

BERKSHIRE REGIONAL NPDES PHASE II  
2015-01/604

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BERKSHIRE REGIONAL PLANNING COMMISSION

PREPARED FOR:

MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION  
BUREAU OF WATER RESOURCES

AND

U.S. ENVIRONMENTAL PROTECTION AGENCY  
REGION 1

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## 604B Final Report

### **Executive Summary**

The Berkshire Regional Planning Commission (BRPC) partnered with Comprehensive Environmental Inc. (CEI) to work with the Towns of Adams, Cheshire, Dalton and Lanesborough and the City of Pittsfield to develop a plan to address the cost of stormwater management and compliance with federal regulations. As operators of regulated small MS4s these municipalities are required to design a program to reduce the discharge of pollutants to the “maximum extent practicable” (MEP), protect water quality, and satisfy the appropriate water quality requirements of the Clean Water Act. Implementation of the MEP standard typically requires the development and implementation of BMPs and the achievement of measurable goals to satisfy each of the six minimum control measures as follows:

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

Through this project, BRPC facilitated meetings of a “working group” and conducted initial research to see if a stormwater utility is appropriate for the City and the Towns. CEI worked to quantify the current and future cost of stormwater management programs, estimate the costs to comply with MS4 requirements, and developed cost estimates and associated savings for regional approaches. BRPC and CEI worked together to bring this information back to the working group in a series of working group meetings, one-on-one meetings, phone conversations and emails. Each community, working with BRPC, has determined an approach to address the first year of the permit requirements and is hoping to realize both cost savings and efficiencies through regionalization.

BRPC and CEI employed a multi-faceted approach toward this project. Through this project BRPC and CEI:

- Established a working group;
- Collected data to understand current practices and costs;
- Estimated costs for compliance with the 2016 MA Small MS4 General Permit;
- Evaluated the feasibility of a stormwater utility;
- Identified items that could be performed at a regional level; and
- Determined potential costs savings associated with regional approaches.

In order to collect data and gain an understanding of current stormwater-related practices and costs, CEI developed and distributed a questionnaire to the five communities within Berkshire County that will be regulated under the 2016 MS4 permit. To estimate MS4 program costs, CEI used its previously developed proprietary M\$4CASTER™ model which is based on EPA’s Stormwater Program Cost Evaluation for Massachusetts technical memorandum and associated Excel Workbooks. The model considers each of the 150+ Permit Action Items (PAIs) in the new permit

and combines them into approximately 25 individual implementation items to provide budget data for overall costs. The MS4CASTER™ model also takes into consideration community-specific data, such as number of catch basins and outfalls, MS4 program configuration, and work performed to date. To develop a customized cost estimate for each community within the study area, CEI incorporated the data collected through the questionnaire into the MS4CASTER™ cost model for each community. Where information was not available, CEI assigned default values based on EPA's default parameters used for small/rural, medium suburban, and large/urban communities.

The 2016 Massachusetts MS4 NPDES Permit provides a number of opportunities for items to be prepared on a regional level rather than by an individual community. Items such as written plan templates, model bylaws, educational material preparation, and training can be performed in part by a single entity and provided to communities for incorporation of facility or community specific information to meet permit requirements. The following items were identified as having the potential for development on a regional basis. Some of these items are already available from other Stormwater Coalitions, MassDEP and EPA and can be used or modified for Berkshire communities. A comprehensive table of which templates are available and who developed them is included within the body of the report.

- Education and Outreach Materials
- Written Plan Templates, including:
  - Stormwater Management Program Plan;
  - Illicit Discharge, Detection, and Elimination Plan;
  - Pre-Construction Peer Review and Construction Site Inspection;
  - As-Built and Long-Term Operation and Maintenance (O&M) Procedures;
  - Stormwater Pollution Prevention Plans; and
  - Operation and Maintenance Procedures.
- Model Bylaws, including:
  - IDDE Regulatory Mechanism;
  - Construction Site Stormwater Runoff Control Regulatory Mechanism; and
  - Stormwater Management in New and Redevelopment Regulatory Mechanism.
- IDDE Training;
- Regional Labor Sharing; and
- TMDL and Impaired Waters Requirements.

Although all of the communities are interested in working together and/or working with BRPC to gain efficiencies and cost savings, none were able to commit to anything beyond interest. It was necessary to work with each community focusing on their needs and once each community's needs were better defined provide options for increased efficiencies. As a result of this project, the Town of Lanesborough has entered into a Community Compact with the Commonwealth of Massachusetts and named stormwater as one of their primary actions. This has led to a \$15,000 grant to the Town from the Commonwealth to prepare the Notice of Intent and Stormwater Management Program Plan as required by the Permit. A similar approach is being considered in the Town of Dalton. The

Towns of Dalton and Adams have sought the assistance of BRPC in complying with the first year of the permit. The City of Pittsfield has greater staff capacity; however, the City would like to participate in regional efforts and has requested the assistance of BRPC in preparing the Notice of Intent and a template for a Stormwater Management Plan.



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## Introduction

The Berkshire Regional Planning Commission (BRPC) partnered with Comprehensive Environmental Inc. (CEI) to work with the Towns of Adams, Cheshire, Dalton and Lanesborough and the City of Pittsfield to develop a plan to address the cost of stormwater management and compliance with federal regulations. In 1987, Congress amended the Federal Clean Water Act (CWA) to require implementation, in two phases, of a comprehensive national program for addressing stormwater discharges. The first phase of the program, commonly referred to as “Phase I” requires National Pollutant Discharge Elimination System (NPDES) permits for stormwater discharges from priority sources including medium and large municipal separate storm sewer systems (“MS4s”) generally serving populations of 100,000 or more and several categories of industrial activity, including construction activity that disturbs 5 or more acres of land. The second phase (“Phase II”) of the stormwater program, which this project addresses, requires permits for stormwater discharges from certain MS4s and construction activity generally disturbing 1 or more acres. Rather than limiting the concentration of individual constituents in stormwater, permit conditions emphasize the use of best management practices (BMPs) to manage stormwater. As operators of regulated small MS4s these municipalities are required to design a program to reduce the discharge of pollutants to the “maximum extent practicable” (MEP), protect water quality, and satisfy the appropriate water quality requirements of the Clean Water Act. Implementation of the MEP standard typically requires the development and implementation of BMPs and the achievement of measurable goals to satisfy each of the six minimum control measures as follows:

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

The Phase II program has been designed specifically to accommodate a general permit approach that prescribe one set of requirements for all applicable permittees. The regulated small MS4 Operator must develop a Stormwater Management Program (SWMP), including best management practices (BMPs) and measurable goals to comply with the permit. In 2003, the Final General Permit for Stormwater Discharges From Small Municipal Separate Storm Sewer Systems (2003 Small MS4 Permit) was finalized by EPA. This permit expired in 2008, but remained in effect for authorized Operators until a new permit goes into effect. The final MA Small MS4 General Permit was published in April 2016 and will go into effect July 1, 2017.

Only a select sub-set of small MS4s, referred to as regulated small MS4s, are impacted by the Phase II Final Rule. The Phase II Final Rule requires coverage of all operators of small MS4s that are located within the boundaries of a Bureau of the Census delineated “urbanized area” (UA) based on the latest decennial Census. Only the portion of the MS4 that is located within the UA boundaries is regulated under Phase II. Within Berkshire County, the City of Pittsfield and the Towns of Dalton and Lanesborough have been regulated under the 2003 Small MS4 Permit and will continue

to be regulated under the 2016 Small MS4 Permit. The Towns of Cheshire and Adams are among just a handful of communities across the state that will be newly regulated based on the 2010 UA. The Towns of Richmond, Lenox, and Hinsdale and the City of North Adams are potentially eligible for waivers with less than 1,000 people within the regulated 2010 UA.

The NPDES Stormwater Program requires operators of regulated MS4s to receive coverage under the General Permit before they can discharge. The NPDES Stormwater Program is designed to prevent stormwater runoff from washing harmful pollutants into local surface waters and seeks to specifically address impairments. The Towns of Adams and Cheshire are located within the Hoosic River Watershed and segments of the Hoosic River are listed on the 303(d) List of Impaired Waters as impaired for fecal coliform, chronic aquatic toxicity and temperature. The Towns of Lanesborough and Dalton and the City of Pittsfield are located within the Housatonic River Watershed. Segments of the Housatonic River, East Branch Housatonic, Southwest Branch Housatonic, West Branch Housatonic, and Wahconah Falls Brook are listed on the 303(d) List of Impaired Waters as impaired for fecal coliform, taste and odor, PCBs and sedimentation/siltation.

Compliance with the Small MS4 Permit is not without expense and the regulated communities within Berkshire County are already operating under constrained budgets. The 2016 MA Small MS4 General Permit is more prescriptive than the 2003 Small MS4 Permit with the most significant changes to IDDE and Post-Construction Runoff Control as well as increased direct expenses and reporting requirements. The small communities within Berkshire County that operate regulated MS4s have limited resources to fund MS4 compliance. The Towns of Lanesborough and Cheshire have populations of just over 3,000 people. The Annual Town Budget for the Town of Cheshire, for example, is just \$5,000,000. Of these already constrained budgets, schools make up more than half the annual budget. The Town of Lanesborough reports spending 70% of their annual budget on schools. In addition to the increases in school budgets over the past several years these communities have seen an average 33% increase to healthcare costs. Despite these increased expenditures, these communities have been experiencing a continued decline in state aid each year. On average, the entire Department of Public Works budget (including highways) is just 10% of the total municipal budget, and all of the regulated communities have had to decrease their public works budget. None of the partner communities have a line item within their budget specific to stormwater. All of the communities, with the exception of Pittsfield, are approaching their levy limit with extremely limited excess levy capacity (.09% - .73% excess as a % of maximum levy). Increasing taxes is typically seen as a last resort especially in communities such as these when the result is a “tax burden” inconsistent with both the County and the State.

The regulated communities within Berkshire County are struggling to determine how they will fund the necessary measures required in order to comply with the MA Small MS4 General Permit. These communities are already stressed by limited resources and increased obligations. In addition, these communities are not able to dedicate City or Town staff to develop and monitor a stormwater management plan and identify appropriate funding mechanisms. These communities do not have

the in-house expertise to address this critical issue, with the City of Pittsfield being the only of these communities that has a dedicated City Engineer.

Through this project, BRPC facilitated meetings of a “working group” and conducted initial research to see if a stormwater utility is appropriate for the City and the Towns. CEI worked to quantify the current and future cost of stormwater management programs, estimate the costs to comply with MS4 requirements, and developed cost estimates and associated savings for regional approaches. BRPC and CEI worked together to bring this information back to the working group in a series of working group meetings, one-on-one meetings, phone conversations and emails. Each community, working with BRPC, has determined an approach to address the first year of the permit requirements and is hoping to realize both cost savings and efficiencies through regionalization. The specific regional approaches and associated cost savings are discussed in greater detail under the Project Approach. As a result of this project the participating communities are anticipated to save between \$1,000 - \$55,500 dollars within the first year. This broad range of savings is due to the fact that each community has committed to a varying degree of participation in regional approaches at this time.

## **Project Approach**

BRPC and CEI employed a multi-faceted approach toward this project. Through this project BRPC and CEI:

- Established a working group;
- Collected data to understand current practices and costs;
- Estimated costs for compliance with the 2016 MA Small MS4 General Permit;
- Evaluated the feasibility of a stormwater utility;
- Identified items that could be performed at a regional level; and
- Determined potential costs savings associated with regional approaches.

## Data Collection & Results

In order to collect data and gain an understanding of current stormwater-related practices and costs, CEI developed and distributed a questionnaire to the five communities within Berkshire County that will be regulated under the 2016 MS4 permit. The questionnaire was created to better understand current stormwater program status within each community, determine program components communities already comply with, and ultimately identify funding needs to comply with new permit requirements. The questionnaire along with responses can be found in Appendix A. Responses varied extensively by community or insufficient information was provided in some cases, however, the following general observations were made:

- Two of the communities have a written plan in place, either a stormwater management program plan and/or an illicit discharge detection and elimination plan;
- All communities have at least some outfalls mapped, and some have other structures such as catch basins and manholes mapped; however, four of the communities could not/did not provide details on the number of outfalls or catch basins within their system;
- Four of the communities clean their catch basins once a year and one cleans basins only when there is a problem or every few years, thus the associated costs are already within existing budgets for these communities;
- All communities sweep streets at least once a year and two of the communities sweep twice a year, thus the associated costs are already within existing budgets;
- Public outreach materials vary between communities, however generally consist of mailed brochures or flyers, workshops, and a website;
- Four of the communities reported having regulations in place requiring the use of sediment and erosion controls and post-construction stormwater BMPs at construction sites; and
- Four of the communities have at least two facilities that will require preparation of a Stormwater Pollution Prevention Plan (SWPPP).

## MS4 Program Cost Estimates

MS4 program implementation costs are expected to vary extensively by community, depending in part on differing characteristics such as physical size, extensiveness of the stormwater system, and work performed to date. EPA's final 2016 Massachusetts MS4 NPDES Permit has over 150 Performance Action Items (PAIs) as identified in a Technical Memorandum on Stormwater Program Cost Evaluation for Massachusetts prepared by WaterVision for EPA in January 2016.

To estimate MS4 program costs, CEI used its previously developed proprietary M\$4CASTER™ model which is based on EPA’s Stormwater Program Cost Evaluation for Massachusetts technical memorandum and associated Excel Workbooks. The model considers each of the 150+ PAIs in the new permit and combines them into approximately 25 individual implementation items to provide budget data for overall costs. The MS4CASTER™ model also takes into consideration community-specific data, such as number of catch basins and outfalls, MS4 program configuration, and work performed to date. To develop a customized cost estimate for each community within the study area, CEI incorporated the data collected through the questionnaire into the M\$4CASTER™ cost model for each community. Where information was not available, CEI assigned default values based on EPA’s default parameters used for small/rural, medium suburban, and large/urban communities. The resulting tables for each community can be found within Appendix B.

### Regional Approach

The 2016 Massachusetts MS4 NPDES Permit provides a number of opportunities for items to be prepared on a regional level rather than by an individual community. Items such as written plan templates, model bylaws, educational material preparation, and training can be performed in part by a single entity and provided to communities for incorporation of facility or community specific information to meet permit requirements. The items below were identified as having the potential for development on a regional basis. Some of these items are already available from other Stormwater Coalitions, MassDEP or EPA and can be used or modified for Berkshire communities as indicated.

<u>Item</u>	<u>Template (Yes/No)</u>	<u>Availability</u>
Education and Outreach Materials	Yes (some)	MassDEP <sup>1</sup>
Written Plan Templates		
Stormwater Management Program Plan	No	
Illicit Discharge, Detection, and Elimination Plan	Yes	CMRSWC <sup>2</sup>
Pre-Construction Peer Review and Construction Site Inspection	Yes	CMRSWC <sup>2</sup>
As-Built and Long Term O&M Procedures	No	
Stormwater Pollution Prevention Plans	Yes	CMRSWC <sup>2</sup>
Operation and Maintenance Procedures	Yes (some)	CMRSWC <sup>2</sup>
Model Bylaws		
IDDE Regulatory Mechanism	Yes	
Construction Site Stormwater Runoff Control Regulation	Yes	
Stormwater Management in New & Redevelopment Regulation Mechanism	Yes (needs revisions under new permit)	CPTC <sup>3</sup> MAPC <sup>4</sup>
IDDE Training	Yes	
Regional Labor Sharing	N/A	
TMDL and Impaired Waters Requirements	No	

<sup>1</sup> <http://www.mass.gov/eea/agencies/massdep/water/wastewater/stormwater-outreach-materials-for-ms4-permit.html>

<sup>2</sup> <http://centralmastormwater.org>

<sup>3</sup> Massachusetts Citizen Planner Training Collaborative (CPTC) - <https://masscptc.org/documents/bylaws/bylaw-docs/stormwater-DEPGuidance.pdf>

<sup>4</sup> Metropolitan Area Planning Council (MAPC) - <http://www.mapc.org/sites/default/files/2%20Model%20Stormwater%20Bylaw%20and%20Reg%2012-10-14.pdf>

### *Education and Outreach Materials*

Under the new permit, municipalities must develop and implement an education program that targets four specific audiences: residential, commercial, construction/developers, and industrial. At a minimum, the program must provide information on stormwater impacts to waterbodies, especially impaired ones, and identify activities that the public can take to reduce pollutants in stormwater runoff. Potential topics include:

- Residential
  - Proper lawn maintenance
  - Benefits of stormwater infiltration
  - Auto work and car washing
  - Disposal of swimming pool water
  - Proper management of pet wastes
  - Maintenance of septic systems
- Industrial
  - Equipment inspection and maintenance
  - Storage of industrial materials
  - Pollution prevention & material storage
  - Waste management and disposal
  - Dumpster and solid waste management
  - Winter salting and salt storage
  - Benefits of stormwater infiltration
- Construction / Developers
  - Sedimentation Control Management
  - Erosion Control Management
  - Low Impact Development
  - EPA Construction General Permit (CGP)
- Commercial / Institutions
  - Benefits of stormwater infiltration
  - Building maintenance
  - Winter salting and salt storage
  - Pollution prevention & material storage
  - Waste management and disposal
  - Parking lot management (sweeping)

MassDEP is continually developing stormwater outreach materials to help towns comply with the MS4 permit. These materials are developed such that a community can print and send materials as is and/or modify to include specific community information without having to worry about copyright issues. A regional planning commission or similar agency may help communities tailor the available materials to the area and add additional messages as appropriate to specific waterbody impairments or other concerns in the region to help promote a unified message.

Measurable goals and methods for measuring effectiveness of various public education measures could also be developed by a regional entity, providing a menu of items for communities to choose from.

### *Written Plan Templates*

The new permit requires preparation of written plans and procedures documenting the implementation of a number of program requirements. A regional entity may prepare plan

templates to provide communities with a starting point. Templates for several of these items have already been developed by other regional stormwater coalitions and could be used or modified for use in the Berkshire communities. Plans and procedures that are required in writing include:

- Stormwater Management Program Plan;
- Illicit Discharge, Detection, and Elimination Plan;
- Procedures for pre-construction peer review and construction site inspections;
- Procedures requiring submission of as-built drawings and ensuring long-term operation and maintenance;
- Stormwater Pollution Prevention Plans ; and
- Operation and Maintenance procedures.

The following sections provide a description of the items required within each written plan, as well as information on where existing templates may be found.

**Stormwater Management Program Plan** - Communities must prepare a written SWMP Plan that describes and details activities and measures to be implemented to meet permit terms and conditions by July 1, 2018. Although many items required in the SWMP are community-specific, a template can be prepared on a regional level that covers basic permit requirements and a structure for evaluating, documenting and reporting BMPs for completion by the community. This template can provide information on program implementation applicable to all communities.

**Illicit Discharge, Detection, and Elimination Plan** - Communities must prepare a written IDDE Plan that at a minimum includes procedures for catchment investigations and outfall screening. Procedures should include the following:

- Establishing evaluation criteria of System Vulnerability Factors (SVFs), or areas with higher potential for illicit connections;
- Manhole inspection methodology, including evaluating key junction manholes representing discrete areas of the drainage system for dry weather flow;
- Procedures to isolate and confirm illicit discharges, such as through smoke testing, dye testing, video inspecting lines, etc.;
- Outfall inventory, catchment delineation methodology, and classification into Problem, High Priority, Low Priority, and Excluded outfalls based on potential for illicit discharges and proximity to sensitive environmental areas; and
- Dry and wet weather sampling procedures used for screening High Priority and Low Priority catchments, including sampling stormwater flows for ammonia, chlorine, conductivity, surfactants, salinity, temperatures, and bacteria.

Additional items, such as legal authority and program responsibilities can be added by a specific community. The Central Massachusetts Regional Stormwater Coalition (CMRSWC) has developed an IDDE Template that addresses the requirements of the 2016 MS4 permit and can be customized

to the specific needs of individual communities. The template may be obtained at <http://centralmastormwater.org>.

Pre-Construction Peer Review and Construction Site Inspection - Communities must prepare written procedures for site plan review, inspection, and enforcement of construction site controls by July 1, 2018. Procedures must include a pre-construction review of the site design, planned construction site operations, planned BMPs during construction, and planned BMPs used to manage runoff after development. Procedures must also consider potential water quality impacts, evaluation of opportunities for low impact design and green infrastructure, and receipt and consideration of information submitted by the public. Finally, procedures for tracking the number of site reviews, inspections, and enforcement actions must be developed. The CMRSWC has developed procedures and forms for conducting construction inspections and erosion and sedimentation control inspections that can be used or customized for use within Berkshire communities. These can be obtained at <http://centralmastormwater.org>. Note that written procedures are still needed for site plan review and for tracking purposes.

As-Built and Long Term O&M - Communities must establish written procedures requiring submission of as-built drawings that show all structural and non-structural stormwater controls by July 1, 2019. Additionally, procedures must be in place to ensure adequate long-term operation and maintenance of stormwater controls, and may include the use of a dedicated funding source or acceptance of the BMPs by the community for ongoing maintenance. Procedures also may include development of maintenance contracts between the BMP owner and the permittee, or submission of an annual certification documenting that work has been done over the last year to properly operate and maintain the BMP.

A document outlining the various options available, advantages and disadvantages of each and language for incorporating these requirements into local bylaws would be helpful for communities to select and incorporate these requirements into their regulations.

Stormwater Pollution Prevention Plans (SWPPPs) - SWPPPs are facility specific plans that assess the potential for the facility to cause stormwater pollution and develop best management practices to reduce, eliminate and prevent the discharge of pollutants to stormwater. Communities must develop written SWPPPs for the following facilities by June 30, 2019:

- Maintenance Garages;
- Public Works Yards;
- Transfer Stations; and
- Other waste handling facilities (i.e., facilities that have bulk storage of oil or chemicals that may not be covered under the multi-sector general permit).

Although SWPPPs are facility-specific, a regional entity may prepare one or more templates for use by municipalities that covers the most common situations encountered at municipal facilities for



which a SWPPP may be required. The municipality can then select those items that apply to it and fill in facility-specific information.

The CMRSWC has developed a template that allows users to tailor it towards its specific needs and can reduce the level of effort to develop such plans significantly, estimated at a 50% (~\$2,500) reduction in effort per plan from developing such plans from scratch. The template may be obtained at <http://centralmastormwater.org>.

Operation and Maintenance Procedures - Communities must develop written operation and maintenance procedures for municipal activities, including the following facilities:

- Parks and Open Space: use, storage, and disposal of pesticides, herbicides, fertilizers, and trash; landscaping and lawn/leaf litter disposal, pet waste handling; and erosion/vegetation protection.
- Buildings and Facilities: use, storage, disposal of petroleum products; solid waste management; parking lot sweeping; and employee training.
- Vehicles and Equipment: storage of vehicles and equipment, with leaking ones stored indoors or contained and ensuring vehicle wash waters don't enter drainage systems or surface waters.
- Winter Maintenance: winter road maintenance, including use and storage of sand and salt, liquid salts, and snow disposal/storage locations.
- Best Management Practice Maintenance: inspecting and maintaining structural BMPs, with inspections occurring at least once per year.
- Stormwater Infrastructure: procedures so that the drainage system is maintained in a timely manner, including catch basin and street sweeping. Note catch basin cleanings and street sweepings must be stored so that they do not discharge to waterbodies.

O&M procedures can be developed as a “menu” of Standard Operating Procedures (SOPs) that a community can pull from based on its specific need and applicability. For example, SOPs for many types of structural BMPs can be prepared, allowing communities to incorporate only the SOPs for BMPs they currently have or expect in the future so as not to crowd the document unnecessarily with information that is not applicable. Written SOPs may also include various checklists, schedules, and forms for use during inventorying and inspecting applicable areas.

In 2012, the CMRSWC developed several SOPs for municipal operations that can be updated/modified where needed to meet the requirements of the 2016 MS4 permit. CMRSWC has also developed a Municipal Stormwater Infrastructure Operation and Maintenance Plan template that can be used or modified regionally to document the operation and maintenance of catch basins, streets and parking lots, catch basin cleanings and street sweepings, winter road maintenance and structural stormwater BMPs. These can be obtained at the CMRSWC website identified above.

A matrix template could also be developed regionally that outlines the types of municipal facilities, typical activities at each and which SOPs apply to which facilities, allowing municipal officials at each location to quickly reference which SOPs may apply to them.

### *Model Bylaws*

The new permit requires communities to implement and/or update three regulatory mechanisms:

- IDDE Regulatory Mechanism – Existing communities must implement a regulatory mechanism to prohibit illicit discharges, investigate suspected illicit discharges, eliminate illicit discharges, including discharges from properties not owned or controlled by the MS4 that discharges into the MS4 system, and implement appropriate enforcement procedures and action. This was required to be in place under the 2003 permit, and IDDE Bylaws have been adopted by the Towns of Dalton and Lanesborough. For the newly regulated communities of Adams and Cheshire, the regulatory mechanism shall be in place by June 30, 2020. The City of Pittsfield has not passed an IDDE Ordinance or other regulatory mechanism and should do so as soon as possible.
- Construction Site Stormwater Runoff Control Regulatory Mechanism – Existing communities must develop a regulatory mechanism requiring sediment and erosion controls at construction sites and control of other wastes such as demolition debris, litter, and sanitary wastes. This was required to be in place under the 2003 permit, and bylaws have been adopted in Dalton and Lanesborough and an ordinance was passed in the City of Pittsfield. For the newly regulated communities of Adams and Cheshire, the regulatory mechanism shall be in place by June 30, 2020.
- Stormwater Management in New and Redevelopment Regulatory Mechanism – Existing communities must develop a regulatory mechanism by July 1, 2019 that addresses the use of Low Impact Development (LID) planning and design to the maximum extent feasible, incorporates various design standards of the Massachusetts Stormwater Handbook, and incorporate requirements for additional pollutant removals such as total suspended solids and phosphorus in new and redevelopment. Bylaws have been adopted in Dalton and Lanesborough and an ordinance was passed in the City of Pittsfield. However, the 2016 MS4 Permit requirements are significantly different from the 2003 permit's requirements, thus it is likely that communities will have to substantially modify or rewrite this bylaw. For the newly regulated communities of Adams and Cheshire, the regulatory mechanism shall be in place by June 30, 2020.

Model bylaws that comply with the 2003 MS4 permit are available through the Massachusetts Citizen Planner Training Collaborative (CPTC) (<https://masscptc.org/documents/bylaws/bylaw-docs/stormwater-DEPGuidance.pdf>) and should serve as a good template to comply with the first two regulatory mechanism requirements outlined above. The Metropolitan Area Planning Council (MAPC) also has model bylaws that meet the first two regulatory mechanism requirements outlined above and also includes some regulatory language to address new requirements under the Stormwater Management in New and Redevelopment regulatory mechanism (<http://www.mapc.org/sites/default/files/2%20Model%20Stormwater%20Bylaw%20and%20Reg%2012-10-14.pdf>). However, the model is based on the 2014 draft permit, thus may require some further modification to comply with the final permit released in April 2016. These modifications can be prepared on a regional basis to provide an up to date model bylaw that complies with the

requirements of the final permit. The model bylaw can then be modified by local departments and boards as needed to fit within each community's regulatory framework.

#### *IDDE Training Program*

Permittees are required to provide annual training to employees involved in the IDDE Program. Topics must include information about the program, including how to recognize illicit discharges and sanitary sewer overflows. A regional approach could develop a standardized program in the form of a presentation, desktop exercise, and/or hands-on field training, or equivalent alternative that could be used by multiple communities. A training seminar could also be presented concurrently to employees from multiple towns in a central location.

#### *Regional Labor Sharing*

An additional cost savings item would be to share one or more regional level employees to perform some non-specialized tasks. Items such as mapping of outfalls, catch basins, manholes, BMP locations, etc. could be performed by an intern at a reduced rate with a provided GPS unit. Efforts could be distributed throughout the towns depending on hours worked.

Due to the variable nature of this item (labor rate, hours worked, tasks performed, duration of employment, efficiency, etc.) it is not possible to provide a detailed cost savings, however it is possible that each community could save between \$10,000 and \$30,000 dollars based on an assumed hourly rate of \$20, compared to \$100/hour for a consultant; actual savings will vary by community.

#### Stormwater Utility Assessment

BRPC worked with the partner communities to determine whether a stormwater utility is appropriate for each community. BRPC investigated how the Five Steps (or The Five Ds) as described within the Stormwater Utility Starter Kit developed by the Metropolitan Area Planning Council (MAPC) could be followed by the partner communities. These steps are:

1. Define Needs;
2. Determine Funding/Fee Structure;
3. Deliver Education & Outreach Program;
4. Develop Administrative Program; and
5. Draft Bylaw/Ordinance/Regulation.

Defining needs is a necessary first step in the process. The term stormwater utility has been used throughout the country to describe the concept of an administrative entity created to implement a service fee to cover the cost of stormwater management. However, it is important to distinguish that a service or drainage fee can be implemented in the absence of a stormwater utility. A stormwater utility is a public utility that has fulltime staff (i.e., superintendent, engineers, administrators, etc.), and is established to operate and manage a municipality's stormwater system. Such an entity would manage a service fee and the municipal stormwater system for all residents' and business' benefit. There are a number of options, such as general fund allocations and grants, for funding stormwater management projects and programs. However, these are not long-term, sustainable sources of

funding. Municipalities could consider implementing a drainage fee with or without the administrative set-up of a stormwater utility.

BRPC met with and interviewed the current Commissioner of Public Works for the City of Pittsfield who had worked for the City of Newton during the time the City of Newton developed a stormwater utility. Based upon the knowledge gathered through the interview and the experience of the City of Newton, BRPC analyzed the steps that would be necessary for Berkshire County communities to assess their needs in relation to a stormwater utility. The analysis conducted by CEI defines each community's need and provides an estimate of the additional cost each community could expect in order to comply with the MS4 permit.

Beyond defining needs, it was anticipated that initial work would focus on developing and delivering an education and outreach program. However, it was determined that a fee structure would need to be determined early in any process in order to understand the additional tax burden which would be imposed by a drainage fee. There are four basic methods that stormwater utilities use to calculate service fees. These are sometimes modified slightly to meet unique billing requirements. The Equivalent Residential Unit (ERU) method (also known as the Equivalent Service Unit (ESU) method) is used by more than 80 percent of all stormwater utilities. It bills an amount proportional to the impervious area on a parcel, regardless of the parcel's total area. It is therefore based on the effect of a typical single family residential (SFR) home's impervious area footprint. Because the potential effect of stormwater runoff from the pervious area of a parcel is not reviewed, this method is sometimes considered to be less equitable than the Intensity of Development (ID) or Equivalent Hydraulic Area (EHA) methods because runoff-related expenses are recovered from a smaller area base. This method could still be used to charge a fee to all parcels - pervious as well as impervious - to cover expenses, such as administration and regulatory compliance unrelated to impervious area. The Intensity of Development (ID) cost allocation system is based on the percentage of impervious area relative to an entire parcel's size. All parcels, including vacant/undeveloped parcels, are charged a fee. For developed parcels, fees are based on their intensity of development, which is defined as the percentage of impervious area of the parcel. However, the ID categories are broad, and parcels are not billed in direct proportion to their relative stormwater discharges. This method can be more difficult to implement than the ERU method because parcel pervious and impervious areas need to be reviewed. It is also more complicated to explain to customers than the ERU method. This method might also discourage urban infill and inadvertently encourage sprawl. With the Equivalent Hydraulic Area (EHA) method, parcels are billed on the basis of the stormwater runoff generated by their impervious and pervious areas, charging impervious area a much higher rate than the pervious area. Because pervious area analysis is required in addition to impervious area, this approach requires more time to determine the total number of billing units. It is also more complicated to explain to customers than the ERU method. The City of Newton established user fees based on a flat rate. Residential properties are assessed a fee of \$6.25 per quarter, and all other properties are assessed a fee of \$37.50 per quarter. The Board of Aldermen debated using a different fee structure but found that the program's operating costs would triple if the city had to determine the rates on the basis of individual lot sizes.

None of the communities in Berkshire County have the staff capacity to determine drainage rates on the basis of individual lot sizes. It is anticipated that the administrative burden would outweigh the benefit or would become an additional expense that would need to be determined and included within the drainage fee. Based on one-on-one conversations with representatives from each community, none of the communities are prepared to advance the proposition of a stormwater utility or drainage fee. However, the analysis conducted by CEI could be used to establish a target amount in order to estimate fees using a flat rate structure similar to that used by the City of Newton.

An internal education and outreach program is still a critical component to advancing the concept of a stormwater utility or drainage fee. Whether a Stormwater Utility must be adopted by a City Council or through Annual Town Meeting a key to its successful adoption is education. Before an external education and outreach program can be implemented it is necessary to conduct an internal education and outreach program working with the City Council and Select Boards so they can understand why a stormwater utility/drainage fee is needed, what services would be funded by it, and how the fees will impact them or their constituents. All of the regulated communities, with the exception of Pittsfield, are approaching their levy limit with extremely limited excess levy capacity (.09% - .73% excess as a % of maximum levy). For this reason, among others, are not ready to pursue additional fees or taxes. In addition, Module #3 of the Stormwater Utility Starter Kit, suggests working with a Stormwater Committee and soliciting expertise in approaching the topic of a stormwater utility/drainage fee. At this point in time, the Town of Dalton is the only community in Berkshire County that has a Stormwater Management Commission. It is recommended that the communities evaluate the accuracy of the estimated cost based upon their experiences in their first year of compliance with the new permit. The communities should continue to work together to increase efficiencies and reduce costs and perhaps work together in the future to develop an education and outreach campaign that could be used internally. Lastly, it is recommended that a regional representative participate in the “coalition of coalitions” that is made up of various coalitions throughout Massachusetts. BRPC could serve as a regional representative to the Massachusetts Stormwater Coalitions. Advantages to working with other coalitions and the Statewide Coalition include sharing of information, materials and resources, dividing and sharing responsibilities for developing models and templates that can be used statewide and benefiting from the cost savings and efficiencies that would result.

## Results

The following tables provide a cost summary for implementing a regional approach along with community savings, program costs for implementation of base program items and TMDL and impaired waters requirements over the first five permit years, with and without the use of materials at a regional level, along with potential savings for each community. For all other templates, it was assumed that the regional entity would have some involvement in producing or modifying materials for use by the Berkshire communities.

The following table, Estimated costs and savings Over 5-Year Permit Term for Regional Approach, provides a cost summary for the regional approach discussed in the previous section. Minor differences in costs between the tables throughout this report and between options are associated with rounding.

Estimated Costs and Savings Over 5-Year Permit Term for Regional Approach			
Item	Cost Regional Entity	by Community Savings	Total Savings (Difference)
<b>Base Program</b>			
Education / Outreach	\$4,000 - \$8,000	\$13,000 - \$91,000	\$9,000 - \$83,000
Written Plan Templates	\$13,000 - \$24,000	\$95,000 - \$218,000	\$82,000 - \$194,000
Model Bylaws	\$4,000 - \$8,000	\$25,000 - \$45,000	\$21,000 - \$37,000
SWPPPs	\$0 - \$0	\$0 - \$0	\$0 - \$0
IDDE Training Program	\$8,000 - \$10,000	\$41,000 - \$49,000	\$33,000 - \$39,000
Totals	\$29,000 - \$50,000	\$174,000 - \$403,000	\$145,000 - \$353,000
<b>TMDL and Impaired Waters</b>			
Nitrogen TMDL	\$8,000 - \$14,000	\$20,000 - \$32,000	\$12,000 - \$18,000
Phosphorus Impairment	\$8,000 - \$14,000	\$15,000 - \$23,000	\$7,000 - \$9,000
Bacteria TMDL	\$1,000 - \$2,000	\$1,000 - \$4,000	\$0 - \$2,000
Totals	\$17,000 - \$30,000	\$36,000 - \$59,000	\$19,000 - \$29,000
<b>PROGRAM COST</b>	<b>\$46,000 - \$80,000</b>	<b>\$210,000 - \$462,000</b>	<b>\$164,000 - \$382,000</b>

Notes:

1. Minor differences in costs between the tables throughout this report are associated with rounding.

The following table provides program costs for implementation of base program items and TMDL and impaired waters requirements over the first five permit years, with and without the use of materials at a regional level, along with potential savings for each community. Costs are provided for budgetary purposes and can be refined as more detailed information is obtained from each community. Costs account for existing catch basin cleaning and street sweeping, and the frequency of each. These costs are only included where additional efforts may be necessary, such as street sweeping twice a year for areas discharging to nutrient impaired waterbodies. Although some communities already have regulatory mechanisms in place for IDDE, construction and post construction site control, it was assumed that all will need updates. This may not be the case in some

instances, which could result in slightly lower implementation costs. TMDL and impaired waters requirements do not include construction of a structural BMP. Minor differences in costs between the tables throughout this report are associated with rounding.

Program Costs Over 5-Year Permit Term with Regional Implementation			
Community	Program Cost, No Regional Savings	Program Cost with Regional Savings	Regional Savings
<b>Base Program</b>			
Adams	\$251,000 - \$585,000	\$215,000 - \$504,000	\$36,000 - \$81,000
Cheshire	\$129,000 - \$310,000	\$98,000 - \$234,000	\$31,000 - \$76,000
Dalton	\$154,000 - \$373,000	\$123,000 - \$297,000	\$31,000 - \$76,000
Lanesborough	\$156,000 - \$361,000	\$125,000 - \$285,000	\$31,000 - \$76,000
Pittsfield	\$411,000 - \$867,000	\$366,000 - \$770,000	\$45,000 - \$97,000
Totals	\$1,101,000 - \$2,496,000	\$927,000 - \$2,090,000	\$174,000 - \$406,000
<b>TMDL and Impaired Waters</b>			
Adams	\$1,000 - \$4,000	\$1,000 - \$3,000	\$0 - \$1,000
Cheshire	\$0 - \$4,000	\$0 - \$3,000	\$0 - \$1,000
Dalton	\$48,000 - \$78,000	\$36,000 - \$58,000	\$12,000 - \$20,000
Lanesborough	\$29,000 - \$47,000	\$23,000 - \$37,000	\$6,000 - \$10,000
Pittsfield	\$129,000 - \$230,000	\$112,000 - \$202,000	\$17,000 - \$28,000
Totals	\$207,000 - \$363,000	\$172,000 - \$303,000	\$35,000 - \$60,000
<b>PROG. COST</b>	<b>\$1,308,000 - \$2,859,000</b>	<b>\$1,099,000 - \$2,393,000</b>	<b>\$209,000 - \$466,000</b>

Notes:

1. Costs are provided for budgetary purposes and can be refined as more detailed information is obtained from each community.
2. Costs account for existing catch basin cleaning and street sweeping, and the frequency of each. These costs are only included where additional efforts may be necessary, such as street sweeping twice a year for areas discharging to nutrient impaired waterbodies.
3. Although some communities already have regulatory mechanisms in place for IDDE, construction and post construction site control, it was assumed that all will need updates. This may not be the case in some instances, which could result in slightly lower implementation costs.
4. TMDL and impaired waters requirements do not include construction of a structural BMP.
5. Minor differences in costs between the tables throughout this report are associated with rounding.

As noted in the above table and information presented in previous sections, Berkshire County communities can realize substantial cost savings, \$174,000 - \$466,000, by using tools and materials developed at a regional level. However, the above table does not account for the cost of preparing the regional tools and materials, only for using them. The cost to prepare these materials must also be considered and factored into the total savings.

Based on CEI's estimate using the M\$4CASTER™ model, it is estimated that preparation of base program items at a regional level will be between \$29,000 and \$50,000 and preparation of TMDL and Impaired Waters items will be between \$17,000 and \$30,000. Communities may contribute funding to a regional entity, such as BRPC or a locally formed stormwater coalition, as the funding contributed will result in an overall cost savings.

The following tables provide a cost summary for two regional program funding options:

Option 1: even distribution of costs between the five communities; and

Option 2: savings-based approach where communities with higher potential savings contribute more funding.

Regional Base Program Funding			
Community	Regional Cost to Prepare	Option 1: Even Distribution	Option 2: Savings-Based Funding
Adams	\$29,000 - \$50,000	\$5,800 - \$10,000	\$6,000 - \$10,000
Cheshire		\$5,800 - \$10,000	\$5,000 - \$9,000
Dalton		\$5,800 - \$10,000	\$5,000 - \$9,000
Lanesborough		\$5,800 - \$10,000	\$5,000 - \$9,000
Pittsfield		\$5,800 - \$10,000	\$8,000 - \$12,000
<b>TOTALS</b>	<b>\$29,000 - \$50,000</b>	<b>\$29,000 - \$50,000</b>	<b>\$29,000 - \$49,000</b>

Notes:

1. Minor differences in costs between the tables throughout this report and between options are associated with rounding.

Regional TMDL and Impaired Waters Program Funding			
Community	Regional Cost to Prepare	Applicable TMDL/Impairment	Option 2: Even Distribution of Applicable Components
Adams	\$17,000 - \$30,000	Bacteria	\$300 - \$500
Cheshire		Bacteria	\$300 - \$500
Dalton		Nitrogen, Phosphorus, Bacteria	\$7,000 - \$12,000
Lanesborough		Nitrogen	\$3,000 - \$5,000
Pittsfield		Nitrogen, Phosphorus, Bacteria	\$6,000 - \$12,000
<b>TOTALS</b>	<b>\$17,000 - \$30,000</b>		<b>\$16,600 - \$30,000</b>

Notes:

1. Minor differences in costs between the tables throughout this report and between options are associated with rounding.

Communities may choose to implement either of the above funding options for preparing program components at a regional level.



## Lessons Learned

Overall this project was a success and many of the approaches employed worked well. However, it was determined that the working group approach was not effective for our target audience. It was useful to hold meetings in order to cover general information, an introduction to the project, and present via PowerPoint and to meet with Fred Civian, MassDEP Stormwater Coordinator. In fact, the target audience was expanded to offer two meetings with Mr. Civian, one meeting for communities that are eligible for a waiver and another meeting for the five regulated communities. Over the course of the project we learned that one-on-one meetings with individual communities, phone calls, and email correspondence were more effective. However, it was also learned that a combination of these approaches was needed in order to get feedback from the communities and direction for moving forward.

Although all of the communities are interested in working together and/or working with BRPC to gain efficiencies and cost savings, none were able to commit to anything beyond interest. It was necessary to work with each community focusing on their needs and once each community's needs were better defined provide options for increased efficiencies. As part of this, it was also important to focus on just the first year of the permit requirements. All of the communities want to be in compliance with the permit, but have not been able to project beyond the first year. Fiscal constraints, overwhelming requirements of the permit, and other demands on municipal staff are all expected to contribute to the difficulty in projecting beyond the first year. In addition, as none of the communities have a dedicated line item or account for stormwater, the City of Pittsfield is the only community with an enterprise fund, and compliance with the permit is not a capital expense, the communities must budget for each permit year on an annual basis when the fiscal year budget is passed. Annual budgeting does not prevent or preclude the communities from planning ahead, it is hoped that during the first year of the permit as the Stormwater Management Program Plans are developed a more defined approach will be developed for each of the subsequent years. In addition, it is hoped that through the process of developing the Stormwater Management Program Plans the ways in which the communities can collaborate will become clear.

## Conclusions/Project Summary

As a result of this project, the Town of Lanesborough has entered into a Community Compact with the Commonwealth of Massachusetts and named stormwater as one of their primary actions. This has led to a \$15,000 grant to the Town from the Commonwealth to prepare the Notice of Intent and Stormwater Management Program Plan as required by the Permit. The Town has entered into an agreement with BRPC and included additional Town funds to include preparation of the Annual Report and ensure that a plan for year 2 is developed in advance of finalizing the Town's FY19 budget.

The Town of Dalton has contracted with BRPC to prepare the Notice of Intent and Stormwater Management Program Plan as required by the Permit. The Town has also included within BRPC's scope preparation of the Annual Report and ensuring that a plan for year 2 is developed in advance of finalizing the Town's FY19 budget. BRPC will work with the Town toward compliance with year 1 requirements in relation to Illicit Discharge Detection and Elimination, Operation & Maintenance Procedures, and Construction Site enforcement. The Town is considering entering into a Community Compact with the Commonwealth of Massachusetts and naming stormwater as one of their primary actions, as was done by the Town of Lanesborough.

The Town of Adams is working toward a general services agreement with BRPC. Preparation of the Notice of Intent and Stormwater Management Program Plan as required by the Permit will be included within the scope and it is anticipated that as the Stormwater Management Program Plan is developed the Town will develop a plan for full compliance in year 1 and subsequent years.

The City of Pittsfield has greater staff capacity than that of the other regulated communities within Berkshire County. However, the City is interested in assistance from BRPC in getting started through the preparation of the Notice of Intent and development of a template for the Stormwater Management Program Plan as required by the Permit.

It is not yet known how the Town of Cheshire plans to proceed; however, BRPC remains in contact with the Town Administrator and Select Board.

With solid commitments from 4 out of 5 communities to work with BRPC in some capacity, specifically for the preparation of the Notice of Intent and Stormwater Management Program Plan as required by the Permit, it is clear that all of the communities have benefitted from increased efficiencies and reduced costs for compliance as a result of this project. Since each agreement is unique and customized to each community it is difficult to quantify cost savings. For example, the Town of Adams has elected to enter into an "outsource planner" agreement with BRPC to address stormwater management needs, NPDES Phase II compliance, and a number of other needs identified by the Department of Community Development, which is currently understaffed. Through an "outsource planner" contract, the town is billed at a reduced rate that does not include BRPC's full overhead rate and the work is performed at the town offices rather than BRPC's office. This approach results in even more cost savings for the Town, but is harder to quantify since it is

unknown at this time how many hours will be devoted to NPDES compliance versus other work conducted under the outsource contract. In addition, it remains to be seen how much savings each community will ultimately realize as the work continues to evolve. BRPC strongly recommends coordinating the work of Berkshire County Communities with the other Stormwater Coalitions and the Statewide Coalition to further reduce costs and insure compatibility with other city and town efforts and prevent needless duplication of efforts. At this time we anticipate the minimum cost savings, which does not include savings as a result of grant funds or additional efficiencies and cost savings anticipated through the regional effort and working with the other Stormwater Coalitions and the Statewide Coalition, to be as follows:

- Adams: \$1,500 - \$18,900
- Dalton: \$16,900 - \$55,550
- Lanesborough: \$1,000 - \$10,400
- Pittsfield: \$1,000 - \$5,000



**Appendix A**  
**Summary of Questionnaire Results**



**Attachment A - NPDES MS4 Questionnaire Results**

Community	Adams	Cheshire	Dalton	Lanesborough	Pittsfield
Year Regulated	2017	2017	2003	2003	2003
Contact Information	DPW: (413) 743-8300 Dept. #172 Dave Nuvallie: DPW Ext. 124	Highway Dept: (413) 743-3376 Water Dept: (413) 743-1690 ext. 16	Highway Dept: (413) 684-6115 Water Dept: (413) 684-6118	William Decelles, DPW Director (413) 443-1921 DPW.Director@Lanesborough-ma.gov	Bruce Collingwood, PE Commissioner of Public Utilities (413) 499-9330
Question					
1. Please identify which of the following written plans you have	SWMP Plan, IDDE Plan	---	SWMP Plan	IDDE Plan	Other: NOI for original permit includes these elements, but should be further
2. Do you have any sanitary sewer overflows (SSOs)?	No	No	No	---	Yes
3. Which components of your drainage system are mapped?	Outfalls / Catch basins, pipes and manholes	Outfalls (some) / Catch basins, pipes and manholes (some)	[Outfalls (map 20%/year)]	Outfalls	Outfalls / Catch basins, pipes and manholes [Entire municipal storm drain system]
4. How many stormwater outfalls do you have in the urbanized area?	---	---	Unknown	Unknown	388 (218)
5. Do any of your outfalls discharge to a public surface drinking water supply source or their tributaries?	No	No	No	No	No
6. How many catch basins do you have in the urbanized area?	---	---	Unknown	---	4712
7. How often do you clean your catch basins?	Only when there is a problem / Every few years	Varies by area: once a year on all main drains / twice a year on all others	Once a year	Once a year	[Once annually]
8. Do you perform catch basin cleaning with your own equipment and staff or do you use an outside vendor?	Performed in-house	Outside vendor: Maintenance Man	Performed in-house	Outside vendor: Maintenance Man (bid out annually)	Performed in-house / Outside vendor: varies
9. How often do you sweep your streets located within the urbanized area?	Twice a year	Once a year	Twice a year	Once a year	Once a year
10. Do you perform street sweeping with your own equipment and staff or do you use an outside vendor?	Performed in-house	Outside vendor: Maintenance Man	Performed in-house	Outside vendor: Maintenance Man (bid out annually)	Performed in-house / Outside vendor: varies
11. How many miles of municipal roadway with stormwater infrastructure do you have in the urbanized area?	---	25-30	---	55, not sure in UA	137
12. How many municipally-owned stormwater treatment structures/BMPs do you have?	0	---	0	4	Unknown
13. What forms of public outreach do you use to relay stormwater information to residents?	Mailed brochures / flyers / workshops	---	None, [mailed brochures / flyers, workshops]	Mailed brochures / flyers / website / workshops	Messages mailed with utility bills / website
14. Do you have regulations that require the use of sediment and erosion control practices and post-construction stormwater controls at construction sites that disturb one or more acres?	Yes, we have requirements within our existing regulations	Other: Dep. And Conservation Committee Planning Board	Yes, we have a separate Stormwater Bylaw	Yes, we have a separate Stormwater Bylaw	Yes, we have a separate Stormwater Bylaw
15. Do you have written procedures for inspections and enforcement of sediment and erosion control measures?	No	---	Yes	---	No
16. Do you have written procedures for site plan review and inspection and enforcement?	No	Yes	---	---	No
17. Do you perform pre-construction peer reviews for construction permits?	Yes, we perform peer reviews in-house. Yes, we hire an outside consultant to perform peer reviews, paid for by the developer	---	---	---	Yes, we perform peer reviews in-house. Yes, we hire an outside consultant to perform peer reviews, paid for by the developer

Note: information shown in [brackets] obtained from annual reports and added to survey results by CEI.





**Attachment A - NPDES MS4 Questionnaire Results**

Community	Adams	Cheshire	Dalton	Lanesborough	Pittsfield
Year Regulated	2017	2017	2003	2003	2003
<b>Contact Information</b>	DPW: (413) 743-8300 Dept. #172 Dave Nuvalle: DPW Ext. 124	Highway Dept: (413) 743-3376 Water Dept: (413) 743-1690 ext. 16	Highway Dept: (413) 684-6115 Water Dept: (413) 684-6118	William Decelles, DPW Director (413) 443-1921 DPW.Director@Lanesborough-ma.gov	Bruce Collingwood, PE Commissioner of Public Utilities (413) 499-9330
<b>Question</b>					
18. Do you perform site inspections of developer's construction projects?	Yes, we hire site inspections in-house. Yes, we hire an outside consultant to perform site inspections, paid for by the developer	---	Yes, we perform site inspections in-house	---	[Yes, we hire an outside consultant to perform site inspections, paid for by the developer]
19. If you perform site inspections (Question 18), how often?	---	---	---	---	---
20. Which of the following do you use to ensure long-term operation and maintenance (O&M) of stormwater management practices installed by developers?	---	---	Acceptance of ownership by Town/City	---	Acceptance of ownership by Town/City; development of maintenance contracts between owner and Town/City
21. Which of the following do you have written O&M procedures for?	---	Snow Disposal	---	Other: Continue CB maintenance as funding allows	---
22. How many municipal properties do you have including schools, town offices, police and fire stations, municipal pools, DPW garages/yards, solid waste facilities, parking garages, etc.?	---	---	8	13	296
23. Which of the following facilities do you have in your community?	Public Works Yard/Highway Garage / Transfer Station/Recycling Center	Public Works Yard/Highway Garage / Transfer Station/Recycling Center / Other: Water Dept.	Public Works Yard/Highway Garage / Transfer Station/Recycling Center	Public Works Yard/Highway Garage / Landfill (capped)	Public Works Yard/Highway Garage / Dedicated Maintenance Facility / Landfill
24. Which of the following facilities do you have Stormwater Pollution Prevention Plans for?	Public Works Yard/Highway Garage	Public Works Yard/Highway Garage / Transfer Station/Recycling Center	None	None	---
25. Which of the following regional approaches to MS4 compliance would you consider participating in?	Generation and distribution of public education materials	Generation and distribution of public education materials	Generation and distribution of public education materials	Generation and distribution of public education materials	Generation and distribution of public education materials
	Generation and use of report/plan templates (SWMP, IDDE, inspections and enforcement)	Generation and use of operation and maintenance procedure templates	Generation and use of report/plan templates (SWMP, IDDE, inspections and enforcement)	Generation and use of report/plan templates (SWMP, IDDE, inspections and enforcement)	Generation and use of report/plan templates (SWMP, IDDE, inspections and enforcement)
	Generation and use of operation and maintenance procedure templates	---	Generation and use of operation and maintenance procedure templates	Generation and use of operation and maintenance procedure templates	Generation and use of operation and maintenance procedure templates
	Generation and use of bylaws and regulations templates	---	Generation and use of bylaws and regulations templates	Generation and use of bylaws and regulations templates	Catch basin cleaning services from outside vendor
	Employee Training	---	Catch basin cleaning services from outside vendor	Catch basin cleaning services from outside vendor	Street sweeping services from outside vendor
	---	---	Street sweeping services from outside vendor	Street sweeping services from outside vendor	Stormwater treatment structure / BMP maintenance services from outside vendor
	---	---	Stormwater treatment structure / BMP maintenance services from outside vendor	Stormwater treatment structure / BMP maintenance services from outside vendor	Employee training
	---	---	Employee training	Employee training	---
26. Please provide any additional information you feel that we should be aware of	---	---	---	Protecting lake is important and a big topic. Pontoosuc Lake Committee.	---

Note: information shown in [brackets] obtained from annual reports and added to survey results by CEI.



**Attachment A - NPDES MS4 Questionnaire Results**

Community	Adams	Cheshire	Dalton	Lanesborough	Pittsfield
Year Regulated	2017	2017	2003	2003	2003
<b>Contact Information</b>	DPW: (413) 743-8300 Dept. #172 Dave Nuvalle: DPW Ext. 124	Highway Dept: (413) 743-3376 Water Dept: (413) 743-1690 ext. 16	Highway Dept: (413) 684-6115 Water Dept: (413) 684-6118	William Decelles, DPW Director (413) 443-1921 DPW.Director@Lanesborough-ma.gov	Bruce Collingwood, PE Commissioner of Public Utilities (413) 499-9330
<b>Question</b>					
<b>TMDL Waters</b>					
<b>Nitrogen TMDL (as identified in permit)</b>	Long Island Sound - however, review shows Adams is not in Long Island Sound watershed	Long Island Sound - however, only very small portion in this watershed, but it is outside the UA	Long Island Sound	Long Island Sound	Long Island Sound
<b>Phosphorus Impairment (as identified in permit)?</b>	No	No	Yes - Waterbody Not Identified	No	Yes - Waterbody Not Identified
<b>Fecal Coliform Impairment - No TMDL?</b>	Hoosic River	Hoosic River	East Branch Housatonic River, Wahconah Falls Brook	---	Housatonic River, East Branch Housatonic River, Southwest & West Branch Housatonic River
<b>Combined Biota/Habitat Bioassessments Impairment</b>	---	---	---	---	West Branch Housatonic River
<b>Aquatic Plants</b>	---	Cheshire Reservoir, Middle Basin	---	Cheshire Reservoir, Middle Basin	---
<b>Aquatic Plants, Nutrient/Eutrophication Biological Indicators</b>	---	Cheshire Reservoir, North Basin	---	---	---
<b>Excess Algal Growth</b>	---	Cheshire Reservoir, South Basin	---	Cheshire Reservoir, South Basin	---
<b>Ambient bioassays - Chronic Aquatic Toxicity</b>	Hoosic River	Hoosic River	---	---	---
<b>Turbidity</b>	---	Cheshire Reservoir, North Basin	---	---	---



**Appendix B**  
**Cost Estimates for Berkshire County Communities**



MS4 Community Assumptions table with columns for Category and Quantity. Includes sections for General, Illicit Discharge, Construction Site Control, Post Construction Site Control, Good Housekeeping, TMDL or Impaired Waterbodies, and Municipalities Notes.

Base Program Schedule table with columns for Major Program Component, % Complete, Consultant, Town, and Year (1-6+). Includes sections for Notice of Intent, Stormwater Management Program, and various Minimum Measures.

\*Work Performed: Recommended breakdown, but could be any combination. Written IDDE Plan template available from CMRSWC - 75% complete. Written SWPPP Template available from CMRSWC - 50% complete.

Community-Specific Resources: Population and Regulated Population: "Regulated Area Map". Includes links to EPA NPDES stormwater maps and other resources.

EPA NPDES General Permit for Stormwater Discharges from MS4s, Massachusetts Permit, Effective July 1, 2017

Spreadsheet Prepared By: Rebecca Balke, P.E., rbalke@ceiengineers.com; Nick Cristofori, P.E., nrcristofori@ceiengineers.com

Comprehensive Environmental Inc. 225 Cedar Hill Street, Marlborough, MA 01752, 800.725.2550

Disclaimer: This spreadsheet has been developed by Comprehensive Environmental, Inc. using EPA's Excel Workbook for small/rural, medium/suburban, and large/urban and accompanying Technical Memorandum - Stormwater Program Cost Evaluation for Massachusetts, available for public download on EPA's website at: https://www3.epa.gov/region1/npdes/stormwater/MS4\_MA.html



Base Program Cost (over 5 years) table for Adams MA. Columns include Estimated Hours (Low, High), Total, Low Cost Range (Consultant, Town), High Cost Range (Total, Consultant, Town), and Percent of Program Cost.

Base Program, Yearly Costs table for Adams MA. Columns include Percent, Total, Low Cost Range (Consultant, Town), High Cost Range (Total, Consultant, Town), and Percent of Program Cost.

Intermittent Program Costs (over 5 years) table for Adams MA. Columns include Estimated Hours (Low, High), Total, Low Cost Range (Consultant, Town), High Cost Range (Total, Consultant, Town), and Percent of Program Cost.

TMDL or Impaired Waterbodies (first 5 years only) table for Adams MA. Columns include Total, Low Cost Range (Consultant, Town), High Cost Range (Total, Consultant, Town), and Percent of Program Cost.





MS4 Community Assumptions table for Cheshire MA. Includes sections for General, Illicit Discharge, Detection, and Elimination, Construction Site Control, Post Construction Site Control, Good Housekeeping, TMDL or Impaired Waterbodies, and Bacteria/Phosphorus impairments.

Municipality Notes: -partial outfalls mapped, -partial catch basins, pipes, and manholes mapped, -clean catch basins once or twice per year, outside vendor, -sweep streets once per year, outside vendor, -have written procedures for site plan review, inspection and enforcement, -have O&M plans for snow disposal, -have DPW Yard and transfer station, both with SWPPPs

-number of outfalls and catch basins are default values, -miles of roadway for sweeping is default value, -MS4 permit shows Cheshire in Long Island Sound, but review of watershed shows UA is not

Base Program Schedule table. Columns include Major Program Component, % Complete, Consultant, Town, and Year (1-6+). Rows cover Notice of Intent, Stormwater Management Program, and various Minimum Measures (1-6).

\*Work Performed: Recommended breakdown, but could be any combination. Written IDDE Plan template available from CMRSWC - 75% complete. Written SWPPP Template available from CMRSWC - 50% complete.

Community-Specific Resources: Population and Regulated Population: "Regulated Area Map": https://www3.epa.gov/region1/npdes/stormwater/ma.html, Outfalls, catch basins, and other infrastructure (If reported on by communities): https://www3.epa.gov/region1/npdes/stormwater/2003-permit-archives.html, Nitrogen or Phosphorus TMDL and/or Impaired Waters: applicable towns listed specifically within MS4 Permit https://www3.epa.gov/region1/npdes/stormwater/ma/2016fpd/final-2016-ma-sm4-gp.pdf, Bacteria Impairments: 303(d) list https://www.mass.gov/eea/docs/dep/water/resources/07v5/14list2.pdf, MassDOT roadway jurisdiction (applicable for roadways owned by MassDOT but maintained by municipality) https://services.massdot.state.ma.us/maptemplate/roadinventory, SWPPPs: required for maintenance garages, DPW yards, transfer stations, and other waste handling facilities

EPA NPDES General Permit for Stormwater Discharges from MS4s, Massachusetts Permit, Effective July 1, 2017

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Cheshire MA Base Program Cost (over 5 years) table. Columns include Estimated Hours, Low Cost Range (Total, Consultant, Town), High Cost Range (Total, Consultant, Town), and Program Cost %. Rows include Notice of Intent, Stormwater Management Program, and various Minimum Measures.

Cheshire MA Base Program, Yearly Costs table. Columns include Percent, Total, Consultant, and Town. Rows show costs for Year 1 through Year 5 and a Total row.

Cheshire MA Intermittent Program Costs (over 5 years) table. Columns include Estimated Hours, Low Cost Range (Total, Consultant, Town), High Cost Range (Total, Consultant, Town), and Program Cost %. Rows include Minimum Measure 3 - IDDE, Minimum Measure 4 - Construction Site Control, and Minimum Measure 6 - Good Housekeeping.

Cheshire MA TMDL or Impaired Waterbodies (first 5 years only) table. Columns include Total, Consultant, and Town. Rows include Phosphorus TMDL (In-State, Out-of-State), Enhanced BMPs, Nitrogen TMDL or Nitrogen/Phosphorus Impaired Water, and Bacteria TMDL or Impaired Water.



















**Appendix C**  
**Cost Estimates with Regional Cost Savings**







Regional Cost Savings Summary, Base Program	Cost for Preparation by a Regional Agency		% Done Regionally %	Adams			
	Low	High		Base Cost		Cost w/ Regional Savings	
			Low	High	Low	High	
<b>Notice of Intent (NOI)</b>	\$0	\$0	0%	\$5,000	\$11,000	\$5,000	\$11,000
<b>Stormwater Management Program (SWMP) Plan</b>	\$5,000	\$10,000	50%	\$13,000	\$20,000	\$6,500	\$10,000
<b>Minimum Measure 1 - Public Education</b>	\$4,000	\$8,000	25%	\$11,000	\$74,000	\$8,250	\$55,500
<b>Minimum Measure 2 - Public Participation</b>	\$0	\$0	0%	\$9,000	\$17,000	\$9,000	\$17,000
<b>Minimum Measure 3 - IDDE</b>	\$8,000	\$10,000		\$69,000	\$135,000	\$60,750	\$125,250
Written IDDE Plan and Procedures	\$0	\$0	0%	\$1,000	\$5,000	\$1,000	\$5,000
System Mapping and Catchment Delineation	\$0	\$0	0%	\$5,000	\$40,000	\$5,000	\$40,000
Catchment Assessment and Ranking	\$0	\$0	0%	\$2,000	\$16,000	\$2,000	\$16,000
Dry Weather Screening	\$0	\$0	0%	\$34,000	\$42,000	\$34,000	\$42,000
Wet Weather Screening	\$0	\$0	0%	\$5,000	\$16,000	\$5,000	\$16,000
Catchment Investigations	\$0	\$0	0%	\$11,000	\$3,000	\$11,000	\$3,000
Training (performed annually over 5 years)	\$8,000	\$10,000	75%	\$11,000	\$13,000	\$2,750	\$3,250
<b>Minimum Measure 4 - Construction Site Control</b>	\$5,000	\$10,000		\$4,000	\$22,000	\$2,000	\$7,000
Update Bylaw or Other Regulatory Mechanism	\$2,000	\$4,000	50%	\$4,000	\$6,000	\$2,000	\$3,000
Procedures for Pre- and Construction Inspections	\$3,000	\$6,000	75%	\$0	\$16,000	\$0	\$4,000
<b>Minimum Measure 5 - Post Construction Runoff</b>	\$2,000	\$4,000		\$21,000	\$39,000	\$18,000	\$33,000
Update Bylaw or Other Regulatory Mechanism	\$2,000	\$4,000	50%	\$6,000	\$12,000	\$3,000	\$6,000
Asses Regulations for Impervious Areas and LID	\$0	\$0	0%	\$7,000	\$14,000	\$7,000	\$14,000
Inventory Muncpal Properties	\$0	\$0	0%	\$8,000	\$13,000	\$8,000	\$13,000
<b>Minimum Measure 6 - Good Housekeeping</b>				\$94,000	\$215,000	\$80,500	\$193,250
<i>rented trucks</i>	\$5,000	\$8,000		\$94,000	\$250,000	\$80,500	\$228,250
<i>purchased trucks</i>							
Operation and Maintenance Procedures	\$5,000	\$8,000	75%	\$18,000	\$29,000	\$4,500	\$7,250
BMP Inspection and Maintenance	\$0	\$0	0%	\$1,000	\$2,000	\$1,000	\$2,000
SWPPP Plans	\$0	\$0	0%	\$0	\$3,000	\$0	\$3,000
SWPPP Implementation	\$0	\$0	0%	\$0	\$24,000	\$0	\$24,000
Catch Basin Cleaning (purchased trucks)	\$0	\$0	0%	\$75,000	\$185,000	\$75,000	\$185,000
Catch Basin Cleaning (rented trucks)	\$0	\$0	0%	\$75,000	\$150,000	\$75,000	\$150,000
Street Sweeping (purchased trucks)	\$0	\$0	0%	\$0	\$0	\$0	\$0
Street Sweeping (rented trucks)	\$0	\$0	0%	\$0	\$0	\$0	\$0
SWPPP Training	\$0	\$0	0%	\$0	\$7,000	\$0	\$7,000
<b>Annual Report</b>	\$0	\$0	0%	\$25,000	\$52,000	\$25,000	\$52,000
<b>Cost for Regional Preparation</b>	<b>\$29,000</b>	<b>\$50,000</b>	<i>rented</i>	<b>\$251,000</b>	<b>\$585,000</b>	<b>\$215,000</b>	<b>\$504,000</b>
<b>Savings Realized by Regional Towns</b>	<b>\$174,000</b>	<b>\$405,000</b>	<i>purchased</i>	<b>\$251,000</b>	<b>\$620,000</b>	<b>\$215,000</b>	<b>\$539,000</b>
<b>TOTAL SAVINGS</b>	<b>\$145,000</b>	<b>\$355,000</b>	<i>trucks</i>	<b>Cost Savings:</b>		<b>\$36,000</b>	<b>\$81,000</b>

Regional Cost Savings Summary, TMDLs and Impaired Waters	Cost for Preparation by a Regional Agency		% Done Regionally %	Adams			
	Low	High		Base Cost		Cost w/ Regional Savings	
			Low	High	Low	High	
<b>Nitrogen TMDL</b>	\$8,000	\$14,000		\$0	\$0	\$0	\$0
Additional Public Education	\$1,000	\$2,000	25%	\$0	\$0	\$0	\$0
Update Bylaw or Other Regulatory Mechanism	\$2,000	\$4,000	25%	\$0	\$0	\$0	\$0
Additional Operation and Maintenance Procedures	\$1,000	\$2,000	50%	\$0	\$0	\$0	\$0
Street Sweeping	\$0	\$0	0%	\$0	\$0	\$0	\$0
Develop Nitrogen Source ID Template	\$4,000	\$6,000	25%	\$0	\$0	\$0	\$0
<b>Phosphorus Impairment</b>	\$8,000	\$14,000		\$0	\$0	\$0	\$0
Additional Public Education	\$1,000	\$2,000	25%	\$0	\$0	\$0	\$0
Update Bylaw or Other Regulatory Mechanism	\$2,000	\$4,000	25%	\$0	\$0	\$0	\$0
Additional Operation and Maintenance	\$1,000	\$2,000	50%	\$0	\$0	\$0	\$0
Street Sweeping	\$0	\$0	0%	\$0	\$0	\$0	\$0
Develop Phosphorus Source ID Template	\$4,000	\$6,000	25%	\$0	\$0	\$0	\$0
<b>Bacteria TMDL</b>	\$1,000	\$2,000		\$1,000	\$4,000	\$750	\$3,000
Additional Public Education	\$1,000	\$2,000	25%	\$1,000	\$4,000	\$750	\$3,000
IDDE Catchment Classification Changes	\$0	\$0	0%	\$0	\$0	\$0	\$0
<b>Cost for Regional Preparation</b>	<b>\$17,000</b>	<b>\$30,000</b>	<i>total</i>	<b>\$1,000</b>	<b>\$4,000</b>	<b>\$750</b>	<b>\$3,000</b>
<b>Savings Realized by Regional Towns</b>	<b>\$36,000</b>	<b>\$58,000</b>					
<b>TOTAL SAVINGS</b>	<b>\$19,000</b>	<b>\$28,000</b>		<b>Cost Savings:</b>		<b>\$250</b>	<b>\$1,000</b>

Regional Cost Savings Summary, Base Program	Cost for Preparation by a Regional Agency		% Done Regionally %	Cheshire			
	Low	High		Base Cost		Cost w/ Regional Savings	
				Low	High	Low	High
<b>Notice of Intent (NOI)</b>	\$0	\$0	0%	\$5,000	\$11,000	\$5,000	\$11,000
<b>Stormwater Management Program (SWMP) Plan</b>	\$5,000	\$10,000	50%	\$13,000	\$20,000	\$6,500	\$10,000
<b>Minimum Measure 1 - Public Education</b>	\$4,000	\$8,000	25%	\$9,000	\$71,000	\$6,750	\$53,250
<b>Minimum Measure 2 - Public Participation</b>	\$0	\$0	0%	\$9,000	\$17,000	\$9,000	\$17,000
<b>Minimum Measure 3 - IDDE</b>	\$8,000	\$10,000		\$28,000	\$49,000	\$19,750	\$39,250
Written IDDE Plan and Procedures	\$0	\$0	0%	\$1,000	\$5,000	\$1,000	\$5,000
System Mapping and Catchment Delineation	\$0	\$0	0%	\$4,000	\$7,000	\$4,000	\$7,000
Catchment Assessment and Ranking	\$0	\$0	0%	\$2,000	\$10,000	\$2,000	\$10,000
Dry Weather Screening	\$0	\$0	0%	\$9,000	\$13,000	\$9,000	\$13,000
Wet Weather Screening	\$0	\$0	0%	\$0	\$1,000	\$0	\$1,000
Catchment Investigations	\$0	\$0	0%	\$1,000	\$0	\$1,000	\$0
Training (performed annually over 5 years)	\$8,000	\$10,000	75%	\$11,000	\$13,000	\$2,750	\$3,250
<b>Minimum Measure 4 - Construction Site Control</b>	\$5,000	\$10,000		\$4,000	\$22,000	\$2,000	\$7,000
Update Bylaw or Other Regulatory Mechanism	\$2,000	\$4,000	50%	\$4,000	\$6,000	\$2,000	\$3,000
Procedures for Pre- and Construction Inspections	\$3,000	\$6,000	75%	\$0	\$16,000	\$0	\$4,000
<b>Minimum Measure 5 - Post Construction Runoff</b>	\$2,000	\$4,000		\$17,000	\$35,000	\$14,000	\$29,000
Update Bylaw or Other Regulatory Mechanism	\$2,000	\$4,000	50%	\$6,000	\$12,000	\$3,000	\$6,000
Asses Regulations for Impervious Areas and LID	\$0	\$0	0%	\$7,000	\$14,000	\$7,000	\$14,000
Inventory Muncpal Properties	\$0	\$0	0%	\$4,000	\$9,000	\$4,000	\$9,000
<b>Minimum Measure 6 - Good Housekeeping</b>				\$19,000	\$33,000	\$10,000	\$15,750
<i>rented trucks</i>	\$5,000	\$8,000				\$10,000	\$15,750
<i>purchased trucks</i>							
Operation and Maintenance Procedures	\$5,000	\$8,000	75%	\$12,000	\$23,000	\$3,000	\$5,750
BMP Inspection and Maintenance	\$0	\$0	0%	\$7,000	\$10,000	\$7,000	\$10,000
SWPPP Plans	\$0	\$0	0%	\$0	\$0	\$0	\$0
SWPPP Implementation	\$0	\$0	0%	\$0	\$0	\$0	\$0
Catch Basin Cleaning (purchased trucks)	\$0	\$0	0%	N/A	N/A	N/A	N/A
Catch Basin Cleaning (rented trucks)	\$0	\$0	0%	\$0	\$0	\$0	\$0
Street Sweeping (purchased trucks)	\$0	\$0	0%	N/A	N/A	N/A	N/A
Street Sweeping (rented trucks)	\$0	\$0	0%	\$0	\$0	\$0	\$0
SWPPP Training	\$0	\$0	0%	\$0	\$0	\$0	\$0
<b>Annual Report</b>	\$0	\$0	0%	\$25,000	\$52,000	\$25,000	\$52,000
<b>Cost for Regional Preparation</b>	<b>\$29,000</b>	<b>\$50,000</b>	<i>rented</i>	<b>\$129,000</b>	<b>\$310,000</b>	<b>\$98,000</b>	<b>\$234,250</b>
<b>Savings Realized by Regional Towns</b>	<b>\$174,000</b>	<b>\$405,000</b>	<i>purchased</i>				
<b>TOTAL SAVINGS</b>	<b>\$145,000</b>	<b>\$355,000</b>	<i>trucks</i>	<b>Cost Savings: \$31,000 - \$75,750</b>			

Regional Cost Savings Summary, TMDLs and Impaired Waters	Cost for Preparation by a Regional Agency		% Done Regionally %	Cheshire			
	Low	High		Base Cost		Cost w/ Regional Savings	
				Low	High	Low	High
<b>Nitrogen TMDL</b>	\$8,000	\$14,000		\$0	\$0	\$0	\$0
Additional Public Education	\$1,000	\$2,000	25%	\$0	\$0	\$0	\$0
Update Bylaw or Other Regulatory Mechanism	\$2,000	\$4,000	25%	\$0	\$0	\$0	\$0
Additional Operation and Maintenance Procedures	\$1,000	\$2,000	50%	\$0	\$0	\$0	\$0
Street Sweeping	\$0	\$0	0%	\$0	\$0	\$0	\$0
Develop Nitrogen Source ID Template	\$4,000	\$6,000	25%	\$0	\$0	\$0	\$0
<b>Phosphorus Impairment</b>	\$8,000	\$14,000		\$0	\$0	\$0	\$0
Additional Public Education	\$1,000	\$2,000	25%	\$0	\$0	\$0	\$0
Update Bylaw or Other Regulatory Mechanism	\$2,000	\$4,000	25%	\$0	\$0	\$0	\$0
Additional Operation and Maintenance	\$1,000	\$2,000	50%	\$0	\$0	\$0	\$0
Street Sweeping	\$0	\$0	0%	\$0	\$0	\$0	\$0
Develop Phosphorus Source ID Template	\$4,000	\$6,000	25%	\$0	\$0	\$0	\$0
<b>Bacteria TMDL</b>	\$1,000	\$2,000		\$0	\$4,000	\$0	\$3,000
Additional Public Education	\$1,000	\$2,000	25%	\$0	\$4,000	\$0	\$3,000
IDDE Catchment Classification Changes	\$0	\$0	0%	\$0	\$0	\$0	\$0
<b>Cost for Regional Preparation</b>	<b>\$17,000</b>	<b>\$30,000</b>	<i>total</i>	<b>\$0</b>	<b>\$4,000</b>	<b>\$0</b>	<b>\$3,000</b>
<b>Savings Realized by Regional Towns</b>	<b>\$36,000</b>	<b>\$58,000</b>					
<b>TOTAL SAVINGS</b>	<b>\$19,000</b>	<b>\$28,000</b>		<b>Cost Savings: \$0 - \$1,000</b>			

Regional Cost Savings Summary, Base Program	Cost for Preparation by a Regional Agency		% Done Regionally %	Dalton			
	Low	High		Base Cost		Cost w/ Regional Savings	
				Low	High	Low	High
<b>Notice of Intent (NOI)</b>	\$0	\$0	0%	\$5,000	\$11,000	\$5,000	\$11,000
<b>Stormwater Management Program (SWMP) Plan</b>	\$5,000	\$10,000	50%	\$13,000	\$20,000	\$6,500	\$10,000
<b>Minimum Measure 1 - Public Education</b>	\$4,000	\$8,000	25%	\$9,000	\$71,000	\$6,750	\$53,250
<b>Minimum Measure 2 - Public Participation</b>	\$0	\$0	0%	\$9,000	\$17,000	\$9,000	\$17,000
<b>Minimum Measure 3 - IDDE</b>	\$8,000	\$10,000		\$35,000	\$67,000	\$26,750	\$57,250
Written IDDE Plan and Procedures	\$0	\$0	0%	\$1,000	\$5,000	\$1,000	\$5,000
System Mapping and Catchment Delineation	\$0	\$0	0%	\$7,000	\$22,000	\$7,000	\$22,000
Catchment Assessment and Ranking	\$0	\$0	0%	\$2,000	\$10,000	\$2,000	\$10,000
Dry Weather Screening	\$0	\$0	0%	\$11,000	\$15,000	\$11,000	\$15,000
Wet Weather Screening	\$0	\$0	0%	\$1,000	\$2,000	\$1,000	\$2,000
Catchment Investigations	\$0	\$0	0%	\$2,000	\$0	\$2,000	\$0
Training (performed annually over 5 years)	\$8,000	\$10,000	75%	\$11,000	\$13,000	\$2,750	\$3,250
<b>Minimum Measure 4 - Construction Site Control</b>	\$5,000	\$10,000		\$4,000	\$22,000	\$2,000	\$7,000
Update Bylaw or Other Regulatory Mechanism	\$2,000	\$4,000	50%	\$4,000	\$6,000	\$2,000	\$3,000
Procedures for Pre- and Construction Inspections	\$3,000	\$6,000	75%	\$0	\$16,000	\$0	\$4,000
<b>Minimum Measure 5 - Post Construction Runoff</b>	\$2,000	\$4,000		\$19,000	\$37,000	\$16,000	\$31,000
Update Bylaw or Other Regulatory Mechanism	\$2,000	\$4,000	50%	\$6,000	\$12,000	\$3,000	\$6,000
Asses Regulations for Impervious Areas and LID	\$0	\$0	0%	\$7,000	\$14,000	\$7,000	\$14,000
Inventory Muncpal Properties	\$0	\$0	0%	\$6,000	\$11,000	\$6,000	\$11,000
<b>Minimum Measure 6 - Good Housekeeping</b>				\$35,000	\$76,000	\$26,000	\$58,750
<i>rented trucks</i>	\$5,000	\$8,000				\$26,000	\$58,750
<i>purchased trucks</i>							
Operation and Maintenance Procedures	\$5,000	\$8,000	75%	\$12,000	\$23,000	\$3,000	\$5,750
BMP Inspection and Maintenance	\$0	\$0	0%	\$1,000	\$2,000	\$1,000	\$2,000
SWPPP Plans	\$0	\$0	0%	\$3,000	\$5,000	\$3,000	\$5,000
SWPPP Implementation	\$0	\$0	0%	\$13,000	\$39,000	\$13,000	\$39,000
Catch Basin Cleaning (purchased trucks)	\$0	\$0	0%	N/A	N/A	N/A	N/A
Catch Basin Cleaning (rented trucks)	\$0	\$0	0%	\$0	\$0	\$0	\$0
Street Sweeping (purchased trucks)	\$0	\$0	0%	N/A	N/A	N/A	N/A
Street Sweeping (rented trucks)	\$0	\$0	0%	\$0	\$0	\$0	\$0
SWPPP Training	\$0	\$0	0%	\$6,000	\$7,000	\$6,000	\$7,000
<b>Annual Report</b>	\$0	\$0	0%	\$25,000	\$52,000	\$25,000	\$52,000
<b>Cost for Regional Preparation</b>	<b>\$29,000</b>	<b>\$50,000</b>	<i>rented</i>	<b>\$154,000</b>	<b>\$373,000</b>	<b>\$123,000</b>	<b>\$297,250</b>
<b>Savings Realized by Regional Towns</b>	<b>\$174,000</b>	<b>\$405,000</b>	<i>purchased</i>				
<b>TOTAL SAVINGS</b>	<b>\$145,000</b>	<b>\$355,000</b>	<i>trucks</i>	<b>Cost Savings:</b>		<b>\$31,000</b>	<b>\$75,750</b>

Regional Cost Savings Summary, TMDLs and Impaired Waters	Cost for Preparation by a Regional Agency		% Done Regionally %	Dalton			
	Low	High		Base Cost		Cost w/ Regional Savings	
				Low	High	Low	High
<b>Nitrogen TMDL</b>	\$8,000	\$14,000		\$24,000	\$37,000	\$17,750	\$27,250
Additional Public Education	\$1,000	\$2,000	25%	\$1,000	\$7,000	\$750	\$5,250
Update Bylaw or Other Regulatory Mechanism	\$2,000	\$4,000	25%	\$2,000	\$4,000	\$1,500	\$3,000
Additional Operation and Maintenance Procedures	\$1,000	\$2,000	50%	\$1,000	\$2,000	\$500	\$1,000
Street Sweeping	\$0	\$0	0%	\$0	\$0	\$0	\$0
Develop Nitrogen Source ID Template	\$4,000	\$6,000	25%	\$20,000	\$24,000	\$15,000	\$18,000
<b>Phosphorus Impairment</b>	\$8,000	\$14,000		\$24,000	\$37,000	\$17,750	\$27,250
Additional Public Education	\$1,000	\$2,000	25%	\$1,000	\$7,000	\$750	\$5,250
Update Bylaw or Other Regulatory Mechanism	\$2,000	\$4,000	25%	\$2,000	\$4,000	\$1,500	\$3,000
Additional Operation and Maintenance	\$1,000	\$2,000	50%	\$1,000	\$2,000	\$500	\$1,000
Street Sweeping	\$0	\$0	0%	\$0	\$0	\$0	\$0
Develop Phosphorus Source ID Template	\$4,000	\$6,000	25%	\$20,000	\$24,000	\$15,000	\$18,000
<b>Bacteria TMDL</b>	\$1,000	\$2,000		\$0	\$4,000	\$0	\$3,000
Additional Public Education	\$1,000	\$2,000	25%	\$0	\$4,000	\$0	\$3,000
IDDE Catchment Classification Changes	\$0	\$0	0%	\$0	\$0	\$0	\$0
<b>Cost for Regional Preparation</b>	<b>\$17,000</b>	<b>\$30,000</b>	<i>total</i>	<b>\$48,000</b>	<b>\$78,000</b>	<b>\$35,500</b>	<b>\$57,500</b>
<b>Savings Realized by Regional Towns</b>	<b>\$36,000</b>	<b>\$58,000</b>					
<b>TOTAL SAVINGS</b>	<b>\$19,000</b>	<b>\$28,000</b>		<b>Cost Savings:</b>		<b>\$12,500</b>	<b>\$20,500</b>

Regional Cost Savings Summary, Base Program	Cost for Preparation by a Regional Agency		% Done Regionally %	Lanesborough			
	Low	High		Base Cost		Cost w/ Regional Savings	
				Low	High	Low	High
<b>Notice of Intent (NOI)</b>	\$0	\$0	0%	\$5,000	\$11,000	\$5,000	\$11,000
<b>Stormwater Management Program (SWMP) Plan</b>	\$5,000	\$10,000	50%	\$13,000	\$20,000	\$6,500	\$10,000
<b>Minimum Measure 1 - Public Education</b>	\$4,000	\$8,000	25%	\$9,000	\$71,000	\$6,750	\$53,250
<b>Minimum Measure 2 - Public Participation</b>	\$0	\$0	0%	\$9,000	\$17,000	\$9,000	\$17,000
<b>Minimum Measure 3 - IDDE</b>	\$8,000	\$10,000		\$33,000	\$61,000	\$24,750	\$51,250
Written IDDE Plan and Procedures	\$0	\$0	0%	\$1,000	\$5,000	\$1,000	\$5,000
System Mapping and Catchment Delineation	\$0	\$0	0%	\$5,000	\$16,000	\$5,000	\$16,000
Catchment Assessment and Ranking	\$0	\$0	0%	\$2,000	\$10,000	\$2,000	\$10,000
Dry Weather Screening	\$0	\$0	0%	\$11,000	\$15,000	\$11,000	\$15,000
Wet Weather Screening	\$0	\$0	0%	\$1,000	\$2,000	\$1,000	\$2,000
Catchment Investigations	\$0	\$0	0%	\$2,000	\$0	\$2,000	\$0
Training (performed annually over 5 years)	\$8,000	\$10,000	75%	\$11,000	\$13,000	\$2,750	\$3,250
<b>Minimum Measure 4 - Construction Site Control</b>	\$5,000	\$10,000		\$4,000	\$22,000	\$2,000	\$7,000
Update Bylaw or Other Regulatory Mechanism	\$2,000	\$4,000	50%	\$4,000	\$6,000	\$2,000	\$3,000
Procedures for Pre- and Construction Inspections	\$3,000	\$6,000	75%	\$0	\$16,000	\$0	\$4,000
<b>Minimum Measure 5 - Post Construction Runoff</b>	\$2,000	\$4,000		\$23,000	\$41,000	\$20,000	\$35,000
Update Bylaw or Other Regulatory Mechanism	\$2,000	\$4,000	50%	\$6,000	\$12,000	\$3,000	\$6,000
Asses Regulations for Impervious Areas and LID	\$0	\$0	0%	\$7,000	\$14,000	\$7,000	\$14,000
Inventory Muncpal Properties	\$0	\$0	0%	\$10,000	\$15,000	\$10,000	\$15,000
<b>Minimum Measure 6 - Good Housekeeping</b>				\$35,000	\$66,000	\$26,000	\$48,750
<i>rented trucks</i>	\$5,000	\$8,000				\$26,000	\$48,750
<i>purchased trucks</i>							
Operation and Maintenance Procedures	\$5,000	\$8,000	75%	\$12,000	\$23,000	\$3,000	\$5,750
BMP Inspection and Maintenance	\$0	\$0	0%	\$6,000	\$9,000	\$6,000	\$9,000
SWPPP Plans	\$0	\$0	0%	\$3,000	\$3,000	\$3,000	\$3,000
SWPPP Implementation	\$0	\$0	0%	\$8,000	\$24,000	\$8,000	\$24,000
Catch Basin Cleaning (purchased trucks)	\$0	\$0	0%	N/A	N/A	N/A	N/A
Catch Basin Cleaning (rented trucks)	\$0	\$0	0%	\$0	\$0	\$0	\$0
Street Sweeping (purchased trucks)	\$0	\$0	0%	N/A	N/A	N/A	N/A
Street Sweeping (rented trucks)	\$0	\$0	0%	\$0	\$0	\$0	\$0
SWPPP Training	\$0	\$0	0%	\$6,000	\$7,000	\$6,000	\$7,000
<b>Annual Report</b>	\$0	\$0	0%	\$25,000	\$52,000	\$25,000	\$52,000
<b>Cost for Regional Preparation</b>	<b>\$29,000</b>	<b>\$50,000</b>	<i>rented</i>	<b>\$156,000</b>	<b>\$361,000</b>	<b>\$125,000</b>	<b>\$285,250</b>
<b>Savings Realized by Regional Towns</b>	<b>\$174,000</b>	<b>\$405,000</b>	<i>purchased</i>				
<b>TOTAL SAVINGS</b>	<b>\$145,000</b>	<b>\$355,000</b>	<i>trucks</i>	<b>Cost Savings:</b>		<b>\$31,000</b>	<b>\$75,750</b>

Regional Cost Savings Summary, TMDLs and Impaired Waters	Cost for Preparation by a Regional Agency		% Done Regionally %	Lanesborough			
	Low	High		Base Cost		Cost w/ Regional Savings	
				Low	High	Low	High
<b>Nitrogen TMDL</b>	\$8,000	\$14,000		\$29,000	\$47,000	\$22,750	\$37,250
Additional Public Education	\$1,000	\$2,000	25%	\$1,000	\$7,000	\$750	\$5,250
Update Bylaw or Other Regulatory Mechanism	\$2,000	\$4,000	25%	\$2,000	\$4,000	\$1,500	\$3,000
Additional Operation and Maintenance Procedures	\$1,000	\$2,000	50%	\$1,000	\$2,000	\$500	\$1,000
Street Sweeping	\$0	\$0	0%	\$5,000	\$10,000	\$5,000	\$10,000
Develop Nitrogen Source ID Template	\$4,000	\$6,000	25%	\$20,000	\$24,000	\$15,000	\$18,000
<b>Phosphorus Impairment</b>	\$8,000	\$14,000		\$0	\$0	\$0	\$0
Additional Public Education	\$1,000	\$2,000	25%	\$0	\$0	\$0	\$0
Update Bylaw or Other Regulatory Mechanism	\$2,000	\$4,000	25%	\$0	\$0	\$0	\$0
Additional Operation and Maintenance	\$1,000	\$2,000	50%	\$0	\$0	\$0	\$0
Street Sweeping	\$0	\$0	0%	\$0	\$0	\$0	\$0
Develop Phosphorus Source ID Template	\$4,000	\$6,000	25%	\$0	\$0	\$0	\$0
<b>Bacteria TMDL</b>	\$1,000	\$2,000		\$0	\$0	\$0	\$0
Additional Public Education	\$1,000	\$2,000	25%	\$0	\$0	\$0	\$0
IDDE Catchment Classification Changes	\$0	\$0	0%	\$0	\$0	\$0	\$0
<b>Cost for Regional Preparation</b>	<b>\$17,000</b>	<b>\$30,000</b>	<i>total</i>	<b>\$29,000</b>	<b>\$47,000</b>	<b>\$22,750</b>	<b>\$37,250</b>
<b>Savings Realized by Regional Towns</b>	<b>\$36,000</b>	<b>\$58,000</b>					
<b>TOTAL SAVINGS</b>	<b>\$19,000</b>	<b>\$28,000</b>		<b>Cost Savings:</b>		<b>\$6,250</b>	<b>\$9,750</b>



Regional Cost Savings Summary, Base Program	Cost for Preparation by a Regional Agency		% Done Regionally %	Pittsfield			
	Low	High		Base Cost		Cost w/ Regional Savings	
				Low	High	Low	High
<b>Notice of Intent (NOI)</b>	\$0	\$0	0%	\$5,000	\$11,000	\$5,000	\$11,000
<b>Stormwater Management Program (SWMP) Plan</b>	\$5,000	\$10,000	50%	\$13,000	\$20,000	\$6,500	\$10,000
<b>Minimum Measure 1 - Public Education</b>	\$4,000	\$8,000	25%	\$12,000	\$75,000	\$9,000	\$56,250
<b>Minimum Measure 2 - Public Participation</b>	\$0	\$0	0%	\$9,000	\$17,000	\$9,000	\$17,000
<b>Minimum Measure 3 - IDDE</b>	\$8,000	\$10,000		\$126,000	\$252,000	\$117,750	\$242,250
Written IDDE Plan and Procedures	\$0	\$0	0%	\$1,000	\$5,000	\$1,000	\$5,000
System Mapping and Catchment Delineation	\$0	\$0	0%	\$10,000	\$93,000	\$10,000	\$93,000
Catchment Assessment and Ranking	\$0	\$0	0%	\$2,000	\$26,000	\$2,000	\$26,000
Dry Weather Screening	\$0	\$0	0%	\$63,000	\$73,000	\$63,000	\$73,000
Wet Weather Screening	\$0	\$0	0%	\$11,000	\$32,000	\$11,000	\$32,000
Catchment Investigations	\$0	\$0	0%	\$28,000	\$10,000	\$28,000	\$10,000
Training (performed annually over 5 years)	\$8,000	\$10,000	75%	\$11,000	\$13,000	\$2,750	\$3,250
<b>Minimum Measure 4 - Construction Site Control</b>	\$5,000	\$10,000		\$4,000	\$22,000	\$2,000	\$7,000
Update Bylaw or Other Regulatory Mechanism	\$2,000	\$4,000	50%	\$4,000	\$6,000	\$2,000	\$3,000
Procedures for Pre- and Construction Inspections	\$3,000	\$6,000	75%	\$0	\$16,000	\$0	\$4,000
<b>Minimum Measure 5 - Post Construction Runoff</b>	\$2,000	\$4,000		\$61,000	\$79,000	\$58,000	\$73,000
Update Bylaw or Other Regulatory Mechanism	\$2,000	\$4,000	50%	\$6,000	\$12,000	\$3,000	\$6,000
Asses Regulations for Impervious Areas and LID	\$0	\$0	0%	\$7,000	\$14,000	\$7,000	\$14,000
Inventory Muncpal Properties	\$0	\$0	0%	\$48,000	\$53,000	\$48,000	\$53,000
<b>Minimum Measure 6 - Good Housekeeping</b>							
<i>rented trucks</i>	\$5,000	\$8,000		\$317,000	\$625,000	\$295,250	\$588,250
<i>purchased trucks</i>				\$156,000	\$339,000	\$134,250	\$302,250
Operation and Maintenance Procedures	\$5,000	\$8,000	75%	\$29,000	\$49,000	\$7,250	\$12,250
BMP Inspection and Maintenance	\$0	\$0	0%	\$19,000	\$35,000	\$19,000	\$35,000
SWPPP Plans	\$0	\$0	0%	\$5,000	\$8,000	\$5,000	\$8,000
SWPPP Implementation	\$0	\$0	0%	\$22,000	\$55,000	\$22,000	\$55,000
Catch Basin Cleaning (purchased trucks)	\$0	\$0	0%	\$75,000	\$185,000	\$75,000	\$185,000
Catch Basin Cleaning (rented trucks)	\$0	\$0	0%	\$236,000	\$471,000	\$236,000	\$471,000
Street Sweeping (purchased trucks)	\$0	\$0	0%	\$0	\$0	\$0	\$0
Street Sweeping (rented trucks)	\$0	\$0	0%	\$0	\$0	\$0	\$0
SWPPP Training	\$0	\$0	0%	\$6,000	\$7,000	\$6,000	\$7,000
<b>Annual Report</b>	\$0	\$0	0%	\$25,000	\$52,000	\$25,000	\$52,000
<b>Cost for Regional Preparation</b>	<b>\$29,000</b>	<b>\$50,000</b>	<i>rented</i>	<b>\$572,000</b>	<b>\$1,153,000</b>	<b>\$527,500</b>	<b>\$1,056,750</b>
<b>Savings Realized by Regional Towns</b>	<b>\$174,000</b>	<b>\$405,000</b>	<i>purchased</i>	<b>\$411,000</b>	<b>\$867,000</b>	<b>\$366,500</b>	<b>\$770,750</b>
<b>TOTAL SAVINGS</b>	<b>\$145,000</b>	<b>\$355,000</b>	<i>trucks</i>	<b>Cost Savings:</b>		<b>\$44,500</b>	<b>\$96,250</b>

Regional Cost Savings Summary, TMDLs and Impaired Waters	Cost for Preparation by a Regional Agency		% Done Regionally %	Pittsfield			
	Low	High		Base Cost		Cost w/ Regional Savings	
				Low	High	Low	High
<b>Nitrogen TMDL</b>	\$8,000	\$14,000		\$64,000	\$113,000	\$55,750	\$100,750
Additional Public Education	\$1,000	\$2,000	25%	\$1,000	\$7,000	\$750	\$5,250
Update Bylaw or Other Regulatory Mechanism	\$2,000	\$4,000	25%	\$6,000	\$8,000	\$4,500	\$6,000
Additional Operation and Maintenance Procedures	\$1,000	\$2,000	50%	\$3,000	\$5,000	\$1,500	\$2,500
Street Sweeping	\$0	\$0	0%	\$34,000	\$69,000	\$34,000	\$69,000
Develop Nitrogen Source ID Template	\$4,000	\$6,000	25%	\$20,000	\$24,000	\$15,000	\$18,000
<b>Phosphorus Impairment</b>	\$8,000	\$14,000		\$64,000	\$113,000	\$55,750	\$100,750
Additional Public Education	\$1,000	\$2,000	25%	\$1,000	\$7,000	\$750	\$5,250
Update Bylaw or Other Regulatory Mechanism	\$2,000	\$4,000	25%	\$6,000	\$8,000	\$4,500	\$6,000
Additional Operation and Maintenance	\$1,000	\$2,000	50%	\$3,000	\$5,000	\$1,500	\$2,500
Street Sweeping	\$0	\$0	0%	\$34,000	\$69,000	\$34,000	\$69,000
Develop Phosphorus Source ID Template	\$4,000	\$6,000	25%	\$20,000	\$24,000	\$15,000	\$18,000
<b>Bacteria TMDL</b>	\$1,000	\$2,000		\$1,000	\$4,000	\$750	\$3,000
Additional Public Education	\$1,000	\$2,000	25%	\$1,000	\$4,000	\$750	\$3,000
IDDE Catchment Classification Changes	\$0	\$0	0%	\$0	\$0	\$0	\$0
<b>Cost for Regional Preparation</b>	<b>\$17,000</b>	<b>\$30,000</b>	<i>total</i>	<b>\$129,000</b>	<b>\$230,000</b>	<b>\$112,250</b>	<b>\$204,500</b>
<b>Savings Realized by Regional Towns</b>	<b>\$36,000</b>	<b>\$58,000</b>		<b>Cost Savings:</b>		<b>\$16,750</b>	<b>\$25,500</b>
<b>TOTAL SAVINGS</b>	<b>\$19,000</b>	<b>\$28,000</b>					

