

State Funding for Public Sewer Infrastructure in Maryland:

Is it Smart Growth vs. Bay Restoration?

James R. Cohen
Urban Studies and Planning Program
University of Maryland

jimcohen@umd.edu

October 5, 2007

Issues Studied

- How important is State financial assistance to local governments in enabling them to generate needed funding for public sewer infrastructure?
- To what degree is state sewer funding being used for facilities inside, rather than outside of, PFAs?
- Are the recent caps on nutrient emissions from major sewer plants in MD, resulting in tension between Smart Growth and Chesapeake Bay restoration goals?

Approaches Used to Answer Questions

- Analysis of Maryland Dept. of Environment (MDE) spending programs for local sewer projects
- Review of Smart Growth provisions, Bay Restoration Fund and other relevant legislation
- Review of prior research
- Interviews with key informants
- Analysis of most recent State Water Quality Revolving Loan Fund priorities

MDE Local Funding Programs

The MDE administers 8 grant and local programs for local water and sewer projects, for purposes of:

- upgrading wastewater facilities (4 programs);
- retrofitting stormwater management controls (1 program.);
- restoring streams (1 program); and
- acquiring, constructing, rehabilitating and improving water supply facilities (2 programs).

MDE Financial Assistance for Local Sewer Infrastructure

Program	Funding: 1997-2006
Water Quality Revolving Loan Fund	\$781.5 million
Biological Nutrient Removal (BNR)	\$147.7 million
Supplemental Assistance Program	\$ 36.6 million
Bay Restoration Fund	\$ 73.9 million (sewer) \$ 9.0 million (septic)
Total	\$ 1.05 billion

Maryland Dept. of Management and Budget (2006)

MD Smart Growth limitations on State funding

Since Oct. 1, 1998, the State may not provide \$ for a “growth-related” project if that project is not located within a PFA. MDE sewer funding programs that are considered to be “growth related” are:

- Water Quality Revolving Loan Fund; and
- Supplemental Assistance Program.

These 2 programs accounted for 66.3% of all MDE financial assistance for local programs between 1997 to 2006 (or \$818.1 million).

MD Smart Growth limitations on State funding (cont.)

Exceptions to the rule regarding growth-related project funding and PFA location are:

- projects approved by Board of Public Works;
- projects required to protect public health and safety;
- projects that “due to operational or physical characteristics, must be located away from other development;” and
- MDE-funded sewer projects “in an existing community located beyond the periphery of the developed portion of the community if permitted average density is ≥ 3.5 units per acre.

1. Importance of State financial assistance to local govts?

Howland and Sohn (2007):

- reviewed county CIPs covering late 1990s & early 2000s
- found that State \$ share of county *water and sewer* projects $\approx 8\%$

Maryland Dept. of Planning (2001):

- surveyed local governments on infrastructure needs
- counties said State share of \$ for public sewer would need to be 29 %

Finding: *prior reports show differing results due to methodology; the level of dependence is now higher due to nutrient reduction requirements.*

2. MDE sewer funding inside of PFAs?

For its Water Quality Revolving Loan Fund, MDE uses an Integrated Project Priority System to rank projects.

- For latest funding round, MDE received 138 applications requesting \$956.2 million in loan assistance. Funds available (\$136.6 million) can fund 21 projects. 98 of the projects are for wastewater treatment facilities.
- 71 (or 72%) of the 98 wastewater treatment projects are indicated as being located inside PFAs and no mention is made of exceptions.

Analysis of Pre-applications for MDE's Water Quality Revolving Loan Fund in 2007

For the 27 other proposed wastewater treatment projects:

- 14 would have “categorical exclusions” based on biological nutrient removal needs;
- 11 would have “categorical exclusions” on the basis that a condition of the state financial assistance is that the project not allow for expansion to accommodate new growth; and
- 2 would not be funded because of “expansion” (to new lots?).

Analysis of Pre-applications for MDE's Water Quality Revolving Loan Fund in 2007

It is not clear from MDE documents how many of the projects are serving development outside of PFAs.

Other information: According to records provided by MDE, between 2007 and 2007, MDE and DBED have approved and, in some cases funded, 10 local water or wastewater projects located outside of PFAs – each consistent with exception criteria.

Finding: *While MDE has no master list of PFA and non-PFA sewer projects funded since 1997, some projects serving areas outside of PFAs have been approved. However, State records indicate that these projects have been consistent with Smart Growth exceptions criteria.*

3. Is it Bay Restoration vs. Smart Growth?

Under U.S. EPA and State mandates, each major waste water treatment plant in MD is bound by TMDLs; upgrade deadline = 2010.

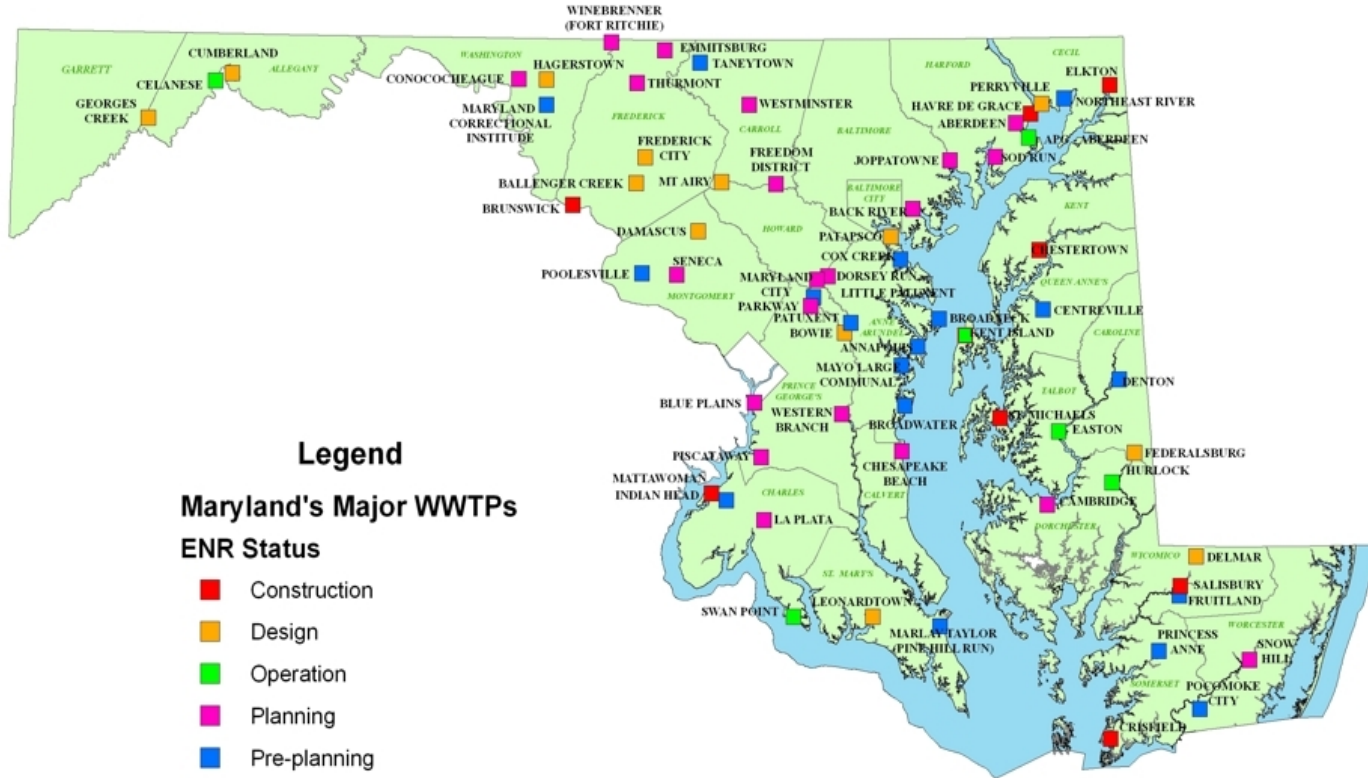
- TMDLs are future limits on the Total Maximum Daily Load of its
a) nitrogen and b) phosphorous emissions to water bodies.
- This is beyond the State requirement that each treatment plant attain a waste water effluent quality of 3 mg / liter of N and 0.3 mg / l of P.

Funding for the upgrades of the 66 largest sewage treatment plants will come from a “flush tax”, approved by MD legislature in 2004, of

- \$2.50 per month for each “EDU” on public sewer; and
- \$30 per year on each HH w/ an on-site septic system.

\$ collected is used to generate bonds totaling \$750 million.

Maryland's Major Wastewater Treatment Plants Current ENR Status



Map Date -- 27 July 2007 Rev. 2



Martin O'Malley, Governor
 Anthony G. Brown, Lt. Governor
 Shari T. Wilson, Secretary
 Robert M. Summers, Ph.D, Deputy Secretary



Example: Cecil, the state's 2nd fastest growing county

To serve development already in pipeline, and expected growth, the plant's capacity will need to more than double.

- By the year 2010, upgrades with flush tax will enable county's plant to treat 2.7 million gallons per day -- enough to serve development now in the pipeline -- but this is limit of State's nutrient cap for the plant.
- The expanded plant capacity will not be sufficient to serve the projected growth → new growth in rural areas . . . on septic systems.
- Bay Restoration Fund Advisory Committee (2007) states that plant construction bids are up to 30% higher than original estimates

Implication: *In Cecil County and other places, capacity upgrades might not be sufficient to serve growth within PFAs.*

Options for reducing conflict between Smart Growth and the sewer plant nutrient caps?

- Increase available funding, through higher “flush tax”, or getting 30 year bonds rather than 20 years (Coble 2007).
- Introduce a nutrient trading program, by which a plant at TMDL capacity could:
 - buy excess capacity from another plant; or
 - pay for planting of cover crops or creation of riparian buffers or wetlands.

Options for reducing conflict between Smart Growth and the sewer plant nutrient caps?

But . . . paying for cover crops is an acceptable option only if there is a clear, scientific foundation for the nutrient reduction to be achieved by the agricultural Best Management Practices used. Simpson and Weammert (2007) note that expected results of BMPs vary with:

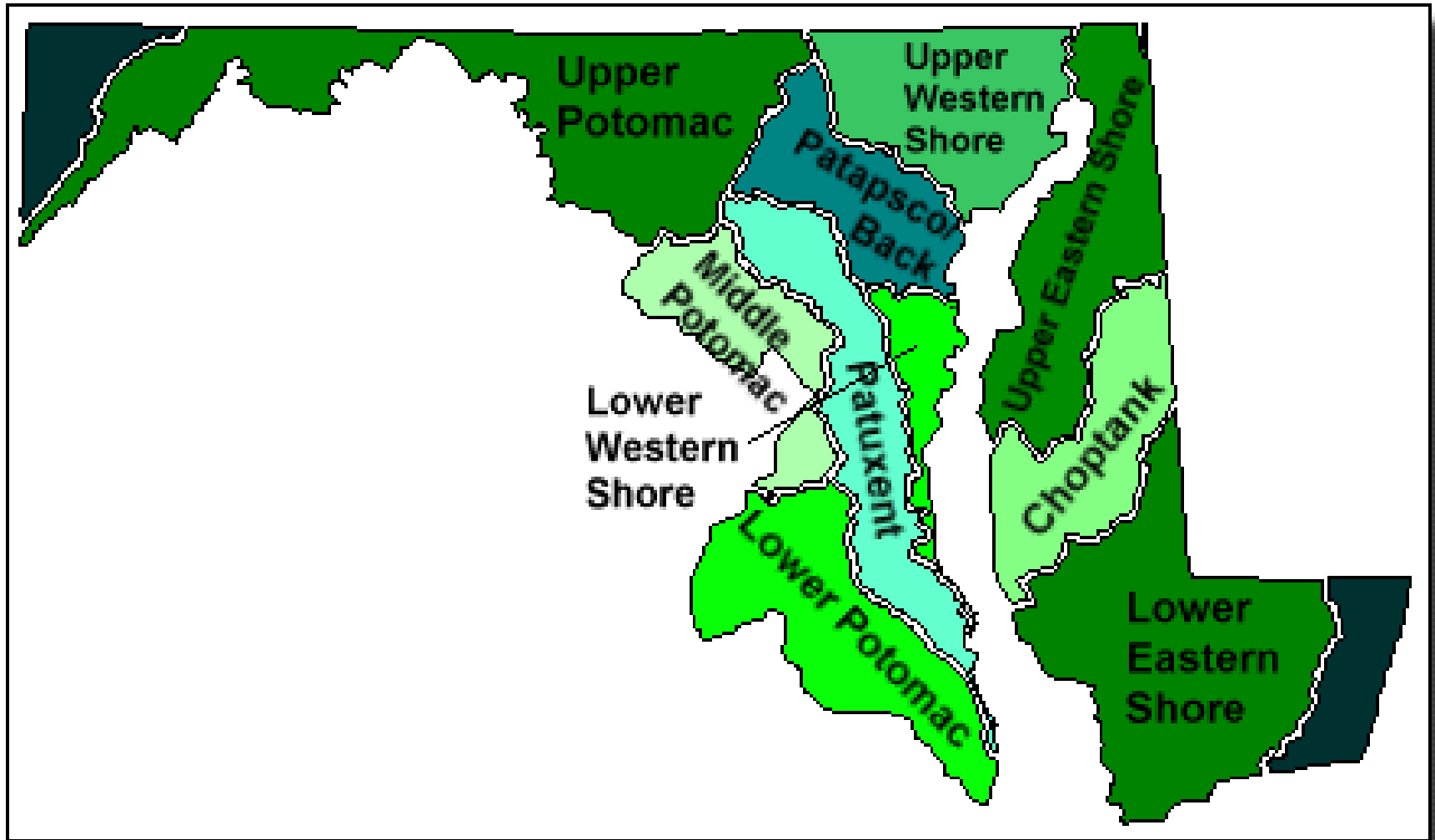
- geography;
- topography;
- farm management practices; and
- a variety of other factors.

Other Options?

- A bubble permit, under which TMDL limits could be applied to a planning area established by MDE rather than to each individual plant (MDP 2007)
- Allowing wastewater reuse, such as for spray irrigation, to be credited to a plant's TMDL reduction. (But where will the N and P in that water be after several years?)

Any alternatives need extensive study to ensure that Bay water quality is not compromised by offset programs

The 10 subwatersheds in MD (for Tributary Strategies)



<http://www.dnr.state.md.us/bay/tribstrat/brochure.html>

Conclusions

- Local govt. dependence on State funds for public sewer has been low in recent years, but is increasing.
- MDE has not kept systematic records on its project funding w/ regard to PFA / non-PFA. Available State data indicates outside-PFA funding has been consistent with the Smart Growth law.
- Unless more funding is made available, or carefully crafted nutrient trading and/ or other offset programs are introduced, TMDL limits could produce results contrary to purposes of both Smart Growth and Chesapeake Bay restoration.
- Better data is needed related to all these issues.