Town of Littleton's Stormwater Action Plan Changes due to EPA's Final General Permit

TO: Board of Selectmen, Town of Littleton

FROM: Emily Scerbo, P.E., Jennie Moonan, P.E., and Cassandra Stacy, EIT
Rebekah Lacey, Miyares and Harrington, LLP

DATE: April 22, 2016

On April 13, 2016, the U.S. Environmental Protection Agency (EPA) published the final National Pollutant Discharge Elimination System (NPDES) *General Permits for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems (MS4) in Massachusetts*. This General Permit substantially increases stormwater management requirements and mandates specific timelines for compliance. The reissued General Permit will become effective on July 1, 2017, the start of Fiscal Year 2018.

The final 2016 General Permit, while largely including the same requirements as the 2014 draft permit, does require minor adjustments to Tighe & Bond's *Stormwater Action Plan* delivered to the Town in February. This memorandum provides additional details regarding these modifications to the permit requirements, compliance schedule, and costs. The attached markup of the *Opinion of Probable Costs Based on the 2014 Draft MA General Permit Requirements* presents the associated adjustments in the year-by-year compliance costs.

Key Changes between the Draft and Final General Permit

Delayed Permit Effective Date. The final General Permit extended the anticipated permit effective date by over one year, and now compliance begins at the start of Fiscal Year 2018 instead of during Fiscal Year 2017. This allows the Town to complete ongoing compliance activities for the 2003 General Permit and begin activities required by the 2016 permit prior to the effective date of the new permit. Beginning new permit requirements early, in Fiscal Year 2107, is advantageous to spread out Permit Year 1 (PY1) costs and to allow adequate time to fully vet obligations that will be promised in the Notice of Intent (NOI) and Stormwater Management Plan (SWMP).

Extended Compliance Schedules. Some implementation timetables within the permit were extended by one to two years, including requirements to inventory all known sanitary sewer overflows, assess current street design and parking lot guidelines, and inventory municipally-owned facilities and equipment. Timetables to complete Illicit Discharge Detection and Elimination (IDDE) work were substantially expanded and now reflect a ten-year overall schedule, with some milestones required at year one (written IDDE Plan), year 1.5 (written catchment investigation plan), year three (dry weather screening of all but excluded and problem catchments), and overall catchment screening (i.e., opening manholes and collecting samples) that follows outfall screening based on priority. Overall, the expanded schedule provides for increased flexibility on the local level to find and remove illicit connections to the MS4.

Two important components of EPA's IDDE requirements are as follows:

1. EPA's focus has shifted such that the initial outfall inventory is more of a paper exercise. This effort only requires knowledge of outfall location and general condition and no longer requires site visits, determining locations by GPS, or individual outfall marking to be completed within one year of the effective date. Inventory information

for outfalls not previously field inspected can now be collected at the same time as dry weather sampling.

2. EPA has revised the wet weather outfall monitoring to focus on sewer infrastructure. Since Littleton has no sewer, wet weather monitoring is *not explicitly required but is only recommended* for outfalls in areas with old drainage and failing septic systems.

Revised Post-Construction Requirements. Note that the design standards that the Town must enforce for new development and redevelopment are modified from the 2014 draft General Permit but are still more stringent than the Massachusetts Stormwater Standards. The Stormwater Management and Erosion Control Bylaw as presented in the Warrant for the May 2, 2016 Annual Town Meeting requires compliance with the Massachusetts Stormwater Standards. We recommend that a motion may be made at Town Meeting to adopt the proposed Bylaw with the following changes (shown in red) to § 38-17.B to incorporate the requirements of the new permit:

> **§ 38-17. Stormwater Management Plan.**
>
> The stormwater management measures described in the Stormwater Management Plan shall, at a minimum, be designed to meet Massachusetts Stormwater Management Standards 1-6 (for new development) or 7 (for redevelopment). To the extent that the Town's NPDES stormwater discharge permit contains post-construction requirements that go beyond the Massachusetts Stormwater Management Standards, additional design requirements implementing the NPDES permit requirements may be adopted by the Planning Board in Rules and Regulations developed under § 38-13.C.

Recommendations for the Stormwater Action Plan and Next Steps

Continue Short-Term Recommendations to Address all Existing MS4 Permit Requirements. The "high priority" recommendations made in Tighe & Bond's *Stormwater Action Plan* letter (i.e., adopting the new stormwater bylaws, confirming the drainage mapping and outfall inventory, and updating the Oil Spill Prevention Control and Countermeasure Plan for Highway Department operations) are still important tasks that must be completed as soon as possible. **The Town should move forward with presenting the two proposed stormwater bylaws at the May 2, 2016 Annual Town Meeting.** These bylaws, which are drafted to bring the town into compliance with the existing MS4 Permit, must be adopted before submitting the Notice of Intent to EPA. Tighe & Bond is currently working with the Town's Highway Department to complete the other two "high priority" items.

Spread Permit Year 1 Requirements Over Two Fiscal Years. The estimated cost to complete all Permit Year 1 requirements is still expected to exceed the Town's $100,000 budget. While the reissued General Permit is not effective until Fiscal Year 2018, it is highly recommended that the Town preemptively begin tasks to defray Permit Year 1 costs and allow more time to meet deadlines. If Fiscal Year 2017 funding is approved at Annual Town Meeting, the Town may develop the Notice of Intent and Stormwater Management Plan, which are due soon after the effective date of the permit. A written Illicit Discharge Detection and Elimination program must be completed within one year of the effective date of the permit, and the Town could begin developing and implementing this program prior to the first permit year, which EPA allows. There are many other planning and mapping requirements that the Town could complete prior to Permit Year 1.

Tighe & Bond recommends the following updated schedule for implementation of the Action Plan and initial permit compliance activities.

April 13, 2016	■ General Permit **final**.
May 2, 2016 (Annual Town Meeting)	■ Request and secure **stormwater funding** for FY17. Adopt the **stormwater bylaws**.
Fall 2016 – Summer 2017	■ Hold multi-departmental meetings to develop Littleton's **NOI** and **Stormwater Management Plan**. The Town must provide opportunities for the Public Participation requirements in developing these documents. *This effort can be completed prior to the General Permit effective date.*
	■ Identify and complete additional Permit Year 1 requirements.
May 2017 (Annual Town Meeting)	■ Request and secure **stormwater funding** for FY18 (Permit Year 1).
July 1, 2017	■ General Permit **effective**.
September 29, 2017	■ Submit **Notice of Intent** to EPA (required by EPA).
July 1, 2018	■ Finalize **Stormwater Management Plan** (required by EPA).

Conclusions

Although the effective date and some of the compliance deadlines have been extended, EPA's overall requirements have not dramatically changed. We recommend the Town of Littleton continue to make progress addressing key gaps in compliance with the 2003 General Permit and begin to tackle the new 2016 General Permit requirements. Being proactive now will mitigate associated costs, effort, and staff time to meet the short compliance deadlines of the reissued General Permit once it is effective in Fiscal Year 2018.

The overall compliance cost will remain approximately the same as the costs discussed with the Board of Selectmen on February 29, 2016. The attached markup of the *Opinion of Probable Costs Based on the 2014 Draft MA General Permit Requirements* presents additional details. **We do not recommend any changes to the Funding Plan presented previously and included on the May 2, 2016 Annual Town Meeting Warrant.**

\\SRV\Projects\L\L0783 Town of Littleton Stormwater\MS4 Evaluation\Final General Permit Update\BOS Memo_Final General Permit Update_Final.docx

NOI due by September 29, 2017

SWMP due by July 1, 2018

Many requirements, including NOI/ SWMP can be started or completed during FY17

Opinion of Probable Costs Based on the ~~2014 Draft~~ 2016 Final MA General Permit Requirements – Years 1 Through 5

Note: This table is to be used to facilitate understanding about EPA's requirements and potential level of effort to comply. Costs presented will need to be further vetted once EPA finalizes the MS4 permit.

Major Requirements	Details and Assumptions	Schedule Details	Year 1 FY18	Year 2 FY19	Year 3 FY20	Year 4 FY21	Year 5 FY22	Total
PART 1.0 Introduction								
Notice of Intent (NOI) and Stormwater Management Program (SWMP)	Assumes that the NOI and SWMP are prepared concurrently during careful planning.	Submit signed NOI to EPA and MassDEP within 90 days of the effective date of the permit. Develop and sign updated written SWMP within one (1) year of the effective date of the permit.	$20,000	$0	$0	$0	$0	**$20,000**
PART 2.0 Non-Numeric Effluent Limitations								
Impaired Waterbody Requirements								
Meet the Phosphorus Reduction Requirements for the Assabet River Watershed TMDL	**Public Education & Outreach**: Distribute an annual message in the spring that encourages the proper use and disposal of grass clippings and encourages the proper use of slow-release and phosphorous-free fertilizers; in the summer encouraging the proper management of pet waste, noting any existing bylaws and regulations where appropriate; and in the fall encouraging the proper disposal of leaf litter. **New Development**: Ensure BMPs are optimized for phosphorus removal. **Good Housekeeping**: Properly manage grass cuttings and leaf litter on permittee property, increase street sweeping frequency.	*See schedules and budgets for Part 2.3.2 Public Education, Part 2.3.6 Stormwater Management in New Development and Redevelopment, and Part 2.3.7 Good House Keeping and Pollution Prevention.*	This budget was carried under Public Education and Outreach, Stormwater Management in New Development and Redevelopment, and Good Housekeeping and Pollution Prevention.					
Meet Phosphorus Reduction Requirements for Impaired Waterbodies (Long Pond)	**Public Education & Outreach**: Distribute an annual message in the spring that encourages the proper use and disposal of grass clippings and encourages the proper use of slow-release and phosphorus-free fertilizers; in the summer encouraging the proper management of pet waste, including noting any existing ordinances where appropriate; and in the fall encouraging the proper disposal of leaf litter. **New Development**: Ensure BMPs are optimized for phosphorus removal. **Good Housekeeping**: Establish procedures to properly manage grass cuttings and leaf litter on permittee property, increase street sweeping frequency to twice per year. This budget was carried under MCM #1, #5, and #6. **Phosphorus Source Identification Report**: Develop a report detailing: 1 . Total MS4 area draining to phosphorus impaired waterbodies, catchments delineations Note: this still includes impervious area measurement. 2. Monitoring results completed during IDDE, including phosphorus 3. Prioritization of catchments with high phosphorus loading 4. List of potential retrofit opportunities for municipal buildings Budget for 1 and 2 included as part of MCM #3, budget for 3 included as part of MCM #5. Note that the Source Identification Report may be included as part of the MassDEP watershed grant work. **Potential Structural BMPs**: Evaluate permittee-owned properties for installation of BMPs. Consider planned projects, cost, permitting, feasibility, etc. Develop a list of locations and schedule for installation of structural BMPs. Install one "demonstration" BMP.	*See schedules and budgets for Part 2.3.3 Public Education, Part 2.3.6 Stormwater Management in New Development and Redevelopment, and Part 2.3.7 Good House Keeping and Pollution Prevention* Note that because Littleton was selected for a MassDEP 319-funded Demonstration Project for NPDES MS4 Analysis, some of the listed requirements may be completed by the State's consultant. Within four (4) years of effective date of permit, develop the Phosphorus Source Identification Report, and submit to EPA. Within five (5) years of effective date of permit, evaluate all Town-owned properties for retrofit opportunities, and develop a list of planned BMPs and schedule. Budget includes coordination with Town projects, Townwide desktop screening, site visits to favorable parcels, conceptual designs for up to three BMPs, planning-level design for one BMP, identification of permitting needs, and development of next steps. Budget does not include survey or soil evaluation. Within six (6) years of effective date of permit, install one "demonstration" BMP to address phosphorus. Note that this budget not presented as part of this plan.	$0	$0	$0	$15,000	$10,000	**$25,000**

Note:
This document was originally delivered on February 12, 2015.
It has been revised to show changes associated with the 2016 final General Permit (markup shown in RED). Delivered on April 22, 2016.

Tighe&Bond

Major Requirements	Details and Assumptions	Schedule Details	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Meet Requirements to Manage Discharges to Water Bodies Impaired by Bacteria or Pathogens (Beaver Brook, Bennet's Brook, Reedy Meadow Brook)	**Public Education:** Include pet waste and, as applicable, septic system maintenance information in education program. **Illicit Discharge:** Implement IDDE program, consider areas discharge to bacteria or pathogen impaired waterbodies high priority.	*See schedules and budgets for Part 2.3.2 Public Education and Part 2.3.4 IDDE*	Budget for these items was carried under MCM 1 and MCM 3.					
Meet requirements to manage discharges of solids to the Beaver Brook Watershed	**New Development**: Ensure that stormwater management systems incorporate designs for shutdown and containment in the event of an emergency spill. **Good Housekeeping:** Increase street sweeping frequency in target areas with potential for high pollutant loads. Prioritize inspection and maintenance for catch basins. Note that an evaluation of the Town's and the MassDOT's contribution to solids in the MS4 must be evaluated.	*See schedules and budgets for Part 2.3.6 Stormwater Management in New Development and Redevelopment and Part 2.3.7 Good House Keeping and Pollution Prevention*	This budget was carried under MCM 4 and MCM 6.					
Requirements to Reduce Pollutants to the Maximum Extent Practicable								
Part 2.3.2 Public Education and Outreach								
Education	Distribute a minimum of two (2) educational messages to each of four audiences – residential, business/commercial/institutional, developers/construction, and industrial. (Except any audiences that are not present in a community) Includes Year 1 budget for developing education program and program evaluation method, such as a survey, to evaluate effectiveness of education effort. Cost is for assistance with development of materials. Note that costs do not include postage or other distribution efforts.	~~Beginning the first year of the permit and~~ extending over the permit term. The distribution of materials to each audience shall be spaced at least a year apart. ~~At least eight (8) messages must be distributed during the permit term.~~ Document in Annual Reports.	$5,000	$2,000	$2,000	$2,000	$2,000	**$13,000**
Part 2.3.3 Public Involvement and Participation								
Public Meeting	Provide the public an opportunity to participate in the review and implementation of the SWMP. The Year 1 budget is included in the SWMP.	Annually.	$0	$500	$500	$500	$500	**$2,000**
Part 2.3.4 Illicit Discharge Detection and Elimination (IDDE) Program								
Identify and Document Sanitary Sewer Overflows (SSOs)	Develop an inventory of known locations of SSOs that occurred within the previous five years. The Town has a limited public sewer system serving the Town offices, Fire Department, high school, middle school, and elementary school, with a small wastewater treatment facility and groundwater discharge.	Develop an inventory of all known SSOs within ~~120 days~~ of the effective date of permit. Document in SWMP, summarize in Annual Reports, and update inventory annually. Provide oral notice to EPA within 24 hours of identifying an SSO. Provide written notice to EPA and MassDEP within five (5) days. One year (to match SWMP deadline)	$1,000	$0	$0	$0	$0	**$1,000**

Major Requirements	Details and Assumptions	Schedule Details	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Outfall/Interconnection Inventory & Dry Weather Screening No longer required	Inventory outfalls and interconnections discharging from the MS4, ~~purchase and install outfall markers.~~ Assumes need to revisit all outfalls (approximately 200) and approximately 6 newly identified interconnections. May be able to slightly reduce number if outfalls are identified as problem or excluded. For dry weather screening, we assume 1 consultant field staff will complete effort together with 1 Town staff. To be conservative, we assume 10 outfalls / interconnections visited per day and 25% of the outfalls/interconnections (approximately 60) will have dry weather flow. For each flowing outfall, we assume analysis will cost approximately $150 (laboratory analysis). In addition, a YSI meter is assumed to be rented for $200 a day. ~~Field markers cost approximately $15 per marker.~~ Labor assumes 10-hour days and time for planning and summary report development. Our estimate also includes contingency. Costs also include analysis of impaired waterbody parameters. Annual cost is for additional work as needed. Cost does not include follow up activities to identify source, remove source, or complete follow up sampling.	Inventory to be completed no later than one (1) year from the effective date of the permit. *Include the inventory in Annual Reports. Update annually. Label all outfalls by the end of the permit term. Dry weather sampling must be completed no later than three (3) years from the effective date of the permit. ~~However, to save costs of duplicate field efforts, we budgeted all dry weather screening to be completed in PY1 in conjunction with the inventory and installation of labels.~~ * EPA's focus has shifted such that inventory is more of a paper exercise and requires knowledge of only location and general condition. Remainder of inventory items can now be collected at the same time as dry weather sampling.	$45,000 ~~$48,000~~ (-$3,000 since outfall markers no longer required)	$1,500 ~~$500~~	$1,500 ~~$500~~	$1,500 ~~$500~~	$1,500 ~~$500~~	$47,000 **~~$50,000~~**
Drainage System Mapping	Work to develop a more complete GIS-based storm drain system map within the MS4, including all outfalls, interconnections with other MS4s (i.e., MassDOT), catch basins, manholes, pipes, flow direction, and public and private BMPs. This includes incorporating necessary data attributes.	Complete*within two (2) years of the effective date of permit, document progress in annual reports. * Phase 1 (outfalls, interconnections, town BMPs, initial catchments. Phase 2 (GPS'd outfalls, full connectivity) due in 10 years.	$30,000	$30,000	$10,000	$10,000	$10,000	**$90,000**
Written IDDE Program (including Delineation and Prioritization of Catchments)	Develop IDDE Plan with new permit requirements, including delineation of catchments and ranking as "excluded," "problem," "high priority," or "low priority" for its potential to have illicit discharge. Review current protocol for eliminating illicit discharges, called "Catchment Investigation Procedure," for consistency with new permit requirements. Develop a written procedure for catchment investigation. Note that EPA expects ranking to be updated annually as new data become available based on mapping and catchment delineation, monitoring, complaints, etc.	Complete within one (1) year of the effective date of the permit. Document information in Annual Reports. Year 1 cost includes budget to develop IDDE plan and to delineate, assess, and priority rank catchment areas for all outfalls. We carried an allowance for annual updates and record keeping. If Town prepares an IDDE plan prior to permit release, this budget will be reduced.	$20,000	$1,000	$1,000	$1,000	$1,000	**$24,000**
Outfall Monitoring (Wet Weather) This is now only recommended, not required.	Wet weather monitoring requirements will be based on the outcome of the written IDDE program. Document the number of outfalls screened and any monitoring results each year in SWMP and annual reports. ~~According to EPA's draft General Permit,~~ wet weather screening is primarily required in areas that contain sewer. ~~In some cases, EPA may require~~ wet weather screening in areas with frequent septic system failures or with old (>40 years) drainage infrastructure. Because there is no sewer in the Town of Littleton, the cost presented assumes limited wet weather screening will be completed during PYs 1, 2 and 3, in conjunction with an overall IDDE program that includes outfall inventory, dry weather monitoring, catchment investigation, as needed. Cost does not include follow up activities to identify source, remove source, or complete follow up sampling.	Complete dry weather screening by Year 3. Perform wet weather screening in the spring only for those catchments that indicate the presence of one or more System Vulnerability Factors. In Year 2, evaluate System Vulnerability Factors to determine outfalls requiring Wet Weather Monitoring. In Year 3, complete Wet Weather Monitoring.	$0	$1,000 ~~$2,000~~	$3,500 ~~$7,000~~	$0	$0	$4,500 **~~$9,000~~**

This cost could be spread out over three years.

EPA has increased emphasis on re-prioritizing/re-focusing IDDE work each year, so annual effort will be greater.

It is still recommended that system mapping is completed as soon as possible.

EPA has revised this entire section of the final permit to focus on sewer infrastructure. Because Littleton has no sewer, wet weather monitoring is not explicitly required but is only recommended for outfalls in areas with old drainage and failing septic systems. At this time we recommend the Town retain some budget to complete wet weather monitoring if needed. Following finalization of the IDDE plan, the budget and actions can be refined.

Major Requirements	Details and Assumptions	Schedule Details	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Catchment Investigation	Begin systematic implementation of the illicit discharge detection procedure in all "Problem Catchments" and catchments identified as priorities with the highest rankings. Includes key junction manhole inspections and screening. The actual budget will depend on Delineation and Prioritization of Catchments in the IDDE Plan, number of structures to investigate, and cost to remove any illicit discharges identified. Our cost assumes 1 key junction manhole per outfall (total of approximately 630 key junction manholes), screen 40% for ammonia, surfactants, and chlorine using field kits ($8 per sample). We assume up to five days of police detail will be needed for a total of $1,000. Assuming 15 manholes a day can be inspected by 1 field staff and 1 Town staff together. Labor assumes 10 hour days and time for planning and summary report development. Our estimate also includes contingency. Cost does not include follow up activities to identify source, remove source, or complete follow up sampling.	~~Complete investigations for 40% of all catchments by Year 5.~~ *Complete 100% of all catchments by Year 10. A budget allowance was carried here because the work required and schedule depends on mapping, priority ranking, and sampling/screening results. Some field investigations and corrective measures may be completed by Town staff. Written plan for catchment investigation must be completed within 1.5 years of effective date, included in IDDE plan * Revised schedule such that investigations must start by PY2 and be completed by PY7 for Problem Outfalls. Revised schedule such that investigations for high and low priority areas should be completed in conjunction with monitoring and prioritizing, during the 10 years.	$5,000	$5,000	$5,000	$5,000	$5,000	**$25,000**
Annual Employee Training	Provide annual training for employees involved in the IDDE program about the program, and how to recognize illicit discharges and SSOs.	Report on the frequency and type of training in Annual Reports. These costs assume a combination of Town staff-lead trainings using low-cost materials developed by others. Assumes Year 1 will include development of a comprehensive training program and schedule.	$3,000	$1,000	$1,000	$1,000	$1,000	**$7,000**
Part 2.3.5 Construction Site Stormwater Runoff Control								
Regulatory Updates and Review	Review existing bylaws & regulations for consistency with permit requirements. Confirm documents define responsibility for site inspections and person with authority to enforce, etc.	Complete within one (1) year from effective date of permit. *Complete in conjunction with effort under Part 2.3.6 Stormwater Management in New Development and Redevelopment.*	This budget was carried in Regulatory Updates and Review Section in Stormwater Management in New Development and Redevelopment.					
Written procedures for site plan review and inspection and enforcement	Develop written procedures that detail review categories and timing, and procedures for long-term tracking.	Complete development within one (1) year from effective date of permit. *Complete in conjunction with effort under Part 2.3.6 Stormwater Management in New Development and Redevelopment*	This budget was carried in Regulatory Updates and Review Section in Stormwater Management in New Development and Redevelopment.					

Major Requirements	Details and Assumptions	Schedule Details	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Parts 2.3.6 Stormwater Management in New Development and Redevelopment (Post Construction Stormwater Management)								
Regulatory Updates and Review new development *	Amend or modify existing bylaws and regulations for development of 1 or more acre to retain first one inch of runoff from all impervious area or provide equivalent pollutant removal. BMPs must be consistent with the MA Stormwater Handbook. Modify existing bylaws and regulations to require submission of as-built plans and long-term O&M procedures. Develop a report assessing current street design and parking lot guidelines to support low impact design, and develop a report assessing existing regulations to determine feasibility of making green infrastructure practices allowable. This task will also include the regulatory requirements under Part 2.3.5 Construction Site Stormwater Runoff Control. * Note that there are now differing requirements (i.e. 0.80 inches of runoff must be retained or equal pollutant removal on or offsite in same watershed) for redevelopment projects. Municipal roadway work/improvements are exempt from infiltration/pollutant removal requirements. Also EPA revised section to more heavily rely on MA stormwater handbook.	Procedures for site inspections and enforcement of sediment and erosion control measures, site plan review and requirements for as-built plans and O&M procedures shall be completed within one (1) year from the effective date of the permit. Modifications to bylaws & regulations to be completed within two (2) years of effective date of permit. The PY1 costs are to develop additional legal language, including regulations. Additional costs shown are for updates, including forms and guidance. Assuming no major modifications to bylaws and regulations will be needed in Year 2. Street design and parking lot assessment to be completed ~~three (3)~~ years after effective date of the permit. Local regulatory assessment for green infrastructure practices must be completed in four (4) years from effective date of the permit. Costs assume these efforts will be completed concurrently and finalized in Permit Year 3. The Year 3 cost does not include development of bylaw language, only an assessment memorandum. four (4)	$10,000	$500	$4,000	$500	$500	**$15,500**
Retrofit Inventory	Report on those MS4 owned properties and infrastructure that have the potential to be retrofitted with BMPs designed to reduce the frequency, volume, and peak intensity of stormwater discharges as well as their pollutant loadings. Annually report on MS4-owned properties that have been retrofitted with BMPs to mitigate impervious area and directly connected impervious area. Note that the inventory may be included as part of the MassDEP 319-funded Demonstration Project for NPDES MS4 Analysis.	Assess feasibility of retrofits within four (4) years from the effective date of the permit. Provide annual report BMP retrofits at MS4-owned property annually beginning in Year ~~3~~. 5 Costs in PY3-5 include identifying potential retrofit locations using a desktop process to pre-screen sites and then limited field visits to further evaluate potential sites. Budget assumes this will be done concurrently with similar planning for Long Pond. Budget also includes applying for grants/loans to assist with BMP implementation and may be completed by Town Staff.	$0	$0	$10,000	$10,000	$3,000	**$23,000**
Part 2.4.7 Good House Keeping and Pollution Prevention for Permittee Owned Operations								
Inventory Town-Owned Facilities and Floor Drains, and Develop Written O&M Procedures for Parks, Buildings/Facilities, Vehicles/Equipment, and Infrastructure	Develop inventory of municipally-owned facilities and equipment. Develop written operations and maintenance procedures for the municipal activities. Establish a program to repair and rehabilitate its MS4 infrastructure in a timely manner to reduce or eliminate the discharge of pollutants from the MS4.	Within ~~one (1) year~~ from the effective date of permit. Include written procedures in SWMP. two (2) years	~~$14,000~~ $7,000	~~$0~~ $7,000	$0	$0	$0	**$14,000**
Stormwater Pollution Prevention Plans (SWPPPs) for Highway Garage	Assume one SWPPP is needed for Highway Facility and one SWPPP is needed for Transfer Station. Budget carried for annual training by contractor, can combine trainings.	Two (2) years from the effective date of the permit. Report on annual inspections in Annual Report.	$0	$16,000	$1,000	$1,000	$1,000	**$19,000**

Major Requirements	Details and Assumptions	Schedule Details	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Catch Basin Cleaning	Use GPS application to track catch basin inspection and cleaning. Optimize catch basin cleaning program to ensure that no catch basin is more than 50% full.	Annually, beginning in Year One.	Assume these budget items carried elsewhere. Completed by Town staff or contractor.					
Street Sweeping	Sweep streets and parking lots directly connected to MS4 once in the spring.	Annually, beginning in Year One.	Assume these budget items carried elsewhere. Completed by Town staff or contractor.					
Winter Road Maintenance	Establish procedures for winter road maintenance, including use and storage of salt and sand. Consider documenting salt use in wellhead protection areas.	No schedule provided.	Assume these budget items carried elsewhere. Completed by Town staff or contractor.					
Storm Drain System Inspection	Inspect and maintain the storm drain system and all stormwater treatment structures. Use GPS application to track system inspection and maintenance.	Annually, beginning in Year One.	Assume these budget items carried elsewhere. Completed by Town staff or contractor.					
PART 4.0 Program Evaluation, Record Keeping, and Reporting								
Annual Reports and Record Keeping	Self-evaluate compliance with the terms and conditions of the permit. Keep all records required by the permit for at least five (5) years. Report on outfall monitoring. Cost assumes Town will complete the majority of the work and a contractor will provide some assistance.	Submit Annual Reports each year. Reporting period is from one year; Annual report due ninety (90) days from the close of each reporting period. (End of reporting period is June 30, submit report by September 29, annually)	$5,000	$5,000	$5,000	$5,000	$5,000	**$25,000**
		Total Estimated Budget (Rounded)	**$161,000**	**$64,000**	**$47,000**	**$52,000**	**$40,000**	**$364,000**
			- $3,000 - $7,000 - $30,000	+ $7,000 + $15,000 + $1,000 - $1,000	- $3,500 + $1,000 + $15,000	+ $1,000	+ $1,000	
			$121,000	$86,000	$60,000	$53,000	$41,000	**$361,000**

\\SRV\Projects\L\L0783 Town of Littleton Stormwater\MS4 Evaluation\Action Plan\2016.02.12_Littleton Action Plan_Table.xls