

Municipality/Organization: SPENCER, MASSACHUSETTS
EPA NPDES Permit Number: MAR041162
MassDEP Transmittal Number: W- X265873
Annual Report Number & Reporting Period: Year 13
April 1, 2015 – March 31, 2016

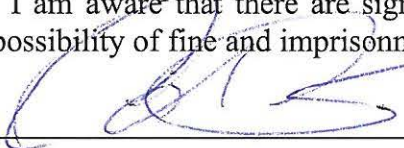
NPDES PII Small MS4 General Permit Annual Report (Due: May 1, 2016)

Part I. General Information

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Certification:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature: 

Printed Name: Adam D. Gaudette, AICP

Title: Town Administrator

Date: April 26, 2016

Part II. Self-Assessment/

Administrative Note: In recent years, the Best Management Practices (BMPs) identified in the 2003 Notice of Intent to receive coverage under the MS4 Permit, and for which the Town of Spencer reported, were modified and updated. As a result, not all progress made by the Town was reflected in the reports. Since Year 10 this report restores the original 22 BMPs and identifies where revisions to the original BMP have been made. This Year 12 Report also shows all original permit tasks as well as all new tasks, actions, and progress completed since 2003 as “Additions”.

Central/Massachusetts Regional Stormwater Coalition/

FY2014/2015/Summary of Activities/

Year 13: April 1, 2015 –/March 31, 2016/

In Year 13, the Town of Spencer continued to be an active participant in the Central Massachusetts Regional Stormwater Coalition (the Coalition). The Coalition’s work in Year 13 (which overlaps municipal fiscal years 2014 and 2015) was funded entirely by contributions of approximately \$4,000 from each of the 28 participating Towns, including Spencer.

Overview of the Coalition

The FY2014/2015 Coalition included 28 towns: Auburn, Boylston, Charlton, Dudley, Grafton, Hardwick, Holden, Hopkinton, Leicester, Millbury, Northborough, Northbridge, Oxford, Palmer, Paxton, Rutland, Shrewsbury, Southbridge, Spencer, Sterling, Sturbridge, Upton, Uxbridge, Ware, Webster, West Boylston, Westborough, and Wilbraham. The Coalition was officially formed in FY2012 with 13 members, expanding to 30 in FY2013. The FY2016 Coalition will be comprised of 31 towns with the recent additions of Framingham, Lunenburg, and Marlborough.

The Year 13 work of the Coalition focused on implementation and preparation.

- The implementation aspects included eight hours of one-on-one time, in which each member was provided with dedicated time from consultants that could be used for whatever was most needed. The Town of Spencer utilized our time for a review and update of our Illicit Discharge Detection and Elimination (IDDE) and Spill Prevention Control and Contingency (SPCC) Plans. A review of current facilities in Town that require an MSGP permit was also reviewed.
- The preparation aspects included work to both understand the technical components of the pending (at the time) Massachusetts MS4 Permit as well as how they will continue to afford the new Permit.
 - The group hosted a September 3, 2015 workshop by Keith Readling of Raftelis Financial Consultants, who has assisted more communities develop a stream of dedicated funding for stormwater management than anyone else. The objective was not to force the concept of a “stormwater utility”, but to get community leaders thinking of stormwater funding as an enterprise, similar to how many already manage sanitary sewer funds.
 - The Coalition continues work on a Stormwater Program cost assessment for member towns, with most already being delivered. This task looks at what the community is actually spending on stormwater management, including staff labor (across many departments and positions), operations and maintenance, equipment costs (rental and depreciation), and third party vendors and consultants.

On April 15, 2015, a meeting of all member communities was held in Charlton, MA to develop a potential scope for FY2016 and determine how the group would be funded and administered going forward. Spencer was in attendance.

An update for all member communities was also presented at a meeting on September 3, 2015 prior to the stormwater funding workshop. T

Coalition members themselves continue to be responsible for putting to use the tools developed by the Coalition. T

The Coalition's Partnerships in Central Massachusetts

The Coalition continues to be actively engaged with many water quality agencies and organizations and is committed to sharing the knowledge it has developed T for the benefit of other communities. These efforts are discussed in following sections as they relate to the following organizations: T

- Massachusetts Department of Environmental Protection (MassDEP) T
- United States Environmental Protection Agency (USEPA) T
- Other Massachusetts Stormwater Coalitions T
- New England Water Environment Association (NEWEA) T
- Massachusetts Municipal Association (MMA) T

Additional T organizations and entities are mentioned elsewhere throughout this Annual Report, reflecting the wide network of knowledge and experience that the T Coalition has tapped into. T

Massachusetts Department of Environmental Protection (MassDEP)

The Coalition continued T its partnership with the MassDEP in FY2014/2015, most recently announcing the receipt of a \$50,000 Stormwater Technical T Assistance grant from the department. This grant will be used to develop training elements and outreach tools that target new or expanded elements in T the new permit, and that can be used by communities across the Commonwealth. T

MassDEP staff continues to attend CMRSWC Steering Committee events and make themselves available for technical assistance. The Coalition T appreciates the ongoing dedication of MassDEP to work with our members so closely and collaboratively. T

In FY2016, the CMRSWC hopes to develop another Interactive Qualifying Project (IQP) with students from the Worcester Polytechnic Institute (WPI). T One potential concept for a FY2016 T project is T to work with MassDEP stormwater and solid waste staff to develop a streamlined method to determine T appropriate beneficial reuse of street sweepings and/or grit from catch basin cleaning activities, thereby turning a material that can be T costly to dispose T into a source of revenue to our members. T

United States Environmental Protection Agency

The Coalition continued collaboration with technical assistance staff in USEPA Region 1, with the goal of benefiting from knowledge and experience of T the agency's staff and from its network. We appreciate the T support of these agency staff, and believe this positive communication resulted in some T modifications to the new MA MS4 permit (released on April 4, 2016) that make it more reasonable while still benefiting and protecting water quality. T

Other Massachusetts Stormwater Coalitions

The Coalition continues to coordinate with "sister" groups with a similar stormwater focus. These include: T

- The Merrimack Valley Stormwater Collaborative (coordinated by the Merrimack Valley Regional Planning Commission); T
- The T Neponset T Stormwater T Partnership T (coordinated T by T the T Metropolitan T Area T Planning T Council T and T the T Neponset T River T Watershed T Association); T
- The Northern Middlesex Stormwater Collaborative (coordinated by the Northern Middlesex Council of Governments); T

- The Connecticut River Stormwater Committee (through the Pioneer Valley Planning Commission); and
- The Southeastern Massachusetts Stormwater Collaborative (coordinated by the Southeastern Regional Services Group)

Many members of these groups were invited to attend the September 2015 stormwater funding workshop, and the facilitators of these different collaboratives have made the effort to inform the other groups of events they're hosting.

Importantly, these separate regional groups met twice in Year 13- on June 23, 2015 and September 17, 2015- to compare notes on activities in progress and share ideas on future collaborations. This statewide partnership will be expanding in Year 14.

Massachusetts Municipal Association (MMA)

Members of the Coalition have been active in the MMA for years, including Robin Craver, Town Administrator for Charlton, MA and an active Coalition leader, who is the Chair of MMA's Policy Committee on Energy and the Environment. This Committee formulates policy related to stormwater, water quality, water supply, wetlands, coastal areas, and other related environmental issues and represents a way for the Coalition to learn from (and share) ideas around the Commonwealth.

Tasks Included in this Annual Report

In the following sections, descriptions of the technical tasks and resources performed by the CMRSWC in Year 13 have been separated into sections that mirror the six Minimum Control Measures (MCM's) in the 2003 Massachusetts Small MS4 Permit.

One of the more innovative tools developed by the Coalition- one that spans across multiple MCM's- is the integrated online mapping and inspection database, hosted by PeopleGIS. The database is cloud-based, and can be accessed by all 28 member communities through a desktop or tablet computer.

In Year 13, we observed that Coalition members expanded use of this resource, primarily by beginning the process of mapping linear infrastructure (like pipes and culverts) and doing more catch basin inspections using the tools. Both of these tasks are key to preparing to increase mapping and to perform the catchment evaluation process included in the 2016 MA MS4 Permit.

As noted in last year's report, this platform does not fit into just one of the MCM's. It aids communities with public education and outreach (MCM 1), as surveying is a highly-visible activity that will generate questions, and is an engaging demonstration to school groups. The integrated mapping and inspection database documents evidence of potential illicit discharges or the absence thereof (MCM 3), aids construction site stormwater control (MCM 4) by allowing for evaluation of how much sediment is contained in a sump, and makes good housekeeping (MCM 6) easier by collecting data on how often catch basins are cleaned. Other tasks and tools of the project connect to the integrated mapping and inspection database, which was designed to serve the needs of the Coalition communities well beyond the 2003 Massachusetts Small MS4 Permit. Each of the online forms is fluid- they will continue to be revised, as needed, to meet the goals of the Coalition members and future Massachusetts MS4 Permit requirements.

Minimum Control Measure 1: Public Education and Outreach /

Year 13 activities included routine meetings of the Coalition's Steering Committee. T

In Year 13, the Coalition purchased copies of the "Water Blues, Green Solutions" documentary (<http://waterblues.org/about>) for each member town, on DVD. T

An exciting tool for public education continues to be the Coalition's Twitter account, @MAStormH2O. As of the date of this report, the Coalition's account has 96 followers, including other stormwater coalitions around the country. Information tweeted (or retweeted) by the Coalition in Year 13 addressed such water quality topics and issues as:

- Stormwater infrastructure funding T
- Nutrient credits and trading T
- Sharing public service announcements (PSA's) developed by our member communities and partners T
- Impact of leaking sanitary sewers on stormwater and water quality T
- Low Impact Development (LID) workshops and training courses held by partners in or near our member communities T

Many of our member communities and regional agencies follow @MAStormH2O and retweet our information, greatly expanding the audience reached by the message. We anticipate using this tool in the future to quantify the size of the audience reached by each message, and evaluating the success of the message. T

In Year 13, the Coalition expanded its efforts to educate the public and other communities about its work. This includes the following presentations and events, listed in chronological order:

- On May 12, 2015, Robin Craver (Charlton, MA) presented at the 6th Annual Water Resources Strategies Symposium, hosted by the Massachusetts Coalition for Water Resources Stewardship, sharing information on stormwater program costs and ways to create regional efficiencies. T
- On May 15, 2015, a Coalition consultant did a presentation to the New England Interstate Water Pollution Control Commission (NEIWPCC) at its Board meeting in Bolton, MA. T
- On June 26, 2015, Robin Craver (Charlton, MA) and a Coalition consultant did a presentation to the Central Massachusetts Regional Planning Commission at its Summer Legislative Breakfast, in Worcester, MA. T
- On July 13, 2015, a Coalition consultant did a presentation to the National Association of Clean Water Agencies at its Summer Conference in Providence, Rhode Island. T
- On November 18, 2015, Robin Craver (Charlton, MA) and a Coalition consultant did a presentation at the "Community Stormwater Solutions" conference, hosted at Worcester Polytechnic Institute by the Massachusetts Watershed Coalition. T

Several Coalition members chose to use some of their "one-on-one" to expand their efforts on this MCM. Updates will be provided in future Annual Reports. T

In Year 13, T Spencer continued to utilize water quality monitoring kits from the World Water Monitoring Challenge program (www.worldwatermonitoringday.org), purchased by the Coalition in Year 10. These kits "build public awareness and involvement in protecting water resources around the world by engaging citizens to conduct basic monitoring of their local water bodies". Several communities used this in Year 13 to work with teachers in their local school department or district to do outreach to elementary and middle-school aged students. The kits continue to be stored in Spencer and Shrewsbury for distribution to the Coalition members. T

Spencer continued to utilize the two Enviroscapes models focused on non-point source pollution education (<http://www.enviroscapes.com/nonpoint-source.html>). One model was purchased by the Coalition in Year 10 and the second was purchased in Year 13 with a grant from NEWEA. These tools are hands-on, visual trainers to demonstrate the importance of good housekeeping and low-impact development for pollution prevention, with the objective of maintaining water T

quality in our communities. These tools are shared with our statewide partners, upon request.

The Coalition continued to expand its educational website, www.CentralMAStormwater.org, focused on providing information about the project to a number of audiences, including the general public, educators, and kids. T

Minimum Control Measure 3: Illicit Discharge, Detection and Elimination/

Several Coalition members chose to use some of their “one-on-one” time to expand their efforts on this MCM. Updates will be provided in future Annual Reports. T

In Year 13, Spencer continued to utilize the two Leica surveying devices (purchased by the Coalition in Year 10) that can be used to map new structures with very high accuracy, using connection to a military-grade Real Time Kinematic (RTK) satellite network. The Leica and tablets can be used to directly access the online mapping and inspection system: the Leica is the most valuable for mapping outfalls, catch basins, pipe, drain manholes, BMPs, and other components of the MS4, T while the tablet computers will be most valuable for ongoing inspection of the structures. These two activities serve as the foundation of IDDE. The Leica units rotate between the 28 Coalition communities on a schedule, with formal handoff between Towns documented. T

Minimum Control Measure 4: Construction Site Stormwater Runoff Control /

Several Coalition members chose to use some of their “one-on-one” time to expand their efforts on this MCM. Updates will be provided in future Annual Reports. T

Minimum Control Measure 5: Post-Construction Stormwater Management in New Development and Redevelopment /

Several Coalition members chose to use some of their “one-on-one” time to expand their efforts on this MCM. Updates will be provided in future Annual Reports. T

Minimum Control Measure 6: Pollution Prevention and Good Housekeeping in Municipal Operations /

Several Coalition members chose to use some of their “one-on-one” time to expand their efforts on this MCM. Updates will be provided in future Annual Reports. T

In Year 13, Spencer continued to utilize the Stormwater Pollution Prevention Plan (SWPPP) template in the form of a word processing document. This document was developed in Year 10 and addresses elements common to all SWPPPs, including storage of materials, site inspection practices, water sampling, training, spill prevention and cleanup, Standard Operating Procedures for a number of activities, and other sections. The SWPPP template covers many types of municipal properties. This includes highway department garages and public works yards-where salt is stored and vehicle maintenance or storage is completed- as well as parks, golf courses, and cemeteries, where fertilizers and pesticides may be applied and lawn mowing activities may result in small spills. The SWPPP template includes built-in instructions to make it as simple as possible for each community to develop a SWPPP for a property, simply by deleting text that doesn’t apply. T

In Year 13, Spencer continued to utilize the 15 Standard Operating Procedures (SOP’s) developed by the Coalition in Year 10, and intended to provide guidance on activities required or encouraged by the 2003 Massachusetts Small MS4 Permit. These SOPs addressed such diverse activities or needs as outfall inspection (both dry weather and wet weather), catch basin cleaning, erosion and sedimentation control, oil/water separator maintenance, use and storage of pesticides and fertilizers, and many more. The group developed standard forms and methodologies for these procedures, many of which were incorporated into the Integrated Online Mapping and Inspection System, described in following paragraphs. T

Coalition Activities in Year 14 (April 1, 2016 – March 31, 2017)

The following are some, but not all, of the work presently underway by the Coalition in Year 14:

- *Administration.* The long-term goal of the Coalition has always been to be self-sustaining, and this was made a reality in Year 13. The Coalition's Steering Committee drafted a bylaw in Year 13 that will govern how the group makes future decisions. The group will add three new communities in Year 14, continuing to be fully self-funded. The Coalition's leadership is committed to keeping the momentum developed in recent years, and sharing the resources for the improvement of water quality in New England.
- *Funding.* The Coalition maintains a strong network of partners, and will continue to evaluate funding sources that become available, including competitive USEPA grants dedicated to MS4 communities as well as 319 and 604(b) grants appropriate for community-wide water quality projects.
- *Public Outreach and Education.* We are implementing development of training and outreach tools, made possible through a \$50,000 MassDEP Stormwater Technical Assistance grant. We are also considering developing of Coalition-specific outreach materials using FY2016 funding. Finally, the Coalition plans to increase its use of Twitter as a measurable outreach tool.
- *IDDE.* The Coalition is developing competitive pricing for its members that wish to use Environmental Canine Services to perform IDDE screening-level assessments. The catchment delineation tool initially developed during the WPI IQP Fall 2013 project will be revised, modified, finalized, and distributed for use by Coalition towns. The Request for Proposals (RFP) developed in Year 10 (for a third-party firm to perform many of the field or inspection services defined in the 15 SOP's, including outfall inspection (dry weather and/or wet weather), water quality monitoring, catch basin inspection, and other related tasks) will be re-evaluated in Year 14 to match the 2016 MA MS4 Permit. Improving the knowledge of IDDE components by many town departments will likely be a substantial component of FY2016 work.
- *Good Housekeeping.* The Coalition may coordinate an on-site demonstration of calibrating deicing equipment at a member community's highway facility. This active demonstration will provide a real-life example of the benchmarking process developed in Year 10 and encourage members to calibrate their own equipment, with a goal of reducing pounds of chloride per lane mile. The Coalition is in the initial phases of developing an IQP project with Worcester Polytechnic Institute and MassDEP to develop a pilot project for beneficial reuse of catch basin cleaning materials.

Part III. Summary of Minimum Control Measures/

1. Public Education and Outreach/

BMP / ID #/	BMP Description/	Responsible / Dept./Person / Name/	Measurable Goal(s)/	Progress on Goal(s) –/ Permit Year 13/ (Reliance on non-municipal partners T indicated, if any)T	Planned Activities –/ Permit Year 14/
PE-1T	Flyer DistributionT		Get participation in a T Household Hazardous T Waste collection eventT	A HHHW collection event took place T September 2015. 44 Spencer residents T participated in this event. T	A HHHW collection date is T scheduled for September 2016. The Town intends to host two T electronics collection events in Year T 14, as well in May 2016 and T September 2016. T
RevisedT	Household Hazardous T Waste (HHHW) DayT	U/F Dept.T Deb GravesT	Annual Household T Hazardous Waste Day T EventT	Electronics collection events took place T in May and October, 2015. T	
PE-2T	Informational MailingsT	U/F Dept.T Steven TylerT	Implement at houses T adjacent to outfalls.	This BMP was expanded to include T educating residents beyond those T immediately adjacent to the outfall T locations, and to use more visible tools T to raise awareness of our valuable water T resources in high traffic areas.T	he installation of stream name signs T began in year 13 and will be T completed in Year 14.T
RevisedT	Stream Name SignsT	Highway Dept.T Eben ButlerT	New signs installedT		
PE-3T	Community Group T MeetingsT	U/F Dept.T Steven TylerT	Awards & T Participation	This BMP was expanded to include T education and outreach efforts beyondT formal meetings, such as coordination T with the local groups, schools and other T boards, departments and commissions. The highway department supported T Spencer's Pride Day (trash and debris T cleanup town wide) on April 23, 2016.T In Year 13, the U/F Department T Superintendent assisted with mentoring T students from WPI School as they T completed their the stormwater culvert T assessment project analyzing 22 T culverts and developing a culvert T inspection and assessment tool now T being copied and used by cities/towns T statewide.	The Town will explore options for T participating in 2016 and 2017T community Earth Day events, T Spencer's Pride Day in April 2017, T and other community festivals, such T as by staffing a booth. The town will T utilize education and outreach T materials, such as using the T CMRSWC nonpoint source pollution T Enviroscope table to demonstrate the T value of stormwater management at T these events. The Town has linked its website to T the CMRSWC website, T www.CentralMAStormwater.org . T
RevisedT	Public AwarenessT				

PE-3f (cont)f RevisedT	Community Group f Meetings f (continued)f Public Awarenessf			In Year 13 a student from WPIT participated in “seasonal summer work” T as a highway department employee, T including involvement in numerousT duties related to stormwater, water T quality and the NPDES MS4 permit T program and requirements.	The Town is interested in exploring T new options for integrating T stormwater education into the science T program of the school department, T such as by demonstrating World T Water Monitoring Day Challenge T water quality test kits, and T distributing kits to interested T teachers.T Despite repeating efforts the local T school district and other schoolT officials they have been unresponsive T to working with the Town on any T school outreach or education efforts. The Town intends to make the U/F T Department Superintendent or T Highway Foreman available for a T “job shadowing” experience for a T high school student in Year 14. T
PE-4T RevisedT	Public Service T AnnouncementsT	U/F Dept.T Deb GravesT	Develop T AnnouncementsT	At a minimum all public service T announcements are posted on the Town’s web site T (www.spencerma.gov). We also post in T local newspapers and on the local cable T access channel. This BMP has T expanded to using the local cable T access channel to advertise events. Thanks to its strong participation with T the CMRSWC in Year 13, the Town T has access to education and outreach T materials that address a variety of T topics in the MS4 Permit. Most of these T materials are appropriate to put on the T local cable access channel. T Many if not all are available through T the stormwater coalition website:T http://www.centralmastormwater.org/T	Continue full implementation. T Make new materials available on the T local cable access program, including T the Liquid Assets DVD, the T presentation on stormwater T management (content focused on T educating the general public and T volunteer groups), and other videos.T Advertise the U/F Department’s T participation at events, such as Earth T Day, HHHW collection events, and T electronics collection events. T

PE-5T	Stream RestorationT	U/F Dept.T Steven TylerT	Clean around 1 stream T per year	This BMP expanded to focus not just T on streams, but other water bodies T within the community. TSeveral T culverts were replaced in 2015 which T included restoration and stabilization of T both perennial and intermittent streams.T	Continue Muzzy Pond, Sugden Lake T and Lake Whittemore annual T pond/lake lowering for weed controlT and cleanup. T
RevisedT	Water Body RestorationT		On-goingT Annual EventsT	Muzzy Pond, Sugden Lake and Lake T Whittemore annual pond/lake lowering T for weed control and cleanup T completed. Additional shoreline T cleanup was performed as part of T Spencer Pride Day, April 23, 2016.T	

1a. Additions /

PE-6T	Public AwarenessT	U/F Dept.T Steven TylerT	Public Access TVT	In Year 13 the U/F SuperintendentT discussed Stormwater on Talk of the Town, a local cable access program.T	We would like to perform similar T outreach in Year 14.T
PE-7T	Public AwarenessT	U/F Dept.T Steven TylerT	Public Access TVT	Continue to air “Liquid Assets” on T local cable accessT	Make new materials available on the T local cable access program, including T the Liquid Assets DVD.T
PE-8T	Catch Basin Stenciling T ProgramT	Highway Dept.T Raymond T HolmesT	Complete Urbanized T Area StenciledT	All catch basins in the MS4 Urbanized T Area were stenciled in previous years, T using a frog logo and the phrase T “Protect ‘R’ Water”. The Town has T refreshed this effort where needed to T maintain previously stenciled catch T basins.T	Continue this effort to catch basins in T rural areas outside the MS4 T Urbanized Area. T Continue to refresh stencils at T previously-stenciled catch basins.T
PE-9T	Seek grants for non-T point source pollution T evaluationT	U/F Dept.T Steven TylerT	Seek and apply for T grants from local, T State, and Federal T programs. T	In Year 13, the Town implemented a T FEMA HMGP Grant to address T flooding on N. Spencer Road (Route T 31). T	In addition to alleviating a T reoccurring flooding problem this T project improves stormwater T treatment and reduce erosion due to T the inherent BMPs added to the T stormwater treatment train (i.e., water T quality swale, deep sump catch basinsT and sedimentation forebay at outfall).T

2. Public Involvement and Participation /

BMP / ID #/	BMP Description/	Responsible / Dept./Person / Name/	Measurable Goal(s)/	Progress on Goal(s) –/ Permit Year 13/ (Reliance on non-municipal partners T indicated, if any)T	Planned Activities –/ Permit Year 14/
PP-1T RevisedT	Storm Drain StencilingT		Stenciling Areas of T immediate concern	This BMP was redundant with BMP T PE-8, discussed previously, as it T focused on public education and T outreach. T As with most MS4 communities, Town T volunteers are not utilized for catch T basin stenciling due to safety issues. T	Continue to support BMP PE-8, to T use stencils as an effective and T visible tool to educate the public T about stormwater infrastructure. T As with most MS4 communities, Town volunteers will not be utilized T for catch basin stenciling due to T safety issues.T
PP-2T RevisedT	Hazardous Waste DayT Household HazardousT Waste Collection Day T EventsT	U&F Dept.T Steven TylerT	Resident Participation T at this once per yearT event Collect HHHWT MaterialsT	This BMP is redundant with BMP PE-1 T and PE-4, discussed previously, which T educate the public about household T hazardous waste collection events. T A HHHW collection event took place T September 2015. 44 Spencer residents T participated in this event. Town T volunteers are not utilized at household T hazardous waste collection events due T to safety issues. Town firefighters T supported this effort insteadT Electronics collection events took place T in May and October, 2015. T	Continue to support BMP PE-1 and T PE-4 by hosting and advertising T household hazardous waste collection T events.T A HHHW collection date is T scheduled for September 2016. The Town intends to host two T electronics collection events in Year T 14, in May 2016 and September T 2016. T
PP-3T RevisedT	Volunteer Monitoring T EffortsT		Annually	This BMP was not specific and has T been replaced by PP-5 through PP-8. T	N/AT

PP-4T	SWMP Volunteer T Monitoring T		Annually	The public continues to have the T opportunity to comment on the Town's T Stormwater Management Plan. T	The Town will continue to announce T all meetings and presentations related T to stormwater, and encourage public T attendance. In addition, the U&F T Office will continue to work closely T with the Spencer Conservation T Commission on all stormwater and T water quality related matters.T
RevisedT				U/F Superintendent participated in T several meetings with the Conservation T Commission under MCM 4 and MCM T 5. The U&F Office works closely with T the Conservation Commission on all T stormwater and water quality related T matters.	

2a. Additions /

PP-5T	Cable viewersT	N/AT	Local "Talk of the Town" program T	As noted in BMP PE-6, the Town has T made progress toward having the T stormwater topic featured on this local T cable access program. T	If possible we will encourage Town T residents to call in to Talk of the Town with questions about T stormwater, or send questions via T social media. T
RevisedT					
PP-6T	Adopt Stormwater T RegulationsT	PlanningT Michelle BuckT	Adopt Stormwater T RegulationsT	Stormwater Regulations were adopted T in November 2011.T In Year 12 we made recommendations T for updates and improvements to the T Stormwater Bylaw and Regulations.T In Year 13 our recommendations for T updates and improvements to the T Stormwater Bylaw and Regulations T were approved/adopted by Town T Meeting Vote in May 2015.T	Continue to implement November T 2011 Stormwater Regulations as T amendedTn Year 14.T Continue to consider and evaluate T suggestions and revisions into our T Stormwater Regulations as part of a T public process, and as USEPA T publishes a new MA MS4 Permit.T
PP-7T	Establish Stormwater T CommitteeT	U/F Dept.T Steven TylerT	Solicit feedback on T stormwater program T from Town and T residentsT	A Stormwater Committee was formed T for the development of Stormwater T Regulations. Since their T implementation no new formal	The Town is exploring options to T establish a formal Stormwater T Committee, based on groups active in T surrounding communities. The T

RevisedT				Stormwater Committee has been T formed, to date.T	Committee may include T representation from the following T among its members: Planning Board, T Conservation Committee, general T public; the school department; T additional interested parties. T
PP-8T	Public attendees at draft T bylaw presentations and T hearingsT	N/AT	Feedback on Draft T Stormwater Bylaw T RegulationsT	Stormwater Regulations were adopted T in November 2011.T	Continue to implement November T 2011 Stormwater Regulations as T amendedTn Year 14.T
RevisedT				In Year 12 we made recommendations T for updates and improvements to the T Stormwater Bylaw and Regulations.T In Year 13 our recommendations for T updates and improvements to the T Stormwater Bylaw and Regulations T were approved/adopted by Town T Meeting Vote in May 2015.T	Continue to consider and evaluate T suggestions and revisions into our T Stormwater Regulations as part of a T public process, and as USEPA T publishes a new MA MS4 Permit.T
PP-9T	Lead Central T Massachusetts Regional T Stormwater Coalition	own T Administrator T Adam GaudetteT U/F Dept.T Steven TylerT	Lead development of a T regional stormwater T management project.	The Town of Spencer served as the lead T community on the Coalition efforts in T Year 13. This involved participation in T 10+ meetings or workshops, review of T deliverables, and coordinating grant T funding received from the T Massachusetts Executive Office of T Administration and Finance. The U/F Superintendent serves as the T manager of two Leica GPS devices T purchased as part of the Coalition T project.	The Town of Spencer will continue T to lead this effort in Year 14, moving T the project forward to its total T number of communities as members T of the Coalition. The CMRSWC is presently at 31 T communities and hope to have an T organization of 40 or more T communities in the relatively near T future.T

3. Illicit Discharge Detection and Elimination /

BMP / ID #/	BMP Description/	Responsible / Dept./Person / Name/	Measurable Goal(s)/	Progress on Goal(s) –/ Permit Year 13/ (Reliance on non-municipal partners T indicated, if any)T	Planned Activities –/ Permit Year 14/
ID-1T RevisedT	Visual InspectionT		All outfalls quarterly	There is no regulatory mandate to T inspect outfalls quarterly. This BMP T did not provide benefit to the T stormwater management program, and T was replaced with BMPs ID-6, ID-7, T and ID-8, which address the specific T tools that will be used to identify illicit T discharges. T	N/AT
ID-2T RevisedT	Laboratory AnalysisT	U/F Dept.T Steven TylerT	When pollution is T evidentT	Water quality screening was completed T at 2 locations in Year 13. One location T had no concerns were identified by the T testing. The second location identified T an illicit connection on Chestnut St. T which was eliminated.T	Utilize Coalition field test kits and T meters, when appropriate, to provide T screening analysis at outfalls. T Utilize full laboratory analysis when T field screening parameters exceed T benchmarks, as appropriate. T
ID-3T RevisedT	Identify and map T outfalls T Identify and map T outfalls in urban areaT	U/F Dept.T Steven TylerT	Map and identify all T outfalls in UAT Develop storm sewer T map (ongoing w/ GIS)T	All known outfalls and water bodies in T the UA were located and mapped prior T to Year 13. T In Year 13, the U/F Department T Superintendent assisted with mentoring T students from WPI School as they T completed their the stormwater culvert T assessment project analyzing 22 T culverts and developing a culvert T inspection and assessment tool now T being copied and used by cities/towns T statewide. T	Continue mapping of new or newly T found drainage structures, T confluences and outfalls.T Verify mapping of catch basins and T drain manhole structures and pipe T and culvert infrastructure, in T conjunction with catch basin cleaning T and other maintenance or repair T events, utilizing Coalition tools. T In Year 14, the Town will develop a T web site for further sharing and T implementation of the culvert T inspection and assessment toolT developed by WPI students for the Town of Spencer.T

ID-4T	Remove source of T contaminationT		When pollution is T evidentT	In Year 13, the Town of Spencer T conducted video inspections and testing T of stormwater piping in an effort to T identify potential illicit discharges. T	Continue to enforce the permanent T removal of illicit discharges. T
RevisedT	Enforce removal of T illicit dischargeT	U/F Dept.T Steven Tyler own T AdministratorT Adam GaudetteT	Ensure permanent T elimination of illicit T discharge.T	In Year 12, the Town of Spencer T purchased a new pipe inspection robot T for approximately \$65,000.00.T In Year 13, the Town purchased a T customized trailer for our pipe T inspection robot to improve efficiency. This represents the Town's T commitment to IDDE. T	Continue to utilize the new pipe T inspection robot to investigate and T identify issues or concerns with T damage, infiltration, illicit T connections, etc.T

3a. Additions /

ID-5T	Develop Discharge T RegulationsT	Stormwater T Committee & T Planning BoardT	Adopt Stormwater T RegulationsT	Adopted new Stormwater Bylaw at T May 7, 2009 Town Meeting. T	Continue to implement November T 2011 Stormwater Regulations as T amendedT In Year 14.T
RevisedT				Adopted new Stormwater Regulations T in November 2011.T In Year 12 we made recommendations T for updates and improvements to the T Stormwater Bylaw and Regulations.T In Year 13 our recommendations for T updates and improvements to the T Stormwater Bylaw and Regulations T were approved/adopted by Town T Meeting Vote in May 2015.T	Continue to consider and evaluate T suggestions and revisions into our T Stormwater Regulations as part of a T public process, and as USEPA T publishes a new MA MS4 Permit.T
ID-6T	Screening of urban T outfallsT	Highway Dept.T Eben Butler	Trace system outfalls T in urban area using T CCTVT	In Year 13, CCTV of stormwater and T sanitary sewer systems included MainT Street and Maple Street as part of T	Identify and begin screening outlying T areas. T

RevisedT				advance road reconstruction projectT planning. No illicit discharge wasT identified within the project limits. The Town replaced the storm drain and T six catch basins on Water Street. New T catch basins have deep sump design to T improve collection of sediments. T	In Year 12, the Town of Spencer T purchased a new pipe inspection T robot for approximately \$65,000.00.T In Year 13, the Town purchased a T customized trailer for our pipe T inspection robot to improve T efficiency. The Town will incorporate inspection T tools developed as part of the T Coalition project into its catch basin T cleaning program, especially those T related to IDDE.T
ID-7T RevisedT	Smoke Testing Sewer T MainsT	Sewer Dept.T Mark RobidouxT	IDDE Investigation T and EliminationT	In Year 13 smoke testing of the T Mechanic Street project area sewer T mains was conducted. The smoke T testing did not identify any illicit T connections, however, private property T issues such as cracked sewer pipes in T basement were identified and the T property owners were directed to make T repairs.T	Additional sanitary sewer and storm T drain lines will be tested as part of T programmed roadway improvements. T In Year 14, the Town will perform T additional pipe inspections on MapleT Street and other locations in advance T of planned projects.T
ID-8T RevisedT	Smoke Testing of T Urban OutfallsT	Highway Dept.T Eben ButlerT	IDDE Investigation T and EliminationT	In Year 13, the Town of Spencer did T not perform any smoke testing. T Because of the recent purchase for a T pipe inspection robot we are able to use T the robot to get better information aboutT potential illicit connections. T	Additional sanitary sewer and storm T drain lines will be tested as part of T programmed roadway improvements.T Our new procedure will utilize robot T inspections first and smoke testing T will be used if needed following the T robotic inspection. T
RevisedT					

4. Construction Site Stormwater Runoff Control /

BMP / ID #/	BMP Description/	Responsible / Dept./Person / Name/	Measurable Goal(s)/	Progress on Goal(s) –/ Permit Year 13/ (Reliance on non-municipal partners T indicated, if any)T	Planned Activities –/ Permit Year 14/
CS-1T	Develop BylawsT	Stormwater T Committee & T Planning BoardT	By the end of permit T Year 2. T	Adopted new Stormwater Bylaw at T May 7, 2009 Town Meeting.T	Continue to implement November T 2011 Stormwater Regulations as T amendedTIn Year 14.T
RevisedT	Develop Construction T Site Stormwater Runoff T Control Bylaw and T RegulationsT		Adopt Stormwater T RegulationsT	Adopted new Stormwater Regulations T in November 2011.T In Year 12 we made recommendations T for updates and improvements to the T Stormwater Bylaw and Regulations.T In Year 13 our recommendations for T updates and improvements to the T Stormwater Bylaw and Regulations T were approved/adopted by Town T Meeting Vote in May 2015.T	Continue to consider and evaluate T suggestions and revisions into our T Stormwater Regulations as part of a T public process, and as USEPA T publishes a new MA MS4 Permit.T
CS-2T	Pre-Construction T Informational MeetingsT	ConComT Margaret T WashburnT	Each construction T project after bylaws T are in place. T	In Year 13, the Conservation T Commission completed siteT approximately 190 inspections of T projects under construction at various T stages of development. Of these, 12 T notices of violations were issued and 4 T stop work orders for immediate T corrective actions. T	Continue performing inspections of T projects under construction. T
RevisedT	Site InspectionsT	ConComT Margaret T WashburnT	Identifying and Tracking ViolationsT	Violations identified are tracked until T resolvedT	Continue identifying and tracking T violationsT

4a. Additions /

CS-3T	Review of Major T Proposed Projects for T Erosion & T Sedimentation Control T	U/F Dept.T Steven TylerT	Review projects for T erosion and T sedimentation T controls. T	In Year 13, the U/F Superintendent T completed a review of over 20T proposed projects as part of the T preliminary technical review committeeT and in support of significant T Conservation Commission filings.	The U/F Superintendent will continue T to review projects submitted for T approval, with a focus on erosion and T sedimentation controls as well as T overall site stormwater design. T
CS-4T	Increase awareness of T sedimentation and T erosion requirements. T	U/F Dept.T Steven TylerT	Make information T available at more T locationsT	In Year 13 further information was T distributed to staff and made available T to the public via our internet webTite.T Also, the Town developed new BMP T standard for inclusion in permitting T documents and requirementsT	In Year 14, the Town will track the T effectiveness of BMP standards for T construction project types that have T has erosion and sedimentation issues T in the past.T

5. Post-Construction Stormwater Management in New Development and Redevelopment /

BMP / ID #/	BMP Description/	Responsible / Dept./Person / Name/	Measurable Goal(s)/	Progress on Goal(s) –/ Permit Year 13/ (Reliance on non-municipal partners T indicated, if any)T	Planned Activities –/ Permit Year 14/
PC-1T	Visual MonitoringT	ConComT Margaret T WashburnT	Minimum of one time T after completionT	In Year 13, the Conservation T Commission completed siteT approximately 190 inspections of T projects under construction at various T stages of development. Of these, 12 T notices of violations were issuedTand 4 T stop work orders for immediate T corrective actions. T	Continue performing inspections of T projects under construction. T
RevisedT	Site InspectionsT	ConComT Margaret T WashburnT	Identifying and T racking ViolationsT	Violations identified are tracked until T resolvedT	Continue identifying and tracking T violationsT

5a. Additions /

PC-2T	Develop Post-T Construction T Stormwater T Management T RegulationsT	Stormwater T Committee & T Planning BoardT	Adopt Stormwater T RegulationsT	Adopted Stormwater Bylaw in 2009T and Stormwater Regulations in 2011.T In Year 12 we made recommendations T for updates and improvements to the T Stormwater Bylaw and Regulations.T In Year 13 our recommendations for T updates and improvements to the T Stormwater Bylaw and Regulations T were approved/adopted by Town T Meeting Vote in May 2015.T	Continue to implement November T 2011 Stormwater Regulations as T amendedTn Year 14.T Continue to consider and evaluate T suggestions and revisions into our T Stormwater Regulations as part of a T public process, and as USEPA T publishes a new MA MS4 Permit.T
RevisedT					
PC-3T	Review of Major T Proposed Projects for T Erosion & T Sedimentation ControlT	U/F Dept.T Steven TylerT	Review projects to T evaluate pre-and post-T development runoff, T and whether use of T infiltration BMPs on T site may be T appropriate. T	In Year 13, the U/F Superintendent T completed a review of over 20T proposed projects as part of the T preliminary technical review committeeT and in support of significant T Conservation Commission filings.	The U/F Superintendent will continue T to review projects submitted for T approval, with a focus on erosion and T sedimentation controls as well as T overall site stormwater design. T

6. Pollution Prevention and Good Housekeeping in Municipal Operations /

BMP / ID #/	BMP Description/	Responsible / Dept./Person / Name/	Measurable Goal(s)/	Progress on Goal(s) –/ Permit Year 13/ (Reliance on non-municipal partners T indicated, if any)T	Planned Activities –/ Permit Year 14/
GH-1T RevisedT	Employee TrainingT	U/F Dept.T Steven TylerT	Annual training T meetingT Provide training to T appropriate employees T based on nature of T activities. T	In Year 13, U/F staff members T continued to receive training and/or T refreshers on an as needed basis. U/F T Superintendent Steven Tyler attended T other training on stormwater related T equipment, systems andT implementation. The U/F department hosts a number of T internal training events, reaching seven T staff members, related to the need to T implement Emergency Response T procedures consistent with the town's T Environmental Management System. T All of these have objectives consistent T with the MS4.	The Town will continueTo take T advantage of training opportunities T that are presented as part of the T Coalition work and from the T Worcester County Highway T Association, MassDOT and other T training resources. The Town will continue to train staff T internally on procedures necessary to T implement the Environmental T Management System.T
GH-2T RevisedT	Develop Operation and T Maintenance ScheduleT		Develop within first T year.	This BMP was vague and did not T reflect on the specific maintenance T activities completed within the Town's T system. It has been replaced with T BMPs GH-6, GH-7, and GH-8. T	N/AT

GH-3T RevisedT	Implement Operation T and Maintenance T ScheduleT		Implement during T Permit Years 2 T through 5.	This BMP was vague and did not T reflect on the specific maintenance T activities completed within the Town's T system. It has been replaced with T BMPs GH-6, GH-7, and GH-8. T	N/AT
GH-4T RevisedT	RecordkeepingT		For each BMP T employedT	During Year 13, the Coalition T continued development and input into T our online mapping and inspection T system that documents all inspections T and provides the opportunity to produce T a report of actions. This includes T inspections of BMPs as well as many T other common tasks associated with the T MS4 Permit. The Coalition also finalized and T adopted 15 Standard Operating T Procedures for many stormwater-T related activities, such as dry- and T weather outfall inspection, catch basin T inspection. These SOPs define the T consistent approach that serves as the T foundation for effective recordkeeping. T	Continue to implement the SOPs and T the online mapping and inspection T system.

6a. Additions /

GH-5T	Water Dept. T Environmental T Management System T (EMS) ImplementationT	U/F Dept.T Steven TylerT	Finalize EMS	The Town revised its original EMS T program in Year 12, incorporating new T inspections and action items into the T existing report. This EMS includes Town resources T associated with water, highway, sewer, T police, fire, and transfer station T facilities and operations. T	Continue to implements the Town'sT Environmental Management System T (EMS) policy and procedures, as T necessary. T
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GH-6T	Catch basin and outfall T cleaningT	HWY Dept. T Eben ButlerT Ray HolmesT	Clean each structure T twice a year (min.); T maintain log of T conditions, etc.T	Completed annual catch basin program; T updated maps and records. T All catch basins are cleaned in spring, T with selected basins cleaned a second T time, in fall, based on staff knowledge T of basin conditions. Having this device T “in house” will facilitate multiple T cleanings in the future.	The Town will continue its program T of cleaning catch basins at least once. The Town will incorporate inspection T tools developed as part of the T Coalition project into its catch basin T cleaning program, especially those T related to IDDE. T
RevisedT					
GH-7T	Street SweepingT	HWY Dept. T Eben ButlerT Kevin T SimonovitchT	Main Street weekly; T urban area monthly; T complete town T annuallyT	All streets and sidewalks within the T urbanized area are swept in spring. T Some streets and sidewalks are swept a T second time in fall, based on U/F T knowledge of debris and grit. The Town uses its own mechanical sweeper T to complete this task. T	Continue sweeping streets and T sidewalks in the urbanized area at T least once a year. T
RevisedT					
GH-8T	Minimize salt and sand T use & exposureT	Highway Dept.T Eben ButlerT	Monitor salt and sand T use – cover pile off T seasonT	In Year 13, the Highway Department T continued efforts to set best practices T benchmarks for salt and sand use and T reduce the quantity of materials used. T Staff re-calibrated all spreading T equipment to determine how much each T component was delivering. The Town has also switched to T “treated” salt, which consists of T standard salt treated with magnesium T chloride. Use of this material has T allowed the Town to use less sand, T reducing how frequently catch basins T fill up, and applying fewer pounds of T chloride per lane mile. The Town presently calculates its T chloride application at approximately T 400-500 pounds +/- of chloride per T lane-mile.T	Maintain expectations & continue T training on equipment calibration. T Attempt to procure funding to add a T new salt shed. The Town will continue to reduce its T application rate of salt, ensuring that T the public safety is not jeopardized.T
GH-9T	Close police firing T range at Town well siteT	U/F Dept.T Steven TylerT	Keep Range Closed	The range was closed in previous T Permit Years. T	Keep the range closed in order to T prevent stormwater pollution. T

Revised					
GH-T 10	Implement pollution prevention practices at Town properties	U/F Dept. Steven Tyler	Implement pollution prevention practices at Crash Derby	In Year 13, the U/F Superintendent refined and implemented a number of best management practices at the Town Fairgrounds property, site of the annual Crash Derby and the other newly added vehicular events located within the Zone 2 of a public water supply. These BMPs included requiring the Fire Department to be on site to respond to spills, preventing vehicles from staying on-site overnight, minimizing the amount of fuel contained in each vehicle, and prohibiting factory fuel tanks and antifreeze in any vehicle. While aimed at protecting the public water supply, these BMPs also result in cleaner surface water and reduced pollution potential, overall.	Continue to monitor BMPs during the Crash Derby and other vehicular events to prevent stormwater pollution. Implement additional BMPs if determined necessary. Continue to seek BMPs to implement at other Town properties that will prevent stormwater pollution.
Revised					

7. BMPs for Meeting Total Maximum Daily Load (TMDL) Waste Load Allocations (WLA) <<if applicable>> f

BMP / ID #/	BMP Description/	Responsible / Dept./Person / Name/	Measurable Goal(s)/	Progress on Goal(s) –/ Permit Year 13/ (Reliance on non-municipal partners T indicated, if any)T	Planned Activities –/ Permit Year 14/
RevisedT				In Year 13 we are continuing to prepare T for the new permit and TMDLT requirements.T	In Year 14 we will apply for a CWA T Sect. 319 grant with matching local T funds to make TMDL improvements T within the Sevenmile River T watershed.T

7a. Additions /

7b. WLA/Assessment/

Several water bodies, including Sevenmile River and Cranberry River (Category 2), are currently being assessed for one or more T designated uses, which may require TMDLs in the future. Other water bodies have never been assessed (Category 3), but may T require TMDLs in the future. Spencer will continue to watch for these TMDLs to be published and will evaluate published Waste T Load Allocations, accordingly.T

Under Category 4a (“TMDL is Completed”), Sugden Reservoir (TMDL 3633, “Nutrient/Eutrophication Biological Indicators”) is T located within Spencer. Spencer will continue to evaluate its actions toward meeting Waste Load Allocations for this TMDL. T

Water Bodies That Address Plants For Other Non-pollutant Impairments Include Jones Pond (TMDL T2364, T“Aquatic Plants T [Macrophytes]”) and Brooks Pond, which has been assessed as having an “Impairment not Caused by a Pollutant” (Category 4c; no TMDL required). These impairments do not require actions under the MS4.T

A TMDL has been completed for Browning Pond to address “Nutrient/Eutrophication Biological Indicators: Non-Native Aquatic T Plants” (TMDL 3626), but this water body is not located within Spencer’s Urbanized Area. A TMDL for Lake Whittemore T (Category 5; Turbidity) will be developed in the future. Spencer will continue to watch for these TMDLs to be published and will T evaluate published Waste Load Allocations, accordingly.T

Part IV. Summary of Information Collected and Analyzed/

Since beginning of permit coverage the Town of Spencer has presented our summary of information collected and analyzed in the preceding sections. Other than the information presented in Part III, above, no additional; information was collected or analyzed. The Town of Spencer maintains that it continues to be in compliance with the 2003 Massachusetts Small MS4 Permit.T

Part V. Program Outputs & Accomplishments (OPTIONAL)/

(Since beginning of permit coverage unless specified otherwise by a **, which indicates response is for period covering April 1, 2015T through March 31, 2016)T

Programmatic/

	(Preferred Units)T	ResponseT
Stormwater management position created/staffedT	(y/n)T	Yes (Committee)T
Annual program budget/expenditures **T	(\$)T	±\$40,000
Total program expenditures since beginning of permit coverageT	(\$)T	±\$220,000T
Funding mechanism(s) (General Fund, Enterprise, Utility, etc)T		General FundT

Education, Involvement, and Training /

Estimated number of property owners reached by education program(s)T	(# or %)T	5,000T
Stormwater management committee establishedT	(y/n)T	YesT
Stream teams established or supportedT	(# or y/n)T	YesT
Shoreline clean-up participation or quantity of shoreline miles cleanedT**T	(y/n or mi.)T	1 miT
Shoreline cleaned since beginning of permit coverageT	(mi.)T	8 mi.T
Household Hazardous Waste Collection Days T		
▪ days sponsoredT**T	(#)T	1T
▪ community participation **T	(# or %)T	44T
▪ material collected **T	(tons or gal)T	60 gals +/-T
School curricula implemented T	(y/n)T	No. (No T cooperation T by school T district)T

Legal/Regulatory/

	In Place Prior to Phase II	Reviewing Existing Authorities	Drafted	Draft in Review	Adopted
Regulatory Mechanism Status (indicate with “X”)					
▪ Illicit Discharge Detection & Elimination					X
▪ Erosion & Sediment Control					X
▪ Post-Development Stormwater Management					X
Accompanying Regulation Status (indicate with “X”)					
▪ Illicit Discharge Detection & Elimination					X
▪ Erosion & Sediment Control					X
▪ Post-Development Stormwater Management					X

Mapping and Illicit Discharges/

	(Preferred Units)	Response
Outfall mapping complete	(%)	98%
Estimated or actual number of outfalls	(#)	100
System-Wide mapping complete (complete storm sewer infrastructure)	(%)	98%
Mapping method(s)		
▪ Paper/Mylar	(%)	<2%
▪ CADD	(%)	<2%
▪ GIST	(%)	98%
Outfalls inspected/screened **	(# or %)	80%
Outfalls inspected/screened (Since beginning of permit coverage)	(# or %)	99%
Illicit discharges identified **	(#)	1
Illicit discharges identified (Since beginning of permit coverage)	(#)	5
Illicit connections removed **	(#); and (est. gpd)	1; (gpd unknown)
Illicit connections removed (Since beginning of permit coverage)	(#); and (est. gpd)	5; (gpd unknown)
% of population on sewer	(%)	50%
% of population on septic systems	(%)	50%

Construction/

(Preferred Units)T ResponseT

Number of construction starts (>1-acre) **T	(#)T	25T
Estimated percentage of construction starts adequately regulated for erosion and sediment controlT**T	(%)T	95%T
Site inspections completed **T	(# or %)T	190+
Tickets/Stop work orders issued **T	(# or %)T	16T
Fines collected **T	(# and \$)T	N/AT
Complaints/concerns received from public **T	(#)T	12T

Post-Development Stormwater Management /

Estimated percentage of development/redevelopment projects adequately regulated for post-T construction stormwater controlT	(%)T	95%T
Site inspections (for proper BMP installation & operation) completed **T	(# or %)T	190 +/-T
BMP maintenance required through covenants, escrow, deed restrictions, etc.T	(y/n)T	YEST
Low-impact development (LID) practices permitted and encouragedT	(y/n)T	YEST

Operations and Maintenance /

Average frequency of catch basin cleaning (non-commercial/non-arterial streets) **T	(times/yr)T	2 times/yearT
Average frequency of catch basin cleaning (commercial/arterial or other critical streets)T**T	(times/yr)T	2 times/yearT
Qty of structures cleanedT**T	(#)T	±1,000T
Qty. of storm drain cleaned **T	(%, LF or T mi.)T	±1,500 lftT
Qty. of screenings/debris removed from storm sewer infrastructureT**T	(lbs. or tons)T	10 tonsT
Disposal or use of screenings (landfill, POTW, compost, beneficial use, etc.) **T	(location)T	landfillT

Basin Cleaning CostsT		
• Annual budget/expenditure (labor & equipment)**T	(\$)T	\$30,000T
• Hourly or per basin contract rate **T	(\$/hr or \$ T per basin)T	
• Disposal cost**T	(\$) T	
Cleaning EquipmentT		
• Clam shell truck(s) owned/leasedT	(#)T	1 ownedT
• Vacuum truck(s) owned/leasedT	(#)T	0T
• Vacuum trucks specified in contractsT	(y/n)T	NoT
• % Structures cleaned with clam shells **T	(%)T	100%T
• % Structures cleaned with vactor **T	(%)T	0%T
(Preferred Units) Response T		
Average frequency of street sweeping (non-commercial/non-arterial streets) **T	(times/yr)T	1 time/yearT
Average frequency of street sweeping (commercial/arterial or other critical streets)T**T	(times/yr)T	2+ times/yearT
Qty. of sand/debris collected by sweeping **T	(lbs. or T tons)T	±900 tonsT
Disposal of sweepings (landfill, POTW, compost, beneficial use, etc.)T**T	(location)T	Landfill/CompostT
Annual Sweeping CostsT		
• Annual budget/expenditure (labor & equipment)**T	(\$)T	20,000T
• Hourly or lane mile contract rate **T	(\$/hr. or T ln mi.)T	
• Disposal cost**T	(\$) T	
Sweeping Equipment T		
• Rotary brush street sweepers owned/leasedT	(#)T	1T
• Vacuum street sweepers owned/leasedT	(#)T	0T
• Vacuum street sweepers specified in contractsT	(y/n)T	NoT
• % Roads swept with rotary brush sweepersT**T	%T	100%T
• % Roads swept with vacuum sweepersT**T	%T	0%T
Reduction (since beginning of permit coverage) in application on public land of: T ("N/A" = never used; "100%" = elimination)T		
▪ FertilizersT	(lbs. or %)T	100%T
▪ HerbicidesT	(lbs. or %)T	50%T
▪ PesticidesT	(lbs. or %)T	50%T
Integrated Pest Management (IPM) Practices ImplementedT	(y/n)T	NoT

	(Preferred Units)	Response T
Average Ratio of Anti-/De-Icing products used **T (also identify chemicals and ratios used in specific areas, e.g., water supply protection areas) T	% NaClT % CaCl ₂ T % MgCl ₂ T % CMAT % KacT % KCIT % SandT	75-100%T <25%T <15%T
Pre-wetting techniques utilized **T	(y/n or %)T	NoT
Manual control spreaders used **T	(y/n or %)T	Yes T95%T
Zero-velocity spreaders used **T	(y/n or %)T	NoT
Estimated net reduction or increase in typical year salt/chemical application rate **T	(±lbs/lb mi. T or %)T	5% increaseT
Estimated net reduction or increase in typical year sand application rate **T	(±lbs/lb mi. T or %)T	5% decreaseT
% of salt/chemical pile(s) covered in storage shed(s)T	(%)T	100%T
Storage shed(s) in design or under constructionT	(y/n or #)T	NoT
100% of salt/chemical pile(s) covered in storage shed(s) by May 2009T	(y/n)T	YesT

Water Supply Protection /

Storm water outfalls to public water supplies eliminated or relocatedT	# or y/nT	0T
Installed or planned treatment BMPs for public drinking water supplies and their protection areasT	# or y/nT	YesT
Treatment units induce infiltration within 500-feet of a wellhead protection areaT	# or y/nT	YesT

APPENDIX A Y

REGIONAL OPEN SEMINAR ORGANIZED AND SPONSORED / PAID FOR BY CMRSWCY

“FUNDING OUR STORMWATER PROGRAM” Y

SEPTEMBER 3, 2015 AT MASSDEP CENTRAL REGIONAL OFFICEY



WORKSHOP Key Topics in Funding Local Government Stormwater Management Programs

Keith Readling, PE

Vice President and Director of Stormwater Management Consulting

Raftelis Financial Consultants

Introductions

- Reading and other hosts/facilitators
- Attendees
 - mostly or entirely a manager
 - mostly or entirely a technical service provider
 - mostly or entirely a regulator
 - consultant or other

Agenda

- Stormwater program planning
- Stormwater costs and funding
- Stormwater ratemaking
- Data, systems, processes to support a fee
- Legal and policy issues
- Communications
- Facilitated breakouts during / after lunch

Answers Sought

- What is it?
- How much will it cost?
- Where will we get the money?
- How will we administer?
- What do we need to be sure about?
- How do we talk about it?

Details

- Breaks planned at about 10:40am (15 minutes) and 12 noon (10 minutes)
 - Stormwater program planning
 - Stormwater costs and funding
 - Stormwater ratemaking
 - Data, systems, processes to support a fee
 - Legal and policy issues
 - Communications
 - Facilitated breakouts during / after lunch
- Communications session will include a handout and a chance to develop an individualized communications plan framework

Details

- Please ask questions as they arise (*really good* questions may be deferred to breakouts)
- Facilitated breakout sessions during lunch:
 - Communications (Aubrey & Matt)
 - Financial planning (Dave)
 - Program planning, costs, rates (Keith)
 - Data, systems, processes (Jennifer)

Examples We Will Use

- Tega Cay, SC
- Mt Lebanon, PA
- Peoria, AZ
- Upper Falls, NC (5)
- NEORSD, OH (63)
- Adams County, CO
- Mooresville, NC
- St Louis, MO
- Morristown, TN
- New Orleans, LA
- Kernersville, NC
- Baltimore, MD
- Beaufort County, SC (5)

1. Fleshing Out the Stormwater Program and Services

- Program planning, known issues
- Integrating regulatory compliance into the plan
- Integrating broader community issues and initiatives into the plan
- Prioritizing

Program Planning and Known Issues

- Operation and maintenance
- Capital
- Staffing
- Data
- Equipment
- Compliance

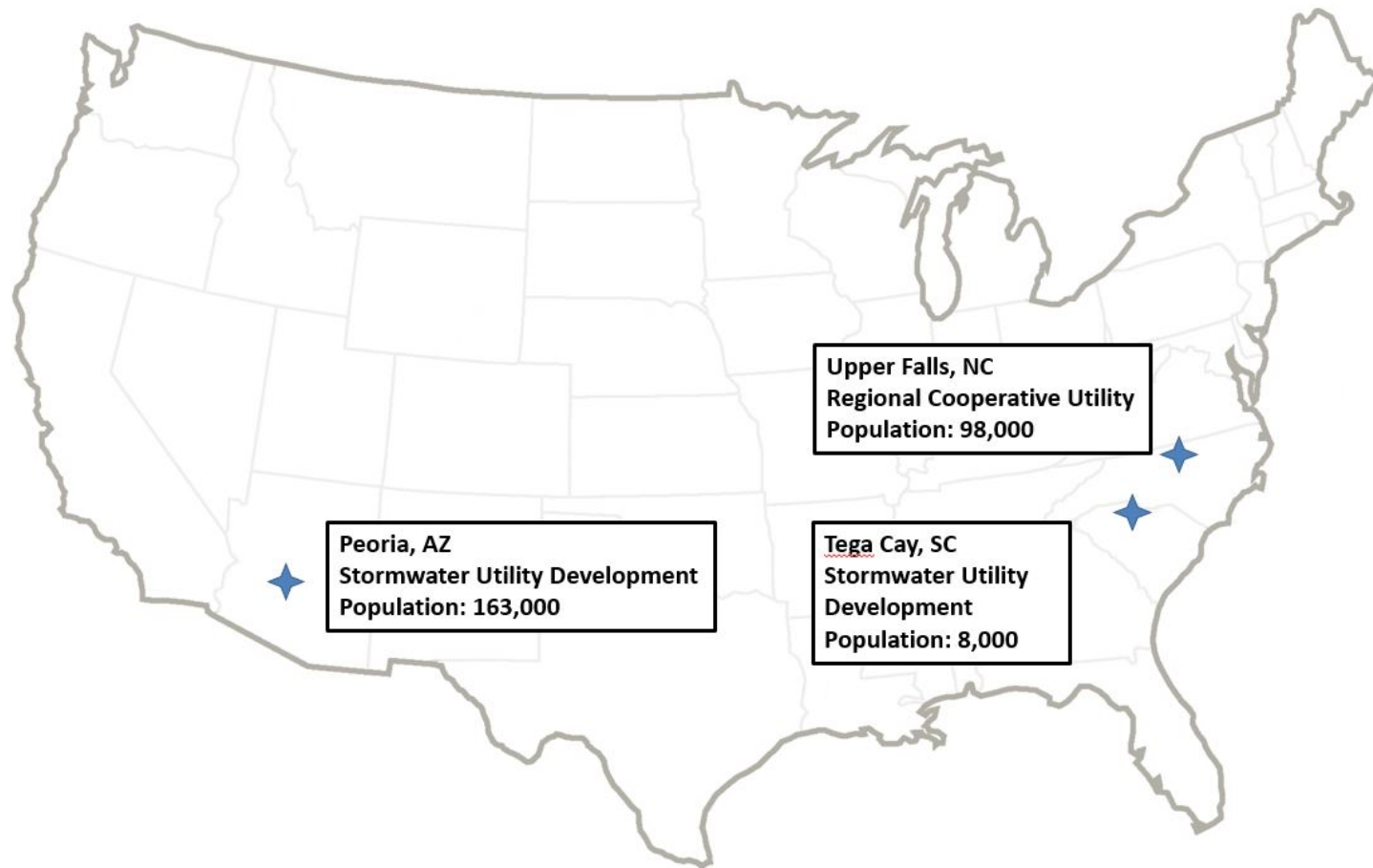
Regulatory Compliance Integration and Relationship to Other Issues

- Timing of the ramp up
- How the six MCMs vary in cost and complexity
- Relationships to other issues and policies
- Drivers for change – opportunity

Setting Priorities

- What do the citizens want?
- How long will it take us to accomplish things?
- How do we balance the need to act with the lack of data?
- Can we accomplish any broader goals if we are thoughtful?

Program Planning Examples



2. Program Costs and Funding Approaches

- Estimating future service delivery costs
- Estimating capital costs
- Cost causation and allocability models
- Taxes, fees, fees-in-lieu, hybrids for funding

Estimating Future Service Delivery Costs

- Inflation can vary a lot depending on the economic cycle
- Unmet O&M needs from newly taken infrastructure or pent up need may be substantial, and BMP O&M may be guesswork
- It is harder to spend money than most citizens would think

Estimating Capital Costs

- Capital need may be vague at best due to a lack of data
- Some high visibility improvements may be required even if they have to be fast tracked
- Debt vs. PAYGO matters a lot (**more later on this**)

Cost Causation and Allocability

- What makes our costs increase?
- How do ratepayers place a demand on our organization for service?
- Can I tie these demands to things I can measure?
- How do I balance technical excellence with simplicity and data maintenance cost? (more during later sessions on this)

Program Cost & Funding Examples



3. Stormwater Ratemaking

- Pricing objectives
- Fixed and variable charges, various independent variables and their advisability in ratemaking
- The enormous implications of debt financing
- Credits, discounts, caps, collection rates

Pricing Objectives

- Do we want to encourage or discourage any particular behaviors or patterns?
- How do we fall out on the fairness vs. simplicity of rates scale?
- Do we need to hold the line for any particular amount of time or plan for frequent smaller increases?

Fixed and Variable Charges

- Account or parcel
- Impervious area
- Gross area
- Other variables
- Simplified charges for some classes

Debt Financing for Capital

- Why and when?
- Why and when not?
- How to model and discuss?
- How does this debt relate to other debts in my jurisdiction?

Credits, Discounts, Caps, Etc.

- What and why?
- How to model the revenue impacts
- Defensibility
- Collection rates and their relationship to billing approaches (**more during a later session**)

Ratemaking Examples



4. Data, Systems, and Processes to Support Fee Funding

- Brief overview of the mechanics of billing for stormwater
- Data maintenance needs and tools
- Customer service needs and tools
- Costs associated with fee funding

The Mechanics of Billing

- Three main ways, one of which is not too good
- Pros and cons
 - Simplicity
 - Collection rates
 - Ratepayer treatment
- Frequently no choice is really reasonable but to use what you have

Data Maintenance Needs / Tools

- Depending on rate structure and policy choices that are made:
 - Detect changes to inputs
 - Update data to cause a bill to be updated
 - Communicate between parcel world and account world – often the most difficult data process

Customer Service Needs / Tools

- Observation: consumer expectations for service have increased
- Customers may need to see “proof”
- Customer service workload variability and choices that can be made to even it out to some extent

New or Changed Costs Associated with Fee Funding

- Fee computation, ratemaking, billing, collections, database maintenance, customer service all cost more than for a tax increase
- KR Guess: Delta is 2% if a big program; 5% or more if a small program. Shared savings are possible.

Data Management Examples



5. Legal and Policy Issues

- Consult counsel early and as needed
- You will likely need a new or amended rate ordinance
- “Data facts” should guide the ordinance; do not allow it to be written without regard to what the data will give you

Legal and Policy Issues

- Start clean
- Typical challenges and responses
 - Tax not fee
 - Authority
 - Arbitrary and capricious

6. Communications and the Public Process

- The normal flow of logic about stormwater needs and money
- Tools and approaches for working with the community
- Approaches for working with elected officials
- Individual framework development exercise

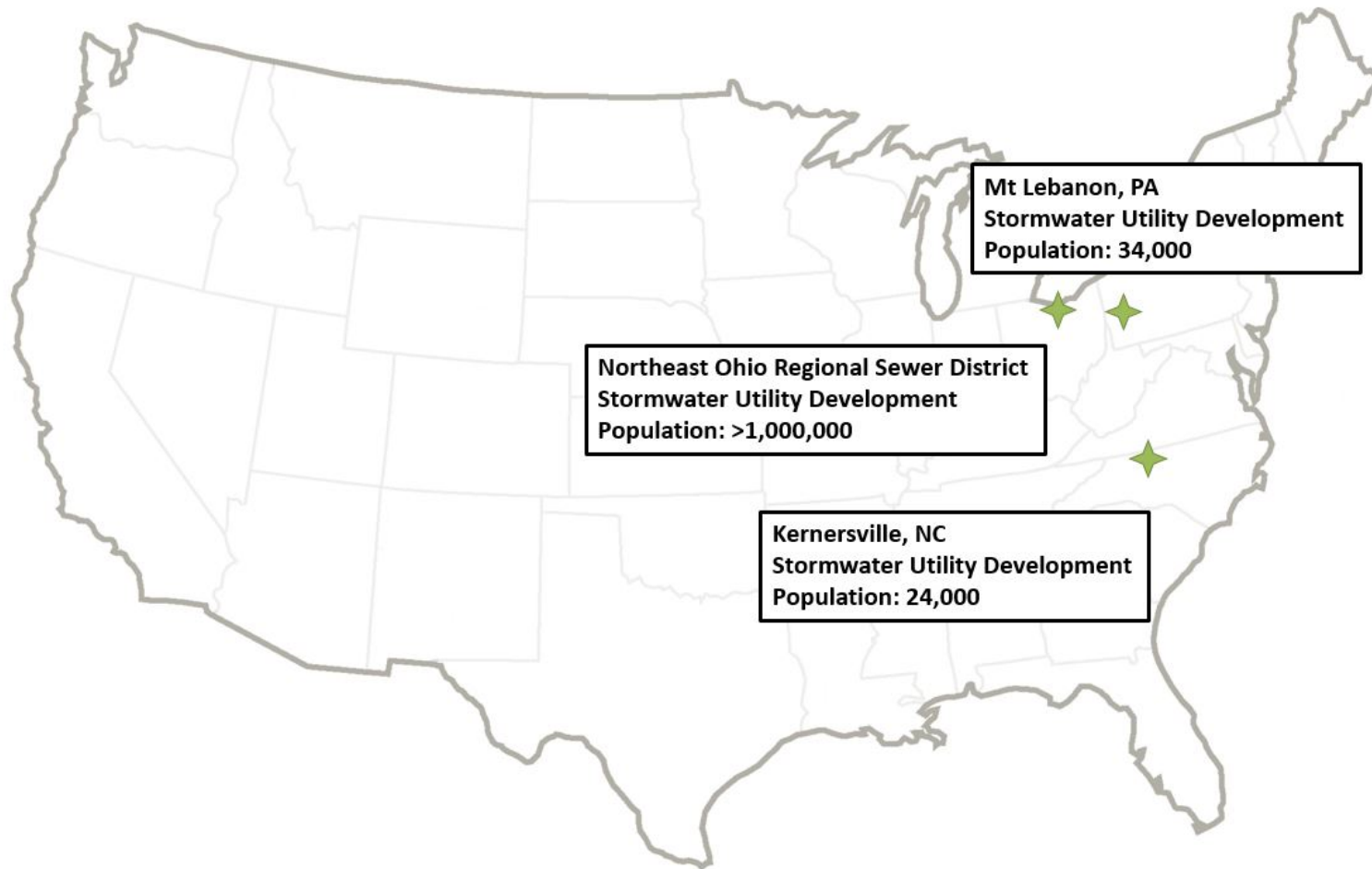
The Logic Flow

- Business for long time; early and main focus safety and real property; streets focused; new kid is water quality; aging infrastructure; never funded like other utilities or infrastructure; quality of life issue; everyone part of problem; everyone part of solution; did not get this way overnight; won't get better overnight; money

Working With the Leadership

- Help leaders govern well
- What is important? Growth, preservation, quality of life, jobs, etc. How to match the program to the important things
- What's the timing of decisions and the process?
- How to think about fees vs. taxes

Communication and Outreach Examples



Exercise – Develop a Communications Plan Framework

Breakout Groups

- Communications (Aubrey & Matt)
- Financial planning (Dave)
- Program planning, costs, rates (Keith)
- Data, systems, processes (Jennifer)

Breakout Groups

- 30 minutes to discuss your subject, take notes, nominate a speaker and develop answers to a few questions
- Four brief reports of <4 minutes each, then a bit of discussion if time allows
 - › Communications (Aubrey & Matt)
 - › Financial planning (Dave)
 - › Program planning, costs, rates (Keith)
 - › Data, systems, processes (Jennifer)

Contact

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Raftelis Financial Consultants
919.780.9151
kreading@raftelis.com

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Name	Town	Title	Signature	
Central Massachusetts Regional Stormwater Coalition				
				Status for FY2016?
Robin Craver	Charlton	Town Admin.	<i>[Signature]</i>	IN
Tony Maressa	Fitchburg	Stormwater Engineer	* different page	IN OUT UNDECIDED
Maria Mast	Grafton	Conservation Agent	<i>[Signature]</i>	IN
John Woodsmall	Holden	Director, DPW	<i>[Signature]</i>	IN
John Westerling	Hopkinton	Director, DPW	<i>[Signature]</i>	IN
Mike Knox	Leicester	Stormwater Committee	<i>[Signature]</i>	IN
Robert McNeil	Millbury	Director, DPW		IN
Fred Litchfield	Northborough	Town Engineer	<i>[Signature]</i>	IN OUT UNDECIDED
Dan Nason	Northborough	Director, DPW	<i>[Signature]</i>	IN OUT UNDECIDED
Jim Shuris	Northbridge	Director, DPW	<i>[Signature]</i>	IN
Ted Kozak	Northbridge	Town Manager	* attended	IN
Andrew Golas	Palmer	Executive Assistant	<i>[Signature]</i>	IN OUT UNDECIDED
Carol Riches	Paxton	Town Administrator	* attended	IN
Mike Putnam	Paxton	DPW Superintendent	<i>[Signature]</i>	IN
Mia McDonald	Paxton	Technical Assistance	<i>[Signature]</i>	IN
Brad Stone	Shrewsbury	Engineer/ Conservation Agent	<i>[Signature]</i>	IN

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Steve Tyler	Spencer	Director, DPW		IN
Adam Gaudette	Spencer	Town Administrator	* attended	IN
Matt Marro	Sterling, Tyngsborough	Conservation Agent	<i>[Signature]</i>	IN OUT UNDECIDED
Blythe Robinson	Upton	Town Manager	<i>Blythe Robinson</i>	IN
Vincent Roy	Upton	Director, DPW	<i>Vincent Roy</i>	IN
Benn Sherman	Uxbridge	Director, DPW	<i>Benn Sherman</i>	IN
David Genereux	Uxbridge	Town Manager	<i>[Signature]</i>	IN
Stuart Beckley	Ware	Town Manager	<i>[Signature]</i>	IN OUT UNDECIDED
Scott Charpentier	Webster	Town Engineer	* attended	IN OUT UNDECIDED
Michael Kittredge	West Boylston	Interim DPW Director		IN OUT UNDECIDED
Lisa Allain	Westborough	Assistant Town Engineer	<i>Lisa Allain</i>	IN OUT UNDECIDED <i>if funding approved</i>
Isabel McCavley	Holden	Town Engineer	<i>Isabel McCavley</i>	IN OUT UNDECIDED
Tony Marissa	Fitchburg	Civil Engineer	<i>[Signature]</i>	IN OUT UNDECIDED
Dan Nagot	Norfolk			IN OUT UNDECIDED
Moira Rouse	SERSG	Regional Admin	<i>Moira Rouse</i>	IN OUT UNDECIDED
				IN OUT UNDECIDED
				IN OUT UNDECIDED
				IN OUT UNDECIDED
				IN OUT UNDECIDED
				IN OUT UNDECIDED
Matt St. Pierre	Tata & Howard	Co-Facilitator	<i>Matt St. Pierre</i>	
Aubrey Strause	Verdant Water	Co-Facilitator	<i>Aubrey Strause</i>	

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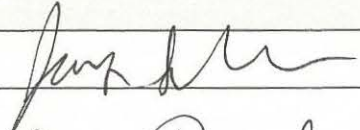
Merrimack Valley
Planning Commission



Pioneer Valley
Planning Commission

Name	Town	Title	Signature
Merrimack Valley Stormwater Collaborative (through the Merrimack Valley Planning Commission)			
Brian Pena	Lawrence	Water & Sewer Commissioner	
Neponset Valley Regional Stormwater Collaborative (Neponset Stormwater Partnership)			
Connecticut River Stormwater Council (through the Pioneer Valley Planning Commission)			
Patty Gambarini	PVPC	Sr. Env Planner	

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Name	Town	Title	Signature
MassDEP			
Andrea Briggs	Central Region Office Head		
Fred Civian	State Stormwater Coordinator		
Therese Beaudin			
Others			
Jennie Moonan	Tighe & Bond	Project Engineer	
Monica Kacprzyk	New England Interstate Water Pollution Control Commission (NEIWPCC)	Environmental Analyst	*attended 
Mary Barry	New England Water Environment Assoc. (NEWEA)	Executive Director	
Tom Philbin	MA Municipal Assoc	Senior Legislative Analyst	
Keith Readling	Raftelis	Presenter	*attended
Jennifer Fitts	Raftelis	Asst. Presenter	*attended
David Fox	Raftelis	Asst. Presenter	*attended
Josh Secunda	USEPA	?	*attended