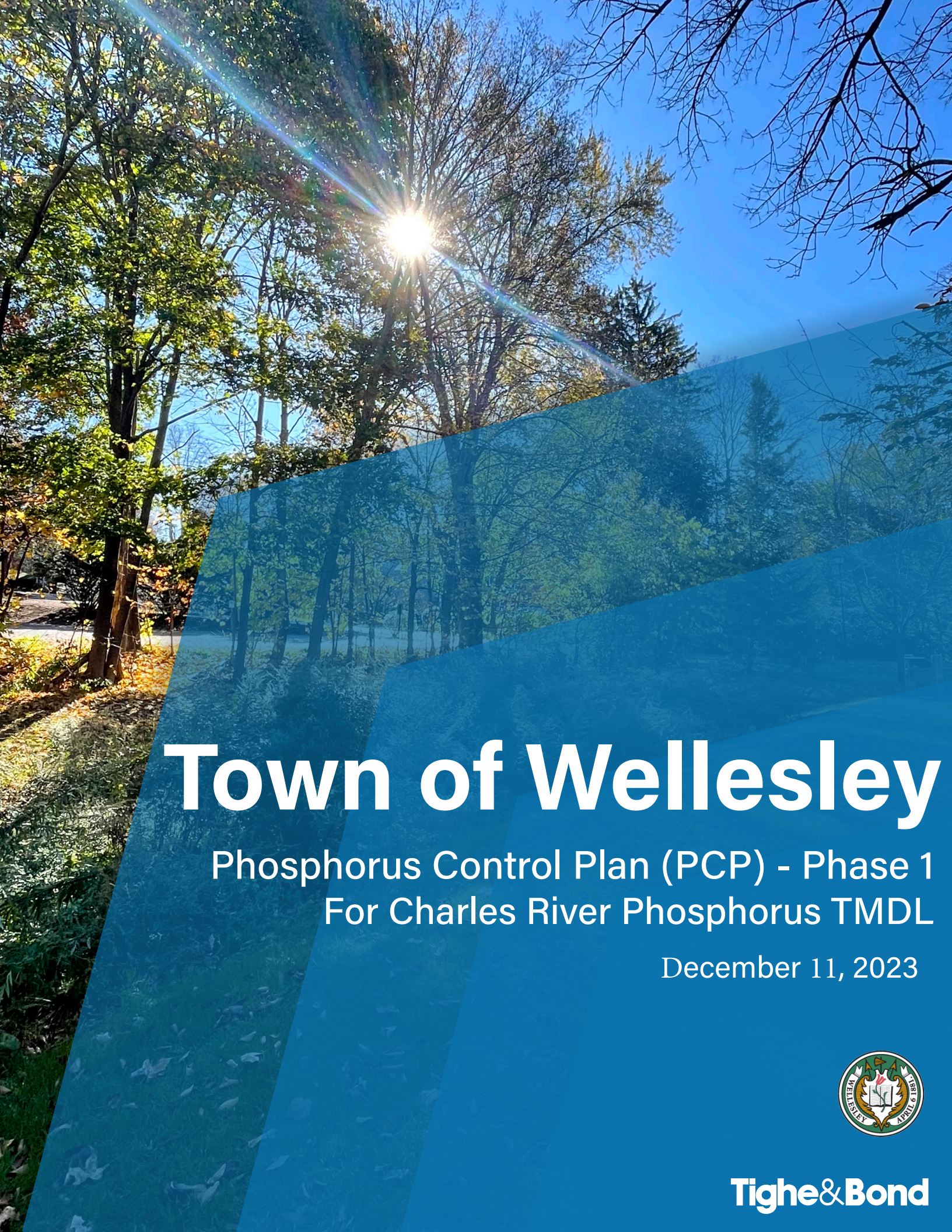


Town of Wellesley

Phosphorus Control Plan (PCP) - Phase 1
For Charles River Phosphorus TMDL

December 11, 2023

Tighe&Bond

Section 1 Phosphorus Control Plan (PCP) Phase 1

Section 2 Documentation and Reporting

APPENDICES

Acknowledgements

Wellesley utilized the Phase 1 Phosphorus Control Plan (PCP) Template developed by the Charles River Watershed Association (CRWA). This template as well as other supporting resources were developed under an FY21 MS4 Municipal Assistance Grant from the Massachusetts Department of Environmental Protection (MassDEP), to support permittees regulated under the U.S. Environmental Protection Agency's (EPA) municipal separate storm sewer system permit (MS4 Permit) in addressing phosphorus reduction requirements in the Charles River watershed and various lakes and ponds throughout Massachusetts. These materials are available at the following URL: https://www.crwa.org/stormwater-regulations.

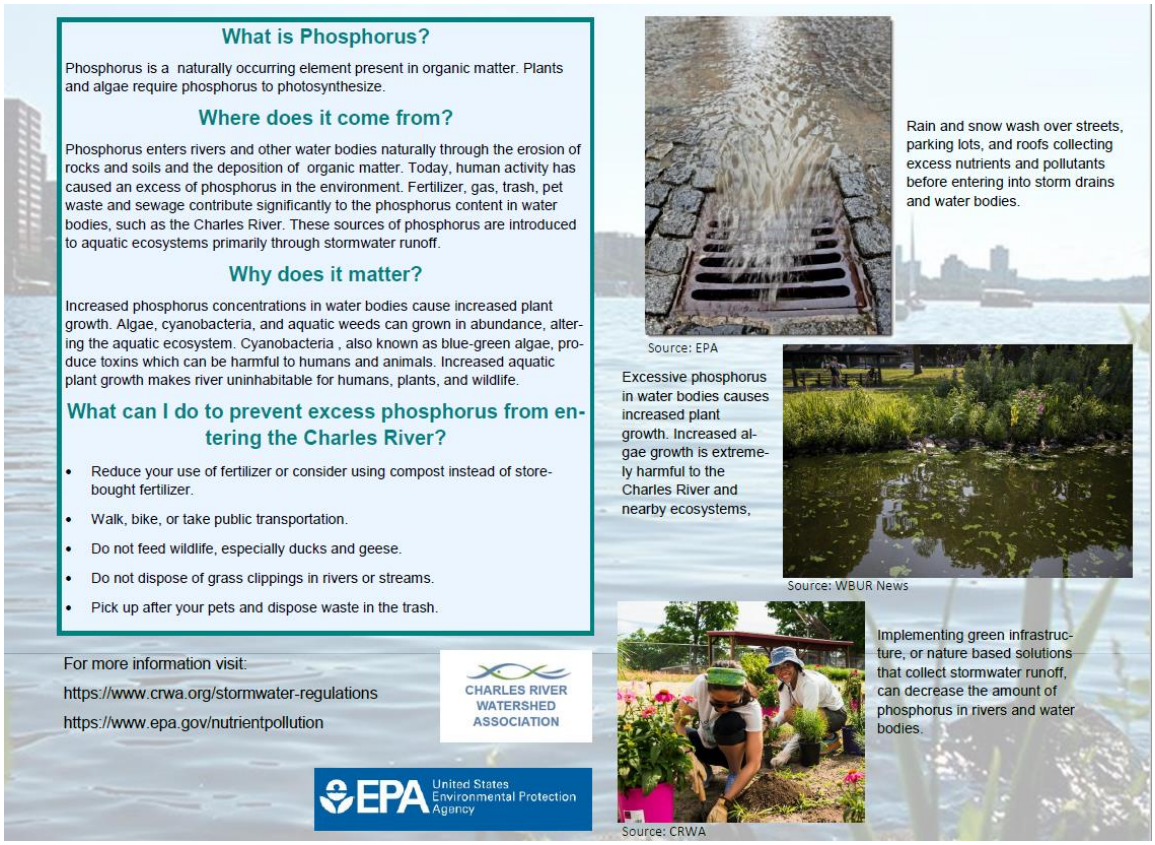
In 2022, CRWA was awarded a FY23 MS4 Municipal Assistance Grant Program that allowed experts from the University of Vermont Spatial Analysis lab to create updated, high-resolution maps of land use and impervious surfaces across the watershed; the land use data was used to estimate Wellesley's current phosphorus loading.

Finally, thank you to U.S. EPA Region 1 personnel for reviewing preliminary calculations and working with our team to troubleshoot the evolving PCP guidance and to answer technical questions during development of this Plan.

Section 1
Phosphorus Control Plan (PCP) Phase 1

The 2016 National Pollutant Discharge Elimination System General Permit for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems (MS4) in Massachusetts ("MS4 Permit" or "the Permit") took effect on July 1, 2018. The Permit was subsequently modified on December 7, 2020. The MS4 Permit conditions the operation, regulation, and management of MS4s in subject Massachusetts municipalities. Terms and conditions include requirements across six Minimum Control Measures (also referred to as Maximum Extent Practicable or MEP provisions), and water quality-based effluent limitations (WQBEL), including requirements for water bodies with approved Total Maximum Daily Loads (TMDLs) and other water quality-limited waters.

There are two approved nutrient TMDLs for the Charles River; one for the Lower Charles River Basin, published in 2007[1], and one for the Upper/Middle Charles River Basin, published in 2011[2]. As an element of the Permit's WQBEL provisions, communities within the Charles River watershed are obligated to address phosphorus impairments through the development and implementation of a Phosphorus Control Plan (PCP).



The above graphic provides background on the importance of reducing phosphorus loading to the Charles River watershed.

[1] *Massachusetts Department of Environmental Protection. 2007. Final TMDL for Nutrients in the Lower Charles River Basin. CN 301.1*

[2] *Massachusetts Department of Environmental Protection. 2011. Total Maximum Daily Load for Nutrients in the Upper/Middle Charles River Basin, Massachusetts. CN 272.0*

Appendix F of the MS4 Permit describes specific requirements of the PCP, implementation of which is anticipated to achieve the TMDL-established targeted phosphorus reductions over a 20-year timeframe. PCP implementation includes structural and non-structural best management practices (BMPs) executed through programs, projects, and policies. The PCP must be fully implemented within 20 years of the Permit effective date (i.e., by 2038), as illustrated in Table 1-1. The targeted phosphorus reductions are broken out into interim mandatory milestones, culminating in achievement of the allowable TMDL phosphorus loads for each municipality at the end of the 20-year schedule.

Table 1-1. General PCP Implementation Timeline for Charles River Watershed Communities

1-5 years after permit effective date [2018-2023]	5-10 years after permit effective date [2023-2028]	10-15 years after permit effective date [2028-2033]	15-20 years after permit effective date [2033-2038]
Create Phase 1 Plan	Implement Phase 1 Plan		
	Create Phase 2 Plan	Implement Phase 2 Plan	
		Create Phase 3 Plan	Implement Phase 3 Plan

1.1 Overview of all PCP Phase 1 Milestones

Phase 1 of the PCP must achieve the first 25% of each permittee's phosphorus load reduction requirement within 10 years (i.e., by June 30, 2028), with an interim milestone of achieving the first 20% of phosphorus load reduction by Year 8 (i.e., by June 30, 2026). The detailed components of the PCP due within Phase 1 are outlined in Table 1-2.

Table 1-2. Phase 1 Component Deadlines

Permit Year #	Year-End (June 30th)	PCP Component(s) Due
Year 1	2019	N/A
Year 2	2020	Legal Analysis (Appendix A)
Year 3	2021	Funding Source Assessment (Appendix B)
Year 4	2022	PCP Scope
Year 5	2023	Descriptions of the following Phase 1 items: - Nonstructural controls - Structural controls - O&M program for structural controls - Implementation schedule - Phase 1 cost estimate - Written Phase 1 PCP

Permit Year #	Year-End (June 30th)	PCP Component(s) Due
Year 6	2024	Performance Evaluation & full implementation of nonstructural controls[3]
Year 7	2025	Performance Evaluation
Year 8	2026	Performance Evaluation & Implementation of structural controls to achieve 20% of target phosphorus reduction
Year 9	2027	Performance Evaluation
Year 10	2028	Performance Evaluation & Implementation of structural controls to achieve 25% of target phosphorus reduction

1.2 Watershed and Community Characterization

The Charles River collects water from a total land area of 308 square miles. The River twists and turns on an 80-mile route from Hopkinton to Boston Harbor. The River flows through 23 communities and the total watershed encompasses 35 communities, adding many political complexities to watershed management. Some 80 brooks and streams, and several major aquifers, feed the Charles River. The watershed contains many lakes and ponds, most of them manmade, many through the construction of dams. The river drops about 350 feet in its unhurried journey to the sea. Lacking speed and force, the slow-moving Charles River is naturally brownish in color, because the water picks up sediment from the abundant wetlands along its path.

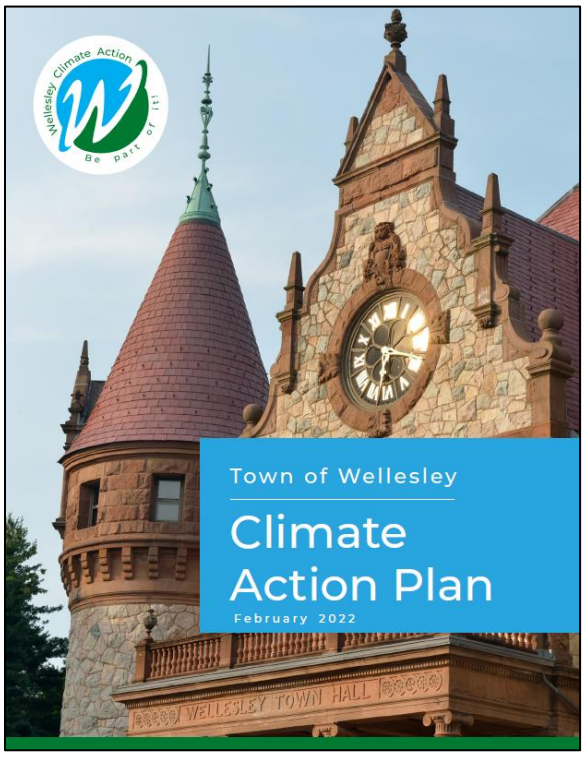
The Charles River watershed is home to over a million residents. As an urban river, it is impaired by multiple pollutants and has many areas with altered and degraded habitat. Three Total Maximum Daily Loads (TMDLs) have been developed for the watershed: two for nutrients and one for bacteria. The river has borne the brunt of much of the development in the greater Boston area through damming, pollution, and disruption from traditional development practices. A nearly five-decade cleanup effort has resulted in water quality improvements, primarily from elimination of industrial discharges and a significant reduction in untreated sewage flowing into the river. The primary challenge facing the river today is stormwater runoff. Phosphorus loading in stormwater runoff is a particular challenge to the river, leading to summertime cyanobacteria blooms and overgrowth of invasive aquatic plants in many areas of the watershed.

The Town of Wellesley owns and operates a small municipal separate storm sewer system (MS4). The entirety of the Town is within an 'urbanized area' boundary according to the U.S. Bureau of the Census and has therefore been required since 2003 by the Clean Water

[3]In the 2016 MS4 General Permit, EPA clarifies that this requirement is due 6 years after the permit effective date in Appendix F Section A.I.1.a.3 "Phase 1 Implementation Schedule" so we have modified this table for Item 1-10 accordingly.

Act and the EPA 's Storm Water Phase II Program to maintain a NPDES permit for its stormwater discharges. More information on the Town's stormwater program can be found on the Town's website (https://wellesleyma.gov/319/Stormwater-Management). Since the entirety of the Town of Wellesley is located within the Charles River watershed, the Town must develop a PCP designed to reduce the amount of phosphorus in stormwater discharges across the entire Town's jurisdiction. This is further discussed in the next section.

The Town's Climate Action Plan, which was finalized in February 2022, highlights the Town's plans to protect their natural resources and maximize their climate resiliency over the next 30 years. Specific stormwater initiatives from the Climate Action Plan include reducing impervious surfaces, streamlining the application and permitting process for removal of impervious surfaces, introducing low impact development, and using nature-based solutions to minimize stormwater on municipal land.



Wellesley's 2022 Climate Action Plan outlines many goals that are consistent with the Stormwater Management Program and Phosphorus Control Plan.

The Town of Wellesley has been aware of the phosphorus concerns in the Charles River watershed for decades and has taken a number of proactive steps to manage stormwater runoff and nutrient pollution well in advance of the 2016 Small MS4 General Permit requirements, including:

- A commitment to meeting the 6 Minimum Control Measures of the Small MS4 General Permit.
- Ongoing partnership with the Charles River Watershed Association for various projects and initiatives.
- Strong local code to protect wetlands and manage stormwater runoff for projects, including projects disturbing less than an acre, and project oversite by municipal personnel in Engineering, Planning, and the Natural Resources Commission.
- Projects with multiple benefits to the community and watershed, like the Fuller Brook Park Project that improved drainage in flood-prone areas, improves water quality and ecological function, and provides green space near the center of town. Recent interventions were made to naturalize the stream channel, restore native plant communities, and reduce stormwater pollution.
- Adoption of a Stormwater Utility to fund the stormwater management program beginning in Fiscal Year 2025, including compliance & planning, drainage system operation & maintenance, and capital projects.

Because of Wellesley's long-time commitment to stormwater management and watershed stewardship, this Phase 1 Plan demonstrates that Wellesley is on track to meet the pollutant reduction milestones through Permit Year 10 and beyond.

1.3 PCP Load Reduction Targets

Permittees within the Charles River Watershed were required to define the scope of the PCP known as the "PCP Area" either as 1) within its jurisdiction within the Charles River Watershed; or 2) in the urbanized area portion of the permittee's jurisdiction within the Charles River Watershed, by four years after the permit effective date. The defined PCP Area is used to determine EPA's set Baseline Phosphorus Load, Allowable Stormwater Phosphorus Load, and Stormwater Phosphorus Reduction Requirement as stated in Appendix F Table F-2 and F-3 of the 2016 MS4 Permit.

1.3.1 PCP Area, Baseline Phosphorus Load, Allowable Phosphorus Load, and Stormwater Phosphorus Reduction Requirements from MS4

The Town of Wellesley will implement the PCP within the entirety of the community, which also falls within the Charles River watershed and the Urbanized/Regulated Area. The Allowable Phosphorus Load reported in Appendix F of the 2016 MS4 General Permit for the Town of Wellesley is shown in Table 1-3.

Table 1-3. PCP Timeline of Phase 1 Reduction Requirements

Condition	Value
Baseline P-Load, lbs/yr	3,155 (1,431 kg/yr)
Allowable P-Load, lbs/yr	1,342 (609 kg/yr)
Stormwater P-Load Reduction Requirement, lbs/yr	1,810 (821 kg/yr)
Year 8 Milestone: 20% of Reduction, in lbs/yr	362 (164 kg/yr)
Year 10 Milestone: 25% of Reduction, in lbs/yr	453 (205 kg/yr)

This Phase 1 PCP establishes a program to achieve the target of reducing phosphorus loads from Baseline by 362 lb/yr by Year 8 and 453 lb/yr by Year 10. The Town of Wellesley will be planning and implementing structural and non-structural BMPs, updating regulatory mechanisms, evaluating funding mechanisms and costs, and developing its O&M and recordkeeping programs to ensure continued compliance and functionality of all installed BMPs.

To satisfy the Year 8 and Year 10 Milestone P-Load goals the Town must achieve a total export rate (Pexp) that is equal to or less than the applicable Allowable Phosphorus Load (Pallow) plus the applicable Phosphorus Reduction Requirement (PRR) multiplied by 0.8 in Year 8 and 0.75 in Year 10 respectively. See Appendix F Section A.I Table F-1 for more detail on the Year 8 and 10 milestone equations. The results of each equation set Wellesley's Year 8 total export rate goal at no more than 2,791 lb/yr (1,266 kg/yr) by 2026 and 2,701 lb/yr (1,225 kg/yr) by 2028 for Year 10.

1.3.2 Increases or Decreases to Baseline Phosphorus Load Since 2005

The Baseline Load referenced in Table 1-3 above was calculated using land use data from 2005 after removing Department of Conservation and Recreation and Department of Transportation property. Note that this calculation included MassBay College property, which is a non-traditional MS4 located within the Town. MassBay College must coordinate their phosphorus reduction efforts with Wellesley, as explained by Section 6.5 of the 2016 MS4 General Permit. The Town's current phosphorus load has changed, due to recent updates to land use, land cover and impervious area data and more detailed phosphorus loading calculations set forth by EPA in Appendix F of the 2016 Permit, as illustrated below.

In 2022, CRWA was awarded a FY23 MS4 Municipal Assistance Grant Program that allowed experts from the University of Vermont Spatial Analysis lab to create updated, high-resolution maps of land use and impervious surfaces across the watershed; the land use data was used to estimate Wellesley's current phosphorus loading.[4] Impervious area data for this calculation was supplemented with a more accurate dataset from the Town of Wellesley from Fiscal Year 2022. Utilizing these updated datasets, the Town of Wellesley's current phosphorus load has decreased from the Baseline Load of 3,155 lb/yr (1431 kg/yr) to 2,709 lb/yr (1,229 kg/year). As land use, development, and impervious cover continue to change, phosphorus load information will be updated. This will ensure that the Town of Wellesley is on track to achieve the required 20% and 25% reduction milestones by Years 8 and 10.

As a result of this updated analysis, Wellesley has already met its Year 8 goal of 2,791 lb/yr (1266 kg/yr), based on the current phosphorus loading of 2,709 lb/yr (1,229 kg/yr). See Table 1-4 for a breakdown of land use changes from 2005 as compared to the 2023 CRWA dataset and Appendix C for Town's current phosphorus loading calculations.

Table 1-4. Wellesley Land Use Changes (2005 to 2023)

	Total Area (acres)		
Phosphorus Land Use Group	**2005 Land Use**	**2023 CRWA Mapping**	**Change in Area since 2005**
Commercial	916.7	685.7	-231.05
Industrial	1.8	1.0	-0.77
High Density Residential	362.6	712.5	349.92
Medium Density Residential	2575.4	1629.4	-946.03
Low Density Residential	168.7	1301.1	1132.43
Highway	84.1	87.8	3.69
Forest	1925.6	1596.2	-329.41
Open Land	197.1	259.0	61.95

[4] 2023. Updated Land Use and Impervious Cover Dataset for the Charles River Watershed (unpublished raw data). *Charles River Watershed Association & University of Vermont Spatial Analysis Laboratory.*

Agriculture	191.6	191.0	-0.02
Water	314.8	274.1	-40.71
Total Land Area	6423.7	6464.4	40.71
Total Land	6738.5	6734.5	0.00

1.4 Legal Analysis

Appendix F of the MS4 Permit requires the Town of Wellesley to develop and implement an analysis that identifies existing regulatory mechanisms available to the MS4 such as bylaws and ordinances and describes any changes to regulatory mechanisms that may be necessary to effectively implement the entire PCP (the "Legal Analysis"). This may include the creation or amendment of financial and regulatory authorities. The Town of Wellesley's Legal Analysis is attached as Appendix A.

1.5 Funding Source Assessment

Appendix F of the MS4 Permit requires the Town of Wellesley to describe known and anticipated funding mechanisms (e.g., general funding, enterprise funding, stormwater utilities) that will be used to fund PCP implementation (the "Funding Source Assessment"). The Town of Wellesley must describe the steps it will take to implement its funding plan. This may include but is not limited to conceptual development, outreach to affected parties, and development of legal authorities. The Town of Wellesley's Funding Source Assessment is attached as Appendix B.

Key takeaways include the following:

- The average annual projected revenue needed over the next 5 years for the Town's Stormwater Management Plan is approximately $3.15 million. This budget includes labor, operating expenses, and capital projects and equipment. The budget also includes increased program administration, periodic rate increases, stormwater credits and abatements, and contingencies, which were all recognized as gaps in Wellesley's current Stormwater Management Program.
- The Town's Phosphorus Control Plan has a projected annual cost of $1.8 million. The PCP is a major driver of the increased costs of the Town's Stormwater Management Plan.
- The Town plans to develop a credit policy, which would aim to incentivize the implementation of phosphorus reduction strategies on private properties. This will hopefully reduce the financial burden placed on the Town to achieve permit compliance.
- The Town of Wellesley reviewed and passed the Stormwater Enterprise Fund at the Spring 2023 Annual Town Meeting.

Additional and updated information related to the development of the Stormwater Utility can be found on the Town's website at https://wellesleyma.gov/1785/Stormwater-Utility-Enterprise-Fund.

1.6 Non-Structural Controls

The Town of Wellesley's approach for non-structural BMP implementation for PCP compliance is detailed in this section.

1.6.1 Current Non-Structural BMPs

The Town of Wellesley is currently implementing non-structural BMPs, which can quality for phosphorus reduction credits. Phosphorus reduction credits were calculated using the updated phosphorus load export rates reported in Attachment 2 to Appendix F, and the results are included in Table 1-5 below. These credits will count towards the required phosphorus reduction outlined in Section 1.3. Current non-structural BMPs are those that are anticipated to continue at current resource levels, or 'business as usual'. The information presented in Table 1-5 is further detailed in Appendix D and the Town's Stormwater Management Plan (SWMP).

The Town's non-structural BMP actions include catch basin cleaning and street sweeping. Wellesley has about 4,200 municipally owned catch basins, and the DPW uses a GIS Collector App to track catch basin cleaning by truck type and percent full. Problematic catch basins, which includes catch basins that are greater than 50% full, are noted on the app then cleaned twice a year. A total of 3,435 catch basins, of which 3,355 were municipally owned, were cleaned by the DPW from fiscal year 2022 through 2023. Catch basin cleaning reductions were conservatively calculated using the 3,355 municipal catch basin values that are routinely cleaned. Total Annual P-Reduction values for this current catch basin cleaning practice is provided in Table 1-5 and Appendix D. The Wellesley Highway Department is looking to hire additional contractors to ensure that 100% of town-owned catch basins are cleaned annually.

The DPW also sweeps all municipal streets and parking lots, including private ways, using a mechanical broom sweeper twice a year. This equates to approximately 412 acres annually. Total Annual P-Reduction values for the Town's current street sweeping practices are provided in Table 1-5 and Appendix D.

The Town of Wellesley utilizes a mechanical broom sweeper to sweep all municipal-owned streets twice a year. Street sweeping is an effective way to reduce the amount of phosphorus in stormwater runoff.

Wellesley manages leaf litter and grass clippings on municipal properties as needed, and residents may bring leaves, brush, and yard waste to the Wellesley Recycling & Disposal Facility (RDF). Wellesley does not document the quantity of leaves or the frequency of cleanup, so the Town does not qualify for phosphorus reduction credit at this time.

Table 1-5. Existing Non-Structural BMPs

Existing Non-Structural BMP	Implementation Levels (schedule, equipment, BMP details)	Total Annual P-Reduction (lb/yr)
Street Sweeping	All municipal streets and parking lots are swept twice a year with a mechanical broom sweeper	8.1 (3.7 kg/yr)
CB Cleaning	Municipal CBs cleaned annually, greater than 50% full are cleaned twice a year	35.6 (16.1 kg/yr)
Leaf Litter Program	none	0
Total Existing Non-Structural Credit		43.7 (19.8 kg/yr)

The existing non-structural controls have already contributed 43.7 lb/yr (19.8 kg/yr) to the annual phosphorus reduction requirement of 1,810 lb/yr (821 kg/yr). With this additional phosphorus reduction, **Wellesley has already met its Year 8 and Year 10 phosphorus reduction goals** of 2,791 lb/yr (1266 kg/yr) by 2026 and 2,701 lb/yr (1225 kg/yr) by year 2028 through current non-structural practices and additional reductions achieved from the Town's 2023 updated phosphorus load (See Section 1.3.2). Wellesley's updated total export rate (P_{exp}) is 2,665 lb/yr (1,209 kg/yr), after accounting for the total annual P-reduction from non-structural practices.

MassBay College also implements street sweeping and catch basin cleaning to meet MS4 permit requirements. However, phosphorus reduction credits had not been calculated at the time of the Phase 1 Report. The Town of Wellesley should incorporate phosphorus reduction credits from nonstructural BMPs on MassBay property when meeting future phosphorus reduction goals.

1.6.2 Planned Non-Structural BMPs

The Town should continue to implement the current non-structural BMPs using, at a minimum, the techniques and frequency described in this Section. At the time of the Phase I report, the Town plans on continuing its current catch basin and street sweeping programs. Since the Town already has met its phosphorus reduction requirements through Phase 1 of the PCP it does not have any immediate plans to implement any new or enhanced non-structural practices.

The Town plans to implement an improved Phase 1 Catch Basin Inspection Program. This program will incorporate an updated digital form to streamline data collection and analysis.

1.7 Structural Controls

The Town of Wellesley utilizes structural BMPs to detain, treat, and better manage runoff from areas of impervious surface, such as roads, parking lots, and rooftops. Semi-structural BMPs are more passive stormwater management approaches that can still

produce excellent water quality benefits such as rainwater harvesting, impervious area disconnection, conversion of impervious area to pervious, and enhancement of pervious areas. For the purposes of this document, the term structural controls refers to both structural and semi-structural BMPs.

Structural BMPs historically have been designed and constructed via stormwater compliance projects (for public and private development projects), using various sources of grant funding or as part of the capital projects to improve Town properties and infrastructure. Structural BMPs presently in place are evaluated in Section 1.7.1.

Our planning in support of PCP development determined that a moderate investment in structural BMPs, by certifying operation and maintenance of existing municipally owned and privately owned BMPs, will be required to achieve an even greater phosphorus reduction for the Town. Since the Town has already met its targeted Phase 1 goals it is not required to invest in structural controls during Phase 1 implementation to remain in compliance. The Town sees an opportunity to achieve an even greater phosphorus reduction removal by claiming phosphorus removal from existing municipal and privately owned BMPs. These existing structural BMP opportunities were evaluated to allow for adaptive management during the development and execution of the PCP, that is presented below.

The following sections describe the assessment, performance, and implementation of current structural BMPs (those that were already built or will be built prior to development of this PCP) and Planned Structural BMPs (those that were newly identified for PCP compliance or will be implemented after this written PCP is submitted).

1.7.1 Current Structural BMPs

The Town of Wellesley already employs a mix of regulatory and capital improvement programs to implement structural BMPs. During development of the PCP, 164 constructed structural BMPs, privately and municipally owned, were identified in Town. These 164 BMPs have the following total annual phosphorus reductions as outlined in Table 1-6 and further detailed in Appendix E. The reductions are presented on a high-level for summary, and all calculations were performed following the equations and requirements in Attachment 3 to Appendix F of the Permit. The Town is required to institute a formal operation and maintenance program to receive the below phosphorus reduction credit, as defined by Appendix F, and to certify the systems are being maintained to function as designed.

Bioswales allow vegetation to uptake stormwater pollutants and to reduce stormwater runoff in larger paved areas, such as parking lots.

Table 1-6. Summary of Current Structural Controls

Current Structural BMP Type	Number of BMPs	Average Treatment Volume (ft^3)	Total Annual P-Reduction (lb/yr)
Bioretention	5	2,586	7.4
Bioretention & Underground Infiltration	1	5,659	0.5
Bioretention (lined)	1	1,449	0.3
Infiltration Basin	1		2.1
Leaching Basins	1	348	0.2
Porous Pavement	8	10,434	4.0
Rain Garden	3	1,067	1.7
Rain Garden & Underground Infiltration	2	913	0.3
Surface Infiltration Basin	1	2,640	2.1
Underground Infiltration	138	1,727	56.6
Un-lined Rain Garden	3	274	0.4
Total Phosphorus Credit from Current Structural BMPs			75.6

The existing structural BMPs, listed in Table 1-6, could contribute an annual load reduction of 75.6 lb/yr (34.3 kg/yr) to the reduction requirement of 1,810 lb/yr (821 kg/yr) if operation and maintenance is certified annually. See Section 1.8 for recommendations.

MassBay College has three structural BMPs that treat and convey stormwater runoff for the campus. Phosphorus reductions for these BMPs were estimated using the EPA BMP Accounting and Tracking Tool (BATT). The total phosphorus reduction credit from structural BMPs on the MassBay College campus is 0.08 lbs/yr (0.04 kg/yr).[5] The Town of Wellesley should review the operation and maintenance plans and confirm the college is regularly inspecting the structures to claim the phosphorus reduction credit.

1.7.2 Planned Structural BMPs

The Town identified five properties for structural retrofits to further reduce the Town's phosphorus load reduction, and this priority list is based on the properties identified in the Town's Stormwater Management Program.[6] Wellesley plans to retrofit these properties in the near future but the Town is not required to implement these stormwater controls

[5] 2022. Charles River Watershed Phosphorus Impairment Requirements Memo. *MassBay Community College & Comprehensive Environmental Inc.*

[6] 2022. Year 4 Annual Report; Massachusetts Small MS4 General Permit. *The Town of Wellesley.*

during Phase 1 of the Plan to achieve its Year 10 phosphorus load milestones. The five planned structural BMPs are listed in Table 1-7.

Table 1-7. Planned Structural Control Summary

Planned Structural BMP (Address)
Railroad Avenue Parking Lot: Railroad Avenue
Washington Street, Cottage Street to Leighton Road
Tailby Parking Lot: 103 Linden St.
Wellesley Farms Station Parking Lot: Croton St., Wellesley Hills
Bates Elementary School:116 Elmwood Road

Additionally, a high-level BMP suitability assessment was conducted using an initial priority ranking of public and private properties within the Town to retrofit with structural BMPs. Implementation of structural BMPs is dependent on physical constraints and opportunities. Much of the phosphorus in Wellesley is coming from the following land uses as displayed in Figure 1:

Figure 1. Average Annual Phosphorus Load by Land Use Category (lb/yr)

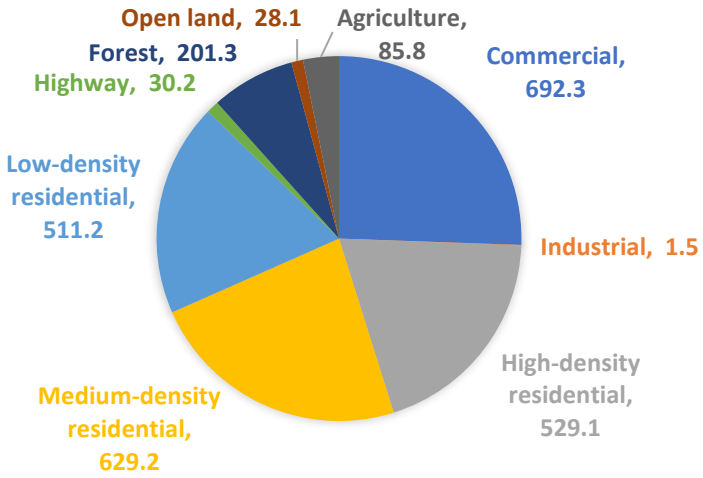


Figure 1 highlights that commercial land contributes the highest amount to the Town's phosphorus load. However, in order to perform a retrofit analysis for structural BMPs, other factors were included like impervious cover percentage, proximity to drainage (drainage systems, roadway projects, etc.), and hydrologic soil conditions. There were also Town-specific criteria used to rank the areas, which included the street resurfacing schedule and BMP feasibility using anecdotal evidence (prioritizing community preferences, areas that flood, etc.). to perform a more detailed analysis.

The priority ranking site matrix consisted of these initial steps to evaluate site suitability and feasibility:

- Desktop Assessment to develop a preliminary list of feasible sites;
- Initial screening of all public and private parcels in ArcGIS to determine site characteristics; and
- Numerical ranking in Microsoft Excel of properties based on site characteristics.

Appendix G includes documentation of the matrix criteria used for the priority ranking. As mentioned above, multiple parameters were included in the assessment. Overall, areas with high levels of impervious surfaces were targeted to achieve the highest phosphorus reductions. Wellesley will continue to refine this ranking as they complete planned retrofits throughout Phase 1 of the program.

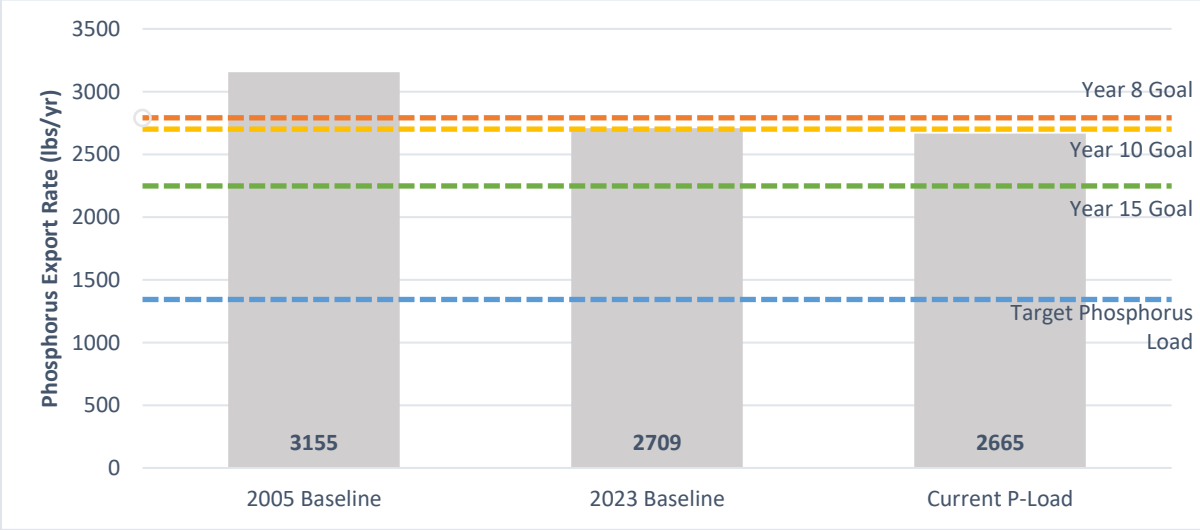
1.8 Description of Operation and Maintenance (O&M) Program for All Existing and Planned Structural BMPs

The Town of Wellesley plans to create an operation and maintenance (O&M) program for all existing and planned structural BMPs through the Town's Utility Cloud Online permitting software. The O&M program will follow the guidance laid out in Appendix F in order to claim additional phosphorus reduction credits through Phase 1 and future phases of the program. The Town also plans to utilize the Stormwater Credit Policy to incentivize private property owners to certify inspection and maintenance of privately owned BMPs each year.

1.9 Phase 1 Implementation Schedule

The Town of Wellesley has not prepared an implementation schedule for Phase 1 of the PCP, since the Town's phosphorus reduction goals have already been met through year 10 (See Section 1.3.2 and 1.6). As of the date of this plan, Wellesley's updated total export rate (P_{exp}) is 2,665 lb/yr (1,209 kg/yr), after accounting for the total annual P-reduction from non-structural practices. The Town is currently reducing approximately 489 lb/yr (222 kg/yr) of phosphorus or 27% of the target phosphorus reduction. Figure 2 depicts Year 8, 10, and 15 goals and the target phosphorus load for the Town of Wellesley.

Figure 2. Wellesley's Phosphorus Reduction Goals



The Town will develop an implementation schedule over the coming years to stay on track and continue to meet subsequent phosphorus reduction goals in Phase 2 and 3 of the PCP. The information below outlines some of the key points to be included in the implementation schedule.

Most of the development within Wellesley occurred before 2005, and redevelopment since 2005 has abided by state and local permitting, which restricts the increase in impervious surfaces without significant stormwater controls. Therefore, the Phase 1 implementation schedule will not need to account for a significant increase in phosphorus loading due to development or redevelopment in the coming years.

The future focus of an implementation plan will be the adoption of a robust structural BMP Operation and Maintenance Program as described in Section 1.8, which the Town should adopt by Permit Year 10 to take credit for the existing structural BMPs with a possible P_{exp} of 2,589 lb/yr and a reduction of 565 lb/yr (31% of target). The plan will also include on-going installation of structural BMPs and a detailed catch basin cleaning protocol, to confirm and document that structures are not consistently greater than 50% full. Other components of the implementation plan will be refined in subsequent years as the needs of the Town and its stormwater plan grow and as year 10 approaches. We also anticipate that EPA will refine and expand available techniques to reduce phosphorus in the next General Permit.

1.10 Estimated Cost for Implementing Phase 1 of the PCP

Wellesley has developed an estimated cost to implement Phase 1 of the PCP. This cost estimate is included in Appendix H and includes the cost associated with continuing the town's existing non-structural control programs from Years 6-10. In 2023, catch basin cleaning costs the Town approximately $109,200 and street sweeping costs $138,330. Between PY6 and PY10, the Town is anticipated to spend a total of $579,647 on catch basin cleaning and $979,072 on street sweeping, which amounts to a total life cycle cost of $1,558,719 during Phase 1. This cost estimate is included in Appendix H and additional details are available from the Town's Department of Public Works. The maintenance costs associated with street sweeping with a mechanical broom were approximated using the Minnesota Stormwater Manual.[7] Supporting calculations for the implementation cost of Phase 1 of the PCP are included in Appendix H.

1.11 Performance Evaluations

Wellesley will complete the required annual Performance Evaluation in Years 6 through 10 to assess the Town's PCP progress as required by Section 4.4 of the 2016 MS4 General Permit. Documentation of the Land Development Impacts and Phosphorus Credits for this effort will be included in either the Town's Annual Report and/or posted to the Town's stormwater webpage.

1.12 Public Comment and Plan Availability

The Town of Wellesley's written Phase 1 PCP is available for public comment on the Town's website and at the Department of Public Works. Appendix I includes documentation of public engagement related to the Town's Phase 1 PCP.

[7] 2022. Minnesota Stormwater Manual. *Minnesota Pollution Control Agency.*

Section 2
Documentation and Reporting

The most current information for annual updates to the Town of Wellesley's PCP progress can be found in the following appendices:

- For non-structural controls: Appendix D
- For structural controls: Appendix E
- For the operations and maintenance program: Appendix F
- For future priority ranking of BMPs Appendix G
- For future implementation planning Appendix H
- For future documentation of the public comment process and comments received Appendix I

This data is also tracked in each year's Annual Report as required by Section 4.4 of the 2016 MS4 General Permit, which are available upon request from the Department of Public Works.

Appendix A
Legal Analysis

MiyaresHarrington

J. Raymond Miyares Thomas J. Harrington Christopher H. Heep Donna M. Brewer Jennie M. Merrill
Rebekah Lacey Bryan Bertram Ivria Glass Fried Alexandra B. Rubin Ethan B. Dively Maurica D. Miller Rian Rossetti

MEMORANDUM

Date: September 24, 2020[1]

To: David Cohen, Director, Department of Public Works, Town of Wellesley
David Hickey, Town Engineer, Town of Wellesley
George Saraceno, Senior Civil Engineer, Town of Wellesley

Cc: Meghan Jop, Executive Director, Town of Wellesley
Don McCauley, Planning Director, Town of Wellesley

From: Rebekah Lacey

Re: USEPA/MassDEP 2016 MS4 Permit
Phosphorus Control Plan Legal Analysis

To fulfill a requirement of the USEPA/MassDEP General Permit for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems in Massachusetts, issued on April 4, 2016 (the "2016 MS4 Permit"),[2] this memorandum provides an analysis of legal considerations regarding the Phosphorus Control Plan to be developed by the Town of Wellesley as required by that permit (and the proposed modifications to it discussed below). Please note that this document is the first step in development of the Phosphorus Control Plan; therefore, all potential actions described herein are merely suggestions for the Town to consider as it moves forward with development of the Plan.

I. The 2016 MS4 Permit and the 2020 Proposed Modifications[3]

In 2003, small municipalities in urbanized areas in Massachusetts (including the Town of Wellesley) were required to obtain permit coverage for discharges from their municipal separate storm sewer systems (MS4s) from USEPA and MassDEP. In 2016, USEPA and MassDEP issued a new MS4 Permit with heightened requirements; that 2016 MS4 Permit went into effect on July 1, 2018. On

[1] This February 9, 2021 slight revision incorporates a few minor corrections, but does not update the text to reflect the Town's October 2020 adoption of revisions to its Drainage Review Bylaw or USEPA's December 2020 issuance of the final modified MS4 Permit.
[2] Available at https://www.epa.gov/npdes-permits/massachusetts-small-ms4-general-permit#2016fgp.
[3] See https://www.epa.gov/npdes-permits/massachusetts-small-ms4-general-permit for more information about the history and regulatory basis of these permits.

April 23, 2020, pursuant to a settlement of legal challenges to the 2016 Permit, USEPA and MassDEP proposed draft modifications to the 2016 Permit (the "2020 Draft Modifications").[4] As of the date of this Memorandum, a final revised permit incorporating the proposed draft modifications has not yet been issued. The basic requirements material to this memorandum are generally the same in both the 2016 Permit and the 2020 Draft Modifications; where a requirement is common to both documents, the memorandum may simply refer to the "Permit."

II. Permit Requirements for Phosphorus Reduction in the Charles River Watershed

The Permit sets requirements for communities in the Charles River watershed (including Wellesley) to reduce the amount of phosphorus in the discharges from their municipal storm drain systems.[5] The Permit estimates the amount of phosphorus (in kilograms [kg] per year) that each municipality discharges to the Charles River or its tributaries. The Permit then specifies the amount by which each municipality must reduce its phosphorus discharge (expressed both in kg/year and as a percentage of the baseline load). Wellesley's baseline load of phosphorus in its stormwater discharge is estimated to be 1,431 kg/year; under the 2016 Permit it must reduce this amount by 661 kg/year (46%).[6] The 2020 Draft Modifications would increase the required reduction to 821 kg/year, or 57%.[7]

Sources of phosphorus in stormwater runoff in urban and suburban areas include dust and dirt, atmospheric deposition, decaying organic matter (such as leaf litter and grass clippings), fertilizer, engine exhaust, and pet waste. The presence of impervious cover increases both the volume of runoff (because it prevents rain from infiltrating into the ground) and the amount of phosphorus in the runoff (because phosphorus adheres to small particles that can be trapped by pervious surfaces but are easily washed off of impervious surfaces).[8]

The 2016 Permit requires Charles River watershed municipalities to develop and implement Phosphorus Control Plans (PCPs) to reduce their discharges of phosphorus in stormwater, as discussed in Appendix F of the Permit. The PCP must include the identification and implementation of structural and non-structural controls (also known as Best Management Practices, or BMPs). The 2020 Draft Modifications do not change the basic nature of the requirements, but they do modify some of the details of Appendix F (including most notably the amount of required phosphorus reduction and the timetables for compliance) and the attachments to Appendix F, which provide an accounting system for quantifying stormwater phosphorus load reduction credits for specified structural and non-structural BMPs.

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[4] Available at https://www.epa.gov/npdes-permits/massachusetts-small-ms4-general-permit#info-prevdraftpermits.
[5] 2016 Permit Section 2.2.1.b.i and Appendix F, Part A.I.
[6] 2016 Permit Appendix F, p. 8.
[7] 2020 DM Appendix F, p. 10.
[8] Fact Sheet for Draft MS4 Permit (2014), Attachment 1, pp. 7-8.

The first required step in drafting the PCP is a legal analysis:

> The permittee shall develop and implement an analysis that identifies existing regulatory mechanisms available to the MS4 such as by-laws and ordinances, and describes any changes to regulatory mechanisms that may be necessary to effectively implement the entire PCP. This may include the creation or amendment of financial and regulatory authorities. The permittee shall adopt necessary regulatory changes by the end of the permit term.[9]

This memorandum is intended to fulfill the above requirement.

III. Legal Considerations Regarding Non-Structural BMPs[10]

For the purpose of the Phosphorus Control Plan, non-structural BMPs are practices that collect and dispose of phosphorus-containing materials. The only non-structural BMPs for which a Charles River watershed municipality can receive phosphorus reduction credit under the Permit are: (1) an enhanced sweeping program for streets and parking lots; (2) catch basin cleaning; and (3) an organic waste and leaf litter collection program. To the extent that these practices are carried out by the municipality, no legal mechanisms are required. (Note, though, that the Permit sets very specific requirements for the manner and frequency of conducting these activities to qualify for phosphorus reduction credit.)

A municipality can also receive credit for requiring owners of large properties (or homeowner associations in developments with private roads) to implement these practices themselves.[11] For properties from which stormwater is discharged to the Town storm drain system, the Town could impose these requirements by amending its Municipal Stormwater Drainage System Rules and Regulations.[12] Those Regulations were adopted by the Board of Public Works under the authority provided by Article 29 of the Wellesley General Bylaws to "establish rules and regulations to effectively prohibit pollutants and non-storm water discharges from entering the Town's storm water collection system" and can be amended at any time by the Board after a public hearing. (See Article 29, Subsection 29.3.e.)

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[9] 2016 Permit Appendix F, p. 4; 2020 DM Appendix F, p. 4.
[10] Non-structural BMPs are addressed in the 2016 Permit and 2020 DM in Appendix F, Attachment 2.
[11] "In meeting its phosphorus reduction requirements a permittee may quantify phosphorus reductions by actions undertaken by another entity, except where those actions are credited to MassDOT or another permittee identified in Appendix F Table F-2 or F-3." 2016 Permit and 2020 DM Appendix F, p. 7 n.6.
[12] The Regulations can be found on the Engineering Department's Stormwater Management web page, at https://wellesleyma.gov/319/Stormwater-Management.

IV. Legal Considerations Regarding Structural and Semi-Structural BMPs

A. Permit Provisions[13]

For the purpose of the Phosphorus Control Plan, structural BMPs are physical structures and landscape design features that treat stormwater to reduce phosphorus discharge by some combination of temporary storage, filtration, and infiltration into the ground; these include infiltration trenches, surface infiltration practices (such as rain gardens), wet and dry detention basins, and similar structures and features. The Permit also discusses four types of "semi-structural BMPs" that can be used to reduce phosphorus discharge: impervious area disconnection through storage (e.g. rain barrels or cisterns); impervious area disconnection; conversions of impervious area to permeable pervious area; and soil amendments to enhance permeability of pervious areas.

A municipality receives credit for reducing phosphorus discharge by installing and maintaining structural and semi-structural BMPs. (Municipalities may also receive credit for BMPs installed and maintained by a third party, if the municipality can verify ongoing maintenance.) The credit is calculated using formulas provided by USEPA, which take into account the type of BMP, the amount of drainage area to be treated, and the land use or uses within that drainage area.

An important thing to understand about the Permit (both the 2016 and 2020 versions) is that the baseline phosphorus load was calculated for the year 2005.[14] Thus, all increased phosphorus loading associated with development since 2005 will need to be offset by the municipality (in addition to meeting the required reductions from the 2005 baseline load).[15] However, a municipality can take credit for reductions in phosphorus loading from each structural BMP installed since 2005 (whether associated with new development, redevelopment, or retrofitting), if the municipality has enough information about the BMP to use EPA's calculation methodology and the municipality can implement or enforce an operation and maintenance program for that BMP.

Given the Permit provisions regarding structural and semi-structural BMPs, there are separate legal considerations for:

- Existing structural and semi-structural BMPs installed since 2005;
- Structural and semi-structural BMPs in new development and redevelopment going forward; and
- Structural and semi-structural BMPs to be installed as retrofits.

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[13] Structural and semi-structural BMPs are addressed in the 2016 Permit and 2020 DM in Appendix F, Attachment 3.

[14] 2016 Permit and 2020 DM, Appendix F, pp. 5, 7. See also EPA's Response to Comments on the 2014 Draft Permit (https://www3.epa.gov/region1/npdes/stormwater/ma/2016fpd/rtc-2016-ma-sms4-gp.pdf), pp. 384-385, 391-392.

[15] The method for calculating increased phosphorus load resulting from new development is provided in the 2016 Permit, Appendix F, Attachment 1 (not changed in the 2020 DM).

B. Credit for BMPs Installed Since 2005

For existing BMPs installed since 2005 on municipal property that the Town would like to take phosphorus reduction credit for, the Town should compile as much information as possible about the BMP (in order to use the load reduction formulas specified by USEPA) and should establish and implement an operation and maintenance program with written procedures and record-keeping. Except for special circumstances (such as where an easement is required for the Town to access the BMP), there are no legal considerations relevant to these BMPs.

For existing BMPs installed since 2005 on private property that the Town would like to take phosphorus reduction credit for, the Town should review the permit under which each was installed to determine whether (1) there is adequate information to use the Permit's load reduction formulas, and (2) whether the permit gives the Town the authority to require the property owner to carry out regular operation and maintenance and/or to perform operation and maintenance itself. To claim credit for phosphorus reduction from an existing BMP on private property, the Town will need to establish and implement a program of oversight or performance of operation and maintenance of the BMP.

C. Controls on New Development and Redevelopment

1. New Development

As discussed above, the Town will need to offset all additional phosphorus loading resulting from new development (that is, conversion of one land use to another land use generating a greater phosphorus load). Thus, the Town should consider imposing strict phosphorus control requirements on new development.

To comply with the requirements of Minimum Control Measure 5 of the Permit (regarding post-construction stormwater management), the Town must require new development projects disturbing more than an acre of land to design their stormwater management systems to remove 60% of the phosphorus generated from the total post-construction impervious area on the site.[16]

The Town may want to consider (1) subjecting more new development projects to the phosphorus reduction requirements and (2) increasing the amount of phosphorus reduction required. The number of regulated projects could be increased by reducing the triggering threshold below one acre (e.g. to ½ acre or ¼ acre) and/or by using generation of a certain amount of impervious cover as an additional regulatory trigger. The required phosphorus reduction could be increased from 60%; the Town could even consider requiring all new development (above the regulatory threshold) to demonstrate no net increase in phosphorus loading. This could be achieved by a combination of site design (minimizing impervious area), structural and semi-structural BMPs, and offsite mitigation

[16] 2016 Permit and 2020 DM, Section 2.3.6.a.ii.3.

(installing structural or semi-structural BMPs as retrofits to other properties within the Town to reduce existing phosphorus loading).

2. Redevelopment

For any redevelopment that does not involve a conversion of land use from the land use in existence in 2005, the Town will receive phosphorus reduction credit for all structural and semi-structural BMPs installed as part of the redevelopment. While adding stormwater treatment can be a challenge at redevelopment sites, redevelopment can also be an excellent opportunity to significantly reduce phosphorus loading.

To comply with the requirements of Minimum Control Measure 5 of the Permit (regarding post-construction stormwater management), the Town must require redevelopment projects disturbing more than an acre of land to design their stormwater management systems to remove 50% of the phosphorus generated from the total post-construction impervious area on the site.[17]

The Town may want to consider (1) subjecting more redevelopment projects to the phosphorus reduction requirements and (2) increasing the amount of phosphorus reduction required. The number of regulated projects could be increased by reducing the triggering threshold below one acre (e.g. to ½ acre or ¼ acre). The required phosphorus reduction could be increased from 50%. Given site constraints for redevelopment projects, the use of offsite mitigation would likely play an important role in enabling increased phosphorus reduction in redevelopment projects.

3. Legal Mechanisms

The Town currently imposes stormwater management requirements on new development and redevelopment through each of the following permitting programs:

1. Site Plan Review under Section 16A(C)(2) of the Zoning Bylaw;
2. Project of Significant Impact review under Section 16A(C)(3) of the Zoning Bylaw;
3. Drainage Review under Section 16C of the Zoning Bylaw;
4. Large House Review under Section 16D of the Zoning Bylaw;
5. Definitive Subdivision Plan review under the Subdivision Regulations, promulgated pursuant to the Subdivision Control Law (M.G.L. c.41, §§81K-GG);
6. Wetlands permitting under the Wetlands Protection Act and Regulations (M.G.L. c.131, §40 and 310 CMR 10.00) and the Wellesley Wetlands Protection Bylaw (Article 44 of the General Bylaws) and Regulations; and
7. Private Drain Connection Permits under the Municipal Stormwater Drainage System Rules and Regulations.

[17] 2016 Permit and 2020 DM, Section 2.3.6.a.ii.4.

The Town is in the process of amending its Drainage Review Bylaw to enable application of the construction site erosion and sediment control and post-construction stormwater management requirements of the 2016 Permit (and the 2020 DM) to all new development and redevelopment projects disturbing more than an acre. Imposition of more stringent phosphorus reduction requirements could be done within the implementing regulations of the revised Bylaw. Reducing the regulatory threshold (or adding impervious area change as a regulatory trigger) would require a further amendment to the Bylaw. Alternatively, the Town may wish to amend one or more of its other permitting programs to impose the additional phosphorus control requirements in a way that is more integrated with the requirements of each program. With this approach, the Town could at the same time review whether to revise any existing requirements of each program that serve to increase impervious area (such as roadway design and parking requirements). Note that strong requirements for long-term operation and maintenance (subject to enforcement by the Town) will be crucial to the Town's ability to take credit for phosphorus reductions from BMPs on private property.

The Town does not currently have an established legal mechanism to facilitate the use of offsite mitigation (in which a developer can receive phosphorus reduction credit for a new development or redevelopment project by installing structural or semi-structural BMPs as retrofits to other properties within the Town to reduce existing phosphorus loading). The Town should consider creation of an offsite mitigation program, which could be incorporated into the Drainage Review Bylaw and its implementing regulations. Offsite mitigation is discussed in detail in Appendix A to this memorandum.

D. Retrofits

The Permit envisions that much of the required phosphorus reduction will be achieved by implementation of structural and semi-structural controls on property that has already been developed – a process typically referred to as "retrofitting."

1. Retrofits to Municipal Property

Many of these retrofits may be able to be done on municipal property. The only legal consideration regarding these projects is whether the Town wants to set up a special funding mechanism by charging a fee to all property owners whose property discharges stormwater (directly or indirectly) into the Town storm drain system. Legal considerations regarding implementation of a drainage fee are discussed in Section V of this memorandum.

2. Retrofits to Private Property

It is likely that some structural and semi-structural controls will also need to be installed as retrofits to private property in order to achieve the full amount of phosphorus reduction required by the Permit. This can be accomplished by providing incentives or by imposing mandates; we recommend using incentives.

Other municipalities around the country have incentivized stormwater management retrofits on private property via their drainage fee programs. The Town can provide reductions in the fee for property owners who install structural stormwater BMPs. Single-family homeowners can receive credit for semi-structural BMPs such as using rain barrels or cisterns to collect rooftop runoff, directing rooftop runoff into dry wells, or replacing paved driveways and walkways with permeable paving. The following are the key legal considerations for incentivizing retrofitting of private property:

- The drainage fee program will need to be set up to incorporate these incentives.
- To qualify for a drainage fee reduction for a retrofit, a property owner must be required to properly install one of the BMPs specified in the Permit and to enter into an agreement with the Town to:
    - Appropriately operate and maintain the BMP;
    - Allow Town staff to enter the property to inspect the BMP to verify proper long-term operation and maintenance; and
    - Provide a financial mechanism to ensure compliance, such as: a bond, surety, or escrow account; a provision that the Town may enter the property to perform maintenance and repairs if the property owner fails to do so and may charge the property owner for the work; or other arrangement.

Another approach would be to require property owners to install stormwater controls, rather than incentivizing them to do so. The Town has the authority to impose this type of requirement for the purpose of protecting public health and safety by adopting a general bylaw under its home rule power. However, we believe that this approach should be a last resort, used only if the Town is unable to achieve sufficient phosphorus reduction via all of the other measures discussed above. Such a mandate would like face political opposition and legal challenges. Also, it is quite possible that USEPA will move to regulate certain private properties in the Charles River watershed in the near future. In May 2019, the Charles River Watershed Association and the Conservation Law Foundation filed a petition asking USEPA to exercise its "residual designation authority" to require "all commercial, industrial, institutional, and five or more unit multi-family residential real properties of one acre or greater within the Charles River watershed" to obtain a stormwater discharge permit from EPA.[18] Owners of these properties would then be subject to phosphorus reduction requirements like those imposed on municipalities by the Permit (which could reduce the requirements for municipalities).

[18] The petition is available at https://www.clf.org/wp-content/uploads/2019/05/CLF-CRWA-Charles-River-Watershed-RDA-Petition-May-9-2019-with-attachments.pdf. Information on EPA's ongoing response is available at https://www.epa.gov/charlesriver/environmental-challenges-charles-river#ResidualDesignationAuthority.

V. Potential Implementation of a Drainage Fee

In order to fund implementation of phosphorus reduction measures on municipal property and to allow creation of an incentive program for private property owners, the Town should consider implementing a drainage fee on all properties discharging stormwater (directly or indirectly) into the Town storm drain system. The Town could establish an enterprise fund to facilitate the collection and expenditure of these fees. Many municipalities in Massachusetts (including the Charles River watershed municipalities of Newton and Millis) have implemented a stormwater fee and associated enterprise fund (sometimes referred to as a stormwater utility).[19]

A drainage fee is simply a charge to property owners for the generation of stormwater. The fee is based on the costs to the Town for the service that it provides to property owners whose properties discharge stormwater to the Town's storm drain system. Drainage fees are the preferred financing system option for municipal stormwater management for several reasons. The fees are equitable—the amount each resident or business is charged is based on a set formula according to relevant factors. Second, a drainage fee is stable. The user pays on a regular basis for ongoing stormwater services, and the Town receives a predictable, stable revenue stream. Third, the fees are adequate—properly calibrated fees allow the Town to carry out its necessary stormwater management and permit compliance activities without generating excess revenue.[20]

Wellesley's source of authority to impose a drainage fee is *M.G.L.* c. 83, §16, which allows municipalities to establish annual charges for the use of "main drains and related stormwater facilities." The annual charge "shall be calculated to supplement other available funds as may be necessary to plan, construct, operate and maintain stormwater facilities and to conduct stormwater programs." Under this authority, Wellesley may charge a uniform fee for residential properties and a separate fee for commercial properties, or may establish an annual charge based on a uniform unit method, provided that the charge is assessed in a "fair and equitable manner." As discussed above, the Town may "may grant credits against the amount of the quarterly or annual charge to those property owners who maintain on-site functioning retention/detention basins or other filtration structures."

There are three primary financing structures Wellesley could consider employing for its drainage fee:[21]

1. Flat Fee System: In a flat fee system, the cost of municipal stormwater activities is spread across properties at a flat rate, or properties in different categories may be charged different rates (e.g. residential vs. commercial).

[19] MassDEP has compiled a spreadsheet of information about the municipal stormwater fees adopted to date, available at https://www.mass.gov/info-details/stormwater#local-stormwater-permitting-and-management-.
[20] Metropolitan Area Planning Council (2014). *Stormwater Financing/Utility Starter Kit*, Overview. Available at https://www.mapc.org/resource-library/stormwater-financing-utility-starter-kit/.
[21] Metropolitan Area Planning Council (2014). *Stormwater Financing/Utility Starter Kit*, Chapter 2.

2. Graduated Fee System: This system recognizes the fact that properties with different land uses and of different sizes are likely to send different quantities of stormwater to Wellesley's municipal storm sewer system. The fee is based on property size and land cover type.
3. Customized Fee System: Drainage fees can be even more individualized at a parcel basis by developing specific measures of impervious surfaces. A customized fee system does not use an average measure of impervious area across land use classifications, but rather creates an estimate for individual properties which would serve as the basis for the fee. The fee can be even more comprehensive by taking into account the stormwater runoff generated by both impervious and pervious areas on a property.

If Wellesley does opt to begin charging property owners a drainage fee, it should establish a stormwater enterprise fund to facilitate collection and expenditure of funds. Generally, any fee or assessment collected by a municipality must be deposited into the General Fund. Under *M.G.L.* c. 44, §53F½, however, communities may establish an "enterprise fund" to serve as a separate accounting and reporting mechanism for municipal services for which a fee is charged in exchange for goods or services. Revenues and expenses are segregated into a fund with financial statements separate from all other government activities. This allows a community to most accurately evaluate the costs of providing the service and the contribution made by user fees and other funding sources, and provides other management advantages. The enterprise fund budget is still subject to appropriation by Town Meeting. Wellesley may adopt an enterprise fund by Town meeting vote.

VI. Conclusion

This legal analysis is only a preliminary first step in the complex process of developing and implementing a Phosphorus Control Plan. A great deal of further review and discussion will be necessary to determine what legal mechanisms are appropriate for the Town to adopt to implement its Phosphorus Control Plan and what the details of those mechanisms should be. We look forward to working with you during this process.

Appendix A
Offsite Mitigation

APPENDIX A
OFFSITE MITIGATION

In an ideal world, new development and redevelopment sites would be able to host all pollution control measures necessary to achieve required pollution control targets. However, this is not always achievable. For example, a new development site may have bedrock underlying the site which makes stormwater infiltration impossible. Redevelopment sites may be covered in buildings and therefore lack space for detention ponds. Offsite mitigation measures, however, present a solution to this problem. These are pollutant removal practices implemented at another location, approved by the Town, in the same watershed, which achieve the required pollutant removal.[1]

Fortunately, both the 2016 MS4 Permit and the 2020 Draft Modification allow the use of offsite mitigation to meet the permit requirements. At the outset, it is important to note the Draft Modification authorizes the use of offsite mitigation for both new development and redevelopment sites, while the 2016 Permit only contemplates offsite mitigation for redevelopment sites.

In the 2016 Permit, EPA Region 1 established new stormwater performance standards for new development and redevelopment projects disturbing more than one acre within regulated small MS4 communities.[2] In outlining requirements for post-construction stormwater management at redevelopment sites, the Permit contemplates some flexibility for meeting performance standards. Section 2.3.6(a)(ii)(4)(c) reads: "Stormwater management on redevelopment sites may utilize offsite mitigation within the same USGS HUC10 for the developer to meet the equivalent retention or pollutant removal requirements of the development site." Analogous language can be found in the Draft Modification in Sections 2.3.6(a)(ii)(3) for new development and (4) for redevelopment. However, the Draft Modification requires the offsite mitigation to take place in the same USGS HUC12, not the USGS HUC10.

The significance of the change between the reference to HUC10 in the 2016 Permit and HUC12 in the Draft Modification requires explanation. The United States Geological Survey (USGS) divides and subdivides the United States into successively smaller hydrologic units. A large drainage area, such as the area draining into the Upper Mississippi, for example, will be composed of multiple smaller drainage areas like the area draining to the Wisconsin River (a tributary to the Upper Mississippi). Each hydrologic unit (HU) is identified by a unique hydrologic unit code (HUC), which is ordered from largest to smallest hydrologic unit boundary as follows: HUC2 (regions), HUC4 (subregions), HUC6 (basins), HUC8 (subbasins), HUC10 (watersheds), HUC12 (subwatersheds), and HUC14.[3] Wellesley lies partly in the Fuller Brook HUC12 subwatershed and partly in the Beaver Brook HUC 12 subwatershed; both of these subwatersheds are within the much larger Charles River HUC 10 watershed.[4] The practical effect of requiring that offsite

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[1] Center for Watershed Protection (2018). *Guidance for Developing an Off-Site Stormwater Compliance Program for Redevelopment Projects in Massachusetts* (hereinafter "Manual"), pp. 1, 8.

[2] 2016 MS4 Permit, Appendix F, p. 2.

[3] For more information, see https://www.arcgis.com/home/item.html?id=4c08f2e2b13741da96ad4a8f6aa5e36a.

[4] Maps of the HUC10 and HUC12 units for Wellesley are attached.

mitigation be located within the same HUC12 subwatershed (rather than simply within the HUC10 Charles River watershed) is that offsite mitigation for projects in eastern Wellesley must be located in eastern Wellesley and offsite mitigation for projects in western Wellesley must be located in western Wellesley, with the dividing line being the Beaver Brook/Fuller Brook subwatershed boundary shown on the attached figures.

There are many benefits to undertaking an offsite mitigation program. These include regulatory flexibility for redevelopment sites where meeting the performance standard onsite is not possible, promotion of infill redevelopment, and targeted development in priority areas identified by Wellesley. Offsite mitigation also encourages cost-effective strategies to achieve equivalent or superior runoff and pollutant reduction as compared to what can be achieved on site.

Generally, there are four ways the Town could structure an offsite mitigation program. The first, and least complicated, is developer-driven offsite mitigation. This approach requires the developer to initiate the site identification process, to be approved by the Town. Under this approach, Wellesley could develop general priority areas where offsite projects would be most beneficial. However, the onus is on the applicant to select, design, construct, and maintain the project. The applicant would also be legally responsible for maintaining offsite mitigation measures in this scenario. Developer-driven offsite mitigation on public property represents a middle of the road approach in which the applicant identifies the location for offsite mitigation on public property, instead of private. Site location may be suggested and approved by the Town. As with the first option, Wellesley should develop a general prioritization of areas where offsite projects would be most beneficial to the receiving waterway. However, unlike the first approach, Wellesley would ultimately take ownership of and maintain the project once constructed. Funding may be provided by the applicant, but the burden of maintaining the project falls on the Town, as it is on public land. The third option is Town-facilitated offsite mitigation. With this option, Wellesley must assume an active role. Not only would Wellesley identify and prioritize mitigation sites, it also assists with property access issues and guides the design and construction process. While Wellesley would take on these additional roles, the applicant remains responsible for designing, constructing, and maintaining the project—albeit with guidance from the Town.[5]

The final, and most complicated option is a payment in-lieu program. Under this approach, the applicant provides a fee to Wellesley (or another assigned entity) that will help cover the cost of implementing an approved pollutant removal project elsewhere in the watershed or subwatershed. Payment-in-lieu fees from multiple sites would then be aggregated by the Town to construct public stormwater projects. While this might allow for economies of scale, it is also important to note this structure requires a much more active Town role. Wellesley must have several program elements in place before considering a payment-in-lieu program and would be responsible for establishing the amount paid for unmet onsite pollutant removal, as well as collecting, tracking, administering, and constructing offsite compliance projects. This approach necessitates an Enterprise Fund, as well as an ability to oversee construction activities or be able to collect fees and dedicate those funds to stormwater related projects. However, this scenario is attractive because it offers Wellesley a

[5] See Manual, pp. 11-13.

greater level of control over its stormwater management program, rather than simply verifying the work of third-party applicants.[6]

There are also multiple approaches Wellesley could consider when developing its criteria for allowing use of offsite mitigation to meet pollution control requirements:

1. Using a qualitative approach by requiring developers to meet the pollutant removal requirements onsite to the maximum extent practicable. Under this approach, a developer must show that they have done the best they could in meeting the pollutant removal requirements and that any remaining pollutant removal required can be met offsite. Under this scenario, the developer will ideally be able to meet all or most of their stormwater management onsite.
2. Using a quantitative approach by allowing developers to meet a certain percentage or amount of their onsite pollutant removal requirements and then automatically allowing the remainder of the pollutant removal amount to be met offsite.
3. Offering no guidance to developers on defining a minimum onsite requirement and allow some or all pollutant removal amounts to be met offsite. While this approach streamlines the process, the developer would potentially be allowed to construct <u>all</u> of their stormwater management practices offsite.[7]

To facilitate the use of offsite stormwater mitigation in the Town's land use permitting processes, the Town would need to create a framework for use of offsite mitigation. This framework could be incorporated into the Town's Drainage Review Bylaw and implementing regulations. A model bylaw creating an offsite mitigation program drafted by the Center for Watershed Protection is attached.[8] Note that the actual content of an offsite mitigation framework for Wellesley would depend on what structure and criteria the Town selected from the options discussed above. In order to ensure that the Town can claim the appropriate phosphorus reduction credit for offsite mitigation, the regulatory framework must include strong provisions for Town verification and oversight, including access and inspection rights, operation and maintenance requirements, and enforcement provisions.

[6] See Manual, Appendix E.

[7] See Manual, pp. 18, 22.

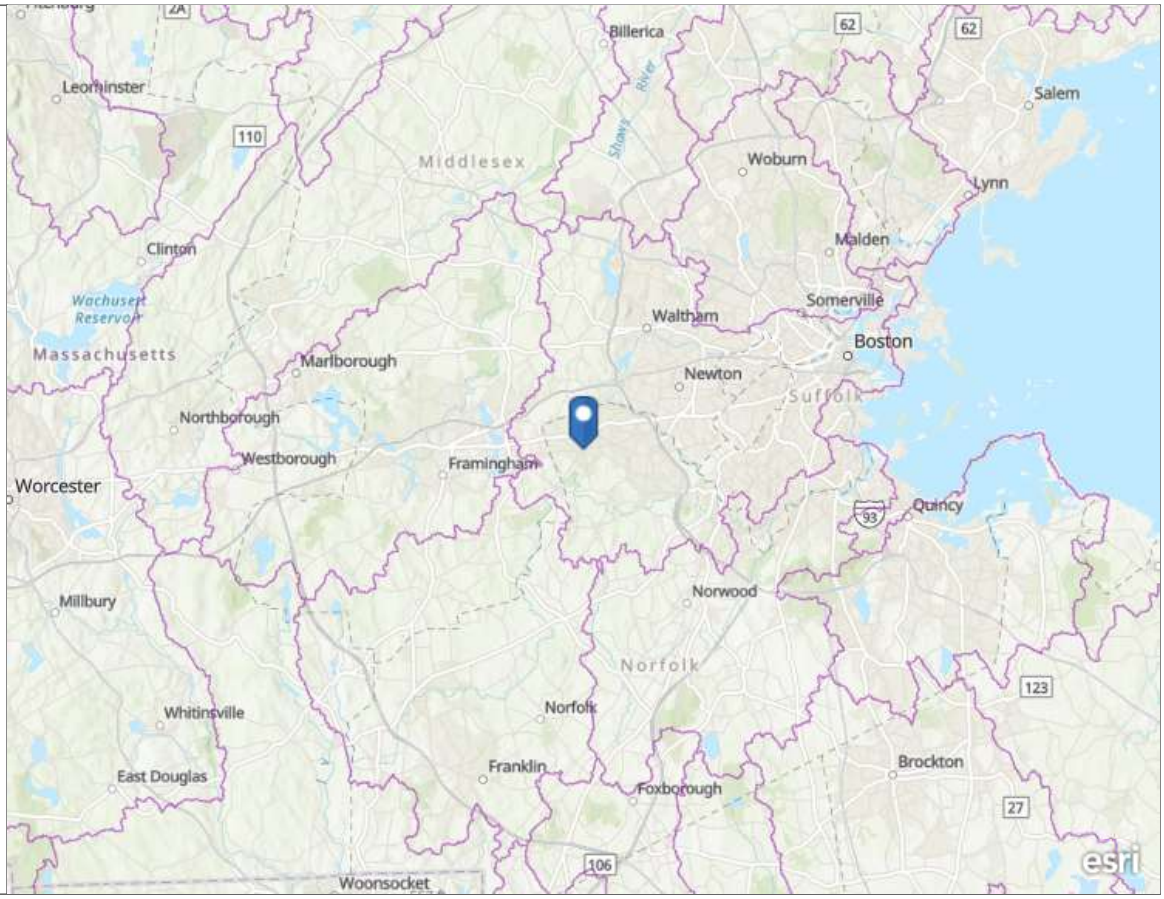
[8] The model bylaw is Appendix B to the Manual.

Maps of HUC10 and HUC12 Boundaries

Watershed Boundaries

Watershed Boundaries

10-digit HU (Watershed)



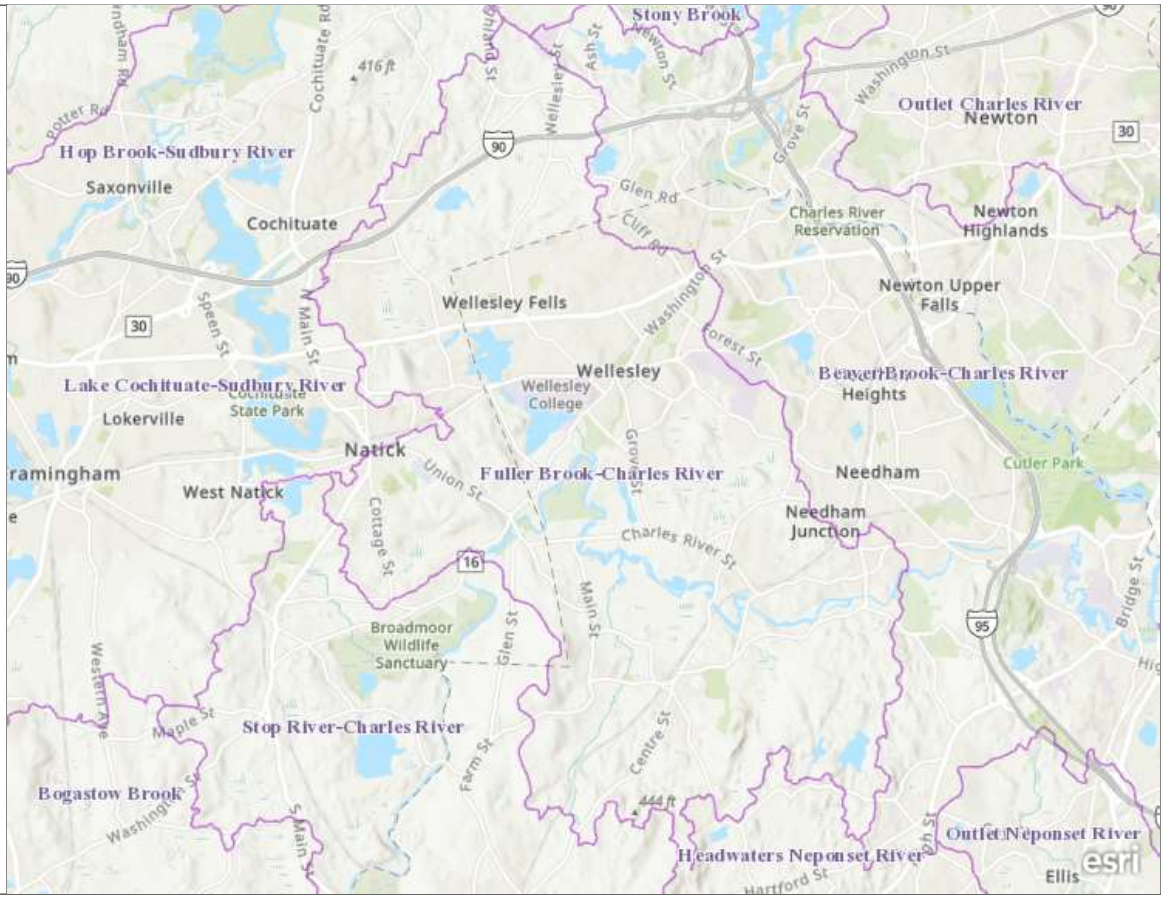
This U.S. Geological Survey (USGS) map layer displays the National Watershed Boundary Dataset (WBD)

Esri, CGIAR, USGS | Esri, HERE, Garmin, SafeGraph, METI/NASA, USGS, EPA, NPS, USDA | USGS WBD - Watershed Boundary Dataset. Data refreshed July, 2020.

Watershed Boundaries

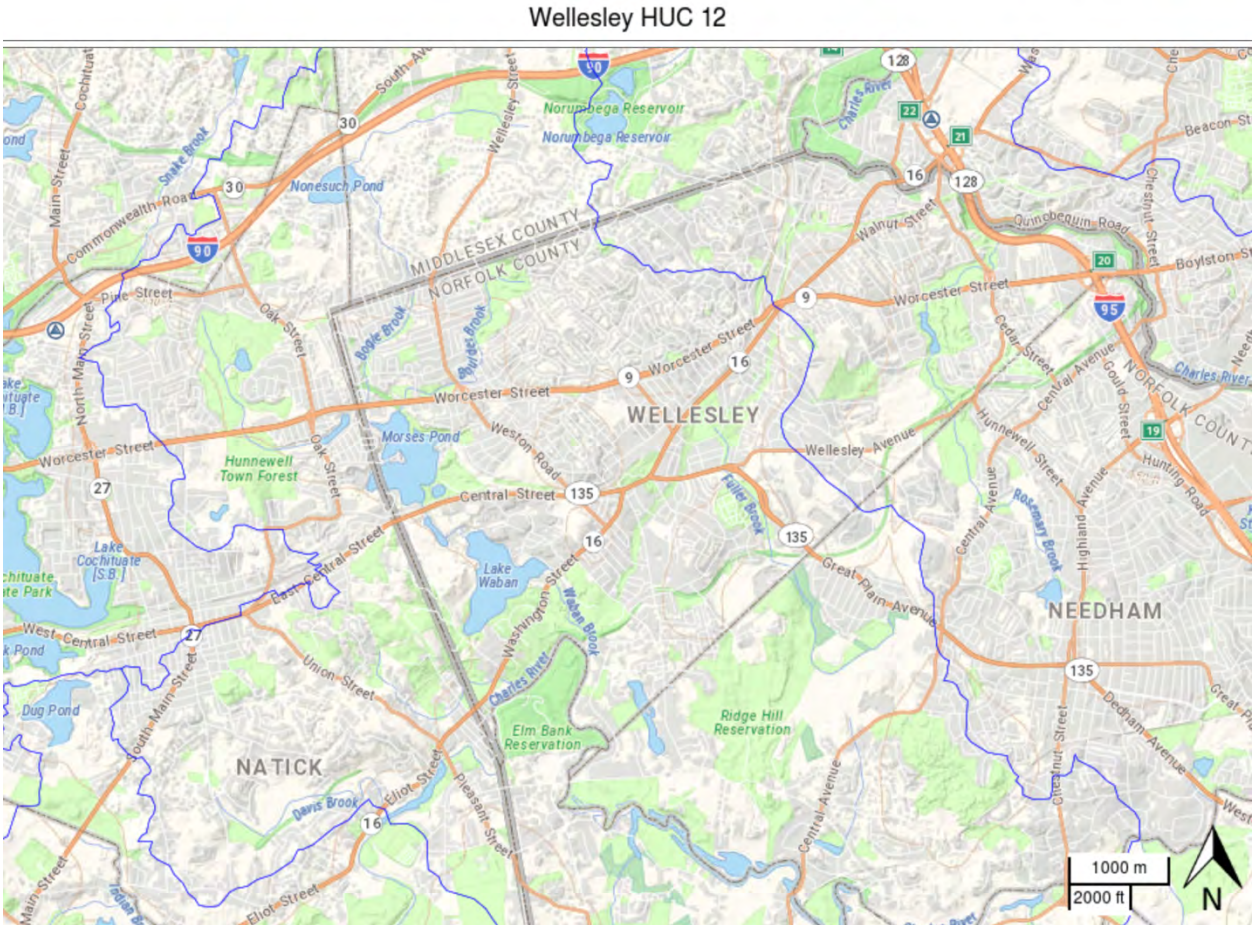
Watershed Boundaries

12-digit HU (Subwatershed)



This U.S. Geological Survey (USGS) map layer displays the National Watershed Boundary Dataset (WBD)

Esri, NASA, NGA, USGS | Esri, HERE, Garmin, SafeGraph, METI/NASA, USGS, EPA, NPS, USDA | USGS WBD - Watershed Boundary Dataset. Data refreshed July, 2020.



HUC12 Watersheds in Wellesley: Detailed View of Boundary Location

Offsite Mitigation Model Bylaw

From:

Guidance for Developing an Off-Site Stormwater Compliance Program for Redevelopment Projects in Massachusetts

(Center for Watershed Protection, 2018)

Appendix B. Model Language for use in Amending Stormwater Management Ordinance or Bylaw

NOTE to MS4s: This model language is intended to be plugged into a broader stormwater management ordinance/bylaw that addresses all aspects of stormwater management for new development and redevelopment projects (in other words, not just off-site compliance). Therefore, some sections of the model ordinance/bylaw below may be duplicative of the broader ordinance/bylaw (e.g., procedures for plan review, inspections, maintenance, performance bonds, etc.). In these cases, the off-site compliance section can simply reference the appropriate section of the broader ordinance/bylaw.

Definitions

Allowable Practices – Stormwater and/or watershed practices authorized by the MS4 to be used as part of an off-site compliance program, and for which pollutant removal equivalents can be established.

Credit – The amount of pollutant removal assigned to a practice based on scientific information, literature review, and/or modeling. This should be distinguished from the term "credit" used as part of a stormwater utility program.

Eligibility – In the context of this guidance, eligibility refers to the documentation and resulting decision about whether a redevelopment site can use off-site compliance options, as authorized by the MS4.

Geographic Scale – The geographic boundary that links the redevelopment site that is eligible for off-site compliance and the off-site practice(s) that provides mitigation. The MS4 General Permit specifies that this scale shall be the same HUC 10 watershed for off-site mitigation.

Maximum Extent Practicable (MEP) – Refers to the extent of efforts to comply with local post-construction stormwater management requirements. Elements of MEP indicate serious intent to comply and include selecting and implementing design elements to address site restrictions. Maximum extent practicable is defined as the following:

1. Proponents of redevelopment projects have made all reasonable efforts to meet the applicable Massachusetts Stormwater Management Standards;
2. They have made a complete evaluation of possible stormwater management measures including environmentally sensitive site design that minimizes land disturbance and impervious surfaces, low impact development techniques, and stormwater best management practices (BMPs); and,

3. If not in full compliance with the applicable Standards, they are implementing the highest practicable level of stormwater management.

Off-Site Compliance – A general term that covers off-site mitigation and refers to meeting all a redevelopment's stormwater requirements, as specified in the local stormwater bylaw or ordinance, at an off-site location(s).

Off-Site Mitigation – The off-site compliance approach whereby pollutant removal practices are implemented at redevelopment or retrofit sites at another location in the same HUC 10 watershed, ideally upstream or in the same HUC 12 subwatershed as the original redevelopment project, as approved by the MS4 and at the pollutant removal equivalents specified in the local stormwater bylaws or ordinances.

Off-site compliance for stormwater management at redevelopment sites.

1. Every Applicant shall install or construct measures that retain the volume of runoff equivalent to, or greater than, 0.8 inches multiplied by the total post-construction impervious surface area on the site AND/OR remove 80% of the average annual post-construction load of total suspended solids (TSS) AND 50% of the average annual load of total phosphorus (TP) generated from the total post-construction impervious area on the site, as described in the Small Municipal Separate Sewer System (MS4) General Permit unless off-site compliance is approved by [Stormwater Authority].

2. [Stormwater Authority] may not waive the minimum requirements of the Small MS4 General Permit for stormwater management of water quality protection.

3. The application for off-site compliance for stormwater management on a redevelopment site must include:
    a. A review fee in the amount of [$X] for review of the off-site compliance application
    b. Stormwater management concept plan
    c. Applicant information
    d. Redevelopment site information
    e. Documentation of meeting on-site compliance to the maximum extent practicable (MEP)
    f. Water volume calculations using the procedures established in the Massachusetts Stormwater Handbook, or other equivalent method pre-approved by [Stormwater Authority], OR pollutant removal calculations consistent with EPA Region 1's BMP Performance Extrapolation Tool, other BMP

performance evaluation tool provided by EPA Region 1, or federally or state approved BMP design guidance or performance standards.

4. To be eligible for off-site compliance on a redevelopment site, the Applicant must demonstrate to the satisfaction of [Stormwater Authority] that on-site compliance was met to the MEP.

5. Where off-site compliance is approved, the Applicant shall satisfy stormwater management requirements by accomplishing an approved off-site mitigation project.

6. Off-site mitigation projects must meet the following conditions:
    a. The off-site mitigation project must be in the same [watershed] as the original project, and on existing impervious surface not expected to be the subject of redevelopment in the next 5 [or more] years, as approved by [Stormwater Authority].
    b. [Stormwater Authority] shall, at its discretion, identify priority areas within the [watershed] in which off-site mitigation projects may be completed.
    c. Off-site mitigation must be for retrofit or redevelopment projects, and cannot be applied to new development.
    d. In all cases, land rights, access agreements or easements, and a maintenance agreement and plan shall be developed to ensure long-term maintenance of any off-site mitigation project prior to approval of the off-site mitigation proposal.
    e. Installation of the off-site mitigation project shall be completed: (a) within three (3) years from the date that the stormwater management design plan is approved, or (b) prior to full completion of the new development or redevelopment project related to the off-site mitigation project, whichever of (a) or (b) is earlier.

NOTE to MS4s: Section 7 is one model for ensuring that off-site mitigation projects are held to the same requirements as on-site projects. Using this approach, the new off-site ordinance/bylaw simply references the appropriate sections of the broader ordinance/bylaw.

7. All requirements in Sections [list sections] for on-site stormwater management shall also apply to off-site mitigation projects. These requirements include but are not limited to a stormwater management design plan, inspections, maintenance, and performance bonds.

NOTE to MS4s: Sections 8 is an alternative model in which the requirements related to inspections of off-site mitigation projects are provided in more detail.

8. [Stormwater Authority] shall inspect all off-site mitigation projects to ensure that they are properly installed to manage the required volume of stormwater.
    a. The applicant shall grant [Stormwater Authority] the right to enter the property of the off-site project for the purposes of making inspections and ensuring compliance with this Section.
    b. The applicant must notify [Stormwater Authority] before the commencement of construction of the off-site mitigation project. In addition, the applicant must notify [Stormwater Authority] in advance of construction of critical components of the stormwater practices on the approved stormwater management design plan. [Stormwater Authority] may, at its discretion issue verbal or written authorization to proceed with critical construction steps, such as installation of permanent stormwater practices based on stabilization of the drainage area and other factors.
    c. [Stormwater Authority] or its representatives shall conduct periodic inspections of the stormwater practices shown on the approved stormwater management design plan, and especially during critical installation and stabilization steps. All inspections shall be documented in writing. The inspection shall document any variations or discrepancies from the approved plan, and the resolution of such issues. Additional information regarding inspections can be found in Section [X]. A final inspection by [Stormwater Authority] is required before any performance bond or guarantee, or portion thereof, shall be released.
    d. At its discretion, [Stormwater Authority] may authorize the use of private inspectors to conduct and document inspections during construction. Such private inspectors shall submit all inspection documentation in writing to [Stormwater Authority]. All costs and fees associated with the use of private inspectors shall be the responsibility of the applicant.
        i. If the use of private inspectors in authorized, [Stormwater Authority] shall, at its discretion, maintain a training and certification program, or authorize another entity to maintain such a program. If such a certification program exists, all private inspectors shall be certified prior to conducting any inspections or submitting any inspection documentation to [Stormwater Authority].

ii. If private inspectors are utilized, then inspections by [Stormwater Authority] or its representatives, as provided in Section [X], may be reduced in frequency. However, [Stormwater Authority] shall remain the responsible entity for ultimate inspection, approval, and acceptance of all stormwater BMPs, and for issuance of the Certificate of Completion in accordance with Section [X].

e. The applicant shall prepare an as-built plan for all off-site projects. The plan must show the final design specifications, materials, and elevations for all stormwater management facilities and clearly show deviations from the approved stormwater management design plan. The as-built shall be sealed by a registered professional engineer or other design professional approved by [Stormwater Authority].

f. Subsequent to final installation and stabilization of all stormwater BMPs shown on the stormwater management design plan, submission of all necessary as-built plans, and final inspection and approval by [Stormwater Authority], [Stormwater Authority] shall issue a Stormwater Certificate of Completion for the project. In issuing such a certificate, [Stormwater Authority] shall determine that all work has been satisfactorily completed in conformance with this Ordinance/Bylaw.

Appendix B
Funding Source Assessment

Stormwater Enterprise Fund Development & Remaining Decisions for the Town of Wellesley, MA

TO: David Cohen, David Hickey, George Saraceno, and Jeff Azano-Brown
Town of Wellesley

FROM: Emily Scerbo, Annaliese Keimel, Michael Schrader, and Adam Yanulis, Tighe & Bond

DATE: July 6, 2022 (Draft to Board of Public Works)
Revised September 23, 2022

Stormwater runoff is known to pick up pollutants, like trash, chemicals, nutrients, oils, and sediment, that can harm our rivers, streams, lakes, and wetlands. Nation-wide the U.S. Environmental Protection Agency (EPA) through the National Pollutant Discharge Elimination System (NPDES) Stormwater Program regulates stormwater discharges to waters of the U.S. with the goal of improving water quality and protecting designated uses (e.g., recreation, fishing) under the Clean Water Act. Since 2003, EPA's *General Permits for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems (MS4) in Massachusetts* (Small MS4 General Permit), reissued July 1, 2018, requires the Town of Wellesley to meet six minimum control measures (MCMs) to reduce stormwater pollution. There are additional permit requirements to reduce phosphorus in stormwater runoff discharging to the Charles River and its tributaries that will add significant additional burden to the Town for enhanced municipal drainage system and roadway maintenance as well as capital expenditures to design, permit, and build stormwater Best Management Practices (BMPs) to reduce stormwater pollution

To fund the program work to meet the Small MS4 General Permit, the Town of Wellesley is considering a Stormwater Enterprise Fund. An enterprise fund is considered a best practice to maintain long-term financial sustainability for water, sewer, and stormwater systems. This memo presents an overview of the current status of the Wellesley Stormwater Management Program, present and future estimated program costs, the established policy decisions as it relates to the development of a Stormwater Enterprise Fund in Wellesley, future decisions still needed prior to adoption of an enterprise fund and fee, and public outreach efforts planned to facilitate socialization of the stormwater utility.

1. Wellesley Stormwater Management Program

1.1 Program Assessment

The Town of Wellesley implements their Stormwater Management Program through the Department of Public Works' Engineering Division. To date, the program is meeting the six minimum control measures (MCMs) outlined in the MS4 General Permit. Current program functions include:

- Participation in the Charles River Stormwater Collaborative and Statewide Stormwater Coalition
- Employee training, including participation in regional meetings related to MS4 compliance

- Assessment and modification to operations including catch basin cleaning, street sweeping, BMP maintenance, and facility inspections
- Incorporation of BMP's into capital projects
- Development of new regulations for oversight of new development and redevelopment
- Review and inspection of private construction projects for compliance with local code
- Development of multi-media public education materials
- Drainage system mapping, inspection, testing, and GIS data development
- Operation of a stormwater hotline and website
- Documentation of compliance activities and annual reporting

Short-Term Recommendations

1. As permit year (PY) four concluded on June 30th, 2022 and the Town looks to meet requirements of future permit years, several action items are recommended. Most critically, it is recommended that the Town develop a Phosphorous Control Plan (PCP) as soon as possible. This requirement is due by June 30, 2023 and a significant portion of increased program costs, discussed further below, will stem from this plan. The PCP will provide key phosphorus loading calculations and an implementation plan with estimated annual expenditures to reach EPA's milestones for phosphorus load reductions.
2. Because the Town had the foresight to begin tracking phosphorus removal efficiency and load reduction ten years ago, the Town will be able to take credit for yearly phosphorus reduction from implemented structural controls (P_{Sred} (mass/year) in Appendix F Equation 1) as long as it can be certified that private BMPs are being properly inspected and maintained. Tighe & Bond has discussed BMP phosphorous removal tracking with the Town and provided technical recommendations to revise and complete these calculations according to Attachment 3 to Appendix F of the General Permit. The Town is working on finalizing this tracking to inform efforts to meet phosphorous requirements.
3. Finally, in our program gap analysis, we identified that there was a misinterpretation of the Stormwater Pollution Prevention Plan (SWPPP) requirements. The Town has since updated the SWPPP for the DPW Facility at 20 Municipal Way and is now performing quarterly SWPPP inspections.

1.2 Future Program Costs

Attachment 1 outlines the major permit requirements from PY4 though PY10 based on the 2016 Final MA General Permit Requirements with Tighe & Bond's opinion of probable costs. Phosphorus Control Plan implementation costs beginning in FY2024 (PY6) were prepared using EPA's methodology where all phosphorus load reduction is accomplished through future stormwater BMPs using an optimization analysis of BMP opportunities in the planning phase. Additional notes on assumptions are provided in Attachment 1. The projected $1.8 Million annual cost to implement the Phosphorus Control Plan will be revised at the end of FY2023 (PY5) once the Town's progress toward EPA's required 57% phosphorus loading reduction has been estimated through structural and non-structural BMPs and a strategy has been developed to achieve program milestones.

The Town prepared a detailed estimate of current and anticipated future stormwater program expenditures, including labor, operating expenses, and capital projects and equipment. Tighe

& Bond worked further with the Town to assess current gaps in the program to meet the desired level of service (LOS). The Town, with input from Tighe & Bond, addressed these gaps in Town's stormwater proforma. The most recent version of this document is on file with the Town of Wellesley. Annual revenue needs averaged over five years are approximately $3.15 million. The annual budget projections account for increased program administration, periodic rate increases, stormwater credits and abatements, and contingencies. **Figure 1** provides the projected Stormwater Management Program expenditures from fiscal year 2024 through 2028 (PY6 through 10). **Table 1** summarizes the estimated 5-year average revenue needs for the purpose of developing a rate model.

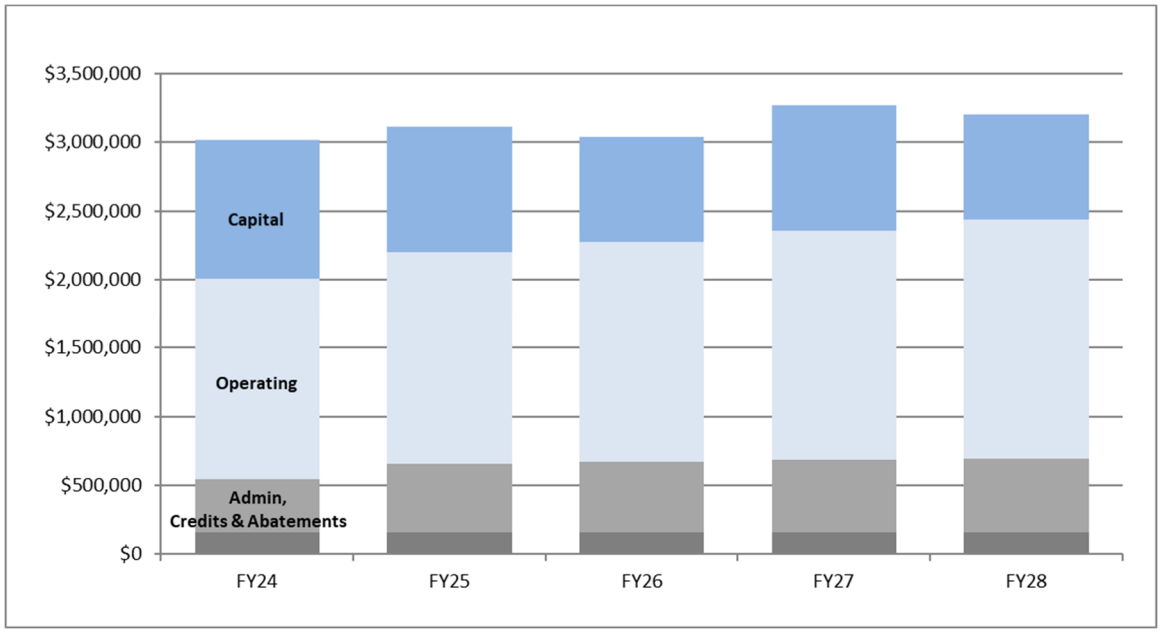


Figure 1 Projected Annual Stormwater Program Expenditures

Table 1
Planning Budget for Stormwater Fee Development and Rate Model

	5-Year Average Projected Annual Stormwater Program Expenditures
Capital	$880,000
Operating Expenses	$1,610,000
Administration	$500,000
Credits & Abatements (Est. 5% of revenue)	$160,000
Total Revenue Needs	**$3,150,000**

2. Stormwater Fee Development

2.1 Background

To support the growing compliance and program costs, the Town of Wellesley has been working to develop a Stormwater Enterprise Fund. A stormwater utility fee is a mechanism to fund required investment in stormwater infrastructure, based on the amount of impervious surface on a given parcel. Similar to water and sewer utilities, a stormwater utility allocates costs based on the amount of use, or in this case, amount of impervious surface. This approach has been implemented in 22 cities and towns in Massachusetts as of 2020 and 1,851[1] communities or counties across the United States as of 2021.

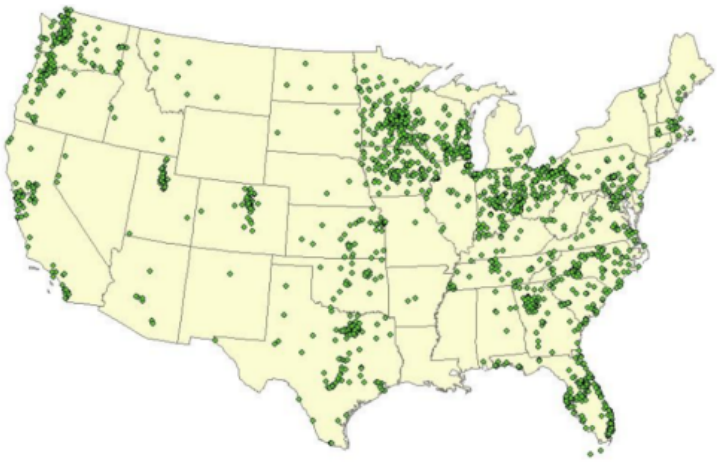


Figure 2 United States Stormwater Utilities 2021 [1]

2.1.1 Benefits of a Stormwater Enterprise

A stormwater enterprise is a sustainable, flexible, and equitable funding mechanism. A stormwater fee provides a dedicated revenue source for the stormwater program so the program can fulfill permit requirements, maintain environmental quality, and adequately function to protect human health and public and private property. The revenue source is flexible in that it can fund all aspects of the stormwater management program described previously in Section 1.

During the many public meetings to seek input from Wellesley's Boards and Committees as well as the public (see Section 4), there was **broad support for more fairly distributing the stormwater program costs across all properties generating runoff proportional to their relative stormwater contribution**. The Town will need to fund the increasing cost of compliance and climate adaptation regardless of whether a stormwater

The goals of the Stormwater Utility and Climate Action Plan are well aligned:

- Stormwater Utility will sustainably fund all aspects of the Stormwater Program
- Fees and credits will provide an incentive to reduce impervious surfaces
- Preserving trees, adding nature-based solutions, and increasing infiltration will reduce thermal impacts to receiving waters

[1] Campbell, Warren, "Western Kentucky University Stormwater Utility Survey 2021" (2021). SEAS Faculty Publications.

enterprise is developed or not. A stormwater fee will distribute this burden, by impact, which corresponds to impervious area.

The most likely alternative to a stormwater enterprise is continuing to raise revenues through the Town's general fund, which would exclude key tax-exempt users, such as State property and educational institutions, which represent large quantities of impervious area within the Town. The two pie-charts below depict the future stormwater revenue distribution if the entire program were funded through a property tax increase (Figure 3) compared to the distribution if the program were fee funded (Figure 4).[2]

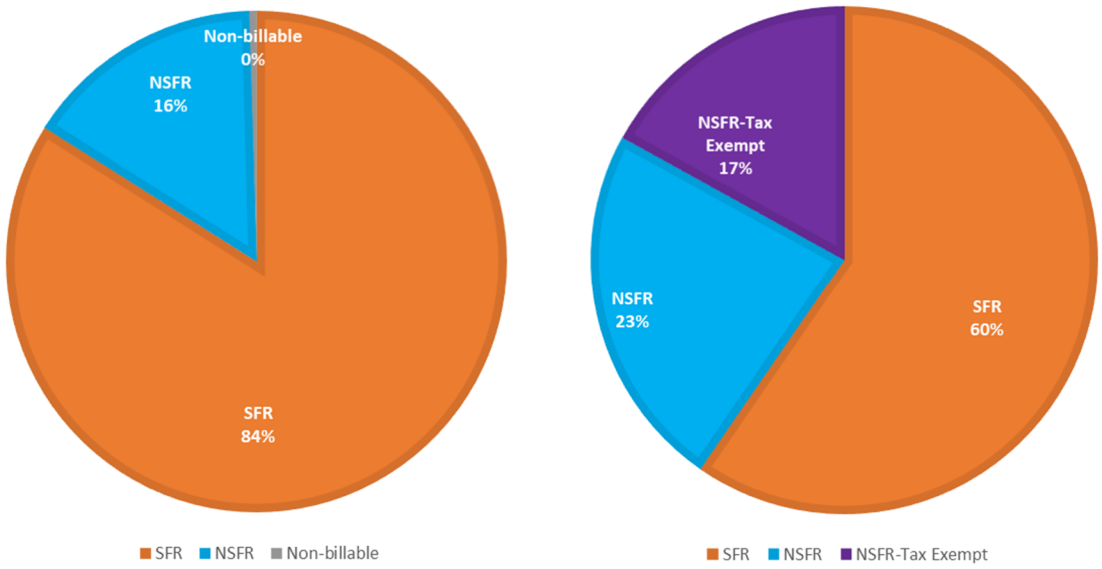


Figure 3 (left) Revenue Distribution from Property Taxes and
Figure 4 (right) Revenue Distribution from Stormwater Fees

2.2 Stormwater Working Group

A stormwater technical group and working group were established to support these efforts. The technical group includes Town personnel including the Director of Public Works, Town Engineer, Senior Civil Engineer, and Assistant Director of Public Works as well as consultants from Tighe & Bond.

The Stormwater Working Group includes all members of the technical working group along with additional personnel from the Town DPW Engineering Division, Natural Resource Commission, Planning Department, and DPW Highway Division.

To date these groups have developed a draft fee structure based on the following preliminary decisions. These decisions have been made based on feedback from the Board of Public Works, Planning Board, Select Board, Climate Action Committee, and Natural Resources Committee.

[2] In these figures, SFR means "Single Family Residential" and NSFR means "Non-Single Family Residential." This is further discussed in Section 2.3 and Section 3.1.1.

Key decisions to date, discussed in further detail below, include the following recommendations:

1. Implement a fee funded stormwater management program.
2. Fees will be based on impervious area.
3. Bill non-single family residential (NSFR) properties for measured impervious area.
4. Proportional fees will be calculated as a whole ERU.
5. Municipal properties will not be billed.
6. Set a minimum impervious area value to be billed.
7. Use MUNIS for stormwater billing.

2.3 Established Policy Decisions

2.3.1 Fee Funded Program

The Town is currently funding its stormwater management program through the general fund. As previously discussed, the costs of operation, maintenance, and management of the stormwater program are expected to increase significantly. To distribute this burden equitably, the Town staff is recommending a stormwater fee and enterprise fund. This will provide the financial means to meet the required level of service of the program and provide funding in a sustainable way requiring all users, even those who are tax exempt to assume financial responsibility within the program. The establishment of a stormwater utility and stormwater fee will be independent of other funding mechanisms in Wellesley and will account for needed reserves in the fund. A stormwater enterprise fund would not preclude the Town from seeking future grants and loans to subsidize the program.

2.3.2 Rate Base Based on Impervious Area

Since the amount of impervious area on a property is a well-established method to measure a property's stormwater impact, the Town has decided to use impervious area as the basis for the stormwater fee. "The relationship (or nexus) between impervious area and stormwater impact is relatively easy to explain to the public—you pave, you pay."[3] One additional option discussed was the use of intensity of development for calculating stormwater fees. However, this methodology is more administratively complex, not as easily understood or accepted, and was not recommended.

2.3.3 Non-Single Family Residential

Single family residential (SFR) properties are properties with a use description of "single family" per the Town of Wellesley assessment records. Properties that are not SFR, are considered non-single family residential (NSFR). The Town has decided that NSFR properties will be billed proportionally to their impervious area. This means the impervious area on a given parcel will be divided by the impervious area in one ERU, 3,105 square feet, to determine the ERUs on the parcel. In contrast a tiered flat fee structure is anticipated for SFR properties.

[3] U.S. Environmental Protection Agency New England. *Funding Stormwater Programs* (EPA 901-F-09-004). April 2009. URL: https://www3.epa.gov/region1/npdes/stormwater/assets/pdfs/FundingStormwater.pdf

2.3.4 Billing Based Upon Whole ERUs

For NSFR properties, when the proportional ERU is determined for a given parcel, calculations are likely to produce a fractional value. Fractional ERUs can be an administrative burden and would require the Town to develop and maintain highly accurate impervious area mapping, therefore the Town has decided to bill NSFR properties based on whole ERUs, rounding to the nearest whole ERU value. For example, a parcel measuring 5.49 ERUs will be rounded down and billed for 5 ERUs; a parcel measuring 5.50 ERUs will be rounded up and billed for 6 ERUs.

2.3.5 Municipal Property Billing

The Town owns approximately 194 parcels in the Town of Wellesley. If these municipal properties were included in the stormwater utility this cost would ultimately be transferred from the general tax fund into the stormwater enterprise fund. This is equivalent to keeping a portion of the stormwater management program tax funded. Therefore, it was decided that municipal properties should be excluded from the Stormwater Fee Rate Base. While municipal properties will be excluded from the rate base, other tax-exempt properties such as nonprofits and state agencies will be included.

2.3.6 Minimum Impervious Area

In developing stormwater fees based on impervious area, a minimum threshold under which a property if not billed, is typically defined. This accounts for potential error in the impervious digitization process, which uses spatial datasets from satellite imagery. In the Town of Wellesley the minimum impervious area is 300 square feet. This value was determined by referencing other New England communities with a stormwater enterprise.

2.3.7 Billing Utilizing MUNIS

The Town plans to use its current utility system, MUNIS, for stormwater billing. The future administrative cost of a stormwater utility will be similar to current administrative costs plus review of credit applications and an annual review of rates. Stormwater utility fees will be added to the current utility billing process (water, sewer, electric). Therefore, 25% of the administrative cost of preparing bills and collections will be attributed to the stormwater utility. This also means that multi-family and condo properties will be billed according to metered accounts already established in MUNIS.

3. Future Work Required

3.1 Future Policy Decisions

The Stormwater Working group has made significant progress in developing a fee structure and program that will cater to the needs of the Town of Wellesley. However, the following policy decisions are necessary prior to Special Town Meeting and bills are delivered to rate payers. An anticipated timeline for these decisions is included at the end of this section. The necessary policy decisions include the following and are discussed in further detail below:

1. SFR Rate Structure
2. Private Roads and Unaccepted Streets
3. Credit Policy
4. Appeals and Abatements
5. Penalties for Late or Non-Payment

3.1.1 Single Family Residential Rate Structure

Due to the wide distribution of impervious area on single family residential properties in the Town of Wellesley (**Figure 5**), it is recommended that the Town uses a tiered approach to bill SFR properties. Tier structures to consider include 3-Tiers, 3-Tiers with a maximum impervious area cutoff, over which a property is charged proportionally, and 4-Tiers. **Based on feedback from public outreach efforts to date, the proposed fee for adoption will be the 3-Tier with a maximum structure.** Once a rate structure is finalized The Town will then need to adopt a rate schedule such as the example provided for a 3-Tier with maximum scenario in **Attachment 2**.

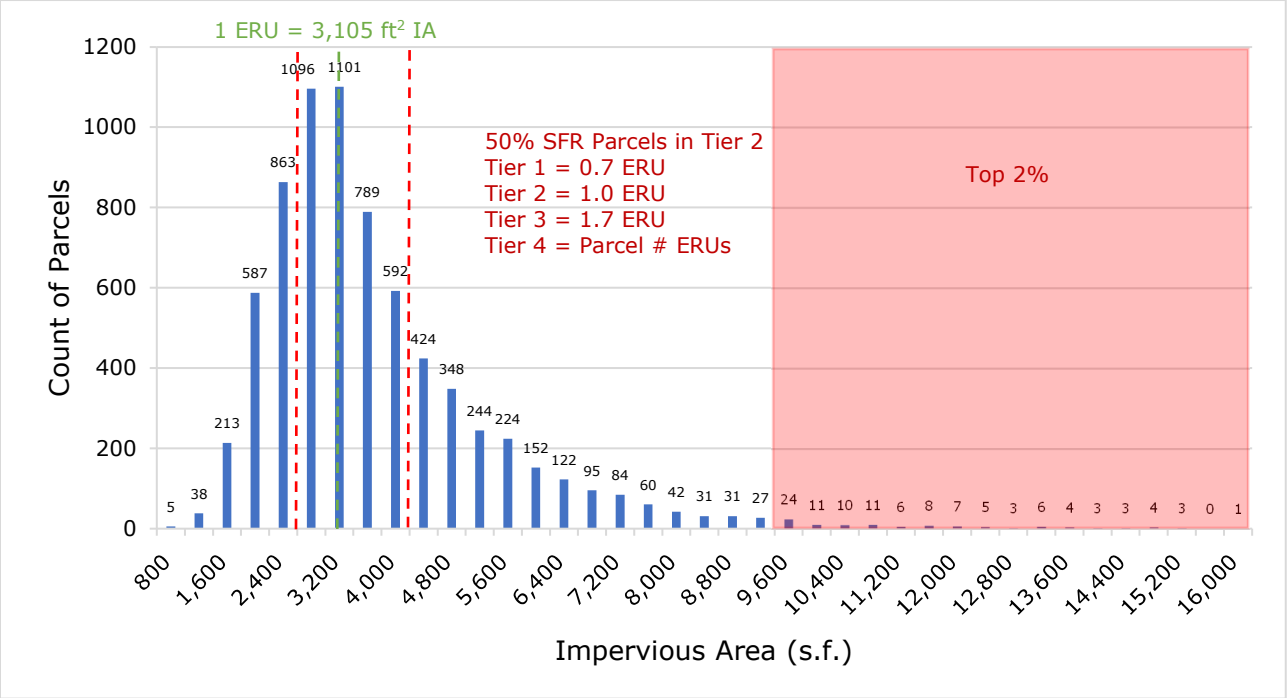


Figure 5 Single Family Residential Impervious Area Distribution

3.1.2 Private Roads and Unaccepted Streets

Public roadways are excluded from the Stormwater Fee Rate Base. However, the Town needs to decide how to bill both private roads (i.e., impervious roadways falling on private property) and unaccepted streets (i.e., streets which have no record of public acceptance by the Town of Wellesley or other governmental authorities). It is recommended that private ways that sit on parcels with building impervious area are included in the rate base and are distributed among the properties along the private way. It is recommended that unaccepted roads are excluded from the Stormwater Fee Rate Base because these roadways are not intentionally private, and the town provides some operation and maintenance (such as plowing, deicing, pothole repair) to provide safe passage.

3.1.3 Credit Policy

The Town plans to develop a credit policy, which will allow reductions in a ratepayer's annual fee for steps implemented to reduce their properties demand on the Town's stormwater system. A credit policy can incentivize implementation of phosphorous reduction strategies

on private properties, reducing the overall financial burden placed on the Town to achieve permit compliance. The Town should develop a credit policy with input from town staff, key stakeholders, and the public. This policy needs to include which stormwater management strategies are eligible and associated credit amounts, an approval process, and application process. The Credit Policy should be approved and published by December 31, 2022, in advance of Annual Town Meeting.

3.1.4 Appeals and Abatements

Implementation of a stormwater fee will require a process to appeal fee amounts for those that disagree with the Town's current impervious area data. This process should include, a timeline for responding to submitted appeals, who reviews appeals and in what order these entities review them. It is recommended that a form is made available to rate payers to provide background on their case. It is possible that this process may also require proof of reduced impervious area through, photographs, site plans, or on-site reviews.

3.1.5 Penalties

As a stormwater fee is commonly based on impervious area, enforcement of said fees can be more difficult than other utilities where penalty may include service shutoff. Penalty options include a tax bill lien with accrued interest on unpaid charges or to bill stormwater prior to other municipal services. The latter would require the Town to bill and process stormwater prior to water or sewer fees, creating a requirement to pay stormwater fees to continue water and sewer services.

3.2 Proposed Timeline

A proposed timeline for finalizing the described actions above is outlined below. This schedule was developed based on preparing a stormwater fee structure and conducting associated public outreach by Annual Town Meeting in March 2023.

October – June 2023

- Publish online parcel viewer with proposed fees per parcel
- Finalize remaining policy decisions
- Prepare for billing and customer communication
- Adopt and publish policy for credits and abatements

March 2023

- Annual Town Meeting to present Stormwater Enterprise Fund and FY24 stormwater budget

Spring 2023

- Public Hearing. Board of Public Works adopts FY24 Rate Schedule

July 1, 2023 (FY24 Starts)

- Fee in Effect. Bills sent during next cycle.

July-September 2023

- Customer Service, Credits, Abatements

4. Public Outreach

4.1 Outreach to Date

The Town has taken a three-pronged communication strategy: public meetings and presentations to solicit feedback through Wellesley's Boards and Committees; general public outreach using the town's website and social media; and direct stakeholder outreach to large property owners or those expected to be most impacted by the new fee.

To date, the Department of Public Works and Tighe & Bond have met with the following boards and committees on the indicated dates:

- Board of Public Works (11/9/2021, 1/11/2022, 7/12/2022)
- Planning Board (12/9/2021)
- Select Board (12/20/2021)
- Climate Action Committee (1/14/2022)
- Advisory Committee (3/2/2022)
- Natural Resources Committee (3/3/2022)

Additionally, Tighe & Bond with input from the Town has provided public outreach materials to be posted on the Stormwater Management Webpage[4] on the Town Engineering site. Following these efforts, the Charles River Watershed Association's January 2022 electronic newsletter, *Changing the Current: Climate Resilience and Local Action*, gave kudos to Wellesley in the Town Highlights section for considering a Stormwater Utility. The highlight includes a link to an article in The Swellesley Report, *Taking Wellesley by Stormwater.*

Excerpt from CRWA Newsletter

Kudos to Wellesley for considering a Stormwater Utility to provide dedicated funds to comply with their MS4 Permit and reduce phosphorus pollution into the Charles River. As the article states, "the cost currently comes out of the town's general tax fund, but the DPW is exploring whether a fee-based utility service, like for water and sewer, ***might be a more stable and fair way to cover skyrocketing stormwater-related costs*** *in the face of tougher standards from the U.S. Environmental Protection Agency that will require more street sweeping, better cleaning of the town's 4,500 catch basins, increased maintenance of Wellesley's nearly 30 water interconnection points, etc." Wellesley would join 20 other Massachusetts communities, including three Charles River Watershed communities (including three Charles River Watershed communities: Newton, Bellingham, and Millis) to adopt a utility model for funding stormwater management. Click here for more information.*

4.2 Frequently Asked Questions (FAQs)

Throughout the Town's ongoing outreach, several questions have occurred on a reoccurring basis. The following FAQs are provided below as a resource as planned outreach continues:

What is a stormwater utility?
A stormwater utility is a mechanism to fund required investment in stormwater infrastructure, based on the amount of impervious surface on a given parcel. Similar to water and sewer utilities, a stormwater utility allocates costs based on the amount of use, or in this case, amount of impervious surface. An Enterprise Fund allows revenue to be collected and applied directly to stormwater-specific costs. Fees can accumulate for future capital projects.

[4] Town of Wellesley Stormwater Utility. URL: https://wellesleyma.gov/1785/Stormwater-Utility

Why an additional fee?
The Town is facing increased compliance costs. A stormwater fee provides an equitable way to fund the stormwater management program and more fairly distribute costs based on impact. In this case, the amount of impervious area is a proxy for impact, as more impervious area is related to increased stormwater runoff and burden on the system. The Town of Wellesley will need to address increased compliance costs either from current funding mechanisms or an enterprise fund. A stormwater fee provides a more equitable method of funding the stormwater management program.

How are fees determined?
Fees are determined based on the amount of impervious area. The median impervious area of all single-family residential (SFR) parcels in the Town of Wellesley is 3,105 square feet. One equivalent residential unit (ERU) is represented by this median value of 3,105 square feet. The total number of ERUs in town was determined in combination with estimated revenue requirements to develop a cost per ERU. This is equal to $225/ERU.

SFR parcels are billed based on a tiered structure. The first tier represents 25% of a impervious area in the Town represented by SFR properties. The second tier represents 50%, and the third tier represents 23%. The fourth tier represents 2% of impervious are which includes any residential property greater than 9,300 square feet. Properties in the fourth tier are billed proportionally to their impervious area, similar to non-single family residential (NSFR) properties. Refer to ***Figure 5*** *in this document.*

For NSFR properties, a given parcel is divided by the impervious area in one ERU, 3,105 square feet, to determine the ERUs on the parcel.

Will this enterprise impact other enterprise funds in the town?
A stormwater enterprise is a separate enterprise fund and will not impact other ongoing funds in Wellesley. Additionally, the current estimate revenue needs accounts for needed reserves in the fund.

Is this fee based on the percentage of impervious area?
No, this fee is not based on the percentage of impervious area. While a fee based on density (or percent impervious area) was considered, this type of fee may fail to fully capture properties that impact stormwater quality more than those with less impervious area. Additionally, this approach would create additional administrative burden. This approach is not recommended currently but can be revisited as the fee is revised in the future.

What is the administrative burden of this program?
The future administrative cost of a stormwater utility will be similar to current administrative costs plus review of credit applications and an annual review of rates. This annual review will include an assessment of impervious area, which Wellesley's GIS department already works with. Additional review will include an assessment and implementation of any annual rate changes. Credits will most likely be offered on a rolling basis as parcel owners complete the required application and submit it to the town for review. Because stormwater will be added to the current utility billing process (water, sewer, electric), 25% of the administrative cost of preparing bills and collections will be attributed to the stormwater utility.

How does Wellesley's Fee Compare to other Towns?
The table below provides benchmarking data of Wellesley's proposed fee against other municipalities in Massachusetts. Wellesley is subject to Charles River Phosphorous TMDL requirements, which should be considered when reviewing benchmarking information. The Town has also undergone substantial review of revenue requirements, contingencies, and potential reserve needs. Note that not all of the Towns listed in Table 2 below are funding their entire program through stormwater fees.

Table 2 Wellesley Proposed Stormwater Fee Compared to Other Massachusetts Municipalities

Town	Year Adopted	ERU (ft^2)	Single Family Residential Fee	Other Residential	Large Residential, Commercial, Industrial, Tax Exempt	Charles River Phosphorous TMDL?
Wellesley	-	3,105	$157.50 - $382.50+/year 4 tiers	$225 / ERU	$225 / ERU	Yes
Ashland	2019	N/A	$35 / year	$0.80/100 ft^2 IA or $80 per year minimum	$0.80/100 ft^2 IA or $80 per year minimum	Yes
Bellingham	2020	3,025	$96 / year Flat Fee for SFR & Condos	$192/year Flat fee 2-3 family	$96 / ERU	Yes
Newton	2006	N/A	$100 / year	$100/year Flat fee for 2-4 Unit Res	$0.047 per ft^2 IA Minimum $150/year	Yes
Millis	2018	N/A	$0 - $400+ / year	$0 - $400+ / year	$0 - $400+ / year	Yes
Westford	2019	3,500	$37.50 - $150 / year 5 Tiers	$75/ERU	$75/ERU	No
Milton	2016	N/A	$40-$520/year 4 Tiers	$2.32 per 100 ft^2 IA	$2.32 per 100 ft^2 IA	No

4.3 Planned Outreach

The Town will continue to keep Town Boards and Committees informed on the policy decisions still to be made. These meetings will be posted and advertised to the town's webpage and newly developed stormwater enterprise webpage to encourage public participation. Additionally, it is recommended that the Town host Stakeholder Workshops with key businesses and large or multiple parcel landowners. Additionally, the Town should contact the local colleges, such as Wellesley College and Babson College, to inform them of the upcoming fee.

Furthermore, the Town should continue to maintain a website highlighting the status and decisions made relevant to the Stormwater Utility. To expand its multimedia approach to public outreach, the Town should consider a public video or public service announcement (PSA) and feature it on local news channels as well as the Stormwater Utility Webpage.

Attachments

Attachment 1 – Stormwater Action Plan & Associated Costs

Attachment 2 – Proposed Fee Schedule

J:\W\W2125 Wellesley, MA\011 Stormwater Assistance - MS4 Compliance Assmnt\04 - Stormwater Utility\Fee Development and Policy Memo\Wellesley Memo_Sept2022.docx

Major Requirements	Requirement Details and Assumptions	Budget and Schedule Details	Year 4 FY22	Year 5 FY23	Year 6 FY23	Year 7 FY24	Year 8 FY25	Year 9 FY26	Year 10 FY27	Total
PART 2.0 Non-Numeric Effluent Limitations										
Impaired Waterbody Requirements										
Meet requirements to manage discharges to waterbodies with a Phosphorus TMDL (Charles River)	**Develop Phosphorus Control Plan (PCP)**: **Phase 1 Components (through Permit Year 10):** Assumes Legal and Funding analyses are already complete as of PY3. **Phase 1 <u>Planning</u> due PY4 and PY5:** • Definition of PCP Area <u>Baseline Phosphorus Loads</u>, Phosphorus Reduction Requirement, and Allowable Phosphorus Load (PY4) • Description of Phase 1 planned structural and non-structural controls (PY5) • Description of Operation and Maintenance program for planned structural controls (PY5) • Phase 1 implementation schedule (PY5) • Estimated cost for Phase 1 implementation (PY5) • Complete written Phase 1 PCP (PY5) **Phase 1 <u>Implementation</u>: Completed by PY10:** • Full implementation of non-structural controls (PY6) • Performance evaluation PY6 through PY10 Full implementation of all structural controls (PY10) **Phase 2 PCP Planning due PY10:** • Update Legal analysis (as necessary) • Description of Phase 2 planned nonstructural controls • Description of Phase 2 planned structural controls • Updated description of Operation and Maintenance Program • Phase 2 implementation schedule • Estimate cost for implementing Phase 2	Within five (5) years of effective date of permit, develop the Phase 1 Phosphorus Control Plan and submit to EPA. Additional planning will be complete during the Retrofit Inventory under Post-Construction Stormwater Management. Beginning in PY6, the town must begin to implement PCP measures and achieve a phosphorous load reduction of 821 kg/yr per Table F-3 in Appendix F of the General Permit. Within ten (10) years of effective date of permit, implement nonstructural and structural controls of Phase 1 and conduct performance evaluation. Within ten (10) years of effective date of permit, develop Phase 2 Phosphorous Control Plan and submit to EPA. Phase 1 implementation costs beginning in PY6 were prepared using EPA's methodology where <u>all phosphorus load reduction is accomplished through future stormwater BMPs using an optimization analysis</u> of BMP opportunities in the planning phase. The estimated unit costs for initial capital investment including an additional 35% for engineering and contingencies ranged from $3,700 to $54,000 per pound of phosphorus removed ($/lb-phosphorus removed) with an overall average cost of $18,600/ lb-phosphorus removed ($41,000/kg-phosphorus removed). According to Table F-3 of Appendix F of the Small MS4 General Permit, the Town of Wellesley is required to achieve an annual stormwater phosphorus load reduction of 821 kg/yr in the urbanized area. However, EPA plans to credit the Town approximately 160 kg/yr for watershed-wide IDDE program implementation through PY10.[5] Therefore, assuming an overall average cost of $41,000/kg-phosphorus removed for 661 kg/year, the cost estimate for achieving this requirement is $27 Million over 15 years (Permit Years 6 to 20) or approximately **<u>$1.8 Million per year.</u>**	$25,000	$75,000	$1.8 Million	$1.8 Million	$1.8 Million	$1.8 Million	$1.8 Million	**$7.3 Million**

[5] Source: U.S. EPA. Statement of Basis for Proposed Permit Modification: NPDES General Permit for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems (MS4s) to Certain Waters in the Commonwealth of Massachusetts. Published in the Federal Register on April 23, 2020.

Major Requirements	Requirement Details and Assumptions	Budget and Schedule Details	Year 4 FY22	Year 5 FY23	Year 6 FY23	Year 7 FY24	Year 8 FY25	Year 9 FY26	Year 10 FY27	Total
Meet requirements to manage discharges to waterbodies with a Bacteria or Pathogen TMDL (Charles River, Fuller Brook, and Rosemary Brook)	**Public Education**: Include pet waste management and, as applicable, septic system maintenance information in the education program. **Illicit Discharge**: When implementing IDDE program, consider areas that discharge to bacteria or pathogen impaired waterbodies problem or high priority catchments.	*See schedules and budgets for Part 2.3.3 Public Education and Part 2.3.4 IDDE.* This budget was carried under Part 2.3.2 Public Education and Outreach and Part 2.3.4 Illicit Discharge Detection and Elimination Program.	$0	$0	$0	$0	$0	$0	$0	**$0**
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). Cost is for assistance with development of materials. It is assumed that some publicly available materials from EPA, MassDEP, Charles River Watershed Association, etc. will be used for Bellingham. Note that costs do not include postage or other distribution efforts.	Public Education and Outreach extends over the permit term. The distribution of materials to each audience shall be spaced at least a year apart. Document in Annual Reports.	$2,000	$2,000	$2,000	$2,000	$2,000	$2,000	$2,000	**$14,000**
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.	Annually.	$500	$500	$500	$500	$500	$500	$500	**$3,500**
Part 2.3.4 Illicit Discharge Detection and Elimination (IDDE) Program										
Identify and Document Sanitary Sewer Overflows (SSOs)	Maintain previously developed SSO inventory.	Update SSO inventory annually, document in the SWMP and include in the Annual Reports. Provide oral notice to EPA within 24 hours of identifying an SSO. Provide written notice to EPA and MassDEP within five (5) days of identifying an SSO. Cost for the annual inventory update is included as part of the Annual Reports.	$0	$0	$0	$0	$0	$0	$0	**$0**

Major Requirements	Requirement Details and Assumptions	Budget and Schedule Details	Year 4 FY22	Year 5 FY23	Year 6 FY23	Year 7 FY24	Year 8 FY25	Year 9 FY26	Year 10 FY27	Total
Drainage System Mapping	Work to develop a more complete GIS-based storm drain system map within the MS4, to be completed in 2 phases. **Phase 1:** It is assumed that Phase 1 has been completed (within 2 years of the effective date of permit). Additional information should be added to the mapping as it is collected. **Phase 2**: Map all pipes, manholes, catch basins, refined catchment delineations, and the Town's sanitary and/or combined sewer system, if applicable. Include spatial location of all outfalls.	All Phase 2 mapping should be complete within ten (10) years of the effective date of permit. Document progress in annual reports. Budget allowance carried for GIS MS4 system updates as system is modified, expanded or as discrepancies are discovered. May also include software, web hosting fees, and support with mobile data collection with People Forms.	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	**$70,000**
Written IDDE Program	Implement and enforce the IDDE Program. IDDE Program assumed to have been developed in PY1 - 2.	Document information in Annual Reports. Track program success and report the overall effectiveness in Annual Reports. Annual cost starting in PY4 is an allowance for updates and record keeping.	$500	$500	$500	$500	$500	$500	$500	**$3,500**
Assessment and Priority Ranking of Outfalls/Interconnections	**Outfall/Interconnection Inventory and Initial Ranking**: Inventory outfalls and interconnections discharging from the MS4. Classify each outfall and interconnection as "problem," "high priority," "low priority," or "excluded" for its potential for illicit discharges. Rank the outfalls/interconnections (except for excluded outfalls) based on the characteristics of their catchment area. **Dry Weather Outfall and Interconnection Screening and Sampling**: Inspect all high and low priority outfalls/ interconnections for dry weather flow in accordance with the initial ranking from the inventory. Develop a written screening and sampling procedure to be included in the IDDE Program. **Follow-Up Ranking of Outfalls and Interconnections**: Update and reprioritize the initial outfall/interconnection ranking based on the results of the dry weather screening and sampling. It is assumed this work has been concluded as of PY3 per permit requirements.		$0	$0	$0	$0	$0	$0	$0	**$0**

Major Requirements	Requirement Details and Assumptions	Budget and Schedule Details	Year 4 FY22	Year 5 FY23	Year 6 FY23	Year 7 FY24	Year 8 FY25	Year 9 FY26	Year 10 FY27	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 in all catchments. Identify all System Vulnerability Factors within catchments during investigations. Perform wet weather screening in the spring for those catchments that indicate the presence of one or more System Vulnerability Factors, which are associated with potential sanitary sewer inputs to the drain. 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 2 key junction manholes per outfall/interconnection (total of approximately 660 key junction manholes), screen 40% for ammonia, surfactants, and chlorine using field kits. Includes an annual allowance of $2,500 for police detail. Assuming 20 manholes per day can be inspected by 1 field staff and 1 Town staff together. Labor assumes 8-hour days and time for planning and summary report development. Cost does not include follow up activities to isolate source, remove source, or complete follow up sampling.	Investigations must be completed by PY7 (FY24) for Problem Outfalls or outfalls with sewer input. Investigations for high and low priority areas should be completed in conjunction with monitoring and prioritizing. Investigation of 100% of catchments with Problem, High, and Low Priority Outfalls must be completed by PY10 (FY27). Written plan for catchment investigation must be completed within 1.5 years of effective date of the permit and included in IDDE plan. Budget for written procedures for catchment investigations is not included and is assumed to have been already addressed in the IDDE Program Development. Document System Vulnerability Factors for each catchment and results of dry and wet weather monitoring in Annual Reports.	$25,000	$25,000	$25,000	$25,000	$25,000	$25,000	$25,000	**$175,000**
Outfall Monitoring (Wet Weather)	Wet weather screening is required in catchments with 1 or more System Vulnerability Factors. Wet weather assumptions are as follows: 264 outfalls and interconnections(assume up to 80% of catchment areas with System Vulnerability Factors), $140 cost per sample for baseline field screening and laboratory analysis with additional cost for TMDL/impaired waters analysis, 1 field staff, 10 outfalls sampled per day.	Budget carried under Catchment Investigation above.	$0	$0	$0	$0	$0	$0	$0	**$0**
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.	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	**$7,000**

Major Requirements	Requirement Details and Assumptions	Budget and Schedule Details	Year 4 FY22	Year 5 FY23	Year 6 FY23	Year 7 FY24	Year 8 FY25	Year 9 FY26	Year 10 FY27	Total
Part 2.3.5 Construction Site Stormwater Runoff Control										
Regulatory Updates and Review	Review existing ordinance & regulations for consistency with permit requirements. Confirm documents define responsibility for site inspections and person with authority to enforce sediment and erosion control measures, etc. It is assumed this has already been conducted in prior permit years.	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.* It is assumed this has been completed in prior permit years.	$0	$0	$0	$0	$0	$0	$0	**$0**
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. It is assumed this has already been conducted in prior permit years.	Complete development within one (1) year from effective date of permit. *Complete in conjunction with effort under Part 2.3.6.* It is assumed this has been completed in prior permit years.	$0	$0	$0	$0	$0	$0	$0	**$0**
Part 2.3.6 Stormwater Management in New Development and Redevelopment (Post Construction Stormwater Management)										
Regulatory Updates	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. Amend or modify existing bylaw for development of 1 or more acres to retain the first: - one inch of runoff from all impervious area or provide equivalent pollutant removal (new development); - remove 90% of average annual TSS load and 60% of the average annual TP from total post-construction impervious surface at the site (new development); - 0.80 inches of runoff from all impervious area or provide equivalent pollutant removal on or offsite in the same watershed (redevelopment); or - remove 80% of average annual TSS load and 50% of the average annual TP from total post-construction impervious surface at the site (redevelopment). Municipal roadway work/improvements are exempt from infiltration/pollutant removal requirements, except for full-depth reclamation projects. LID planning must be used to the maximum extent feasible. BMPs must be consistent with the MA Stormwater Handbook. Modify existing bylaws to require submission of as-built plans and long-term O&M procedures.	Modifications to bylaws & regulations to be completed within two (2) years of effective date of permit. It is assumed this has been completed in prior permit years. Additional costs shown are for updates to forms and guidance, as necessary.	$3,500	$0	$0	$0	$0	$0	$0	**$3,500**

Major Requirements	Requirement Details and Assumptions	Budget and Schedule Details	Year 4 FY22	Year 5 FY23	Year 6 FY23	Year 7 FY24	Year 8 FY25	Year 9 FY26	Year 10 FY27	Total
Local Code Assessment	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 and written procedures under Part 2.3.5 Construction Site Stormwater Runoff Control.	Street design and parking lot assessment to be completed four (4) 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 4. The Year 4 cost does not include development of bylaw language, only an assessment memorandum.	$6,500	$0	$0	$0	$0	$0	$0	**$6,500**
Retrofit Inventory and Optimization for Phosphorus Removal	Report on the 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. *See retrofit requirements also required to meet Charles River watershed phosphorus reduction in Impaired Waterbody Requirements, due in Permit Year 5.* *We will incorporate/update retrofit analysis with information already completed by others.* Budget carried under Retrofit Inventory includes coordination with Town projects, Town-wide desktop screening, site visits to favorable parcels, conceptual designs for up to ten BMPs, planning-level design for three BMPs, identification of permitting needs, and development of next steps. Optimization will be conducted using EPA's Opti-Tool or equivalent water quality modeling software. Budget does not include survey or soil evaluation.	Assess feasibility of retrofits of a minimum of 5 permittee-owned properties within four (4) years from the effective date of the permit. Identify additional MS4-owned properties that could be retrofitted and report on any that have been modified or retrofitted in the annual report beginning in Year 5. Maintain a minimum of 5 sites in the inventory. Costs in PY4 include identifying potential retrofit locations using a desktop process to pre-screen sites and then limited field visits to further evaluate potential sites. Budget in PY5 through PY10 includes updating the priority list of inventory opportunities as necessary.	$74,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	**$80,000**
Part 2.3.7 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 MS4 infrastructure in a timely manner to reduce or eliminate the discharge of pollutants from the MS4. It is assumed this has already been conducted in prior permit years.	Within two (2) years from the effective date of permit. Include written procedures in SWMP. It is assumed this has been completed in prior permit years. Costs include annually updating the facility inventory and SOPs, as needed.	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	**$7,000**

Major Requirements	Requirement Details and Assumptions	Budget and Schedule Details	Year 4 FY22	Year 5 FY23	Year 6 FY23	Year 7 FY24	Year 8 FY25	Year 9 FY26	Year 10 FY27	Total
Stormwater Pollution Prevention Plans (SWPPPs) for DPW Facility.	SWPPP preparation and updates will be completed by the Town. Town will also complete quarterly site inspections. Budget carried for annual training by contractor. Costs may be reduced if combined with Annual Employee Training under the IDDE Program.	Within two (2) years from the effective date of the permit. Report on annual inspections in Annual Report.	$500	$500	$500	$500	$500	$500	$500	**$3,500**
Catch Basin Cleaning	Optimize catch basin cleaning program to ensure that no catch basin is more than 50% full. Town uses a GPS application to track system inspection and maintenance.	Annually, beginning in Year One. Assume this budget item carried elsewhere. Completed by Town staff or contractor.	$0	$0	$0	$0	$0	$0	$0	**$0**
Street Sweeping	Sweep streets and parking lots directly connected to MS4 once in the spring. The Town will need to increase sweeping to twice per year in watersheds impaired by phosphorous and metals.	Annually, beginning in Year One. Assume this budget item carried elsewhere. Completed by Town staff or contractor.	$0	$0	$0	$0	$0	$0	$0	**$0**
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 this budget item carried elsewhere. Completed by Town staff or contractor.	$0	$0	$0	$0	$0	$0	$0	**$0**
Storm Drain System Inspection	Inspect and maintain the storm drain system and all stormwater treatment structures. Consider using a GPS application to track system inspection and maintenance.	Annually, beginning in Year One. Assume this budget item carried elsewhere. Completed by Town staff or contractor.	$0	$0	$0	$0	$0	$0	$0	**$0**
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.	Submit Annual Reports each year. Reporting period is from July 1 through June 30. Annual report is due ninety (90) days from the close of each reporting period. Cost assumes the Town will complete most of the report with consultant input.	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	**$7,000**
		Total Estimated Budget	**$150,500**	**$117,500**	**$1,842,500**	**$1,842,500**	**$1,842,500**	**$1,842,500**	**$1,842,500**	**$9,480,500**

TOWN OF WELLESLEY

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STORMWATER FEE SCHEDULE FOR FISCAL YEARS 2024 & 2025

Description	Impervious Area (ERUs)	Monthly Cost	Annual Total
Single Family Residential			
Tier 1	0.7 ERUs	$13.13	$157.50
Tier 2	1 ERUs	$18.75	$225.00
Tier 3	1.7 ERUs	$31.88	$382.50
Tier 4 (>9,300 ft^2 IA) – Proportional Fee	Varies	$18.75/ERU	$225/ERU
Non-Residential and Multi-Family Residential			
Proportional Fee	Varies	$18.75/ERU	$225/ERU

Notes:

1. The Equivalent Residential Unit (ERU) is a commonly used unit of measure for impervious area and is used to establish stormwater fees as it is fair and equitable, and easily understood. One ERU defined as the median amount of impervious cover of all single-family residential (SFR) parcels in Town (3,105 ft^2 in Wellesley). The impervious area of all other parcels is then divided by this value to obtain the number of Equivalent Residential Units for each parcel, rounded to the nearest integer. The impervious areas were based upon existing data and mapping.
2. All SFR properties below 9,300 square feet of impervious area are charged a tiered uniform fee of 0.7, 1, or 1.7 ERUs. Non-single family residential and Tier 4 SFR properties with greater than 9,300 square feet of impervious area are charged based upon the number of ERUs (impervious area / 3,105 ft^2).
3. Property owners can apply for stormwater credits to reduce their costs. See the Stormwater Utility Credit Policy available at the Department of Public Works for more information.

Appendix C
Supporting Calculations for Phosphorus Loading Rate

WELLESLEY

Phosphorus Land Use Group	Total Area (ac)	Impervious Area (ac)	Directly Connected Impervious Area								Pervious Area Phosphorus Load															Disconnected Impervious Area			Total Avg Annual Phosphorus Load (lb/yr)
				Sutherland Coeffs							Perv HSG Area (ac)							Phosphorus Export Loading Rate (lb/ac/yr)							Avg Annual Phosphorus Export Load (lb/yr)									
			Percent Impervious	A	B	Percent Directly Connected Impervious Area (%)	%DCIA Check	Directly Connected Impervious Area (ac)	Phosphorus Loading Export Rate (lb/ac/yr)	Avg Annual Phosphorus Export Load (lb/yr)	A	B	C	C/D	D	Unk	Total	A	B	C	C/D	D	Unk	A	B	C	C/D	D	Unk	Total	Disconnected Impervious Area (ac)	Pervious Area Composite Phosphorus Export Loading Rate (lb/ac/yr)	Avg Annual Phosphorus Load (lb/yr)	
Commercial	668.5	404.1	60.5%	0.4	1.2	54.9%	54.92	367.1	1.78	653.5	126.8	14.0	22.8	32.5	0.2	68.1	264.4	0.03	0.12	0.21	0.29	0.37	0.21	3.8	1.7	4.8	9.4	0.1	14.3	34.1	37.0	0.13	4.8	692.3
Industrial	1.0	0.8	81.1%	0.4	1.2	78.1%	78.14	0.8	1.78	1.4	0.0	-	-	-	-	0.2	0.2	0.03	0.12	0.21	0.29	0.37	0.21	0.0	-	-	-	-	0.0	0.0	0.0	0.19	0.0	1.5
High-density residential	705.8	257.7	36.5%	0.4	1.2	30.0%	30.00	211.7	2.32	491.2	322.7	22.0	13.8	2.9	1.0	85.6	448.1	0.03	0.12	0.21	0.29	0.37	0.21	9.7	2.6	2.9	0.8	0.4	18.0	34.4	46.0	0.08	3.5	529.1
Medium-density residential	1617.4	474.0	29.3%	0.1	1.5	15.9%	15.87	256.6	1.96	503.0	729.3	93.1	49.0	34.7	17.5	219.9	1,143.4	0.03	0.12	0.21	0.29	0.37	0.21	21.9	11.2	10.3	10.1	6.5	46.2	106.0	217.4	0.09	20.2	629.2
Low-density residential	1293.5	326.8	25.3%	0.1	1.5	12.7%	12.70	164.2	1.96	321.9	261.6	223.4	68.9	33.1	147.5	232.2	966.8	0.03	0.12	0.21	0.29	0.37	0.21	7.8	26.8	14.5	9.6	54.6	48.8	162.1	162.5	0.17	27.2	511.2
Highway	44.1	20.1	45.5%	0.1	1.5	30.7%	30.69	13.5	1.95	26.4	10.2	2.9	0.2	0.6	0.2	10.0	24.0	0.03	0.12	0.21	0.29	0.37	0.21	0.3	0.3	0.0	0.2	0.1	2.1	3.0	6.5	0.13	0.8	30.2
Forest	1533.4	46.4	3.0%	0.01	2	0.1%	0.09	1.4	1.52	2.1	665.4	404.0	133.4	34.7	73.4	176.1	1,487.0	0.13	0.13	0.13	0.13	0.13	0.13	86.5	52.5	17.3	4.5	9.5	22.9	193.3	45.0	0.13	5.9	201.3
Open land	245.7	19.9	8.1%	0.1	1.5	2.3%	2.30	5.6	1.52	8.6	144.5	34.5	10.5	0.5	0.1	35.6	225.9	0.03	0.12	0.21	0.29	0.37	0.21	4.3	4.1	2.2	0.2	0.1	7.5	18.4	14.2	0.08	1.2	28.1
Agriculture	190.4	5.0	2.6%	0.01	2	0.07%	0.07	0.1	1.52	0.2	120.5	53.7	7.9	0.4	1.3	1.5	185.3	0.45	0.45	0.45	0.45	0.45	0.45	54.2	24.2	3.6	0.2	0.6	0.7	83.4	4.9	0.45	2.2	85.8
Total Land Area	**6,299.9**	**1,554.9**	**25%**			**16%**		**1,021.2**		**2,008.3**	**2,381.0**	**847.6**	**306.7**	**139.4**	**241.1**	**829.2**	**4,745.0**							**188.6**	**123.5**	**55.6**	**34.9**	**71.7**	**160.4**	**634.7**	**533.6**		**65.7**	**2,708.8**

Appendix D
Supporting Calculations for Phosphorus Non-Structural Controls

Land Use	PLER	Impervious Area Swept (acres)	Sweeping Technology	Sweeping Frequency	Technology | Frequency	P-Reduction Factor	Credit (lb/yr)
COM	1.78	62.9	Mechanical Broom	2/year (spring and fall)	Mechanical Broom | 2/year (spring and fall)	0.01	1.120
IND	1.78	0.0	Mechanical Broom	2/year (spring and fall)	Mechanical Broom | 2/year (spring and fall)	0.01	0.000
HDR	2.32	78.8	Mechanical Broom	2/year (spring and fall)	Mechanical Broom | 2/year (spring and fall)	0.01	1.827
LDR	1.96	153.5	Mechanical Broom	2/year (spring and fall)	Mechanical Broom | 2/year (spring and fall)	0.01	3.009
MDR	1.96	88.7	Mechanical Broom	2/year (spring and fall)	Mechanical Broom | 2/year (spring and fall)	0.01	1.738
FOR	1.52	8.8	Mechanical Broom	2/year (spring and fall)	Mechanical Broom | 2/year (spring and fall)	0.01	0.134
HWY	1.95	13.2	Mechanical Broom	2/year (spring and fall)	Mechanical Broom | 2/year (spring and fall)	0.01	0.257
OL	1.52	6.2	Mechanical Broom	2/year (spring and fall)	Mechanical Broom | 2/year (spring and fall)	0.01	0.094
AG	1.52	0.25	Mechanical Broom	2/year (spring and fall)	Mechanical Broom | 2/year (spring and fall)	0.01	0.004
Total Area Swept acres	**412.3**						
Total Sweeping Credit (lb/yr) Mechanical Broom | 2/year (spring and fall)	**8.18**						

Sum of Adjusted P Loading (lb/yr)	Currently Cleaned		
Row Labels	**No**	**Yes**	**Grand Total**
Institution	0.49		0.49
Municipal - DPW	7.95	35.60	43.55
Municipal - Other	0.03	0.05	0.08
Neighboring Municipality	0.63	0.03	0.66
Private	4.05	0.61	4.66
State - DOT	3.82	0.04	3.85
(blank)	0.66	0.00	0.67
Grand Total	**17.63**	**36.32**	**53.95**

Sum of CB Receiving Area (acres)	Currently Cleaned		
Row Labels	**No**	**Yes**	**Grand Total**
Institution	13.67		13.67
Municipal - DPW	204.50	895.85	1100.35
Municipal - Other	0.89	1.25	2.14
Neighboring Municipality	17.83	0.71	18.53
Private	108.23	15.19	123.42
State - DOT	99.12	0.97	100.08
(blank)	17.44	0.03	17.46
Grand Total	**461.67**	**914.00**	**1375.67**

Appendix E
Supporting Calculations for Phosphorus Structural Controls

Found Electronically At DPW Department

Appendix F
Operations and Maintenance Program Guidance

Using a Self-Certification Process to Streamline Operation & Maintenance (O&M) of Private Stormwater Controls

Purpose and Background

Ongoing maintenance of stormwater controls is essential for those controls to perform as intended to achieve water quality and water quantity benefits. Under the NPDES MS4 Stormwater General Permit for Massachusetts (MS4 Permit), municipalities intending to obtain credit for the phosphorus reductions achieved by stormwater controls (per Appendix F of the MS4 Permit) must ensure that ongoing maintenance is being performed. In accordance with Standard 9 of the Massachusetts Stormwater Handbook [1], municipalities routinely require that applicants for stormwater, wetlands, subdivision, site plan review and special permits provide a stormwater operations and maintenance plan (O&M) in their applications. However, many municipalities find it challenging to ensure ongoing maintenance of stormwater controls occurs after a project is built by an applicant. One solution to this challenge is to require property owners annually self-certify they are inspecting and maintaining their controls. An O&M self-certification process as proposed herein would provide a reporting process that can fold directly into the municipality's MS4 Annual Report and allow the municipality to focus inspections on auditing just a small proportion of the systems each year. Read on to learn how Stormwater O&M self-certification works.

O&M self-certification emerged as an interest and a need during the **Mystic Stormwater Collaborative Project**, which includes the communities of Cambridge, Lexington, Reading, and Watertown, and technical partners such as the Mystic River Watershed Association, University of New Hampshire Stormwater Center, and the U.S. Environmental Protection Agency (EPA). While the four participating communities understand the importance of conducting regular O&M on stormwater management controls, they expressed interest in new ways to address the challenges associated with ensuring O&M on smaller projects within existing regulatory frameworks and available resources.

Model O&M Self-Certification Form

The O&M self-certification form should be simple and easy to complete by a property owner or their agent. A template form that communities can start with is provided in Appendix A.

The minimum information to be collected on a self-certification form should include:

- Name and contact information of owner
- Name and contact information of operator, if applicable
- Address/location of stormwater control
- Type of stormwater control
- Date of last inspection or maintenance for each control
- Certification statement

[1] The Massachusetts Stormwater Handbook is currently being updated. Requirements for the individual stormwater standards may change.

- Signature of owner or operator
- Date attesting to the certification statement
- Reference of the O&M Plan or guidance being followed

Many property owners may be unfamiliar with or unaware of their stormwater controls and maintenance responsibilities. Typically, a stormwater O&M Plan is approved as part of the permitting process for an improvement on their property.

Some projects that fall below a particular municipal permit threshold are often not required to develop a stormwater O&M Plan. For these properties, it may be helpful to append to the self-certification form a menu list of common small-scale stormwater control practices (e.g., dry wells, rain gardens, bio swales, and permeable pavers) along with O&M best practices. This will help serve as a reminder to such owners and their agents (e.g., operators) of the recommended O&M for their specific control(s). An O&M Plan approved through a municipal permit process should always take precedent over the maintenance best practices highlighted in an appendix to the form.

Making Stormwater O&M Plans Readily Available: Most property owners will not be well versed in stormwater controls and may not be aware that the stormwater controls approved on their site require ongoing maintenance. A municipality can help by ensuring that O&M plans approved through a permitting process are complete, include a map or figure identifying each control, and are attached to the permit when it is issued to the property owner. *(Note: Permits should be issued to property owners and linked to specific parcels, even if the applicant filing the permit application is an agent.)*

Depending on the municipality's MS4 regulatory requirements and capacity for data collection, the form could include more specific operational information for the stormwater controls, such as:

- Permit number, so the municipality could track the form back to the original permit.
- A field to indicate whether the stormwater control ties into the MS4.
- Comment box for the owner/operator to describe specific maintenance performed or problems encountered since the last inspection.

Municipalities could require applicants of larger projects, which would be required to submit an O&M Plan with their permit application, to also customize and submit an O&M self-certification form as part of their permit application. The approved customized form could then be used by the owner for years to come.

Regulatory Framework

For this self-certification process to succeed, property owners with stormwater controls must be legally required to submit the stormwater O&M self-certification form each year. This requirement should be embedded into the municipal permitting process either as a standard condition that is attached to the permit approval or found in regulations in the bylaw/ordinance or regulations. This approach will differ among municipalities depending on the existing permit structure for stormwater controls. Regardless of which permitting authority is responsible, the same form should be used and supplemented as needed with any other conditions that may be required by the issuing authority. The permit that includes the ongoing reporting requirement should be issued for a given property and should run with the property.

New Controls: Moving forward, owners/operators of all permitted stormwater controls should be required to submit an annual form certifying completion of the ongoing stormwater O&M Plan approved in their permit.

Existing Controls: Permits for prior permitted stormwater controls should be reviewed to determine if O&M was required and if annual reporting can be required. If O&M was required, the municipality can explore whether and how to include those properties in the self-certification process.

O&M self-certification may be beneficial to municipalities for small, medium, and large projects alike. Larger projects often manage O&M of stormwater controls well since they tend to have better access to resources (e.g., funding, engineers, site managers or operators). However, a municipality may find it useful to require larger projects to self-certify if the community has a significant number of these larger projects to oversee, and limited resources for inspections and enforcement. Smaller projects, on the other hand, may not be as well-informed to properly manage stormwater controls, but self-certification can provide an important educational service to the owners, even if there is no or limited follow-up and enforcement on small projects. Municipalities may find the best use of their resources to target the medium projects, like multi-family housing and mid-size commercial properties.

Consistency in Stormwater Standards Across Permits: If stormwater management controls are evaluated in multiple permit processes (e.g., Stormwater Management Permit, Wetlands Order of Conditions, Site Plan Review, Subdivision Approval, Drainage Connection Permit), those processes should be made consistent so that a given development project and its stormwater controls are held to a uniform set of stormwater standards, including a stormwater O&M Plan.

Submission Frequency

Stormwater O&M self-certification forms should be collected from property owners on an annual basis. Maintaining one uniform submittal schedule, regardless of the installation date or permit issuance date for a given stormwater control, helps to simplify the process for both the property owners/operators and the municipality. The due date for self-certification forms should be selected to provide sufficient time for the municipality to review and compile the results and include them in the municipal MS4 Annual Report.

Submission Process

Completed forms should be directed to a single department or individual to log the responses. The municipality can create a specific email address to receive completed forms, and allow paper copies to be mailed or hand delivered if desired. A municipality that has an online database system in place could create a mechanism for uploading completed forms or ideally an option for completing the form online (there could be a link to a town data base, where the user only has access to his/her submittal field). In the early years, the number of reporting forms collected each year may be minimal. However, over time, it will increase. For this reason, an automated process is recommended.

Auditing and Enforcement

The crux of the self-certification process is auditing. An auditing process involves the municipality performing a small percentage of stormwater inspections each year and is essential to ensuring the credibility of the self-certification reporting. Municipal staff must be authorized through the individual permitting processes or the stormwater ordinance/bylaw to perform inspections and enforce the approved O&M Plan on the applicable properties.

Credible Enforcement Mechanism: Credible enforcement is necessary to ensure MS4 permit holders can obtain phosphorus reduction credit for stormwater controls.

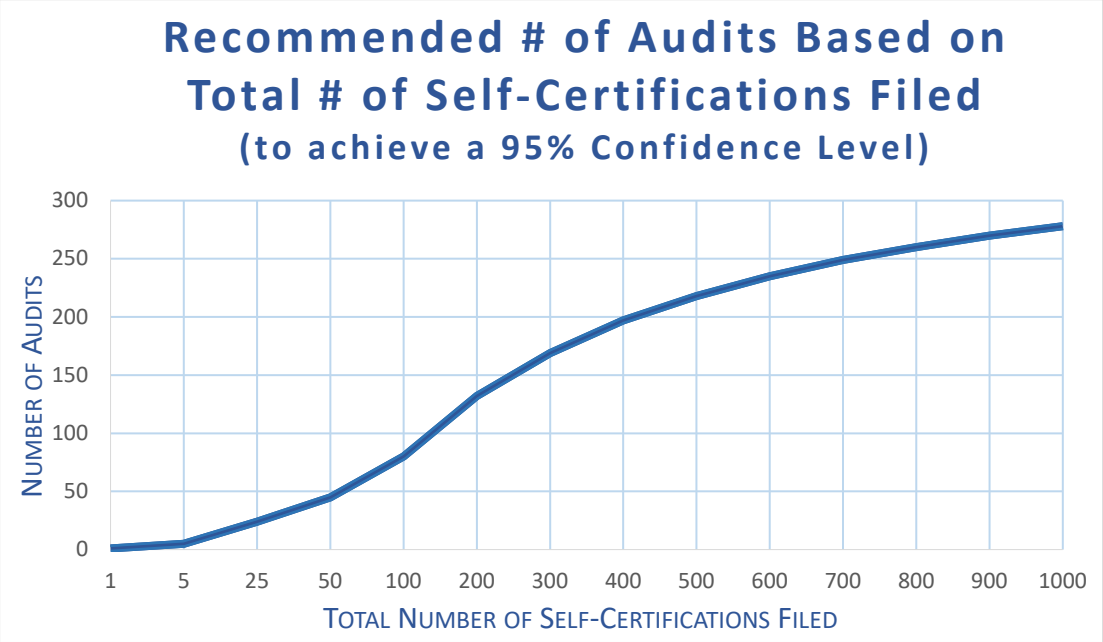
Such authorization for enforcement may currently be provided to different departments, boards, or commissions depending on the permits issued for a given project. It could be beneficial to streamline the auditing and enforcement powers through just one department, such as Engineering, Public Works, or Health, so that the system can be more easily monitored. Many bylaws/ordinances or regulations include a provision by which a board or commission or other permitting entity can designate an agent to perform some of the duties, including enforcement. Review your code for this type of authorization and consider coordinating with other permitting entities to designate one consistent enforcement agent for all stormwater controls.

Although O&M self-certification may be required on projects of variety of sizes, the municipality should focus enforcement resources on medium and large projects. Including small projects in the self-certification process serves as a great educational tool; however, enforcing these types of projects may to be prohibitively burdensome for the municipality.

A properly designed audit program will allow a municipality to maintain confidence that individual self-certified stormwater controls are in fact being maintained. In addition, the MS4 permit requires municipalities to certify that all stormwater controls they are claiming pollution credit for are working and maintained as designed. An important mechanism to ensure that the municipality can make that claim with confidence is a statistically significant auditing program. The community may want to perform a statistical analysis to determine the percentage of audits that should be done each year to ensure general compliance with O&M across all self-certified sites. The box below provides some simple tips for developing an audit to consider for developing an audit program, including some guidance on selecting the number of annual audits to perform based on the total number of controls in the program. The goal is to perform the audits over the course of a 5 year permit cycle.

Tips for Developing an Audit Program:

1. Select the number of audits to perform to ensure with a 95% confidence level that the audited systems will be representative of the total population. If your municipality has fewer than 50 certifications, all of the systems should be audited over the 5-year cycle. As the number of certifications increases, the relative number that needs to be audited decreases.



2. Randomly select the systems to audit (e.g., select every 5th certification in your database).
3. Notify property owners of audits electronically, to let them know when it will be, how long it will take, and to offer to change to a more convenient time if owners want to be present.
4. Develop an audit checklist that mirrors the self-certification standards, so the audit report can be used as an example for self-certification.
5. Communicate the results to the property owner, with a timeline to address deficiencies and a reporting requirement or re-auditing protocol, depending on seriousness of non-compliance
6. At end of the annual or 5-year audit period, tabulate audit data to identify common maintenance issues for further action or revised guidance as needed to improve compliance.

Useful Tool: Permitting Database

A permitting database, from a basic internal Excel file to a GIS database to an online cloud-based system, can be an exceptionally useful tool for communities working to track stormwater controls. A database can help multiple departments within a municipality monitor and participate in the permit approval process, and can serve as an organizational tool to log all permits issued to an individual parcel over time. Important data to track over the long term include permit issuances, parcel ID and up-to-date contact information for parcel owners.

Some communities have instituted an online database to coordinate and track permit applications, reviews, and approvals among municipal departments. The permit information is typically linked to individual parcels allowing a community to track all permits and additional relevant information on a parcel-by-parcel basis. In addition, a permitting database enables the municipality to run reports, compile records, generate electronic communications, and trigger certain reviews or audits on a designated schedule or frequency. In addition, an online permitting database with a public-facing interface can allow permittees to submit documentation to their record, such as an annual stormwater O&M self-certification form. Communities using an online permitting database, such as Viewpoint Cloud, may find it easy to develop and require electronic submission of the O&M self-certification form. Filing these forms electronically will help provide easy access to the forms and critical information required for annual reporting to comply with the MS4 Permit requirements.

Common Online Permitting Platforms:

Viewpoint Cloud (https://www.viewpointcloud.com/). Used in Cambridge and Lexington, MA.
CitizenServe (https://www.citizenserve.com/). Used in Lawrence, MA.
CityView (https://www.municipalsoftware.com/).
Govpilot (https://www.govpilot.com/).

Note: Listing of permit database platforms in this document is for informational purposes only, and does not represent an endorsement by the authors or EPA.

Documenting and Tracking Prior Existing Stormwater Controls

Communities may lack records on the existence and location of small stormwater controls, particularly because stormwater controls could have been approved through one of several different permit processes (e.g., Wetlands Order of Conditions, Site Plan Review, Stormwater Permit, Building Permit). While it would be ideal to know where every stormwater control is located throughout the municipality, a community may only be interested or able to document the type and location of stormwater controls approved and installed in recent years. The MS4 Permit only allows phosphorus control credit for practices if an inspection is performed and any necessary maintenance is performed to bring the system into working order. Therefore, the process of folding these prior existing stormwater controls into the reporting process is useful for the overall health of the watershed in which they are located, but need not be prioritized over tracking and maintenance of new practices.

Communicating with Property Owners

It is best practice to issue reminders to owners/operators to conduct O&M as part of completing the self-certification form. Reminders could be easiest sent via the online permitting database, if applicable. Communities that do not have an online database could send annual reminders to permittees through regular mail and include reminders in other general municipal communications such as social media, town website, or utility billing. Educational materials that are used to promote O&M to smaller projects should be careful to not include a punitive tone if the municipality does not intend to audit and enforce O&M self-certification for small projects.

Ensuring continuity of O&M practices through property transfer can be challenging. Property transfer is a time when information about municipal requirements for the property, such as O&M self-certification, can get lost. While some municipalities require the transfer of property with larger stormwater controls

to renew an O&M plan, it is more difficult to track for small and medium projects. Municipalities can work with the water department to notify the stormwater authority when there is a change in water meter ownership. Other mechanisms may be readily available to the community if an online database is utilized. Municipalities may choose to adopt a bylaw to ensure continuity.

Under the MS4 Permit, municipalities are required to implement an education and outreach program for their community, including residents, businesses, and institutions, which comprise the targeted audience for O&M self-certification. Communities can use this opportunity to circulate a fact sheet on the importance of on-site stormwater management and conducting regular O&M.

Appendix A: Template O&M Self-Certification Form

Stormwater Control Operation and Maintenance
Annual Self-Certification Form
Calendar Year: _____

Owner (required)	**Operator (if applicable)**
Name:	Name:
Phone:	Phone:
Email address:	Email address:
Street Address of Stormwater Control Location:	
Name and Date of Operations and Maintenance Plan: (Note: If your property received or was a part of property that received any of the permits listed on the back of this form since 2020, your permit included a Stormwater O&M Plan that you should be following. Please see the back of this form for more information.)	

Name/ Type of Stormwater Control	**Description and Date of Maintenance performed since July 1 of last year**

Certification Statement

I understand that I own a stormwater control practice or practices on my property and I understand that I need to perform regular and ongoing maintenance of that/those practice(s) to ensure performance and functionality, and to protect the water resources in my community. I certify that I have performed the approved maintenance for my stormwater control practice(s) for this year.

Signature of Owner or Operator: _____

Date: _____

Note: The Town/City performs maintenance audits each year on a small percentage of stormwater controls. You may be contacted by the Department of Public Works for this purpose.

Stormwater Control Operation and Maintenance
Annual Self-Certification Form
ADDENDUM

(This addendum is intended to serve as a reference for property owners in completing the Annual Self-Certification Form. It should be edited by each municipality to meet its own needs)

These are the types of land development or land alteration permits that may include Stormwater O&M Plans for your stormwater practices:

- Stormwater Management Permit
- Wetlands Order of Conditions
- Site Plan Review
- Subdivision Approval
- Drainage Connection Permit

This list of permits should be adjusted by each individual municipality according to its own permit practices.

Our records show that you received a ***[permit type]*** on ***[date].*** Please contact the ***[appropriate department]*** at ***[municipality name]*** Town Offices for help in locating the appropriate Stormwater O&M Plan for your property.

If a database is used to track permits and communicate with permittees, a statement like this could be included on each individual self-certification reporting form that is generated for each permitted property.

Appendix B. Maintenance Needs for Common Small Stormwater Controls for Small Projects

The information summarized below is for stormwater controls that have no approved Operations and Maintenance (O&M) Plan associated with it. Approved O&M Plans take precedent over the information provided below.

Stormwater Controls	Maintenance Summary
Bioretention	**Regularly:** Inspect your bioretention practice, remove trash and debris, pull weeds, and repair any erosion gullies. **Early Spring and Fall:** Mow grassy areas of the practice and prune your plants, remove dead vegetation and replace if needed, and replenish mulch in the bed as needed. **If the practice is slow to drain:** you may need to aerate the top layer of soil or remove fine sediment that may have accumulated. Check the underdrain system through the cleanout to make sure there isn't standing water in the pipe.
Dry Well	**Early Spring and Fall:** inspect the downspout connection to the dry well to be sure it is properly connected and clear of debris. For open downspouts, remove debris and sediment buildup in the upper gravel layer. **If system appears clogged:** If excessive ponding or gully erosion is observed, and/or the system does not drain within three days, your dry well is not functioning properly. Check the drainage connection and gravel for clogging. Remove and replace all stone if needed, or possibly the entire drywell structure if crushed or otherwise damaged beyond repair.
Infiltration Trench	**Early Spring and Fall, and after major storms:** Inspect the system surface for damage and remove accumulated debris and sediment from the upper layer of gravel. Check the underdrain system through the cleanout to make sure there isn't standing water in the pipe, if the practice has an underdrain system. **Annually:** Inspect system and remove sediments, trash and debris from sediment removal (pretreatment) systems when ½ of the storage volume is full of sediment. **If the trench is not draining:** remove and replace the top layer of stone and filter fabric. If ponding continues, gravel layers and pipes may need to be replaced but this usually does not occur until years of use with proper maintenance.
Permeable Pavers	**Monthly:** Remove debris and trash and sweep away sediment buildup that can clog the system over time. **Early Spring and Fall:** Mow and seed the grass in the pavers. Add sand or gravel to stone pavers to replace any lost material. **Winter:** Attach rollers to the bottoms of snowplows to prevent snagging, or perform snow removal with a snowblower or shovel. **After any major storms:** Check that paver system is draining. If it is not, remove and wash gravel in joints, and remove any plant growth that was not originally planted. Refer to manufacturer's instructions for pressure washing or vacuuming.

Stormwater Controls	Maintenance Summary
Planters	**Early Spring:** Inspect the planter and replace any dead or damaged plants, missing gravel, damaged infrastructure and repair any damage to the planter, especially to address leakage. **As needed:** remove debris, trash and sediment that accumulates in the planter.
Porous Pavement	**Routinely:** Remove trash and debris (particularly leaves) from the surface. **Start of each season:** Vacuum sweep (you will need to contract this service, as this requires special equipment) **Annually:** Inspect the surface for deterioration and crumbling and take note of any surface ponding. Repair/replace when needed. **Note:** Do not use sand on porous pavement for winter snow management. Porous pavement helps to significantly reduce standing water, which reduces icing and the need for sand or salt. Sand will clog the system. Salt can be used sparingly in most areas.
Rain Garden	**Regularly:** Inspect your rain garden and remove trash and debris, pull weeds, and repair any erosion gullies. **Early Spring and Fall:** Mow or prune your plants, remove dead vegetation and replace if needed, and mulch the bed. **If the rain garden is slow to drain**: you may need to aerate the top layer of soil or remove fine sediment that may have accumulated.
Water Quality Swale	**Spring and fall:** Mow the swale and remove any accumulated trash and debris. **Annually:** inspect for accumulated sediment and/or erosion; remove sediment and repair gullies as needed. **If draining poorly:** roto-till the bottom of the swale to improve aeration and reseed as needed.

[1] Some stormwater controls, including underground storage, are more advanced or more difficult to access than others and need an experienced operator to routinely inspect and conduct maintenance.

Appendix G
Retrofit Criteria for Priority Ranking of BMPs

Ranking Criteria	Priority Value (0 through 5) Cut-off Values (criteria specific)						Notes
	0	1	2	3	4	5	5 = highest priority rank 0 = lowest priority rank
Area (acres)	-	0	0.5	1	5	10	Larger parcel size ranks higher
Impervious Area*	-	0	0.125	0.25	0.5	1	Larger cover ranks higher *priority is 1-20
Vacant Parcel	Yes	-	-	-	-	No	Parcels with active uses rank higher
Dominant Hydrologic Soil Conditions	C, D, or C/D	-	-	A/D, B/D, Null	-	A or B	Soil types range from A - D and can be mixed. Soil type A provides best infiltration rates and therefore ranks highest. Soil type D ranks lowest
Wetland Area (% Coverage)	50	40	30	20	10	0	Smaller wetlands area ranks higher
FEMA Floodzone	100 Year Flood	-	-	500 Year Flood	-	None	Parcels not in flood zones rank higher
Depth To Bedrock (cm)	-	Shallow: 0-38	-	38-41	Deep: > 41	Null	Deeper bedrock ranks higher
Depth To Watertable (cm)	-	Shallow: 0-36	-	Null	Deep: > 36	-	Deeper water table ranks higher
Proximity to Sewer (ft)	-	0	25	50	100	200	Further ranks higher
Proximity to Aquifer (mi)	-	1	0.75	0.5	0.25	0	Closer ranks higher
Proximity to Water Body (ft)	-	0	-	100	-	200	Further ranks higher
Proximity to Impaired Waters (ft)	-	0	-	100	-	200	Further ranks higher
Proximity to Public Water Supply (mi)	-	0	0.5	1	1.5	2	Further ranks higher
Proximity to Wellhead Protection Zone 1 (mi)	-	0	0.5	1	1.5	2	Further ranks higher
Proximity to Wellhead Protection Zone 2 (mi)	-	0	0.5	1	1.5	2	Further ranks higher
Proximity to Drainage (ft)	-	75	50	25	15	0	Closer ranks higher
Stormwater Infrastructure Onsite	No	-	-	-	-	Yes	Parcels containing Stormwater infrastructure ranks higher
Within 25-Foot Wetland/Water Body Buffer	Yes	-	-	-	-	No	Parcels outside the buffer rank higher
Within 50-Foot Wetland/Water Body Buffer	Yes	-	-	-	-	No	Parcels outside the buffer rank higher
Within 100-Foot Wetland/Water Body Buffer	Yes	-	-	-	-	No	Parcels outside the buffer rank higher
Located within Environmental Justice Area	No	-	-	-	-	Yes	Pollutant control in environmental justice areas rank higher
Street Resurfacing**	Recently Completed					Planned	prioritized, and recently resurfaced properties are not
Town Feasibility***	no					yes	increasing Town identified parcels, so that the final ranking compares these parcels with our criteria
Land Use (as a proxy for Total P Loading)	forest	open land	agriculture	commercial industrial	low desnity residential medium density residential highway	high density residential multi-family residential	Only applied to the top 20 private and public parcels

*impervious area was ramked on a scale 1-20, with larger impervious cover ranking higher

** street resurafcing was given a score of -20 if recently completed and +10 if planned

*** parcels identified as favorable by the Town are given a score of 10

Appendix H
Supporting Calculations for Implementation Cost

BMP Type / Schedule	Permit Year 5	Permit Year 6	Permit Year 7	Permit Year 8	Permit Year 9	Permit Year 10	
Catch Basin Cleaning	2023	2024	2025	2026	2027	2028	Total Year 6-10
Capital (cost from contractor)	$ 109,038	$ 109,038	$ 109,038	$ 109,038	$ 109,038	$ 109,038	$ 545,188
Labor Costs	$ 163	$ 163	$ 163	$ 163	$ 163	$ 163	$ 813
Present Worth	$ 109,200	$ 109,200	$ 109,200	$ 109,200	$ 109,200	$ 109,200	$ 546,000
Total Life Cycle Costs - Future Value (FV)[1]	$ 109,200	$ 111,384	$ 113,612	$ 115,884	$ 118,202	$ 120,566	$ 579,647
Enhanced Street Sweeping Program	2023	2024	2025	2026	2027	2028	PY6-PY10
Operating Costs (Labor, Disposal, Equipment Maintenance)	$ 138,330	$ 138,330	$ 138,330	$ 138,330	$ 138,330	$ 138,330	$ 691,649
Capital (Periodic Purchase Sweeper)		$ 240,000					$ 240,000
Present Worth	$ 138,330	$ 378,330	$ 138,330	$ 138,330	$ 138,330	$ 138,330	$ 931,649
Total Life Cycle Costs - Future Value (FV)[1]	$ 138,330	$ 385,896	$ 143,918	$ 146,797	$ 149,733	$ 152,727	$ 979,072
(1) Inflation Rate for FV Calculation	**2.0%**						

Appendix I
Public Comment Record Keeping