



MONTGOMERY COUNTY PLANNING DEPARTMENT
THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION

September 24, 2007

Memorandum

To: Montgomery County Planning Board

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Re: Further *“Toward Sustainable Growth for Montgomery County: A Growth Policy for the 21st Century.”* Addressing Issues Raised in Response to the Planning Board’s *Final Draft 2007-2009 Growth Policy*

SUMMARY

In May 2007, the Montgomery County Planning Board transmitted a report to the Montgomery County Council entitled, *“Toward Sustainable Growth for Montgomery County: A Growth Policy for the 21st Century.”* That report responded to the County Council’s request for analysis and recommendations concerning the County’s growth policies, impact taxes, and adequate public facilities ordinance. Much of the report focused on the Planning Board’s recommendation to move beyond *adequacy* to *sustainability* as the key concept underlying growth management in Montgomery County. Moving *beyond adequacy* does not mean that the County should no longer require that public facilities be adequate to support growth. Instead, it is a recognition that adequacy alone does not encompass all of the aspects of growth that are important to the County and its future.

The Planning Board’s report was the subject of public hearings and County Council worksessions in June and July. When the County Council adjourned for its August recess, it requested that the Planning Board and staff conduct some additional analysis based on issues raised by Councilmembers and others over the summer. These specific issues are included in a memo from Council President Praisner, attached. Several of the options mentioned in the attachment do not require additional work, but

others were to be addressed with staff work over the August break – and still others require more work than can be completed in a month or two.

This memorandum responds to the Council’s request for additional information about the next steps for both the sustainable growth and design excellence recommendations for the Planning Board. It addresses the questions, concerns, and new ideas expressed in response to the proposed transportation and school adequacy tests, and it provides requested impact tax analysis.

The Council’s Planning, Housing and Economic Development Committee is scheduled to take up the Growth Policy resolution on October 1, and the Management and Fiscal Policy Committee is scheduled to resume work on impact tax/recordation tax issues in mid-October.

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SUSTAINABLE QUALITY OF LIFE

Recommendations

The Planning staff asks that the following recommendations be transmitted to the County Council for further strengthening the Growth Policy report with respect to Sustainable Growth.

- 1) Sustainability should be the overarching vision for decisions about growth and redevelopment in Montgomery County.
- 2) The proposed Growth Policy resolution should be amended to require the Planning Board to combine Sustainability and Quality of Life indicators and develop a set of *Sustainable Quality of Life Indicators*.
- 3) The initiative should involve the public, county agencies and other stakeholders in a significant, inclusive public participation program to set the vision and goals that will be used in formulating the Indicators.
- 4) To the extent possible, the indicators program should be conducted on a timeline so that products are available for use as input to the 2009 Growth Policy. Planning staff notes that our survey of other jurisdictions suggests that similar projects take between 18 months and two years.
- 5) The Planning Board will request supplemental resources to conduct this effort in the FY08 work program.
- 6) As part of the ongoing work program on Growth Policy, propose targets for each indicator for public review and comment and consideration and adoption by the Planning Board and County Council.
- 7) Develop an ongoing public participation process to provide continuous feedback on progress of the indicators, public policies and programs.

Issues Raised by the Council

As the Chairman's transmittal letter to the Council predicted, the majority of the Council's worksession time was spent on transportation and schools adequacy and paying for growth. However, the Planning Board's sustainability recommendations – including the establishment of a sustainability indicators program – were positively received.

Councilmember Knapp asked how the Planning Board's APFO and infrastructure financing recommendations moved the County closer toward sustainability. They do so principally in two ways:

- Policy Area Mobility Review moves the focus of the test for transportation adequacy away from a roadway-based approach and toward a mobility-based approach which recognizes that sustainable transportation solutions encompass more than the automobile.

- Setting impact tax rates to capture 100 percent of the cost of infrastructure is more fiscally sustainable than allowing new development to create deficits that must be supported by other sources.

Attached is a memorandum from Councilmembers Praisner and Berliner requesting more information about the next steps in the indicators program and Chairman Hanson’s response. In August and September, Planning staff (with the assistance of a graduate intern from the University of Maryland) conducted additional research on the processes used by other jurisdictions. Staff used this information to supplement their earlier recommendations, forming the basis of this memo.

During the Council worksession on the Growth Policy (and in the memo from Councilmembers Praisner and Berliner), we were asked to combine the sustainability indicators program with quality of life indicators. Although staff does not believe that *quality of life* and *sustainability* are the same thing, there is considerable overlap in the two concepts. In concept, the combination of the two into *Sustainable Quality of Life Indicators* encompasses the desire to sustain not just adequacy, but to achieve higher goals. Those goals should still be aimed at a quality of life that does not compromise the ability of future generations to have that same quality of life or better.

Planning for, and establishing indicators of a sustainable quality of life for Montgomery County residents, workers and businesses will move the County in a positive, reinvigorating direction and provide a direct link to our constituents. Engaging the public and stakeholders in an ongoing discussion of their vision both quality of life and sustainability will raise awareness of the opportunities and choices that face the County and allow positive interaction with our programs and policies.

Well-designed, sustainable growth and development will allow the County to explore combining many existing efforts with new information and trends to do the following:

- a) Address climate change*
- b) Increase proximity of people to work and other desirable activities**
- c) Create an interesting and safe environment**
- d) Integrate the natural and built environments*
- e) Include design for active and healthy living*
- f) Provide access to high quality transportation and offer transportation choices**
- g) Maximize building energy efficiency and utilize environmentally sound construction materials and techniques*
- h) Create new and preserve existing open and recreation spaces**
- i) Build green*
- j) Include a range of housing types and affordability**

* County already pursues this goal in a limited way

** County already pursues this goal in a substantial way

- k) Reduce the impact on natural resources*
- l) Pay the average marginal costs of needed facilities*
- m) Work economically for the County**
- n) Empower residents to participate in decision making processes**
- o) Reflect and respect the values of residents and workers**
- p) Promote social equity and fairness*

Summary of Survey of Other Jurisdictions

Planning staff surveyed eight other jurisdictions that have had indicators programs in place for 2-22 years. All reported that their programs have been valuable, are still vital and provide useful information to citizens and policymakers. The full report on the survey, conducted by Brooke Taylor (a graduate student intern) follows.

These programs often have many indicators. The jurisdiction surveyed had between 19-150 individual measures that are usually combined into 10 or fewer categories. Of those surveyed, Jacksonville, Florida and Charlotte, North Carolina were most similar in population size and area to Montgomery County. The survey found the following important characteristics of successful programs in four categories:

Developing an Indicators Program

- Start with a clear shared community vision
- Use vision for goal and targets for the indicators.
- Determine whether indicators are descriptive (just state facts, track trends) or prescriptive (set goals and targets to meet).
- Determine what is important for analyzing “quality of life” or “sustainability.”
- Determine the level of geography used for each indicator.

Public Participation

- Open and inclusive from the beginning.
- Public participation should have strong roots in the community.
- Targeted participation (selection of certain individuals, experts, sectors of the community) may be useful to maximize meaningful positive public feedback.
- Think about who needs to be invited to the table to make decisions

Program Implementation

- Need for both top-down support (from elected officials) and bottom-up support (from public).

- Start small/manageable. Limit the scope or number of indicators.
- Be realistic with regard to the project timeline.
- Focus on the long view and on consistency. Do not change indicators for 3-5 years.
- Distribute the report widely.
- Once selected, “ownership” or “adoption” of indicators is essential.

Adequate Resources

- Support program with adequate resources, including staff assigned to the program and consultant support.
- Truckee Meadows received a grant of \$500,000 for their program.
- Jacksonville says that it currently takes about \$40,000 per year to maintain and update their program.

Next Steps

Developing a set of Sustainable Quality of Life Indicators is a long-term, serious effort. It should be tied into every facet of planning and, eventually, programs and policies of the County. The first step would be to amend the Growth Policy resolution so that it directs the Planning Board to develop Sustainable Quality of Life Indicators with the immediate step of returning to the Council with a supplemental budget request and a revision to the Planning Department’s work program to accommodate the project. The following changes are proposed:

F2 Sustainability Indicators Program: The Planning Board, with the aid of the Executive and with broad public participation, must develop a set of sustainable quality of life indicators addressing issues of environment, social equity, and economy. These recommended indicators must be suitable for guiding land use and other public policy decision-making, including capital programming and design of public facilities. An initial set of tracking indicators should be prepared in time to inform the 2009 Growth Policy review. The public participation effort will extend well beyond this period and require the assistance of a skilled consultant to prepare materials and organize outreach events. Supplemental funding to support the consultant services and staff supervision will be needed to meet the goals and timeline.

Perhaps the most productive and rewarding side of all the programs we have investigated is public awareness and participation. Public outreach on this issue is something that interests all communities and cultures. Even if there are some “standard” indicators established early in the process, a sustained effort to involve residents, stakeholders and schools in setting additional indicators and targets will result

in an informed and involved constituency. Later in this memo staff highlights the characteristics of a proposed public outreach program. The objectives of the public outreach program should include:

- Broad spectrum of stakeholders
- Education and awareness a key focus
- Involve schools, libraries, institutions, internet community

The sustainability of the indicators program itself will rely on a continuous, funded program to provide long term public involvement and feedback to the indicators, master plans and the CIP process. If the program is to remain vigorous, it must receive constant renewal with newcomers and young people as they mature. Specific groups or neighborhoods may even develop their own indicators that inform the progress of their own neighborhoods, businesses and civic efforts toward a sustainable quality of life.

Planning staff recommends that an expert panel be convened from the various governmental agencies, educational institutions, research establishments and technical groups to assure the scientific, technical and statistical soundness of the indicators. They can also assist in finding the appropriate data to measure progress. That data must have the following characteristics to serve as indicators:

- Available data in time series
- Provides accurate measurement
- Can be used to compare different parts of the County
- Can be influenced by growth policy or expenditure of public funds

All the programs we investigated had significant resources assigned to the effort. The projected cost of staff and consultant services for Montgomery is anticipated to be approximately \$500,000 over two years, with some ongoing funding for outreach annually to continue the program.

Current and Future Plans and Projects

Early work on the Sustainable Quality of Life Indicators will inform the Zoning Code Re-write and the Housing Policy Element of the General Plan projects that are currently underway, as well as the continuation of the Growth Policy's design excellence program. These projects will also inform the Sustainable Quality of Life Indicators program in return.

An indicators program is truly useful when it forms the basis for future work program projects. In the Growth Policy, the Planning Board recommends additional studies and initiatives to continue progress toward a sustainable growth policy for Montgomery County. These include studies that explore additional issues related to transportation tests and impact taxes. Planning staff is suggesting some refinements to those studies in this report.

As an example of how the Sustainable Quality of Life Indicators program can shift the direction of these future Growth Policy studies, we note that *vehicle miles of travel* and *greenhouse gas emissions* have been proposed as important indicators of the County's progress toward sustainability. If, for example, vehicle miles of travel (VMT) is selected by Montgomery County as an indicator, and a goal of reducing VMT is adopted, then it is a logical next step to revise the Growth Policy's to test new development for its effect on VMT.

Councilmember Elrich expressed his interest in pursuing reductions in VMT and CO2 emissions through the Growth Policy and other avenues, as has the Coalition for Smarter Growth and its local partner, the Action Committee on Transit. In the Coalition for Smarter Growth's latest newsletter, Community Clips, they report:

The Coalition for Smarter Growth and local partners are recommending judging new growth based on how many vehicle miles traveled and global warming emissions are generated. For proposed projects that generate high levels of vehicle miles traveled, the project could be required to reduce vehicle miles traveled through changes in mix of uses, design, transit and street investments, pricing parking and other approaches. If vehicle miles cannot be sufficiently reduced through mitigation, then the project would be disallowed from moving forward.

The Coalition for Smarter Growth has also proposed changing the impact tax regimen to support reductions in VMT, possibly by charging impact taxes on parking spaces. Although we are not endorsing that approach, staff is recommending that the County pursue a comprehensive parking policy and additional work on impact tax issues to support the County's sustainable quality of life objectives.

In the Planning Board Chairman’s budget priorities letter to the County Council President Praisner, several proposed initiatives are closely aligned with a sustainable quality of life indicators program. This includes the proposal for an *Energy Conservation and Environmental Protection Plan* with specific mandates and methods to create a greener future for the County and reduce greenhouse gas emissions. The Plan could include recommendations to:

- Provide information for a set of environmental indicators
- Increase pervious and semi-pervious area and tree planting
- Establish forest banking for carbon sequestration
- Adopt design standards and guidelines for energy conservation, water conservation and material reuse
- Provide for restoration of water quality in intensely developed areas
- Increase non-SOV travel mode share countywide

Ultimately, the Sustainable Quality of Life Indicators will be a touchstone, or reference point, for the core mission of the Department: master planning and development review.

Detailed Results: Survey of Other Jurisdictions

The Montgomery County Planning Department contacted 11 jurisdictions that have implemented indicator programs. Eight were available to discuss their efforts, and the data below summarizes answers to a telephone questionnaire that was administered to them. Key findings are detailed in below, followed by a discussion of how this may help Montgomery County implement an indicators program. Appendix A includes two tables that provide characteristics about each of the eight indicator programs, including the date the program started, the number and category of indicators, goals of the program, contact information, size of the jurisdiction population, and size of the jurisdiction land area. Appendix B provides detailed feedback received from the questionnaire, and Appendix C discusses the public participation component.

Key Findings From Questionnaire

Sustainability/Quality of Life Plan Development

- *Impetus for indicators project development:* The impetus for indicator projects differed widely across organizations contacted. Reasons cited for implementation include: desire to measure “quality of life” (Jacksonville); recommendation from a departmental task force in response to global environmental concerns and international conferences (Santa Monica); long term research funding (Boston); requirement as part of a state plan (Oregon); improvement of inner-city neighborhoods (Charlotte); and conception of private non-profit (San Mateo).
- *How indicators programs work:*
 - Many programs have large-scale, general indicator sectors (e.g. economy), goals (e.g. economic strength and resilience), and specific individual indicator measures (e.g. unemployment rate).
 - The development and maintenance of indicators programs varied widely across organizations contacted. Development processes cited included a citizen review committee in conjunction with the Chamber of Commerce (Jacksonville); Board of Directors in conjunction with experts in the field (Oregon); a sustainable city plan with 2010 performance-based targets (Santa Monica); and a small number of non-profit staff members in conjunction with several dozen community volunteers (San Mateo).
- *Aspects of the plan’s development that are integral to its overall success:* Citizen participation for support, buy-in, and ownership was by far the most cited factor in the success of indicator projects (Boston, Jacksonville, Sarasota, San Mateo). This also includes “adopt an indicator” programs to increase project ownership (Truckee Meadows). Vision and specific goal areas was also mentioned (Santa Monica). Long view and consistency was included as well (Charlotte). It was also noted that projects should be limited in scope, and realistic about timelines (Santa Monica).
- *Primary stakeholders:*
 - Stakeholders varied widely depending on what type of organization had ownership over the indicators project. Generally speaking, government leaders, business leaders, and the general public played a major role in all the indicator programs contacted.
 - Specific examples of stakeholders cited include: the United Way, commercial services, The Chamber of Commerce, local government, and environmental groups were all invited (Jacksonville); Governor (chair of

Oregon Progress Board), representatives from districts in the state (Oregon); city staff, Task Force on the Environment, Council (Santa Monica); SCOPE (non-profit which does indicator work), community at large, nonprofits (Sarasota); Planning Department, Police Department, County Department of Social Services, School System, Mental Health, Researchers (Charlotte).

- *Benefits of having a sustainability plan:* Benefits were cited from many of the organizations contacted. These include: better allocation of resources (Santa Monica); better communication with the constituency (Santa Monica); real-world performance benefits (Santa Monica); acquisition of additional funding (Boston); sharing of ideas and data with other groups (Boston); ability to develop visual tracking method of progress (i.e. maps) (Charlotte); quality of life improvement (Truckee Meadows).
- *Impact of indicators on decision makers:* Indicators programs in most of the jurisdictions contacted have been used by decision makers. They have been used to update the General Plan (Santa Monica); to convene decision makers and business leaders about issues (Boston); for grant writing (Sarasota); to acquire additional funding for projects in specific areas (Charlotte); to change water use in certain areas (San Mateo); and to include in the county's strategic planning process (Truckee Meadows).

Performance Indicators/Targets

- *Use of performance indicators or targets:*
 - All projects contacted use indicators; some set targets and goals (prescriptive approach), and others do benchmarking and trend analysis (descriptive approach). Descriptive projects only assess current conditions and show trends over time, but make no attempt to determine whether a trend is good or bad or to set goals. This makes it more difficult to make policy decisions; however, it keeps dialog about an issue open.
 - Most projects contacted (five) were used to increase public information and inform public expenditures. Seven projects cited that they were used to determine public policy. Three were used to rank performance (greater detail in Appendix B).
- *How indicators/targets are developed:*
 - Most indicators are data-driven, in that topics which already have data readily available are included.

- The process for developing indicators ranged widely from project to project. Some were done in a more top-down approach with a select few individuals who determined the indicators that would be used, and others held several large-scale community meetings to collect public feedback. Often a group of indicators was selected, then community participation was used to narrow this list and determine how to measure the indicators, and then the indicators were developed in-house by staff.
- *Reviewing, changing, modifying indicators:* Most indicator programs have in place a process for reviewing, adding/deleting, or otherwise modifying indicators. Two cited an annual review process (Jacksonville, Santa Monica); two cited a two-year review cycle with collaboration with the community (Boston, Charlotte); and one reviews indicators within a committee on an as-needed basis as issues arise (San Mateo).
- *Successful indicators:* Successful indicators tend to be those with readily available, reliable, replicable data. These included: housing, education, economy, social, physical development, energy use, water use, air quality.
- *Problematic indicators:* Problematic indicators tend to be those with limited data available and questionable indicator definitions. These included: cultural life and the arts, civic vitality, mental health, environment, learning preparation, human dignity, civic participation, education, crime, and land use and open space.

Public Participation Process

- *Public process:* Inclusion of the public in the indicators projects varied by project. Some projects were very inclusive (Jacksonville, Charlotte, Truckee Meadows), and others were mainly driven by staff and experts (Oregon). Those that were inclusive, held both large (Jacksonville, Truckee Meadows) and small (Sarasota, Charlotte, Truckee Meadows) scale meetings. Some also held both and used e-surveys and written feedback from the community as well (Truckee Meadows).
- *Amount of public participation:* The amount of participation varied by project; however, all agreed it was essential. In updating the indicators, 18 months was mentioned as a timeframe (Truckee Meadows).
- *Benefits of public participation:* The benefits of public participation were heralded. It provided for community buy-in and ownership of the project (Jacksonville, San Mateo) and high utilization of the report/indicators (Jacksonville)

- *Drawbacks to public participation:* While it was noted that citizen participation is essential, it was also noted that it can be difficult working with certain members of the public (Santa Monica), and that there was some difficulty with determining “indicators” versus “issues” with the public because they are not experts (Sarasota).

Lessons Learned

- *Changes to approach/process of plan development:* There were many lessons learned that were shared by projects. In terms of the approach to the process, lessons cited included: being more inclusive in the approach (Oregon, Boston, Charlotte); starting with a shared community vision (Jacksonville); considering what geographic level to measure each indicator at (Jacksonville); maintaining a more realistic timeline (Sarasota); and being more proactive about distribution of the report (San Mateo).
- *Changes to performance indicators or targets:* In terms of the actual indicators selected, lessons cited included: setting strong indicators and not changing them frequently. This ensures tracking of trends over time. Without this, the indicators are much less useful (San Mateo).
- *New directions and initiatives spurred by indicators:* Specific examples of initiatives started as a result of the indicators were cited. Such examples include: with regard to energy and greenhouse gas indicators, Solar Santa Monica was created and human dignity indicators have influenced a rethinking of the homeless issue (Santa Monica). In addition, it has caused the three local governments to work more closely on regional issues and regional planning and has caused the discussion of impacts from policy decisions to be broader than just fiscal, considering environmental and other impacts, across indicators (Truckee Meadows).

What Does this Mean for Montgomery County?

In terms of applying the results of the questionnaire to Montgomery County, the key messages could be categorized into the following broad areas:

Developing an Indicators Program

- An indicators program should start with a clear shared community vision to measure against. This clear vision will also lead to specific goal areas and targets for the indicators.
- Montgomery County should determine whether they want their indicators project to be descriptive (just state facts, track trends) or prescriptive (set goals and targets to meet).

- Determine what is important for analyzing “quality of life” or “sustainability.”
- Attention should be paid to the level of geography used for each indicator. Some indicators are better analyzed at the neighborhood level; others at the city level; others at the county level. Boston has an option on their website to cross-cut data at different geographic levels (different neighborhoods, Metro Boston, inner-core).

Convening Public Participation

- The process of indicator selection should be open and inclusive from the beginning.
- Public participation should be highly emphasized for stakeholder buy-in, support, and ownership. The indicators will more likely be used by decision-making bodies if the project has strong roots in the community.
- Targeted participation (selection of certain individuals, experts, sectors of the community) may be useful to maximize meaningful positive public feedback, while minimizing negative feedback.
- Think about who needs to be invited to the table to make decisions – what other departments and organizations, what stakeholders, and how and who do you reach out to in the public?

Program Implementation

- Need for both top-down support (from Council) and bottom-up support (from public).
- Start small / manageable. Choose artificial boundaries if necessary to limit scope of the project.
- Be realistic with regard to the project timeline.
- Focus on the long view and on consistency. Do not change indicators for 3-5 years at least as it is important to acquire data over time to track trends.
- Be proactive about distributing the report widely to different Departments, the public, the Council, etc. to encourage more widespread support, ownership, healthy competition between cities, and implementation by decision makers.
- Once selected, “ownership” or “adoption” of indicators is essential to ensure that the data is being used and appropriate positive changes are implemented. It must be determined who owns the indicator and what the target is. Truckee Meadows has implemented a successful “adopt an indicator” program.

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APPENDIX A: REFERENCE INFORMATION (TABLES AND QUESTIONNAIRE)

Table 1: Background Information about Indicators Programs Contacted

Jurisdiction/ Name of Indicators Program	Date Program Started	Current Number of Indicators	Indicator Categories	Goals of Project	Contact Information	Website
Boston, MA/ The Boston Indicators Project	2000	10 indicator sectors, 70 indicator goals, 150 individual measures (i.e. indicator sector = Housing; indicator goal = Housing Affordable to All Residents; Individual measure = Median home price vs. median household income, Metro Boston)	Civic Vitality, Cultural Life and the Arts, Economy, Education, Environment, Health, Housing, Public Safety, Technology, Transportation	Democratize access to information; Foster informed public discourse; Track progress on shared civic goals, report on change.	Charlotte Kahn, Sr. Director cbk@tbf.org 617-338-1700 Tim Davis, Director of Research Tim.davis@tbf.org 617-338-1700	www.bostonindicators.org
Jacksonville, FL/ Quality of Life	1985	9 indicator sectors, 111 individual measures	Education, Economy, Environment, Social wellbeing, Arts/culture/ recreation, Health, Government, Transportation, Safety	Provide ongoing analysis of the state of the region; Monitor effectiveness of solutions proposed	Ben Warner Deputy Director JCCI ben@jcci.org (904) 396-3052 ext.14	www.jcci.org/statistics/qualityoflife.aspx
State of Oregon/ Oregon Benchmarks	1999	7 indicator sectors, 91 individual measures or “benchmarks”	Economy, Education, Civic engagement, Social support, Public safety, Community development, Environment	Provide long view perspective; Used for a broad array of policymaking and budget- related activities; State agencies are required to link their performance measures to it	Rita Conrad Executive Director rita.r.conrad@state.or.us (503) 378-3202 Jay Grussing Data Analyst jay.grussing@state.or.us (503) 378-3205	benchmark.oregon.gov/
Santa Monica/ Sustainable City Indicators	1994	8 indicator sectors, 60 individual measures	Resource Conservation, Environmental and Public Health, Transportation, Economic Development, Open Space and	Present vision for sustainability; Represent what Santa Monica must achieve to become a sustainable city.	Shannon Parry Program Coordinator shannon.parry@smgov.net (310) 458-2227	www.smgov.net/epd/scp/goals_indicators.htm

			Land Use, Housing, Community, Education and Participation, Human Dignity			
Sarasota, FL/ Sarasota County Openly Plans for Excellence (SCOPE) Community Report Card	2005	8 indicator sectors, 121 individual measures	Civic Participation, Culture & Recreation, Economy, Health & Medical Care, Learning, Natural environment, Social environment, Transportation, Built environment	Engage community in planning; Monitor change to enhance the quality of life; Tool that people in our community can use to better understand Sarasota County	Kate Irwin Data & Indicators Coordinator kirwin@scopexcel.org (941) 365-8751	www.scopexcel.org/data/index.html
Charlotte, NC & Mecklenburg County / Quality of Life Indicators	1993	4 indicator sectors, 19 individual measures	Social, Physical, Crime, Economic	Monitor neighborhood level quality of life and take proactive actions to protect and improve these basic building blocks of the city.	Stanley Watkins Director Neighborhood Development, City of Charlotte swatkins@ci.charlotte.nc.us (704) 336-3796	216.1.6.76/cgi-bin/MsmGo.exe?grab_id=129660186&EXTRA_ARG=&CFGNAME=MssFind%20Ecfg&host_id=1&page_id=1136&query=%20quality+of+life%22&highlight=QUALITY+LIFE+QUALITIES+QUALITYS+
San Mateo County/ Sustainable San Mateo	1998	3 indicator sectors, 32 individual measures	Environment, Economy, Society	Fact-based information about local trends over time	Tyler Hammer Executive Administrator (650) 638-2323 tyler@sustainable.sanmateo.org	www.sustainable.sanmateo.org/indicators-report
Truckee Meadows/ Truckee Meadows Tomorrow	1994	10 indicator sectors 33 individual measures	Arts & cultural vitality, Civic engagement, Economic wellbeing, Education & lifelong learning,	A stipulation of Regional Planning was that Truckee Meadows must define and monitor its area's quality of	Karen Hruby, Executive Director (775) 323-1518 karenhruby@sbcglobe.com	www.truckeemeadowstomorrow.org/indicators

			Enrichment, Health & wellness Innovation, Land use & infrastructure, Natural environment, Public wellbeing	life		
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Table 2: Demographic Information about Indicators Programs Contacted

Jurisdiction/Name of Indicators Program	Public or Private Undertaking	Population of Jurisdiction in 2000 (number of people) ¹	Population of Jurisdiction in 2006 (number of people) ²	Land Area of Jurisdiction in 2000 (square miles) ³
City				
Boston, MA/ The Boston Indicators Project	Public-Private	589,141	575,187	48
Jacksonville, FL/ Quality of Life	Private	735,617	799,875	758
Santa Monica/ Sustainable City Indicators	Public	84,084	88,244	8
Sarasota, FL/ Sarasota County Openly Plans for Excellence (SCOPE) Community Report Card	Private	325,957	369,535	15
County				
Montgomery County, MD		873,341	932,131	496
Charlotte, NC & Mecklenburg County / Quality of Life Indicators	Public	540,828 (city)/ 827,445 (county)	648,387 (city)/ 695,454 (county)	242 (city)/ 526 (county)
San Mateo County/ Sustainable San Mateo	Private	707,161	705,499	449
Truckee Meadows (encompasses Reno- Sparks/Washoe County area)/ Truckee Meadows Tomorrow	Private	339,486 (Washoe County)	396,428 (Washoe County)	6,342 (Washoe County)
State				
State of Oregon/ Oregon Benchmarks	Public	3,421,399	3,700,758	95,997

¹ According to the U.S. Census Bureau 2000 Census.

² According to the U.S. Census Bureau 2006 American Community Survey.

³ According to the U.S. Census Bureau State & County Quick Facts.

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APPENDIX B: DETAILED QUESTIONNAIRE FEEDBACK

Sustainability/Quality of Life Plan Development

- Impetus for indicators project development
 - One jurisdiction began thinking differently about its relationship with the world and what it meant to improve the 'quality of life' (QOL) in communities. It wanted to expand this view to be larger than just economic. It wondered how QOL could be measured, and decided to use indicators (Jacksonville).
 - Indicators were recommended by the Task for on the Environment in response to Rio Declaration. This group created the Sustainable City Plan in 1994 with 4 goals; by 2000 it grew to 8 goal areas (Santa Monica).
 - The impetus for some of the projects is commitment from funders for long-term research (Boston).
 - For others, it evolved out of state planning efforts, such as Oregon Shines, an economic revitalization plan for the state, which required a measurement technique (Oregon).
 - Other programs are more neighborhood-specific. Indicators were used to look at inner-city neighborhood to determine if city improvement efforts were working. This project was conducted by a local university (UNC-Chapel Hill) to do the indicator research based on other work being done nationally (Charlotte).
 - Some organizations are private non-profits who administer the indicator research and produce reports. These are not directly affiliated with the local or county government. For one project, the impetus came out of the Earth Summit, and the desire for a citizen-community project (San Mateo).

- How indicators programs work
 - Many of the projects are designed to be long term to analyze trends.
 - Determining the indicator sectors is usually a long process that involves convening large groups of stakeholders.
 - Each year, citizens convene to review the QOL report. The report is measured against the vision. A citizen review committee reviews the draft report of the indicators, and adds and removes indicators, prioritizes issues, and red-flags important issues. This committee is lead by the incoming head of the Chamber of Commerce (Jacksonville).
 - Benchmarks and targets may be established by a board of directors through interaction with experts in the field (Oregon).
 - The Sustainable City Plan has large scale guiding principles, 8 goal areas, and then specific goals within those goal areas. Specific indicators track progress on the goals. Each has a performance-based target (2010 target) (Santa Monica).
 - Some organizations are run by both staff, and an even larger number of volunteers (from varied fields like transportation, education, health), who serve on an Indicators Committee. Each year, they come together to guide the project, to determine what has worked, and what work needs to be done on the

indicators. The program has developed a research guide and Excel files to crunch the data, and volunteers from the community each take on an indicator to do the work. This requires roughly 35 people. A new effort has included local high school students who excel in their work. Consultants review all the work (San Mateo).

- Aspects of the plan's development that are integral to its overall success
 - Citizen participation (this was echoed by all indicator projects)
 - Gaining large-scale public support (Boston).
 - Brining people on board so that the process is data-driven and people look to the results as representative (Boston).
 - Citizens think of new things that staff did not consider (Jacksonville).
 - Citizen participation encourages community ownership of the project (Jacksonville).
 - By engaging citizens, the city is viewed as a neutral convener, and gains trust (Jacksonville).
 - Input from the community was essential. A meeting was held every week for two months to learn about indicators. Indicators were selected based on whether there was data available (Sarasota)
 - Community buy-in is essential for those who will use the product (San Mateo)
 - Clear vision at the start, which will lead to specific goal areas and targets (Santa Monica).
 - Look at outcomes, not actions (Santa Monica).
 - Start small / manageable. Choose artificial boundaries if necessary to limit scope of the project (Santa Monica).
 - Long view, consistency (Charlotte)
 - Making information publically available (Charlotte)
 - Meet with elected officials to determine what is important (Charlotte)
 - Adopt an indicator program. Participants were asked to adopt the indicators, providing stewardship for improvement following the grant. Then the adoption program was opened to the entire community. Over the last decade, there have been about 750 adoptions of the QOL indicators, by hundreds of individuals and organizations. Adoption is free and open to anyone, including students and families. In 2007, the program was put online. Anyone can adopt the indicators they are passionate about and report their actions / outcomes online. The compacts program goes to the next level, through a formalized contract agreement among the compact partners and Truckee Meadows Tomorrow to improve targeted indicators, over a specific time period, including deliverable reporting and stewardship following the compact. To date there have been 7 successful compacts with documented results. Initial seed money was essential to advertise the adoption program, followed by adopter recognition via newsletter articles, event programs, and media stories. (Truckee Meadows).
- Primary stakeholders

- An open process is essential from the beginning. The United Way, commercial services, The Chamber of Commerce, local government, and environmental groups were all invited. They strived for breadth and inclusion at the beginning. As a “Community Report,” they felt everyone should be involved because “everyone is a stakeholder” (Jacksonville).
 - Governor (chair of Oregon Progress Board), representatives from districts in the state (Oregon).
 - City staff, Task Force on the Environment, Council (need top-down support) (Santa Monica).
 - SCOPE (non-profit who does indicator work), community at large, nonprofits (Sarasota)
 - Planning Department, Police Department, County Department of Social Services, School System, Mental Health, Researchers (Charlotte).
 - Nonprofit leaders, government leaders, and citizens (San Mateo)
- Benefits of having a sustainability plan
 - Can allocate resources appropriately (Santa Monica).
 - Can communicate with constituency in a positive manner (Santa Monica).
 - Will see real-world performance benefits (Santa Monica).
 - These programs can bring in additional funding from outside sources (Boston).
 - They also encourage cross-pollination of ideas and sharing of data with others (Boston).
 - Able to show a map with problem areas so policy makers must address issues (Charlotte).
 - Collective actions leading to QOL improvement, one indicator at a time (Truckee Meadows).
- Impact of indicators on decision makers
 - Indicators have been a “critical element” and have been used to update the General Plan (land use, circulation, and housing) (Santa Monica).
 - Some programs strive to be a ‘convener’ for decision makers and business leaders for making decisions about data. In Boston, a quarterly meeting is held with 300 decision makers and business leaders, and indicators data is used (Boston)
 - Some programs survey decision makers to determine how they use the indicators. Key areas, especially human services are linked in (Jacksonville).
 - Difficulty arises were there is only data and no community support or use of information. “Ownership” of indicators is essential (Jacksonville).
 - Report cards helpful for grant writing (Sarasota).
 - Elected officials give additional funding for neighborhood outreach efforts (Charlotte).
 - One organization hired an outreach consultant to present its annual findings to the community and elected officials. While this group was passive in the past, they have become more pro-active about putting their report out and their outreach efforts, so decision makers have become more tuned into the report

- and progress. For instance, water use was found to be very high in an affluent neighborhood, and this has been addressed since the last report (San Mateo).
- Report has been used in General Plan for data and background information (San Mateo).
 - Caused the county to use the QOL indicators in their strategic planning process and performance reporting (Truckee Meadows).

Performance Indicators/Targets

- Use of performance indicators or targets
 - All projects contacted use indicators; some set targets and goals, and others do benchmarking and trend analysis
 - Indicators are sometimes discussed in terms of trends, not goals. Programs that use this method indicate whether the trend is going up, down, or staying the same without declaring a specific goal or whether or not a trend is positive or negative (Boston).
 - Some projects are descriptive as opposed to prescriptive. Descriptive projects make it more difficult to make policy decisions. This is sometimes preferred because it creates an open dialog. In 1991, Jacksonville set targets for 2000 that didn't work; in 2000 they set targets for 2005 which worked better, but still not well. The problem was that no entity took ownership over the target. Need to determine who owns the indicator and what the target is working towards (Jacksonville).
 - No targets are used because they do not want to imply that a certain measure must be achieved to succeed (Sarasota)
 - Many are used to increase public information, inform public expenditures, rank performance, and determine public policy
 - Public Information
 - The Metro Boston Data Common is taking the indicators data collected to manipulate it and make it more user-friendly for the public (Boston)
 - Value-added, non-political information becomes available (Boston)
 - Awareness and community actions (Truckee Meadows)
 - Santa Monica
 - Sarasota
 - Charlotte
 - Public Expenditures
 - Boston
 - Jacksonville
 - Santa Monica
 - Charlotte, especially in neighborhood revitalization
 - County performance reporting (Truckee Meadows)
 - Rank Performance

- Boston
 - Santa Monica
 - Ranks its cities, encourages competition between cities (San Mateo).
- Determine Public Policy
 - Boston
 - Oregon
 - Santa Monica
 - Charlotte
 - San Mateo
 - Truckee Meadows
 - The indicators program is looked to as a core shared resource. It is used by all decision makers, including the United Way, business leaders, the Chamber of Commerce, at CEO orientation, by community activists, by local radio/television programmers, and the Sherriff's office. This is because it is citizen-based and rooted in the community (Jacksonville).
- How indicators/targets are developed
 - With the Chamber of Commerce, 100 volunteers were selected to determine which indicators to use and how to measure them (Jacksonville).
 - Most indicators are data-driven, in that topics which already have data readily available are included (Boston).
 - Large-scale meetings (4-6) after a small set of indicators was determined (Santa Monica).
 - Facilitator – Maureen Hart is highly recommended. Maureen Hart, President of Sustainable Measures, develops and presents training courses on sustainability and indicators, provides technical assistance to community indicator projects, evaluates indicators and indicator sets, consults with businesses and business-related non-profits on sustainable production indicators, consults with foundations and other grant-making organizations on defining strategies for and evaluating decisions relating to funding sustainable development related projects, and does research on measuring sustainability. (Santa Monica).
 - Indicators were selected through a community-wide process, and then they were developed by staff in house (Sarasota).
 - University researchers at UNC-Chapel Hill researched other indicator programs and selected the indicators to use (Charlotte).
 - Targets have not been set due to limited staff resources, but they plan to set benchmarks and targets in the future to create a 'sustainability plan.' To date, trends have been tracked, and information has been presented in an objective fashion (San Mateo).
- Reviewing, changing, modifying indicators

- Two year review cycle; convene people for each of the 10 indicator sectors to see if indicators are still valid, or if new indicators should be included. Afternoon-long event. People are selected over time based on their expertise in the field (Boston).
 - Environment indicator used to mean only green space; now it has been extended to the context of climate change (Boston).
 - Annual review cycle; of the original 85 indicators, about 45 are the same. An additional 60 indicators have been added (Jacksonville).
 - Annual review cycle; some indicators are not explaining what they should be. Believe that a project should report on an indicator for 3-5 years before changing it (Santa Monica).
 - Two-year review cycle; measures change over time, and the program has been extended to city-wide instead of just inner-city neighborhoods (Charlotte).
 - Reviewed on as-needed basis by Indicators Committee as important issues arise, like climate change and disaster preparedness (San Mateo).
- Successful indicators (tend to be those with readily available, reliable, replicable data)
 - Housing – data readily available; great deal of dialog about the issue already (Boston)
 - Education
 - very important for driving decision making (Boston)
 - easy to measure (Jacksonville)
 - Economy – easy to measure (Jacksonville)
 - Social
 - easy; great deal of data (Oregon)
 - easy; great deal of data (Charlotte)
 - Physical development indicators such as crime are very helpful (Charlotte)
 - Energy Use – easy, noncontroversial, available data (San Mateo)
 - Water Use – easy, noncontroversial, available data (San Mateo)
 - Air Quality – easy, noncontroversial, available data (San Mateo)
 - Problematic indicators (tend to be those with limited data available, and questionable indicator definitions)
 - Cultural life & the arts – data not readily available; difficult to measure (Boston)
 - Civic vitality – data not readily available; difficult to measure (Boston)
 - Mental health – difficult to measure (Jacksonville)
 - General issues that lack data, such as early learning preparation, quality of life for the elderly, etc. (Jacksonville)
 - Environmental – need work; difficult to determine the benchmark needed to accurately capture the data; data not there; trade-offs with other indicators (Oregon)
 - Human Dignity – important but data not available (Santa Monica)
 - Civic participation – important but data not available (Santa Monica)
 - Education – problematic methodology and data (San Mateo)
 - Crime – problematic methodology and data (San Mateo)

- Land Use and Open Space – problematic definition of open space (San Mateo)

Public Participation Process

- Public process
 - Everyone interested in the program (large-scale community involvement) gathered at a meeting to discuss (Jacksonville).
 - The benchmarks were a Board decision, with collaboration with experts; Oregon Shines included a lot of public involvement and strategic planning in developing the revitalization plan (Oregon).
 - Large Community Assembly (350 people) met to discuss issues, facilitated by Executive Director of SCOPE. Small meetings were then held of 10-15 people who volunteered and were selected out of the Community Assembly to determine indicators (Sarasota).
 - Initially, there was a great deal of public dialog about where the boundaries of geographic analysis should be. Agreement about neighborhood designation was needed (Charlotte).
 - Several town meetings were held in which indicators were presented, and feedback about which to include was obtained from the community.
 - The 2005-06 update process used a combination of public meetings and small group forums/roundtables, written and e-surveys, presentations/roundtables at community groups and organizations, CEO forum, input from the community's environmental scan and United Way compact to review all the indicators being used by partner agencies to measure impact, along with e-prioritization by thousands of citizens to narrow the most important indicators to QOL in the region (Truckee Meadows).
- Amount of public participation
 - This is an essential issue for Jacksonville. They involve the community in two ways: 1) On an annual basis by invitation. A grid with their nine QOL indicators is made and people are located with expertise in those areas. It is ensured that the group convened is representative of the community at large (age, gender, geographic distribution). 2) Every five years, a larger community effort is undertaken. Invitations are sent and it is open to the entire community. The invitation is published on their website and through different media. These groups then look through the elements section-by-section (Jacksonville).
 - The most recent 2005-06 process took 18-months to update the indicators. The follow-up metrics, research and survey work will take another 18-months resulting in the next community wellbeing report 2/08 (Truckee Meadows).
- Benefits of public participation
 - Buy-in and ownership of project (Jacksonville).
 - Gets used by the community because it is rooted in the community (Jacksonville).
 - Keeps costs low if there are volunteers (San Mateo).

- If this will be used as a resource to the public, it provides buy-in and ownership, as well as spreads the word (San Mateo).
- Drawbacks to public participation
 - Double-edged sword: need community buy-in, but those who come out tend to be on the extreme (usually negative); suggests going out for targeted participation (Santa Monica).
 - The citizen group selected “issues” not “indicators,” which meant that there was not data readily available for all the things they wanted to look at (Sarasota).
 - Challenging to work with the public (San Mateo).

Lessons Learned

- Changes to approach/process of plan development
 - Would include an inclusive approach to engaging the state (Oregon).
 - Broaden convening groups to determine if the ‘right’ people were included (Boston).
 - Start with a shared community vision to measure against. Indicators need to be useful, and flexibility is needed when making decisions, especially about what geographic level to measure. Some issues should be measured at the neighborhood level, while others at the county. An issue may be missed if the wrong geographic level is analyzed (Jacksonville).
 - Would house it in the City Manager’s office, so there was no need to horizontally influence other city entities from the Environmental Department (Santa Monica).
 - Keep funding out of the general fund (Santa Monica).
 - Not so ambitious; would have included a more realistic timeline (such as one forum per year, instead of 4) (Sarasota).
 - Need public participation (Charlotte).
 - Must determine what is important for determining “quality of life” (Charlotte).
 - Would be more aggressive/proactive about distributing the report widely to different Departments, the public, the Council, etc. (San Mateo).
 - Establish endowment funding to continue the work each year. This organization is an independent nonprofit, funded through memberships, contributions and grants. Since it is not actually a “service provider” it is extremely difficult to generate grant funding, even though its work benefits and overall QOL in the region, benefiting every citizen, business, organization and individual (Truckee Meadows).
- Changes to performance indicators or targets
 - Some new data sources should be located (Boston).
 - There was controversy over the ecological footprint issue, as to whether it was a “measure” or an “indicator” (Sarasota).
 - There was criticism received regarding how neighborhoods were labeled as “fragile” or in need. This was changed to indicate stable, transitioning, and challenged neighborhoods (Charlotte).

- Be sure to set strong indicators initially and then do not change them. It is important to have continuity to track trends over time (San Mateo).
- New directions and initiatives spurred by indicators
 - With regard to energy and greenhouse gas indicators, Solar Santa Monica was created; human dignity indicators have influenced a rethinking of the homeless issue (Santa Monica).
 - Led the three local governments to work more closely on regional issues and regional planning and has caused the discussion of impacts from policy decisions to be broader than just fiscal, considering environmental and other impacts, across indicators (Truckee Meadows).

SUSTAINABLE QUALITY OF LIFE

APPENDIX C: Details of the Public Participation Process

The Sustainability Team is currently researching how other jurisdictions throughout the U.S. developed, communicated and continue to maintain sustainability and quality of life indicator programs. The collected information benefits the Department by providing insight into how indicator programs are created, and how they evolve over time. This memo provides some initial thoughts about how Montgomery County can develop its indicators program, and an associated outreach program targeted to three distinct groups of stakeholders. The ideas provided here are meant to offer only a starting point for further discussion; they are not viewed as the course that should be followed. *It should be noted at the outset that developing a successful outreach program will require consultant assistance and expertise, as well as additional staff within the Department.*

Vision for the County

The proposed Growth Policy, currently under consideration by the County Council, proposes that future growth within the County should pursue a goal of sustainability. The Growth Policy states:

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.

Using this guiding principle, the Department has also proposed using sustainability, or quality of life indicators to monitor progress in key aspects of sustainability.⁴ Based on staff research, supplemented by a survey of other jurisdictions conducted by a researcher from the University of Maryland, it appears that sustainability indicator programs are most effective when originated:

- a) From the top down (e.g., by a high level elected official) as done in Mecklenberg County, NC; or
- b) From the ground up, such as through the efforts of a grass-roots campaign as done in Jacksonville, FL.

In between, the larger stakeholder groups must also be involved. These stakeholders include civic associations, Chambers of Commerce and other business organizations, religious institutions, and other stakeholders integral to both the built environment of Montgomery County, but also integral to providing a high quality of life. Educating and achieving buy-in for these distinct constituencies requires tailored outreach strategies and timeframes that reflect different interests and subject knowledge.

⁴ Department staff recognizes that growth can be sustainable without improving quality of life. Similarly, growth may not be sustainable over time yet in the short term enhance quality of life. There is suitable overlap between the two; the goal of the Planning Department is to achieve sustainability *and* enhance quality of life.

Developing a Strategy

Outreach

The outreach strategy involves three distinct components:

- 1) **Education** of the various constituent groups, particularly decision-makers, about what indicators do and how they can be used; and
- 2) A **marketing** effort, intended to bring greater awareness about the underlying premise of sustainability, identify what that means in real terms, and how indicators relate to policy efforts.
- 3) Create a **support** network to develop meaningful input to both strengthen program understanding, and develop indicators reflective of community needs, better ensuring buy-in and involvement over time.

Since the Council has asked for development of an indicators program, an outreach strategy should proceed with their support. Defining the program and communicating that to stakeholders is the first step to take to ensure buy-in and continued support.

Education

Tools to better inform stakeholders can include a multimedia presentation similar to the recently produced marketing video developed by Community Relations. The program should make full use of technology as a tool to greatly increase public participation, not only to provide information but also to gather public input considering the extensive use of the web through web pages, videos on the web, blogs, list serves, as well as other technologies such as electronic voting. In addition, the Council and Executive Staff may require in-person workshops, conducted by Planning staff, to develop a keen understanding of what indicators do and how they might be used. Convening an expert panel can add to the knowledge base of elected officials and staff as the program evolves. Table 1 offers a high level breakdown of a possible multi-tiered outreach strategy targeting different constituencies using different outreach tools.

Marketing

Concurrently, the Department can also implement a marketing campaign to develop buy-in from stakeholder groups, particularly the business community. This effort will likely necessitate consultant assistance to most effectively raise awareness about the program. But our research found that indicator programs are most successful when individual indicators are “adopted,” by an organization or community stakeholder who takes responsibility for monitoring that indicator.

Grassroots Support

Lastly, a successful indicator program needs grassroots support. Again, this may require consultant expertise to most effectively collect and develop outreach materials and market the program. But we know, based on demographic analysis, that the County faces growth from three key areas: 1) seniors; 2) children; and 3) non-traditional households. Effectively targeting each group can raise awareness about the program, but also inform selection of indicators based on what these groups view as sustainable development, and what attributes they identify as being integral to a high quality of life.

Cost

Initial investigation indicates that a similar effort cost \$500,000 in Truckee Meadows (Washoe County, Nevada). Jacksonville, Florida has a well-established program that is allocated about \$40,000 per year to maintain the indicators and public outreach.

DESIGN EXCELLENCE

Background

The Planning Board recommended that the County Council, when it adopts the Growth Policy resolution, include the following directive:

“The Planning Board, with the aid of the Executive, must convene a “design summit” of public agencies involved in the design and development of public facilities and the review of private development to develop consensus and commitment to design excellence as a core value in all public and private projects, and focus on how to improve design of public facilities and private development through various means including better coordination among agencies. The Planning Board must report its findings to the County Council not later than July 1, 2008.”

In addition, in its *Final Draft 2007-2009 Growth Policy*, the Planning Board identified other initiatives to further the design excellence goals in the Growth Policy. These include emphasizing design excellence in the zoning ordinance re-write, developing design protocols for the Planning Department staff, and develop urban design compendiums to master plans for mixed use centers.

Design Summit

The Planning Department is moving forward with the Design Summit concept, exploring ideas with CADRE, a non-profit entity for planning, design and research affiliated with, and managed by, the University of Maryland School of Architecture, Planning and Preservation. More specifically, the Department is working with Professor Emeritus Roger K. Lewis, FAIA, who is a director of CADRE and well-known to area residents as a Washington Post columnist. Professor Lewis recently managed the design competition for the downtown Silver Spring Civic Building and Veteran’s Plaza.

The design summit is a launching point, not only for the long process of developing a culture of design excellence but also to inform specific aspects of the Planning Department’s work program in FY08 and beyond, including the zoning ordinance rewrite, the master plan reassessment, and review of the public and private development projects by staff and public officials.

Design Training for Planning Department Staff

Among the obstacles to achieving a higher level of design quality in the public realm is a lack of clear, shared understanding by staff as to what is now expected when they review a public facility as a mandatory referral or a private development project for Board approval.

The *Final Draft 2007-2009 Growth Policy* identified a ‘design protocol for Planning department staff’ as a means of setting out best urban design practices, review the design controls currently available to staff, and explore different situations and case studies.

The Planning Department is moving ahead with the overall objective of improved design training for staff, also through an arrangement with CADRE and Professor Lewis.

The arrangements for both the assistance with the design summit and the staff training are still underway. More details will be available as the Council discusses Growth Policy, or at the Planning Board’s Semi-Annual Report to the Council, both scheduled for October.

ADEQUACY OF TRANSPORTATION FACILITIES

Background

The Planning Board's May 21 Growth Policy recommends a range of elements designed to more comprehensively assess the transportation impacts of growth and direct both land use and needed mitigation toward more sustainable solutions, while upholding general plan and master plan tenets. These recommendations include:

- Reintroduction of a policy-area transportation test, called Policy Area Mobility Review (PAMR) that sets area adequacy standards based on both transit and arterial mobility conditions that are based on nationally recognized measures of service quality.
- Establishment of a transportation impact tax structure designed to capture the marginal costs of the County's portion of planned transportation capacity expansion for the next 20 years, allocated proportionally by vehicle trip generation.
- Maintenance of the Local Area Transportation Review (LATR) procedure, although with several points of clarification to improve the predictability of the application process.

The public hearings on the Planning Board's proposal, followed by the County Council's review of the Growth Policy, identified areas of agreement, issues of concern, and suggestions for improvement. Several Councilmembers expressed concern that neither the Policy Area Mobility Review nor the Local Area Transportation Review tests are stringent enough to provide desired levels of mobility. Secondary interests are to:

- Recognize different expectations for Metro Station Policy Areas in the policy area test.
- Develop a means to slow or halt growth before a policy area's transportation system becomes inadequate.
- More directly incorporate non-auto travel modes into the regulatory process.

Although Planning staff recommends that the Planning Board retain the basic elements of the Growth Policy recommendations endorsed in May, we recommend several adjustments to these basic elements, as discussed below.

Summary of Policy Area Mobility Review Recommendations

The Board’s recommended Policy Area Mobility Review (PAMR) process assigned each policy area a designation of “adequate” (for which no further action was needed) or “inadequate” (for which trip mitigation beyond LATR would be required). The PAMR process is described on pages 114 to 125 of the Planning Board’s May 21 report. Appendix D to this memorandum contains additional information regarding the basis for establishing the relative arterial and transit mobility standards, excerpted from material provided to the County Council’s PHED Committee this summer.

Planning staff recommends the following adjustments to address the concerns raised during Council review:

- Retain the current threshold whereby development must fully mitigate trips because mobility levels are inadequate. In addition, require partial trip mitigation in policy areas that approach, but do not yet exceed, the inadequacy threshold. Planning staff has located the area where partial trip mitigation would be required between the alternative adequacy boundaries described in the Planning Board’s report (“stairstep” and “diagonal line”). Within this area, the level of mitigation for each policy area based on its relative location between the two boundaries. This adjustment would
 - Increase the number of policy areas where some mitigation is required from 2 to 10, and
 - Increase the amount of mitigation required by development in policy areas as their mobility scores approach the inadequate designation. The extent of partial mitigation required would serve as a proxy for staging ceilings (providing guidance regarding remaining development capacity). It would increase the value of remaining capacity to the County as it becomes scarce, and partially address the free-rider issue.¹
- Allowing applicants that select the LATR Alternative Review Procedure in Metro Station Policy Areas (paying double the impact tax and developing a Trip Mitigation Agreement) to pass PAMR.

Summary of Local Area Transportation Review Recommendations

Planning staff recommends three adjustments to the LATR process described in the May 21 Growth Policy Report.

¹ The free-rider problem is expressed in two ways. One set of free riders are those early developers who were approved with few transportation requirements, while later developers must mitigate all of their trips. The second set of free riders are those developers that follow a developer who was required to make a large transportation improvement – so large that it provides capacity for subsequent development projects.

- *Require additional mitigation for over-capacity intersections:* For development cases where background traffic already causes an intersection to exceed its CLV congestion standard, a developer should be required to mitigate more than the trips from his/her own development. He/she should also be required to *improve* intersection congestion. Staff proposes that in these cases new development should essentially mitigate twice as many trips as it generates.²
- *Specify larger LATR study area requirements for very large development applications:* The LATR Guidelines should include additional guidance on the number of intersections to be included in LATR studies for developments generating more than 1,750 vehicle trips.
- *Recognize urban design and transit amenity goals in Germantown Town Center:* The congestion standard for the Germantown Town Center Policy Area should be raised from 1450 to 1600.

Work Program Amendment to Consider Potential Adjustments

The Planning Board's May 21 recommendations recognized that there would be certain transportation-related elements requiring further study during FY 08, including development of sustainability indicators, which would desirably influence the measures of effectiveness used to assess the adequacy of public facilities and provide input for a comprehensive transportation impact tax rate study. The Planning Board also recommended enhanced intersection data collection to be supported in the FY2009 budget.³

Based on Councilmember and public interest, Planning staff also recommend an amendment to our work program to incorporate additional study of the following elements for the next Growth Policy:

- Development of comprehensive Parking Management policy for the County to consider how the supply and pricing of parking can be better employed as a travel demand management tool to discourage auto use, particularly in Metro station areas.
- Rather than assigning all congestion and mobility standards by policy area, consider assigning standard based on the characteristics of the parcel to be developed, such as proximity to transit. These "Transit Service Overlay areas" could be responsive to operational elements such as bus service frequency or pedestrian connectivity, and the concept was suggested by the Action Committee for Transit and Coalition for Smarter Growth.

² More specifically: the new development should be required to reduce critical lane volumes below the background condition by a CLV amount equal to the CLV increase attributable to the development.

³ The draft Growth Policy resolution indicates that the increased funds will be requested in the "FY2008" budget, but, of course, FY2008 has already begun.

- Evaluation of a multi-modal quality of service requirement, the goal of which would be to have a more seamless integration of pedestrian, bicycle, transit, and auto modes (as opposed to the current system’s reliance on conversion between modes through trip reduction and non-auto amenity packages). This evaluation would directly address concerns about PAMR’s tradeoff between auto and non-auto modes and would include consideration of more operational intersection analysis tools that might either augment or replace CLV analysis. This study was also suggested by the Action Committee for Transit and Coalition for Smarter Growth and, as recommended, staff recommends that this study have a significant public participation component and a significant independent consultant component.

Review of Other Potential Growth Policy Adjustments

The Council suggested many ideas on how the Planning Board’s May 21 recommendations could be improved. Most of these ideas have been incorporated in the prior paragraphs, either as:

- Recommended adjustments for the current Growth Policy, or
- Further study for the next Growth Policy.

Staff does not recommend some of the Council proposals for further study for the reasons described below:

- *Use a 4-year window for PAMR tests:* We recommend retaining the Planning Board’s May 21 proposal to incorporate projects fully funded in the six-year CIP and CTP for analysis. The PAMR analysis to define policy area adequacy is performed several months in advance of annual policy area adequacy establishment and the analysis is used for an additional calendar year. It is therefore appropriate that the PAMR analysis consider six years of future projects while the LATR test, applied at time of subdivision application, considers four years. The four-year PAMR test results are contained in Appendix E.
- *Apply more stringent CLV standards in rural areas:* We recommend against lowering the numeric congestion thresholds in our rural and most suburban areas as we believe LOS D/E is the most efficient quality of service to plan for and that requiring greater mitigation will merely increase impervious surface in the form of auxiliary lanes, an outcome inconsistent with the County’s recent and current water quality protection objectives.
- *Staging ceilings.* We recommend against establishing staging ceilings. As described in the Planning Board’s May 21 report, we maintain that:
 - The PAMR adjustment that we recommend (partial mitigation in policy areas that approach inadequacy) is analogous to, but yields greater

benefits than a system that meters out “free” capacity until it is gone, and then requires full mitigation from the next developer.

- The effectiveness of staging ceilings as a tool to balance jobs and housing is marginal, in both senses. Overall zoning capacity and market conditions will have a greater effect on the jobs-housing ratio.
- Competition for scarce staging ceiling capacity can distort the market as developers seek approvals before they are ready to move to construction. It also increases pressure to accommodate projects that are not complete prior to the expiration of their APF finding.
- Staging ceilings created an entire bureaucracy unto themselves, including considerable staff and public attention to proposed exemptions and reallocations of staging ceiling to accommodate specific projects or projects of certain types.

Detailed Analysis: Policy Area Mobility Review

Planning staff recommends two substantial revisions to the Policy Area Mobility Review (PAMR) analysis process. The first results in establishing a series of policy areas for which partial PAMR mitigation would be required. The second addresses a means for providing Metro Station Policy Areas with a progressive mitigation process similar to the way in which they are treated in LATR. We also recommend a fairly minor, but symbolic, administrative revision and have reviewed the concept of a four-year test.

Graduated Mitigation Requirements Under PAMR

The Planning Board's May 21 Growth Policy recommended a PAMR analysis whereby on an annual basis, each Policy Area would be graded either "adequate" or "inadequate". For areas graded inadequate, applicants would be required to mitigate 100% of their trips using one or more of four mitigation strategies:

- Trip reduction through a Trip Mitigation Agreement
- Application of non-auto transportation amenities in the LATR guidelines
- Provision of offsite roadway network capacity, or
- Provision of transit services

The proposed division line between adequate and inadequate is based on transit mobility and arterial mobility level of service standards and has been described as a "stairstep". In presentations of the PAMR during late spring and summer, staff identified an alternative method of setting standards for PAMR, which also used the "stairstep" shape, but connected the apex of each step to the one below it, creating a diagonal line. From a technical perspective, the stairstep reflects minimum arterial mobility LOS standards for each transit mobility LOS category and the diagonal line reflects a continuum between LOS thresholds for transit mobility and arterial mobility.

Staff proposes a new set of definitions for the same PAMR process and chart, as shown on Figure 1 and summarized in Table 1:

- The area above the diagonal line would describe mobility conditions as "acceptable."
- The area between the diagonal line and the stairstep would describe mobility conditions as "acceptable with partial mitigation."
- The area below the stairstep would describe mobility conditions as "acceptable with full mitigation."

Table 1. Comparison of Prior and Adjusted Versions of PAMR

May 2007 version			September 2007 version		
Area of chart	Label	Mitigation	Area of chart	Label	Mitigation
Above stairstep	Adequate	None	Above diagonal line	Acceptable	None
			Between diagonal line and stairstep	Acceptable with partial mitigation	0% to 50% based on Relative Arterial Mobility
Below stairstep	Inadequate	100%	Below stairstep	Acceptable with full mitigation	100%

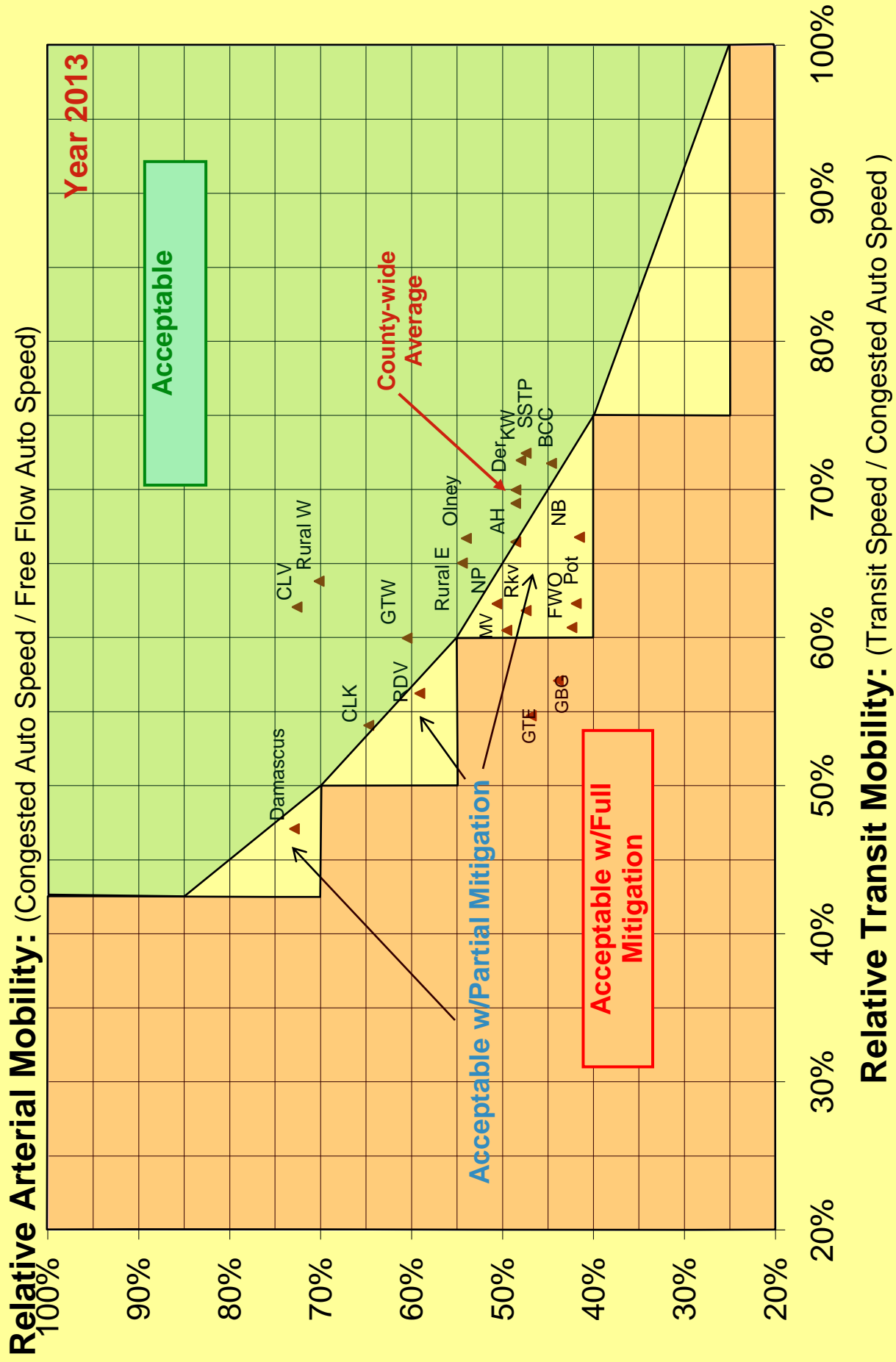
The proportion of trips requiring mitigation in the “acceptable with partial mitigation” range would vary based on the distance between the stairstep and the diagonal line. For instance, in a Policy Area located midway between the two lines, such as Damascus, 25% of the trips would require PAMR mitigation, the midway point between 0% and 50%.

Table 2 provides a summary of the required percentage of PAMR trip mitigation required for each Policy Area under the revised staff proposal.

Table 2. Policy Areas Requiring Partial or Full Mitigation

Policy Area	Mitigation Required in May proposal	Mitigation Required in September proposal
Damascus	0%	25%
Fairland/White Oak	0%	40%
Gaithersburg Vicinity	100%	100%
Germantown East	100%	100%
Montgomery Village/Airpark	0%	15%
North Bethesda	0%	40%
North Potomac	0%	10%
Potomac	0%	45%
R&D Village	0%	15%
Rockville	0%	20%

Figure 1. Year 2013 PAMR Chart



Staff believes this revised PAMR proposal addresses several concerns that were raised about the original PAMR proposal:

- *That the test is not stringent enough to reflect County mobility expectations.* The revised proposal provides greater mitigation while maintaining the basis of the process on nationally accepted mobility criteria. Some level of PAMR mitigation is now required in 10 policy areas instead of just two.
- *That PAMR does not reflect degrees of adequacy in its mitigation requirements – an area either passes or fails.* Perhaps the second most pervasive concern with the original PAMR process is that there is no effect of being close to failing. Under the Policy Area Transportation Review procedure in effect prior to 2003, development projects in areas close to failing were not required to mitigate trips but the staging ceiling number provided some sense of how close the Policy Area was to going into moratorium. We believe the “partial mitigation” revision to PAMR provides the same level of guidance regarding proximity to inadequacy, and has two additional benefits:
 - It requires some proactive contribution by the private sector, with the level of contribution increasing as an area becomes worse
 - As development approvals in areas with “partial mitigation” are approved, the combination of LATR plus PAMR partial mitigation will slow or halt the downward trend within the Policy Area.

Treatment of Metro Station Policy Areas (MSPAs) in PAMR

The Council expressed concerns that MSPAs were not treated any differently from their “parent” policy areas (for instance; Bethesda is the parent policy area of the Friendship Heights and Bethesda CBD Metro station policy areas). PAMR did not reflect MSPAs’ superior transit mobility because the modeling tool is not fine-grained enough to make that distinction⁴. Staff considered several approaches to reflect the desire to guide development toward MSPAs.

Before reviewing these alternatives, it is useful to discuss how the staff’s recommendation to require partial mitigation in some policy areas (discussed above) would affect Metro station policy areas. Staff’s recommendation would mean that partial mitigation (40%) would be required in the Twinbrook, White Flint, and Grosvenor Metro station policy areas. Neither full nor partial mitigation would be required in any other Metro station policy area under the current test results. Of course, test results will change over time.

⁴ The same characteristic applied to the Policy Area Transportation Review – staging ceilings for MSPAs were manually disaggregated from the parent Policy Area totals.

The alternative approaches are:

- Fully exempt development in Metro station policy areas from PAMR.
- Allow development projects in Metro station policy areas who use the current “Alternative Review Procedure for Metro Station Policy Areas” to meet their LATR requirements to also “meet” their PAMR requirements. The Alternative Review Procedure requires payment of double the applicable transportation impact tax and agreement to reduce peak period vehicle trip generation by 50%, with a monitoring program to ensure that the 50% goal is continuously maintained.
- Require all (or all major) development projects in Metro station policy areas to mitigate, or partially mitigate their trips –whether or not the “parent” policy area is adequate or not. This requirement would replace both PAMR and LATR in Metro station policy areas.

Staff is not recommending that development in Metro station policy areas be fully exempt from PAMR. In most policy areas with Metro station areas, the majority of future development is within the Metro station policy area. Development in within these areas does create real mobility effects both within and outside the Metro station areas.

The second option, allowing developers to use the Alternative Review Procedure when it is to their advantage, has the benefit of historical precedent. Before Policy Area Transportation Review was eliminated, developers could use the Alternative Review Procedure to pass both transportation tests. Use of the procedure has been controversial in the neighborhoods surrounding the areas where it has been used, but it must be said that the procedure has only been used twice (Twinbrook Commons and North Bethesda Town Center).

The third option, which would replace PAMR and LATR in Metro station policy areas with a trip mitigation requirement, is beneficial because the mitigation requirement would enforce, and probably strengthen, the expected benefit of locating development near high quality transit. For example, it may be that one can routinely expect development in Metro station areas to achieve at least a 25 percent non-driver mode share. Unless the project is designed and programmed to support non-auto use, however, those non-driver mode shares may not be achieved. On the other hand, a well designed project with programmatic support would achieve improved non-driver mode shares.

This option also moves away from a situation where most development projects receive “free” development capacity while an unlucky few – those who wish to move forward when the areas is “inadequate” – have major transportation improvement conditions placed on them. Requiring each project to provide partial mitigation of auto

trips may yield greater overall benefit than requiring a few projects to mitigate 100 percent of their trips (which would be the case if PAMR were applied in Metro station areas).

There are already mode share goals in some master plans and sector plans to which development projects are held accountable.

However, requiring trip mitigation in Metro station areas raises several issues. Among them:

- What level of trip mitigation would be required, and what tools would be available to the development project to mitigate trips? One choice would be to require what is now the “Alternative Review Procedure:” pay the full development impact tax and mitigate 50 percent of trips. Other alternatives that are less stringent: set the required mitigation level at something less than 50 percent, or allow the development project to use the full menu of mitigation options proposed for PAMR, including non-auto amenities such as sidewalks.
- If applied to all MSPAs, it would increase the burden on most applicants, particularly those in MSPAs that have “acceptable” mobility, such as Wheaton and Glenmont. Moreover, in these areas, transportation conditions would be more stringent in the Metro station area than in the surrounding policy area.
- The Alternate Review Procedure, as currently formulated, may not be ready for broad application. For example, it has a strong monitoring component that would be burdensome for smaller projects, and difficult to administer on projects where the simpler monitoring techniques such as driveway counts are not available. Also, broadly applying the current Alternative Review Procedure would have implications on staff workload (for either M-NCPPC or DPWT).
- Stakeholders deserve an opportunity for public comment on a completely new concept for treatment of Metro station areas

If there is interest in the concept of replacing PAMR and LATR with broad, mandatory trip mitigation requirements in Metro station areas, staff suggests the best approach would be to pursue it as a potential Growth Policy amendment in the spring. In the interim, staff recommends that when a Metro station policy area is inadequate, that developers be able to pass PAMR (as well as LATR) by mitigating 50 percent of their trips, paying the full impact tax (that is, double the Metro station area tax), and the other requirements of the Alternative Review Procedure.

Definition of LOS F as unacceptable

The PAMR Transit LOS and the PAMR Arterial LOS standards are inversely related, reflecting the County’s long-standing policy that greater levels of roadway congestion should be tolerated in areas where high-quality transit options are available.

As proposed in May, if a policy area has a forecasted PAMR Transit LOS of A, the PAMR Arterial LOS is set at F. Conversely, if a policy has a forecasted Transit LOS of F, the PAMR Arterial LOS is set at A.

During the Planning Board's May review of PAMR, they voted to establish a line within the LOS F ranges on both the Transit and Arterial axes below which no area would be deemed adequate. Staff now proposes to simplify the finding further; no area should be considered acceptable without full PAMR mitigation if either the Transit LOS or Arterial LOS is in the F range. This change is largely symbolic as none of our alternative scenario tests to date have resulted in a LOS F score for either axis. It does change the lines slightly at the extreme edges of the PAMR chart shown in Figure 1.

Four Year Versus Six Year PAMR Analysis Period

Staff recommends that the PAMR analysis period remain at six years rather than four years. The PAMR analysis to define policy area adequacy is performed several months in advance of annual policy area adequacy establishment and the analysis is used for an additional calendar year. It is therefore appropriate that the PAMR analysis consider six years of future projects while the LATR test, applied at time of subdivision application, considers four years. An analysis of the four-year PAMR test results is contained in Appendix D.

Detailed Analysis: Local Area Transportation Review

Staff recommends that the Planning Board support three changes to the LATR process described in the May 21 Growth Policy Report:

- For development cases where an intersection CLV exceeds its Policy Area congestion standard in the background condition, approved development should be required to reduce the CLV below the background condition by a CLV amount equal to the CLV increase attributable to the development.
- The LATR Guidelines should include additional guidance on the number of intersections to be included in LATR studies for developments generating more than 1,750 vehicle trips.
- The congestion standard for the Germantown Town Center Policy Area should be raised from 1450 to 1600.

We recommend no change to the remaining CLV standards, including the rural and most suburban areas. The following paragraphs explain the rationale for these recommendations.

LATR Guidelines for Developments Generating More than 1,750 Peak Hour Trips

The number of intersections affected by a new development increases as the size of the development increases. The LATR Guidelines reflects this characteristic in the Table 2 guidance regarding the number of signalized intersections in each direction that should be included in the LATR study. These criteria are informally described as “rings” by LATR study practitioners. A development generating between 30 and 250 peak hour vehicle trips must include at least one intersection in each direction (a one-ring study) from the site access point. Table 2 indicates that for every 500 vehicle trips above 250, another “ring” should be added to the study, up to a five ring study for a site generating 1,750 or more vehicle trips. Council staff recommends specifying criteria for a sixth and seventh ring, at 2,250 and 2,750 trips, respectively. Staff concurs with this recommendation as it improves both specificity and consistency.

Germantown Town Center

Planning efforts for both the CCT and the Germantown Master Plan recognize that for both multimodal equity and urban design reasons, a higher CLV standard is appropriate in the Germantown Town Center Policy Area. Staff concludes that the Germantown Town Center CLV standard should be 1600, which is one letter grade worse than the prevailing areas around the town center which are at 1450.

An alternative would be to establish a CLV standard of 1800, similar to the other urban policy areas. However, the CCT will not provide the same level of transit mobility as the Metrorail system does, so staff finds that an 1800 CLV is not appropriate for the Germantown Town Center.

Rural and suburban policy areas

Staff finds that the current LOS standards in rural policy areas, and the least densely settled suburban policy areas, are appropriate. There are two reasons the CLV standards should not be lowered further in rural or suburban policy areas.

First, achieving a better LOS is not an appropriate goal if adequate conditions are already being achieved. It is true that school report card consisting of Ds would not be acceptable to the average parent. However, transportation engineers consider LOS D and E to be the most cost-effective conditions to design for, as they reflect the maximum throughput, or person-carrying capacity, of a roadway. The LOS standards used for subdivision review are also considered in master planning and roadway facility planning studies, so if the County sets a higher LOS goals for development to achieve, it will also apply that standard to its own projects.

Second, an effect of lowering the CLV standard will be to require the construction of more turn lanes, increasing impervious surface in areas we most want to

remain impervious. Staff has supported the reduction in the Upper Paint Branch Special Protection Area impervious cap from 10% to 8% as proposed in ZTA 07-11. To make CLV standards in the Upper Paint Branch SPA more stringent would be inconsistent with the objective of ZTA 07-11. A similar, although less specifically codified, logic applies elsewhere in areas of the county with low density development.

How Should Development Treat Intersections Already Worse Than the CLV Standard?

The current Growth Policy requires that developers ensure that their development does not cause the level of intersection congestion to worsen beyond the applicable congestion standard. However, in cases where the intersection congestion would already be worse than the standard without the development (called the “background condition”, as it includes existing traffic and that traffic generated by approved but unbuilt development), the developer does not need to provide improvements needed to attain the standard, but rather only those improvements needed to leave the congestion no worse than if the development did not occur. In other words, when congestion already exceeds the standard, the obligation of the developer is to “do no additional harm”.

Council staff has proposed two modifications to the Growth Policy that would change the approach for intersections whose background conditions are worse than the congestion standard:

- Establish a higher CLV threshold (perhaps 200 CLV above the congestion standard for each policy area) that development would need to achieve, or
- Require development to mitigate to a condition better than (perhaps by 50 CLV) the background condition.

Staff recommends combining these two conditions. For development cases where an intersection CLV exceeds its Policy Area congestion standard in the background condition, approved development should be required to reduce the CLV below the background condition by a CLV amount equal to the CLV increase attributable to the development. **In essence, the requirement would be to mitigate twice the amount of the impact.** This proposal would make the burden for improvement commensurate with the level of development impact proposed.

Items for Further Study

There are three areas of study recommended, each related toward bringing the next Growth Policy revision closer toward our anticipated sustainability objectives.

Travel Demand and Parking Management Policy

Identifying and implementing ways of reducing peak hour vehicle trips, especially auto trips is a topic of increasing interest. Many new strategies are being used in different places nationally and overseas. The question is: How should these new ideas best be applied in Montgomery County, where we already have a relatively effective bus and rail system, parking charges in many locations, and some Transportation Management Districts? A work program item with consulting assistance could provide these answers and be part of evolving new growth policy following our emerging sustainability principles.

We have emphasized shifting mode share goals in our master plans for decades yet the public response to our current Travel Demand Management (TDM) policies has been mixed. If the Council wishes to reduce the current 72% drive-alone mode share for commuting, we would recommend consultant assistance to identify the methods being used more effectively in other jurisdictions similar to Montgomery County, and to propose detailed plans that could be reviewed by the many stakeholders in our County. How any actions we take will position us relative to other surrounding jurisdictions, making our businesses less competitive, for example, is one of many important considerations that have been raised in discussions on this topic in the past.

We believe that parking management is an important area to pursue. Many experts suggest that parking availability is the key variable in the decision to travel by car or transit. Just limiting parking, or charging more, is a simple answer to a complex problem. Council Resolution 16-236 (regarding expanded parking hours) demonstrates the level of controversy associated with the issue and the difficulty associated with implementing even minor policy changes.

We will need to evaluate some of these issues as part of our comprehensive zoning code amendment work program. However, analysis of parking charges, zoning requirements, and implementation tools such as Parking Lot District establishment, will require substantial interagency coordination and consulting assistance. The Planning Department does not have parking specialists who could do this work although we stand ready to supervise consultants if this study were incorporated into our work program.

Transit Service Overlay Areas

Development is currently encouraged in Metro Station Policy Areas (MSPAs) through three mechanisms related to transportation:

- More relaxed LATR congestion standards (a CLV of 1800), including a queuing analysis option for intersections with CLV values higher than 1800,
- An Alternative Review Procedure that allows applicants to be exempt from LATR requirements in exchange for paying double the transportation impact tax and entering into a Traffic Mitigation Agreement (TMAg) to achieve a 50% reduction in vehicle trip generation.
- A transportation impact tax rate that, at 50% of the Countywide rate, is lower than would be expected due solely to reduced trip generation characteristics of MSPA development (otherwise, the TMAg emphasis in the Alternative Review Procedure would be meaningless).

We recommend further study of additional concepts to encourage development into areas well served by transit. These concepts include:

- Revisions to the three existing mechanisms above, such as higher CLV congestion standards (a standard of 1900 has been suggested) and sliding scales to match trip reduction goals, TMAg durations, and impact tax rates.
- Identification of separate treatments for “Transit Service Overlay” areas, defined by individual parcel proximity to transit service (including the frequency of bus service). These areas would be candidates for “mini-MSPA” treatments, such as relaxed CLV standards or transportation impact tax rates.
- Identification of separate treatments for urban areas as defined in the Road Code process. These areas would have more pedestrian-oriented design standards and should also be logical transit service nodes.

Local Area Transportation Review

During the PHED discussions of the Growth Policy in July, Council members expressed interest in a number of approaches to analyzing mobility that are applicable to LATR and inextricably intertwined:

- Considering the experience of individuals in addition to the average experience of an aggregate group
- Shifting emphasis towards operational analysis elements such as queuing and delay
- A more seamless comparison of system performance across modes

Examples of these concerns can be described for the intersection of Colesville Road and Fenton Street. Currently, due to favorable signal progression along US 29, most vehicles traveling in the peak direction along Colesville Road do not stop at all while some motorists on Fenton Street might wait for a second signal cycle. However, if signal

phases for pedestrians crossing Colesville Road were longer, both autos and buses on Colesville Road would experience greater delay.

These issues are being faced by jurisdictions across the country. The Planning Board's current Growth Policy proposals are based on national research published by the Transportation Research Board and reflected in the *2000 Highway Capacity Manual* and the *2001 Transit Capacity and Quality of Service Manual*. The Transportation Research Board is conducting additional research to inform the next generation of these documents. The National Cooperative Highway Research Program (NCHRP) Project 3-70, Multimodal Level of Service Analysis for Urban Streets, is expected to be completed in December 2007.

Based on both the level of interest in, and the complexity of both the transit-emphasis area treatments and the LATR details, we recommend that the Planning Board and County Council consider an inclusive and phased approach to the problem. To be inclusive, a technical working group should be established consisting of:

- M-NCPPC
- DPWT
- SHA
- Representatives of the consulting community who prepare LATR studies
- Interest groups such as Action Committee for Transit and Coalition for Smart Growth
- An independent consultant to provide research and development services to compare proposals with practices in other jurisdictions and beta-test those proposals with either recent or hypothetical case studies in Montgomery County.

The phased approach should include Planning Board and County Council review according to the following schedule to determine:

- Organization of technical work group and independent consultant by December 2007
- A policy on measures of effectiveness by June 2008: What outcomes should we measure in the development review process? Should the County convert from our current CLV-based methodology to an operational based methodology? How would we accomplish similar analyses for long-range master planning decisions?
- A policy on performance standards by September 2008: Given the established measures of effectiveness and analysis tools, what should the performance standards be for different areas of the County, such as?
 - Policy Areas, including

- Metro Station Policy Areas,
- Town Center Policy Areas,
- Other suburban policy areas,
- Rural policy areas
- More flexible overlay areas, including
 - Transit Service Overlay areas,
 - Urban areas as defined through the Road Code process,
- Roadway functional classification
- A policy on mitigation approaches by March 2009: Given the established performance standards, how should development applications be allowed to mitigate impacts?

This schedule should allow a phased review and buy-in process from the Planning Board and County Council so that policy decisions considered in each phase are building upon those policy decisions made in the prior phases. This schedule will also reflect our concurrent design and sustainability proposals during FY 08 and allow the Council to consider the changes as part of the comprehensive growth policy report due from the Planning Board in June 2009.

We expect that the comprehensive, three-pronged study outlined above would require two additional work years for staff and approximately \$300K in consulting services.

APPENDIX D. POLICY AREA MOBILITY REVIEW (PAMR) STANDARDS

The Policy Area Mobility Review (PAMR) process is described on pages 114 to 125 of the Planning Board's May 21 report. It consists of the following elements:

- Establishment of Transit LOS and Arterial LOS standards to be applied within each policy area
- Evaluation of the forecasted conditions for each policy area
- Finding of PAMR "adequacy" or "inadequacy" for each policy area
- Development of alternative approaches to mitigate transportation impacts of development in areas found inadequate.

The PAMR process uses information in two documents published by the Transportation Research Board (TRB) to assess arterial and transit mobility. Additional details on the process and references are described below, excerpted from material we prepared for a County Council PHED Committee worksession packet.

Transit Level of Service

Transit level of service is computed by using the Department's TRAVEL/3 model to summarize the amount of time it takes people to travel to work by auto from each policy area to everywhere else in the model region during the morning peak period. Then, the number of work-related auto trips are calculated from each policy area to everywhere else in the model region. The auto travel times are then divided by the number of work-related auto trips to compute an average roadway trip time for each policy area.

Next, the model is used to summarize the amount of time it takes for people to travel to work by transit from each policy area to everywhere else in the model region during the morning peak period. Then, the number of work-related transit trips are calculated from each policy area to everywhere else in the model region. The transit travel times are then divided by the number of work-related transit trips to compute an average transit trip time for each policy area.

Finally, the average roadway trip times are divided by the average transit trip times to compute an "average transit delay" percentage for each policy area. The resultant average transit delay percentages are used on the y-axis of the PAMR chart.

The relationship between auto mobility and transit mobility are assessed a level of service grade based upon Exhibit 3-31 of the Transit Capacity and Quality of Service Manual, excerpted below. Exhibit 3-31 describes this aspect of transit level of service as the difference in travel times. Staff has converted the Exhibit 3-31 differences to a ratio by dividing the difference in travel times, using a 45-minute journey-to-work as the

denominator. For example, a trip that takes 45 minutes longer by transit than by auto equates to a Relative Transit Mobility value of 50%, the threshold between LOS D and LOS E.

Exhibit 3-31
Fixed-Route Transit-Auto
Travel Time LOS

Since transit-auto travel time is a system measure, its data requirements are greater than those for transit stop and route segment measures. This section presents two methods for calculating transit-auto travel time LOS: one uses a transportation planning model and the other is done by hand.

As with many of the other service measures, transit-auto travel time can be measured at different times of the day, for example, at peak and off-peak times. Because peak hour traffic congestion tends to lengthen automobile trip times, the calculated LOS will often be better during peak hours than during the rest of the day. Exhibit 3-31 provides the transit-auto travel time LOS thresholds:

LOS	Travel Time Difference (min)	Comments
A	≤0	Faster by transit than by automobile
B	1-15	About as fast by transit as by automobile
C	16-30	Tolerable for choice riders
D	31-45	Round-trip at least an hour longer by transit
E	46-60	Tedious for all riders; may be best possible in small cities
F	>60	Unacceptable to most riders

Door-to-door travel by transit is faster than by auto at LOS "A." This level of service provides considerable incentive to potential riders to use transit. At LOS "B," the in-vehicle travel times by auto and transit are comparable, but the walk and wait time for transit makes the total trip by transit slightly longer. Riders must spend an extra hour per day using transit at LOS "C" levels and up to 1.5 hours at LOS "D." At LOS "E," individual trips take up to 1 hour longer by transit than by automobile.

Arterial Level of Service

Arterial level-of-service is computed by first summarizing travel speeds for each policy area under free-flow, evening peak period, travel conditions as defined by the model process for all of the non-freeway roads in each policy area. Then a travel speed calculation is made under congested evening peak period travel conditions for all of the non-freeway roads in each policy area. The free-flow travel speeds are then divided by the congested arterial travel speeds to compute an "average rolling delay" percentage for each policy area. The resultant average rolling delay percentages are used on the x-axis of the PAMR charts.

The arterial level of service standards are based on the Highway Capacity Manual Exhibit 15-2, excerpted below. As with the transit level of service axis, the PAMR arterial LOS thresholds are expressed as a ratio. For instance, on a street with a 40 MPH free flow speed, the Exhibit 15-2 threshold between LOS D and LOS E occurs at 22 MPH, or a rate of travel 55% as fast as the free flow speed.

other hand, longer urban street segments comprising heavily loaded intersections can provide reasonably good LOS, although an individual signalized intersection might be operating at a lower level. The term through vehicle refers to all vehicles passing directly through a street segment and not turning.

Exhibit 15-2 lists urban street LOS criteria based on average travel speed and urban street class. It should be noted that if demand volume exceeds capacity at any point on the facility, the average travel speed might not be a good measure of the LOS. The street classifications identified in Exhibit 15-2 are defined in the next section.

EXHIBIT 15-2. URBAN STREET LOS BY CLASS

Urban Street Class	I	II	III	IV
Range of free-flow speeds (FFS)	55 to 45 mi/h	45 to 35 mi/h	35 to 30 mi/h	35 to 25 mi/h
Typical FFS	50 mi/h	40 mi/h	35 mi/h	30 mi/h
LOS	Average Travel Speed (mi/h)			
A	> 42	> 35	> 30	> 25
B	> 34-42	> 28-35	> 24-30	> 19-25
C	> 27-34	> 22-28	> 18-24	> 13-19
D	> 21-27	> 17-22	> 14-18	> 9-13
E	> 16-21	> 13-17	> 10-14	> 7-9
F	≤ 16	≤ 13	≤ 10	≤ 7

Travel speed defines LOS on urban streets

APPENDIX E. FOUR-YEAR PAMR SENSITIVITY TEST

2011 PAMR Analysis

In response to a request from the County Council, a “2011 PAMR analysis” was performed that assumed a transportation/land use scenario reflecting a 4-year capital program in combination with land use consistent with the 2013 PAMR test. The key elements and findings of this analysis are briefly discussed below.

Land Use and Transportation Network Assumptions

The land use assumed for the 2011PAMR analysis **inside of Montgomery County** is the same as that assumed for the recommended 2013 PAMR analysis. That land use scenario is described as the combination of all existing **and** pipeline of approved but un-built development in the County (as of January 2007), plus proposed development at the Naval Medical Center in Bethesda associated with the Federal Base Realignment and Closure (BRAC) program. The land use **outside of the County** assumed a **4-year projection** (i.e., year 2011forecast) based on the MWCOG Round 7.0 Cooperative Forecast.

The following transportation projects were **removed from or modified relative to** the 2013 network in order to define a year 2011network reflecting a 4-year capital program:

- *Roads*
 - Intercounty Conector (ICC): 6-lane freeway between I-370 and US 1 in Montgomery and Prince George’s Counties (removed)⁵
 - Observation Drive Extended: 2-lane arterial roadway from the existing terminus in Germantown to the MD 355 Bypass in Clarksburg (removed)
 - Goshen Road Extended: 4-lane arterial roadway between Odenhal Avenue to Warfield Road (reduced to a 2-lane arterial roadway)
- *Transit*
 - Corridor Cities Transitway (CCT): Segment between Metropolitan Grove and COMSAT (removed)
 - Dulles Metrorail Extension: **Removed** ⁶

Summary of Findings

While several policy areas move “closer to failure” in the year 2011 test, the overall findings are quite similar to the year 2013 analysis – namely, with the exception of two policy areas (Gaithersburg City and Germantown East), all policy areas in the County are adequate. As noted above, the ICC was removed from this analysis. The roadway is clearly a major transportation facility, but it only accounts for approximately 4.3% of total Countywide vehicle miles of travel (VMT) and 1.65% of total countywide vehicle hours of travel (VHT) in the 2013 PAMR analysis. Therefore, it is not surprising that the removal of this roadway in the 2011 PAMR analysis would lead to results which are generally comparable with the 2013 PAMR test.

Relative to the 2013 test, an observation of the PAMR results for policy areas located within the “ICC Corridor Area” make sense – i.e., the regional arterial mobility (RAM) for these areas decreases. These policy areas include Aspen Hill , Cloverly, Derwood and Fairland/White Oak. The decrease in RAM in the Rural East policy area seems plausible as the removal of the ICC would have a negative impact on local traffic in the southern portion of this area. The RAM increase in Gaithersburg City and Rockville (the vicinity of the western terminus of the ICC) can be explained because ICC-related traffic is no longer able to reach the local roadway network in these areas.

Relative to the 2013 test, PAMR results for the Montgomery Village/Airpark area seem reasonable given the removal of capacity along Goshen Road. To some extent, the removal of the ICC would also contribute to the PAMR results reported for this area.

⁵ It should be noted that any **bus routes** operating along the ICC were removed as well.

⁶ This project is located in Fairfax County, VA.

The year 2011 PAMR results are summarized in the following table.

Year 2011 PAMR Tabulation

Policy Area	Forecast Relative Transit Mobility	Transit LOS Standard	Arterial LOS Standard	Relative Arterial Mobility Standard	Forecast Relative Arterial Mobility	Difference Between Forecast & Standard	Adequacy Finding
Aspen Hill	70%	C	D	40%	42%	2%	Adequate
Beth. Chevy Chase	75%	C	D	40%	43%	3%	Adequate
Clarksburg	54%	D	C	55%	71%	16%	Adequate
Cloverly	64%	C	D	40%	57%	17%	Adequate
Damascus	48%	E	B	70%	75%	5%	Adequate
Derwood	72%	C	D	40%	47%	7%	Adequate
Fairland/White Oak	62%	C	D	40%	41%	1%	Adequate
Gaithersburg	58%	D	C	55%	51%	-4%	Inadequate
Germantown East	55%	D	C	55%	52%	-3%	Inadequate
Germantown West	60%	D	C	55%	69%	14%	Adequate
Kensington/Wheaton	75%	C	D	40%	47%	7%	Adequate
Mont. Village/Airpark	63%	C	D	40%	46%	6%	Adequate
North Bethesda	73%	C	D	40%	44%	4%	Adequate
North Potomac	62%	C	D	40%	54%	14%	Adequate
Olny	65%	C	D	40%	51%	11%	Adequate
Potomac	66%	C	D	40%	43%	3%	Adequate
R&D Village	58%	D	C	55%	65%	10%	Adequate
Rockville	65%	C	D	40%	44%	4%	Adequate
Silver Spring/Tak. Pk	73%	C	D	40%	47%	7%	Adequate
Rural Area East	64%	C	D	40%	52%	12%	Adequate
Rural Area West	59%	C	D	40%	69%	29%	Adequate
Mont. County Total	75%				48%		

Measures of School Adequacy

The Growth Policy currently has a two-tiered test for school adequacy. When forecast enrollment for a high school exceeds 100 percent of forecast capacity for that high school; or forecast enrollment for elementary or middle schools in a cluster exceeds 105 percent of the capacity for those schools in that cluster, the Planning Board may approve residential development in that cluster but only if the developer agrees to contribute financially to new school facilities (a “school facilities payment”). If forecast enrollment at any level exceeds 100 percent of capacity, then the cluster is closed to new residential subdivision approvals (except senior housing) for that fiscal year.

Almost every aspect of the school adequacy test was evaluated by the Planning Board in its *Final Draft 2007-2009 Growth Policy*. The discussion begins on page 59. The Planning Board recommended:

- Using the same definition of capacity in the Growth Policy as is used by Montgomery County Public Schools for facility planning (aka, “program capacity”).
- Retaining the two-tiered test that first triggers a school facilities payment when enrollment exceeds 110 percent of capacity, and a moratorium when enrollment exceeds capacity by 135 percent. Although neither threshold is a “magic number,” they were selected by the Planning Board after an in-depth review of the factors that affect school enrollment change.
- Setting the school facilities payment equal to the cost-per-pupil of school infrastructure, which is \$32,524 for each elementary school student, \$42,351 for each middle school student, and \$47,501 for each high school student.

The numbers underpinning the Planning Board recommendations are shown in tables on the next page.

The result of the Planning Board’s recommendations is that the school facilities payment would be required at the high school level by development in the Wootton cluster; at the middle school level by development in the Clarksburg cluster; and at the elementary school level in the Blake, Clarksburg, Einstein, Kennedy, Northwest and Wheaton clusters.

County Executive Isiah Leggett’s Growth Policy recommendations contain one difference from the Planning Board’s school adequacy test recommendations. The Executive would impose the school facilities payment at a lower threshold: 100 percent of program capacity. The Executive’s recommendations would impose the school facilities payment in two additional

clusters at the high school level; one additional cluster at the middle school level, and nine additional clusters at the elementary school level.

Numbers Related to the Planning Board’s School Facilities Payment Recommendations

Marginal Costs of Growth ¹	Elementary	Middle	High
Cost per pupil	\$32,524	\$42,351	\$47,501

Student Generation Factors ²	Elementary	Middle	High
Housing Type			
SFD (single family detached)	0.320	0.144	0.131
SFA (single family attached)	0.211	0.122	0.107
Multi-family garden apt.	0.153	0.056	0.073
High/Low Rise w/parking	0.042	0.039	0.033

Cost per Housing Type	Elementary	Middle	High	Total
SFD (single family detached)	\$10,408	\$6,099	\$6,223	\$22,729
SFA (single family attached)	\$6,863	\$5,167	\$5,083	\$17,112
Multi-family garden apt	\$4,976	\$2,372	\$3,468	\$10,815
High/Low Rise w/parking	\$1,366	\$1,652	\$1,568	\$4,585

Council Issues with the School Adequacy Test

The County Council is considering several options for the school adequacy test in addition to those recommended by the Planning Board and the County Executive. The Council has not yet selected a threshold for triggering the school facilities payment or a subdivision moratorium. Among the options raised by Councilmembers: a 100 percent threshold for the school facilities payment and a 110 percent threshold for imposing a moratorium.

Councilmembers also asked for the results of the school adequacy test if the forecast horizon were changed from 5 years (the current approach) to four years. This change would mean that the test would forecast enrollment four years into the future and compare it with school capacity anticipated to be available four years from now. MCPS has recalculated the enrollment and capacity numbers for a four year test and the results are shown in a following

¹ Source: MCPS

² Source: MNCPPC Census Update Survey

table entitled “Capacity Remaining Under Various Thresholds for School Test Using MCPS Program Capacity and Four Year Threshold.”

Council staff proposed more substantial changes to the current test: calculating “staging ceilings” based on school capacity and eliminating the school facilities payment in favor of a “ceiling flexibility” provision. This second idea would eliminate the two-tier nature of the school adequacy test – a cluster would either be “adequate” and new approvals could continue, or the cluster would be “inadequate” and approvals would stop unless the developer built the school facilities needed by his development (a qualitatively different idea from having the developer contribute funds toward school capacity).

“Staging ceilings” have been used with the Growth Policy’s policy area transportation test for many years. Setting staging ceilings for schools is a relatively simple matter: the amount of remaining capacity for new students in each cluster is equal to the *forecast capacity* minus *the forecast enrollment*. In the previous table entitled “Capacity Remaining Under Various Thresholds for School Test Using MCPS Program Capacity and Four Year Threshold,” Planning staff shows the remaining capacity for new students under various definitions of adequacy.

Planning staff notes that “net remaining capacities” under the old transportation staging ceilings were based on transportation demand from *existing development* plus the entire *pipeline of approved development*. This is different from what is proposed for the school ceilings, which would be forecast enrollment. MCPS has expressed concern about using forecasts as the basis for staging ceilings, as the forecasts are already hotly debated and this would give them even greater importance.

When the Montgomery County School Board supported the Planning Board’s recommendations, it noted that a concern about “program capacity” is that it can change from year to year to a much greater extent than the current definition of “Growth Policy capacity.” The School Board proposed handling this problem by freezing program capacity of a school over the two-year Growth Policy cycle. This would mean that if a program were moved from one school to another during the Growth Policy cycle, it would not trigger a change in the school adequacy test results until the next Growth Policy was adopted. Planning staff supports this idea.

Planning Staff Response

With the exception of the School Board proposal to freeze program capacity over the life of the Growth Policy, Planning staff is not recommending that the Planning Board change its recommendations for the school adequacy test.

The Planning Board decided to recommend switching to “program capacity” to better reflect how capacity is experienced by students and how capacity is defined for school planning purposes. “Program capacity” is smaller than the current “Growth Policy capacity.” A historical concern about using “program capacity” is that the results vary depending on many small decisions not directly related to infrastructure. That is one of the reasons that Planning staff recommended that the threshold for the school facilities payment be 110 percent instead of 100 percent – the payment would not be triggered by a programming decision that just barely lifts enrollment over capacity in a cluster.

The Planning Board studied the factors affecting school enrollment change – particularly the role that new development plays compared to other sources of change. The Planning Board’s recommendation that the school facilities payment be triggered at 110 percent of capacity and the moratorium triggered at 135 percent of capacity reflects a finding that new development is often not the major source of school enrollment change.

Planning staff is not recommending that the school adequacy test be based on a four-year forecast of enrollment and capacity, although we do not feel strongly about this issue. Staff notes that the four-year test and the five-year test have the same seven clusters paying the school facilities payment, and no cluster would be over 135 percent of capacity, so no cluster would be in moratorium. A rationale for moving to a four-year test is if school facilities fully funded in the first five years of a CIP do not result in school facilities being completed five years later. That is, have programmed school facilities, once counted for the Growth Policy, been delayed? A review of past school construction by Council staff suggests that school projects, one fully funded in the CIP, do move reliably to completion.

Planning staff is not recommending the use of staging ceilings for schools. Staff notes that we did not recommend the return of staging ceilings for the transportation test, either. Our rationale is that staging ceilings add considerable uncertainty and complexity to the adequate public facilities test. That added uncertainty and complexity is not justified by the added public benefit because the relationship of new development and facility adequacy is not precise.

Planning staff has a warmer reaction to the idea of requiring developers in clusters that are inadequate to build the school facilities needed by their development project. We don't agree with Council staff's rationale³ but we agree that there is a closer nexus between *impact* and *remedy* if the developer is required to make an improvement that mitigates the impact of his development project. We are not recommending adoption of this approach because Planning staff is trying to move away from a system where developers contribute little toward infrastructure as long as facilities are "adequate" but as soon as the line is crossed into "inadequate" status, new development must mitigate 100 percent of its impact (or even more than 100 percent, in some cases).

The two-tiered school test has two different levels of requirements on developers, pending on the degree of inadequacy. Staff thinks that approach makes sense for a County at this stage in its development, and we are applying the idea in our revised recommendations for PAMR as well.

Having some clusters in "school facilities payment" status also signals the public sector that it is time to allocate more resources to that cluster. This is another way that the school facilities payment serves a traditional APFO function.

³ Council staff suggested that the use of a school facilities payment runs counter to the principle of an adequate public facilities ordinance. Planning staff does not agree, in part because of the likelihood that school facilities payments will result in the construction of the needed facilities, and in part because the school facilities payment is backed up by a moratorium if conditions worsen.

Capacity Remaining Under Various Thresholds for School Test - Elementary Schools

Using MCPS Program Capacity and Four Year Threshold

Reflects Amended FY 2007-2012 Capital Improvements Program (CIP) and MCPS Enrollment Forecast

Elementary School Enrollment and MCPS Program Capacity

Cluster Area	Projected Sept. 2011 Enrollment	100% MCPS* Capacity With Council Amended FY07-12 CIP
B- CC	3,003	2,761
Blair	3,619	3,933
Blake	2,347	2,000
Churchill	2,564	2,644
Clarksburg	3,236	3,009
Damascus	1,949	2,106
Einstein	2,221	1,758
Gaithersburg	3,637	3,947
Walter Johnson	3,126	3,094
Kennedy	2,288	1,798
Magruder	2,485	2,536
R. Montgomery	2,232	2,153
Northwest	3,872	3,475
Northwood	2,695	2,642
Paint Branch	2,277	2,337
Poolesville	585	755
Quince Orchard	2,852	2,652
Rockville	2,341	2,172
Seneca Valley	2,062	2,202
Sherwood	2,471	2,464
Springbrook	2,658	2,845
Watkins Mill	2,430	2,545
Wheaton	2,442	2,149
Whitman	2,122	2,084
Wootton	2,963	3,082

Cluster Area	Capacity Remaining (in Students)				
	100% Capacity Remaining at 100% of MCPS Capacity	110% Capacity Remaining at 110% of MCPS Capacity	120% Capacity Remaining at 120% of MCPS Capacity	130% Capacity Remaining at 130% of MCPS Capacity	135% Capacity Remaining at 135% of MCPS Capacity
B- CC	-242	34	310	586	724
Blair	314	707	1,101	1,494	1,691
Blake	-347	-147	53	253	353
Churchill	80	344	609	873	1,005
Clarksburg	-227	74	375	676	826
Damascus	157	368	578	789	894
Einstein	-463	-287	-111	64	152
Gaithersburg	310	705	1,099	1,494	1,691
Walter Johnson	-32	277	587	896	1,051
Kennedy	-490	-310	-130	49	139
Magruder	51	305	558	812	939
R. Montgomery	-79	136	352	567	675
Northwest	-397	-49	298	646	819
Northwood	-53	211	475	740	872
Paint Branch	60	294	527	761	878
Poolesville	170	246	321	397	434
Quince Orchard	-200	65	330	596	728
Rockville	-169	48	265	483	591
Seneca Valley	140	360	580	801	911
Sherwood	-7	239	486	732	855
Springbrook	187	472	756	1,041	1,183
Watkins Mill	115	370	624	879	1,006
Wheaton	-293	-78	137	352	459
Whitman	-38	170	379	587	691
Wootton	119	427	735	1,044	1,198

* MCPS program capacity based on a variety of classroom capacities based on programs in the school, including variations for class-size reduction schools,

and Pre-K/ Head Start, ESOL, and Special education programs (as published in November in the CIP and in June in the Master Plan.)

In cases where elementary or middle schools articulate to more than one high school, enrollments and capacities are allocated proportionately to applicable clusters. Enrollment projections by Montgomery County Public Schools, October, 2006.

Capacity Remaining Under Various Thresholds for School Test - Middle Schools

Using MCPS Program Capacity and Four Year Threshold

Reflects Amended FY 2007-2012 Capital Improvements Program (CIP) and MCPS Enrollment Forecast

Middle School Enrollment and MCPS Program Capacity

Cluster Area	Projected Sept. 2011 Enrollment	100% MCPS* Capacity With Council Amended FY07-12 CIP
B- CC	1,000	1,037
Blair	1,878	2,247
Blake	1,147	1,332
Churchill	1,323	1,426
Clarksburg	1,275	1,146
Damascus	910	937
Einstein	851	1,430
Gaithersburg	1,381	1,800
Walter Johnson	1,477	1,855
Kennedy	1,167	1,333
Magruder	1,192	1,656
R. Montgomery	991	973
Northwest	1,808	1,971
Northwood	847	1,339
Paint Branch	1,189	1,308
Poolesville	371	472
Quince Orchard	1,252	1,532
Rockville	817	972
Seneca Valley	1,199	1,468
Sherwood	1,272	1,475
Springbrook	1,046	1,215
Watkins Mill	1,090	1,260
Wheaton	1,398	1,570
Whitman	1,186	1,267
Wootton	1,456	1,583

Cluster Area	Capacity Remaining (in Students)				
	100% Capacity Remaining at 100% of MCPS Capacity	110% Capacity Remaining at 110% of MCPS Capacity	120% Capacity Remaining at 120% of MCPS Capacity	130% Capacity Remaining at 130% of MCPS Capacity	135% Capacity Remaining at 135% of MCPS Capacity
B- CC	37	141	244	348	400
Blair	369	594	818	1,043	1,155
Blake	185	318	451	585	651
Churchill	103	246	388	531	602
Clarksburg	-129	-14	100	215	272
Damascus	27	121	214	308	355
Einstein	579	722	865	1,008	1,080
Gaithersburg	419	599	779	959	1,049
Walter Johnson	378	564	749	935	1,027
Kennedy	166	299	433	566	633
Magruder	464	630	795	961	1,044
R. Montgomery	-18	79	177	274	323
Northwest	163	360	557	754	853
Northwood	492	626	760	894	961
Paint Branch	119	250	381	511	577
Poolesville	101	148	195	243	266
Quince Orchard	280	433	586	740	816
Rockville	155	252	349	447	495
Seneca Valley	269	416	563	709	783
Sherwood	203	351	498	646	719
Springbrook	169	291	412	534	594
Watkins Mill	170	296	422	548	611
Wheaton	172	329	486	643	722
Whitman	81	208	334	461	524
Wootton	127	285	444	602	681

* MCPS program capacity based on a variety of classroom capacities based on programs in the school, including variations for class-size reduction schools, and Pre-K/ Head Start, ESOL, and Special education programs (as published in November in the CIP and in June in the Master Plan.) In cases where elementary or middle schools articulate to more than one high school, enrollments and capacities are allocated proportionately to applicable clusters. Enrollment projections by Montgomery County Public Schools, October, 2006.

Capacity Remaining Under Various Thresholds for School Test - High Schools

Using MCPS Program Capacity and Four Year Threshold

Reflects Amended FY 2007-2012 Capital Improvements Program (CIP) and MCPS Enrollment Forecast

Cluster Area	Projected Sept. 2011 Enrollment	100% MCPS* Capacity With Council Amended FY07-12 CIP	Capacity Remaining (in Students)				
			100% Capacity Remaining at 100% of MCPS Capacity	110% Capacity Remaining at 110% of MCPS Capacity	120% Capacity Remaining at 120% of MCPS Capacity	130% Capacity Remaining at 130% of MCPS Capacity	135% Capacity Remaining at 135% of MCPS Capacity
B- CC	1,628	1,656	28	194	359	525	608
Blair	2,469	2,840	371	655	939	1,223	1,365
Blake	1,798	1,715	-83	89	260	432	517
Churchill	1,969	1,985	16	215	413	612	711
Clarksburg	1,462	1,629	167	330	493	656	737
Damascus	1,384	1,625	241	404	566	729	810
Einstein	1,545	1,575	30	188	345	503	581
Gaithersburg	1,981	2,094	113	322	532	741	846
Walter Johnson	2,030	2,199	169	389	609	829	939
Kennedy	1,405	1,718	313	485	657	828	914
Magruder	1,757	1,954	197	392	588	783	881
R. Montgomery	1,883	1,967	84	281	477	674	772
Northwest	2,100	2,187	87	306	524	743	852
Northwood	1,297	1,526	229	382	534	687	763
Paint Branch	1,665	1,899	234	424	614	804	899
Poolesville	1,063	1,094	31	140	250	359	414
Quince Orchard	1,759	1,791	32	211	390	569	659
Rockville	1,106	1,585	479	638	796	955	1,034
Seneca Valley	1,367	1,497	130	280	429	579	654
Sherwood	2,059	2,054	-5	200	406	611	714
Springbrook	1,915	2,148	233	448	663	877	985
Watkins Mill	1,623	1,890	267	456	645	834	929
Wheaton	1,385	1,472	87	234	381	529	602
Whitman	1,853	1,909	56	247	438	629	724
Wootton	2,326	2,031	-295	-92	111	314	416

* MCPS program capacity based on a variety of classroom capacities based on programs in the school, including variations for class-size reduction schools, and Pre-K/ Head Start, ESOL, and Special education programs (as published in November in the CIP and in June in the Master Plan.)

In cases where elementary or middle schools articulate to more than one high school, enrollments and capacities are allocated proportionately to applicable clusters. Enrollment projections by Montgomery County Public Schools, October, 2006.

INFRASTRUCTURE FINANCING

Background

Development impact taxes are a vehicle for new development to contribute toward the infrastructure needed to support that development. The Planning Board has recommended that new development projects be assessed impact taxes that reflect the average marginal cost of expansion of schools and transportation infrastructure capacity required to serve them and sustain current levels of service.

Planning Department staff continues to recommend setting transportation impact tax rates at levels that reflect the full cost (approximately \$1.2 billion) of planned increases in transportation capacity. The schedule of tax rates we developed to accomplish this goal is the following:

Transportation Impact Tax	General	Metro Station	Clarksburg
Residential (per dwelling unit)			
SFD (single family detached)	\$8,380	\$4,191	\$12,572
SFA (single family attached)	\$6,856	\$3,429	\$10,286
Multi-family (except high-rise)	\$5,884	\$2,943	\$7,591
High-rise residential	\$4,204	\$2,102	\$5,422
Multi-family senior residential	\$1,682	\$840	\$2,169
Non-residential (per sq. ft GFA)			
Office	\$11.55	\$5.80	\$13.90
Industrial	\$5.40	\$2.65	\$6.40
Retail	\$18.80	\$9.50	\$22.55
Place of worship	\$0.30	\$0.15	\$0.35
Private elementary and secondary school	\$0.75	\$0.35	\$1.00
Hospital	\$0.00	\$0.00	\$0.00
Other non-residential	\$4.85	\$2.40	\$5.80

In addition to being more closely tied to the cost of infrastructure, this methodology for calculating transportation impact tax rates varies from the current approach in some other ways. One of the more notable is that this method is basing the cost allocations on *total daily* auto trips, rather than *peak period* auto trips. The result of this change is to allocate more of the costs to retail uses. Retail excepted, these rates are generally about twice the current rates.

For schools, Planning staff continues to recommend that the impact tax be based on the total cost of providing new school capacity sufficient to meet the need generated by new development. The Planning Board recommends the following school impact tax rates:

School Impact Tax	Rates
Residential (per dwelling unit)	
SFD (single family detached)	\$22,729
SFA (single family attached)	\$17,112
Multi-family (except high-rise)	\$10,815
High-rise residential	\$4,585
Multi-family senior residential	\$0

This component of the infrastructure impact tax applies only to residential development. It applies to all residential development throughout the County without regard for the extent to which schools in the immediate cluster serving it are operating above or below capacity. The impact tax as recommended would provide sufficient revenues to cover the average marginal cost of the infrastructure to support new development and would allow the County to sustain current levels of service in to the future.

Another mechanism used to fund infrastructure is the recordation tax. The current recordation tax in Montgomery County is applied to the transfer in ownership of residential property. As the County continues to grow, some of the change that will occur will simply be changes in population characteristics within existing neighborhoods. School age populations within certain neighborhoods will increase even in the absence of new development, especially as older residents move out of those neighborhoods and younger ones move in. For this source of school enrollment change, the Board has recommended an increase in the recordation tax. The current Montgomery County tax is \$6.90 per \$1000 (with the first \$50,000 exempt), with \$4.40 going toward the general fund and \$2.50 dedicated to MCP and Montgomery College.

Comparison of Recordation and Transfer Taxes

The County Council requested additional comparative information about recordation and transfer tax rates. Recordation and transfer tax rates for neighboring jurisdictions vary with rates in Virginia substantially lower. Under current rates, a \$500,000 house in Montgomery County would be assessed a total recordation and transfer tax of \$10,605, compared to \$7,500 in Frederick and \$14,780 in Baltimore, while a similarly priced home would be charged \$2,167 tax in northern Virginia and \$11,000 in the District of Columbia. Virginia charges a State Grantor Tax which is paid by the property seller.

A comparative table of recordation and transfer tax rates follows.

Impact Taxes, the Cost of Housing, and Regressivity

During Council work sessions, several issues were raised with respect to imposition of the full marginal cost of growth. First, a concern was raised regarding the effect of increased

Recordation and Transfer Tax Rates

Maryland, Virginia and the District of Columbia

Virginia	Virginia Recordation Tax	County/City Recordation Tax	Virginia Grantor Tax
Alexandria City	25 cents per \$100	1/3 of State tax rate	50 cents per \$500
Arlington County	25 cents per \$100	1/3 of State tax rate	50 cents per \$500
Fairfax County	25 cents per \$100	1/3 of State tax rate	50 cents per \$500
Loudon County	25 cents per \$100	1/3 of State tax rate	50 cents per \$500
Prince William	25 cents per \$100	1/3 of State tax rate	50 cents per \$500

	D.C. Recordation Tax	D.C. Transfer Tax
District of Columbia	1.10%	1.10%

Maryland	Maryland Recordation Tax	County/City Transfer Tax	Maryland Transfer Tax
Frederick County	\$10.00 per \$1,000	0.00%	0.50%
Howard County	\$5.00 per \$1,000	1.00%	0.50%
Montgomery County	\$6.90 per \$1,000*	1.00%	0.50%
Prince Georges County	\$4.40 per \$1,000	1.40%	0.50%
Baltimore County	\$5.00 per \$1,000**	1.50%	0.50%
Baltimore City	\$10.00 per \$1,000**	1.50%	0.50%

* First \$50,000 exempt

**First \$22,000 exempt

Estimated Recordation and Transfer Costs on a \$500,000 home sale

Maryland, Virginia and the District of Columbia

Virginia	Virginia Recordation Tax	County/City Recordation Tax	Virginia Grantor Tax	TOTAL
Alexandria City	\$1,250	\$417	\$500	\$2,167
Arlington County	\$1,250	\$417	\$500	\$2,167
Fairfax County	\$1,250	\$417	\$500	\$2,167
Loudon County	\$1,250	\$417	\$500	\$2,167
Prince William	\$1,250	\$417	\$500	\$2,167

	D.C. Recordation Tax	D.C. Transfer Tax	TOTAL
District of Columbia	\$5,500	\$5,500	\$11,000

Maryland	Maryland Recordation Tax	County/City Transfer Tax	Maryland Transfer Tax	TOTAL
Frederick County	\$5,000	\$0	\$2,500	\$7,500
Howard County	\$2,500	\$5,000	\$2,500	\$10,000
Montgomery County	\$3,105	\$5,000	\$2,500	\$10,605
Prince Georges County	\$2,200	\$7,000	\$2,500	\$11,700
Baltimore County	\$2,390	\$7,500	\$2,500	\$12,390
Baltimore City	\$4,780	\$7,500	\$2,500	\$14,780

impact taxes on the price of housing. In the *Final Draft 2007-2009 Growth Policy*, Planning Department staff provides references to several academic studies that conclude impact taxes are not passed on to the homebuyer, but are instead recaptured by the developer by bidding less for undeveloped land. There is also research that indicates that home values increase when impact taxes result in a higher level of services in a community.

Staff will not revisit those arguments again in this report, except to note that even if one could characterize rising home prices in a hot market as being partially propelled by increased impact taxes (a difficult argument to make, in staff's judgment), the current housing market is no longer one that can be considered "hot." Staff discusses the housing market and the County economy in more detail further in this report.

A second concern raised was whether residential impact taxes, charged on a per-unit basis, are regressive. An alternative would be to charge residential impact taxes on a per-square-foot basis, so that the impact tax would be higher on larger (and presumably more expensive) homes.

Before looking to ways to make impact taxes less regressive, we should examine the idea that they are regressive at all. Like property taxes and income taxes, impact taxes are not directly paid by the housing consumer – they are an added cost to the home builder. Staff does not believe that we can simultaneously suggest that impact taxes are not (generally) passed along to homebuyers *and* claim that impact taxes charged on a per-unit basis have a regressive effect on homebuyers. It also seems to us that of considerably greater interest to homebuyers is: how much of the cost of new infrastructure is borne by themselves, rather than by the homebuilder or original landowner?

Who exactly is paying the impact tax also figures into the utility of varying the tax in order to change behavior. Staff has previously discussed our belief that varying impact tax rates by geography does not affect locational decisions – developers do not decide to develop in one area of the County instead of another because the impact tax is lower. More recently, some have floated the idea that charging the residential impact tax on a per-square-foot basis would encourage developers to build smaller units¹, or charging the impact tax on parking spaces would encourage builders to provide a minimum number of parking spaces.

Staff does agree, though, that charging impact taxes on a per-square-foot basis makes sense if larger housing units have, for example, greater trip or student generation than smaller units. At the request of the County Council, we investigated the calculation of impact fees based on dwelling unit size rather than type.

¹ On a multi-family building, the impact tax wouldn't change unless the overall square footage of the building were reduced. If the tax is assessed by square foot, then the impact tax on one hundred 1,250 square foot apartments is the same as the impact tax on one hundred and twenty five 1,000 square foot apartments.

Residential Impact Taxes on a Per Square Foot Basis

Staff conducted a nationwide search of jurisdictions that base impact fees on square footage of new construction as well as searched the professional literature for further information on the subject. Tischler and Bise, Fiscal, Economic and Planning Consultants, developed an impact fee schedule for Missoula, Montana, based on floor area of single-family housing this spring. We analyzed the methodology used and discussed the results with planning staff in Missoula, Montana. Several jurisdictions in Florida also calculate impact fees based on floor area using a slightly different approach (different jurisdictions have various data sources as well as impact fees for differing services). We discussed several approaches with Professor Arthur (Chris) Nelson of Virginia Tech, one of the most frequently cited experts in impact fees, to shape our methodology.

School Impact Taxes by Square Foot

Although studies conducted for other parts of the country have demonstrated a relationship between housing unit size and student generation, staff conducted our own analysis using local data. To do this, we used GIS to link parcel file data (which contains housing unit size) with data on household demographic characteristics and calculated student generation rates for single-family dwelling units by size and by type. These student generation rates were multiplied by the per seat cost of school construction in order to calculate school construction cost impact by unit size and type.

By dividing the per unit costs by the mean square feet per unit, staff arrived at a school impact tax in line with taxes calculated by unit type. Impact tax rates based on unit type and impact tax rates based on unit size appear to be equivalent proxies for the demand for school facilities. The draft impact tax based on square footage is approximately \$8.15 per square foot for single family detached houses, which would result in an impact tax on the mean existing house size of \$20,527. The impact tax for single-family attached houses would be \$10.66 per square foot resulting in \$16,580 for the average sized single family attached house.

Data limitations did not allow for a calculation of the school construction cost per square foot for multi-family dwelling units; therefore, our analysis focused on single family detached and attached dwellings. In addition, our linking of parcel file and demographic data yielded some interesting relationships that staff would need some time to explore fully.

Staff is proposing further research and data collection related to impact taxes, and we suggest the most fruitful course will be to align impact tax studies with the sustainable quality of life indicators.

Residential Transportation Impact Taxes by Square Foot

In Montgomery County, transportation impact tax rates vary by land use. For residential land uses, transportation impact taxes are charged on a per-unit basis, with single-family

detached homes paying the highest rates and multi-family senior residential paying the lowest rates. The variation in these per-unit tax rates is due to variation in trip generation.

The current set of transportation impact tax rates also vary by geographic location. The current geographic variability in the tax rate structure (Metro Station Policy Areas at 50%, Clarksburg at 150%) has been established to meet policy and fiscal objectives rather than by technical analysis of trip generation rates.²

Assuming that the goal is find the best method so that transportation impact tax rates vary according to trip generation, the issue is: what characteristic of land use is most closely correlated to trip generation? Nationally, there are a variety of options available:

- The *ITE Trip Generation* report looks at trip generation by unit type (single-family detached, etc), number of residents, and number of vehicles as separate, independent variables (each with similar R-squared values on the causal relationship) for single-family detached units and apartments. Data are unavailable for most of these variables for some multi-family structures like high rises. For single-family housing units, ITE also reports on acreage as an independent variable but the causal relationship is poor.
- MWCOG uses number of residents per dwelling unit, the number of vehicles per dwelling unit, and household income strata for trip generation in the long-range forecasting process.

The Montgomery County Planning Department's trip generation rates for use in Local Area Transportation Review are based on data collected in Montgomery County. These rates were developed without considering independent variables other than the number and type of unit.

Most jurisdictions we have studied base their transportation impact tax rates solely on the number of dwelling units by general type. Some jurisdictions have established rates for either household size (e.g., Aspen, CO) or number of bedrooms (e.g., Livermore, CA) by converting residents per dwelling unit to either bedrooms or square footage. As noted earlier, several Florida jurisdictions charge residential transportation impact taxes by square foot.

Planning staff is not recommending that the County begin to charge residential transportation impact taxes by square feet for the following technical reasons:

- The best trip generation rates for Montgomery County are those that have been locally developed for Local Area Transportation Review. The development of those trip generation rates did not take into account size of housing unit.

² Council staff has proposed to address this issue in Metro station policy areas by setting Metro station policy area impact tax rates at 75% of the general district rates, saying that this differential is closer to the actual difference in trip generation. We've found that the rate varies by land use type; while we agree that the 50% rate is too low for most uses, we recommend further study before changing the relationship between MSPAs and the rest of the County.

- In the residential land use categories for which trip generation by square foot data are available from ITE, we see no improvement gained in terms of data reliability. ITE data are not available for all types of residential uses.

An intermediate step would be to calculate the variation in size of household (in people) by size of housing unit in square feet, and then relate trip generation to size of household. Staff conducted a similar approach in order to develop school impact tax rates by square foot (discussed earlier in this report) by linking parcel file data to household-level demographic data. As we mentioned, the parcel file/demographic data comparison yielded relationships that staff would need some time to explore fully. Staff is proposing further research and data collection related to impact taxes, and we suggest the most fruitful course will be to align impact tax studies with the sustainable quality of life indicators.

In other words, if the County would like to pursue a transportation impact tax regimen based on policy objectives, rather than solely on the basis of transportation impacts, we believe the sustainable quality of life indicators program is an excellent opportunity for defining those policy objectives. From Planning staff's perspective, this position implies transportation impact tax rates should not be established by geographic districts (other than MSPAs where trip generation rates can be expected to be significantly lower than elsewhere in the County).

Incorporating Trip Length and Weighted Diurnal Trip Generation Rates into the Calculation of Tax Rates

In response to Council staff requests, Planning staff has conducted preliminary analyses of revised transportation impact tax rates by:

- Including a trip length factor by land use to reflect vehicle-miles of travel (VMT), rather than vehicle trips.
- Including a weighted diurnal distribution so that the tax rates are based on a formula of 25% AM peak hour, 25% PM peak hour, and 50% daily.
- Incorporating Clarksburg back into the general district, and
- Reflecting LATR trip generation rates for MSPAs (rather than the blanket 50% discount in the current rates).

These changes have resulted in preliminary tax rates that are slightly higher than those presented in the Planning Board's May 21 report, with the exception of Clarksburg. This is due in part to the fact that we have now projected both VMT and demographic growth for MSPAs independently from the rest of the County (whereas the May 21 rates reflected countywide growth).

This finding that the rates have increased may be counter-intuitive, but it raises a basic issue about marginal cost recovery: if one wants to recover a specific marginal cost estimate,

the ability to carve land use data into subsets containing multiple independent variables is limited by the ability to forecast development according to those same variables. For example, if we want to charge rates that vary by dwelling unit square footage, the important assumption in marginal cost recovery of a target budget is not just the range of dwelling unit sizes we have today, but rather the range of dwelling unit sizes we forecast through to the horizon year.

Such issues need not hinder the establishment of tax rates by policy; all jurisdictions make these assumptions. It does, however, complicate the explanation of multiple rate structures emanating from multiple sets of assumptions. We therefore believe it would be premature to introduce multiple sets of transportation impact tax rates prior to completion of the comprehensive, multi-agency study for FY 08 recommended in the Planning Board's May 21 report. We have shared the technical information developed to date with Council staff.

Exempting Market Rate Units in "Affordable Housing Projects" from Impact Taxes

In discussions with the County Council this summer, the Housing Opportunities Commission (HOC) noted that prior to 2001 the market rate units in a residential development project containing 30 percent or more affordable units were exempt from impact taxes. At that time the policy was changed to exempt only the affordable units. HOC suggested that the broader exemption is needed to make it financially feasible for developers to have a higher mix of affordable units in their projects.

Planning staff was not able to conduct an in-depth analysis of this issue in the past month. We note that the Planning Board has previously taken the position that exemptions and other credits be limited to the affordable units and not more generally applied to the market rate units in a project containing affordable units.

Very recently, we have added a new member to the Research & technology Center staff, Jacob Sesker, who has considerable experience preparing pro forma analyses for private sector developers. Mr. Sesker is preparing analytical tools that will allow us to better address issues like these in the future. Mr. Sesker's skill set, along with that of economist Pamela Dunn, has substantially increased the Department's economic analysis resources in the past year.

Staff notes that in the worksessions that resulted in the Workforce Housing law, the Council did not exempt workforce housing units from impact taxes. That in and of itself is not germane, but the Council also discussed a *somewhat* related issue: should residential development projects that contain a high proportion of affordable units be exempt from the workforce housing requirement? The Council decided that if the entire project contains sufficient affordable units to receive federal low-income housing tax credits, then no workforce housing units would be required in that project.

Growth Policy and the County's Economy

The Research & Technology Center of the Montgomery County Planning Department closely tracks various economic indicators in order to better understand factors and trends affecting the County's economy. The Planning Department's annual "*Economic Forces*" report and the recently released "*Housing Market Update*" are among the many ongoing efforts of the Research and Technology Center to inform the efforts of the Planning Department with in-depth research and analysis.

In addition to these ongoing efforts, the RTC staff recently analyzed the importance of the construction industry to the County's economy by using well-respected methodologies and models. RTC staff member Dr. Krishna Akundi, who has previously prepared analyses of the County's agriculture and association industries, analyzed the most current data available from sources such as the "*Census of Construction*" and the County Department of Finance's "*Quarterly Economic Indicators Report*." Dr. Akundi used the IMPLAN model to estimate the economic impact of new construction on the economy. The IMPLAN model is an input-output model that is widely used to quantify the connections between industries in a local economy. The connections between industries are based on data from a variety of federal government sources including the Bureau of Economic Analysis and the Bureau of Labor Statistics, and can be measured in both jobs and dollars.

Montgomery County, like jurisdictions across the nation, is currently experiencing a downturn in new residential construction. This decline in new residential construction is a result of poor fundamentals in the local, regional and national real estate markets as well as uncertainty in the broader financial sector. Between 2005 and 2006 (the most current year for which data is available) overall construction spending in the County fell 7%. That decline can be entirely accounted for by the decline in new residential construction. While non-residential construction spending in Montgomery County increased between 2005 and 2006 that increase was not enough to offset significant declines in new residential construction spending, which dropped more than 14% from \$742 million in 2005 to \$635 million in 2006.

Consistent with the 2006 construction spending figures, there was a sharp decline in sales of new single family detached homes in the first quarter of 2007. However, among the new single-family detached homes that sold, the median sale price jumped to more than \$1.1 million. This indicates that the single-family residential construction that did occur in 2006 was heavily skewed to the high end of the housing market.

Staff tracks trends in new residential construction spending, in part to understand how further declines might affect the broader Montgomery County economy. Spending on new residential construction may continue to decline in the near future; however, it constitutes less than one-quarter of the County's entire construction industry and in 2005 constituted only 1.15% of the County's total economic output.

Overall, Planning staff estimates that Montgomery County has a \$64.4 billion economy, 5 percent of which is contributed by construction of all kinds. About 45 percent of all construction activity is new construction (both residential and non-residential); so new construction contributes about 2.3 percent to the County's total economy.

There are a host of factors that contribute to the rise and fall of the construction industry's contribution to the County economy: national economic conditions, interest rates, job creation by the County's principal employers (such as the Federal government) and others.

Impact tax rate increases will not have long-term effects on the Montgomery County economy. While such taxes may decrease the value of undeveloped or underdeveloped residential land in the County, the taxes themselves will not discourage economic activity in the County. To the extent that the transition period to the higher rates might discourage construction activity in the short-term, the effect will be temporary and the impact on the broader Montgomery County economy will be limited. Any negative economic impact of the growth policy is likely to be much smaller than the positive impact that the growth policy will have on the County's fiscal stability. In forecasting the revenues from the impact fees currently proposed by the Planning Board, the Finance Department did not foresee the rates causing a downturn in construction.

County Council Working Group on Infrastructure Financing

In June the County Council established the Working Group on Infrastructure Financing to recommend strategies to raise substantial revenue annually to fund much-needed projects across the County. The group consists of seven members with a wide range of experience in finance and three non-voting staff members. The group is looking at a broad range of options, including some that would involve state enabling legislation. The group developed a preliminary list of about 30 options and is currently weighing the options by the following criteria: potential impact on bond rating, adequacy as a long-term source of revenue, fairness, collectability, legal feasibility, and contribution to other County goals. The Working Group was asked to issue its final report to the County Council by September 30.

The Planning Board has discussed the utility of alternative financing mechanisms, pointing out that impact taxes and other upfront charges require developers to use "the most expensive money" that they have. Special taxing districts and other mechanisms are expected to be included in the report, and the report's issuance provides the Planning Board with an opportunity to participate in that discussion.

INFRASTRUCTURE FINANCING

Appendix F: Estimated Impact of New Construction Investment on the Montgomery County Economy

Summary: Planning staff estimates that Montgomery County has a \$64.4 billion economy, 5 percent of which is contributed by construction of all kinds. About 45 percent of all construction activity is new construction; so new construction contributes about 2.3 percent to the County's total economy.

QUESTIONS

This appendix addresses the following questions:

1. What is the size of the Montgomery County Economy?
2. What is the County's Gross Product?
3. What is the construction industry's contribution to gross product?
4. What is the impact of new construction on the county economy?
5. What is the construction multiplier?

FINDINGS

TABLE 1: Size and Impact of the Construction Industry on the Montgomery County Economy

Metric	Year	Value
Gross County Product *	2005	\$64,396,074,107
Construction Industry Product *	2005	\$3,054,051,980
Economic Impact of New Construction Investment**	2005	\$2,282,000,000
Economic Impact of New Construction Investment**	2006	\$2,122,262,000
Economic Impact of New Construction Jobs**	2005	22,320
Economic Impact of New Construction Jobs**	2006	20,900

* Estimate derived by staff

**Economic impact model (direct + spin-off) results

METHODOLOGY

Research staff followed a three step process to answer the above five questions—

First, when and where available, data were collected from in-house or external published sources.

Second, as there is no published figure for Montgomery County's gross county product, staff derived this valued based on calculations recommended by the U.S. Bureau of Economic Analysis and other business researchers. Third, to estimate economic impact, staff used the IMPLAN analysis model.

How to Derive Gross County Product? The U.S. Bureau of Economic Analysis (BEA) publishes annual gross product data by industry for the nation and the states. The BEA also publishes industry earnings data for the nation, states, and counties. It is assumed that industry earnings represent a significant fraction of gross state product. Since earnings data for each industry are available at the state and county geographies, applying the county-to-state earnings by industry ratio to the gross state product by industry would provide a rough estimate of a county's product by industry; a summation of each industry's product would then result in the gross county product. Thus, using this methodology, staff

derived the Gross County Product (GCP) for Montgomery County as well as the county’s construction industry product.

How to determine the economic impact and multiplier? IMPLAN is a long-established and highly regarded software program that allows the user to estimate the impact of new investment (or disinvestment) on the economy. The software is based on the input-output model. Developers of the software have generated models for every state and county in the nation. Research and Technology Center purchased the model for Montgomery County some years ago when we were asked to analyze the impact of Associations on the County economy. To calculate the economic impact of new construction investment on the Montgomery County economy, staff returned to the IMPLAN software.

ANALYSIS

Size of the County Economy

Staff estimates that Montgomery County has a \$64.4 billion economy: over one-fourth of the state’s gross product is concentrated in Montgomery County. The construction industry represents almost 5 percent of the county’s gross product—statewide, construction represents 6 percent of the gross state product. There are a number of metrics available to measure the size of an economy including employment, establishments, payroll, and industry earnings—these are provided in Table 2. Gross product, however, is considered the best measure.

Construction is also just under 7 percent of countywide industry earnings and the county’s workforce. Data further show that 45 percent of the value of construction comes from new construction. The Montgomery County Department of Finance reports that the value of new construction in fiscal year 2005 was \$1.4 billion and \$1.3 billion in fiscal year 2006—a seven percent drop in value. Thus in conducting the analysis, staff focused on the impact of new construction investment.

TABLE 2: Size of the Montgomery County Economy

Metric	Year	Value	Industry Share of County Economy
Gross County Product *	2005	\$64,396,074,107	
Construction Industry Product *	2005	\$3,054,051,980	4.7%
Industry Earnings**	2005	\$39,045,743,000	
Construction Industry Earnings**	2005	\$2,621,698,000	6.7%
Total Employment***	2006	464,945	
Construction Employment***	2006	30,887	6.6%
Number of Establishments***	2006	32,671	
Construction Establishments***	2006	2,777	8.5%
Total Payroll***	2006	\$26,220,957,000	
Construction Payroll***	2006	\$1,706,005,000	6.5%

* Estimate derived by staff

**U.S. Bureau of Economic Analysis, Local Area Personal Income Series

*** U.S. Bureau of Labor Statistics, QCEW program

Impact of New Construction on the Montgomery County Economy: Data Inputs

The inputs or direct impact on the economy is the value of new construction. IMPLAN divides construction into its component parts: new single family residential construction, new multifamily residential construction, new non-residential construction, and other new construction. Data on the value of new residential and new non-residential construction was taken from the Quarterly Economic Indicators Report prepared by the Montgomery County Department of Finance. The component values were estimated based on ratios derived from other sources (i.e., Research and Technology Center, and Census of Construction). Because 2005 was the peak of the construction boom, and 2006 was the beginning of the downturn, the impact from both scenarios is modeled.

Table 3: Value of New Construction by Component

Metric	2005 Value	2006 Value	Multiplier*
New Residential	\$742,279,000	\$635,271,000	
New Single Family	\$720,010,630	\$616,212,870	1.59
New Multi-Family	\$22,268,370	\$19,058,130	1.63
New Non-Residential	\$544,333,000	\$578,723,000	
Mfg & Industrial	\$10,886,660	\$567,148,540	1.60
Commercial & Inst.	\$533,446,340	\$11,574,460	1.67
New Other**	\$113,388,000	\$86,006,000	1.68

*IMPLAN model

** Other types of new construction may include highways, roads, utility structures, farm houses.

Impact of New Construction on the Montgomery County Economy: Model Results

The foundation of the IMPLAN software is an input-output structure of the local economy. The IMPLAN developers have also incorporated employment, output, and income defaults into the model. Hence, for example, if the analyst knows the value of new investment but not the number of new jobs or vice versa, IMPLAN fills in the missing variable. Staff entered value data into the model and IMPLAN generated the jobs numbers. The model, through a series of matrix algebraic equations, calculated the impacts. The results show that because the construction industry, in 2005, invested \$1.4 billion in the County, other sectors of the economy—in response to this initial investment—generated almost \$882,000: a return of 0.62 cents for every new construction dollar. The downturn in the housing industry, beginning in 2006, shows the construction industry investing \$1.3 billion dollars into the county economy. While proportionally the return on investment is about the same, other sectors of the economy only generated \$821,000 in response to new construction investment. In response to every new construction job, other sectors of the economy created roughly one additional job.

Table 4: Dollar (\$) and Job Impact of New Construction Investment

	Output (2005)	Jobs (2005)	Output (2006)	Jobs (2006)
Direct	\$1,400,000,000	13,070	\$1,300,000,000	12,300
Indirect	\$413,068,000	4,450	\$383,647,000	4,100
Induced	\$468,597,000	4,800	\$438,615,000	4,500
Total	2,282,000,000	22,320	\$2,122,262,000	20,900
Multiplier	1.62	1.7	1.62	1.7

Note: values rounded

The IMPLAN model also illustrates which industries are most impacted by new construction investments, aside from the construction industry itself. The model can generate this information because the unit cost relationship between industries is part of IMPLAN’s fundamental base structure.

Table 5: Industries most impacted by New Construction Investment in rank order

Rank	Industry Name
1	Architecture and Engineering
2	Wholesale Trade
3	Owner-Occupied Buildings
4	Restaurants
5	Real Estate, Rental & Leasing

GLOSSARY OF TERMS

Direct Impacts: These may be thought of as the revenues, jobs, and wages that a new business or expanding business brings into the local economy-- or removes from the economy as the case might be.

Earnings by Industry: The Bureau of Economic Analysis, as part of its Local Area Personal Income series, reports on income generated from participation in current production. Income from current production refers to the sum total of wages and salaries, employer contributions (to pension funds, insurance funds, social security), and proprietor’s incomes by industry by geography

Gross Domestic Product: It is the total monetary value of all finished goods and services produced within the boundaries of an economy on an annual basis. This measure allows analysts to gauge the health/wealth of an economy: is it expanding or contracting?

Indirect Impacts: Any business expansion or new entry into a market will lead that business to make purchases from and/or sales to local firms. Because of new demand, local firms are likely to create some number of new jobs, increase wages and revenues. All this, in turn, will have an additional impact on the overall economy.

Induced Impacts: While direct effects and indirect effects measure the impacts of business to business interactions, induced effects are specific to the behavior of the labor force. What that means is, employees of the new business and the related businesses will spend their earnings in the local economy to purchase items such as food, transportation, housing, medical, etc.. This increased consumer spending will have additional impacts on the overall economy.

Multiplier: Ratio that demonstrates by how much the economy will increase or decrease because of a change in final demands.

Owner-occupied dwellings: This is a special industry sector developed by the Bureau of Economic Analysis. It estimates what owner/occupants would pay in rent if they rented rather than owned their homes. This sector creates an industry out of owning a home. Its sole product (or output) is ownership, purchased entirely by personal consumption expenditures. Owner-occupied dwellings capture the expenses of home ownership such as repair and maintenance construction, various closing costs, and other expenditures related to the upkeep of the space in the same way expenses are captured for rental properties.

Real Estate, Rental & Leasing: This sector includes establishments primarily engaged in renting, leasing, or otherwise allowing the use of tangible or intangible assets. Tangible assets include buildings and

equipment (without operator); intangible assets include patents and trademarks. Also included are establishments involved in managing, selling, buying, and appraising real estate for others.

Spin-off Effect: Sum total of indirect and induced impacts