

Municipality/Organization: Town of Salem, New Hampshire

EPA NPDES Permit Number: NHR041031

**Annual Report Number
& Reporting Period:** Year 15: April 1, 2017 – March 31, 2018

**NPDES PII Small MS4 General Permit
Annual Report
(Due: May 1, 2018)**

Part I. General Information

Contact Person: Roy Sorenson **Title:** Director of Municipal Services

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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: Christopher A. Dillon

Title: Town Manager

Date: 4/30/18

Part II. Self-Assessment

The Town of Salem has completed the required self-assessment and has determined that our municipality is generally in compliance with the conditions of the permit. See Part III for status of BMPs.

As the Town has the last few years, over the past year, the Town has continued to take a proactive approach in trying to implement some of the Best Management Practices that will be required under the 2017 NH MS4 Permit. During Permit Year 15, the Town continued to work with their consultant, Weston & Sampson, to accomplish the following:

- Identify outfalls regulated by the MS4 Permit; and delineate, rank and prioritize drainage catchments for future Illicit Discharge Detection and Elimination efforts. Prioritization and ranking of catchments is ongoing, and updates are being made as new outfall screening and sampling data becomes available.
- Refine and further develop their written IDDE Plan to meet the requirements of the 2017 NH MS4 Permit.
- Develop a Draft Notice of Intent and Draft Stormwater Management Plan in compliance with the 2017 NH MS4 Permit.
- Develop a Draft Salt Reduction Plan for the Policy-Porcupine Brook Watershed in accordance with the 2017 NH MS4 Permit.

The Town also continued to work with Stantec to collect asset information for approximately 1,463 drainage structures, including information on asset condition, pipe invert elevation, pipe size, and asset material, as an extension of the Drainage Inventory and Assessment work that Stantec completed for the Town back in 2008. Going forward, the Town will utilize this information to prioritize improvements.

In addition, the Town has continued to work with FB Environmental Associates over the past year to accomplish the following:

- Mail brochures specific to Salem that discuss the impacts of pet waste on public health and the environment to 300 abutters along Captain Pond and Millville Lake.
- Perform dry weather screening at four (4) outfalls discharging to Captain Pond, and two (2) outfalls discharging to Millville Pond that were not previously screened. Dry weather flow was sampled at one outfall discharging to Captain Pond. All other outfalls either were not flowing and had no evidence of dry weather flow or were not flowing but had evidence of dry weather flow and were therefore screened a second time, but again were not flowing.
- Perform “hot spot” monitoring at six (6) outfalls to Captain and Millville Ponds. These outfalls were prioritized for follow-up monitoring because they had elevated fecal indicator bacteria levels and/or received positive hits based on canine detection work previously performed. Outfalls were visited during both dry and wet weather conditions and were sampled when flowing.
- Perform dry weather screening, and sampling when flowing, at 23 outfalls that discharge to Arlington Pond and nine (9) outfalls that discharge to Canobie Lake. Perform wet weather sampling at two (2) outfalls that discharge to Canobie Lake and seven (7) outfalls that discharge to Arlington Pond based on the presence of system vulnerability factors.
- Perform illicit discharge detection and elimination (IDDE) investigations in catchments tributary to “hotspot” outfalls discharging to Arlington Pond, Canobie Lake and Captain Pond that were identified based on prior sampling efforts.

Other notable achievements during Year 15 include:

- Continued implementation of the Town's 10-Year Road Construction Program where associated drainage improvements are completed in conjunction with the repair or reconstruction of existing roadways. In 2017, the Haverhill Road Reconstruction Project was completed, which included comprehensive drainage improvements along 3,600 linear feet of roadway on Haverhill Road between Theodore Avenue and North Main Street. Road reconstruction also began on industrial roads, including Commercial Drive, which included storm drain improvements along approximately 2,000 linear feet of roadway.
- Attendance at meetings for the Nashua-Area Stormwater Group.
- Obtaining funding from the Clean Water State Revolving Fund (CWSRF) program, administered by the New Hampshire Department of Environmental Services, to develop both Stormwater and Wastewater Asset Management Plans to prioritize future system improvements.
- Connecting properties along South Shore Road along Canobie Lake that were previously on septic systems to the new sewer that was constructed on this street.

During Permit Year 16, the Town intends to continue to work to accomplish the following:

- Draft proposed revisions to the Town's existing bylaws to meet the requirements of the 2017 NH MS4 Permit.
- Update the classification and ranking of drainage catchments for future IDDE efforts as needed to incorporate new information collected, including outfall screening and sampling data.
- Finalize their written IDDE Plan to meet the requirements of the 2017 NH MS4 Permit.
- Perform dry weather screening and sampling at 26 regulated outfalls discharging to Canobie Lake, Millville Pond, Captain Pond and Arlington Pond. Perform wet weather sampling at eight (8) outfalls discharging to these water bodies based on the presence of system vulnerability factors.
- Finalize their Notice of Intent for submission to EPA and NHDES to obtain coverage under the 2017 NH MS4 Permit.
- Finalize their written Stormwater Management Plan in compliance with the 2017 NH MS4 Permit.
- Finalize their Salt Reduction Plan for the Policy-Porcupine Brook Watershed in accordance with the 2017 NH MS4 Permit.
- Provide municipal employee training on IDDE and municipal Good Housekeeping practices.
- Continue implementation of the Town's 10-Year Road Construction Program where associated drainage improvements are completed in conjunction with the repair or reconstruction of existing roadways.
- Develop both Stormwater and Wastewater Asset Management Plans through funding received from the CWSRF Program to prioritize future improvements.

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 16 (if applicable)
1-1	Maintain Existing Watershed Signs at Canobie Lake	Dept. of Public Works	Maintain signs throughout permit term	New uniform watershed signs placed around Canobie Lake during Permit Year 13 to replace the previous signs were maintained during Year 15.	These watershed signs will be maintained during Year 16.
1-2	Broadcast Informational Stormwater Video on Local Television	Engineering Department	Broadcast video annually beginning with Permit Year 2	Two stormwater videos were broadcast on local cable television during Permit Year 15. These included the informational stormwater video entitled “Stormwater Runoff, There is No Away”, which aired 3 times in June 2017; and an outreach video on the use of canines to detect human waste in water quality samples collected from the Arlington Mill Reservoir, Captain’s Pond, Hedgehog Pond, and Millville Pond, which aired 17 times between February and September 2017.	The Town will continue to air existing stormwater videos and is still working to identify new stormwater videos/material to air on the local cable access channel.
1-3	Develop Stormwater Brochure ----- Brochure Available for Distribution	Engineering Department ----- Engineering Department	Develop brochure by May 1, 2005 ----- Make brochure available at Town Hall and DPW by May 1, 2006 and distribute to students annually in Permit Years 3 through 5	Copies of the EPA pamphlet/fact sheet “Protecting Water Quality from Urban Runoff”, the Clean Water Campaign pamphlet entitled “Pick it Up It’s Your Doodie”, and the handout “Warm Weather Tips for Outdoor Water Conservation” continue to be available at the Town Hall front desk and at the DPW. The Town also makes copies of their MS4 Annual Reports available at Town Hall, at the DPW and on the Town’s website. Outfall sampling reports are also available on the Town’s website. The Town previously developed a separate pet waste brochure that is specific to Salem that discusses the impact of pet waste on public health and the environment. In Permit Year 15, this brochure was mailed to 300 abutters along Captain Pond and Millville Pond.	The Town will continue to make pamphlets/fact sheets and the Town’s MS4 Annual Reports available at Town Hall, at the DPW and on the Town’s website. The Town will also continue to make outfall screening and sampling reports available on the Town’s website.
1-4	Stormwater Information added to Engineering Department’s website	Engineering Department	Stormwater information added to Engineering Department website by May 1, 2005	BMP Completed.	BMP Completed.

	Maintain/update information on Engineering Dept. Website	Engineering Department	Update/maintain website during Permit Years 3 through 5	<p>The Town continued to maintain links to stormwater resources on their website. The Town has copies of all their previous MS4 Annual Report submittals on the Town's website. The Town continues to provide a NHDES Fact Sheet on their website regarding snow and ice removal by business owners. It discusses the use of 'certified' snow removal contractors who are trained in efficient application of road salt as part of the Green SnoPro Program, thereby reducing impacts to nearby receiving waters. It encourages annual calibration of salt spreaders; use of infrared thermometers to reduce potential salt application; covering salt and sand piles when not in use; and employing the use of drop type spreaders, anti-icing and pre-wetting measures to reduce salt usage.</p> <p>During Permit Year 15, the Town developed an Engineering Facebook Page.</p>	<p>Continue to maintain and update existing links and add new stormwater resources to the Town's website.</p> <p>Continue to maintain the Engineering Facebook Page developed by the Town.</p>
1-5	Identify locations for 3 kiosks with stormwater bulletins	Dept. of Public Works	Identify location for kiosks by May 1, 2004	BMP Completed.	BMP Completed.
	Design Kiosks	Engineering Dept.	Complete design of kiosks by May 1, 2005	BMP Completed.	BMP Completed.
	Install Kiosks	Dept. of Public Works	Install kiosks by May 1, 2006	BMP Completed.	BMP Completed.
	Maintain Kiosks	Dept. of Public Works	Maintain/update kiosks during Permit Years 4 through 5	<p>Kiosks were maintained at Canobie Lake, Hedgehog Pond, Michelle Memorial Park, Town Forest, Bill Valentine Memorial Park and the Mall at Rockingham Park during Permit Year 15. Copies of the EPA pamphlet/fact sheet "Protecting Water Quality from Urban Runoff" and the pamphlet entitled "Pick It Up It's Your Doodie" are available at each kiosk.</p>	<p>Continue to maintain stormwater information in kiosks located at Canobie Lake, Hedgehog Pond, Michelle Memorial Park, the Town Forest, Bill Valentine Memorial Park, and the Mall at Rockingham Park.</p> <p>Add an additional kiosk at the Tuscan Village Green Space, which is a conservation area, and include stormwater pamphlets in the kiosk. There is also a kiosk/education board at the Transfer Station where information could be added.</p>

1-6	Approach Private Beaches and Mall at Rockingham Park about Installing Informational Kiosks	Dept. of Public Works	Approach private beach by May 1, 2006	The Salem Fire Dept. has pursued funding in the past to build additional kiosks at private beaches and Rockingham Park. To date, they have been unable to secure this grant. However, during Year 14, the Eagle Scouts were able to build a new kiosk at the Mall at Rockingham Park, and stormwater information was added to that kiosk in Year 15. A kiosk is also planned for the Tuscan Village Green Space, which is a conservation area. Stormwater information will be included in that kiosk once it is built.	Add an additional kiosk at the Tuscan Village Green Space, which is a conservation area, and include stormwater pamphlets in the kiosk.
	Coordinate Kiosk Installation if Approved	Dept. of Public Works	Kiosk installed within one permit year upon receiving approval		

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 16 (if applicable)
2-1	Comply with State Public Notification Guidelines	Planning Board and other Town Departments	Post notices on all applicable meetings	The Town continued to comply with the required state meeting notification guidelines.	Continued compliance with the required state meeting notification guidelines.
2-2	Publicize and Maintain Public Complaint Hotline and DPW Website	Dept. of Public Works	Maintain hotline and continue to respond to complaints from website	During Permit Year 15, the Town continued to maintain a hotline on their website to respond to public work order requests. Work order requests go directly to DPW. The Town logs and tracks all work order requests. In 2017, the Town responded to 952 work orders predominantly for maintenance such as street sweeping and catch basin cleaning.	Continue to maintain a hotline on the Town website to respond to public work order requests. Continue to log and track all work order requests.
2-3	Hold Annual Household Hazardous Waste Day	Dept. of Public Works	Household hazardous waste collection day held each year. Amount of household hazardous waste collected.	The Annual Household Hazardous Waste Collection Day was held on Saturday, September 9 th , 2017. Hazardous household waste consisting of aerosols, flammable solids and liquids, paint related material, oxidizing solids and liquids, solid and liquid pesticides, corrosive solids and liquids, mercury-containing devices, asbestos, antifreeze, motor oil, fluorescent lamps, and batteries was collected.	The Annual Household Hazardous Waste Collection Day is scheduled for Saturday, September 8 th , 2018.
2-4	Continue Mandatory Recycling Program	Dept. of Public Works	Continue existing recycling program throughout permit term.	The recycling program was maintained throughout Permit Year 15. Approximately 2,221 tons of recyclables were collected in 2017.	Continue existing recycling program.
2-5	Schedule Annual Town Roadside Litter Clean-up Day	Dept. of Public Works	Schedule clean-up day annually. Amount of roadside litter collected and properly disposed	The Town held their Annual Roadside Litter Clean-up from April 17 th through April 25 th , 2018. The clean-up covered 60 roadways and approximately 4.51 tons of trash was collected town-wide. As part of a separate clean-up earlier in the year, 250 pounds of trash was removed from the drainage ditch in front of the former Shaw's Supermarket on Cluff Crossing Road. Separate clean-up teams were also organized by the Boys & Girls Club. The DPW provided assistance by disposing of trash bags of collected materials.	Continue to hold an Annual Roadside Litter Clean-up event in March/ April 2019.

2a. Additions

2-6	Hold Public Outreach Event Regarding Bacterial Source Tracking	Engineering Dept.	Hold one public outreach event in conjunction with the Senior Center.	BMP Completed. A public demonstration was previously held at the Ingram Senior Center during Permit Year 12 to show how canine detection can be utilized to identify sources of bacteria in the storm drain system.	BMP Completed.
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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 16 (if applicable)
3-1	Continue inspection of new/updated sewer connections	Dept. of Public Works	Continue inspection of all new/updated sewer connections. Number of sewer connections inspected.	The Town inspected 72 new/updated sewer connections during Permit Year 15. This includes 31 properties on South Shore Road and Lake Shore Road along Canobie Lake that were previously on private septic that are now connected to the public sewer.	Continue inspection of new/updated sewer connections.
3-2	Identify Priority Areas	Dept. of Public Works	Priority Areas identified by May 1, 2004	BMP Completed. During Year 15, the Town continued to work to prioritize and rank catchments delineated during Permit Year 14 to identify outfalls that are problem catchments, high priority, and low priority for implementation of the Town's IDDE Program under the new MS4 Permit. The matrix developed was updated to reflect sampling data collected during Permit Year 15. Outfalls discharging to drinking water sources and beaches have been designated as high priority as required by the new MS4 Permit.	BMP Completed. Continue to update catchment prioritization and ranking as new sampling data is collected.
3-3	Map Outfalls/Receiving Waters	Dept. of Public Works	Map completed by May 1, 2007	In Permit Year 15, the Town continued to make additional updates to their Drainage GIS to incorporate mapping of outfalls, drain manholes, and catch basins associated with new construction and road reconstruction projects. The Town also collected asset information for approximately 1,463 drainage structures, including collection of pipe invert elevation data, pipe size, material, and asset condition.	The Town will continue to keep their GIS drainage mapping up-to-date, mapping new drainage structures in GIS as a result of new construction and road reconstruction work. The Town will prioritize improvements to the drainage system based on asset information collected.

3-4	Complete Dry Weather Screening of Outfalls	Dept. of Public Works	One round of outfall screening completed by end of permit term	BMP Completed. Outfalls were previously inspected as part of the Stormwater Inventory and Assessment Project. At this time, screening was conducted in conjunction with GIS mapping of outfalls although EPA's definition of dry weather conditions may have not been met at all outfalls. In Permit Year 15, 44 outfalls near Captain Pond, Millville Pond, Arlington Pond and Canobie Lake were screened during dry weather. Catchment investigations were also completed of previously identified "hotspot" outfalls discharging to Arlington Pond, Canobie Lake and Captain Pond. All sampling and investigations completed are consistent with the requirements of the Final 2017 NH MS4 Permit.	BMP Completed. During Permit Year 16, the Town plans to complete additional dry weather monitoring/sampling at 26 outfalls and wet weather sampling at 8 outfalls tributary to Captain Pond, Millville Pond, Canobie Lake and Arlington Pond.
3-5	Stormwater Ordinance	Dept. of Public Works	Draft stormwater ordinance/amendment language by May 1, 2007	The Town's existing municipal code prohibits illicit discharges to the storm drain system and outlines procedures and penalties for violations.	The Town is in the process of performing a comprehensive re-write of their existing municipal code. Under the new permit, the Town will amend their existing regulations as needed to meet the requirements of the new permit.
3-6	Develop and Implement System for Elimination of Illicit Discharges	Dept. of Public Works	Based on prioritized results in BMP#3-4, determine procedures to identify and remove illicit connections to drain; maintain records.	The Town previously developed a draft written protocol for identifying and removing illicit connections as part of their Stormwater Inventory and Assessment Project. During Permit Year 15, the Town began work on the development of a Comprehensive Illicit Discharge Detection and Elimination (IDDE) Plan that meets the requirements of the new MS4 Permit.	During Permit Year 16, the Town will finalize their IDDE Plan in accordance with the 2017 NH MS4 Permit. The Town will also conduct municipal employee training on illicit discharge detection and elimination.

3a. Additions

3-7	Assess Water Quality at Bacteria Impaired Waters & Conduct a Shoreline Survey to Identify Potential Sources of Contamination	Engineering Dept.	Conduct preliminary assessment at Arlington Mill Reservoir, Captain's Pond, Hedgehog Pond, and Millville Pond	During Permit Year 15, the Town completed dry and wet weather monitoring/sampling of outfalls tributary to Captain Pond, Millville Pond, and Arlington Pond, as well as IDDE investigations in catchments tributary to "hotspot" outfalls discharging to Arlington Pond, and Captain Pond. This work is part of the Town's continuing efforts to meet the Waste Load Reductions identified in the TMDLs for these water bodies.	During Permit Year 16, the Town plans to complete additional dry and wet weather monitoring/sampling of outfalls tributary to Captain Pond, Millville Pond, and Arlington Pond.
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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 16 (if applicable)
4-1	Continue to Implement Land Use Control Regulations which Require Erosion and Sediment Control at Construction Sites	Engineering Department	Continue to enforce regulations throughout permit term. Number of proposed development plans reviewed each year.	<p>The Town’s Land Use Control regulations which require sediment and erosion control at construction sites were enforced during Permit Year 15.</p> <p>In 2017, proposed subdivision and site development plans were submitted for review a total of 214 times. Both initial plan reviews and review of subsequent plan revisions are tracked and included in this total.</p>	Continue to implement Land Use Control Regulations which require erosion and sediment control at construction sites. The Town will also work to amend their existing regulations as needed to meet the requirements of the 2017 NH MS4 Permit.
4-2	Maintain Procedures for Site and Subdivision Plan Review	Engineering Department	Continue to enforce regulations throughout permit term. Number of site and subdivision plans reviewed each year.	<p>The Town has procedures in place for certain departments and/or boards to perform site and subdivision plan reviews. Water quality impacts are assessed as part of these reviews. These procedures were enforced during Permit Year 15.</p> <p>In 2017, proposed subdivision and site development plans were submitted for review a total of 214 times. Both initial plan reviews and review of subsequent plan revisions are tracked and included in this total.</p>	Continue to maintain procedures for site and subdivision plan review. During Permit Year 16, the Town will work to amend their existing regulations as needed to meet the requirements of the 2017 NH MS4 Permit, including ensuring that site and subdivision plan review procedures are in written format.
4-3	Maintain Procedure for Collecting and Responding to Public Comments	Dept. of Public Works	Maintain hotline and continue to respond to complaints from website.	The Town maintained the hotline and continued to respond to public work order requests received via the Town website. These requests now go directly to DPW. All work order requests were logged and tracked. In 2017, the Town responded to 952 work orders predominantly for maintenance such as street sweeping and catch basin cleaning.	Continue to maintain the hotline and respond to public work order requests received via the Town website. Continue to log and track all work order requests.
4-4	Maintain Construction Site Inspections for Erosion Control	Engineering Department	Maintain existing procedure throughout permit term. All construction sites inspected each Permit Year.	In accordance with their Land Use Control Regulations, the Town follows the required procedures for inspection of construction sites, which includes enforcing the use of erosion control measures. The Town completed inspections as required for all construction sites in 2017/2018.	Continue to maintain construction site inspections for erosion control.
4-5	Amend Land Use Control Regulations to include Construction Material Management	Engineering Department	Draft Amendment to regulations by May 1, 2005. Implement upon approval.	BMP Completed.	BMP Completed.

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 16 (if applicable)
5-1	Maintain Land Use Control Regulations which Require Post-Construction Runoff Control for Construction Sites	Dept. of Public Works, Engineering Dept. & Planning Board	Continue to enforce regulations throughout permit term. Number of proposed development plans reviewed each year.	<p>The Town’s existing Land Use Control Regulations establish criteria for stormwater runoff in new developments. The Town continued to follow their existing policies during Permit Year 15.</p> <p>In 2017, proposed subdivision and site development plans were submitted for review a total of 214 times. Both initial plan reviews and review of subsequent plan revisions are tracked and included in this total. There were also 38 as-built submissions for subdivision and site plan development projects.</p>	Continue to maintain Land Use Control Regulations which require post-construction runoff control for construction sites. The Town will also work to amend their existing regulations to meet the requirements of the 2017 NH MS4 Permit.
5-2	Amend Land Use Control Regulations to Require Developers to Submit O&M Plans for Private Structural BMPs	Dept. of Public Works, Engineering Dept. & Planning Board	Draft Amendment to regulations by May 1, 2005. Implement upon approval.	<p>The Town developed a draft amendment to their existing Land Use Control Regulations, which would require developers to submit operation & maintenance plans for the long-term maintenance of any private BMPs for stormwater runoff control. During Year 10, the draft ordinance was updated and presented to the Planning Board for discussion/consideration on Feb 19, 2013, but was not adopted. As of Year 15, the Town is working on further revisions and updates in the hopes of obtaining Planning Board Approval. O&M notes for individual BMPs are still added to plan sets and O&M Manuals are required by the NHDES as part of the Alteration of Terrain Rules. The Town does require the submission of as-builts, and in 2017, 38 as-builts were submitted for subdivision and site plan development projects.</p>	The Town will continue to work to amend their existing regulations to meet the requirements of the 2017 NH MS4 Permit.

5-3	Land Use Control Regulations Recommend a Structural BMP Manual for Use by Developers	Dept. of Public Works, Engineering Dept. & Planning Board	Maintain reference to BMP Manual throughout Permit Term.	The Town's Land Use Control regulations reference the "Stormwater Management and Erosion and Sediment Control Handbook for Urban and Developing Areas in New Hampshire" for use by developers. The reference to this Structural BMP Manual was maintained throughout Permit Year 15.	Maintain reference to Structural BMP Manual. Under the new permit expected later this year, the Town will amend their existing regulations as needed to meet the requirements of the new permit.
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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 16 (if applicable)
6-1	Continue Street Sweeping and Residual Disposal Practices	Dept. of Public Works	Sweep all streets in Town at least once per year	All streets were swept once. All residuals were disposed of at the Shannon Road landfill where they were monitored and tested.	Continue existing street sweeping and residual disposal practices.
6-2	Continue Catch Basin Cleaning and Residual Disposal Practices	Dept. of Public Works	Clean 33% of catch basins in Town each year. All CBs inspected and/or cleaned on a three-year rotating schedule.	The Town has 5,087 catch basins and approximately 375 basins were cleaned over the past year in the Rte. 28 area. In addition, there were another 42 catch basins that were cleaned while they were being repaired. All residuals were disposed of at the Shannon Road landfill where they are monitored and tested.	Continue existing catch basin and residual disposal practices. The Town plans to continue to utilize an outside contractor to complete catch basin cleaning during Permit Year 16.
6-3	Continue Salting and Snow Removal Practices	Dept. of Public Works	Continue existing practices throughout Permit Term	The Town had been trying to secure state approval and funding of their “Scope and Plan” for Salt Mitigation, which includes construction of a sand/salt storage shed and the purchase of new equipment. The Town has had various meetings with the state in the last few years, and it does not look like the Town will be receiving any funding for this project from the state. During Permit Year 15, the Town did purchase another new truck with ground speed control bringing the total number of trucks that the Town has with ground control spreaders to seven. The Town also installed a new roof on their salt shed.	Since the Town is unable to secure state funding of the “Scope and Plan” for Salt Mitigation, which includes construction of a sand/salt storage shed, the Town is trying to budget to complete this work themselves at some point in the future, although no immediate plans exist.
6-4	Continue Vehicle Maintenance Practices	Dept. of Public Works	Continue existing practices throughout Permit Term	Municipal vehicle maintenance is performed within the DPW garage. Practices include reducing the amount of solvents/chemicals used through recycle/reuse, using alternative products whenever possible, and having absorbing compounds available for employee use in the event of a spill.	Continue to follow existing vehicle maintenance practices.

6-5	Continue Vehicle Washing Practices	Dept. of Public Works	Continue existing practices throughout Permit Term	<p>Municipal DPW vehicles are currently washed over a leaching basin. The vehicles are washed with water only or biodegradable soap.</p> <p>The Town had been trying to secure state approval and funding of their “Scope and Plan” to construct a new truck wash down area. They have had various meetings with the state and have been unable to secure funding to date.</p>	The Town is still looking into other potential options for funding of a new truck wash down area. The Town has also discussed construction of a regional truck wash down facility although no immediate plans exist.
6-6	Continue Maintenance Activities at Parks & Open Space	Dept. of Public Works	Continue existing practices throughout Permit Term	The Town previously developed draft written operation and maintenance procedures for municipal activities and facilities. This includes parks and open space. The Town continues to use organic fertilizers and does not employ the use of any pesticides. The Town is also working to develop an improved turf maintenance program, which would allow for enhanced documentation of the type and quantity of materials utilized.	<p>Continue to use organic fertilizers when performing maintenance activities within parks and open space.</p> <p>Work to finalize written O&M procedures for parks and open space in accordance with the 2017 NH MS4 Permit.</p>
6-7	Continue Hazardous Waste Storage and Employee Training	Dept. of Public Works	Continue existing practices throughout Permit Term	The Town’s practices include proper storage of hazardous materials, and the Fire Department has a spill prevention and response plan. The DPW has installed non-flammable cabinets to hold hazardous materials. They also recycle waste oil and meet oil storage requirements. From time to time, the Fire Dept. also completes hazardous materials management training for other departments.	Continue to follow the Town’s existing practices including proper storage of hazardous materials, and implementation of the spill prevention and response plan at the Fire Dept. and provide training to municipal employees.
6-8	Develop/Implement Employee Education Program	Dept. of Public Works	4 hours of stormwater related training during permit term for each appropriate employee	In Permit Year 15, 4 employees attended the Culvert Maintainer Certification Training Class, which is conducted by the UNH Technology Transfer Center, and certified by NHDES. Annual training is also conducted for employees on the Stormwater Pollution Prevention Plan (SWPPP) for the Transfer Station.	During Permit Year 16, the Town will continue to provide training to municipal employees on the SWPPP for the Transfer Station. The Town will also continue to explore other opportunities to provide stormwater related training to their employees.

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

There are currently six approved TMDLs which apply to Salem:

- *The Policy-Porcupine Brook Chloride TMDL. Identified sources of chloride to Policy-Porcupine Brook include water softeners (2%), food waste (1%), atmospheric deposition (1%), state roads (9%), municipal roads (27%), private roads (3%), parking lots (50%), and salt piles (7%).*
- *The New Hampshire Statewide Bacteria (387 segments) TMDL, which includes 387 bacteria-impaired waters on NH's 2008 303(d) list. In Salem, these waters include Captain's Beach and Camp Otter Swim Area at Captains Pond, where the impairment is for e-coli.*
- *The Bacteria-Impaired Waters (58 segments) TMDL, which includes 58 bacteria-impaired waters on NH's 2010 303(d) list. In Salem, these waters include the Arlington Mill Reservoir and Millville Lake. Again, the impairment is for e-coli.*
- *The 44 Bacteria-Impaired Waters TMDL, which includes 44 bacteria-impaired waters on NH's 2012 303(d) list. In Salem, these waters include the Arlington Mill Reservoir – Arlington Pond Improvement Assoc. and Salem Town Beach – Hedgehog Pond. Again, the impairment is for e-coli.*
- *The Bacteria TMDL for Camp Hadar Beach on Captain Pond in Salem, NH (and updated bacteria results for Camp Otter Beach), where the impairment is e-coli.*
- *The Phosphorous TMDL for Captain Pond, which was finalized in September 2017.*

Many of the BMPs that the Town is currently implementing as part of their Stormwater Management Program will assist the Town in meeting these approved TMDLs. These include BMP #1-2, 1-3, 1-4, 1-5, 2-2, 2-6, 3-1, 3-4, 3-5, 3-6, 3-7, 6-1, 6-2, 6-3 and 6-6. In addition, the Town has also implemented the following BMPs which are aimed at assisting the Town in meeting the TMDL Waste Load Allocations:

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 16 (if applicable)
7-1	Involve Watershed Groups: Arlington Pond Protective Assn., Millville Lake Protective Assn., Captain's Pond Protective Assn.,	Local Groups & Dept. of Public Works & Engineering	Continue to hold regular meetings and disseminate information to the public	During Permit Year 15, the Millville Lake Protective Assn. and the Arlington Park Improvement Assn. remained active in improving the water quality of the Millville Lake and the Arlington Mill Reservoir. The Millville Lake Protective Association continues to provide information on their website on how to improve lake water quality by reducing sources of phosphorus, bacteria and sediment. The Arlington Park Improvement Association held a beach clean-up day on May 20, 2017.	The Arlington Park Improvement Association plans to hold a beach clean-up day on May 19, 2018. These local protective associations will continue to remain active in educating the public and improving water quality.
Revised	Added Arlington Park Improvement Assn.				

7a. Additions

7-2	Assess Water Quality at Water Bodies with Bacteria Impairments & Conduct a Shoreline Survey to Identify Potential Sources of Contamination	Engineering Dept.	Conduct preliminary assessment at Arlington Mill Reservoir, Captain's Pond, Hedgehog Pond, and Millville Pond	<p>During Permit Year 15, the Town performed dry weather screening at four (4) outfalls discharging to Captain Pond, and two (2) outfalls discharging to Millville Pond. Dry weather flow was sampled at one outfall discharging to Captain Pond. All other outfalls either were not flowing and had no evidence of dry weather flow or were not flowing but had evidence of dry weather flow and were therefore screened a second time, but again were not flowing.</p> <p>The Town also performed "hot spot" monitoring at six (6) outfalls discharging to Captain and Millville Ponds. These outfalls had elevated fecal indicator bacteria levels and/or received positive hits based on canine detection work previously performed. Outfalls were visited during both dry and wet weather conditions and were sampled when flowing.</p> <p>The Town also performed dry weather screening, and sampling when flowing, at 23 outfalls that discharge to Arlington Pond, and wet weather sampling at seven (7) outfalls that discharge to Arlington Pond based on the presence of system vulnerability factors.</p> <p>The Town also performed illicit discharge detection and elimination (IDDE) investigations in catchments tributary to "hotspot" outfalls discharging to Arlington Pond and Captain Pond that were identified based on prior sampling efforts.</p> <p>This work is part of the Town's continuing efforts to meet the Waste Load Reductions identified in the TMDLs for these water bodies.</p>	During Permit Year 16, the Town plans to complete additional dry and wet weather monitoring/sampling of outfalls tributary to Captain Pond, Millville Pond, and Arlington Pond.
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7-3	Prohibit Use of Calcium Chloride for Dust Control on Town Road Construction Projects Within the Policy/Porcupine Brook Watershed	Dept. of Public Works & Engineering	Continue to Prohibit Use of Calcium Chloride for Dust Control on Town Road Construction Projects Within the Policy/Porcupine Brook Watershed	<p>During Permit Year 15, the use of calcium chloride was prohibited within the watershed for Policy/Porcupine Brook on Town road construction projects as a dust control measure. Only water was allowed to be used.</p> <p>During Permit Year 15, the Town also began to develop a Salt Reduction Plan for the Policy-Porcupine Brook Watershed as required by the Final 2017 NH MS4 General Permit.</p>	The Town will continue to prohibit the use of calcium chloride for dust control on all Town road reconstruction projects within the watersheds of those water bodies that have impairments for chloride. The Town will also finalize the development of a Salt Reduction Plan for the Policy-Porcupine Brook Watershed as required by the Final 2017 NH MS4 General Permit.
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7b. WLA Assessment

The Waste Load Allocations for Policy-Porcupine Brook, as included in the Final TMDL and as they relate to Salem, are as follows:

Source	FY07 Salt Imports (tons salt/yr)	Allocation of Loads (tons salt/yr)
Municipal Roads	1,247.9	997.9
Private Roads	119.6	95.6
Parking Lots	2,379.1	1,902.5
Salt Piles	315.2	0.0

The Waste Load Reductions for Bacteria Impaired Waters, as included in the Final TMDL and as they relate to Salem, are as follows:

Waterbody	% Reduction in E. coli to meet TMDL	
	Geometric Mean	Single Sample
Captain Pond – Captain’s Beach	complies	1%
Captain Pond – Camp Otter Swim Area Beach	88%	78%
Arlington Mill Reservoir – Second St. Beach	complies	65%
Millville Lake – Town Beach	25%	63%
Arlington Mill Reservoir – Arlington Pond Improvement Assoc.	56%	78%
Salem Town Beach – Hedgehog Pond	76%	78%
Captain Pond – Camp Hadar Beach	73%	78%

The Waste Load Allocations for phosphorus for Captain Pond, as included in the Final TMDL and as they relate to Salem, are as follows:

Inputs	Current Load (kg/yr)	Target Load to Obtain In-Lake Target Concentration (kg/yr)	% Reduction
Atmospheric	3.86	3.86	0%
Internal	11.56	11.56	0%
Waterfowl	41.96	10.49	75%
Septic Systems	8.88	8.88	0%
Watershed Load – Northeast Watershed	36.53	27.83	24%
Watershed Load – Direct Drainage	22.15	13.03	41%
Total Load	124.94	75.65	39%

The Town is making progress in meeting the Waste Load Allocations and Waste Load Reductions identified above through implementation of existing BMPs identified herein.

Part IV. Summary of Information Collected and Analyzed

The only additional information that has been collected outside of what was listed in Part III above includes sampling at pipes outlets and treatment swale discharge points that collect stormwater runoff from the Shannon Road landfill. Samples are collected quarterly at up to 10 locations during major rain events. Samples are analyzed for TSS.

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, 2017 through March 31, 2018)

Programmatic

	(Preferred Units)	Response
Stormwater management position created/staffed	(y/n)	N
Annual program budget/expenditures **	(\$)	
Total program expenditures since beginning of permit coverage	(\$)	
Funding mechanism(s) (General Fund, Enterprise, Utility, etc)		General Fund

Education, Involvement, and Training

Estimated number of property owners reached by education program(s)	(# or %)	
Stormwater management committee established	(y/n)	N
Stream teams established or supported	(# or y/n)	
Shoreline clean-up participation or quantity of shoreline miles cleaned **	(y/n or mi.)	
Shoreline cleaned since beginning of permit coverage	(mi.)	
Household Hazardous Waste Collection Days		
▪ days sponsored **	(#)	1
▪ community participation **	(# or %)	
▪ material collected **	(tons or gal)	
School curricula implemented	(y/n)	

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					
▪ Erosion & Sediment Control					
▪ Post-Development Stormwater Management					
Accompanying Regulation Status (indicate with "X")					
▪ Illicit Discharge Detection & Elimination					
▪ Erosion & Sediment Control					
▪ Post-Development Stormwater Management					

Mapping and Illicit Discharges

	(Preferred Units)	Response
Outfall mapping complete	(%)	100%
Estimated or actual number of outfalls	(#)	
System-Wide mapping complete (complete storm sewer infrastructure)	(%)	100%
Mapping method(s)		
▪ Paper/Mylar	(%)	
▪ CADD	(%)	
▪ GIS	(%)	100%
Outfalls inspected/screened **	(# or %)	100%

Outfalls inspected/screened (Since beginning of permit coverage)	(# or %)	
Illicit discharges identified **	(#)	
Illicit discharges identified (Since beginning of permit coverage)	(#)	
Illicit connections removed **	(#); and (est. gpd)	
Illicit connections removed (Since beginning of permit coverage)	(#); and (est. gpd)	
% of population on sewer	(%)	40%
% of population on septic systems	(%)	60%

Construction

	(Preferred Units)	Response
Number of construction starts (>1-acre) **	(#)	
Estimated percentage of construction starts adequately regulated for erosion and sediment control **	(%)	
Site inspections completed **	(# or %)	
Tickets/Stop work orders issued **	(# or %)	
Fines collected **	(# and \$)	
Complaints/concerns received from public **	(#)	

Post-Development Stormwater Management

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

Operations and Maintenance

Average frequency of catch basin cleaning (non-commercial/non-arterial streets) **	(times/yr)	< 1/yr
Average frequency of catch basin cleaning (commercial/arterial or other critical streets) **	(times/yr)	< 1/yr
Qty of structures cleaned **	(#)	417
Qty. of storm drain cleaned **	(%, LF or mi.)	
Qty. of screenings/debris removed from storm sewer infrastructure **	(lbs. or tons)	

Disposal or use of screenings (landfill, POTW, compost, beneficial use, etc.) **	(location)	landfill
Basin Cleaning Costs		
• Annual budget/expenditure (labor & equipment)**	(\$)	
• Hourly or per basin contract rate **	(\$/hr or \$ per basin)	
• Disposal cost**	(\$)	
Cleaning Equipment		
• Clam shell truck(s) owned/leased	(#)	
• Vacuum truck(s) owned/leased	(#)	
• Vacuum trucks specified in contracts	(y/n)	
• % Structures cleaned with clam shells **	(%)	
• % Structures cleaned with vector **	(%)	

	(Preferred Units)	Response
Average frequency of street sweeping (non-commercial/non-arterial streets) **	(times/yr)	1/yr
Average frequency of street sweeping (commercial/arterial or other critical streets) **	(times/yr)	
Qty. of sand/debris collected by sweeping **	(lbs. or tons)	
Disposal of sweepings (landfill, POTW, compost, beneficial use, etc.) **	(location)	landfill
Annual Sweeping Costs		
• Annual budget/expenditure (labor & equipment)**	(\$)	
• Hourly or lane mile contract rate **	(\$/hr. or ln mi.)	
• Disposal cost**	(\$)	
Sweeping Equipment		
• Rotary brush street sweepers owned/leased	(#)	
• Vacuum street sweepers owned/leased	(#)	
• Vacuum street sweepers specified in contracts	(y/n)	
• % Roads swept with rotary brush sweepers **	%	
• % Roads swept with vacuum sweepers **	%	

Reduction (since beginning of permit coverage) in application on public land of: ("N/A" = never used; "100%" = elimination)		
▪ Fertilizers	(lbs. or %)	
▪ Herbicides	(lbs. or %)	
▪ Pesticides	(lbs. or %)	100%
Integrated Pest Management (IPM) Practices Implemented	(y/n)	

	(Preferred Units)	Response
Average Ratio of Anti-/De-Icing products used ** (also identify chemicals and ratios used in specific areas, e.g., water supply protection areas)	% NaCl % CaCl ₂ % MgCl ₂ % CMA % Kac % KCl % Sand	
Pre-wetting techniques utilized **	(y/n or %)	
Manual control spreaders used **	(y/n or %)	33% of spreaders
Zero-velocity spreaders used **	(y/n or %)	
Estimated net reduction or increase in typical year salt/chemical application rate	(±lbs/ln mi. or %)	
Estimated net reduction or increase in typical year sand application rate **	(±lbs/ln mi. or %)	
% of salt/chemical pile(s) covered in storage shed(s)	(%)	
Storage shed(s) in design or under construction	(y/n or #)	
100% of salt/chemical pile(s) covered in storage shed(s) by May 2008	(y/n)	

Water Supply Protection

Storm water outfalls to public water supplies eliminated or relocated	# or y/n	
Installed or planned treatment BMPs for public drinking water supplies and their protection areas	# or y/n	
<ul style="list-style-type: none"> Treatment units induce infiltration within 500-feet of a wellhead protection area 	# or y/n	