Stormwater Financing/Utility Starter Kit

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Prepared for:

The 101 Cities and Towns of Greater Boston

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Stormwater Financing Kit Module 1: Needs

This Module of the Starter Kit provides guidance regarding how to determine the needs for the program: water quality improvements, water quantity enhancements, stormwater management system improvements, and long-term operations. Guidance is provided regarding the data collection and analysis needed to determine the existing costs and potential additional expenditures for the stormwater management program. The cost information from that exercise will be utilized to determine the fee scale (Module 3).

Although this Kit is geared towards municipalities that have already determined that a drainage fee and/or utility is something they would like to explore, it should be mentioned that some communities conduct what has been called a "DIMS" (Does It Make Sense) Study in the initial planning stages. This type of study is merely a quick concept study that identifies key issues, potential barriers, and assesses political feasibility. Typically a DIMS study concludes with a Go or No Go recommendation regarding a fee/utility and lays out next steps. Often a stormwater professional will lead this study. An example of a DIMS study is the Town of Yarmouth, MA DIMS Study. Regardless of the process undertaken to get to the point of exploring a drainage fee/utility, it's important to ask the following critical questions regarding need:

- What is the status of the municipality's water quality/quantity and what are the existing threats?
- What are some other reasons that the municipality would want to pursue this funding mechanism?
- What comprises the municipality's stormwater management plan/practices?
- What are the short- and long-term current and projected expenditures (i.e., what would this fund)?
- What are the major challenges to developing a fee system and/or utility?

Using an outside expert at this stage offers a number of benefits, including bringing an objective, external perspective to the process. They also can provide guidance on what's worked and what hasn't in other communities.

One of the most clearly related needs for developing a long-term funding source is to protect and restore water quality and quantity. Unfortunately, most of the surface waters within Eastern Massachusetts are impaired due to traditional development and stormwater management practices. In addition, although Massachusetts benefits from robust annual precipitation, quantity issues linger from development impacts both within our watershed systems, as well as between watershed systems as transfer. These critical issues are discussed briefly within the sections below.

Water Quality

Water quality is a general term used to describe the chemical, physical, and biological characteristics of water. Under the Clean Water Act, it typically refers to the water's suitability to support particular uses, like drinking, swimming, fishing, and boating. Assessment of contaminants that can harm

water quality, such as nutrients and pesticides, requires a nuanced understanding of the complicated natural and urban ecosystems that impact surface and ground water: climate and atmospheric contributions; natural landscape features such as geology, topography, and soils; human activities related to different land uses and land-management practices, and aquatic health.

Rural areas may also contribute to water-quality problems, often generating a great deal of chemical runoff from animal feed, manufactured fertilizers, and manure, which are sources of nitrogen and phosphorus pollution. These excess nutrients have the potential to degrade water quality if incorporated into runoff from farms into streams and lakes. Whether urban or rural, cities and towns need to be diligent in analyzing what contaminants their properties, residents, businesses, and farms are producing and where, and understand that it is not just a municipal problem, but a systemic, regional issue requiring collaboration and cooperation with adjacent cities and towns as well.

Regulatory requirements for water quality improvement are based on the Massachusetts Surface Water Quality Standards, which define the Clean Water Act goals for the rivers, streams, lakes, and coastal waters of the state. The status of each watershed's compliance with the water quality standards is listed in the 2012 Integrated List of Waters. These are key documents for municipalities in understanding the status of their water bodies and the monitoring, protection, and improvements that are needed in order to meet their water quality standards.

It should also be noted that selected watersheds in Massachusetts have additional requirements under a Total Maximum Daily Load (TMDL) analysis for specific pollutants. In the MAPC region this inculdes a TMDL for phosphorus in the Charles River watershed and for pathogens in the Neponset River watershed. MS4 permits for communities in those and other TMDL watersheds will include additional requirements to control those pollutants.

Although it is beyond the scope of this Kit to provide detailed guidance regarding water quality monitoring, a summary of key elements in developing a monitoring program are listed below, most of which were taken from the EPA's *Monitoring Guidance for Determining the Effectiveness of Nonpoint Source Controls* document.

Water Quantity

Water quantity issues are also important to determine and document, as they are equally important to watershed function as well as human needs (recreation, fishing, drinking/irrigation water availability). Most often, guidance related to water quantity monitoring will be discussed in the context of stream flow, as it is a marker of amount of water moving through the watershed. The United States Geological Survey (USGS) provides stream flow data for stream segments in all major river basins in Massachusetts, which municipal officials can use as baseline data. For municipal staff who wish to monitor and calculate stream flow on their own, the EPA has developed an online guidance document regarding stream flow, which includes monitoring methodologies: *What is stream flow and why is it important?*

Stormwater Management System Inventory

In order to make connections between water quality and stormwater impacts and determine needs, it will be important for the municipality to inventory existing stormwater management and treatment facilities. The inventory should include a list of all facilities, locations (mapped, showing discharge points), type of treatment, maintenance completed, and cost.

A drainage fee and/or utility is developed to support the necessary, and often desired, work under a stormwater management plan, from programmatic elements to capital improvement projects. As part of developing a fee, municipalities should review the relationship between where the built and natural elements of the stormwater management system exists (and may be planned) and the geographic areas contributing runoff to the system. There are cities and towns where the entire area contributes runoff to and is served by the storm sewer system, but there may also be municipalities where large areas are undeveloped and contributing little to no runoff to the system. An EPA measure that speaks to this consideration is Directly Connected Impervious Areas (DCIA). According to the EPA's *Estimating Change in Impervious Area (IA) and Directly Connected Impervious Areas (DCIA) for Massachusetts Small MS4 Permit* document, the DCIA "is considered the portion of impervious area (IA) with a direct hydraulic connection to the permittee's MS4 or a waterbody via continuous paved surfaces, gutters, drain pipes, or other conventional conveyance and detention structures that do not reduce runoff volume." As a companion to this document, the EPA has created information specific to regulated municipalities, including maps of impervious cover and tables with statistics about DCIA.

In addition to assessing the natural and physical systems, it is also important to list all potential expenditures that will be financed by the drainage fee. Although not an exhaustive list, the table below shows likely stormwater-related expenditures incurred by the municipality. Not all categories will apply to every community.

Table 1.1. Potential Expenditures

Potential Expenditures	Description
STORMWATER MANAGEMENT PROGRAM	
General Maintenance & Operations	Routine cleaning, general maintenance and day to day service operations by DPW.
Stormwater Treatment (Contractual)	Costs of privately contracted facility to treat stormwater runoff (if any).
Service Requests	Reporting and Responding to notices, complaints and reported damage
Illicit Discharge Detection and Elimination	Assume 10% of outfalls have illicit discharge. Estimate cost to identify source at appx. $1200 per hit. Removal costs should be the owner's responsibility.
Erosion/Sediment Control Inspections	Estimate a 50x% increase in workload due to additional maintenance and construction
MS4 Requirements for Water Quality Monitoring	Not included in the 2003 permit, but expected to be in the next MS4 permit. Specific requirements and costs are not currently known.
Catchbasin Inventory/Maintenance	Field crews to inspect, record and clean catchbasins on a regular schedule. Two to Four times per year is recommended.
Septic, Inflow and Infiltration Program	Cost of coordination between board of health and stormwater program.

Potential Expenditures	Description
Spill Cleanup Program	Develop a priority response program based on high accident areas, significant pollutant potential and proximity to receiving waters.
Waterfowl & Pet Waste Management Programs	Install waterfowl education signs at congregation areas and implement waterfowl deterrents. Install pet waste stations in strategic locations.
Street Cleaning	Increase effort, fuel, supplies,& disposal to Sweep streets.
Stream Restoration/Stabilization	Complete at least one stream restoration project every set number of years.
PLANNING AND REGULATORY COMPLIANCE	
NPDES Compliance	Includes annual reporting, mapping, Stormwater Management Plan (SMP). Often includes private consulting services.
Master Planning for Stormwater	Develop a CIP based on Phosphorous Control Plan and Infrastructure Needs.
MS4 Stormwater Permit Administration	Review of permits annually (often by consultants)
Groundwater and Drinking Water Program Coordination	Technical review memo of drinking water quantity and quality in priority areas. Conclusions of reports to be considered in the improvement of the system.
Code Development and Zoning Support Services	Review and update zoning codes and other local regulations as needed, report on local regulations affecting impervious areas and report on feasibility of green practices and other green techniques.
Hazard Mitigation and Flood Insurance Updates	Allowance for high hazard analysis by private consultant for specific areas of concern.
ADMINISTRATION	
Utility Fee Implementation	Capital expenses associated with establishing HR to manage the new program.
Billing	Costs associated with preparing and distributing fee invoices.
Administrative Fees	General office operations and overhead.
Utility Fee Credits	Costs for administering and deducting expenses for properties that meet set compliance standards to reduce runoff.
Collection Fees, Delinquencies	Costs for processing receivables with contingencies for late or non-payments.
Legal Support Services	Legal Review of Regulatory changes every set number of years
Inter-Municipal Coordination	Adjacent municipalities to meet every set number of years to review and coordinate programs.
NPDES Public Education/Engagement Programs	Distribute at least two messages to residents, commercial, industrial, and construction constituencies and measure and report message effectiveness. Host public forums, regularly update websites and host regular workshops

Capital Improvements

In addition to the costs for operations and maintenance, planning and regulatory compliance, and administration summarized above, needs for long term capital improvements should be considered. In some communities this may already be addressed (partially or in full) in a Capital Improvement Plan or program. If not, the future needs for stormwater capital improvements should be estimated and considered as part of the costs to be addressed by the stormwater fee/utility.

After determining the water quality issues that the municipality is facing, and assessing the status of the existing treatment facilities in the community, a municipality can now make some assumptions

regarding the type of additional treatment facilities needed to improve water quality and quantity conditions.