MUNICIPAL ACTIONS to PROTECT and IMPROVE WATER QUALITY IN THE DELAWARE RIVER WATERSHED

DELAWARE VALLEY dvrpc REGIONAL PLANNING COMMISSION

MUNICIPAL OUTREACH INTERVIEW ANALYSIS

Background

In order to best develop municipal actions to protect and improve water quality in the Delaware River Watershed, the Municipal Technical Advisory Assistance Panel (MTAAP) project team began by seeking input directly from the municipalities themselves. This included a round of telephone interviews between June and July 2016 with officials from 37 municipalities within the watershed, most of whom (21) identified themselves as township managers. The following is a summary and analysis of these interviews.

Quick Stats
Delaware River Watershed

Municipalities: 838

Counties: 42

States: 5

Miles: 301

Tributaries: 216

Catchment area: 14,119 mi^2

Dams (main stem): 0

Drinking-water population: 17 million

Municipal Outreach Interview Respondents
Delaware River Watershed

- *29 Pennsylvania municipalities, by county*
  - Berks (2 municipalities): Reading, Wyomissing
  - Bucks (6): Buckingham, Durham, Richland, Solebury, Springfield, Warrington
  - Carbon (1): Kidder
  - Chester (8): East Bradford, East Goshen, Honey Brook, London Grove, Pocopson, Tredyffrin, Upper Uwchlan, Warwick
  - Delaware (1): Radnor
  - Monroe (1): Smithfield
  - Montgomery (9): Abington, Cheltenham, East Greenville, Lower Gwynedd, Lower Moreland, Lower Salford, Montgomery, Upper Dublin, Whitpain
  - Northampton (1): Lower Saucon
- 7 New Jersey municipalities
  - Burlington (1): Evesham
  - Hunterdon (2): Lambertville, Lebanon
  - Mercer (1): Hamilton
  - Salem (1): Pilesgrove
  - Sussex (2): Newtown, Stillwater
- 1 Delaware municipality
  - New Castle (1): Newark

Methodology

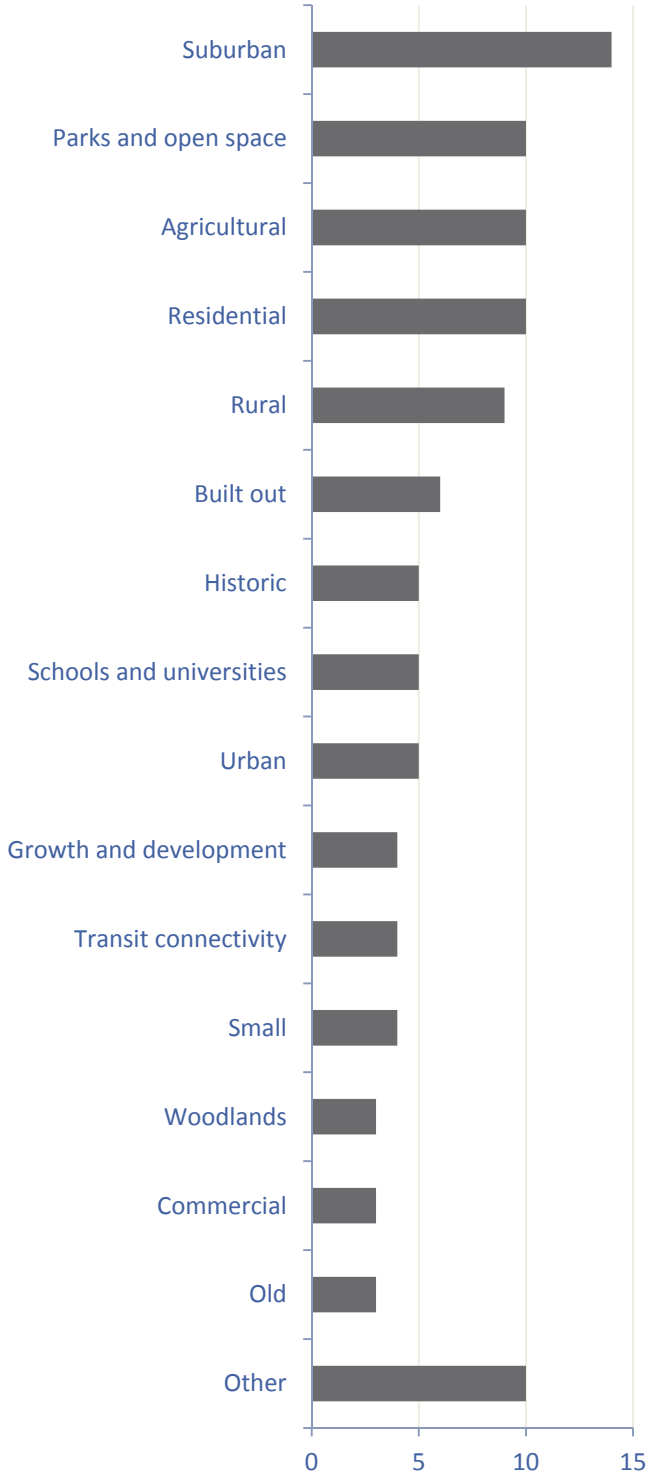
The interviews each consisted of 11 questions, six of them open-ended. These six open-ended responses are the focus of this analysis.

Responses

- Responses were coded in several rounds, in order to produce, for each question, a visual representation of how, generally, municipalities responded as a whole. This representation mostly took the form of 1-2 bar graph(s). In one instance, where responses had been delineated into just four categories, a map was generated to add a more precise spatial context to the analysis.
- For each question, select responses from municipalities were highlighted to help explain the meaning of each code used to generalize responses. These select responses can be found in call-out boxes throughout this analysis.

How would you describe your community to someone who has never been there before?

Figure 1: Describe your community



n = 105 responses, 37 respondents

Respondents were first asked to describe their communities, given prompts (rural, agricultural, etc.), if needed. In aggregate, municipalities were described most commonly as: 1) suburban; 2) residential; 3) agricultural; 4) parks and open space; and/or 5) rural.

Among the three most represented counties – Montgomery (9 municipalities), Chester (8), and Bucks (6) – generally, Montgomery County municipalities were described as "suburban" (5) or "built out" (4), whereas those in Bucks County, nearer the Delaware River, were described as "rural" (4) or "agricultural" (4). Chester County municipalities were described as a mix of both "suburban" (6) and/or "rural" (3).

The response "urban" was used broadly, with three such "urban" municipalities also describing their communities as "small," (East Greenville, Lambertville, and Newton), and one describing its community as both "rural and urban," (Richland). "Other" (10) consisted of terms used more than once, including "large" (2), "affluent" (2), "industrial" (2), "professional" (2), and "river" (2).

"Suburban"

"Mostly residential, some commercial (retail), peaceful but busy, suburban." – Evesham, NJ

"Parks and open space"

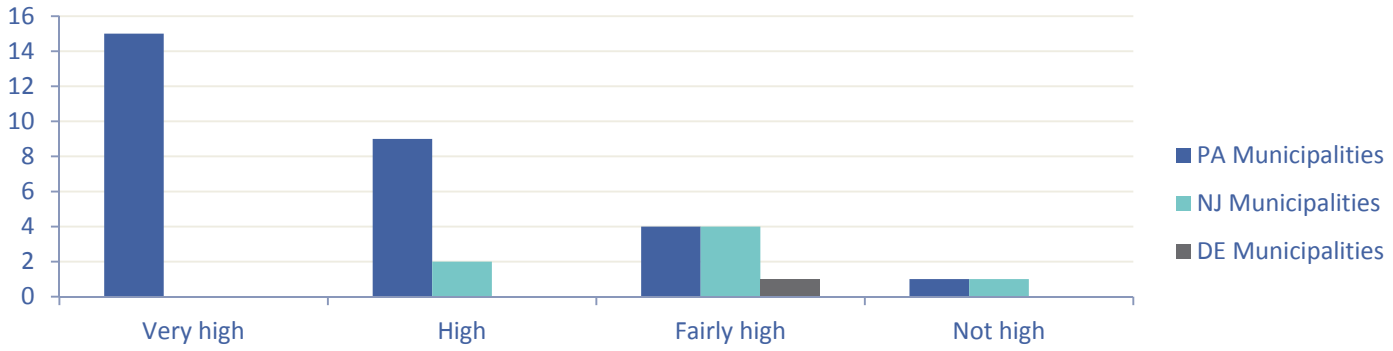
"While it is no longer a farming community, it has a farmland feel to people who drive through because of the township's emphasis on open space preservation." – Lower Salford, PA

"Rural"

"Rural town… We don't want this sprawl stuff, where people live in big homes and even don't come outside." – Durham, PA

Where does water quality rank as a priority in your municipality?

Figure 2: Municipal Priority of Water Quality



n = 37 responses, 37 respondents

Respondents were asked where water quality ranks as a priority in their municipalities. Although this question too was open-ended, responses generally fell into one of four categories: 1) "very high"; 2) "high"; 3) "fairly high"; and 4) "not high." Nearly half of the respondents (15) ranked water quality as a "very high" priority, and all of them were from Pennsylvania. Out of the seven respondents from New Jersey, five of them ranked water quality as less than a "high" priority ("fairly high" or "not high"), whereas only five out of the 29 respondents from Pennsylvania ranked water quality as less than a "high" priority.

"Very high"

"Over 20 years ago, London Grove adopted one of the first stormwater management ordinances… that cared about not just quantity of water but also quality… considered grass, vegetation swales, wetlands, etc." – London Grove, PA

"Stormwater has historically been a big issue here – probably the biggest issue for elected officials… The Township has spent $30 million+ over the past several years to address stormwater issues/retrofits." – Abington, PA

"Fairly high"

""Most people aren't thinking about water quality because the water quality is good. However, it's getting worse in some areas due to failing septic systems… 100% of the town is on septic." – Lebanon, NJ

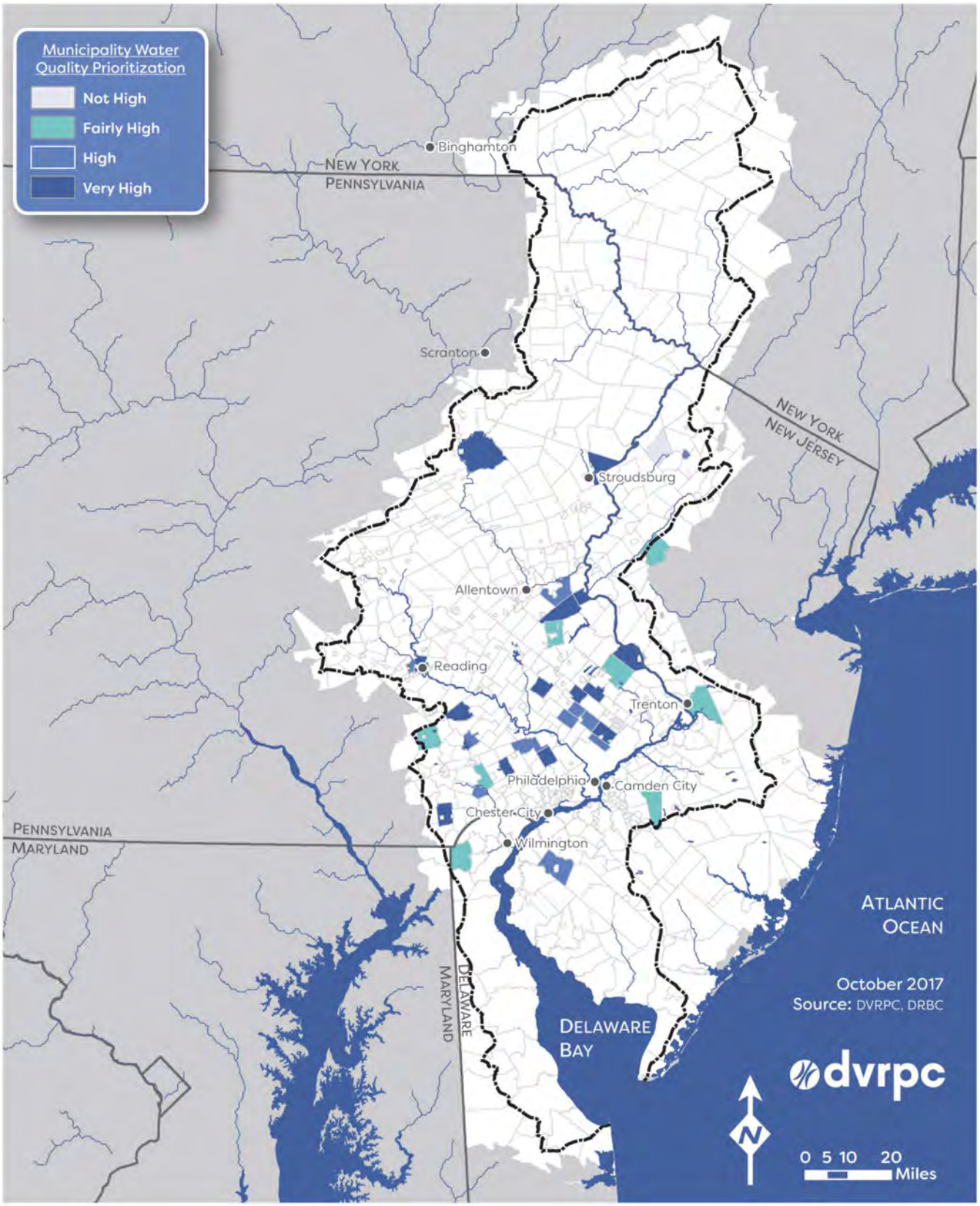
Not High

Interestingly, the two respondents who ranked water quality as "not high" each represented municipalities very close to the Delaware River: Stillwater, NJ and Lower Moreland, PA. Stillwater responded that the "top priority is taxes" with most people taking water quality "for granted" and "no money to do anything about it." Lower Moreland responded that "it's hard to communicate the negative effects of stormwater" and that "stormwater is not a major focus."

Map: Municipalities by Water Quality Prioritization

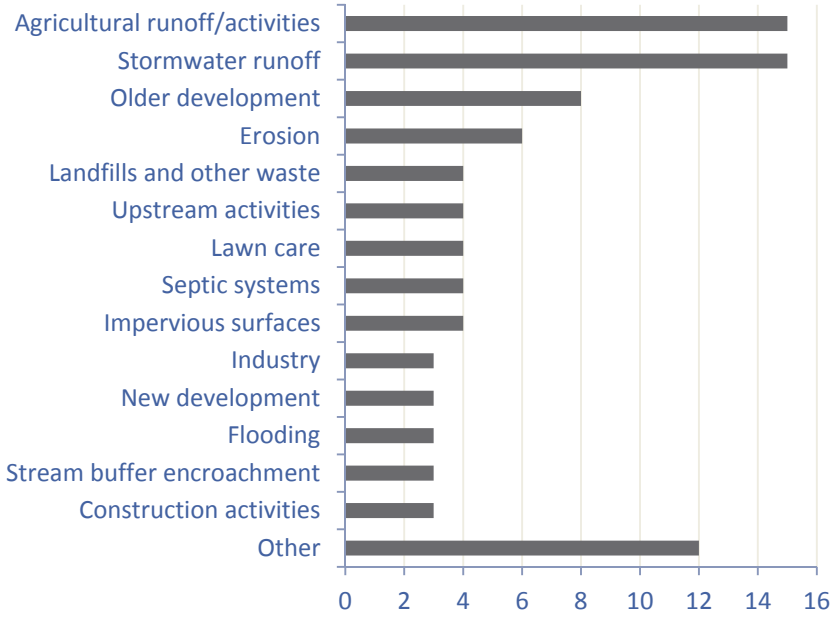
The map on page 4 shows the responses of 37 municipalities to the question: Where does water quality rank as a priority in your municipality? Although the sample size is small, a pattern emerges: municipal prioritization of water quality is less a factor of its proximity to a watershed, and more a factor of the state to which it belongs. Overall, prioritization is higher on the Pennsylvania side of the Delaware River than on the New Jersey side.

MAP: MUNICIPALITIES BY WATER QUALITY PRIORITIZATION



In your opinion, what are the major threats to water quality in your community? Why?

Figure 3: Threats



n = 91 responses, 37 respondents

Respondents were asked what they saw as the major threats to water quality in their communities and in the Delaware River watershed. Most cited stormwater or agricultural runoff, although their reasons why varied, including both the consequences of runoff, as well as the conditions that create or enable it. Some of these consequences of runoff were "erosion," "flooding," and chemicals such as fertilizers or pesticides polluting the watershed ("lawn care"). Conditions that created or enabled excess runoff included "older development," "impervious surfaces," and "stream buffer encroachment." The most commonly cited threat, aside from runoff, was "older development" (8 municipalities), which refers mostly to development that occurred prior to the implementation of stormwater ordinances/regulation.

"Older development"

"The biggest threat is older development that occurred prior to good stormwater controls (pre-1990s). Current regulations do not address this threat." – Lower Moreland, PA

"Septic systems"

"Septic systems are the biggest threat. There are no sewers in Stillwater." – Stillwater, NJ

"Lawn care"

"Another big threat is lawns – lawns are cared for by companies who spray chemicals and over-fertilize. There has been increased lawn coverage in the township. It's a bigger impact than agriculture in Lebanon." – Lebanon, NJ

"Stream buffer encroachment"

"Even though mowing your lawn all the way down to the stream might look pretty, or having a path to the stream, it's not good for water quality." – Solebury, PA

"New development"

"The township has accelerated erosion, scour, and loss of vegetation on its banks and slopes. Increased-density development and redevelopment of smaller lots is responsible." – Tredyffrin, PA

Among the 14 municipalities described as "suburban," the most common threats cited were "stormwater runoff" (6 municipalities) and "older development" (4). Among the 13 municipalities described as "rural" and/or "agricultural" in Question 1, the most common threats cited were "agricultural runoff/activities" (9) and "septic systems" (4). Among the "Other" threats cited more than once were "military activities" (2), "auto accidents" (2), and "pipes/pipelines" (2). "Other" threats cited once, but worth noting, included: "weeds," "road salt," "fracking," "airport," "private wells," and "mine drainage."

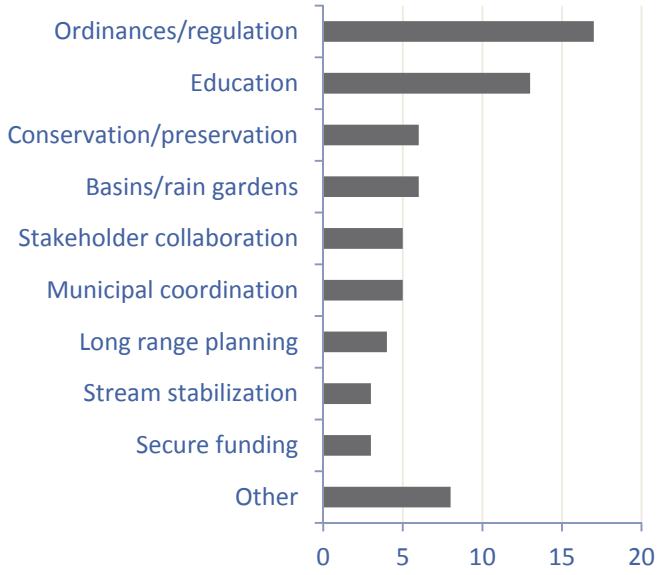
In your opinion, what are the most important strategies to protect or improve water quality in your community? Why?

Respondents were asked about the most important strategies they might employ to improve or protect water quality in their municipality and in the Delaware River watershed. In aggregate, respondents most commonly cited: 1) ordinances/regulation, 2) education, 3) basins/rain gardens, 4) conservation/preservation, and 5) municipal coordination.

Ordinances/Regulation

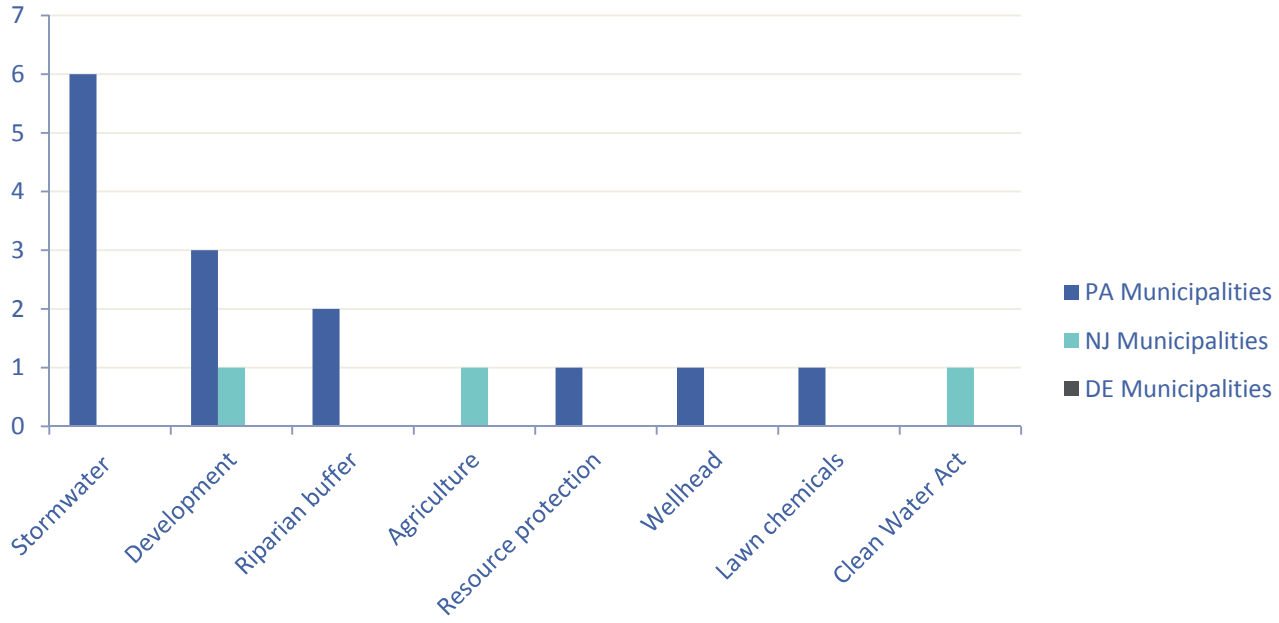
"Ordinances/regulation" included stormwater ordinances, development ordinances such as the Subdivision and Land Development Ordinance (SALDO), riparian buffer ordinances, and more, with three respondents citing multiple ordinances/regulation. Among the 17 citations of "ordinances/regulation," 15 referred to municipal ordinances, while just two referred to state or federal regulations, (state lawn chemical regulation and the Clean Water Act). Among the eight respondents who cited stormwater and/or riparian buffer ordinances, all of them were from Pennsylvania. (See Figure 4.1: *Strategies: Ordinances/Regulation* below).

Figure 4: Strategies



n = 70 responses, 37 respondents

Figure 4.1:
Strategies: Ordinances/Regulation



n = 17 responses, 13 respondents

"Ordinances/regulation"

"Implemented a variety of ordinances: wellhead protection, stormwater management, natural resources protection." – Lower Saucon, PA

"The Clean Water Act and NJ's Clean Water Enforcement Act have contributed to a huge improvement in the Delaware River since the 50s-60s." – Lambertville, NJ

"Education"

"Need to keep water quality issues in the spotlight rather than just bringing them up after a disaster." – Tredyffrin, PA

"Basins/rain gardens"

"East Goshen is largely built out, so limiting impervious surface coverage will have minimal impact. Even changing requirements for new developments will have minimal impact. Steps municipalities like East Goshen can take include retrofitting basins, providing rain barrels, reducing stormwater volumes, and making stream improvements." – East Goshen, PA

"Municipal coordination"

"Be aware of what's happening upstream… partnering with not only neighboring municipalities but also most if not all of the upstream municipalities as well… [East Greenville] worked to check potential contamination sites upstream, and inventoried all of them." – East Greenville, PA

"Other"

"Addressing the deer problem… They eat the understory, but the understory protects erosion… It's difficult though – fine balance between residents who love the deer and feed them, and others who wish the deer wouldn't eat their crops." – Solebury, PA

Education

"Education" included public outreach, educating property owners, and educating elected officials.

Basins/Rain gardens

Among the six respondents that cited "basins/rain gardens," a pattern emerges suggesting that basins/rain gardens are considered more important in more developed areas. Four of the six citing "basins/rain gardens" described their community as "suburban" or "urban" in Question 1, while just one described their community as "rural" or "agricultural."

Coordination, Funding, and Other Strategies

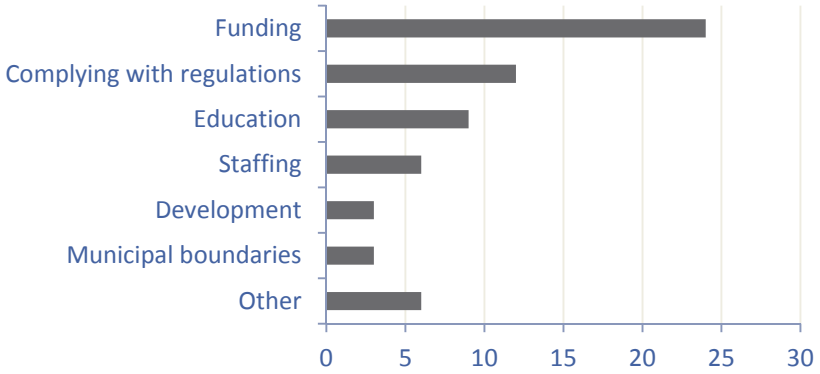
Respondents citing "municipal coordination" referred mostly to working with the municipalities upstream. "Secure funding" included securing a steady stream of revenue through watershed funds or something similar. "Other" responses included: reducing street salt, reducing the deer population, inventorying contamination sites, and monitoring impervious surfaces.

Rain garden with educational signage, Philadelphia. (Photo: Joanna Joye, University of Pennsylvania, 2017).

What do you feel are the greatest limitations to municipalities protecting water quality or watersheds? Why?

Respondents were asked about the greatest limitations to protecting water quality or watersheds, facing municipalities in general and their communities in particular. Prompts were given (lack of funding, staff capacity, etc.), if needed.

Figure 5: Limitations



n = 63 responses, 37 respondents

Funding

Respondents overwhelmingly cited "funding" as the greatest limitation, regardless of state or county. "Funding" was often cited in reference to hiring new staff, meeting unfunded mandates, helping private owners upgrade older developments, maintaining/improving stormwater infrastructure, or stabilizing streambanks.

Complying with Regulations

"Complying with regulations" included complaints about unfunded state/federal mandates, contradictory or ever-changing state/federal policies, and the slow and expensive MS4 permitting process. Among the 12 respondents who cited "complying with regulations," all of them were from Pennsylvania. Three cited the MS4 program specifically.

Education, Boundaries, and Other Limitations

"Education" pointed to the public's lack of awareness about the effects of fertilizers and pesticides on water quality, as well as a general lack of municipal officials' understanding. "Municipal boundaries" referred primarily to the lack of control a given municipality has over the actions of municipalities upstream. "Other" limitations included people, political buy-in/will (e.g. tax concerns), eminent domain, and cultural differences.

"Funding"

"Funding, funding, funding. Stormwater is an unfunded mandate… DEP wants East Bradford to stabilize 9 miles of streambank (approximate cost is $5 million). They don't have enough money to do that. It's crazy!"– East Bradford, PA

"Complying with regulations"

"The MS4 permit gets into ridiculous minutiae – i.e., if a mechanic spills a drop of oil he's supposed to file a report." – East Bradford, PA

"Uncertainty on what's allowed or not allowed big problem – between EPA, DEP and court agreements, rules keep changing, so you may submit one project and think it will be approved, and then it's not due to changing rules." – East Goshen, PA

"Too much time and money is wasted on MS4 process that doesn't result in positive impacts… a travesty of bureaucratic bullshit… plagued by vagueness from the beginning." – Springfield, PA

"Education"

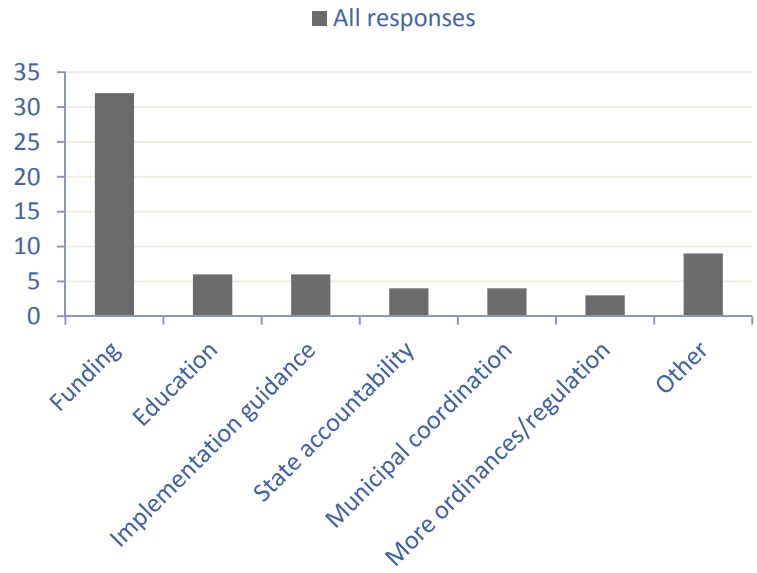
"Would like to see more models on how to do projects/plans/ordinances so [we] don't have to reinvent the wheel." – East Goshen, PA

"Municipal boundaries"

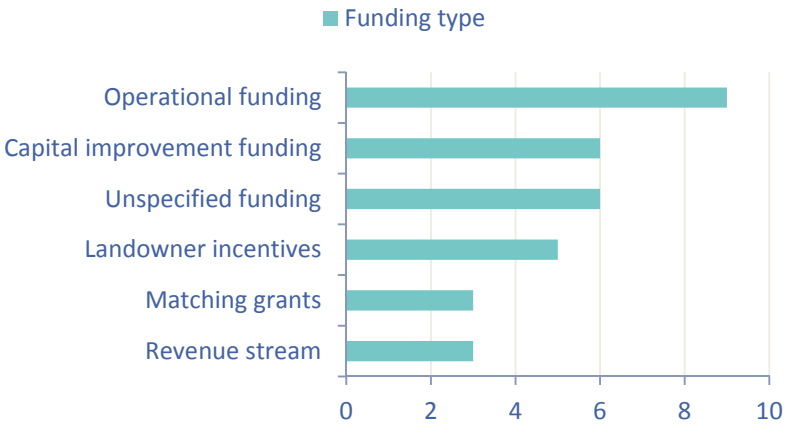
"Can't control what happens upstream… there is a lot of development across the river in Bucks County because people move therefrom NJ to avoid NJ's higher taxes (especially the wage tax)." – Lambertville, NJ

For your municipality to take more action to protect or improve water quality, what needs to change? What incentives need to be offered?

Finally, respondents were asked about what needs to change, or what incentives need to be offered, for their municipalities to take more action to protect or improve water quality.



n = 64 responses, 37 respondents



n = 32 responses, 24 respondents

Funding

Not surprisingly, respondents overwhelmingly cited "funding." The most common funding types specified were: 1) operational funding, 2) capital improvement funding, and 3) landowner incentives. "Operational funding" included funding for municipalities to meet unfunded mandates, such as the MS4 or other DEP requirements, or financial rewards for municipalities that

"Operational funding"

"Additional funding for compliance with MS4 and stormwater requirements." – Richland, PA

"Funding and grant opportunities need to be better and more plentiful." – Tredyffrin, PA

"More money and staff is needed to do more… Grant money not enough… Should offer formula funding that rewards money for performance." – Hamilton, NJ

"Capital improvement funding"

""Especially need funding for infrastructure replacement and repair."– Warrington, PA

"Landowner incentives"

""Some incentive or reward for property owners who install some sort of infrastructure or make some renovation that helps to cut down on runoff on their own property."." – East Greenville, PA

"Matching grants"

"Funding source would be helpful. A lot of things are passed down to municipalities from the state. How much burden do you want to place on residents? Grants are preferable. It's a lot easier to accomplish with a small match." – Durham, PA

"Revenue stream"

"Need SW utilities - revenue stream to make improvements to achieve TMDLs." – Upper Dublin, PA

"Education"

"Education/training to municipal officials… information on the economic benefits of actions."– Reading, PA

"Implementation guidance"

"Assistance with implementation from the state would be nice. Does every city need to have its own program? Newark has its own permit. However, it seems like the permit should be held at the county level. We should do projects at the watershed/county level." – Newark, DE

"Municipal coordination"

"A more regional approach, getting a group together like a consortium and developing a regional fee. Currently, there are some flooding areas that are a result of development activities in neighboring towns. Neighboring electeds have no incentive to address it because they answer to their constituents and it doesn't impact them." – Radnor, PA

"Other"

"Permitting, as cited above, is an issue. For example, E. Bradford has been a leader in trail development and they need to get a permit to cross a very small stream, but it's too expensive! DEP needs to make permitting easier." – East Bradford, PA

"He wants to map and 'televise' the water infrastructure system, and do a conditions assessment, which he thinks will lead to a better stormwater system overall." – Evesham, NJ

comply with such requirements. "Capital improvement funding" referred to the cost of installing or improving stormwater infrastructure BMPs. "Landowner incentives" included rewarding landowners who install BMPs themselves. Interestingly, out of the 14 respondents who cited "operational funding," or "landowner incentives," only one cited "ordinances/regulation" as an important strategy in Question 4 (Cheltenham, PA). Seven out of the nine who cited "operational funding" described their communities as "suburban" in Question 1, including four "suburban" municipalities from Chester County, PA: East Bradford, East Goshen, Tredyffrin, and Upper Uwchlan.

Education

"Education" included communicating the economic benefits of projects to municipal officials and informing the public of BMPs, such as the proper maintenance of septic tanks.

Implementation guidance

"Implementation guidance" included the need for clearer top-down direction in how to implement DEP recommendations or meet regulations.

Municipal coordination

"Municipal coordination" included several interesting ideas. For example, East Goshen suggested allowing a municipality to "partner" on a project that is in another municipality, if that project improves or protects the water quality within its own boundaries (i.e. downstream), and receive "credit" towards meeting a regulatory requirement for the project. Radnor, the only municipality represented in the sample that levies its own stormwater fee, suggested levying an additional "regional fee" to protect municipalities whose water is impacted by development in neighboring towns.

Summary

Despite the small sample size of participating municipalities, certain patterns nonetheless emerge. These patterns should not form the basis of any recommendation, but rather be considered as evidence in support of – or in conflict with – a recommendation that was conceived as a result of a more comprehensive study.

Municipal Priorities

Water quality ranked higher as a priority in Pennsylvania municipalities than it did in New Jersey municipalities. Additionally, there was no apparent correlation, within the sample, between a municipality's water quality prioritization and its proximity to the Delaware River.

Threats

The question of what constitutes a "threat" to water quality is greatly nuanced. Stormwater and agricultural runoff were cited as the most common threat; yet citing "runoff" alone does not address the consequences of runoff, like erosion or flooding, nor the conditions that exacerbate it, like older development or impervious surfaces. In assessing the threats to local water quality, it is important for municipal officials, as well as residents, to understand the stormwater system holistically.

Strategies

The most commonly cited important strategy was ordinances/regulation. Among the 17 ordinances/regulations cited, 15 of them were municipal level ordinances, compared with just two cases of support for state or federal regulations. The most common ordinance specified was the stormwater ordinance, cited six times, all by Pennsylvania municipalities.

Limitations

The greatest limitation was funding, particularly in reference to complying with state or federal regulations. Since the most common important strategy cited was ordinances/regulation – mostly municipal ordinances – and the greatest limitation was complying with state or federal regulations, these findings, together, support the basic idea that municipalities prefer municipal ordinances to state or federal regulations.

Incentives

For municipalities, improving or protecting water quality is an expensive endeavor. Furthermore, because its effects are less publicly visible than, say, a new downtown development or a perfectly manicured lawn, there is little to incentivize elected officials or property owners to take action – other than, perhaps, concern for future generations. Pragmatically, this is simply not enough. Financial incentives need to be offered as a reward, for both: 1) municipalities that comply with or exceed the thresholds set by unfunded mandates; and 2) property owners who implement stormwater infrastructure BMPs. Only then – once this action, catalyzed by funding, breeds public awareness – may public pressure itself sufficiently incentivize municipal action.

Sources

Delaware River Network, “The Delaware River – A little known natural treasure”, www.delawareriverkeeper.org/delaware-river, accessed July 31, 2017.

Phone interview with Maureen Abdill, Township Clerk, Pilesgrove Township, July 13, 2016.

Phone interview with Brian Barnett, Chairperson, Smithfield Township, July 19, 2016.

Phone interview with Leonard Bilger, Executive Director, Western Berks Water Authority, July 14, 2016.

Phone interview with Michael Brown, Manager and Zoning Officer, Springfield Township, July 6, 2016.

Phone interview with Steven Brown, Township Manager, London Grove Township, July 7, 2016.

Phone interview with Stephen Burgo, Township Engineer, Tredyffrin Township, July 19, 2016.

Phone interview with Dennis Carney, Township Manager, Solebury Township, July 12, 2016.

Phone interview with Dana S. Cozza, Township Manager, Buckingham Township, July 22, 2016.

Phone interview with Thomas Czerniecki, Township Manager, Evesham Township, July 14, 2016.

Phone interview with David M. DelVecchio, Mayor, Lambertville City, July 5, 2016.

Phone interview with Bob Dobash, Zoning Officer, Kidder Township, July 22, 2016.

Phone interview with Adam Duckworth, Environmental Commission Chair, Lebanon Township Green Team, July 29, 2016.

Phone interview with Jim Fry, Code Enforcement/Zoning, Borough of East Greenville, July 8, 2016.

Phone interview with Lawrence Gregan, Manager, Montgomery Township, July 22, 2016.

Phone interview with Joan Grimley, Township Administrator, Warwick Township, July 27, 2016.

Phone interview with Bryon Havir, Manager, Cheltenham Township, July 22, 2016.

Phone interview with Lynda Knott, Municipal Clerk, Stillwater Township, June 30, 2016. Phone interview with Joseph M. Kulick, Township Manager/Secretary, Durham Township, July 8, 2016.

Phone interview with Steve Landes, Manager, Honeybrook Township, July 6, 2016.

Phone interview with Michael LeFevre, Township Manager, Abington Township, June 21, 2016.

Phone interview with Paul Leonard, Manager, Upper Dublin Township, July 1, 2016.

Phone interview with Barry Luber, Interim Townshp Manager, Warrington Township, July 22, 2016.

Phone interview with Michael P. Lynch, Township Manager, East Bradford Township, July 22, 2016.

Phone interview with Christopher R. Hoffman, Township Manager, Lower Moreland Township, July 28, 2016.

Phone interview with Leslie Huhn, Township Manager, Lower Saucon Township, July 20, 2016.

Phone interview with Dean Miller, Executive Director of the Reading Area Water Authority, Reading City, July 19, 2016.

Phone interview with Roman Pronczak, Township Manager, Whitpain Township, July 19, 2016.

Phone interview with Maureen Feeney Roser, Director, Planning and Development, City of Newark, July 29, 2016.

Phone interview with Thomas Russo, Town Manager, Newtown Town, July 8, 2016.

Phone interview with Steve Sechriest, Township Manager, Richland Township, July 14, 2016.

Phone interview with Susan Simone, Secretary, Pocopson Township, July 5, 2016.

Phone interview with Rick Smith, Manager, East Goshen Township, July 7, 2016.

Phone interview with Cary B. Vargo, Township Manager, Upper Uwchlan Township, July 20, 2016.

Phone interview with Rich Watson, Director, Water Pollution Control, Hamilton Township, July 1, 2016.

Phone interview with Mary West, Assistant Township Manager, Lower Salford Township, June 16, 2016.

Phone interview with Jamie Worman, Assistant Township Manager, Lower Gwynedd Township, July 5, 2016.

Phone interview with Robert Zienkowski, Township Manager, Radnor Township, June 20, 2016.

Published to Web: November 13, 2017