

September 18, 2008

Infrastructure Assessment Workgroup Report

(Workgroup of the Task Force on Future Growth and Development)

I. Introduction

The Maryland Department of Planning's (MDP) *2004 Infrastructure Needs Survey* identified the State and local annual infrastructure needs. In 2007, these needs summed to nearly \$8,000,000,000. Total annual infrastructure investments equal only about half this amount. Maryland is not alone; the average State infrastructure gap equals \$1 trillion¹.

It appears to the Workgroup that since 2004 the need to fund the infrastructure imbalance remains large. It is estimated that in Fiscal Year 2008, the Maryland Department of the Environment (MDE) received funding requests for projects costing nearly \$1 billion, but was able to award only about \$100 million.

Maryland faces a simple but difficult problem. To achieve smart growth, infrastructure must be built and maintained in existing communities. The basics: water, sewer, schools, and roads are absolute prerequisites for denser and walkable communities. Libraries, parks, cultural/recreational and other similar facilities and amenities enrich our communities. These amenities are important for achieving improved smart growth performance as they attract people to more urban communities. Local, State and federal funds can meet only a small fraction of this demand.

The Task Force on the Future for Growth and Development recognized the smart growth/infrastructure relationship early in their deliberations. The Task Force created an Infrastructure Workgroup to bring additional focus and resources to bear on this critical issue². The Workgroup met seven times to assess the current and future infrastructure situation and to take a first cut at the Task Force's Infrastructure legislative directives. Essentially, the Workgroup attempted to document opportunities to use infrastructure to increase the amount of development following smart growth principles. The Workgroup believes that such communities would be inherently sustainable.

The Workgroup identified four infrastructure types that most influence developments' "smartness"; they are:

1. Sewage facilities
2. Water supply facilities
3. Schools
4. Transportation facilities

¹ Hank Habicht, Director, Global Environment and Technology Foundation, US Chamber of Conference *Water Infrastructure Conference*, C-Span, July 28, 2008.

² Principles for smart growth and its definition are currently being adopted by the Task Force. The work group for its work considered smart growth to equate to the implementation of the State's eight visions, which would result in compact, environmentally sensitive, and less vehicle dominated development pattern.

These facilities, when available, permit a compact, mixed-use, and less vehicle dominated use pattern. With this pattern, most of the smart growth basics can be attained. Therefore the Workgroup concentrated on these four facility types. The Workgroup anticipates that each jurisdiction will rely on new development requirements and their own willingness to pay to provide the appropriate level for non-basic infrastructure.

This report briefly documents the Workgroup's assessment of basic infrastructure's role in furthering the State's growth management objectives. The Workgroup began by recognizing the Task Force's infrastructure statutory mandate from House Bill 773. It then identified several values to provide a framework against which its recommendations could be judged. The report then provides recommendations to:

1. Assess existing conditions and the impact of infrastructure investments on development patterns.
2. Identify tools to estimate future needs.
3. Provide options for funding these needs.

The next section addresses the Task Force on Growth and Development's statutory infrastructure mission.

II. Infrastructure Statutory Mission

Below are the three HB 773 infrastructure directives to the Task Force:

1. Determine methods to assess the cumulative impact of proposed development on infrastructure, including water, sewer, roads and utilities and on transportation, fire and safety resources, health systems, educational systems and environmental resources on a regional scale.
2. Identify infrastructure needed for smart growth development consistent with population growth.
3. Assess mechanisms to fund the construction and maintenance of smart growth infrastructure.

III. Sustainable Communities—Values that Guide Investment

These values are essential to the sustainability of a community. It is realized they represent a utopian view of how we envision an ideal community. They are offered as a guide for judging the Workgroup's recommendations.

1. Economic Prosperity
2. Environmental Protection
3. Community Health
4. Sense of Place
5. Social Advancement

IV. Assess the Cumulative Impacts of Proposed Development on Infrastructure

The Workgroup recommends that State agencies be required to report infrastructure expenditures and assess whether the expended funds promote sustainability. The *Smart Growth and Neighborhood Conservation Policy* Executive Order 01.01.1998.04 requires that all agencies report on the use of funds relative to Priority Funding Areas. The Maryland Office of Smart Growth is preparing a draft annual report to the governor that will consolidate this information. The Workgroup recommends that this report:

1. Determine and display for each expenditure its geographic location, amount and purpose.
2. Assess its effect on encouraging smart growth from both a State and local perspective.
3. Categorize expenditures in three groups:
 - a. Healthy and safety
 - b. Maintenance of existing infrastructure and
 - c. “Discretionary”
4. Provide recommendations for improving the use of funds to encourage additional smart growth.
5. Require that the infrastructure expenditure report classify spending “improvements” and critically review expenditures for their performance in fostering smart growth development.

V. Infrastructure Needed for Smart Growth Development Consistent with Population Growth

The Workgroup identified the following factors as critical to targeting growth within Priority Funding Areas.

Debt Capacity and Affordability:

According to the Maryland Association of Counties (MACo), debt capacity varies from county to county. Bonded indebtedness is statutorily set by individual counties and is generally set at 15% or less of the counties’ general fund. At this time, MACo believes most counties are carrying as much debt as they can reasonably maintain. (See Appendix A – County Debt Overview.)

The Maryland Municipal League (MML) indicated that city and town debt capacity is limited. To assess and summarize this capacity is extremely difficult due to the vast disparities in population size, service offerings and budgets. Few towns and cities have formal property tax and/or debt limitations. Further complicating the situation is the large number (156) of municipalities. Municipalities often have a “pay-as-you-go” philosophy and formally adopted debt limitations are the exception rather than the rule. For these reasons, the Workgroup did not attempt to characterize municipal debt capacity.

Local governments appear to have limited capacity for carrying additional debt to finance infrastructure improvements.

Water Permits and Priority Funding Areas:

The Maryland Department of the Environment evaluates each application for a permit to withdraw water for the reasonableness of the amount of water planned for a particular use and the impact of that use on the resource and other users of the resource. These methods are intended to determine if sufficient ground water or surface water is available to supply the requested appropriation without unreasonable adverse impacts on the streams in the watershed. The evaluations are conducted by MDE staff using statistical analyses and analytical tools, and are based on hydrologic and other data from a variety of databases and published reports. Through the permit review process, MDE attempts to avoid adverse impacts to other water users, to assure that water withdrawals do not exceed the sustained yield of the State's surface water and aquifers and to protect stream ecology. For areas underlain by unconfined aquifers, MDE evaluates water withdrawal permit applications using watershed-based, water-balance methods.

Some municipalities in the regions of the State where MDE applies the water balance method of appropriation cannot support additional dense development with the amount of water allocated. This issue, and the relative ease outside the Priority Funding Areas of developing on individual wells and on-site sewage disposal systems like septic tanks, is perceived to undermine smart growth and prevent some towns from building enough of a "wealth base" to serve residents adequately. Some communities disagree with MDE's use of the water balance policy and want MDE to consider other methodologies. MDE notes that in some areas, the limiting factor isn't the allocation policy but the actual availability of water.

A few mechanisms are available to water constrained municipalities to improve their water supply appropriation. The municipality could:

1. Buy land, or buy a water rights easement on land, outside of the municipality. This provides additional recharge credits, so the municipality could qualify for a larger water appropriation.
2. Institute aggressive water conservation measures, document their success, and thereby make the conserved water available to new users.

A bill passed by the Maryland Legislature (2008 Laws of Maryland, Chapter 198) allows MDE to give priority to public water systems that serve certain municipalities and Priority Funding Areas in Carroll, Frederick and Washington Counties. MDE plans to convene a stakeholders group to recommend how to implement this law. At this time, the precise impact of this law is not known.

The Advisory Committee on the Management and Protection of the State's Water Resources, the "Wolman Committee," made several recommendations closely related to water allocation policies. It recommended that two hydrological studies be funded and conducted to improve the water allocation model to better support water appropriation decisions, and it recommended that, following completion of these two studies, the State should revise, as appropriate, its allocation policies or other science-based methodologies into regulations. The two hydrologic studies would cover virtually the entire State:

1. The Fractured Rock Water Supply Study, covering Maryland west of the Fall Line will provide tools for predicting the seasonal impacts of ground water withdrawal from fractured rock on the water resource and the health of stream biota. The study is estimated to cost \$5.7 million and is expected to take at least 5 years to complete.
2. The Coastal Plain Aquifer Study will cover Maryland east of the Fall Line. This study is estimated to cost \$11.8 million and is expected to take 6 years to complete.

The Advisory Committee also recommended that surface and ground water monitoring networks be expanded. The two studies and the monitoring will provide comprehensive state-wide data and scientific tools needed to ensure that water is allocated and used in a sustainable fashion, while minimizing ecological damage. Funding of these studies and the enhancements to the monitoring network has not been authorized by the legislature.

Water Supply and Water Reuse:

Treated wastewater may be reused. The technique known as “land treatment” involves the application of treated wastewater to the land surface by several methods, spraying or drip irrigation is the most common. Land treatment systems are regulated by State Groundwater Discharge Permits; COMAR 26.08.01 through 26.08.04 and 26.08.07, which contains specific provisions addressing the quality of the wastewater, the application rate, and any other parameters necessary to protect groundwater. Setback requirements are prescribed. When treated wastewater is used for irrigation, it reduces water demand and can add water to the groundwater table.

In addition, treated wastewater can be used in other ways. For example, it can be used for cooling water, in air pollution control equipment such as wet scrubbers, etc., which consume large quantities of water by evaporation. There are several examples of such reuse in Maryland. The reuse itself is generally not subject to MDE permitting (there are exceptions), but the ultimate discharge of the remaining water is regulated by the groundwater discharge permit system, or the National Pollutant Discharge Elimination System for surface waters. High consumption, whether through use or reuse may have consequences. Some surface water appropriation permits contain provisions that require the permittee to augment the flow in the surface water to offset consumptive use during low flow periods. Such a permittee might have to take less water, reduce consumption or release stored water to the surface water during periods of low flow.

Other states have implemented water reuse on a large scale for decades. Because these states impose fewer constraints on land application than Maryland, treated wastewater is widely used there for irrigation in residential areas. In some cases, highly treated wastewater is returned to the water supply.

Wastewater:

The Chesapeake Bay Tributary Strategy limits some wastewater treatment plants by imposing nutrient caps. For these plants, MDE's Policy for Nutrient Cap Management and Trading (Phase I) offers some options for expansion. Other plants may also be limited because their waterways are degraded and subject to a Total Maximum Daily Loads (TMDLs). TMDLs are federally mandated by the Clean Water Act for waters that do not meet water quality standards. TMDLs establish the upper bound for the amount of a particular pollutant that can be assimilated by a water body or stream segment. They are computed by MDE and vetted through a public process. The load is divided between point sources and nonpoint sources. Point sources receive a waste load allocation, which sets a permit limit. If this permit limit is for nitrogen or phosphorus, and is lower than the nutrient cap, a treatment plant may have to operate below capacity, or upgrade its treatment, in order to meet the TMDL. If a Priority Funding Area's wastewater treatment plant discharges to a TMDL-limited water body, this can work against concentrating new growth in Priority Funding Areas.

While there is a well-developed permitting system for point sources, this is not true for nonpoint sources. Nonpoint pollution is addressed by best management practices, sediment and erosion control, and stormwater management. A coordinated strategy is needed to bring the total loading of pollutants below the TMDL.

Adequate Public Facilities Ordinances:

Adequate public facilities ordinances work best when jurisdictions have a mechanism for eliminating the infrastructure inadequacy when they arise. The two biggest planning issues for any jurisdiction are (1) what land uses will be allowed and where; and (2) how do we create public infrastructure in time to serve private development that is coming on line? The first question -- land use -- should remain principally a local decision. But the second question -- where to build infrastructure and how fast -- is the one where the State government has a role. Major infrastructure projects (e.g., roads, transit, schools) often involve State funding. Such infrastructure functions best if planned with consideration of regional and State-wide perspectives.

At times, adequate public facility ordinances conflict with the State school funding formula and with the implementation of federal and State educational policies. For instance, if the local policy for maximum student per classroom size is set below the State funding standard for a new, replacement or expanded school, the problem of "overcrowded" schools will not be solved unless the jurisdiction is willing to fund the additional facility costs commensurate with the local standard.

The State's Department of Education's Interagency Committee or its designees analyze whether an educational facility seeking to increase school capacity qualifies for state funding. The Interagency Committee evaluates the State classroom and construction policies and compares the actual enrollments and the seventh year enrollment projections, to determine whether the school enrollments exceed the facilities' approved State capacity and are therefore eligible for state funding. The State of Maryland's Public School Construction Program Administrative Procedure Guideline defines the State Rated Capacity "as the maximum number of students that can reasonably be accommodated without significantly hampering delivery of the educational

program”. The student/classroom ratios are:

- Elementary school is 20 to 23:1
- Middle schools and high schools is 25:1
- Special Education self-contained classrooms is 10:1.

Transit:

A sincere and concerted commitment by local and State government agencies to pool their resources, financial and otherwise, is needed to ensure that growth is directed towards current and planned transit stations and to take advantage of other mass transit. The Baltimore Regional Transportation Board recently announced that \$350 million would be directed to transit projects. While this is welcomed news for environmentalist and smart growth advocates, non-urbanized centers will remain underserved. There is a significant need for public transit in non-urban areas. Federal mass transit funds are not available when the number of long distance commuters is insufficient to meet federal funding standards. The issue with rail transit and long distance commuting will need to be monitored and reassessed periodically. The Maryland Department of Transportation will be conducting a survey of local needs for transportation infrastructure.

2004 Infrastructure Survey:

The Workgroup suspects that the magnitude of need has not changed for local jurisdictions since the 2004 Infrastructure Survey was completed and that another survey would reach the same conclusion. Other than providing a refined problem definition, another survey would likely find that there is more need than funding. One suggested improvement for future surveys would be to include questions that delineate what funding is necessary to encourage development in Priority Funding Areas.

VI. Mechanisms to Fund the Construction and Maintenance of Smart Growth Infrastructure

The following funds sources were identified by the Workgroup:

1. Existing State Funding for Infrastructure Improvements:
 - a) The Maryland Department of the Environment provides grants and loans to local governments for wastewater, drinking water, and non-point source pollution control projects to improve water quality and address public health problems.
 - b) The Division of Neighborhood Revitalization within the Maryland Department of Housing and Community Development administers both funding and technical assistance programs that support local governments, non-profit organizations and small businesses by funding local infrastructure improvements. The Local Government Infrastructure Finance Program, in particular, assists governments with municipal bond offerings.

- c) The Maryland Department of Transportation coordinates and assists local jurisdictions with directing development, enhancing and maintaining safety and mobility, and preserving economic development. Several programs such as the Transportation Enhancement Program provide partial funding to support local streetscape and trail enhancements.
- d) The current United States surface transportation authorization bill, SAFETEA-LU (Safe Accountable, Flexible and Efficient Transportation Equity Act – A Legacy for Users (SAFETEA-LU)), expires in September 2009. The need to authorize a new bill for federal highway and transit spending in 2009, presents a great opportunity for State and local stakeholders to shape federal transportation policy toward the provision of greater transportation choice for Maryland residents.

2. Potential Federal Resources:

- a) The Farm Bill contains some money for measures to combat nonpoint source pollution in the Bay region, but President Bush has proposed eliminating the first year of the new five-year, \$188 million program for bay farmers.

3. Existing Resources:

- a) Impact Fees/Charges: The Flush Tax spreads the cost to all who benefit from improved water quality and reduces the hardship on the affected jurisdictions. Even though all counties contribute to this fund, only the largest wastewater treatment plants can expect to receive grants. Smaller counties are not eligible to reap the benefits of the implementation of this funding source.

It is noted that impact fees may affect the supply of affordable housing. Impact fees in general also increase the cost of housing. As a result, impact fees can limit the development of affordable housing.

- b) Bond Debt: Fiscal parameters are statutorily established by some counties. Most counties are at their practical debt capacity limit when bond rating and other considerations are recognized.
- c) The Chesapeake and Atlantic Coastal Bays 2010 Trust Fund (2010 Trust Fund) was established during the 2008 Legislative Session by Senate Bill 213 to provide financial assistance to local governments and political subdivisions for the implementation of nonpoint source pollution control projects to achieve the State's tributary strategy developed in accordance with the Chesapeake 2000 Agreement and to improve the health of the Atlantic Coastal Bays and their tributaries.
- d) Tax Increment Financing: This approach could be used to finance water and sewer.
- e) Private Activity Bonds: These bonds have a statutory cap that determines the amount of bonds issued for a jurisdiction. Federal legislation has been proposed to lift the cap

on these bonds. Private activity bonds have been successfully provided to transportation facilities. Their use for other facilities may be a source of relatively low-interest financing.

VII. Infrastructure Recommendations

Simply stated the need for infrastructure far outstrips current funding on the federal, state, and local level. In the past, federal and state grants and loans were generous. Now local governments and users shoulder most of the burden. If smart growth is to become a reality, new and expanded infrastructure funding is required. The Infrastructure Assessment Workgroup offers the following recommendations for the Task Force's consideration beginning with a list of recommendations for which the workgroup had a full consensus. Following next is a list of items that have been deferred to the Adequate Public Facilities Ordinances Workgroup for further investigation. Lastly, we provided a list of concepts for which the group could not reach a consensus.

1. Provide local governments with additional authority to implement new revenue sources, such as transfer tax and excise tax authority, with revenue being dedicated to provide for infrastructure improvements. Implementation would be a local option.
2. Require that MDP update the 2004 Infrastructure Survey periodically and:
 - a) Undertake this survey on a regular and predictable basis (once every ten years).
 - b) Continue to make changes in the survey to ensure that there is clarity in the definition of terms so that results are consistent across jurisdictions and over time.
 - c) Consider asking about infrastructure needs in growth areas in future surveys in addition to asking for infrastructure needs in Priority Funding Areas.
3. State and, if available, federal funding should be provided to the Maryland Department of the Environment so that it can complete the state-wide hydrology study so that the State's water resources can be more reliably assessed. As an interim measure, a strategy should be developed to address growth in water-constrained Priority Funding Areas.
4. The Maryland Department of the Environment should carefully review existing standards and the programs of other states to develop policies and regulations that maximize opportunity for water reuse without compromising public health and explore the use of State funds to help jurisdictions acquire rights for land application of treated wastewater.
5. The State should study potential state-wide funding sources that could be used to generate revenue for infrastructure to support smart growth without impacting local revenue sources.
6. Expand the Department of Housing Community Development's Local Government Infrastructure Finance Program. The Department of Housing Community Development's is currently reviewing options for enhancing the reach of the Local Government Infrastructure Finance Program. Requests from local governments for assistance with municipal bond financing have nearly tripled from \$33 million in 2007 to more than \$100

million for 2008. The issue under review is use of the Maryland Housing Fund's resources as a credit enhancement, replacing the costly private bond insurance that now excludes many smaller towns and cities from the municipal bond market. In addition, the Department is looking at other models for infrastructure investment, including the Virginia Resource Authority, which provides a similar service to the Department of Housing Community Development's Local Government Infrastructure Finance Program but at a larger scale.

7. Additional site-level investments in transit facilities may reduce vehicle trips and thereby offset the need for certain highway improvements. The opportunities for such alternative investments should be identified and investigated for their practicality and cost effectiveness.
8. Local growth policies should encourage developers to design concentrated and walkable communities in areas where such development is appropriate. One possibility is to give upgrades and maintenance of existing infrastructure a high priority. Adopting such a "fix it first" policy would stabilize and improve infrastructure capacity for infill areas.
9. The Task Force should be briefed on the changes in infrastructure funding over last several decades to gain appreciation for the changing roles of government entities.
10. Develop a Storm Water Management and Utilities Usage Fee. While creation of this fee would provide new revenues, taxpayers may object that there is no need for additional capacity and that new development is not needed. This has been politically difficult to implement. The State should nonetheless create local enabling authority. Implementation would be a local option.
11. If smart growth is to take place in Priority Funding Areas where the water balance policy restricts the appropriation of water, interim relief will be necessary until the funding is provided and the recommended studies completed. Workgroup members recommend that MDE broaden the scope of its stakeholder group on Chapter 198 to explore how to address the need for water in Priority Funding Areas. There may be aspects of State water rights law that also need to be reevaluated.
12. Water quality recommendations:
 - a) Continue to regulate development to minimize its point and nonpoint pollutant contributions.
 - b) Provide funding to implement local watershed plans (Watershed Restoration Action Strategies).
 - c) Implement the Phase I and II of the nutrient cap management and trading program for pollutant reduction.
 - d) Develop policies at the State and local level consistent with protecting the environment and public health to reduce the cost of using spray irrigation for waste

disposal. Examples of potential cost savings include: preapproval of spray irrigation sites by county water and sewer plans, adjustment of local buffer requirements to match the State's 25 foot buffer for spray site and, when appropriate, allowing winter discharge to reduce system storage requirements.

- e) Intensify cooperation between federal/state/local government agencies to address impaired water ways.

VIII. The Following items have been deferred to the Adequate Public Facility Ordinances Workgroup for further study

1. The State should work with jurisdictions to develop a plan and a schedule for correcting their inadequate public facilities. This should be done even if implementing the plan is contingent on the availability of financing.
2. New development generating demand for public facilities should “pay its way” for such facilities. For example, adequate public facilities ordinances and current development regulations often do not address the development's off-site right of way requirements for State and county infrastructure and traffic mitigation.
3. Local jurisdictions with lower class size standards than the State Rated Capacity must be prepared to fund the additional school square footage above the State standard.
4. Develop a sunset provision on adequate public facility ordinances and/or require mandatory redistricting of overcrowded schools as to prevent building new schools outside of designated growth areas in response to an adequate public facility ordinance or identify priority growth areas where State and local agencies should concentrate efforts to address needs and lift adequate public facility moratoria.

IX. The following are concepts discussed by the workgroup, but consensus was not achieved

1. Institute smart growth performance measures for development approvals. When State funds are used to fund local infrastructure development, these measures could be used to establish priorities among competing projects. The workgroup believed that such measures would fail due to the variety of circumstances among the jurisdictions. In other words, one size could not fit all.
2. Prior to development projects approval at the State or local level, adequate infrastructure needs to be either be in place or planned to support the project. If adequate infrastructure is not currently available and not likely to be available in time to support the anticipated development project, the project should not be approved until such infrastructure is identified and approved. This concept states standard practice and essentially does not add substance to our recommendations.
3. Jurisdictions should include a discussion of adequate public facilities in their

comprehensive plan and adequate public facilities ordinances should be linked to the comprehensive plan. The workgroup was concerned that the many recent additional comprehensive plan requirements are resulting in “plan bloat”. Therefore the group chose not to recommend adding this requirement.

4. A workgroup should be convened to review and possibly revise the public school funding process and standards as it relates to expansion/improvement versus new construction of schools. The workgroup understands that a State task force has recently addressed this issue and it is considered settled for now.

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