Environmental and Public Health
3. Transportation
4. Economic Development
5. Open Space and Land Use
6. Housing
7. Community Education and Civic Participation
8. Human Dignity

The structure of these goal areas and indicators will be addressed later in the discussion of indicators.

San Mateo County, CA

Sustainable San Mateo County Initiative

San Mateo County provides a definition of Sustainable Development and follows up with measurement Indicators. For San Mateo:

> Sustainability is a shorthand term for viewing the relationship between our actions today and their affect on the future. Living sustainably means that we meet today's needs without compromising the ability of future generations to meet their needs.
>
> Sustainable planning recognizes the interconnections between the environment, economy, and society. A disruption in any one area affects the health of the other two. Discussions of sustainability often cite the three Es: Environment, Economy, and social Equity. At Sustainable San Mateo County, we focus on how all these areas affect the health of our region.[8]

[8] www.sustainablesanmateo.org

In addition to this definition, the Initiative explicates each of the "three Es":

Environment

Vital communities have clean air, water, and are free from pollution. A healthy environment is one where resources are replaced, not depleted. Healthy environments include natural spaces where non-humans can thrive.

Economy

Vital communities have strong economies. They foster sound businesses, government, and non-profit entities. They provide jobs, meet basic community needs, and offer a ground for innovation. A strong economy creates a solid foundation for society.

Social Equity

Vital communities meet the needs of all their citizens. They provide good schools, affordable housing, and the basic services that enable even the least affluent to live comfortably. A healthy society fosters a wide sense of individual responsibility for the community.

Denver, CO

Greenprint Denver Initiative

The Greenprint Denver Initiative was launched by the city's mayor to address issues of Sustainable Development. The Initiative defines Sustainable Development to:

> Balance economic, social and environmental impacts of our actions. Greenprint Denver is an effort to fully integrate sustainability as a core value and operating principle in Denver city government. [9]

The Initiative has seven Guiding Principles:

- Communicate sustainability as a public value and expanding the concept of the city as a steward of public resources.
- Support sustainability as a core business value to improve efficiencies in resource use, reduce environmental impact and invoke broad cultural changes.
- Incorporate "triple bottom line" analysis (seeking to balance economic, social and environmental considerations) into all city policy and program decisions.
- Set clear metrics of success and report on our progress moving forward through annual report cards.
- Pursue activities that support environmental equity and health for all citizens.
- Partner with community organizations, cultural institutions and businesses to achieve broad Impact.

[9] www.greenprintdenver.org

- Lead by example in City practice wherever possible.

The Austin Matrix for Evaluating the Capital Improvement Program

Austin's Sustainability Matrix was devised to help provide an indication to the community of whether or not a project would help move towards identified sustainability goals and objectives. After establishing these goals, Austin developed it matrix to equally evaluate environmental, economic and equity concerns. The matrix included the following 13 criteria:

Public Health/Safety (13 points)
Maintenance (13 points)
Socioeconomic Impact (10 points)
Neighborhood Impact (11 points)
Social Justice (12 points)
Alternative Funding (5 points)
Coordination with Other Projects (6 points)
Land Use (10 points)
Air Impact (4 points)
Water Impact (4 points)
Energy Impact (4 points)
Biota Impact (4 points)
Green Building (4 points)

Austin developed these criteria to evaluate, and assigned specific weighting to each. City government departments scored projects, while a City Sustainability Officer appointed by the City Manager reviewed scores. This ensured some consistency in what Austin recognized was a largely subjective process.

In discussing lessons learned, Austin did not view the matrix as a likely final determinant to project selection. However, the dialog resulting from the matrix served to greatly further understanding of sustainability within various city departments. For example, departments followed certain building guidelines more closely in order to achieve higher matrix scores.

The key points from Austin are that the concepts of sustainability, themselves subjective, can be systematically included to better evaluate capital improvement projects. And by creating greater dialogue between departments, the Austin example illustrates that tools like a matrix, which attempt to both identify and quantify impacts, effectively encourage the use of more sustainable practices. By articulating sustainability in its policies, by establishing clear sustainability goals and objectives in master plans, and by supplementing these policy efforts with analytic processes to evaluate capital improvement projects, the County could potentially direct development and provide infrastructure to more effectively balance economic, environmental and equity concerns.

Common Indicators from Around the U.S.

An indicator presents a trend over time to allow residents and decision makers to track and monitor select social, economic and environmental conditions. Indicator programs recognize that communities are complex, dynamic natural and human settlements and, therefore, attempt to measure progress toward specific quantifiable goals or targets. Indicators simplify vast amounts of information and data, and thus provide a common ground on which communities create relationships, build trust and consensus, and base decisions.

Numerous jurisdictions across the county have successful indicator programs, several of which were studied by the sustainable growth team: Sustainable Seattle; King County, Washington; Santa Monica, California; San Mateo, California; and Marin County, California. With the exception of Sustainable Seattle, which is run by a citizen-managed non-profit organization, these programs are operated by government entities.

These programs are successful largely because they represent the values, interests and concerns of key stakeholders in their respective jurisdictions. Redefining Progress, a non-profit organization based in California that tracks indicator programs nationwide, identifies 11 important characteristics of indicators:

1. Relevant. The indicator tells you something about the system you need to know, and it is meaningful to your community.
2. Valid. Understandable rationales exist for using both the specific indicator and for drawing conclusions from it.
3. Credible. Community members must believe it important to measure.
4. Measurable. Data must exist that are relevant and linked to goals/targets.
5. Consistent and Reliable. The data must be available over time.
6. Comparable. Community and civic leaders should be able to use the data to compare progress to other jurisdictions.
7. Understandable. Indicators must be simple and logical
8. Leading. Like the canary in the coalmine, an indicator should forewarn of developing problems.
9. Compelling and interesting. Remember, you must be able to communicate results and grab people's attention.
10. Engaging to local media.
11. Accessible and affordable.

Generating a sustainability indicators program, or at least identifying the framework for developing such a program, offers a logical compliment to effective growth policy. Indicators, developed by stakeholders from the community, business and government, provide an opportunity to clearly measure progress and evaluate success. Ultimately, indicators provide an additional tool for better policy formation, allowing decision makers to establish causal links between planning interventions and outcomes. Any developed indicators would then function as the backbone for the forthcoming Energy and Environment Functional Master Plan Process, during which additional quality of life indicators not necessarily limited to growth policy could be identified.

Common Indicators from Around the U.S.

The indicators included in this table represent those indicators we found most relevant to growth policy issues and for which Planning Board or County Council decisions on growth and development could alter an indicator's progress or trend. We broadly grouped similar indicators based essentially on the pillars of sustainability described above—environment, social/equity and economy—and further subdivided them to improve organization and readability. The table shows which indicators repeat and where categories of indicators are similar and at times identical. With the current county focus on green building, we added the draft Leadership for Energy and Environmental Design (LEED) for Neighborhood Design to illustrate measurable attributes of community design that could support sustainability.

Indicator Category	Sustainable Seattle	King County	Santa Monica	San Mateo County	Marin County	LEED-ND
Environment – Land Use and Transportation						
New Construction in Urban Areas		Urban Center Residential Permits As Percentage of Total Permits	Percent of residential, mixed use projects within ¼ mile of transit nodes			
Land Consumption		Ratio of Land Development and Population Growth Percentage of New Housing Built on Redevelopable Land				A variety of housing sizes and types that achieves 0.5 according to the Simpson Diversity Index
Parks and Open Space	Number of city residents within 1/8 mile of open space	Acres Per 1,000 Residents	Acres of public open space by type Percent of	Acres per 1000 residents	Acres of county-owned neighborhood parks	Parks, green plazas or squares are at least 1/6 acre in area, and at least 150' in widthActive open space (playfields etc): of at

Common Indicators from Around the U.S.

Indicator Category	Sustainable Seattle	King County	Santa Monica	San Mateo County	Marin County	LEED-ND
			households and population within ¼ and ½ mile of a park			least 1 acre lies within ½ mile walk distance of 90% of dus and non-residential projects larger than 7 acres-all parks shall average at least ½ acre in size
Modes of Travel		Percent of Population By Mode Choice For Work Trips Percent Change In Jobs & Bus Ridership Change In Average Commute Time For County Residents Percent Increase In Use – Commercial vs Non Commercial Vehicles	Number of trips by type Average vehicle ridership Annual bus and transit ridership Average Vehicle Ridership of businesses with greater than 50 employees Percent of residents who have used a sustainable mode in the last month	Commute in County By Mode	Modal travel split Countywide Modal split by County employees	Implement a TDM program that reduces weekday peak period by at least 20% compared without any TMD requirements Sites with transit service of 20 or more accessible transit service per day; in a MPO and transportation analysis zone where VMT per capita or SOV driving mode share is no more than 80% of the average of the metro region as a whole

Common Indicators from Around the U.S.

Indicator Category	Sustainable Seattle	King County	Santa Monica	San Mateo County	Marin County	LEED-ND
Vehicle Miles Traveled		Vehicle Miles Traveled In County – Total & Per Capita	Total VMT	VMT Within County		Development within MPO and within Traffic Analysis Zones where VMT per capita or SOV driving mode share has been demonstrated to be no more than 80% of the average of the region as a whole
Bicycle Lanes and Paths			Percent of arterial streets with bike lanes, Total miles of bike paths		Miles of Class I and Class II bicycle paths	50% of dwelling units and business entrances are within 3 miles of at least 4 or more diverse uses using an existing biking network; or 50% of all buildings are located within ¼ mile walk to multi-use trail or Class I bicycle trail of at least 3 miles in length
Bicycle and pedestrian safety			Annual number of bicycle and pedestrian collisions with motor vehicles			
Traffic Congestion – Level of Service			Number of signalized intersections and local streets with LOS D or lower		Average congestion delay	

Common Indicators from Around the U.S.

Indicator Category	Sustainable Seattle	King County	Santa Monica	San Mateo County	Marin County	LEED-ND
Residential/Mixed Use Projects in proximity to transit			Percent of Residential/Mixed Use Projects within ¼ or ½ mile of transit			Locate development that is near existing or planned transit service so that at least 50% of dwellings and business entrances are within ¼ mile walk distance of bus or streetcar stops or within ½ mile walk distance of bus rapid transit stops
Environment – Ecology, Energy and Public Health						
Air Quality		Number of Days In A Year In Each Air Quality Category		Number of Days Over California Standard	Greenhouse gas emissions from county government sources	Supports the design and construction of energy efficient buildings to reduce air pollution and environmental impacts from energy production; Demonstrate a minimum 10% of proposed building performance compared to the baseline building performance rating per ASHRAE/IESNA Standard 90.1.2004
Energy Consumption		Per Capita Energy Consumption – BTU's Per Year			Fuel consumption by County vehicles Number of zero or low-emission County vehicles	Reduce energy consumption and production by increasing the efficiency of the power delivery system; onsite energy generation system with peak electrical

Common Indicators from Around the U.S.

Indicator Category	Sustainable Seattle	King County	Santa Monica	San Mateo County	Marin County	LEED-ND
					Electricity use per employee in County buildings Total MW of County photovoltaic systems	generating capacity of at least 5%; incorporate on-site nonpolluting renewable energy
Water Consumption		Total & Per Capita Consumption – Gallons Per Day		Per Capita Water Consumption	Water usage by County facilities	*Non-residential:* Employ strategies that in aggregate use 20% less water than the water use baseline *Residential:* Average flow rate of all lavatory faucets and shower heads must be <2.0 GPM; landscaping does not require permanent irrigation systems
Surface and Groundwater Water Quality		Proportion of Streams In Each Biotic Status Levels of Arsenic, Nitrate & Lead		Number of and amount of Organic Chemicals Found in Drinking Water	Water quality (Macro – invertebrate diversity)	
Impervious and Pervious Surfaces	Percent of land identified as urban or		Percent of Permeable land area		Percent of land preserved Miles of open	*Non-Roof*: Shade trees; paving materials with a Solar Reflectance Index (SRI) of

Common Indicators from Around the U.S.

Indicator Category	Sustainable Seattle	King County	Santa Monica	San Mateo County	Marin County	LEED-ND
	residential		Percent of open space that is permeable		space trails	at least 29; open grid pavement system; place a minimum of 50% of parking spaces *Roof*: Use roofing materials that have a SRI of 29 or 78 depending on the roof slope; Green-vegetated-roof for at least 50% of roof area
Biodiversity				Total Number of Plant and Animal Species Listed as Rare Threatened and Endangered	Presence of key indicator species	Protect species and ecological communities-comply with Habitat Conservation Plan under Endangered Species Act
Tree Protection and Conservation			Percent of tree canopy coverage by neighborhood Percent of newly planted and total trees that meet defined sustainability criteria			Use native trees and plants

Common Indicators from Around the U.S.

Indicator Category	Sustainable Seattle	King County	Santa Monica	San Mateo County	Marin County	LEED-ND
Social Equity						
Supply and Demand for Rental Units		Number of Affordable Rental Units By Income Group				15% of total rental units priced for 50% of area median income; at least 30% of rental units should meet 80% area median income
Home Purchase Affordability	% Market price of housing that is above affordable level	Gap Between Affordable Price For Median HH and First Time Buyer HH Compared To Median Home Value	Average cost of home ownership	Average cost of home ownership		10% of new for-sale housing is priced for households up to 80% of area medial income; 20% of households up to 120% median income
Existing Housing Units Affordable to Low Income Households		% of Countywide Housing Affordable to Low Income Groups	Percentage of households who can afford average cost of housing			
Economy						
Location of Employment		Percentage of New Jobs Created In Urban Centers	Percent of county employers who live in County			

Common Indicators from Around the U.S.

Indicator Category	Sustainable Seattle	King County	Santa Monica	San Mateo County	Marin County	LEED-ND
New Housing Units Built Through Redevelopment						
Balance of jobs and housing		Change In Jobs Per Housing Units In King & Surrounding Counties	Ratio of housing to jobs			Include a residential component equaling at least 25% of the development's total building sq.ft.; locate development within ½ mile walk distance of a # pre-development jobs;
Agriculture	Number of traditional farms Number of organic farms and Number of farmer's markets and vendors Acres in King County with Agricultural Zoning		Percentage of local produce served at County-owned facilities Annual number of farmers markets			Dedicate permanent and viable growing space and/or related facilities per square feet-related to residential development; alternative is to purchase shares in Community Supported Agriculture program; proximity to a farmer's market-1/4 mile