



TO: Avondale Borough, Franklin Township, London Britain Township, London Grove Township, New Garden Township and West Grove Borough
FROM: Naomi Young, Environmental Finance Center - UMD
DATE: June 3, 2017
RE: Options for Collaboration on Stormwater Management

INTRODUCTION

Through a grant from the National Fish and Wildlife Foundation, the Environmental Finance Center at University of Maryland (EFC) is part of a team supporting the Christina Watersheds Municipal Partnership (CWMP) to develop multi-jurisdictional collaborative approach to stormwater compliance. The White Clay Wild and Scenic River Program is leading the pilot efforts among six municipalities in the East Branch of the White Clay Creek Watershed. The municipalities are Avondale Borough, Franklin Township, London Britain Township, London Grove Township, New Garden Township and West Grove Borough. EFC is providing assistance with the funding and financing components to reinforce the sustainability and viability of the plan's implementation and maintenance over the next five-year permit cycle.

This memo provides an introduction to options for collaboration among the White Clay pilot municipalities. Specifically, it:

- describes a range of approaches to collaboration, drawing on models implemented or in the process of development across PA; and
- outlines parameters for consideration when determining how to make cost- and resource-sharing for arrangements.

This memo serves as starting point for discussion. EFC will further develop a preferred collaboration model (including cost-share) based on feedback from the municipalities.

OPTIONS FOR COLLABORATION

In this permit cycle, PA Department of Environmental Protection (DEP) is providing greater flexibility in how municipalities can address their stormwater obligations. It is promoting a watershed approach that also supports the concept of multi-municipal collaboration¹.

¹ See DEP website for further information on multi-municipal collaboration.
<http://www.dep.pa.gov/Business/Water/CleanWater/StormwaterMgmt/Stormwater/Pages/Collaboration.aspx>

Table 1: Watershed Approach to Addressing Stream Impairments					
	HUC 12 in White Clay Creek Watershed with Impaired Streams				
Municipality	East Branch	Upper Branch	Middle Branch	Lower Branch	West Branch
Avondale Borough	✓	✓			
Franklin Township	✓	✓	✓		✓
London Britain Township	✓	✓	✓		✓
London Grove Township	✓	✓	✓		
New Garden Township	✓	✓		✓	
West Grove Borough	✓	✓	✓		

Table 1 identifies where municipalities have natural synergies for coordinating stormwater management programs. It uses information provided by DEP to identify HUC12 watersheds where the municipalities have shared responsibilities with respect to a TMDL Plan for nutrients. Both the East Branch and the Upper Branch of White Clay Creek is relevant to all municipalities.

Collaboration among municipalities can take many forms. Key features involve decisions about:

- the specific activities and responsibilities to be shared;
- the appropriate level (formality and integration) of collaboration; and
- cost-share or resourcing arrangements.

Decisions about these features of collaboration depend upon:

- which of these areas of collaboration best fit the collective’s limitations and constraints;
- the scale and likelihood of collaboration benefits being realized; and
- the ability of collaboration to address resource and capacity gaps to meeting MS4 obligations.

In this MS4 permit cycle, municipalities will have to track and verify stormwater management, not just implement BMPs or undertake education and outreach. As a result, compliance with the MS4 program – individually or through collaboration – will involve additional and/or new expenses in three areas.

- *BMP implementation.* Municipalities will have an obligation to reduce sediment loads by 10%. Achieving this target requires the retrofit of existing BMPs or installation of new BMPs. This activity will require resources for siting, design and construction. Partnerships with local nonprofits will help offset some of these costs. However, collaboration with other municipalities may also provide cost savings through the opportunities to increase the scale of projects, capitalize on a potentially broader base of low hanging fruit, and reduce financing costs.
- *BMP O&M.* Over the permit cycle, each municipality will be building an inventory of stormwater BMPs that will require adequate maintenance to ensure they operate as designed. Because of the area's suburban and rural landscapes, green infrastructure practices will play an important role. These BMPs will require existing municipal staff to absorb these additional responsibilities, to undertake training to acquire new skills, and/or to contract specialized services.
- *MS4 permit administration.* Administration captures a range of activities including education, outreach, mapping, and permit reporting. With the changes in the MS4 program, this activity is likely to be more involved. Tracking and verification of BMPs will be important to municipalities being able to fully receive credit for installed BMPs. This additional responsibility will require municipalities to develop system(s) to monitor and report BMP inspection and maintenance (regardless of whether they are undertaken by municipal staff, private landowners, or nonprofits).

The degree and formality of collaboration in these activities falls on a spectrum. At one end, collaboration can be informal (eg, involving peer-to-peer communication and information sharing) or opportunistic (ie, project-by-project). On the other end of the spectrum, collaboration could be more formal and established. Formal arrangements can be narrowly defined (eg, delivery of education and outreach efforts or maintenance capacity) or comprehensive (eg, integrated planning and management).

The following outlines several alternative structures and approaches to collaboration around three areas of the MS4 program.

Table 2. Options for Collaboration			
Option	Requirements	Strengths	Weaknesses
<p>1. Project-by-project Pursue collaboration on individual BMPs.</p>	<ul style="list-style-type: none"> -Identifying projects in each municipality's implementation plan -Establishing an approach to sharing costs and pollutant reductions -Identifying O&M responsibilities 	<ul style="list-style-type: none"> -Familiar approach, replicates how nonprofits & municipalities pursue grant funding -Flexible -Cost minimizing where collaboration potential is small or "one-off" 	<ul style="list-style-type: none"> -Opportunistic not strategic -Limited cost savings restricted to individual project -Relies on project champion to identify and drive BMP agreement
<p>2. Shared Implementation Plan Adopts a watershed approach to address the collective pollution reduction requirement.</p>	<ul style="list-style-type: none"> -Requires formal collaboration such as an IGA and ordinance among participating municipalities -Establishing an approach to sharing costs and pollutant reductions -Identifying O&M responsibilities -Creating a clear decision making process 	<ul style="list-style-type: none"> -Creates opportunity for economies of scale and implementation efficiencies -Allows BMPs siting where it makes the most sense at the watershed scale (eg, availability of land, landowner willingness) 	<ul style="list-style-type: none"> -May require planning areas to be expanded rather than minimized -IGA and ordinance can be resource intensive to develop -Presents some risk in terms of meeting DEP's expectations
<p>3. Shared O&M Agreement to coordinate, O&M of existing &/or new BMPs.</p>	<ul style="list-style-type: none"> -Requires formal collaboration such as an IGA and ordinance among participating municipalities -Identifying O&M responsibilities 	<ul style="list-style-type: none"> -Attracts competitively priced vendors & services -Enhances BMP longevity & effectiveness -Supports full utilization of existing capital equipment and staff -Spreads O&M responsibilities among those best equipped to do it 	<ul style="list-style-type: none"> -Requires cost share when level of effort may not be clearly assessed -IGA and ordinance can be resource intensive to develop -Presents some risk in terms of meeting DEP's expectations
<p>4. Shared Administration Municipalities share services or a stormwater manager.</p>	<ul style="list-style-type: none"> -Commitment to support defined administrative activities -Cost-share arrangement 	<ul style="list-style-type: none"> -Reduces redundancy of effort across municipalities 	<ul style="list-style-type: none"> -IGA and ordinance can be resource intensive to develop

COST-SHARE FOR COLLABORATION

Cost-share arrangements have to balance concerns of feasibility, equity, appropriateness, and effectiveness. Finding the “right” balance increases in difficulty as the diversity among municipalities increase.

Common metrics used to develop cost-share arrangements for stormwater include: the scale of pollutant reduction requirement; the size of the municipality, urbanized area or planning area; the acres of impervious area; the miles of impaired stream; and socio-economic indicators, such as population and median household income. The table below summarizes these indicators for the Boroughs and Townships.

Integrating these metrics into the cost-share arrangements depends how well each metric addresses differences among the municipalities. For example, each municipality’s share of urbanized acres is often aligned with its population; and generally each municipality’s share of the planning area tracks with its share of impervious acres. For example with a scenario that combines the planning areas, the New Garden Township would account for 70% of the planning area, but only 39% of the population and 43% of the urbanized acres. West Grove Borough accounts for 7% of the planning area and 15% of the impervious acres. Good candidate metrics for a cost share should account for heterogeneity, such as population and planning area acres.

Municipality	Urbanized Acres^a	Potential Planning Area Acres^b	Impervious Acres^c	Population (2010)^d	Median Household Income
Avondale	309	58	20.2	1265	\$68,516
Franklin	4662	122	13.4	4352	\$118,750
London Britain	1755.6	0	-	3139	\$110,781
London Grove	4851.8	808	121.2	7475	\$82,967
New Garden	8944.6	2,865	659.1	11984	\$111,272
West Grove	427	268	144.7	2854	\$57,303
<i>Total</i>	<i>20,950</i>	<i>4121</i>	<i>958.5</i>	<i>31,069</i>	<i>-</i>
Municipal Shares of Collaboration Area					
Avondale	1%	1%	2%	4%	--
Franklin	22%	3%	1%	14%	--
London Britain	8%	0%	0%	10%	--
London Grove	23%	20%	13%	24%	--
New Garden	43%	70%	69%	39%	--
West Grove	2%	7%	15%	9%	--
<i>Total</i>	<i>100%</i>	<i>100%</i>	<i>100%</i>	<i>100%</i>	<i>--</i>
^a Based on DEP reported figures. ^b Assumed acres – used for illustrative purpose of calculating pollutant loads. ^c DEP reported impervious cover by urbanized area of a municipality to planning area acres. ^d Population for entire municipality.					

To the extent possible, we recommend use a simple cost share approach. The following examples illustrate how two cost share approaches could be applied to the proposed collaboration options (ie, set out in Table 2) and metrics (ie, Table 3).

Option	Cost Share Approach & Example
1. Project by - Project	<p><i>Relative share of pollutant load reduction</i></p> <p>Example:</p> <ul style="list-style-type: none"> • BMP costs \$50,000 & removes 8000lb of sediment • To meet load reduction: Muni A uses 6000lbs; Muni B uses 2000lbs to meet. • Cost-share: Muni A, 75% (\$37,500); Muni B, 25% (\$12,500)
2. Shared O&M	<p><i>Relative share of pollutant load reduction</i></p> <p>Example:</p> <ul style="list-style-type: none"> • Annual O&M costs \$30,000 for 3 BMPs removing 300lbs of TSS • To meet load reduction: Muni A uses 225lbs; Muni B uses 75lbs to meet. • Cost-share: Muni A, 75% (\$22,500); Muni B, 25% (\$7,500)
3. Shared Administration or Shared Implementation Plan	<p>Example with two cost share approaches:</p> <ul style="list-style-type: none"> • Admin costs/Stormwater Mgr: \$100,000/yr (salary + benefits) <p><i>Weighted share of pollutant load reduction, planning acres, & population</i></p> <ul style="list-style-type: none"> • 4 municipalities: 10,000lb of sediment, 3000 planning acres; 16700 population. <ul style="list-style-type: none"> ○ Muni A: 6000lb (60%); 900 planning acres (30%); 2800 population (17%) ○ Muni B: 2000lb (20%); 600 planning acres (20%); 3500 population (21%) ○ Muni C: 1500lb (15%); 450 planning acres (15%); 3000 population (18%) ○ Muni D: 500lb (5%); 1050 planning acres (35%); 7400 population (44%) • Weights for cost-share metrics: 30% load reduction; 50% planning acres; 20% population • Muni A: \$36,350 (36%); Muni B: \$20,190 (20%); Muni C: \$15,590 (16%); Muni D: \$27,860 (28%) <p><i>Relative share of pollutant load reduction</i></p> <ul style="list-style-type: none"> • Cost share: Muni A: \$60,000 (60%); Muni B: \$20,000 (20%); Muni C: \$15,000 (15%); and Muni D: \$5,000 (5%)

NEXT STEPS

The scale of required pollution reductions and their associated costs are still being developed. Specific cost share approaches and analysis will be undertaken once the six municipalities in the White Clay Creek Watershed determine their preferred approach to collaboration.

The next steps are to: (i) identify a preferred approach to collaboration; (ii) develop an estimate of the resources needed to support the preferred approach; (iii) analyze potential cost-sharing arrangements; and (iv) develop IGA and ordinance.