

Municipality/Organization: Town of Chelmsford

EPA NPDES Permit Number: MAR041185

MaDEP Transmittal Number: W-039848

**Annual Report Number
& Reporting Period: No. 15: March 2017-March 2018**

NPDES PII Small MS4 General Permit Annual Report

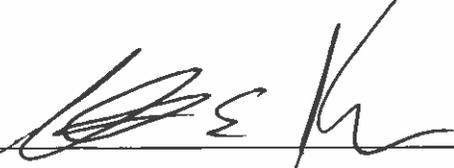
Part I. General Information

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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: STEPHEN E. JAHNLE

Title: ASSISTANT DIRECTOR OF PUBLIC WORKS

Date: 4/27/10

Part II. Self-Assessment

The Town of Chelmsford has completed year 15 of the Stormwater Phase 2 program. Early in 2017, the activities were in preparation for the upcoming 2016 Massachusetts Small MS4 General Permit. Once the “stay” was placed, Chelmsford continued to build on the 2003 permit with the anticipation of a new permit approaching in the near future.

Part of the preparation for the new permit included finding a funding mechanism to operate under. Chelmsford determined that forming a stormwater utility was the best plan. The Chelmsford Department of Public Works worked diligently on presenting information on the new MS4 permit to various Town boards. Town Meeting was held in early May, and the creation of a new stormwater enterprise was approved. Mr. Fred Civian of Massachusetts DEP was kind enough to help us with the technical questions at the meeting. Unfortunately, the “Stay” that was placed on the MS4 permit caused the Town management to decide to hold off commencement of the new program, including funding the stormwater enterprise.

Although the funding was denied, we had already hired college interns to assist in outfall inspections. Chelmsford went ahead and utilized the interns to inspect as many outfalls as possible over the course of the summer. This allows the Town to have a full understanding of what the IDDE program may look like under the new permit. No illicit discharges were found.

Chelmsford has been involved with the Northern Middlesex Stormwater Collaborative (NMSC). We are one of 13 communities to be involved in this regional stormwater collaborative. The NMSC has joined the Massachusetts Statewide Stormwater Coalition which has increased the resources available to each community. The primary goal is to establish and implement a regional stormwater collaborative to address stormwater issues using an innovative approach that reduces costs and fosters regional cooperation and coordination. For a detailed list of activities (**See Appendix**)

NMSC has been paramount to furthering our ability to improve Chelmsford’s MS4 program in the following ways:

1. Represented Chelmsford in the Statewide Stormwater Coalition meetings.
2. Expanded public education and outreach program opportunities.
3. Offered many training sessions on stormwater for all municipal staff and officials.
4. Ongoing Support for mapping our stormwater system with GIS and GPS.

Being a part of NMSC has allowed the 13 communities to share resources and has eliminated the need for duplicative activities. This collaborative has been most valuable to Chelmsford’s success in the stormwater program.

Progress was made in the following areas:

BMP # 1-2: Stormwater Lesson Plan for students. (See Appendix)

- This year, all fifth grade students in both middle schools had a stormwater lesson. Each year, the lesson plans get improved

upon. The lessons included information on stormwater pollution, watersheds, and a demonstration of the Enviroscope Model. The students got a hands-on lesson about point-source and non-point-source pollution. The Town Engineer conducted stormwater lessons for:

- **215 Fifth Grade Students at Parker Middle School in March 2017**
- **200 Fifth Grade Students at McCarthy Middle School in June 2017**
- **80 Third Grade students at South Row Elementary School in December 2017**

BMP # 1-4: Stormwater Media Campaign. (See Appendix)

- Lowell Sun and Chelmsford Independent newspapers both published articles about Chelmsford's stormwater program (June and July 2017)
- March 2017 – YouTube video about the rain barrel program
<https://www.youtube.com/watch?v=M0iC06og6fc>
- In preparation for the new MS4 permit, the Engineering Division appeared at many local boards to emphasize the importance of stormwater pollution prevention. They also presented at the Selectmen meetings, and made a comprehensive presentation at the Chelmsford Spring Town Meeting about the upcoming Stormwater Permit in the spring of 2017.

BMP # 2-2: Stormwater Poster Contest. (See Appendix)

- Third Grade Stormwater Posters on display in the DPW lobby

BMP # 2-6: Provide Support for clean-up and collection days. (See Appendix)

- Hazardous waste collection day. April 29, 2017
- Annual Town Cleanup day April 23, 2017
- First Annual Leaf and Grass collection day - Nov 18, 2017
- Chelmsford renewed involvement in the Rain Barrel Community Program offering discounted Rain Barrels to the residents. Rain barrels are advertised on cable TV, website, Facebook and emails. 68 Barrels sold at the event on May 16, 2017. (See Appendix)

BMP # 2-7: Develop a Catch Basin Stenciling Program. (See Appendix)

- Organized a stenciling program and promoted it around the Town

BMP # 3-1: Create a stormwater system map. (See Appendix)

- Interns completed numbering all storm drain features. All features have numbers referencing the outfall to which they flow.
- A contract was secured with CGIS, Inc. to revise our drain features. The online utility application created for the DPW staff has been used thoroughly. This online map is extremely beneficial to the IDDE program. The storm drain feature ID numbers have been added to this map, so connectivity to outfalls is easier to read. Features such as detention basins, swales,

emergency overflow weirs, stormwater treatment units, inlets, outlets, headwalls, catch basins, culverts, drain manholes, drain lines, and outfalls are all included.

- The drain features are displayed on the Town’s public GIS map. More details are available in the staff’s utility app. Annual updates are made to the drain features in these maps. This makes residents more aware of the drainage infrastructure.

BMP # 3-2: Create an Illicit Discharge Inspection/Elimination Plan. (See Appendix)

- Interns aided the Engineering Division in inspecting and sampling outfalls – summer 2017.
 - Hired 2 College Students and 1 Senior Citizen to help with the stormwater mapping and outfall inspections.
 - 508 outfalls (as of 10/27/2017) were inspected and photographed– no illicit discharges were found. (See Appendix)
- Residents are still using “See Click Fix” to report concerns such as, drainage issues, street sweeping requests, wetland safety concerns, illicit discharges or illegal dumping.

BMP # 6-3: Stormwater pollution prevention in municipal operations. (Removing directly connected impervious area)

- The new roofs of the schools’ modular units are being mitigated by routing them to subsurface infiltration systems.
- Improvements have been made to the municipal grounds fertilization plan to reduce waste.

BMP # 6-4: DPW Training Program

- DPW staff attend multiple training programs on Stormwater Management.

The following BMPS are not completely fulfilled:

BMP # 2-3: Stormwater photo contest for high school students. The Suasco Watershed Council has decided to abandon this contest and replace it with a different activity. We have had such success with the **poster contest**, that we have it every year in place of the photo contest.

BMP # 4-1: Development of an erosion and sediment control by-law for construction projects. Currently the Town has authority through the site plan process to regulate erosion and sediment control based upon approvals for a specific project. A stand-alone bylaw is not necessary at this time. We will reevaluate our decision once the new permit is released.

BMP # 5-1: Development of a by-law to require certain construction sites to follow MADEP Stormwater Standards 2, 3, 4 and 7. The Town currently has authority to fine property owners in violation of their approved operation and maintenance manuals included with site plan or subdivision approvals. Our site plan stormwater by-law was re-written to clarify the language so that it specifically states compliance with MassDEP Stormwater Standards. A stand-alone bylaw is not necessary at this time. We will reevaluate our decision once the new permit is released.

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 15 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year
1-1 Revised	Stormwater flyer/survey distributed to residents	DPW/Suasco	Distribute flyers to a minimum of 75% of the residents	Complete. Flyers have been distributed to residents and copies are available with the traveling display and online via the town web site.	Continued distribution of flyers and displaying material to help awareness.
1-2 Revised	Stormwater lesson plan for 5 th grade students	DPW/Suasco	Develop and distribute lesson plan to 5 th grade	Completed. Annually teach all the 5 th graders. See Self-Assessment	Continuation of new lesson plan in the schools.
1-3 Revised	Stormwater flyer to business community	DPW/Suasco	Flyer distributed to a minimum of 50% of businesses and a logo to be displayed for compliance	Completed in Year 11.	Update and republish
1-4 Revised	Stormwater media campaign	DPW/Suasco	Develop a media information packet to be distributed	Complete.	Update and republish ad campaign
1-5 Revised	Stormwater video	DPW/Suasco	Show a stormwater video at one public meeting and re-air video on local cable	Complete. Video runs twice a year on local cable and is available on YouTube.	Run ad campaign twice a year on local cable focusing on gardening in the spring and good housekeeping in the fall.
1-6 Revised	Stormwater web page	DPW	Creation of a stormwater web page	Complete. Annually Updated http://www.townofchelmsford.us/375/Stormwater	Maintain website
1-7 Revised	Provide brochures on recycling, composting and water conservation	DPW/Recycling	Maintain a supply of brochures	Complete. Currently have a supply of brochures from the SuAsCo Watershed, EPA, Mass DEP and other organizations available	Continuation of current supply

2. Public Involvement and Participation

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 15 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year
2-1	Stormwater traveling display	DPW/SuAsCo	Display and circulate traveling display at various buildings and events	Complete. Rotation throughout town buildings and events. Demonstrations were done at the farmer's market, volunteer fair and Library.	Continued rotation throughout town buildings and events.
Revised					
2-2	Stormwater poster contest for 5 th grade students	DPW/SuAsCo	Hold a stormwater awareness poster contest, judge and display it.	3 rd graders made posters on Stormwater Pollution based on what they learned in the lesson from the Town Engineer. The posters were displayed at the DPW.	Continue to offer the poster project to students who attend the stormwater presentations.
Revised					
2-3	Stormwater photo contest for high school students	DPW/Suasco	A stormwater photo contest is held, judged, and displayed	SuAsCo has decided to abandon the contest. The poster contest has become an annual activity, and we hope to continue it.	We are exploring other options for an "art contest".
Revised					
2-4	Stormwater Summit event	DPW/Suasco	Hold a local Stormwater event	Complete. Several presentations have been made to the Board of Selectmen and Finance Committee about the new requirements of the MS4 Permit.	Continue to hold summits as possible.
Revised					
2-5	Participate in Suasco Super Summit and conduct and evaluation and assessment survey of public stormwater awareness.	DPW/SuAsCo	Town participation in the Suasco summit and evaluation and assessment survey results compiled.	Currently waiting on information for the summit event.	Hold Summit once available.
2-6	Provide support for clean up and collection days	DPW/Recycling	Provide support at least twice per year	Complete. Support has been provided for brush drop off, leaf collection, Haz-mat, town clean up. See self-assessment for more information.	Continued support for these days.
Revised					
2-7	Develop a catch basin stenciling program	DPW	Develop a program to stencil catch basins in priority areas	Complete. See self-assessment	Continue stenciling program

3. Illicit Discharge Detection and Elimination

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 15 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year
3-1 Revised	Create a stormwater system map	DPW	Develop a stormwater system map, maintain and update as needed	Continued mapping of our stormwater system. See self-assessment for more detailed info.	See self-assessment. Continued mapping and updating of existing information.
3-2 Revised	Create an illicit discharge inspection/elimination plan	DPW	Develop a plan to locate and eliminate illicit and illegal connections	508 Outfall inspections performed See self-assessment for more detailed info.	Inspect all 650 outfalls
3-3 Revised	Develop and implement an ordinance that prohibits illicit and illegal connections	DPW	An ordinance is developed to prevent illicit and illegal stormwater and non-stormwater connections to the system	Complete. Implementing bylaw.	Continue to implement bylaw and review for any potential improvements.
3-4 Revised	Increase number of Haz Mat days	Recycling/DPW	Make disposal easier of hazardous materials	Complete. The recycling office has entered into an agreement with other towns to provide homeowners more opportunities to dispose of their Haz. Waste. There are collection bins located at Town Hall for recycling of light bulbs, batteries, cardboard, etc.	Continued support for these events.
Revised					

4. Construction Site Stormwater Runoff Control

BMP ID #	BMP Description	Responsible Dept./Person Name	Measurable Goal(s)	Progress on Goal(s) – Permit Year 15 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year
4-1	Development of an erosion and sediment control by-law for all construction projects	DPW/Community Development	Develop and implement a by-law	See self-assessment.	Review current requirements and revise as necessary.
Revised					
4-2	Plan reviews	DPW	All plans reviewed for water quality issues and concerns	Complete. Currently reviewing plans for standard erosion and sedimentation protection. All redevelopment designs must show improvements to water quality and quantity of runoff.	Continued review of plans for revised current stormwater regulations. Develop a plan review checklist.
Revised					
4-3	Site inspections of construction projects	DPW/Community Development	Periodic inspection of ongoing sites	Complete. Inspectors trained on Stormwater runoff control. Inspectors have an online utility app. which allows them to see the entire stormwater system and sewer system so that they can quickly assess the potential dangers of any hazardous situations.	Continued inspections and enforcement of the proposed erosion and sediment control plans presented by the developers. Develop an inspection form.
Revised					
4-4	All work within the public right of way inspected to prevent erosion and sediment build up	DPW	Minimize and/or prevent sediment from entering the public right of way	Complete. Require all contractors to provide a rip-rap construction entrance, periodically sweep streets and install silt sack protection to existing basins where necessary. Inspectors trained on stormwater runoff control to the ROW.	Continued inspections and enforcement.
Revised					
Revised					

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 15 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year
5-1	Develop a by-law to require certain construction sites to follow MADEP stormwater standards 2,3,4, and 7	DPW/ Community Development	All regulated projects required to follow same standards	See self-assessment.	Review current requirements and revise as necessary.
Revised					
5-3	Post construction inspection of regulated projects	DPW	Inspections are performed to ensure proper construction and that facilities are working as they were proposed	Design engineers are required to submit as-builts and letters certifying construction has been conducted in accordance with the plans. Follow-up inspections conducted by DPW staff to ensure the facilities are working as proposed.	Continued inspection and recommendation to private system owners that they maintain their systems in accordance with the design or proposed post construction plan along with the approved operations and maintenance manual.
Revised					
5-2	Develop a list of BMP's for the post construction maintenance schedule	DPW	Develop a list as a guideline for post construction maintenance	We have worked with the local engineers and developers to have parameters for post construction maintenance of facilities.	Continued work on a finalized list to be added into our regulations. Work with private property owners on maintenance of systems.
Revised					

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 15 (Reliance on non-municipal partners indicated, if any)	Planned Activities – Permit Year
6-1	Catch Basin cleaning	DPW	Continuation of current catch basin cleaning schedule	Complete. Every catch basin was cleaned last year. This task is contracted to a private company.	Continue to clean each catch basin.
Revised					
6-2	Street Sweeping	DPW	Continuation of the current street sweeping program	Complete. All public streets, sidewalks and municipal parking lots are swept utilizing the town owned and operated sweepers	Continued Spring sweeping schedule
Revised					
6-3	Stormwater pollution plan in place and in effect for DPW facility	DPW	Maintain the current plan and update as needed	Continued maintenance of oil separators, traps and containment systems.	Ongoing operation and maintenance
Revised					
6-4	Develop a training program for DPW employees	DPW	Employee training program established	Complete. Training took place on March 29, 2017. NMSC hosted the training by Tighe & Bond at the Westford DPW building.	Continue training to all new staff.
Revised					
6-5	Stormwater system mapping used to identify critical areas for catch basin cleaning	DPW	Stormwater system mapping used to optimize basin cleaning procedures	Online stormwater system map in GIS.	Continue maintenance of the online stormwater GIS map.
6-6	Identify catch basins in poor condition and repair or replace those structures	DPW	Utilize mapping to identify facilities in poor condition and repair or replace a minimum of 5 per year	Complete. Repaired or replaced approximately 40 drainage structures, cleaned out approximately 12 culverts, repaired 4 headwalls and improved drainage on 10 roads.	Ongoing maintenance
Revised					
6-7	DPW drainage maintenance permit	DPW	Renew drainage facility maintenance permit	No dredging was done over the winter.	Renew dredging permit as needed.
Revised					

Assessment of the appropriateness of the selected BMPs.

The Best Management Practices (BMPs) selected for the stormwater program appear to be appropriate. Anticipation of a new NPDES MS4 permit has caused us to improve our current Stormwater Management Program. We believe that we have a head start for the requirements of the new MS4 permit. Furthermore, the decision to join other municipalities in stormwater collaboratives allows the Town the opportunity to further improve our stormwater program while at the same time save money by sharing resources.

Reference any reliance on another entity for achieving any measurable goals:

SUASCO – educational material and displays

Northern Middlesex County of Governments (NMCOG) – Northern Middlesex Stormwater Collaborative (NMSC) - Regional Stormwater Collaborative. See Appendix for full list of activities.

Frederick Civian, MassDEP- Presented technical information about the MS4 permit at our Town Meeting on May 1, 2017

AppGeo Inc. – Consultant who created our mobile utility app. and is hosting our GIS map for the residents.

CGIS, Inc. – Consultant who performed the updates to our GIS mapping of Sewer and Stormwater infrastructure.

**APPENDIX TO
CHELMSFORD, MASSACHUSETTS
ANNUAL STORMWATER REPORT
YR- 15
MARCH 2017 TO MARCH 2018**

NMSC Activities (April 1, 2017-March 31, 2018) (page 1 of 3)

A. Trainings and Meetings:

1. Meeting at DEP on the Off-Site Mitigation Manual project (3/29/18)
2. Participated in EPA's Soak Up the Rain webinar: "Stormwater Standards for the Future-Environmental and Financial benefits of Adopting Local Stormwater Regulations (3/28/18)
3. Statewide Stormwater Coalition Technical Subcommittee meeting conference call (3/21/18)
4. Organized training on Phasing of the MS4 Permit Requirements, Preparing a SWPPP for municipal facilities, High Accuracy GPS equipment for Stormwater Asset Data Collection (with GPS to GIS workflow solutions), and Drone Use in DPW and Stormwater Programs (3/20/18)
5. Participated in EPA webinar: "Building Resilient Communities with Green Infrastructure and Hazard Mitigation Planning (3/1/18)
6. Participated in EPA's Soak Up the Rain webinar: "The Guiteras Green Infrastructure Community School Project" (2/28/17)
7. Attended a meeting at DEP on the Off Site Mitigation Manual project (2/27/18)
8. Participated in EPA's webinar: "Green Infrastructure Modeling Toolkit for Stormwater Management" (2/22/18)
9. Statewide Stormwater Coalition conference call (2/22/18)
10. Participated in EPA's webinar: "Stormwater Management Model (SWMM) (2/20/18)
11. Attended Bay State Road's Stormwater Workshop in Acton (2/15/18)
12. Participated in EPA's webinar: "The New Surface Water Toolbox" (2/8/18)
13. Participated in a conference call with the Statewide Stormwater Coalition Technical Subcommittee (2/8/17)
14. NMSC meeting at NMCOG (2/8/17)
15. Statewide Stormwater Coalition meeting (2/1/18)
16. Statewide Stormwater Coalition Technical Committee conference call (1/25/18)
17. Statewide Stormwater Coalition meeting (1/16/18)
18. Participated in EPA's webinar: "Making Urban Forests Count-Quantifying and Creating Stormwater Benefits (1/10/18)
19. Participated in EPA's webinar: "Trees and Stormwater-A Tool for Your Community" (12/14/17)
20. Participated in EPA's Soak Up the Rain webinar: engaging Urban Residents-Innovative Approaches to Promoting Community-Based Stormwater Management (11/18/17)
21. Participated in EPA's Soak Up the Rain webinar: "Exploring the Green Infrastructure Workforce-Jobs, Training and Certification for Installation, Maintenance and Monitoring (11/15/17)
22. Participated in EPA's webinar: "Water Quality Portal Discovery Tool" (11/14/17)
23. Statewide Stormwater Coalition meeting (11/2/17)
24. Participated in a Statewide Stormwater Coalition conference call (10/31/18)
25. Submitted a letter on permit delegation (10/25/17)
26. NMSC Meeting at NMCOG (10/11/17)
27. Participated in training for Municipal Vulnerability Preparedness grant program, (9/28/17)
28. Participated in EPA's Soak Up the Rain webinar: "Back to School with Green Infrastructure- Linking Infrastructure with School Curricula and Massachusetts Science, Technology and Engineering State Standards" (9/27/17)
29. Participated in EPA webinar: "Where to Put the Water- Assessing the Vulnerability of Urban Stormwater Systems to a Changing Climate" (9/20/17)
30. Participated in US Forest Service webinar: "Tools for Trees-Better Stormwater Management and Livability" (9/13/17)
31. NMSC Meeting/NOI Training at NMCOG (9/11/17)
32. Statewide Stormwater Coalition Meeting (8/28/17)
33. Participated in EPA's National Stormwater Calculator webinar (8/23/17)
34. NMSC Meeting at NMCOG (8/14/17)
35. Attended DEP bidder's conference on the MS4 Municipal Assistance Grant (8/16/17)

NMSC Activities (April 1, 2017-March 31, 2018) (page 2 of 3)

36. Statewide Stormwater Coalition Meeting (8/8/17)
37. Participated in EPA webinar: "Community-Based Efforts to Improve Local Water Quality" (8/3/17)
38. Statewide Stormwater Coalition Meeting (8/1/17)
39. Certified Stormwater Inspector Training in Marlborough (7/13-14/17)
40. Participated in EPA's Water Quality Monitoring webinar: "Introduction to WASP" (7/12/17)
41. Participated in the National Association of City Transportation Officials webinar: "Introducing the Urban Street Stormwater Guide" (6/29/17)
42. Participated in EPA webcast: "Completing a Notice of Intent (an NOI) for approval to discharge under the 2016 Massachusetts Small MS4 General Permit, 6/22/17)
43. Participated in EPA's Soak Up the Rain webinar: "Rain Gardens to the Rescue-Using Plants and Natural Systems to Manage Stormwater" (6/13/17)
44. Participated in WEF's Stormwater Institute webinar: "Working with the Market for Green Infrastructure" (6/8/17)
45. Participated in EPA webcast: "Engaging Urban Residents: Innovative Approaches to Promoting Community-Based Stormwater Management, (5/25/17)
46. Participated in EPA's webinar: "Low Cost Green Stormwater Management Projects for Parks and Public Lands" (5/24/17)
47. Statewide Stormwater Coalition Technical Subcommittee meeting (5/23/17)
48. Participated in EPA webinar: "Washington DC's Stormwater Retention Credit Program" (5/23/17)
49. Participated in EPA's webinar: "DC Water's Environmental Impact Bond" (5/11/17)
50. Participated in the "Grey to Green Webinar: Quantifying Green Infrastructure" (5/9/17)
51. NMSC Meeting at NMCOG-4/26/17
52. Participated in EPA's Water Security and Resiliency webinar (4/25/17)
53. Participated in EPA's Soak Up the Rain webinar: "Intermunicipal Stormwater Services Agreements and Strategic Approaches to Calculating Stormwater Costs" (4/24/17)
54. Participated in Lowell's Earth Day Event (4/23/17)
55. Participated in EPA's "Tools and Resources Webinar Series: Challenging Nutrient webinar (4/19/17)
56. Participated in EPA's "The Value of Pollution Prevention" webinar (4/13/17)
57. Attended the Non-point Source Pollution Conference in Northampton (4/12/17)
58. Attended the NEWWA Spring Conference in Worcester (4/5-4/6/2017)
59. Statewide Stormwater Coalition meeting (4/6/17)

B. Public Education and Outreach:

1. Distributed customizable brochures and leaflets
2. Provided EnviroScape model to participating communities for various community events
3. Participated in community events such as River Day, Lowell's Sustainability and Earth Day Events, and Old Home Day
4. Provided staff resources for leafleting at municipal events such as Hazard Waste collection days
5. Assisted Tyngsborough with rain barrel distribution
6. Worked with community groups such as Girls Inc., the YWCA, and the Scouts on stormwater education

C. GIS and other technical tools and information:

1. Distributed DEP Summary of MS4 Permit Requirements
2. Researched/documented ESRI ArcGIS stormwater data collection options
3. Reviewed DudeSolutions Mobile311 mobile data collection app
4. Downloaded and integrated new MassGIS Hydro 1:25000 data
5. Reviewed new ESRI stormwater data collection apps, contacted ESRI to set up demo (after initial interest ESRI didn't respond)
6. (For Tyngsborough) - Mapped NHESP endangered species areas within the MS4 permit area
7. (For Tyngsborough) - Mapped/listed MACRIS historic resources within MS4 area

NMSC Activities (April 1, 2017-March 31, 2018) (page 3 of 3)

8. (For Tyngsborough) - Mapped Tyngsborough impaired waterways
9. Contacted EPA regarding GPS loan program, provided information and contact information to interested NMSC communities
10. GPS joint-purchase planning: Contacted NMSC communities to identify GPS data collection equipment resources and requirements.
11. Organized GPS demo for Spring 2018 stormwater training
12. GPS joint-purchase planning: researched new GPS hardware and software capabilities and pricing, identified vendors and units which may be of interest to NMSC communities
13. GPS joint-purchase planning: organized two GPS hardware/software demos
14. Completed needs assessment survey for the Statewide Stormwater Coalition grant

D. Grant Opportunities:

1. Distributed information on the Massachusetts Division of Ecological Resources Culvert Replacement Grant opportunity
2. Distributed information on the National Wildlife Federation's Five Star and Urban Waters Restoration Grant program
3. Distributed information on the DEP 604(b) and 319 grant programs
4. Distributed information on DEP's MS4 Municipal Assistance Grants-NMSC partnered with Pioneer Valley, Merrimack Valley and MAPC in a successful application for funding to create an Off-site Mitigation Manual
5. Distributed information on the State's Municipal Vulnerability Preparedness Grant Program; Distributed information on the MEMA/FEMA Pre-Disaster Mitigation and Flood Mitigation Assistance grant programs

BMP # 1-2

STORMWATER LESSON AT THE MCCARTHY MIDDLE SCHOOL

WITH UMASS LOWELL INTERNS

SPRING 2017



BMP # 1-4

ARTICLE FROM LOWELL SUN JUNE 2017

Town slices stormwater-operations fee

By Alana Melanson, amelanson@lowellsun.com
Lowell Sun

Updated: 2017-06-14 06:30:33.95

CHELMSFORD -- Single-family homeowners will pay a \$40 annual fee for stormwater operations in fiscal 2018 as the result of budget reductions taken at spring Town Meeting in May.

Prior to the reductions that nearly halved the first-year budget for the Stormwater Management Enterprise Fund, which becomes operational July 1, homeowners would have paid \$65 annual fees.

Multi-family and nonresidential properties will also have lower fees. Department of Public Works Assistant Director Steve Jahnle told the Board of Selectmen last week

He said these properties will still be subject to a tiered fee system based on the amount of impervious area, including roofs and paved parking lots. The annual fees will range from \$250 for properties with impervious area under 5,000 square feet up to \$8,000 for those with impervious areas of 1.1 million square feet to 1.2 million square feet.

Under the previous plan, the fees for these properties would have ranged \$250 to \$15,000.

The fees will be split between the sewer bills property owners receive twice a year, Jahnle said. Informational fliers will be mailed to all property owners, he said.

Under new federal stormwater regulations that go into effect in Massachusetts July 1, the town must create a stormwater master plan, fully map the stormwater system with catchments, retrofit sites with stormwater improvements, clean all catch basins once they are more than 50 percent full, report on phosphorus removal, increase site inspection, inventory private stormwater systems and revise bylaws and plan review requirements.

The Town Meeting article to create and fund the division originally sought \$1.9 million in equipment and startup costs and another \$1.8 million for staff and operational costs.

The majority of Town Meeting members felt fully funding the division was not necessary in its first year. They passed an amendment that lowered the amounts to \$1 million each, cut staffing from 11 employees to six and reduced the amount of vehicles and equipment provided to the division.

"That will allow us to get the master plan underway and completed," Jahnle said of the first-year funding. "We'll continue with the annual catch basin cleaning after July 1. This division will take over the sweeping both in the fall that we have to do now and then also the annual spring sweeping, will take that over from highway division."

He said the stormwater employees will also do some light maintenance and "get a good jump on the inventory and inspections of our system."

In later years, when the stormwater division is fully staffed and operational, Jahnle said he expects fees could rise to the original proposed amounts.

Visit www.townofchelmsford.us/375/Stormwater for more information.

Follow Alana Melanson at facebook.com/alana.lowellsun or on Twitter @alanamelanson.

ARTICLE FROM CHELMSFORD INDEPENDENT JULY 2017



Chelmsford storm water plan on hold

By Margaret Smith
msmith@wickedlocal.com

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Posted Jul 11, 2017 at 12:04 PM

Updated Jul 11, 2017 at 12:16 PM

A storm water enterprise fund to meet new, stricter federal and state requirements faces at least a one-year delay in implementation, as litigation by two municipalities puts the new mandates on hold.

Town Manager Paul Cohen informed Selectmen at their July 10 meeting of the Environmental Protection Agency's one-year delay for the requirement.

The delay was announced in a June 28 notification, two days before the new requirements' expected start.

For the moment, the town will not activate planned surcharges on sewer bills or any aspect of the stormwater management plan -- including staffing and equipment purchase -- approved at Town Meeting.

"We will just continue, with no difference, and we will monitor any resolution to the stormwater litigation," Cohen said.

The city of Lowell and the town of Franklin sued over the new requirements.

"Until that dispute is resolved, we will come back to Town Meeting. But for now, we are not operating any differently than we did two weeks ago," Cohen said.

The \$1 million Town Meeting representatives approved for borrowing will hold until a future Town Meeting, at which a new proposal will be brought for use of that money, Cohen said.

Debate and delay

The town's proposed stormwater management plan passed with significant reductions and delay spanning two nights at Town Meeting on May 1.

Town Meeting representatives voted 108-24 to approve the amended article, with reduced budget figures. The vote on the article came after lengthy debate, both on the article itself, and the amendment, which passed 73-63 vote.

The article garnered the necessary two-thirds majority for a bonding article; the amendment required only a simple majority vote.

Town Meeting Representative Paul Rigazio, of Precinct 7, put forth the amendment to reduce the number.

While discussion continued on the main article, Rigazio revised his amendment, so it read:

-- light duty 3/4 ton truck at \$ 45,240

-- light duty 1/4 ton truck at \$28,000

-- medium duty truck at \$65,000

-- medium duty truck at \$83,760

-- GPS units at \$25,000

--office build out at \$753,00

-- total \$1 million

Rigazio's reductions of \$ 791,742 on the budget to get to \$ 1 million are:

-- Lower salaries at \$ 291,742 for six employees versus the originally-proposed 11 employees

-- Lower contract services to \$50,000, adjusted \$60,000

-- Lower outlays to \$100,000, adjusted \$93,760

-- Lower OPEB \$25,000, adjusted \$24,400

-- Lower management plan \$75,000, adjusted \$225,000

-- Lower projects \$100,000, adjusted zero

-- Lower debt \$150,000, adjusted \$140,000

-- Total reductions, \$791,742

Representatives heard a presentation from Assistant Department of Public Works Director Stephen Jahnle, as well as from Cohen, who criticized the reduced cost plan.

Fred Civian, of the Department of Environmental Protection stormwater management division, was on hand May 1 to answer questions.

Stormwater is water from rain or melting snow that "runs off" across the land instead of seeping into the ground. Stormwater most frequently flows into the nearest body of water, such as a stream, river or lake.

Since 2003, town officials say the town has complied with a federal permit to discharge stormwater under a program called Phase 2. However, compliance has not decreased pollution -- prompting newer, stricter requirements.

In the original proposal, with a detailed outline including proposed personnel, equipment purchase, debt service, OPEB costs and more, sought \$1,956,240 for capital equipment and \$1,791,742 for operation and management.

A surcharge of \$65 annually, broken into two payments of \$32.50, was to be assessed to homeowners. However, this amount could be reduced with the amendment that passed.

The surcharge's implementation, whatever the amount, is now on hold pending the Environmental Protection Agency's one-year delay, and the litigation by Franklin and Lowell.

Within the budget were provisions for requirements including increasing street-sweeping to twice yearly.

There are also specific requirements for the town's stormwater infrastructure -- its 4,500 catch basins, more than 800 manholes, 95 miles of pipe and 650 outfalls or discharge points.

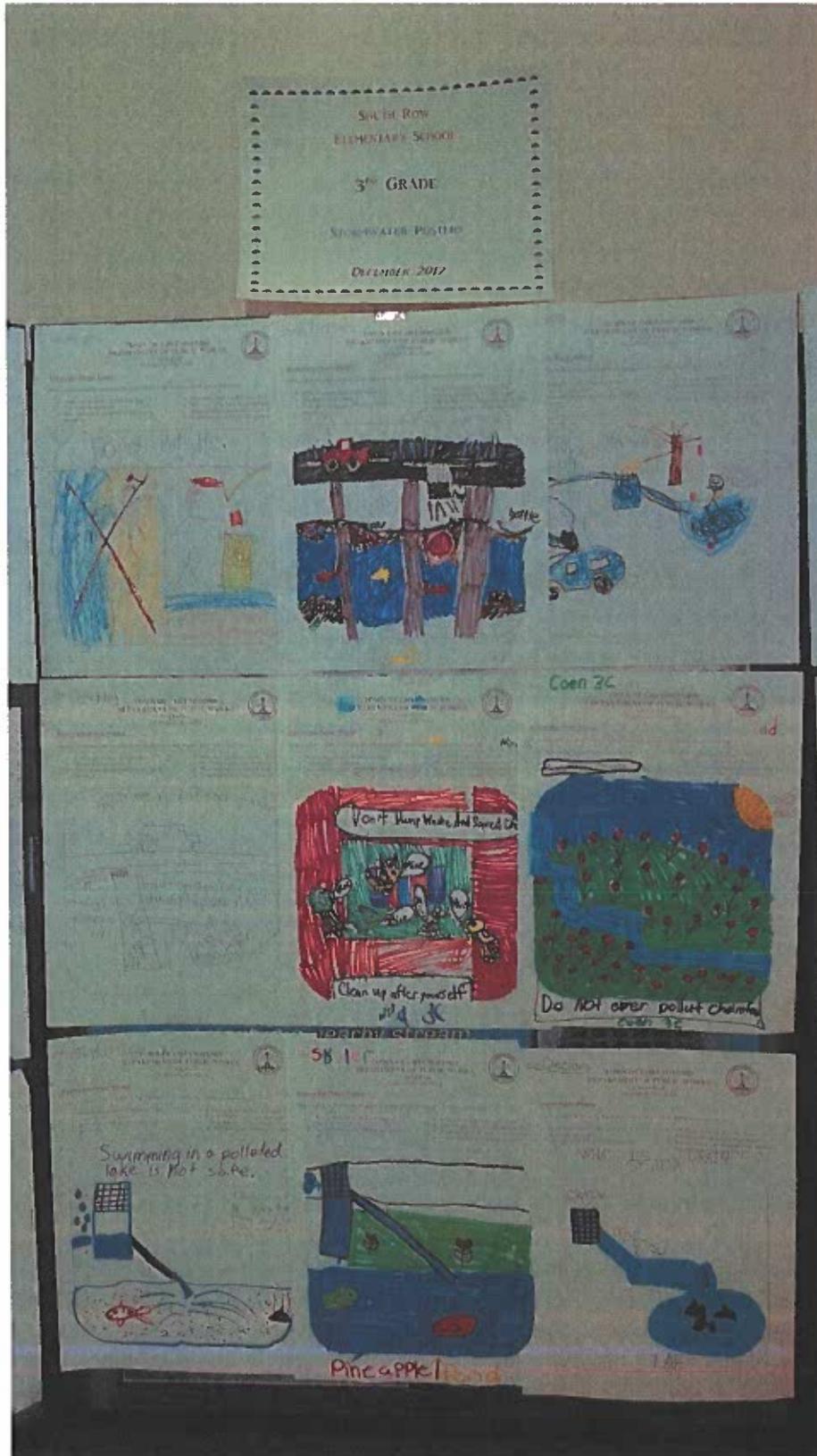
Civian told the representatives there are 249 communities statewide grappling with the changes.

The requirements are spread out incrementally to take effect over a first, second and third year. Civian said the requirement of some communities to do more work on stormwater management nationwide, in particular larger cities, goes back at least to the 1990s.

But it is this time-span, along with the cost, that prompted much of the debate. At Town Meeting, Rigazio said he supports the implementation and sees the need for stormwater management requirements.

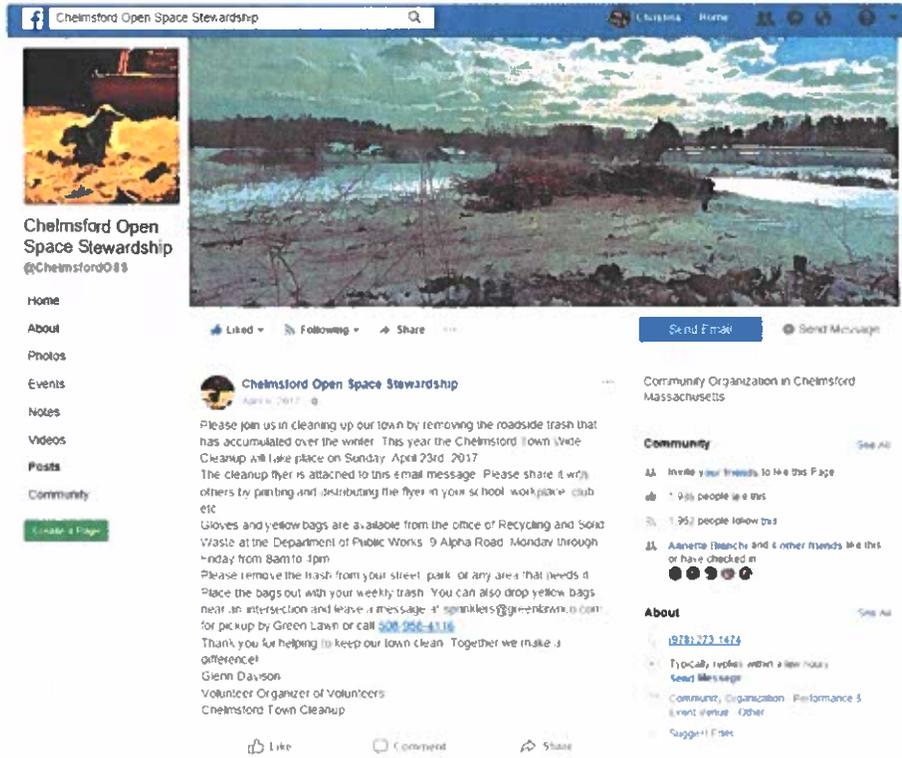
BMP # 2-2

THIRD GRADE POSTERS DISPLAYED AT THE DPW



BMP # 2-6

TOWN WIDE CLEAN UP, LEAF PICK UP, RAIN BARRELS



Home | News Flash

Home Page Newsflash

Posted on: November 1, 2017

FREE TOWN BRUSH DROP-OFF & LEAF BAG DROP OFF

BRUSH: Nov. 18th 9am - 3pm at Community Tree, 163 Billerica Road, Chelmsford

- 6" diameter x 8' long
- Rope, wire, bags, etc. must be removed by resident
- Community Tree accepts brush all year for a FEE

LEAVES & GRASS: Nov. 18th 9am-3pm at the DPW, 9 Alpha Rd., Chelmsford.

- Leaves and grass must be in **paper yard waste bags**



Next

Power Outage Status – Updated at 11:30 pm on November 2nd

BMP # 2-6

TOWN WIDE CLEAN UP, LEAF PICK UP, RAIN BARRELS

Chelmsford Town-Wide Cleanup Sunday, April 23, 2017

Chelmsford Recycling Committee is hosting this event with the goal of the removal of trash from our roads, parks, and paths. Bags and gloves are provided for free. This year we have notified 40,000 homes of the event. Trash can be put out with household waste or can be picked up at a street corner by notifying our team. Our DPW will collect large items. Contact information: davisong@verizon.net or davisong@verizon.net

Spring Clean Up Event

Help us keep the neighborhoods around the pond clean and beautiful.

Where: Heart Pond Public Beach

When: Saturday, May 13, 2016

Time: 9:30 AM – Pick up Bags



MAY 13 Heart Pond Spring Cleanup
Public Hosted by Heart Pond

★ Interested ✓ Going

🕒 Saturday, May 13, 2017 at 9:30 AM - 12 PM
about 11 months ago

📍 Heart Pond
Pond Street, Chelmsford, Massachusetts 01824

Show Map

About

Discussion

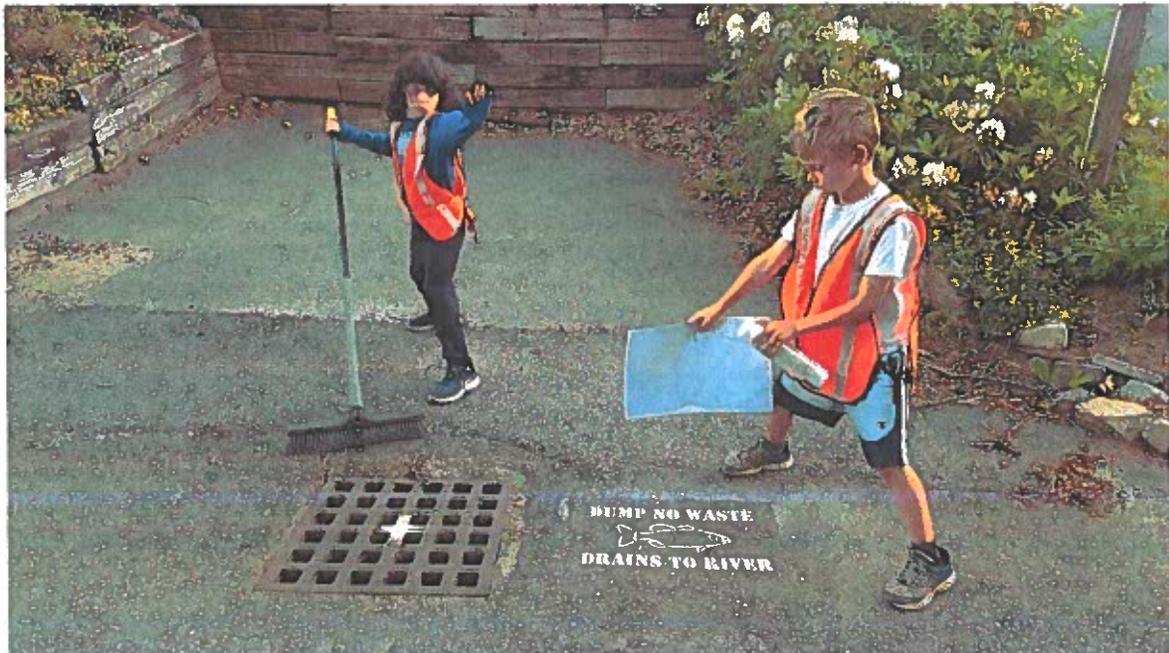
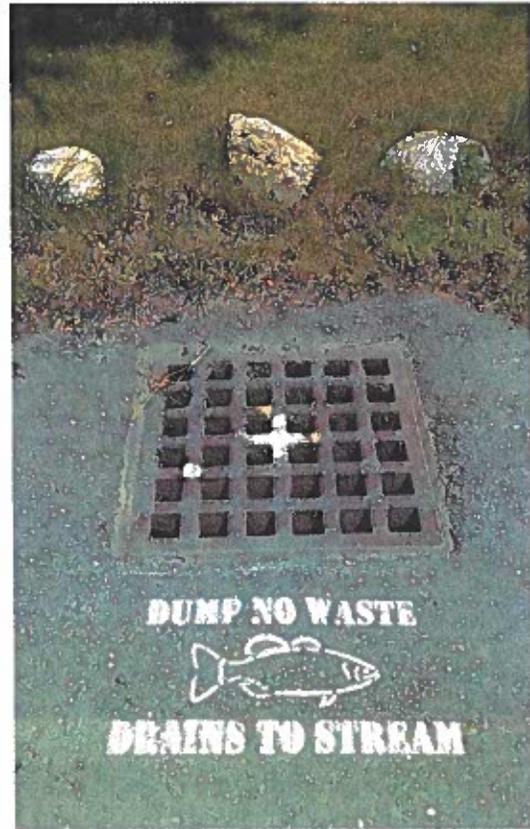
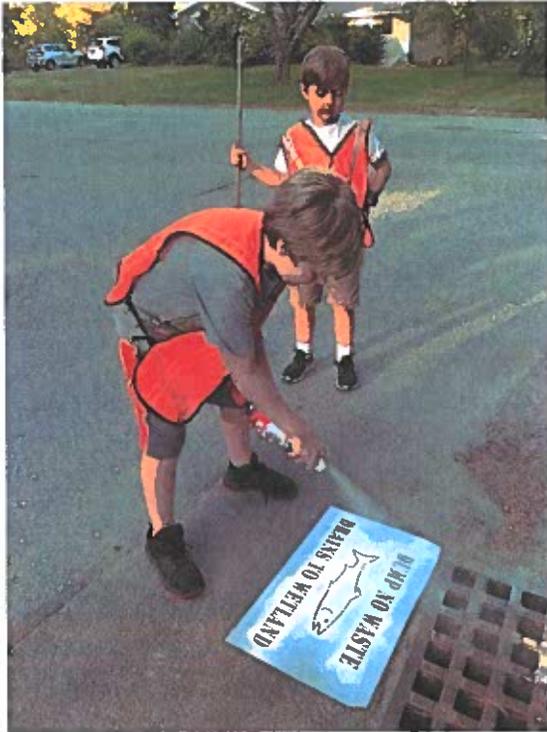
Details

Help maintain a clean and healthy pond by helping HPA cleanup around the pond on Saturday May 13th. Yellow bags for collecting trash will be available at 9:30 am at the Heart Pond Public Beach.

Free Admission

BMP # 2-7

STORM DRAIN STENCILING – JUNE 2017



BMP # 3-1

STORM DRAIN MAPPING



BMP # 3-2

OUTFALL INSPECTIONS



TOWN OF CHELMSFORD OUTFALL INSPECTION FORM

Outfall ID: D0029 Location: Donstable Road Date: 5-24-17 Inspector's Name: JF
 Photograph Private Road Watershed: Deep Roads Weather: Sunny P Cloudy Cloudy Rainy Drizzle
 Temperature: 66 Most Recent Precipitation: 1.2 (in) Amount: 0.1 (in) Onset: Low State: Private Unknown
 Flow: Yes No (Dry weather)

OUTFALL CONDITION

Condition	Color (Strongly Averse, Moderate, Satisfactory)	Surface Condition (Cracks, Spalls, etc.)	Structure (Concrete, Masonry, etc.)	Functionality (Flow, Blockage, etc.)	Vegetation (Overgrowth, etc.)	Signs of Leaking (Puddles, etc.)	Other Notes
Good	/	/	/	/	/	/	/

PIPE CONDITION

Material (Concrete, etc.)	Condition (Cracks, etc.)	Depth (in)	Other Notes
Concrete	Cracks	14"	Cracks no measurement included

HEADWALL CONDITION

Material (Concrete, etc.)	Type (Gravity, etc.)	Condition (Cracks, etc.)
Concrete	Gravity	Cracks

SWALE CONDITION

Type (Grass, etc.)	Material (Gravel, etc.)	Type (Grass, etc.)	Width (ft)	Height (ft)	Bottom Width (ft)	Date of Last Maintenance
Grass	Gravel	Grass				

WATER SAMPLING RESULTS

Ammonia (± 0.5 mg/L)	Copper (± 0.05 mg/L)	SRP (± 0.25 mg/L)	CDP (µg/L)	Salinity (µM)	F. Coli (per 100ml)	Temperature (°F)	PH (pH)	Water Table (ft)	Flow Rate (gpm)

OUTFALL DISCHARGE LOCATION

Location (e.g., Road, Field, etc.)	Notes	Drainage Sub-System
Deep Road		