Municipal Actions to Protect and Improve Water Quality in the Delaware River Watershed

2018 Coalition for the Delaware River Watershed Forum
September 26, 2018

Chris Linn, AICP
Project Background

- Funded by the William Penn Foundation
- June 2015 to December 2017
- Interdisciplinary project team:
  - Alison Hastings; Patty Elkis; Chris Linn; Melissa Andrews; Christina Arlt; Robert Beatty; Stephanie Lipartito; interns
Project Scope

- Delaware River Watershed
- 843 municipalities
- Advisory panel of over 50 individuals
- 6 advisory panel meetings
Project Elements

- Outreach interviews:
  - What are the barriers to, and conditions of, success for municipal-based conservation practices?
  - How could municipal technical assistance be more effective?

- Municipal Case Studies

- Action Plans
  - What actions can be taken to help municipalities protect their water quality?
Qualitative Interviews

• Content Experts
  ▪ Outreach for Municipal Technical Assistance Advisory Panel (MTAAP)
  ▪ 60+ interviews

• Municipalities
  ▪ Outreach to nearly 60 municipalities
  ▪ Inform case studies, ground-truth MTAAP interview findings and early recommendations
  ▪ 37 participated in individual interviews
Outreach Interviews

- Significant threats to water quality

- Stormwater runoff from highly developed communities upstream.
- On-lot septic systems.
- Improper land development and too much impervious coverage.
- Lack of enforcement.
- Agriculture
Outreach Interviews

• Important actions to take in response

  - Public education and outreach to property owners.
  - Retrofitting basins and restoring streams.
  - Updated ordinances (for example, SALDO, riparian buffer).
  - Agricultural BMPs
  - Active land preservation program.
Outreach Interviews

• Limitations to those actions

Staffing and capacity

Funding

Competing priorities

The public isn’t demanding action

Private property rights
Case Studies

Abington Township, Pennsylvania

Background: Abington was largely developed before modern stormwater management. The township has seen experienced some flooding events during heavy rains, particularly on slopes that caused resiidents to lose their lives. The township has spent millions of dollars on projects to mitigate flood risk.

Coombs Creek Watershed Association, Pennsylvania

Background: Coombs Creek Watershed Association (CCWA) has been working to improve water quality. The association has been successful in reducing nutrient levels in the creek and improving water clarity.

East Bradford Township, Pennsylvania

Background: East Bradford is located in a region with high agricultural and industrial activity. The township has implemented several measures to improve water quality, such as planting buffer strips along streams.

Water Quality Problems

- Like many other municipalities, East Bradford Township is facing stormwater management and watershed issues caused by urban and suburban development.
- Land conversion from forests and meadows to impervious surfaces, such as roads, parking lots, and buildings, increases the amount of stormwater runoff.
15 Case Studies

- Abington Township, Montgomery County
- Berks County Water and Sewer Association
- Camden City, New Jersey
- Durham Township, Bucks County
- East Bradford Township, Chester County
- Hamilton Township, Mercer County
- Kidder Township, Carbon County
- Lower Salford Township, Montgomery County
- Lower Saucon Township, Northampton County
- Montgomery Township, Montgomery County
- Newark CCD, New Castle County
- Smithfield Township, Monroe County
- Stillwater Township, Sussex County
- Warrington Township, Bucks County
- **West Chester City, Chester County**
Stormwater Runoff Problems in West Chester

- **Impaired waters in local streams**
  - Goose Creek
  - Taylor Run
  - Blackhorse Run
  - Plum Creek

- **Excessive amounts of runoff impact health, safety, and welfare**
  - Flooding
  - Stream bank erosion

- **Strains historic infrastructure**
  - Pipes, inlets, and other stormwater infrastructure require inspections, cleaning, and rehabilitation and replacement
West Chester’s Streams are Impaired

- Stormwater Assessment Advisory Committee (SWAAC) was formed in 2013 to recommend to Borough Council how to address the problem & fund it
- Included representatives from:
  - Residential
  - Business
  - Institutions (Chester County Hospital)
  - Non-Profits (Church)
  - West Chester University
  - Chester County
  - Borough Council and Staff

The SWAAC:

Met 7 times between July 2013 and October 2015 on funding options and policy issues
Fee based on impervious area

Source: West Chester Borough
Final Stream Protection Fee Structure

Stream Protection Fee Rate Structure:

SPF rates are grouped into Tiers based on the amount of impervious area in a parcel.

<table>
<thead>
<tr>
<th>Tier</th>
<th>Impervious Area/Parcel</th>
<th>Monthly Fee*</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0-1,000 square feet (ft²)</td>
<td>$3.35</td>
</tr>
<tr>
<td>2</td>
<td>1,000–1,500 ft²</td>
<td>$8.38</td>
</tr>
<tr>
<td>3</td>
<td>1,500–2,000 ft²</td>
<td>$11.73</td>
</tr>
<tr>
<td>4</td>
<td>2,000–2,500 ft²</td>
<td>$15.08</td>
</tr>
<tr>
<td>5</td>
<td>2,500–3,000 ft²</td>
<td>$18.43</td>
</tr>
<tr>
<td>6</td>
<td>&gt; 3,000 ft²</td>
<td>$20.10 and up</td>
</tr>
</tbody>
</table>

*The base rate has been set at $6.70 per 1,000 ft² of IA per month. Tiers 1-5 are charged a flat fee as shown above. Tier 6 properties are charged based on actual impervious area. The monthly fee is multiplied by 12 to determine annual costs.

Source: West Chester Borough
Prioritized Recommendations
Prioritizing Recommendations

- Identified over 500 recommendations/ideas
- Project Team consolidated into 48 distinct recommendations/ideas grouped by four “actors”
  - Municipalities
  - Nonprofits
  - State Agencies (PADEP)
  - Collaborations (all three working in concert)
- Prioritized by MTAAP
- Identified “coalition of the willing” to lead priority actions
Final Recommendation

Through several phases of this stakeholder research project, MTAAP members and municipal water quality champions provided ideas for tools and partnerships that enable municipalities to protect their water quality. The DVRPC team synthesized these ideas into discrete recommendations and asked the MTAAP members to prioritize them.

More detailed recommendations will be released in Summer 2017. Below are broad recommendations, listed in priority order as identified by MTAAP members.

**Municipal Actions**

These recommendations were identified to be the most important actions municipalities should take to improve and maintain water quality.

<table>
<thead>
<tr>
<th>Ranking</th>
<th>Recommendation</th>
<th>Shorthand Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Lead by example by implementing Best Management Practices (BMPs)/Green Stormwater Infrastructure (GSI) projects in parks and other municipal-owned properties with high visibility, and supplement with educational signage and outreach.</td>
<td>Lead by example (with BMPs/GSI)</td>
</tr>
<tr>
<td>3</td>
<td>Enact municipal stormwater fees (without creating a new stormwater authority) to pay for water quality BMP projects.</td>
<td>Municipal stormwater fee</td>
</tr>
<tr>
<td>5</td>
<td>Create locally-funded open space programs that prioritize land protection for water quality purposes.</td>
<td>Ballot initiatives to preserve open space</td>
</tr>
</tbody>
</table>
Action Plans
15 Action Plans

- Organized by Category
  - Expand Existing Efforts
    - Educate Riparian Landowners
  - Innovative New Ideas
    - Create a Watershed Academy
  - Advocacy and Policy Campaigns
    - Create a New State Funding Source for Stormwater Best Management Practices
Environmental Defense Fund
Co-authored by Alice Baker, PennFuture, and Alison Hastings, DVRPC

- A resource, administered by an established municipal assistance organization, that gives legal defense to municipalities faced with a legal challenge to environmental protective measures.
Environmental Defense Fund
Co-authored by Alice Baker, PennFuture, and Alison Hastings, DVRPC

• Membership fee
• Access to legal expertise
• Attorney fee reimbursement if the Fund enters into a court case on behalf of a municipality and wins the suit
• Short-term result: more legal actions
• Long-term result: increase in case law, fewer legal actions, more ordinances
Watershed Academy

Co-authored by Jen Adkins, Ann Hutchinson, Dulcie Flaharty, John Theilacker, Carol Collier, Susan Caughlan and Patty Elkis

• Newly branded training, educational, and networking program that brings together expert, targeted technical assistance providers, municipal training organizations AND receptive municipalities.
Watershed Academy

- The concept:
  - Train and certify professionals
  - Educate and certify municipalities

- The delivery: Coordinated by an existing organization in partnership certified experts
  - Build on existing programs
  - Provide access to peer network
Watershed Academy

• The Incentives:
  • Academy trained professionals get put on “Pre-Qualified” list of consultants
  ▪ Academy educated municipal officials become eligible for funding subsidies
New State Funding Source

Co-authored by Chris Linn and Henry Felsman, DVRPC

- An incentive program modeled after state/local funding partnerships for land preservation
- Takes advantage of the ability of PA municipalities to charge stormwater fees
New State Funding Source

• Incentivizes municipalities to enact stormwater fees to generate local revenue

• Provides a smaller incentive for municipalities without fees to encourage municipal-funded BMPs and allow wider participation

• Projects evaluated based on their effectiveness at reducing pollutants causing impairments

• Will require a statewide campaign

GROWING GREENER
KEEPS PA GREENER
Ongoing Work

- DRWI Data/GIS/Modeling Workgroup
- Implement Action Plans by working with MTAAP partners
Thank you!

Full report: dvrpc.org/Environment/Water/MunicipalActions/

Chris Linn, AICP, Manager of the Office of Environmental Planning, DVRPC
clinn@dvrpc.org