

# Pennsylvania Stormwater Financing Initiative

## Final Report

Prepared for the Environmental Protection Agency

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Prepared by the **Environmental Finance Center**



National Center for Smart Growth Research & Education  
University of Maryland  
June 2008

# Table of Contents

Executive Summary .....	4
Background .....	5
Stormwater Financing Initiative .....	5
Program Goals and Objectives.....	5
Overview of Stormwater Management in Pennsylvania.....	6
Overview of Stormwater Financing.....	10
Taxes .....	11
Regulatory Fees and Penalty Fees.....	12
Stormwater User Fee, Stormwater Enterprise Fund, Authority, Utility.....	13
In-lieu-of Construction Fees .....	15
Grants .....	16
The EFC’s Approach.....	17
Selection of the Watershed .....	17
Technical Assistance and Outreach Strategy .....	20
Leadership Dialogues.....	20
The Capacity Survey .....	29
Capacity Survey Objectives .....	29
Developing the Capacity Survey .....	29
Insights Gained from the Capacity Survey .....	29
The Stormwater Financing Forum.....	31
Participation.....	31
Structure.....	32
Presenters .....	32
Outcomes.....	33
Forum Evaluation .....	33
Stormwater Financing Initiative: Observations & Recommendations .....	35
Lessons and Observations.....	35
Recommendations .....	36
Conclusion.....	39
The EFC Project Team.....	40
EFC Staff.....	40
Special Consultants to the EFC.....	41
References and Resources .....	42
Appendices.....	44
Appendix A: Demographic Data for the Wissahickon, Pennypack, and Brandywine Watersheds .....	45
Appendix B: Leadership Dialogue Interview Template.....	48
Appendix C: Capacity Survey .....	49
Appendix D: Capacity Survey Results.....	58

Appendix E: Stormwater Financing Forum Participants..... 65  
Appendix F: Stormwater Financing Forum Agenda..... 67  
Appendix G: Stormwater Financing Forum Evaluation and Summary Data..... 70

# Executive Summary

This report is the culmination of a one and a half year process managed by the Environmental Finance Center at the University of Maryland (EFC). The project was designed to help communities manage and finance their stormwater management programs.

The project was guided by a steering committee consisting of representatives from the Pennsylvania Department of Environmental Protection (DEP) Stormwater Management Program, the Montgomery County Planning Commission, Pennsylvania Environmental Council, U.S. Environmental Protection Agency - Region 3, the EFC, and EFC project consultants.

The project was comprised of four primary components. The first was a series of **leadership dialogues** with community leaders and water resource managers. The purpose of these discussions was to get a detailed understanding of the issues facing pilot communities related to stormwater management. As a follow up to the dialogue process, the EFC project team conducted **capacity surveys** to better gauge the available resources and resource needs of municipalities for implementing stormwater management programs.

Using the results of these two information gathering tools, the EFC project team organized and conducted a **stormwater financing forum**, which was a comprehensive, interactive event that provided the foundation for community decision-makers and managers as they work toward advancing their stormwater programs. Finally, the EFC project team used the results of the forum, the surveys, and the dialogue sessions to provide **recommendations**, outlined in this final report, on how communities can develop and implement sustainable financing programs to support stormwater programs in their communities.

The EFC is an independent non-academic center located at the National Center for Smart Growth Research and Education at the University of Maryland. The EFC has worked with communities in EPA Region 3 for more than fifteen years. One of the EFC's core strengths is its ability to bring together organizations and individuals necessary to help communities develop solutions for a wide variety of problems. Through workshops, charrettes, and trainings the EFC has assisted communities with source water protection, stormwater management, green space and green infrastructure planning, low impact development, septic system management, aquatic restoration, and community outreach and education.

# Background

## *Stormwater Financing Initiative*

Stormwater management has evolved from essentially flood control programs into sophisticated local efforts to protect water and stream quality. With more aggressive enforcement of state and federal pollutant discharge laws, local governments are forced to implement potentially expensive Best Management Practices (BMPs) with limited fiscal resources. This, coupled with dwindling state and federal resources available for implementing MS4 permit requirements, has resulted in costly unfunded local mandates.

The Stormwater Financing Initiative is an Environmental Finance Center (EFC) program that provides resources, tools, and technical assistance to communities striving to implement stormwater programs. With the support of a 104(b)3 Cooperative Agreement Grant from the U.S. Environmental Protection Agency, this Initiative provides communities with an analysis of their capacity and a framework to manage and finance their stormwater management programs.

This Initiative was designed to provide communities with a clearer understanding of their capacity to implement state and federal stormwater management permit requirements and to assist community leaders with developing sustainable financing and implementation strategies to achieve stormwater management goals. In addition, the Initiative developed an outreach and training program, the Stormwater Financing Forum, to provide communities with access to resources and technical experts to develop a thorough implementation strategy focused on two core financing elements: (1) expanding revenues, and (2) reducing implementation costs and expenditures.

## *Program Goals and Objectives*

At the onset of the Initiative, the EFC was charged with providing resources, tools, and technical assistance to a watershed within the Environmental Protection Agency's Region 3. The goal of the Stormwater Financing Initiative is to improve local water quality and watershed health by facilitating more effective implementation of stormwater management. Specifically, communities need help with addressing the demands of the National Pollutant Discharge Elimination System (NPDES) Municipal Separate Stormwater Sewer System (MS4) Phase II program. Objectives to meet this goal include:

- Provide communities with a clearer understanding of their fiscal, legal, administrative, and political capacity to implement stormwater management requirements.
- Provide local officials with sustainable financing and implementation strategies to achieve wet weather management goals through the Stormwater Financing Forum and the EFC website.

- Identify the resources and technical services available to communities.

## Overview of Stormwater Management in Pennsylvania

Pennsylvania has an astounding number of designated watersheds – 350 – and an equally astounding number of municipalities charged with managing MS4 Phase II Stormwater Programs. Pennsylvania is also unique in its government structure with counties broken into townships, cities, and boroughs (2,567 total municipalities in the state). Each of these municipalities (some of them very small) has its own governing body, ordinances, water and sewer departments and/or contracts with private companies for water, sewer, trash, etc. Implementation responsibility of the NPDES MS4 Phase II program resides at the municipal level and not at the county level. In addition, stormwater management planning lags far behind the pace of development. As population grows and development pressures intensify, only 35% of the municipalities in the state have Act 167 Plans and only 27% have enacted Act 167 ordinances. For example, development in the Swamp Creek Watershed, Montgomery County led to a doubling of population in the 1990s, outpacing by at least a decade the completion of the stormwater management planning process.

In addition to development pressure, the political structure and cultural norms in Pennsylvania have contributed to the extremely slow pace of stormwater planning. From Walker:

*"Stormwater is viewed not as a resource to be conserved in the Commonwealth, but an obligation that takes attention away from other municipal business. This apathetic attitude to protect natural resources stems from an environment of fragmented local government, fragmented state agency districts, contrary state agency objectives, and inadequate educational efforts by the state and grassroots organizations. This fragmented governmental structure allows meaningful stormwater management to slip through the cracks as the cause and effects of water quality issues are not under the comprehensive control of a meaningful entity. This apathy exists within a culture that feels entitled to a plentiful, clean, and inexpensive water supply in this water rich state." (Walker, p. 26)*

On the federal level, stormwater planning under Phase I of the NPDES stormwater management program began in 1990 (40 CFR Part 122). The program addressed large and medium municipal stormwater systems (MS4s) in incorporated locales with more than 100,000 people. In 1999, Phase II of the program expanded the requirements to include small municipal stormwater systems in incorporated areas with greater than 1,000 people. According to this legislation, 930 municipalities in "urbanized areas" across Pennsylvania must apply for a permit and meet the NPDES MS4 Phase II requirements before legally discharging stormwater.

In accordance with the NPDES stormwater management program, each designated MS4 community is required to create, implement, and enforce strategies to meet the six Minimum Control Measures (MCMs). In Pennsylvania, the first 5-year Phase II MS4 permit cycle was

originally intended to end in March 2008, but was extended by one year to March 2009. MCMs include:

1. Public education and outreach.
2. Public participation and involvement.
3. Illicit discharge detection and elimination.
4. Construction site runoff control.
5. Post-construction stormwater management in new development and redevelopment.
6. Pollution prevention and good housekeeping for municipal operations and maintenance.

Currently, the Phase II MS4 program does not require water quality monitoring or measurement. However, the program may eventually include these activities with a potential linkage of Total Maximum Daily Loads (TMDLs) for specific pollutants to the MS4 permit. The state of Pennsylvania encompasses 350 designated watersheds and over 2500 incorporated municipalities. The state is stretched to meet the federal stormwater management mandates due to the large number of jurisdictions requiring permit development and review by a relatively small staff to serve these municipalities.

Act 167, the Pennsylvania Stormwater Management Act of 1978, has been the state-level legislative backbone for stormwater management activities in Pennsylvania for the past three decades. Under this Act, watershed-level Stormwater Management Plans were required, first, as flood control strategies and, only recently (2002), with an additional water quality component. Beginning in 1985, the Pennsylvania Department of Environmental Protection (DEP)'s Stormwater Management Program offered grant funding to offset costs by reimbursing municipalities 75% of the cost associated with developing Stormwater Management Plans and additional funding for Plan implementation. As part of this process, a guidance document was issued in 1985. *Stormwater Management Guidelines and Model Ordinances*, that provided technical guidance, advice, and suggestions to counties and municipalities as they prepared to draft a watershed-level Stormwater Management Plan.

The particular structuring of the Act 167 legislation resulted in joint responsibility for watershed protection among counties and the municipalities within their jurisdiction. Instead of stimulating planning and management activity, the required and unprecedented coordination among jurisdictions has led to stagnation in the stormwater planning process.

In recognition of the need for integrating all existing state and federal stormwater requirements, the DEP published final guidance – the *Comprehensive Stormwater Management Policy* – in September 2002. DEP considered this document a central cog in their “multi-pronged approach to stormwater management.” It was intended to provide a framework for meeting the requirements of two NPDES programs (Phase II Permit Program for Municipal Separate Stormwater Sewer System (MS4) and the Construction Permits Program) and the existing Pennsylvania Act 167 legislation. For example, municipalities that had already crafted and implemented an Act 167 Plan, assuming it met the requirements of watershed-level and water

quality protection (including an MS4 module), would be able to sufficiently meet the MS4 NPDES plan requirements.

However, for municipalities acting without approved Act 167 Plans, the guidance document stated the following:

*Municipalities that are required to obtain an MS4 permit but which have discharges to watersheds without an approved Act 167 Plan that meets the water quality requirements of 25 Pa. Code Section 93.4a, will be encouraged to work with their county to develop a stormwater plan that meets the requirements of Act 167 and the Phase II MS4 permit. Financial assistance for that effort is authorized under Act 167, and a special MS4 module is available for this purpose. Municipalities that do not want to participate in the Act 167 process will be required to develop a separate municipal plan to meet the MS4 requirements, without the use of state cost-sharing funding under Act 167. (DEP. 2002. Comprehensive Stormwater Management Policy, p. 4)*

Although this guidance document was a needed addition to the county/municipal toolkit for crafting effective stormwater management plans, it does not provide an incentive (or disincentive) for counties and/or municipalities to draft and implement an Act 167 Plan. Plus, the document does not give counties and/or municipalities sufficient assurance that Pennsylvania stormwater policy is, indeed, comprehensive. This was illustrated, once again, in early 2007 at the Stormwater Management Listening Sessions hosted by the Pennsylvania Environmental Council. During the sessions, participants noted “a general lack of a unifying strategic plan for managing stormwater.” Among the recommendations made by participants was another call to “integrate requirements of current regulations (e.g., Act 167, NPDES/MS4, TMDL, etc.)”

It should also be noted that, in the five years since the publication of the state *Comprehensive Stormwater Management Policy*, there has been discussion about the possibility of TMDL requirements being factored into the new MS4 Phase II permit scheduled for release in the spring of 2009. However, as of the publication of this report, TMDL requirements reportedly will not be included in the next MS4 Phase II five-year permitting cycle.

Additional Pennsylvania state documents have been published to assist MS4 municipalities with reconciling the state Act 167 and federal NPDES requirements. For instance, the DEP created a streamlined statewide general permit – PAG-13 – with uniform requirements for any “small MS4” municipality that does not discharge stormwater to “special protection” waters. *Municipal Separate Storm Sewer System Stormwater Management Program Protocol* (the “Protocol”) was published in December 2002 by DEP and includes a model Stormwater Management Plan. The Protocol also offers additional time for compliance for municipalities who choose to follow a watershed-based approach for implementing a DEP-approved Plan.

In August 2003, yet another DEP guidance document - *Guidance on MS4 Ordinance Provisions* - was issued with model ordinance provisions for MS4 communities. This guidance offers three options for meeting the Protocol requirement of adopting a stormwater ordinance:

1. Augment an existing ordinance, or regulations, by adopting model provisions in four areas: (1) prohibition of non-stormwater discharges, (2) erosion and sediment control, (3) post-construction runoff from new development and redevelopment, and (4) sanctions for failure to comply.
2. Adopt a complete stormwater ordinance, focusing on water quality, using the Department's model ordinance.
3. Adopt an ordinance under the state Act 167 Program, which contains MS4-related provisions.

In addition, as the fourth "prong" of DEP's Comprehensive Stormwater Policy, a *Best Management Practices Manual* was published in December 2006.

Two additional events that are attempting to clarify the current landscape of stormwater management in Pennsylvania include: (1) the Pennsylvania Stormwater Management Listening Sessions and (2) House Bill No. 2266 of the 2008 Session. First, in early 2007, the Pennsylvania Environmental Council held a series of Stormwater Listening Sessions with a cross-section of stakeholders, including local governments, environmental groups, and representatives from state and federal agencies. Data from these sessions were recently published (October 2007) and, while not part of the statewide discussion when this EFC initiative began, the outcome of these sessions will certainly guide the future of stormwater management in Pennsylvania. Much of what is reported in the Listening Session summary is echoed by findings of this EFC Financing Initiative.

Second, the slow progress of House Bill No. 2266 (legislation drafted under the leadership of Representative David Steil that would create the Integrated Water Resources Restoration, Protection, and Management Act) has left in question the roles and responsibilities of the Department of Environmental Protection, the Environmental Quality Board, counties, municipalities, and water resources management authorities when it comes to stormwater management. The Bill was re-committed to the Rules Committee, as of June 11, 2008 and it is unknown whether or not the Bill will come up for a vote in the next session.

Changes to the language of this Bill, as proposed by the County Commissioners' Association, were approved on June 11, 2008 by the House Committee on Local Government. These changes potentially eliminate the badly needed "tool" that would have been available to municipalities to "nominate" Counties to assume overall coordination and management of stormwater programs on a larger, more coordinated scale. However, the amendment does not prevent Counties from assuming this role if the decision to do so is mutually acceptable to more than 51% of the municipalities in the County and the County itself.

## Overview of Stormwater Financing

In many Pennsylvania communities, the stormwater system can be described as a “forgotten investment.” This is partially due to the fact that stormwater management and infrastructure are “hidden.” In a literal sense, the initial infrastructure designs of stormwater systems were to move rainwater quickly and, as unobtrusively as possible, away from the built environment. In contrast, current best management practice is to retain and infiltrate as much of that water as possible on site, imitating the natural water cycle that was present prior to development. The costs and benefits of stormwater management are also hidden and not at all apparent to many sectors of the public, creating public opposition and/or apathy toward funding for stormwater management. The public is accustomed to paying meter-based user fees, for example, for drinking water and sewer, and views metering as both acceptable and equitable. However, the public may have difficulty seeing stormwater management as an equal necessity. Finally, allocations for stormwater management, if present at all, may be hidden in flood control and transportation budgets.

Today, many communities in Pennsylvania are facing water shortages, water quality issues, flooding, and failing infrastructure. There is great potential, therefore, for “multi-objective watershed management” but this will necessitate a multi-pronged finance approach. Indeed, as older stormwater programs evolve beyond flood control to incorporate natural resource management and environmental protection, the costs of repairing and retrofitting municipal stormwater management systems will only be compounded. In addition, new developments have the financial burden of attaining the standards set by codes, as well as the future cost of maintenance long after initial compliance is met.

It is important to differentiate the terms “funding” and “financing”. While funding provides revenue toward paying for a program or project, it is generally short-term, unreliable, and unsustainable. Financing, on the other hand, is a process for acquiring, investing, and managing fiscal resources with a goal of leveraging sustainable, dedicated revenue streams. This means balancing revenue with expenditures to minimize costs while maximizing return on investment. In the public sector, return on investment is measured by the reduction of costs. The keys to reducing costs and managing expenditures include:

- **Enforcing laws and regulations.** This is the best way to prevent accumulation of costs;
- **Creating market-based programs,** which is the most powerful economic organizing tool we have, because markets make government programs efficient and cost effective; and
- **Leveraging other community priorities.** If communities are interested in related issues like health and safety, recreation, transportation, etc., they can use these issues to leverage support.

Developing a Financing Plan for stormwater management should be a community-guided process, with input from all stakeholder groups. The most effective plans will combine different

types of funding sources, tools, and programs and reflect the needs of multiple stakeholders and environments, including governments, landowners, land users, and landscapes. Public outreach, education, communication, and coordination are essential and a four-step process is recommended:

1. **Develop a Watershed Plan.** This step involves mapping the watershed and identifying sources of watershed pollution/degradation, as well as natural resources and infrastructure already in place.
2. **Quantify service needs and costs.** This step involves identifying what potential Best Management Practices (BMPs) could be used to address the stormwater management needs and to determine what costs are associated with each BMP.
3. **Gauge community capacity.** In this step, municipalities must be surveyed to determine the fiscal, administrative, and political capacity. Key questions include:
  - Are elected officials and citizens well-informed and engaged in the process?
  - Is watershed protection a community priority?
  - Do elected officials and citizens have venues to communicate with one another on this issue?
  - Are the necessary laws in place?
  - Are the necessary institutions in place?
  - What is the community's tax obligation vs. tax opportunity?
  - What is the community's debt capacity?
4. **Close the capacity gap.** The final step is raising and leveraging revenue, reducing costs, and managing expenditures.

When considering funding sources for financial plans, seven questions should be asked:

1. Is the funding source dedicated?
2. Is it politically acceptable?
3. Is it equitable?
4. It is feasible to implement?
5. Is it easy to administer?
6. Is it legal?
7. Will it generate sufficient funds?

The following is a discussion of some of the financing options available to communities as they contemplate creating or updating their financing plans. Although varying in stability and sustainability, these funding mechanisms can play a role in a sound financing plan.

## Taxes

Traditionally, stormwater management systems were constructed with capital budgets supported by local taxes. Today, it is acknowledged that taxes *and* fees should form the basis of any stormwater financing program. Taxes, also known as general revenue appropriations, are mandatory charges, levied by governments at the federal, state, county, and/or local levels, to fund services for the common benefit. Examples are property, income, and sales taxes. Tax

programs may take the form of general fund expenditures, dedicated tax programs, or tax incentive programs. When determining what kind of tax system will be the most effective, communities should consider:

- Who will pay? Will voters support a tax increase?
- Which types of local jurisdictions have authority to implement and collect the charge?
- What procedures must be followed to implement and collect the charge?
- How can the money be used? Often, there are specific limitations to the use of tax generated funds.

Of all the options, taxes, along with dedicated enterprise funds, authorities, or utilities, are key to building local capacity and provide the greatest flexibility and stability. However, it should also be noted that taxes based upon sales, rather than property, have a tendency to be less stable during times of economic strife. Additionally, taxes are seen as burdensome by some sectors of the public and politically risky by politicians. Although the majority of cities' and counties' general revenue appropriations may be adequate to cover the costs of current stormwater maintenance, stormwater programs have to compete with many other community services. For some communities, like those in Pennsylvania needing major infrastructure repairs, these funds may not be sufficient.

Another criticism of a traditional tax system for stormwater management financing is equitability. As Walker notes, tax systems based on property value may unfairly charge property owners contributing little to stormwater problems. Those with little impervious cover or low-intensity land use may add little to the stormwater burden; whereas, others with significant impervious cover, poor stormwater management, or intensive land use create greater demand on the system and may not pay accordingly for maintenance of the system. In addition, tax-exempt institutions, such as schools, churches, universities, and nonprofit organizations with large amounts of impervious cover are not held to any obligation to support the stormwater management system from which they benefit.

As a final note, a tax-based stormwater management system presents the potential for regional collaboration among neighboring municipalities. If, as is the case in much of Pennsylvania, individual municipalities cannot support a large enough tax base, communities within a given watershed may partner to build a more sustainable tax base. For example, bonds are sometimes issued to provide a community significant start-up funds for a compliance program. Taxes are often used to pay off that debt over time. Because bond ratings are based upon the tax base in a community (lower ratings will make the project costs higher), municipalities have the opportunity to band together to raise their tax base, improve their bond rating, and limit costs.

### **Regulatory Fees and Penalty Fees**

Fee-based programs may include Regulatory Fees (for instance, Development Fees, Inspection Fees, Plan Review Fees, and Impact Fees) and/or Penalty Fees (for instance, Illicit Discharge Fees). Fees, assessed by a local government to cover the costs of a regulatory activity (in this case, the

design, construction, maintenance, and regulatory oversight of stormwater infrastructure) and fines, assessed as a penalty for the violation of an ordinance, can be an important part of stormwater financing plans, but will likely provide only a small proportion of needed revenue. In general, these types of fees may only cover the costs of the regulatory activity and are limited as to who has the authority to assess and collect the fee and how the proceeds may be used. Two types of fees may be particularly useful to stormwater programs in Pennsylvania:

*Inspection fees* are designed to be collected on a one-time basis from developers building new developments with stormwater management infrastructure, as required by local municipalities. Commonly, developers are required to create such infrastructure, but there are no requirements to assure the viability of these BMPs. Development inspection fees, therefore, are intended to offset future costs for monitoring and maintenance of stormwater management facilities in new developments. In the case of new residential developments, these fees are usually passed along by the developer and, probably unknowingly, absorbed by the homebuyer.

A second example, *stormwater impact fees*, is also designed to mitigate the burden of development on stormwater infrastructure and water quality. However, these fees differ from development inspection fees, because these fees are intended to offset development impacts by constructing public, off-site improvements when it is not possible to resolve the impacts on-site. Revenue from these fees is often earmarked for very specific uses, sometimes rendering the fee impractical. In Pennsylvania, impact fees are required to remain on site and cannot be used for maintenance elsewhere in the system. This means that the newer segments of a system are being maintained, but older portions are not receiving upgrades and maintenance. In the case of stormwater infrastructure, maintenance that does not address the entire system will have a limited effect on overall watershed health.

### **Stormwater User Fee, Stormwater Enterprise Fund, Authority, Utility**

The above terms can be used interchangeably and refer to a fee-based system assessed and dedicated to a specific service. Unlike the use of general fund taxes to pay for stormwater programs, these funds cannot be allocated to other activities. They are dedicated, not discretionary, thereby providing long-term security for the stormwater management program. In Pennsylvania, the term *authority* is used because it applies to an institution that collects and distributes funds for a dedicated program but does not generate profit. The term *utility* is not used, because it connotes a for-profit model, although both institutions essentially perform the same function. *Enterprise Fund* is a broader term referring to the general function of collecting fees and disseminating them for a particular purpose.

The *stormwater utility/authority approach* has been used with success in many parts of the United States. This type of user fee is yet another option for funding stormwater management in Pennsylvania. Under this system, property owners are charged a fee based upon an assessment of parcel size, intensity of use, and/or degree of imperviousness. Users are charged this fee based on the contribution of their property to stormwater and corresponding services provided to them by the stormwater utility. Fees are structured to cover the actual costs of the

service, and are implemented and collected by the local government or designated utility/authority.

The stormwater enterprise or authority fee is better than a tax because it is dedicated for use by that specific program. It is stable, reliable, and not at the discretion of the political annual budget allocation process. The stormwater enterprise or authority fee is also equitable and based upon a scientifically calculated and agreed-upon approach to determine fee levels.

As discussed in previous sections, Pennsylvania is unique because of the large number of small local governments across the state. The fragmented structure of the local government system, therefore, may present some challenges to a traditional stormwater authority. Several schemes may apply to Pennsylvania communities developing authorities. Viable options include:

- Local user fees,
- Regional user fees,
- County user fees, or
- Watershed or river basin district user fees.

If implemented on a local level, communities may be comfortable with a high degree of local control and may already have systems in place for the administration of the fee. Disadvantages to locally controlled utilities may include a lack of technical expertise within the small boundaries of a municipality and difficulty collecting a sufficient amount of funds from the relatively small number of users within a municipality to finance costly infrastructure projects. At a regional level, clusters of two to ten (and as many as 30+ if, for example, this type of system was implemented in the Brandywine Watershed) municipalities would have the advantage of drawing from a larger body of technical knowledge and may be able to share administrative costs across the region. On this scale, disadvantages include the unwillingness of some communities to collaborate with neighboring municipalities and the difficult task of creating a fee structure that is equitable and acceptable across the region.

One major hurdle that municipalities are unwilling to address is the lack of clear, legal authority to establish a stormwater authority. Some legal interpretation supports that the existing authority language is sufficient to encompass stormwater, but this interpretation has not carried enough weight for any municipality to successfully pursue the option.

It is also important to note that stormwater boundaries are different from existing established political boundaries in Pennsylvania that may handle wastewater or drinking water. However, this would not necessary prevent an existing drinking water or wastewater authority that has the established infrastructure and capacity, to serve also as the stormwater authority.

On a county level, authorities would have access to an even greater body of knowledge and expertise, particularly because counties have gained experience in watershed level planning as they have moved through the process of creating Act 167 Stormwater Management Plans. As

Walker states, “A county planning commission or water resource department can better afford planning for seven watersheds, than several dozen municipalities planning two watershed areas each.” (p. 17) Disadvantages of a county-level utility scheme, however, are that Pennsylvania counties have scant regulatory authority. In addition, individual municipalities would have to be convinced to relinquish some local authority. A watershed-level authority, or, at an even more comprehensive scale, a river basin-level authority, would enhance the effectiveness of decision-making around a complete watershed.

The utility/authority approach may be more successful than a tax approach in Pennsylvania as it has been successfully demonstrated in over 500 examples across the country. Strengths to an utility/authority approach include:

1. The revenue from the utility would be stable, reliable, and dedicated.
2. The fee is charged equitably to all users, based upon their property’s contribution to stormwater runoff from impervious area. Taxes, on the other hand, are based on property value.
3. User fees are collected from tax-exempt properties, like schools, churches, and public universities who are often large contributors to stormwater runoff.
4. A fee based on impervious area would likely encourage innovative design that limits impervious area in urban spaces.
5. A majority of homeowners would likely pay less in fees than they would under a tax system.

If a stormwater utility/authority were to be pursued, McKinley (p. 32) lists these keys for successfully launching and establishing a stormwater authority:

- Public acceptance of responsibility for stormwater management.
- Recognition that stormwater creates distinct problems.
- Rates bear a direct relationship to user contribution and system demand.
- Utility concept has met legal and procedural requirements.
- Seek assistance from someone who has done it before.
- Tackle both technical and financial issues.

Finally, similar to the strategy mentioned above in the *Taxes* section, fees may also be used to improve bond ratings. The additional revenue stream generated by fees can be an important tool for leveraging additional funding through bonds.

### **In-lieu-of Construction Fees**

*In-lieu-of construction fees* are levied as an alternative to requiring developers to construct on-site stormwater systems. In contrast to impact fees, in-lieu-of fees may be used in situations where stormwater problems are solvable on-site, but are more practically solved off-site. The thinking behind these fees is that developers may not install the most efficient, effective, and reliable systems. As an alternative, municipalities can use the money generated from these fees

to leverage additional financial support and create systems that are the most likely to be effective.

A strength of this type of fee is the flexibility offered to both developers and municipalities. A disadvantage, however, is that these fees do not generate enough revenue on their own to fund major infrastructure construction and improvements. Regardless, in-lieu-of fees may be another important piece of a broader financing strategy.

### **Grants**

For intermittent support and seed money, federal and state programs and/or grants may be good sources of funding. Grant funds from federal, state, and/or local governments, foundations, and corporations are ideal for seed money and particularly effective for education and outreach programs. Rarely, however, does grant funding provide enough money, capacity, or stability to support sustainable, comprehensive stormwater management.

# The EFC's Approach

## *Selection of the Watershed*

It is widely acknowledged that Pennsylvania communities are dealing with serious stormwater-related impacts and are in great need of resources, tools, and technical assistance to support their stormwater management plans. This project was not conceived with a specific watershed in mind, however, early in the process, it was determined that focusing on one community or watershed would be the most effective use of resources.

A Steering Committee was assembled to assist in the selection of the watershed. Members of the committee included representatives from the Pennsylvania Department of Environmental Protection (DEP) Stormwater Management Program, the Montgomery County Planning Commission, Pennsylvania Environmental Council, U.S. Environmental Protection Agency - Region 3, the EFC, and EFC project consultants.

Three southeastern watersheds were selected by the committee for a first round of analysis:

1. Chester County/Brandywine Creek Watershed;
2. Montgomery County/Wissahickon Watershed; and
3. Montgomery County/Pennypack Watershed.

With assistance from the steering committee, criteria were developed to evaluate and select the most appropriate "Watershed Community" for this project. The following data for each watershed were gathered from the Pennsylvania DEP and evaluated with other members of the steering committee:

1. Number of incorporated municipalities
2. Population
3. Watershed delineation
4. Political momentum/climate
5. Local champion/Leader – an individual/elected official, or organization
6. Do the municipalities within the watershed community have good working relationships with each other?
7. Is it in a FEMA Flood designated area?
8. Is it a MS4?
9. What is the level of MS4 compliance?
10. TMDL status
11. Does it have a 167 Act Plan?

12. What is the projected future land use and amount of undeveloped land? Because the MS4 program is targeted at managing stormwater from new development, the amount of developable land is an important factor.
13. Are there other factors for consideration? (i.e. sewer authorities, etc.)

Although time-intensive, the process of gathering characteristic data for each watershed proved to be invaluable. A brief overview of each watershed follows. (For complete data, please see Appendix A.)

#### Brandywine Creek Watershed, Chester County

The Brandywine Creek Watershed is the largest watershed in Chester County. It is located in the center of the County and covers 350 square miles and over 30 municipalities. This watershed extends into Lancaster County and crosses into the State of Delaware. The watershed totals 567 stream miles, 140 of which are impaired.

The Brandywine Creek Watershed covers a mix of rural and suburban areas, many of them rapidly growing. The area of the watershed encompasses much more land than the Wissahickon and Pennypack and the 2000 Census population of the watershed was approximately 260,000.

The MS4 compliance ratings, assigned by the Pennsylvania Department of Environmental Protection, range from 0-7, with the lowest level of compliance or noncompliance at "0" with the highest level of compliance at "7." According to DEP, the average compliance rating of the municipalities in the Brandywine Creek Watershed is 2.5.

#### Wissahickon Watershed, Montgomery County

The majority of the Wissahickon watershed municipalities feed into the Schuylkill River, with a smaller portion of their municipalities draining into the Delaware River. The Wissahickon is a tributary to the Schuylkill and the Schuylkill feeds the Delaware. The watershed encompasses 53 square miles and includes all or portions (at least 1% of total land area) of the following twelve incorporated municipalities: Abington Township, Ambler Borough, Cheltenham Township, Lansdale Borough, Lower Gwynedd Township, Montgomery Township, North Wales Borough, Springfield Township, Upper Dublin Township, Upper Gwynedd Township, Whitemarsh Township, and Whippen Township. Philadelphia also shares part of the drainage basin but, for the purposes of this study, Philadelphia was not considered in this analysis. The 2000 Census population of the area within the watershed, excluding Philadelphia, was approximately 108,000.

Because the Wissahickon watershed drains into the Schuylkill River and, therefore, is a major drinking water source for Philadelphia, the Philadelphia Water Department is in the process of collecting information about the Wissahickon for its Integrated Water Management Plan. All of the Wissahickon municipalities are covered by the NPDES MS4 Phase II program. A few of the communities have some flooding issues. In addition, the Wissahickon Creek has TMDL requirements for organic enrichment/low dissolved oxygen (from urban runoff/storm sewers) and pathogens (from unknown sources).

This watershed has been intensively developed. In two municipalities, the amount of developable land ranges from just over 40% (Lower Gwynedd) to just over 20% (Whitemarsh). The remaining 10 municipalities have developable lands below 10% of their municipal area. The MS4 compliance ratings for this watershed average 4.9.

Pennypack Watershed, Montgomery County

The Pennypack watershed is located in Eastern Montgomery County, adjacent to the Wissahickon, but drains to the Delaware River. The watershed encompasses 56 square miles and includes all or portions (at least 1% of total land area) of the following 9 incorporated municipalities: Abington Township, Bryn Athyn Borough, Hatboro Borough, Horsham Township, Lower Moreland Township, Upper Moreland Township, Upper Southampton Township, Warminster Township, and Philadelphia, which was not considered in this analysis. Approximately 31 miles (56%) are located in Montgomery County, 17 miles (32%) in Philadelphia County, and 6 miles (12%) in Bucks County. The 2000 population of the area within the watershed, excluding Philadelphia, was approximately 101,000. The Pennypack Watershed is also on the impaired list, but not scheduled for a TMDL for another 2-3 years. The MS4 compliance ratings for this watershed average 3.9.

Finally, the Pennypack is a well-mapped watershed thanks to the efforts of FEMA and Temple University. The effort was financed through a cost-sharing arrangement between the municipalities and FEMA and produced a revised map of the watershed.

At the conclusion of the data gathering and analysis process, the Steering Committee selected the Wissahickon Watershed due to strong nonprofit involvement in watershed initiatives, including the Friends of the Wissahickon, the Wissahickon Partnership (a Philadelphia Water Department initiative), and the Schuylkill Action Network (SAN). In addition, a committee member from the Montgomery County Planning Department with a strong interest in stormwater issues was willing to help navigate staff and elected officials within the municipal governments. The committee also perceived good “community readiness” in this watershed.

This data-gathering process gleaned some key information about the status of Notices of Violation (NOV) and community readiness in the Wissahickon Watershed. Although almost half of the municipalities in the watershed received NOVs within the first two MS4 Phase II permit cycles, they were all NOV-free by the third round of annual report reviews. The EFC believed that this showed that municipalities were gaining experience and competence at managing their program. Although it was not a widespread opinion among municipalities that they should be doing more than they were currently doing or more than what they could afford to do—unless it related to flooding issues (not a MS4 focus) – the EFC and the Steering Committee believed that Wissahickon communities were at a juncture at which they could begin to look at how they could more effectively and efficiently manage their programs.

## Technical Assistance and Outreach Strategy

Once the Wissahickon Watershed was selected, the EFC initiated a series of **Leadership Dialogues** with community leaders and water resource managers in six of the twelve municipalities (those willing to participate in this activity). The purpose of these discussions was to get a municipal perspective of the of the stormwater management issues facing communities within the watershed. The leadership dialogues were followed by **Capacity Surveys** that were used to better gauge the current capacity of municipalities implementing their stormwater management programs. Using the results of these two information-gathering tools, the EFC project team, organized and conducted an outreach event - **Stormwater Financing Forum**. This forum, a comprehensive, interactive event that brought together stormwater practitioners and decision-makers, provided the foundation for community leaders and managers to work toward advancing their stormwater programs. Finally, the EFC project team analyzed the results of the dialogues, the surveys, and the forum to provide **Recommendations**, on how communities can develop and implement sustainable financing programs to support stormwater management priorities. Our recommendations can be found at the end of this report in the section entitled *What we learned from the Stormwater Financing Initiative*.

The technical assistance and outreach program strategy focused on two core financing elements: (1) expanding revenues and (2) reducing implementation costs and expenditures. Although the financing needs of each community are somewhat unique, there are commonalities shared by municipalities that can be leveraged into opportunities.

To achieve this goal, the EFC project team set out to provide community officials with:

- An accurate estimation of the costs associated with increasing stormwater management programs;
- An analysis of the community's capacity to finance the costs associated with the increased level of service associated with stormwater regulatory requirements. The EFC project team will focus on necessary fiscal, administrative, and political capacity; and
- Identification of key tools and resources available for financing and implementing infrastructure improvements, including:
  - Appropriate community taxes and fee-based programs;
  - Key regulations and laws;
  - Market-based programs;
  - Federal and state funding programs; and
  - Coordination with other community priorities and programs.

### Leadership Dialogues

After the Wissahickon Watershed was selected, the EFC set out to schedule leadership dialogues with the township managers and/or engineers responsible for implementing the MS4 programs for their municipalities. The goal was to meet informally and in-person with these managers to

assess their perceptions of how well they were able to administer the MS4 program, where they needed help, what kind of assistance would be helpful, and who they viewed as their most valuable partners.

Each of the twelve municipalities with all or a percentage (at least 1%) of their boundaries falling within the Wissahickon Watershed were invited to participate in the dialogues. Of the twelve, six municipalities agreed to participate:

1. Lower Gwynedd (88.4 of land area within watershed)
2. North Wales (100%)
3. Upper Dublin (90.5%)
4. Upper Gwynedd (61.9%)
5. Whitemarsh (56.7%)
6. Whitpain (41.6%)

The six non-participating municipalities included:

1. Abington (22.8% of land area within watershed)
2. Ambler (100%)
3. Cheltenham (2.8%)
4. Lansdale (23.9%)
5. Montgomery Township (14%)
6. Springfield (93.7%)

The following 15 questions were discussed with the township managers and/or engineers in each of the six municipalities. A summary of the feedback is reported below each question and a copy of the interview template can be found in Appendix B.

**1. How would you describe your level of success with your stormwater program?**

When asked about their level of success with managing the stormwater program in their community, the responses ranged from “very successful” to “good, because we are a very small municipality, with no new development,” to “moderate.” However, the new NPDES MS4 Phase II requirements have made them more aware of their responsibilities.

A common response was “We are dealing with 30 years of long- term problems in the basins, that are a challenge and costly to address.” Most managers cited a list of specific activities they are involved with now or intend to be in the near future, including:

- A stormwater study/inventory of all stormwater structures.
- A more comprehensive GIS. For many municipalities, smaller areas have been completed but more comprehensive mapping is needed.
- An inventory to map the entire system’s outfalls. Some municipalities have completed and some have just initiated this process, but would like to find funding to complete it.
- More staff. Some municipalities have hired a new employee to map/inventory all basins—both public and private.

**2. How have flooding issues affected your program?**

Because of increased flooding problems in the suburban Philadelphia area, we predicted that municipalities would have a heightened interest in addressing stormwater issues. However, this seemed to be a driver for few municipalities, as only one or two reported experiencing severe flooding issues. Interestingly, when flood mitigation projects were undertaken, such as a \$2,000,000 grant reported by Upper Dublin to construct a box culvert to Sandy Run to protect private property, however, no water quality features were designed into the project.

**3. From both programmatic and financing perspectives—what are the biggest challenges you face with the program?**

As a group, municipalities stated that more money is needed to:

- Fund drainage projects to get water off the streets.
- Deal with “sins of the past” – neighborhoods that were built without stormwater management are the most time consuming and challenging.
- Do retrofits.
- Address infiltration problems.

Municipalities reported a diversity of techniques for funding their current stormwater management programs. They are currently funding their programs with monies from:

- Capital budgets (\$1.5 million in Upper Dublin).
- \$350,000 Turnpike study (As reported by Upper Dublin, a portion of this money is going toward stormwater management research.)
- \$5 million of bond money and flood grant funds used for stormwater management studies.

One municipality (Whitpain) reported the use of two innovative financing mechanisms. The first was an outfall fee - \$5/linear foot for frontage – that generates less than \$20,000/year. The second was an In-Lieu-Of fee. Monies generated by this fee go into a stormwater fund that currently totals \$25,000. Funds are spent on getting infrastructure back to optimal operating conditions on both public and private property. In addition, the funds are used on education and outreach to help homeowner’s associations/individual homeowners to understand their responsibilities and to require more advance information on new development operation and maintenance.

Besides inadequate funding for stormwater management, the biggest challenges reported by the municipalities included:

- **Unclear policy** – Understanding what constitutes compliance.
- **Private property** – There is a lack of incentive for private owners to maintain their private properties to minimize the effects of stormwater.

- **Long term maintenance**
  - Some municipalities were concerned about maintenance of systems that had previously been privately held and were now the responsibility of homeowners associations.
  - One municipality reported concerns about Pennsylvania Department of Transportation (Penn DOT) trying to change their maintenance obligation. According to this municipality, Penn DOT has proposed holding responsibility of right-of way and giving responsibility of storm drains back to the municipality. However, the reduction of the liquid fuels tax (used to cover this maintenance expense) has been reduced from 25% to 18%, thereby reducing management responsibility and funds to pay for the maintenance.
- **Education**

**4. How involved is your Board of Supervisors with your program?**

As a group, the municipalities stated that municipal leadership is aware of the MS4 requirements and regulations but tends to only get involved on a complaint basis. For the most part, there were no outstanding “stormwater champions” recognized on the Boards or Supervisors or elsewhere. Many municipalities reported that community leaders were primarily focused on if or whether the program management costs would “dip into citizens’ pockets.”

**5. Which, if any, of the six Minimum Control Measures (MCMs) pose the most challenge and why? MCMs include:**

- #1 Public Education and Outreach
- #2 Public Participation/Involvement
- #3 Illicit Discharge Detection and Elimination
- #4 Construction Site Runoff Control
- #5 Post-Construction Runoff Control
- #6 Pollution Prevention/Good Housekeeping

There did not seem to be any clear consensus on which Minimum Control Measure posed the greatest challenge. Municipalities made the following comments:

***#1 Public Education and Outreach and #2 Public Participation/Involvement***

Almost all municipalities included MCMs #1 and #2 in their responses. Some reported no progress at all on these measures and others indicated that they met these measures by placing articles in newsletters and sending out pamphlets. One municipality (Whitpain) has conducted two successful workshops and would like to do more education work in schools. No evaluation or follow-up was reported to determine the efficacy of the newsletter and pamphlet-driven educational/outreach campaign. In addition, municipalities reported having inadequate time/staff to meet these MCMs and having difficulty finding volunteers. Although compliance with the six MCMs is either assigned to the “in-house” engineer or

outsourced to municipally contracted engineering firms, neither of these groups of professionals have the experience or expertise in the activities covered by MCM 1 and 2.

### **#3 Illicit Discharge Detection and Elimination**

Some municipalities, including Lower Gwynedd and Whitemarsh, reported having no illicit discharge (and therefore having little difficulty meeting this MCM). Other municipalities stated that illicit discharges are hard to police. Some commented that addressing illicit discharge involves a comprehensive mapping and inventory base, followed by a regular monitoring schedule. This MCM is perhaps the most comprehensive and generates the most amount of work on a continuing basis.

### **#4 Construction Site Runoff Control**

Construction site management is not a new practice or requirement for the townships and does not appear to pose a significant challenge for most municipalities.

### **#5 Post-Construction Runoff Control**

According to the municipalities, the challenge from post construction runoff control is maintenance and enforcement. One municipality reported that, in most situations, once the post construction bond is released, usually after 18 months, no continuing post construction activities are pursued or monitored.

### **#6 Pollution Prevention/Good Housekeeping**

Most of the responding municipalities seem to be managing pollution prevention and good housekeeping practices within their municipal operations to a level that adequately addresses this MCM.

## **6. What opportunities for improvement do you see for your program?**

The most noted opportunities for improvement included additional funding for drainage projects maintenance and staff to manage the program and serve as a grant writer and coordinator. Other opportunities identified by municipalities included enabling legislation to establish an utility/authority and working on compliance. It was also noted, with some concern, that establishing a utility may heighten public expectations that flooding and associated problems will be eliminated.

Several municipalities noted that development of natural "green infrastructure" could assist with stormwater management. This could be combined with other programs, making stormwater more cost-effective. One municipality (Whitpain) reported that they were working toward a baseline program for naturalized basins that would reduce maintenance time and costs. An "in-lieu-of" fee is being used to leverage more money for this type of work. Another municipality (Upper Dublin) viewed a \$30 million bond to develop an open space and trail system as an opportunity to coordinate these activities with their stormwater management activities. Lower Gwynedd saw opportunity in continuing riparian buffer maintenance on Wissahickon Creek and getting private property owners more involved.

## 7. Who do you see as potential partners as your stormwater program continues to develop and grow?

An array of potential stormwater management partners were identified by municipalities. Interestingly, however, neighboring municipalities did not appear on the list. One municipality noted that they were focusing on getting programs up and running before going out to leverage cooperation in the community. The following is a breakdown by category of organizations that municipalities view as potential partners for their stormwater management programs.

Industry/corporate: Although included in the “potential partnership” discussion, industry was only mentioned in the context of the municipalities informing corporations in their jurisdiction of their legal responsibilities in terms of stormwater management.

Nonprofit organizations: Quite a few non-profit organizations were identified, primarily to address the MCM #1 and #2 requirements of Education and Public Outreach. Those mentioned included: Wissahickon Valley Watershed Association, PEAK Senior Center, Perkiomen Valley Watershed Association, and the Rotary Club.

Developers: During this discussion, developers were mentioned as potential partners. Although not leaders in the stormwater management movement, due to regulatory requirements and especially in areas where flooding is prevalent, developers were viewed as more willing to cooperate. One community leader cited an example where flooding regularly inhibited access to commercial buildings.

Schools: A number of municipalities reported using the school district for educational outreach. One municipality noted that the local Community College was doing a lot of BMP work with new development on their property

Other Government Agencies: Several other governmental agencies were cited, including county and state agencies. Parks and Recreation Departments were recognized as providing the most cooperative support. Penn DOT was recognized, although almost all municipalities reported frustration with Penn DOT. Penn DOT was seen by the municipalities as not accepting responsibility for stormwater facilities, and, because these facilities are located on limited access highways, maintenance can be a problem.

Adjacent Municipalities: As mentioned previously, none of the municipalities in the watershed are currently working cooperatively on their MS4 programs, but some are receptive to the concept. Two municipalities (Upper Gwynedd and North Wales) partnered on a stormwater management study.

## 8. Although the new 2008 MS4 permit is not out yet, what changes in your program do you predict will be needed to address more aggressive levels of compliance?

The responses to this question varied considerably and ranged from, “nothing, really - we can’t get more aggressive than what we are currently doing,” to “increase education and outreach levels to get average citizens to participate and practice stormwater BMPs.” Mapping was mentioned as an urgent need, as well as trying to incentivize with in-lieu-of fees to promote a “do it now approach.” There was also mention that more clarity is needed on the current program and that a higher level of clarity would also be welcomed in the next permit cycle. Concerns were also expressed about the compliance ramifications if the new permit is linked to Total Maximum Daily Load (TMDLs). Collaboration on other issues was noted (see Question #9).

**9. Is your township or programs within your township currently collaborating with neighboring townships on other efforts? If so which ones and how successfully?**

Although municipalities are not currently working together on their MS4 programs, there is a history of collaboration on a variety of projects and programs in the watershed. Examples of collaboration include:

- **Transportation:** Several municipalities have worked together on the Welsh Road Transportation Corridor project. Municipalities also cited other regional transportation corridor projects.
- **Open Space:** Upper Gwynedd, Lansdale, and North Wales have worked together on a Joint Open Space program.
- **Public Works:** Cooperative projects between Upper Gwynedd Public Works and North Wales Public Works were reported.
- **Development Review:** A few municipalities reported joint review of development along township borders.
- **Montgomery County Consortium:** Several municipalities have joined this consortium and have collaborated on the procurement of goods for their municipalities.

Despite some history of collaboration, municipalities also cited a history of frustration and finger pointing from lack of cooperation among their neighbors. This lack of cooperation focused mainly on ineffective stormwater management due to runoff from one municipality adversely affecting another.

**10. Is there any type of assistance that you believe would be helpful? If yes, what type and what are the impediments to receiving that assistance?**

The types of assistance that would be most helpful to municipalities fell into three primary categories: funding, education, and clarity and consistency in the administration of the program.

**Funding:** As stated in more detail above, municipalities reported that additional funding is needed to carry out more projects in the municipalities. To achieve higher level stormwater management goals, additional funding could also be used to pay for remediation on private properties.

**Education:** As a group, community leaders stated that additional assistance would be welcomed to deliver education to residents, business owners, and public officials. Education of a different

sort was suggested for state and local governments, because it was noted that state agencies don't understand grass roots issues and vice versa. More meetings, forums, and roundtable discussion would be helpful to bridge this gap.

**Policy Clarity:** Regarding the administration of the program, municipalities once again stated the need for more clarity on what is expected of their stormwater management program. Leaders reiterated that, from their perspective, the current policy remains open to interpretation and, consequently, each municipality is doing their own thing, with "compliance" applying to a wide range of interpretation.

**11. Would you be interested in learning more about stormwater financing approaches? If yes, are there specific topics of interest?**

Municipal managers reported that they are very interested in learning about stormwater financing approaches. In addition to learning more about in-lieu of programs, the majority were interested in learning about user fees and authorities. A few community leaders indicated that they need to understand more about the political ramifications of these types of financing approaches.

Having accessibility to grants – or more specifically having a grants consultant that could search them out and write applications – was also frequently mentioned. There was recognition by one municipality that it would be best if the grant work could be watershed based.

**12. Does your township have a stormwater program budget?**

**13. If not, how do you account for the costs associated with your stormwater program?**

About half of the municipalities in the watershed reported having specific stormwater budgets. Of those that have specific funds for stormwater management, the budgets ranged from \$12,000 to \$1 million. Those without dedicated stormwater program budgets have program costs covered by items in the general fund, the civil engineering budget, funds generated from outfall fees, and/or block grants.

**14. How could the state agency provide additional or different types of support to your program?**

Three primary areas were cited where Pennsylvania could provide additional or different types of support to the municipalities: clarity and communication, money, and manpower.

**Clarity and communication:** Municipalities reported "feeling like guinea pigs" through Pennsylvania's trial and error approach to the program. One leader suggested that probably 70% of the Notices of Violations are a result lack of clarity concerning what is expected. Municipalities suggested communication through more meetings with DEP and general information shared on the Pennsylvania State website. They also felt that an education program, geared toward local governments, is needed to educate municipalities. It was noted

that one region of Pennsylvania was doing a fairly good job with communicating program information, but this was not a universal sentiment across the state.

The municipalities would also like to see DEP assist with relationships to other state agencies such as Penn DOT and the Turnpike Commission. Many municipalities reported experiencing inadequate detention/retention and maintenance work on the part of these State agencies.

**Funding:** As expressed throughout this document, municipalities would like to see increased levels of funding support made available to their programs. Currently the state does not provide any dedicated funds to the MS4 program with the exception of the reimbursement of costs associated with developing an Act 167 Plan.

**Manpower:** The municipalities continued to express the need for more staff to handle funding, education, and technical issues.

### 15. Other comments/questions/concerns?

While these comments were collected at the conclusion of the interview and mostly reiterated information already described above, a few important conclusions may be drawn. Municipalities once again expressed concern about simultaneously meeting the requirements of similar programs (Act 167, the MS4 program and TMDLs). There were repeated comments that the NPDES requirements are often very unclear and nebulous. Many of the community leaders reiterated concerns about potential future requirements to meet stringent water quality requirements (TMDLs) that are often dependent on the actions of their watershed neighbors.

One comment addressed policy fragmentation in the watershed. For instance, codes and ordinances can vary dramatically from municipality to municipality, with no overarching master plan for watershed protection and development. Municipalities recognized that this results in more arbitrary development patterns and compounded stormwater management issues. This situation is further complicated by the fact that many of the municipalities' ordinances have not been updated in 20-30 years and these include requirements that are not consistent with more current practices. In short, this fragmentation makes it challenging for municipalities to fully and effectively carry out the intent of these programs. Unfortunately, the legal costs to update and upgrade the whole array of municipal ordinances are yet another financial hurdle for municipalities. If all codes and ordinances were reconciled and consistent, a more effective program would result.

Finally, a few of the municipalities reported that the new state-of-the art sewage treatment plant in the region is stretching their financial capacity.

## **The Capacity Survey**

### **Capacity Survey Objectives**

The next step of the strategy involved a quantitative assessment of the current level of service and costs associated with each municipality's MS4 program. A primary objective of this process was to first identify the level of service being delivered and the true costs of full implementation. This would help us identify the "gap" between what is being spent on a marginally effective stormwater program and what needs to be spent on a comprehensive stormwater program.

Theoretically, using the data gathered from the Capacity Survey, the secondary objective of this process was to identify the financial gap and a number of financing approaches to close the gap. The intent was to identify the possibilities and demonstrate the benefits of collaborative management and financing of a watershed-level stormwater program.

### **Developing the Capacity Survey**

The eight-page survey was developed with the intention of gathering as much information from municipalities as possible without overwhelming officials as to the breadth and scope of information requested. The survey tool went through several iterations before it got to the most "user-friendly" state possible. The final version of the Capacity Survey can be found in Appendix C.

The survey was provided to all twelve municipalities in the Watershed, regardless of t in the Leadership Dialogues. Five municipalities completed and returned the survey. The participating municipalities included: North Wales, Montgomery Township, Upper Gwynedd, Whitmarsh Township, and Whitpain Township.

### **Insights Gained from the Capacity Survey**

While five surveys were returned to the project team for analysis, the level of data provided was not sufficient to even assess the first of the two objectives stated above. The task of procuring complete financial data from the municipalities proved to be more difficult than originally expected, largely due to inadequate staffing capacity within the municipalities. The complete survey results are available at Appendix D. A brief summary of these results appears in the chart below.

In the introductory section of the capacity survey, respondents were asked to indicate which departments or agencies in their municipality performed stormwater activities. You can see from the data presented below that there is little consistency among municipalities as to what local departments or agencies are charged with stormwater responsibilities. This also implies wide discrepancies in the background, training, objectives, and experience of responsible officials.

Potential Participating Parties	Whitpain	Whitemarsh	North Wales	Montgomery	Upper Gwynedd
Planning Agencies	X	X	X	X	
Wastewater Departments		X			X
Water Departments		X			
Solid Waste Departments		X			
Sanitary/MSD Districts		X			
Parks and Recreation Departments		X	X		X
Emergency Management Agencies		X			
Health Departments		X			
Soil and Water Districts		X			
Facilities and Maintenance Departments	X	X	X	X	X
Environmental Advisory Councils (EACs)		X			
Code Enforcement		X	X	X	X
L and I		X			
Building Inspectors		X	X		X
Other		X		X	

Table 1 – Each of the five communities surveyed responded to the question “Please check off below other departments/agencies performing stormwater activities.” An affirmative response is indicated with an “X”.

When asked to rate the level of clarity of the State and Federal MS4 program requirements as conveyed to municipalities, respondents gave a ranking of “somewhat clear” when given the choice of “very clear,” “somewhat clear,” or “not clear.” When asked the question, “How much of a range of effort or performance is there given/allowed in [your community’s MS4] requirements as you can best understand them?,” three responded “moderate level” and two responded “high” when given the choice of “none,” “moderate level,” or “high range of effort or performance.”

As a group, the five municipalities reported having a good understanding of what the MS4 compliance requirements are. Municipalities reported a desire to increase their level of effort, but are limited by what they can afford. In addition to their general fund budgets (and, in one municipality’s case, storm sewer outfall fee and fee in-lieu-of stormwater management for residential building permits), a few are accessing funds from the DEP Growing Greener II Watershed Grants, Tree Vitalize, and the Community Development Block Grants, and education programs.

As reported by the municipalities, the total populations of the five communities ranged from under 5,000 to approximately 25,000. The majority of the acreage in the surveyed areas was residential. Median household income was reported by four of the five respondents and ranged from \$35,000 to \$125,000 annually.

In Section IV of the capacity survey, municipalities were asked to assess the built and geographic features of their municipality. Interestingly, the range of responses in various categories reveals the complicated nature of creating watershed-level stormwater management programs that still meets the needs of small municipalities. For instance, communities reported between 11 and 76 miles of storm sewers, 11 and 115 miles of roadway, and 10 and 135 miles of curbs and gutter. One municipality reported no bridges while another reported 13. One municipality was unable to report on the number of inlets in their system, one reported 291 inlets, and three reported having more than 2,250 inlets (with a maximum of 3,596). Two municipalities were unable to report on the number of catch basins in their system, whereas, another two fell in the range of 120 to 291, and a fifth reported as many as 3,596. The same is true for the number of culverts with one community unable to report, three communities with between 2 and 40 culverts, and another community reporting 383. (In addition, identical numbers were given in some cases for inlets and catch basins indicating that terminology may vary in different municipalities.)

In Section V, municipalities were asked about the legal, management, and administrative structure of their stormwater program. Four of the five reported that their municipality had some sort of stormwater ordinance. (The fifth did not respond at all to this question.) The municipalities reported that their ordinance was based either on the DEP Model Ordinance or a Subdivision and Land Development Ordinance (SALDO).

The municipalities were very reluctant to provide responses to Section VII regarding the financial component of their stormwater management program. Only one of the five municipalities provided an actual budget. None of the communities provided a copy of financial chart of accounts for all departments with stormwater related activities. All of the communities reported that there were no current bonding/debt financing policies within their municipality. It was unclear to the project team whether the municipalities were unable to access this information or whether they were just uncomfortable sharing it for the purposes of this project.

## ***The Stormwater Financing Forum***

### **Participation**

The third step of the strategy was the Stormwater Financing Forum. Invitations to the Forum were officially extended via email and U.S. postal mail to municipal managers and elected officials in the Wissahickon watershed. Invitations were initiated through Montgomery County Planning Department in an effort by the EFC project team to forge community connections. While the Forum was intended to be an educational opportunity for officials within the watershed municipalities, invitations informally trickled to the non-profit audience through word-of-mouth. In addition, officials from Montgomery, and Delaware counties, Pennsylvania DEP, Philadelphia Water Department, and the U.S. EPA also participated in the Forum. (A complete list of attendees is included in Appendix E.)

Over 60 participants attended the Forum. Of the attendees, 15 municipal officials participated along with 3 elected officials. The Forum was held from 8:30am to 4:00pm on June 26, 2007 in the Learning Center at the Temple University Ambler campus.

## Structure

The original design of the Forum was to bring together the municipalities and present the data gathered from the capacity survey. The project team planned to share with the municipalities a review of costs, an assessment of gaps, and approaches for cooperatively addressing the shortfalls, however, this level of assessment was not possible due to the lack of specific financial data provided by the municipalities.

The EFC project team, however, was able to develop an agenda for the Forum that provided a very strong educational opportunity. Local and national experts were assembled to present information on a variety of topics and a number of case studies that demonstrated the formation of either utilities or intermodal agreements to fund and manage stormwater programs.

Presentations included information on the historical development of stormwater systems, issues and challenges for local governments, funding sources, legal and legislative issues in stormwater financing, and case studies. In addition, the Pennsylvania Environmental Council presented preliminary findings from the Pennsylvania Listening Sessions and the EFC Project Team presented a review of findings from the Capacity Survey.

During the second half of the Forum, strategy discussions took place among the participants. Small breakout groups were assembled with each group focusing on one of the MS4 Minimum Control Measures (MCMs). With facilitation from one of the Forum presenters, each group considered:

- How they are currently funding their activities.
- Where collaboration is possible.
- How this collaboration might work -- what it looks like.
- Obstacles to progress.
- Solutions to removing or minimizing these obstacles.
- What the State can do better to help municipalities do their job.
- Next steps.

## Presenters

At the Stormwater Financing Forum, stormwater practitioners, as well as technical and financing experts, provided a foundation for community leaders and managers to improve their stormwater programs. A list of presenters is included below. The agenda for the Forum is included in Appendix F.

- *Scott Tucker*, Interim Executive Director of Start-Up Stormwater Authority in the City of Centennial and unincorporated Arapahoe County, Colorado
- *Doug Harrison*, General Manager of the Fresno (California) Metropolitan Flood Control (Retired)
- *Steve McKinley*, Vice President and Director of Water Resources for URS Corporation
- *Steve Hann*, PA Municipal Authorities Association
- *Gwyn Roland*, Director of Watershed Programs, Pennsylvania Environmental Council
- *Jeff Edelstein*, Edelstein Associates
- *Lisa Grayson Zygmunt*, Program Manager, Environmental Finance Center
- *Dan Nees*, World Resources Institute

## Outcomes

The EFC project team opened the Forum with the question, “Why have you dedicated your time to being here today? Please list your top three compelling reasons.” General responses included:

- To learn about financing (11 responses).
- To gauge local municipality interest and needs (6 responses).
- Because stormwater is a pressing issue (5 responses).
- To learn about stormwater authorities/utilities (4 responses).
- To recognize challenges and solve stormwater problems (4 responses).
- To learn about the EFC initiative (4 responses).
- To network with other municipalities and/or support my local program (4 responses).
- To be a resource for others (3 responses).
- To learn about the activities of peers (3 responses).
- Miscellaneous (5 responses), including:
  - Legal issues
  - The future of stormwater management
  - Stay current in my practice.

## Forum Evaluation

At the conclusion of the Forum, participants were asked to complete an evaluation form. Representatives from four municipalities, one nonprofit organization, one county, one county planning department, and one academic organization submitted evaluations for a total of eight respondents. Though the project team only received forms from about 13% of Forum participants, the comments submitted via evaluation represented some important sentiments.

Eight evaluations were received. The evaluation form and summary data are available at Appendix G.

Overall the attendees rated the “quality of information received” and “quantity of information received” as “excellent” or “very good.” Attendees found a number of aspects most interesting to them, including:

- Roundtable discussions with neighboring townships and experts to address ways for municipalities to cooperate on stormwater issues, facts, statistics and regulatory changes;
- History of stormwater management;
- Overview of revenue sources; and
- Legal issues.

There seemed to be real interest in doing more to move their programs to the next level, but municipalities seemed to feel that they didn't have the tools to do so. The most prominent missing tools included:

- An organization that could serve to facilitate more collaborative activities among municipalities. One of the breakout groups spent time on discussing what nonprofit organization would be a logical choice to serve this role.
- Legislative clarity as to the legality of establishing an authority.
- The resources to dedicate staff and support to advance the topic with the general public and decision-makers in the municipalities.
- No eminent threat of not doing more than is currently being done.

All respondents agreed that a collaborative approach would be beneficial to their stormwater management efforts, but only half of those believed that a regional authority would help in the collaboration effort. Those who supported the concept of an authority cited that there is "strength in numbers" and that an "authority would provide the added pressure from the region to correct the problem and provide focus to problem-solving."

# Stormwater Financing Initiative: Observations & Recommendations

## *Lessons and Observations*

This process gleaned some important information and observations about the perception of stormwater management in the Wissahickon Watershed, funding gaps, and regulatory drivers. First, we have to acknowledge that, although the MS4 Phase I program has been in place for a number of years, the MS4 Phase II program is a *new* program. Pennsylvania is still under its original permit, as the release of the second five-year permit has been delayed/postponed a number of times and is now not due for release until the fall of 2008, to be enacted in the spring of 2009. As with any new program, there is a learning curve for the state administering the program and for the municipalities that must comply. The DEP Southeastern Regional Office should be commended for the level of effort and thoroughness with which they have addressed this new program. They have effectively used the first five-year permit cycle as a learning process to teach the municipalities about the program and to work toward attaining minimum levels of compliance.

Second, due to the complexities and sheer volume of permits to be reviewed as a result of Pennsylvania's governmental structure/organization, the challenges faced by the Southeastern DEP office are magnified by a capacity issue – the office is woefully understaffed to address the volume of permit reviews required. The Southeastern Regional Office has one staff person responsible for reviewing over 200 permits. In comparison, a state such as Maryland has 40 permits total with a designated staff or 3 to 4 permit reviewers.

It is clear, then, that regardless of how efficient and effective the permit reviewers are, there is a limit to the level of service the handful of managers across Pennsylvania can provide to the municipalities served. The potential for less scrutiny or a decreased level of service exists unless the staff to number of permits ratio is addressed.

Third, most municipalities in the watershed have made major improvements during the first five-year permit cycle of the MS4 Phase II Program. Municipalities' understanding, implementation, and reporting ability have improved with each year. However, though technically in compliance, most municipalities could and should be doing much more with their MS4 Phase II program. From the perspective of the municipalities, however, we learned a great deal about the reluctance toward and resistance to the MS4 Phase II program as an unfunded mandate. As with any unfunded mandate, the strain of trying to stretch already over-extended budgets and personnel is causing resistance.

We also observed that, even among those who see the necessity and value of the stormwater program, the process has reached a stalemate. Municipalities are simply stymied as to how to increase the level of service that they are delivering, because they do not have the tools that empower them or the “fear of consequences” to drive them to the next level of service, effectiveness, efficiency, or compliance. Nor do they have the incentive, as municipalities do in another EFC-guided MS4 project in Pennsylvania’s Darby Cobbs watershed (Delaware County), which has the potential to receive additional grant funding for a Stormwater Manager. This manager could serve a collaboration of municipalities who agree to pool certain components of their MS4 program to explore and demonstrate the benefits of combined approaches (with or without a formal establishment of an authority or utility.)

Municipalities are comfortable with the position of their programs at the present time and are not willing to make any significant investments or changes in them until the new/next permit is released and they know what will be required. The unfortunate fact is that the permit that would have gone into effect in March, 2008, is now one year delayed.

## **Recommendations**

### ***Enforce laws and regulations.***

This will send a strong message to municipalities that the state and federal agencies are very serious about attaining high levels of compliance with this program. It will also elevate the program during budget and funding discussions as municipal leaders will realize that there will be consequences if the performance and compliance levels of their programs are not up to par. An additional benefit to municipalities, although maybe not acknowledged, is that as a result of enforcement, the cost accumulation of the program is minimized.

As part of enforcing laws and regulations, there is work to be done in clarifying policy. With higher expectations of performance and compliance, more clarity will be needed. Data gathered during this initiative show that, from the perspective of municipal leaders, current policy remains open to interpretation. Consequently, each municipality is doing their own thing, with “compliance” applying to a wide range of interpretation

The ambiguity or lack of direct reference to stormwater in the Pennsylvania Municipality Authority code must also be addressed. Several legal opinions indicated that a stormwater authority would be legal under the existing code, but without specific reference to stormwater, no municipality -- other than Philadelphia -- has been willing to test the interpretation of this existing code. And a bigger question looms regarding the political will and readiness of Pennsylvania to address the stormwater issue: Why hasn’t the existing Pennsylvania Municipality Authority code been modified to include the word “stormwater?” This would address one of the major obstacles cited by municipalities and would provide a much needed tool for progress.

### ***Create market-based programs.***

As discussed previously in this document, market-based programs are the most powerful economic organizing tool we have because markets make government programs efficient and cost effective. Market-based programs should be considered (particularly those that can motivate the private sector through incentives) as this and other water quality programs mature to the point where effective trading programs can be developed.

### **Leverage community priorities, programs and projects.**

Municipalities should seek out and continue to leverage activities from other programs and departments that will result in positive contributions to the stormwater management program. For instance, several municipalities commented that combining stormwater management with the “naturalizing of basins” and forest buffers should be included as a way to increase program funding. Green infrastructure has multiple benefits, including open space, recreation, stormwater management, water quality improvements, wildlife habitat, etc., and this strategy would open up planning and funding options.

### **Educate.**

As a group, community leaders stated that additional assistance would be welcomed to deliver education to residents, business owners, and public officials. Education of a different sort was suggested for state and local governments, because it was noted that state agencies don’t understand grass roots issues and vice versa. More meetings, forums, and roundtable discussion would be helpful to bridge this gap. Education is vitally important for all stakeholder groups to create the political will necessary for change.

### **Collaborate.**

Municipalities should work collaboratively with neighboring municipalities and, ideally, all those in the shared watershed. This would not necessarily require the establishment of a utility, but would require some type of inter-municipality agreement. As we have seen in other parts of the country, the costs for administering stormwater programs decreases and the quality of products and services increase with a collaborative model. Key reductions in implementation costs and expenditures, coupled with more effective results, particularly for outreach and training, could be accomplished if municipalities could agree to collaboration.

As part of this collaborative strategy, municipalities should explore the option of hiring/contracting with a neutral party/organization/individual to serve as the coordinator to facilitate dialogue and initial stages of collaboration. The Wissahickon Forum participants showed interest in opening the dialogue with neighboring municipalities on the MS4 program. Wissahickon municipalities have been successful with other collaborative purchasing or maintenance programs, and are beginning to see that similar approaches could reap similar benefits. Specific points raised at the Forum include:

- Participants in the Forum defined the need for an outside, nonbiased, non-partisan organization to assist in initiating the collaboration among municipalities. This

coordinating organization would act as a neutral party with no agenda of its own but to serve the collaborative.

- None of the municipalities have the resources to dedicate to coordinating a collaboration effort among interested municipalities. Even if one did, participants in the Forum believed that it would face the scrutiny of other municipalities and would be seen as having an ulterior motive. Thus, as mentioned above it is extremely important that the coordinating organization is seen as neutral to all stakeholders.

### **Explore Joint Permits and Co-Permitting.**

As a logical component or extension of collaboration, municipalities should explore the option of joint or co-permitting with neighboring municipalities. This strategy would help to streamline the permitting and reporting process, thereby reducing costs associated with the preparation of the annual reports. This approach would also reduce the load on the DEP.

As previously discussed, there is a lack of precedence concerning a joint permit or co-permit approach that would encourage and promote collaboration among municipalities in a watershed. Federal law allows these approaches, but Pennsylvania has not developed a process or protocol, thereby, by default, not encouraging these types of submissions.

### **Develop Stormwater Financing Plans.**

Municipalities should develop a stormwater financing plan based on an evaluation of applicable funding tools and programs and match the activities requiring funding to the appropriate financing strategy. In the absence of a stormwater utility/authority that can collect dedicated funds on a continual basis, this review and application process will have to be done on an annual basis to provide needed funds to support the stormwater program. In addition, it is advised that funding for the neutral party discussed in "Recommendation 4" should be a major component of each municipality's financing plan.

### **Consider Authorities.**

Municipalities should consider the establishment of authorities to collect, distribute, and manage funds strictly dedicated to stormwater management. While we recognize that municipalities may initially be opposed to the concept of an authority because it creates another institution and potentially another level of bureaucracy, the utility/authority model clearly creates an entity that can work more effectively toward the goals of a comprehensive stormwater program, reduce costs and expenditures, improve water quality, and protect public health and safety.

### **Build Political Will.**

Based on our experience with successful stormwater programs, progress in building effective programs takes a political leader willing to champion the effort. These types of political leaders arise through a combination of actions outlined above – education, enforcement, and cooperation from regulatory agencies in providing flexibility and tools to make it work.

## **Conclusion**

We recognize that giant steps cannot be taken overnight to overhaul the programmatic approach to the MS4 Phase II program, but we recommend that municipalities seriously embark on as many of the outlined recommendations as possible to advance their programs. A movement toward collaboration, along with the successes garnered through education and outreach, will build the political will necessary to steer the future of stormwater management in Pennsylvania.

# The EFC Project Team

## *EFC Staff*

### **Lisa Grayson Zygmunt, Program Manager**

Lisa Grayson joined the Environmental Finance Center in 2005 to manage the Center's new Stormwater Financing Initiative that will provide communities with the tools and resources they need to effectively finance and implement their stormwater management programs. Lisa has over 16 years of experience in managing and coordinating national and regional environmental and natural resource conservation projects, meetings, workshops, and conferences. Her three core areas of focus are in: water and watershed related efforts, green building, and corporate environmental health and safety management.

Working on projects with the U.S. Environmental Protection Agency and USDA, Lisa managed projects on the following topics, watershed, wetlands, mitigation and conservation banking, clean lakes, nonpoint source pollution, stormwater management, greenways, coastal zone management, and riparian restoration, the Rural Clean Water Program. She also helped coordinate an American Rivers national conference and was involved with The National Forum on Non-Point Source Pollution, lead by the Conservation Fund and National Geographic, and coordinated one of its resulting demonstration projects, the CF Industries National Watershed Awards Program. She has conducted stakeholder interviews and surveys within the Schuylkill watershed in support of a watershed wide gap analysis.

More recently she has very involved with promoting green building and has worked closely with the U.S. Green Building Council (USGBC) helping to launch their LEED (Leadership in Energy and Environmental Design) Program, through national training workshops. In addition to supporting the LEED program, she also provided assistance in launching Greenbuild, the USGBC's national convention and exposition. Currently she is working with the Delaware Valley Green Building Council (a chapter of the USGBC) to launch the Green Advantage® training workshop targeted to the building trades.

Lisa serves on the board of the Delaware Valley Green Building Council and is a member of the Lower Makefield Environmental Advisory Council. Lisa is a graduate of Sarah Lawrence College, in Bronxville, NY.

### **Megan Hughes, Program Manager**

Megan Hughes comes to the EFC most recently from Bowling Green State University in Bowling Green, OH, where she served for four years as an Instructor and Internship Coordinator for the Center for Environmental Programs. In this capacity, she taught undergraduates on a variety of environmental topics including human population growth, biodiversity, land use, water, and climate disruption and focused on research, writing, and critical-thinking strategies. Prior to accepting this Instructorship, Ms. Hughes worked for two years with the Chapel Hill, NC, firm

Environmental Consultants and Research (EC/R, Inc.) as a contractor to the Environmental Protection Agency Office of Air Quality Planning and Standards (OAQPS).

Megan received her Master of Environmental Management degree from Duke University's Nicholas School of the Environment and Earth Sciences and a Bachelor of Arts Degree in Environmental Studies from the University of North Carolina at Wilmington. Her Master's Project, entitled "Creating the Urban Toolshed: A case study of Durham children's perceptions of nature and neighborhood," was authored during her time as an environmental education consultant for Durham Parks and Recreation in Durham, NC. During graduate studies, she also held a series of positions in the Triangle region of NC with the North Carolina Solar Center (as K-12 Program Manager), the Center for Environmental Education (as Education Intern), and Triangle J Council of Governments (as Solid Waste Intern).

### ***Special Consultants to the EFC***

**John Damico**, President of Environmental Rate Consultants, (ERC)

ERC projects focus solely on working with communities regarding rates and financing, institutional and organizational, management and policies, public involvement and facilitation and utility billing system implementations in a needs analysis project or full implementation project scenarios.

John Damico's experience includes over 22 years of water resource, financial and rate setting and public relations experience implementing over 30 municipal and regional storm water utility programs and performing over 60 water/sewer and storm water rate studies all across the country. Additionally, he has experience in facilitating and consensus building for large and small groups, implementing water resource public involvement campaigns, financing options analysis, strategic planning development, rate structure design and analysis, cost of service analysis, cash flow analysis, organizational analysis, storm water utility billing system design and implementation, and GIS program cost/benefit analysis and implementations.

John has done work throughout the United States with over 60 similar projects, working with and facilitating county wide and watershed groups to reach consensus on program missions, other policy issues such as funding institutional, management and organizational aspects of their groups.

**Steven McKinley**, Vice President and Director of Water Resources , URS Corporation

Steve McKinley is a graduate of the University of Kentucky School of Engineering and a Registered Professional Engineer. Steve has 30 years experience in water resource development, planning, and design. His experience includes storm water utility development, stormwater program evaluation, FEMA floodplain studies and floodplain management, dam inspection and design, wet weather and watershed management efforts. Steve has successfully developed stormwater and wet weather programs for Louisville, Kentucky; Columbus, Ohio; Fort Wayne, Indiana; Toledo, Ohio; Hamilton County, Ohio; Gwinnett County, Georgia and assessed the Chattanooga, Tennessee Storm Water Program.

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# Appendices

- Appendix A:** Demographic Data for the Wissahickon, Pennypack, and Brandywine Watersheds
- Appendix B:** Leadership Dialogue Interview Template
- Appendix C:** Capacity Survey
- Appendix D:** Capacity Survey Results
- Appendix E:** Stormwater Financing Forum Participants
- Appendix F:** Stormwater Financing Forum Agenda
- Appendix G:** Stormwater Financing Forum Evaluation and Summary Data

## Appendix A: Demographic Data for the Wissahickon, Pennypack, and Brandywine Watersheds

Appendix A: Watershed Demographic Data

Municipality	1980 Pop.	1990 Pop.	2000 Pop.	2005 DVRPC est.	2010 DVRPC est.	2015 DVRPC est.	Land Area (sq. mi.)	% of area in watershed	% developable	if MS4, rating?	2003 total revenues	2003 total tax rev.	2003 exp. per capita	2003 tax per capita
Wissahickon - Abington Twp	58,836	56,322	56,103	56,090	55,960	55,830		< 5	5.1	5.5	40,682	20,771	\$733	\$370
Ambler Borough	6,628	6,609	6,426	6,490	6,910	7,270		100	8.1	5.5	6,323	1,538	\$995	\$239
Cheltenham Twp	35,509	34,923	36,875	36,900	36,770	36,700		< 5		6.5	38,887	15,845	\$983	\$430
Horsham Twp	15,959	21,896	24,232	25,210	25,840	26,680		< 5		4.5	15,103	9,566	\$681	\$395
Lansdale Borough	16,526	16,362	16,071	16,200	16,310	16,440		~ 25	2.2	4.5	2001 26,852	4,571	\$1,629	\$284
Lower Gwynedd Twp	6,902	9,958	10,422	10,920	11,410	11,700	9.3	89	43.6	5	9,947	5,098	\$977	\$489
Montgomery Twp	5,718	12,179	22,025	23,980	24,870	25,530	10.7	~ 15	11.5	4	15,381	8,215	\$645	\$373
North Wales Borough	3,391	3,802	3,342	3,300	3,250	3,250		100	1.3	5.5	3,508	665	\$2,039	\$199
Springfield Twp	20,344	19,612	19,533	19,550	19,490	19,380		~ 85	9.7	5	13,729	6,069	\$686	\$311
Upper Dublin Twp	22,348	24,028	25,878	26,340	26,730	27,010	13.2	~ 30	8.4	4	20,787	12,830	\$808	\$496
Upper Gwynedd Twp	9,487	12,197	14,243	15,410	16,050	16,140		~ 60	10.8	5	20,432	1,954	\$1,351	\$137
Whitemarsh Twp	14,987	14,863	16,702	17,100	17,260	17,470		~ 50	20.3	6	15,372	7,820	\$965	\$468
Whitpain Twp	11,772	15,673	18,562	18,970	19,420	19,870		~ 40		6	13,366	8,043	\$1,047	\$433
Worcester Twp	4,661	4,686	7,789	8,820	9,340	9,950		< 5		5	3,656	2,258	\$481	\$290
Little Neshaminy - Horsham	15,959	21,896	24,232	25,210	25,840	26,680	17.3	66						
Ivyland Borough - Bucks	661	490	492	520	560	590	0.35	100		5.5	459	323	\$945	\$656
Lower Gwynedd Twp	6,902	9,958	10,422	10,920	11,410	11,700	9.3	11.2	43.6					
Montgomery Twp	5,718	12,179	22,025	23,980	24,870	25,530	10.7	59	11.5					
Northampton Twp - Bucks	27,392	35,406	39,384	40,930	42,430	43,730	26.27	24		5.5	19,525	9,012	\$611	\$229
Upper Dublin Twp	22,348	24,028	25,878	26,340	26,730	27,010	13.2	5.4	8.4					
Warminster Twp - Bucks	35,463	32,832	31,383	32,550	33,680	34,650	9.99	54		4.5	17,214	7,859	\$550	\$250
Warrington Twp - Bucks	10,704	12,169	17,580	19,290	21,120	22,990	13.46	51		4.5	16,668	4,774	\$1,032	\$272
Warwick Twp - Bucks	2,307	5,915	11,977	13,520	15,230	17,070	11.14	41		5	12,515	4,006	\$699	\$334

Municipality	1980 Pop.	1990 Pop.	2000 Pop.	2005 DVRPC est.	2010 DVRPC est.	2015 DVRPC est.	Land Area (sq. mi.)	% of area in watershed	% developable	if MS4, rating?	2004 total revenues	2004 total tax rev.	2004 exp. per capita	2004 tax per capita
Brandywine - Birmingham Twp	1,584	2,636	4,221	4,600	4,950	5,620	6.40	100		4	1,557	823	\$367	\$195
Cain Twp	9,639	11,997	11,916	12,630	13,300	14,020	8.76	100		3	9,789	3,778	\$669	\$317
Chadds Ford Twp - Del. Co.	2,057	3,118	3,170	3,360	3,660	3,920	8.78	~90		2.5	831	434	\$252	\$137
Coatesville City	10,698	11,038	10,838	11,080	11,300	11,400	1.85	100		4.5	13,826	3,345	\$1,507	\$309
Concord Twp - Del. Co.	6,437	6,933	11,239	12,130	13,230	14,140	13.70	~10		4	4,215	1,958	\$363	\$197
Downingtown Borough	7,650	7,749	7,589	7,770	7,940	7,990	2.19	100		4	6774 (2003 data)	2530 (2003 data)	960 (2003 data)	333 (2003 data)
East Bradford Twp	3,219	6,440	9,405	10,310	11,180	11,950	15.03	100		5.5	6,040	2,942	\$1,070	\$313
East Brandywine Twp	4,690	5,179	5,822	6,160	6,470	6,720	11.39	100		3	5,181	1,961	\$1,031	\$337
East Cain Twp	2,187	2,619	2,857	3,030	3,180	3,230	3.63	100		3.5	6,062	1,314	\$1,817	\$460
East Fallowfield Twp	3,962	4,433	5,157	5,510	5,840	6,140	15.68	100		4	2,061	989	\$382	\$192
East Marlborough Twp	3,953	4,781	6,317	7,100	7,860	8,420	15.62	~20		2.5	3,960	1,452	\$499	\$230
East Nantmeal Twp	1,222	1,448	1,787	1,820	1,830	1,950	16.39	~45			630	455	\$322	\$254
East Whiteland Twp	8,468	8,398	9,333	9,690	10,030	10,300	11.00	~10		4.5	9,912	4,353	\$1,035	\$466
Highland Twp	1,244	1,199	1,125	1,180	1,210	1,240	17.22	~80			263	159	\$274	\$141
Honey Brook Borough	1,164	1,184	1,287	1,360	1,410	1,450	0.49	100			438	228	\$338	\$177
Honey Brook Twp	4,128	5,449	6,278	6,720	7,150	7,450	25.11	~90		1.5	1,556	918	\$215	\$146
Kennett Twp	4,201	4,624	6,451	7,150	7,830	8,400	15.55	~10		2.5	4,869	2,262	\$1,084	\$351
Londonderry Twp	1,293	1,243	1,632	1,840	2,020	2,150	11.33	~60			495	211	\$340	\$129
Modena Borough	672	563	610	590	570	570	0.33	100			200	111	\$299	\$181
Newlin Twp	725	1,092	1,150	1,210	1,240	1,300	11.98	100			469	364	\$470	\$317
Parkesburg Borough	2,578	2,981	3,373	3,560	3,720	3,900	1.25	~90		1.5	3,451	1,037	\$1,217	\$308
Pennsbury Twp	2,604	3,326	3,500	3,700	3,870	4,060	9.91	~95		3	1,562	572	\$206	\$164
Pocopson Twp	2,331	3,266	3,350	3,610	3,840	4,090	8.28	100		4.5	955	472	\$239	\$141

Municipality	1980 Pop.	1990 Pop.	2000 Pop.	2005 DVRPC est.	2010 DVRPC est.	2015 DVRPC est.	Land Area (sq. mi.)	% of area in watershed	% developable	if MS4, rating?	2004 total revenues	2004 total tax rev.	2004 exp. per capita	2004 tax per capita
Sadsbury Twp	2,398	2,510	2,582	2,650	2,700	2,760	6.25	100		4.5	1,607	558	\$905	\$216
Salisbury Twp - Lancaster Co.		8,527	10,012								2,365	937	\$252	\$94
South Coatesville Borough	1,359	1,026	997	1,030	1,040	1,070	1.70	100		1.5	940	421	\$1,108	\$423
Thornbury Twp - Chester Co.	1,323	1,131	2,678	2,960	3,230	3,530	3.91	~25		3.5	1,483	965	\$674	\$360
Upper Uwchlan Twp	1,805	4,396	6,850	8,200	9,500	10,840	10.75	~80		3.5	5,686	2,680	\$695	\$391
Uwchlan Twp	8,364	12,999	16,576	17,430	18,250	19,120	10.44	~70		4.5	11,086	4,861	\$726	\$293
Valley Twp	3,598	4,007	5,116	5,440	5,740	6,090	5.97	100		3	4,663	1,122	\$1,082	\$219
Wallace Twp	1,881	2,541	3,240	3,540	3,820	4,100	12.03	100		5	1,296	893	\$406	\$276
West Bradford Twp	7,343	10,406	10,775	11,450	12,080	12,480	18.56	100		3.5	5,029	1,982	\$1,311	\$184
West Brandywine Twp	4,068	5,984	7,153	7,690	8,200	8,840	13.38	100		3.5	3,204	1,633	\$484	\$228
West Caln Twp	4,958	6,143	7,054	7,610	8,150	8,440	21.75	~75		1.5	1,781	982	\$176	\$139
West Chester Borough	17,435	18,041	17,861	17,850	17,820	17,860	1.84	~70		4	23,456	5,881	\$1,392	\$329
West Fallowfield Twp	2,122	2,342	2,485	2,510	2,510	2,570	18.07	100			687	502	\$220	\$202
West Goshen Twp	16,164	18,082	20,495	21,520	22,500	23,270	11.92	~40		5.5	16,040	8,392	\$730	\$409
West Marlborough Twp	941	874	859	860	860	860	17.13	~50			665	157	\$376	\$182
West Nantmeal Twp	1,766	1,958	2,031	2,120	2,190	2,240	13.42	~65			551	349	\$247	\$172
West Sadsbury Twp	1,728	2,160	2,444	2,560	2,650	2,810	10.67	~10			853	331	\$316	\$135
West Vincent Twp	1,992	2,262	3,170	3,540	3,890	4,120	17.75	~10			3,365	1,640	\$1,063	\$517
West Whiteland Twp	9,581	12,403	16,499	17,820	19,100	19,770	12.96	~90		5	14,525	6,148	\$837	\$373
Westtown Twp	6,774	9,937	10,352	10,480	10,560	10,660	8.73	~80		3	10,916	2,487	\$1,010	\$240

% developable refers to the entire municipality; all financial data from the PA Dept. of Community & Economic Development Municipal Summary Query Form; 2004 exp. = expenditures; DVRPC = Delaware Valley Regional Planning Commission; MS4 rating is the average rating of the first 2 annual reports, with 7 the highest and 0 the worst; for Little Neshaminy, column H and I data from original Act 167 plan

## Appendix B: Leadership Dialogue Interview Template

1. How would you describe your level of success with your stormwater program?
2. How have flooding issues affected your program?
3. From both programmatic and financing perspectives—what are the biggest challenges you face with the program?
4. How involved is your Board of Supervisors with your program?
  - 4 a. Was there a particular “champion” on the Board or elsewhere?  
Any opponents/naysayers? Who and why?
5. Which, if any, of the 6 MCMs pose the most challenge and why?
  - #1 *Public Education and Outreach*
  - #2 *Public Participation/Involvement*
  - #3 *Illicit Discharge Detection and Elimination*
  - #4 *Construction Site Runoff Control*
  - #5 *Post-Construction Runoff Control*
  - #6 *Pollution Prevention/Good Housekeeping*
6. Who do you see as potential partners as your stormwater program develops and grows?
7. Although the new 2008 MS4 permit is not out yet, what changes in your program do you predict will be needed to address more aggressive levels of compliance?
  - Concerned – especially if linked to TMDL.
  - Trying to incentivize with in lieu of fees – trying to take a “do it now” approach.
8. Is your township or programs within your township currently collaborating with neighboring townships on other efforts? If so which ones and how successfully?
9. Is there any type of assistance that you believe would be helpful? If yes, what type and what are the impediments to receiving that assistance?
10. Would you be interested in learning more about stormwater financing approaches? If yes, are there specific topics of interest?
11. Does your township have a stormwater program budget?
12. If not, how do you account for the costs associated with your stormwater program? How could the state agency provide additional or different types of support to your program?

Other comments/questions/concerns

## Appendix C: Capacity Survey

# The Stormwater Financing Initiative Capacity Survey

*For Municipalities in the Wissahickon Watershed  
Provided by the Environmental Finance Center*

### **Background**

The Stormwater Financing Initiative is a new initiative by the Environmental Finance Center (EFC), to provide technical assistance to communities striving to implement stormwater programs. This Initiative is designed to provide communities with the tools and resources they need to **effectively finance and implement** their stormwater management programs. Our goal is to provide communities with an analysis of their capacity to manage and finance their programs as well as a framework for effectively moving forward.

### **Why A Capacity Survey?**

The *Capacity Survey* will assess a community's capacity – financial, political and administrative – for implementing their stormwater plans. In order to do this a baseline of information about a municipality's stormwater management program must be collected for compilation and evaluation. The Environmental Finance Center realizes that each community is unique with a different set of assets and challenges that need to be evaluated in order to produce a set of recommendations that most effectively meet the municipality's need.

### **Data To Be Collected**

We will be requesting information on a variety of topics. A clear and/or obvious connection with these topics may not be immediately apparent. However they will provide us with a more comprehensive picture of your municipality's financial, administrative and political capacity as it relates to financing your stormwater program.

Below are the categories of data requests followed by a brief description of why we are requesting this data and how be used in our analysis.

### **Method/Format for Submitting Data**

We request that data be supplied in an electronic format. Please use this Word document and fill in your answers within the document. For requests that are too large to include in this survey form, please note the website where the document can be located or that the document is supplied separately as an attached document and be sure that title of the attachment includes the number of the SECTION and NUMBER of the question and the name of the document. (For example: *Section II, Question #1*)

If certain answers or reports are not available, don't worry! Please note, "This information is not available."

### **Deadline for Submission**

Extended to May 18, 2007

### **Question?**

Please don't hesitate to contact us as you work your way through the data collection process. **Contact: Lisa Grayson Zygmunt, Program Manager, 215.428.9655 or [lgrayson@umd.edu](mailto:lgrayson@umd.edu).**

## The Stormwater Financing Initiative Capacity Survey

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Name of Municipality: \_\_\_\_\_

Address: \_\_\_\_\_

Primary Contact/Responsible for Survey Completion: \_\_\_\_\_

Title/Department: \_\_\_\_\_

Phone Number: \_\_\_\_\_ Email: \_\_\_\_\_

Back up/Assistant Contact: \_\_\_\_\_

Title/Department: \_\_\_\_\_

Phone Number: \_\_\_\_\_ Email: \_\_\_\_\_

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**Please check off below other departments/agencies performing stormwater activities.**

Planning Agencies

Wastewater Departments

Water Departments

Solid Waste Departments

Sanitary/MSD Districts

Parks and Recreations Departments

Emergency Management Agencies

Health Departments

Soil and Water Districts/Agencies

Facilities and Maintenance Departments

Environmental Advisory Councils (EACs)

Code Enforcement

L&I

Building Inspectors

Others \_\_\_\_\_

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**Section I: Overview**

1. Please rate the level of clarity of the State and Federal requirements for stormwater management:     Very Clear     Somewhat Clear     Not Clear
  
2. Does the MS4 program help you define requirements in your community's MS4 program?     Yes     No    Comments  
\_\_\_\_\_  
\_\_\_\_\_
  
3. How much of a range of effort or performance is there given/allowed in the requirements as you can best understand them?  
 None     Moderate Level     High range of effort or performance
  
4. Do you have a clear idea where your community wants to be in that range, e.g. minimum needed to comply, what you can afford, whatever you can achieve with current technology, etc.  
\_\_\_\_\_  
\_\_\_\_\_
  
5. What kinds of programs and/or grants are you managing to achieve your stormwater goals?  
\_\_\_\_\_
  
6. Are there other programs and grants you would like to use? If so, which ones?  
\_\_\_\_\_  
\_\_\_\_\_

**Section II: Demographics**

*Demographic information is collected to assess the potential revenue base of your community and identify other issues that may affect the revenue or costs as we project into the future.*

1. What is the total population of your community?  
 Less than 5,000     5,001 - 10,000     10,001 - 15,000  
 15,001 - 20,000     20,001 - 25,000     25,001- 30,000
  
2. What is the approximate acreage breakdown of residential versus commercial properties?  
\_\_\_\_\_  
\_\_\_\_\_
  
3. What is the average household income in your community?

- Less than \$25,000       \$25,000 - \$35,000       \$35,001 - \$45,000  
 \$45,001 - \$60,000       \$60,001 - \$85,000       \$85,001 - \$100,000  
 \$100,001 - \$125,000       \$125,001 - \$150,000       \$150,001 +

4. Please provide the population growth projections, annually through the year 2012.

2008 \_\_\_\_\_ 2009 \_\_\_\_\_ 2010 \_\_\_\_\_  
 2011 \_\_\_\_\_ 2012 \_\_\_\_\_

**Section III: Regulatory and Permit Information**

*Information about the regulatory and permit environment of your municipality will help us assess areas that could be expanded to support stormwater program objectives.*

	<b>Check if Available</b>	<b>Note website address or other location where available</b>
1. Copy of 2003 original Five-Year NPDES Phase II (MS4) Plan Submitted to DEP.		
2. Copy of 2004 NPDES Phase II, Year 2 and 3		
3. Copy of Stormwater Master Plan		
4. Copy of five-year capital improvement plan		
5. Copy of municipal comprehensive plan		

**Section IV: Built and Geographic Assessment of Your Municipality**

*Collecting information about built and geographic features of your municipality will provide information about the service area from both a maintenance and protection perspective.*

1. List the (approximate) miles of storm sewers in your community's system.

\_\_\_\_\_

2. List the miles of roadways in your community's system (breakdown by Federal/State/County/Township).

*Federal*

\_\_\_\_\_

*State*

\_\_\_\_\_

*County*

\_\_\_\_\_

*Township/Borough*

\_\_\_\_\_

3. List the (approximate) miles of curb and gutter in your community's system (breakdown by Federal/State/County/Township).

*Federal*

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*State*

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*County*

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*Township/Borough*

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4. List the (approximate) miles of street sweeping in your community's system (breakdown Federal/State/County/Township) and the frequency.

*Federal*

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*State*

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*County*

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*Township/Borough*

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5. List the number of bridges in your community's system.  
\_\_\_\_\_
6. List the number of inlets in your community's system.  
\_\_\_\_\_
7. List the number of catch basins in your community's system.  
\_\_\_\_\_
8. List the number of culverts in your community's system.  
\_\_\_\_\_
9. List the number of rivers, streams, and creeks in your community's system.  
\_\_\_\_\_
10. List the number of ponds in your community's system.  
\_\_\_\_\_
11. List the number of ditches in your community's system.  
\_\_\_\_\_
12. List the amount of porous pavement in your county's system.  
\_\_\_\_\_

**Section V: Legal/Management/Administrative**

*The legal/management/administrative structure of your municipality's stormwater program will provide valuable information and opportunities for identifying areas to increase both the efficiency and effectiveness of your current programs. The legal requirements of your municipality provide a driver for action. Ordinance driven*

*activity provides a baseline – and expectation level - from which to start the evaluation and assessment process.*

1. Provide list and short description of any stormwater related ordinances for your community.

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2. Does your community have any drainage/ditch/conservancy special assessment already in place? If yes, what is the dollar amount collected annually? \_\_\_\_\_

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3. Provide your municipality’s list of outstanding maintenance work orders by category for the past 3 years.

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4. Provide your municipality’s list of outstanding (unfinished) capital improvement work orders by category for the past 3 years. (Provide contact for person responsible)

Description of work
_____
_____
_____
_____

5. List the number of stormwater related complaints for the past 3 years (if possible please group by complaint category)

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6. Please provide reference information for the following guidance documents.

	Check if Available	Note website address or other location where available
1. Zoning regulations manual		
2. Erosion and sediment control manual		
3. Development/subdivision regulations manual		
4. Any manuals that relate to stormwater rules and regulations		
5. Floodplain management manuals/regulations		
6. Is your community a member of the FEMA community rating-system for flood insurance?		

**Section VI: GIS/Billing System**

*The structure of your billing and GIS systems can provide valuable information and existing options for assessing stormwater costs and methods to collect fees to support the program.*

Please check the following features that are contained in your communities GIS system.

	Check if Included	Comments/Notes
1. Does your GIS contain impervious area features for some or all properties?		
2. Is the GIS database consistent with the engineering department and/or property tax office or both?		
3. Does your community have a water and/or sewer billing system? If so, list the name.		
4. Is the water/sewer billing system integrated with the GIS?		
5. Is the GIS database tax parcel based?		
6. List the number of parcels in your community.		
7. List any other features		

**Section VII: Financial Information**

*Obtaining a look at your municipality’s approach to managing the financial components of your management activities is important to assist in identifying areas for improved efficiency and new financial approaches.*

1. List the current funding policies for your community relating to stormwater management, if any.  


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2. List the current bonding/debt financing policies for your community relating to stormwater management, if any list the current financing policies for your community relating to water/sewer or solid waste, if any.  


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3. Provide the 2005 and 2006 Operating Budget for the County Engineer.
4. Provide the 2005 and 2006 Operating Budget for the Streets/Roadway Department.
5. Provide a copy of financial chart of accounts for all departments with stormwater activities.
6. Provide any engineering department budgets for stormwater management.

**Section VIII: Information From Street/Road Maintenance Department**

*Data relating to personnel and activity level are essential to assess where gaps exist and where additional resources are needed. We realize that your municipality may not have any employees dedicated 100% to Stormwater Management. However, please estimate the number of employees that work on Stormwater related activities and note the percentage of their time spent.*

Number of employees that perform stormwater related activities		Percentage of time Per employee	Classification (supervisor, operator; engineer, or laborer)
	Employee #1		
	Employee #2		
	Employee #3		
	Employee #4		
	Employee #5		
	Employee #6		
	Employee #7		
	Employee #8		

Please provide your municipality’s level of service as it relates to stormwater management below.

<b>Services</b>	<b>Annual Cost for Activity</b>	<b>Annual Hours Spent</b>	<b>Number of employees</b>
<b>Office</b>			
1. Emergency Response/Drainage Complaints			
2. Stormwater Administration			
3. Data Enter Inspection Results / Create Work Order			
4. Waste Dumping Fees			
5. Hazardous Spills Response			
6. Monitoring Stations			
7. Insurance, Small Capital and Governmental Charges			
<b>Field</b>			
8. Sampling and Sampling Analysis			
9. Leaf Pickup			
10. Street Sweeping			
11. Storm Sewer Line Inspection			
12. Litter Collection Prior to Mowing and Disposal			
13. Placement of High Water Signs			
14. Storm Sewer Line - TV Inspection			
15. Construction Maintenance Materials and Supplies			
16. GPS - Data Gathering			
7. 17. Vehicles and Travel			
<b>Maintenance</b>			
<b>Green</b>			
18. Roadside Swale Maintenance			
19. Stream Bank Restoration			
20. Detention/Retention Basin Mowing			
21. Detention/Retention Basin Repair			
22. Mowing Stormwater Swales and Berms			
<b>Gray</b>			
23. Storm Sewer Line Cleaning			
24. Storm Sewer Installation and Repair			
25. Storm Sewer Pump Station Maintenance			
26. Curb Maintenance			
27. Culvert Repair and Replacement			
28. Bridge and Creek Debris Clearing			
29. Vactor Operation			
30. Miscellaneous Maintenance			
<b>Other (please list any others)</b>			

Please return via email to: Lisa Grayson Zygmunt: [lgrayson@umd.edu](mailto:lgrayson@umd.edu)  
 Or mail to: 344 Saly Road, Yardley, PA 19067  
 Questions: 215-428-9655

***Thank you very much!  
 Your participation is greatly appreciated!***

## Appendix D: Results from the Capacity Survey

### Appendix D: Capacity Survey Results

	(1)	(2)	(3)	(4)	(5)
	<b>WHITPAIN TOWNSHIP</b>	<b>WHITEMARSH TOWNSHIP</b>	<b>NORTH WALES</b>	<b>MONTGOMERY TOWNSHIP</b>	<b>UPPER GWYNEDD TOWNSHIP</b>
<b>DEMOGRAPHICS</b>					
Population:	15,001 - 20,000	15,001 - 20,000	Less Than 5,000	20,001 - 25,000	10,001 - 15,000
Residential vs Commerical Acreage:	90% RESIDENTIAL 10% COMMERCIAL	3516.6 ACRES RES 5810.85 ACRES COMM	95% RESIDENTIAL 5% COMMERCIAL	2,336 ACRES RES 561 ACRES COMM	2850 ACRES RES 74 ACRES COMM
Median Household Income:	\$100,001 - \$125,000		\$35,001 - \$45,000	\$60,001 - \$85,000	\$60,001 - \$85,000
Population Growth Estimate For 2008:			1%	24,902	15,683
Population Growth Estimate For 2009:			0.50%	25,096	15,863
Population Growth Estimate For 2010:	19,950		0.50%	25,290	16,043
Population Growth Estimate For 2011:			0.50%	25,476	16,223
Population Growth Estimate For 2012:			0.50%	25,662	16,403
	<b>WHITPAIN TOWNSHIP</b>	<b>WHITEMARSH TOWNSHIP</b>	<b>NORTH WALES</b>	<b>MONTGOMERY TOWNSHIP</b>	<b>UPPER GWYNEDD TOWNSHIP</b>
<b>OTHER DEPTS/AGENCIES</b>					
Planning Agencies:	Yes	Yes	Yes	Yes	No
Wastewater Depts:	No	Yes	No	No	Yes
Water Depts:	No	Yes	No	No	No
Solid Waste Depts:	No	Yes	No	No	No
Sanitary/MSD Districts:	No	Yes	No	No	No
Parks and Rec Department:	No	Yes	Yes	No	Yes
Emergency Mgmt Agency:	No	Yes	No	No	No
Health Departments:	No	Yes	No	No	No
Soil and Water Districts:	No	Yes	No	No	No
Facilities and Maintenance Dept:	Yes	Yes	Yes	Yes	Yes
Environmental Advisory Councils:	No	Yes	No	No	No
Code Enforcement:	No	Yes	Yes	Yes	Yes
L and I:	No	Yes	No	No	No
Building Inspection:	No	Yes	Yes	No	Yes
Other Dept Agency:	No	TWP ENGINEER	No	ENV PLANNING	No
Other Dept Agency:	No	SW TASK FORCE	No	No	No
	<b>WHITPAIN TOWNSHIP</b>	<b>WHITEMARSH TOWNSHIP</b>	<b>NORTH WALES</b>	<b>MONTGOMERY TOWNSHIP</b>	<b>UPPER GWYNEDD TOWNSHIP</b>
<b>OVERVIEW</b>					
Level of Clarity:	Somewhat Clear	Somewhat Clear	Somewhat Clear	Somewhat Clear	Somewhat Clear
Does MS4 Define Requirements?:	Yes	Yes	Yes	Yes	Yes
Range of Effort:	Moderate Level	High Range	Moderate Level	High Range	Moderate Level
Clear Idea Where Community Wants to Be in Range?	Has Become Clearer	Would Like to Meet or Exceed	Yes	What We Can Afford	What We Can Afford
What Programs/Grants Are You Managing?	DEP, Growing Greener II Watershed Grants	Growing Greener, Tree Revitalize	CDBG, Educational Programs, Website, Newsletter	None	None
Other Programs/Grants You Would Like to Use?	Section 319, Flood Protection Grants	Any or All Available Grants	Non Block Grant Are SW MGMT Grants	None	None

REGULATORY AND PERMIT	WHITPAIN TOWNSHIP	WHITEMARSH TOWNSHIP	NORTH WALES	MONTGOMERY TOWNSHIP	UPPER GWYNEDD TOWNSHIP
1. 2003 NPDES Phase II Five-Year Plan Available?	Yes	Yes	Yes	Yes	Yes
Website or Location	Paper Copy Available Upon Request	Whitemarsh Twp Building	North Wales Borough Office		Township Office
2. 2004 NPDES Phase II, Year 2 and 3 Available?	Yes	Yes	Yes	No	Yes
Website or Location	Paper Copy Available Upon Request	Whitemarsh Twp Building	North Wales Borough Office		Township Office
3. Copy of Stormwater Master Plan Available?	Yes	Yes	Yes	No	Yes
Website or Location	Paper Copy Available Upon Request	<a href="http://www.whitemarshntp.org/news/article.aspx?aid=23">www.whitemarshntp.org/news/article.aspx?aid=23</a>	North Wales Borough Office		Township Office
4. Copy of Five-Year CIP Available?	No	No	Yes	No	No
Website or Location			North Wales Borough Office		
5. Copy of Municipal Comprehensive Plan Available?	Yes	Yes	Yes	No	Yes
Website or Location	<a href="http://www.whitpaintownship.org">www.whitpaintownship.org</a>	<a href="http://www.whitemarshntp.org/information/comprehensive-plan.aspx">www.whitemarshntp.org/information/comprehensive-plan.aspx</a>	North Wales Borough Office		Township Office
BUILT AND GEOGRAPHIC ASSESSMENT	WHITPAIN TOWNSHIP	WHITEMARSH TOWNSHIP	NORTH WALES	MONTGOMERY TOWNSHIP	UPPER GWYNEDD TOWNSHIP
1. List the approximate miles of storm sewers	76.23	44 +	11	Unknown	65
2. List miles of roadways in community's system:					
Federal	2.99	0	0	0	
State	22.03	28.50 +	1	Unknown	20.66
County	3.75	8 +	0	Unknown	7.72
Township/Borough	67.40	60 +	10	70.73	54
Private	19.06	3.70			
3. List miles of curb and gutter in community's system:					
Federal	N/A			0	
State	22		1	Unknown	15
County	Do Not Know			Unknown	1
Township/Borough	135		9	100	40
Private					
4. List miles of street sweeping in community's system:					
Federal	Do Not Know			0	
State	Do Not Know			Unknown	41.32
County	Do Not Know			Unknown	15.44
Township/Borough	67.40		11	70.73	108
5. List number of bridges:	10	6 +	2	0	13
6. List number of inlets:	3596	2250	291	Unknown	2260
7. List number of catch basins:	3596		291	Unknown	120
8. List number of culverts:	383	24 +	2	Unknown	40
9. List number of					
Rivers	6	1	1	3	
Streams		3			
Creeks		3			3
10. List number of ponds:		19 +		Unknown	8
11. List number of ditches:	15	N/A		Unknown	23
12. List amount of porous pavement:	0	100 SY		Unknown	< 1 Acre

LEGAL/MANAGEMENT/ADMINISTRATIVE	WHITPAIN TOWNSHIP	WHITEMARSH TOWNSHIP	NORTH WALES	MONTGOMERY TOWNSHIP	UPPER GWYNEDD TOWNSHIP
1. Any stormwater related ordinances?	Yes	Yes		Yes	Yes
Describe:	DEP Protocol Incorporated into SW Mgmt, Subdivision and Land Development Ordinances	Chp 58 Grading, Erosion Control, SW Mgmt, Best Mgmt Practices		Subdivision and Land Development Ordinance	DEP Model Ordinance With Minor Changes
2. Any drainage/ditch/conservancy special assess? If yes, annual amount collected:	Yes	No	No	No	No
Describe:	Storm sewer outfall fee and fee-in-lieu of SWM for residential bldg permits				
3. Provide list of outstanding maintenance work orders:	None		None	Yes	Yes
Describe:				Curb and Sidewalk Replacement and Road Paving	Somnertown Pike, Phase 2
4. Provide list of outstanding CIP for past three years:	Yes		None	None	None
Describe:	17 miles of curb replacement				
5. List number of SW related complaints for past 3 yrs:	Yes	Yes	Yes	Yes	Yes
Describe:	Since July 2006 had 21 complaints most of which were residential drainage concerns	> 100 complaints - all flood related. Has problem areas map available upon request.	Street flooding during heavy rain periods. Water dissipates after rain event ends.	Resident complaints on private property	Ext of Existing System (4), Clogged Inlet (4), Inlet Cleaning (5), Storm Line Repair (10)
6. Provide reference information for the following:					
1. Zoning Regulations?	Yes	Yes	Yes	Yes	Yes
Website or Location	<a href="http://www.whitpaintownship.org">www.whitpaintownship.org</a>	Chp 116 www.whitemarshwp.org	North Wales Borough Office		Chp 195 www.uppergwynedd.org
2. Erosion and sediment control manual?	Yes	Yes	Yes	Yes	Yes
Website or Location	<a href="http://www.whitpaintownship.org">www.whitpaintownship.org</a>	Chp 58 & Res 2004-8 www.whitemarshwp.org	North Wales Borough Office		Chp 168 www.uppergwynedd.org
3. Development/subdivision regulations manual?	Yes	Yes	Yes	Yes	Yes
Website or Location	<a href="http://www.whitpaintownship.org">www.whitpaintownship.org</a>	Chp 105 www.whitemarshwp.org	North Wales Borough Office		Chp 168 www.uppergwynedd.org
4. Any manuals that relate to SW rules and regs?	Yes	Yes	Yes	No	Yes
Website or Location	<a href="http://www.whitpaintownship.org">www.whitpaintownship.org</a>	Chp 58 & Res 2004-8 www.whitemarshwp.org	North Wales Borough Office		Chp 168 www.uppergwynedd.org
5. Floodplain management manuals/regulations?	Yes	Yes	Yes	No	Yes
Website or Location	<a href="http://www.whitpaintownship.org">www.whitpaintownship.org</a>	Chp 116 Article XXII www.whitemarshwp.org	North Wales Borough Office		Chp 195 www.uppergwynedd.org
6. Is community a member of FEMA CRS?	Yes	Yes	No	Yes	Yes

<b>GIS / BILLING SYSTEM</b>	<b>WHITPAIN TOWNSHIP</b>	<b>WHITEMARSH TOWNSHIP</b>	<b>NORTH WALES</b>	<b>MONTGOMERY TOWNSHIP</b>	<b>UPPER GWYNEDD TOWNSHIP</b>
1. Does GIS contain impervious area features?	Yes				No
Comments/Notes	We keep track of new imperv surface for each bldg permit				
2. Is GIS consistent with eng dept, tax office, both?					No
Comments/Notes					
3. Does community have water and/or sewer billing?	Yes				Yes
Comments/Notes	Whitpain Twp				Township employees do sewer billing
4. Is water/sewer billing integrated with GIS?	No				No
Comments/Notes					
5. Is the GIS database tax parcel based?	Yes				Yes
Comments/Notes					
6. List the number of parcels in your community.	Approximately 6,600	64,876			5,564
7. List any other features.					
Comments/Notes	GIS includes zoning, roadways, floodplains, parcels, storm sewer system, sanitary system, hydrants, USGS contours, streams and aerial photos				
<b>FINANCIAL INFORMATION</b>	<b>WHITPAIN TOWNSHIP</b>	<b>WHITEMARSH TOWNSHIP</b>	<b>NORTH WALES</b>	<b>MONTGOMERY TOWNSHIP</b>	<b>UPPER GWYNEDD TOWNSHIP</b>
1. List current funding policies for your community relating to stormwater mgmt, if any.	Budgets \$139,000 annually, allocated from Eng Dept and Public Works, in addition to the outfall fee and fee-in-lieu.			General Fund	
2. List current bonding/debt financing policies, if any.	None	None	None	None	None
3. 2005 County Engineer operating budget provided?	No	No	No	No	No
3a. 2006 County Engineer operating budget provided?	No	No	No	No	No
4. 2005 Streets/Roadway Dept budget provided?	<a href="http://www.whitpaintownship.org">www.whitpaintownship.org</a>				
4a. 2006 Streets/Roadway Dept budget provided?	<a href="http://www.whitpaintownship.org">www.whitpaintownship.org</a>				
5. Provide copy of chart of accts for SW related depts.	Not Provided	Not Provided	Not Provided	Not Provided	Not Provided
6. Engineering dept budgets provided?	<a href="http://www.whitpaintownship.org">www.whitpaintownship.org</a>				
Comments/Notes	2007 budget at <a href="http://www.whitpaintownship.org">www.whitpaintownship.org</a> . It is estimated that \$60,000 of annual salaries are SW related. \$10K on annual SW consulting, \$4K annually for mapping and \$8K annually for testing and sampling.				

<b>STREET/ROAD MAINTENANCE DEPT</b>	<b>WHITPAIN TOWNSHIP</b>	<b>WHITEMARSH TOWNSHIP</b>	<b>NORTH WALES</b>	<b>MONTGOMERY TOWNSHIP</b>	<b>UPPER GWYNEDD TOWNSHIP</b>
Please estimate the number of employees that work on Stormwater related activities and note the percentage of their time spent.	8 employees all at 10% of annual time. Supervisor, Asst Foreman and 6 Highway Maintenance Workers	None provided	2 employees. Supervisor @ 20% and Laborer @ 30%	None provided	11 employees. Supervisor @ 25%, Supervisor @ 10%, Foreman @ 12.5%, Foreman @ 35%, 2 Operators @ 50%, Truck Driver @ 35%, Truck Driver @ 25%, 1 Laborer @ 25% and 2 Laborers @ 15%
<b>SERVICES</b>	<b>WHITPAIN TOWNSHIP</b>	<b>WHITEMARSH TOWNSHIP</b>	<b>NORTH WALES</b>	<b>MONTGOMERY TOWNSHIP</b>	<b>UPPER GWYNEDD TOWNSHIP</b>
<b>LEVEL OF SERVICE - OFFICE</b>	<b>WHITPAIN TOWNSHIP</b>	<b>WHITEMARSH TOWNSHIP</b>	<b>NORTH WALES</b>	<b>MONTGOMERY TOWNSHIP</b>	<b>UPPER GWYNEDD TOWNSHIP</b>
1. Emergency Response/Drainage Complaints Annual Cost Annual Hours Spent Number of Employees	300 2				\$1,820.00 52 1
2. Stormwater Administration Annual Cost Annual Hours Spent Number of Employees	300 2				\$22,350.00 780 1
3. Data Enter Inspection Results/Create Work Order Annual Cost Annual Hours Spent Number of Employees	100 2				\$10,875.00 416 1
4. Water Dumping Fees Annual Cost Annual Hours Spent Number of Employees					\$5,000.00
5. Hazardous Spill Response Annual Cost Annual Hours Spent Number of Employees	100 2				
6. Monitoring Stations Annual Cost Annual Hours Spent Number of Employees					
7. Insurance, Small Capital and Governmental Charges Annual Cost Annual Hours Spent Number of Employees					

SERVICES LEVEL OF SERVICE - FIELD	WHITPAIN TOWNSHIP	WHITEMARSH TOWNSHIP	NORTH WALES	MONTGOMERY TOWNSHIP	UPPER GWYNEDD TOWNSHIP
8. Sampling and Sampling Analysis Annual Cost Annual Hours Spent Number of Employees	\$8,000.00				\$260.00 10 1
9. Leaf Pickup Annual Cost Annual Hours Spent Number of Employees					
10. Street Sweeping Annual Cost Annual Hours Spent Number of Employees	\$19,200.00 640 1			\$5,000.00 200 1	\$14,000.00 150 1
11. Storm Sewer Line Inspection Annual Cost Annual Hours Spent Number of Employees					\$22,880.00 1040 2
12. Litter Collection Prior to Mowing - and Disposal Annual Cost Annual Hours Spent Number of Employees				40 2	
13. Placement of High Water Signs Annual Cost Annual Hours Spent Number of Employees					
14. Storm Sewer Line - TV Inspection Annual Cost Annual Hours Spent Number of Employees					
15. Construction Maintenance Materials and Supplies Annual Cost Annual Hours Spent Number of Employees	\$9,500.00				
16. GPS - Data Gathering Annual Cost Annual Hours Spent Number of Employees					\$704.00 16 2
17. Vehicles and Travel Annual Cost Annual Hours Spent Number of Employees				40	\$10,000.00

<b>LEVEL OF SERVICE - GREEN</b>	<b><u>TOWNSHIP</u></b>	<b><u>TOWNSHIP</u></b>	<b><u>NORTH WALES</u></b>	<b><u>TOWNSHIP</u></b>	<b><u>TOWNSHIP</u></b>
18. Roadside Swale Maintenance Annual Cost Annual Hours Spent Number of Employees				40 3	\$5,000.00 40 3
19. Stream Bank Restoration Annual Cost Annual Hours Spent Number of Employees					\$5,000.00 15 2
20. Detention/Retention Basin Mowing Annual Cost Annual Hours Spent Number of Employees	\$9,800.00 104 1			100 4	\$6,000.00 275 2
21. Detention/Retention Basin Repair Annual Cost Annual Hours Spent Number of Employees					\$440.00 20 2
22. Mowing Stormwater Swales and Berms Annual Cost Annual Hours Spent Number of Employees					
<b>MAINTENANCE</b>	<b><u>WHITPAIN</u></b>	<b><u>WHITEMARSH</u></b>	<b><u>NORTH WALES</u></b>	<b><u>MONTGOMERY</u></b>	<b><u>UPPER GWYNEDD</u></b>
<b>LEVEL OF SERVICE - GRAY</b>	<b><u>TOWNSHIP</u></b>	<b><u>TOWNSHIP</u></b>	<b><u>NORTH WALES</u></b>	<b><u>TOWNSHIP</u></b>	<b><u>TOWNSHIP</u></b>
23. Storm Sewer Line Cleaning Annual Cost Annual Hours Spent Number of Employees					\$20,000.00 416 2
24. Storm Sewer Line Installation and Repair Annual Cost Annual Hours Spent Number of Employees	\$18,778.00			40	\$54,366.00 2000 5
25. Storm Sewer Pump Station Maintenance Annual Cost Annual Hours Spent Number of Employees					
26. Curb Maintenance Annual Cost Annual Hours Spent Number of Employees				1000	
27. Culvert Repair and Replacement Annual Cost Annual Hours Spent Number of Employees	160 2				
28. Bridge and Creek Debris Clearing Annual Cost Annual Hours Spent Number of Employees					
29. Vacor Operation Annual Cost Annual Hours Spent Number of Employees					\$50,000.00 1040 2
30. Miscellaneous Maintenance Annual Cost Annual Hours Spent Number of Employees					\$2,112.00 96 1

## Appendix E: Stormwater Financing Forum Participants

### Stormwater Financing Forum Participants

First Name	Last Name	Title	Affiliation
Jennifer	Adkins	Schuylkill Watershed Initiative Grant Coordinator	Partnership for the Delaware Estuary Pennsylvania Environmental Council
Jessica	Anderson	Governor's Center for Local Government Services	State Office Building Brandywine Valley Association
Ron	Bednar	Assistant Engineer	Whitpain Township Delaware County Planning Department
Kathy	Bergman	MS4 Compliance Specialist	PA Department of Environmental Protection
Jim	Blanch	Mediation, Facilitation, Strategic Planning	U.S. Environmental Protection Agency Brandywine Valley Association
Shaun	Bollig	Director and Research Professor, Center for Sustainable Communities,	Temple University, Ambler College Montgomery County Planning Commission
Richard	Breitenstein	Environmental Planner	Environmental Finance Center
Jeffrey L.	Edelstein	Program Manager	AMEC Earth & Environmental
Paula	Estronnel	Project Manger	Upper Dublin Township Hamburg, Rubin, Mullin, Maxwll & Lupin
Jane	Fava	Grading Inspector	PA Department of Environmental Protection Delaware County Planning Department
Jeffrey	Featherstone	Esquire	Hatboro Township U.S. Environmental Protection Agency
Nicole	Galdieri	General Manager, Fresno Metropolitan Flood Control District (Retired)	PA Department of Environmental Protection Delaware County Planning Department
Lisa	Grayson	Watershed Manager, Watershed Management Program	Delaware County Planning Department
Marlou	Zygmunt	Manager	Hatboro Township U.S. Environmental Protection Agency
Tim	Gregory	Hatboro Council	PA Department of Environmental Protection Pennsylvania Environmental Council
Steve	Hann	Watershed/EAC Programs Associate	
Doug	Harrison		
Desiree	Henning-Dudley		
Karen	Holm		
Vince	Lasorse		
Mindy	Lemoine	Environmetnal Innovation Branch (3EA40)	
Kimberly	Long		
Khiet	Luong		

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Gayla	McCluskey	Principal	Radnor EAC & Global EHS
Carolyn	McCreary	Director of Finance	Borough of Landsdale
Don	McCreary	Manager of Public Facilities	Upper Gwynedd township
Michael	McGee	Township Manager	Horsham Township
Steve	McKinley	Vice President, Director of Water Resources	URS Corporation Montgomery County Planning Commission
Alexis	Melusky	Environmental Planner	Southeastern PA RC&D Council
John	Metrick	Coordinator	Congresswoman Allyson Schwartz
Jane	Murray	Mountgomery County Field Representative	Temple University, Ambler College
Richard	Nalbanian	Senior Associate, People and Ecosystems Program	
Dan	Nees Pappas	Environmental Planner	World Resources Institute Philadelphia Water Department
Marissa	Barletta	Manager	North Wales Borough
Susan	Patton	Watershed Program Manager	Pennsylvania Environmental Council
Paul	Racette	Commissioner	Upper Moreland Township Pennsylvania Environmental Council
Lisa	Romaniello	Director of Watershed Programs	Delaware County Planning Department
Gwyn	Rowland	Manager, County & Regional Planning	Whitemarsh Township Montgomery County Planning Commission
Lee	Senior	Chief, Environmental Planning	
Michael	Shaw	Superintendent, Wasterwater Treatment	Ambler Borough
Drew	Shaw, AICP	Public Works Administrator	Upper Dublin Township
Dan	Shinsky		U.S. Environmental Protection Agency
Jerry	Smith		Pennsylvania Environmental Council
Mark	Smith	Vice President	Environmental Finance Center
Patrick	Starr	Program Manager	
Swati	Thomas	Executive Director, Urban Drainage and Flood Control District (UDFCD), Denver, Colorado. (Retired)	
L. Scott	Tucker	Manager	Whitemarsh Township
Chris	Van De Velde	Mayor	Borough of Ambler
Charles (Bud)	Wahl	Community Planner	Natural Lands Trust
Nathan	Walker	Principal	TownShapes Philadelphia Water Department
Steven	Ware		
Joy	Young	Aquatic Biologist, Office of Watersheds	

## Appendix F: Stormwater Financing Forum Agenda



College Park, Maryland 20742-1411  
301.405.5036 TEL 301.314.5639 FAX  
<http://www.efc.umd.edu>

National Center for Smart Growth Research and Education  
Environmental Finance Center

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### Agenda Stormwater Financing Forum

*Tuesday, June 26, 2007; 8:30 am – 4:00 pm*  
*Temple Ambler Campus; Learning Center 302 and 303*

8:00-8:30 Registration and Breakfast

8:30-9:00 Welcome and Introductions  
*Lisa Grayson Zygmunt, Environmental Finance Center*  
*Dan Nees, World Resources Institute*

#### **Opening Round**

Attendees will be asked:

- (1) If you had all the money that you needed, list one feature or activity you would like to be doing that you are not doing now?
- (2) How can we raise the money we need?

9:00-9:30

#### **Background**

*Scott Tucker, Interim Executive Director of Start-Up Stormwater Authority in the City of Centennial and unincorporated Arapahoe County, Colorado*

*Doug Harrison, General Manager of the Fresno (California) Metropolitan Flood Control (Retired)*

- Historical development of Stormwater Systems
- New paradigm
- Stormwater as a service
- Issues and Challenges for Local Government

- 9:30-10:15      **Sources of Funding**  
*Doug Harrison, General Manager of the Fresno (California) Metropolitan Flood Control (Retired)*
- 10:15-10:30      Break
- 10:30-11:30      **Legal and Legislative Issues for Stormwater Program Financing**  
Summary of Legal Issues,
- *Scott Tucker, Interim Executive Director of Start-Up Stormwater Authority in the City of Centennial and unincorporated Arapahoe County, Colorado*
  - *Ohio Case Study, Steve McKinley, URS*
  - *Pennsylvania Legislative Status, Steve Hann, PA Municipal Authorities Association*
- 11:30-12:00      **Preliminary Finding from State-Wide Listening Sessions and Update on Representative Dave Steil's Proposed Stormwater Legislation**  
*Gwyn Roland, Director of Watershed Programs, Pennsylvania Environmental Council*
- 12:00-12:30      Lunch
- 12:30-1:00      **Maine's Interlocal Case Study**  
*Jeff Edelstein, Edelstein Associates*
- 1:00-1:15      **Review of Capacity Survey Findings**  
Steve McKinley, URS
- 1:15 -2:30      **Strategy Discussions**  
Small breakout groups with each focusing on one of each of the MS4s Minimum Control Measures, addressing the following: *(One of our expert presenters will be assigned to facilitate each group discussion)*
- Discussion of how they are currently funding their activities
  - Discussion of where collaboration is possible
  - Discussion of how this collaboration might work -- what it looks like
  - Identifying obstacles to progress
  - Identifying solutions to removing or minimizing these obstacles.
  - What can the State do better to help municipalities do their job?

- Next steps

2:30-3:30

**Report Back**

- Each group reports back
- Combined recommendations for moving forward
- Does a regional authority help in the collaboration effort?

**Reactions, response and recommendations from expert presenters**

3:30-4:00

**Closing Comments and Adjourn**

## Appendix G: Stormwater Financing Forum Evaluation and Summary Data

### Stormwater Financing Forum Evaluation and Summary Data

The following is a compilation of the Forum evaluation forms completed after the completion of the event. Although we received only eight evaluations form, they seemed to represent a wide variety of opinions.

**1. Did this Forum meet your expectations? Please rate on a scale of 1-4.**

Rated 1	Rated 2	Rated 3	Rated 4
0	1	7	1
<ul style="list-style-type: none"> <li>• Balance between “experts” and us elected officials</li> <li>• Good, but was hoping for more group discussion time</li> <li>• Very good presentation with strong emphasis on solutions</li> </ul>			

**2. Were you satisfied with the Forum structure? YES/NO If “no” what type of structure would you prefer?**

Yes	No
9	0
<ul style="list-style-type: none"> <li>▪ Some sort of Q&amp;A so I could ask others what is happening and available to assist.</li> </ul>	

**3. Please rate the following:**

A. Overall presenter quality	<b>3</b> Excellent	<b>6</b> Very Good	Good	Fair	Poor
B. Forum material	<b>1</b> Excellent	<b>4</b> Very Good	2 Good		Fair
C. Meeting Room	<b>3</b> Excellent	<b>4</b> Very Good	Good	Fair	Poor
D. Quality of Information	<b>4</b> Excellent	<b>5</b> Very Good	Good	Fair	Poor
E. Quantity of Information	<b>2</b> Excellent	<b>6</b> Very Good	1 Good		Fair

**4. What aspect of this Forum did you find most interesting and/or most useful?**

- Round table with neighboring townships and experts

- Facts, statistics, regulatory changes and history of stormwater management
- Breakout discussion groups in afternoon about way for municipalities to cooperate on stormwater
- Scott and Doug’s overview of revenue sources; afternoon group discussion
- Break out groups
- Presentation on legal issues by Scott Tucker, Ohio case study, Maine case study
- Maine case study and legal issues in PA (Steve Hann)
- All

**5. What aspect of this Forum was least interesting or useful to you?**

- Pennsylvania’s proposed stormwater legislation seemed to be rushed to get into legislation details
- History of stormwater management

**6. How do you plan to apply the knowledge gained through this Forum?**

- The initiative to have some communications with the contiguous townships.
- I will speak to my neighboring officials at the next opportunity, and of course try to rally my peers locally.
- Working on a similar project in Delaware County with EFC.
- Share information on case studies.
- Not sure, this is a long process
- Useful for similar stormwater initiative about to get underway in my county (Delaware)
- Institute an initial meeting between our neighboring municipalities

**7. Do you think that a collaborative approach would be beneficial to your stormwater program and if so, does a regional authority help in the collaboration effort? Yes/No ; Yes/No**

Yes	No	Und.	No Answer	Yes	No	Und.	No Answer
8	0	0	1	4	1	1	3

- Much like we now do with Northern Montgomery County Recycle Commission
- However, we do not have a stormwater program currently. An authority would provide the added pressure needed from the region to correct the problem and provide focus to problem solving.
- County government
- Legal/political issues associated with establishment of authority
- Strength in numbers

**8. My decision to attend this Forum was driven by:**

- Flooding in our town
- Personal interest
- The agenda and speakers
- Desire to learn about stormwater financing
- Interest
- My superiors
- Relation to regional stormwater effort in Delaware County
- Desire to achieve better water quality

**9. I would recommend this type of Forum to colleagues.**

Yes (8)      No (0)

- absolutely
- definitely

**10. Please provide recommendations for improvements to the Forum or the Process**

- I missed the opening session so may have missed the opportunity to comment
- I like having the technical information, more the better. (NPDES history, regulations, facts that I can not get easily. I think the information is necessary when discussing solutions with sewer authorities, or other contributors to water quality.)
- More group discussions
- Continue the strong focus on solutions and challenge people to think beyond financing
- Find a local elected official as a champion or spokesperson
- More discussion integrated in beginning parts of program

**11. Additional Comments**

- To meet and greet. I was surprised at the depth of expertise and felt not enough of "us" "officials/elected" were there.
- I learned a lot today. Thank you!
- Speakers should have handouts available. More listening – less writing.

**12. Please circle one. Are you from a 1) Municipality, 2) State/Federal Agency, 3) NGO, 4) Academic Organization, 5) Other**

- Municipality (4)
- State/Federal Agency (0)
- NGO(1)
- Academic Org (1).
- Other (3-- 1 county, 1 county planning dept)