



Town of Danvers Sustainable Stormwater Funding Study



woodardcurran.com
COMMITMENT & INTEGRITY DRIVE RESULTS

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1. INTRODUCTION

This report is intended to provide information to local decision makers regarding creating a stormwater utility as a potential mechanism to fund the current and future stormwater programs in the Town of Danvers. The Sustainable Stormwater Funding Study is being funded by the Massachusetts Bays Program (MBP) through a Research and Planning Grant. Woodard & Curran, in coordination with the Town of Danvers, prepared this report.

The Sustainable Stormwater Funding Study:

- Presents general information on stormwater utilities;
- Presents a compelling case for a stormwater utility;
- Summarizes the Town's current and future stormwater program priorities and costs;
- Estimates a preliminary equivalent residential unit (ERU) and Danvers's projected revenue generated with an impervious-based user fee;
- Identifies preliminary incentives for fee reduction;
- Identifies potential pitfalls and risks;
- Summarizes the stakeholder process and end-of study attitudes towards a stormwater user fee; and
- Identifies the next steps, timelines and additional information necessary for the Town to further assess the feasibility of a local stormwater utility.

2. STORMWATER UTILITY OVERVIEW

2.1 WHAT IS A STORMWATER UTILITY

A stormwater utility is a dedicated, stable funding source for a stormwater management program. The stormwater utility is both an organizational entity, which provides a fee for service, as well as a driver for physical change by providing an economic incentive to reduce the amount or improve the quality of stormwater generated on a property.

A stormwater utility serves as a revenue generating vehicle which allows a community to manage its stormwater management programs through a management fund. A stormwater management fund works in a similar method as a water or sewer utility, it generates revenue through user fees. Stormwater user fees are calculated based on the amount of stormwater generated on a property. In order to generate the fee, the amount of impervious surface on a property is measured and a fee is assessed based on the financial needs of the municipality.

2.2 BENEFITS OF A STORMWATER UTILITY

There are many reasons for municipalities to create a stormwater utility. The key reasons are because a stormwater utility is S.A.F.E:¹

- It is St^{able} – utility fees are not as dependent on the uncertain annual budget process as tax revenue is.
- It is Adequate – utility fees are based on an advance planned stormwater program that meets the needs of the community.
- It is Flexible – the utility can adapt to changing program and funding needs over time.
- It is Equitable – the cost of the stormwater program is calculated on the basis of impact on the drainage system and receiving waters, not property value or land use.

Once a stormwater utility is established all of the revenue is dedicated in an Enterprise Fund. The dedicated funds are used for stormwater improvements, maintenance and operations as mandated by local law. Stormwater enterprise funds don't compete with Police, Fire, Schools and other Public Services.

2.3 TYPICAL DRIVERS FOR CREATING A STORMWATER UTILITY

Municipalities across the country are electing to establish stormwater utilities in order to provide stable and dedicated funding for their stormwater management programs. While there are many drivers for the increase in number of stormwater utilities, the main driver is the increasingly expensive cost of undertaking stormwater management. The implementation of stormwater management standards, adoption and implementation of a stormwater management bylaw, and operations, maintenance and inspection programs are increasingly overburdening municipal budgets.

Additional drivers include:

- Insufficient funding
- Regulatory mandates (TMDLs, Phase II)
- Flooding problems and complaints

¹ The acronym S.A.F.E is widely used in stormwater utility informational presentations and materials from a variety of sources.

- Aging infrastructure
- Potential lawsuits
- Development opportunities/pressures
- Economic impact of pollution
- Aesthetic & “green” demands and desires
- Quality of life

2.4 STORMWATER UTILITY ENABLING LEGISLATION

In Massachusetts, there are two companion pieces of enabling legislations that allow municipalities to create stormwater utilities, to set up an authority to manage stormwater, and to charge utility fees for managing stormwater.

- **M.G.L. Chapter 83, Section 16** – Annual charges for the use of common sewers, main drains and related stormwater facilities, which shall be paid by every person who enters his particular sewer therein.
- **M.G.L. Chapter 40, Section 1A** – provides the definition of a district for the purpose of water pollution abatement, water, sewer, and/or other purposes.

2.5 STORMWATER UTILITIES IN MASSACHUSETTS

There are currently 5 communities with stormwater utilities in Massachusetts: Chicopee, Newton, Reading, Fall River and Westfield. The first stormwater utility in the State was adopted by Chicopee in 1998 and the most recent was adopted by Westfield in 2010. Single family residential charges run from \$20/year in Westfield to \$140/year in Fall River. All of the communities offer a credit system or discount program for elderly residents.

Each of these stormwater utilities was structured slightly differently to accommodate community-specific environmental or political concerns. For example, Chicopee’s utility was established in response to Combined Sewer Overflow (CSO) challenges. Reading decided to fund its Stormwater Management Program using both the general fund and a stormwater utility. All stormwater activities that the Town was previously doing before the adoption of the Stormwater Utility Bylaw are funded though the General Fund and all new requirements under the NPDES ”Small MS4” General Permit are funded out of the Stormwater Utility.

3. DANVERS' PROGRAM PRIORITIES & COSTS

3.1 REGULATORY OVERVIEW

The mitigation of stormwater impacts is a challenging issue faced by municipalities across the country. Increased land development and construction have a profound impact on the quality and quantity of water in the Town of Danvers and throughout the State of Massachusetts. Pollutants from lawns, parking lots and roadways travel into rivers, streams, lakes, ponds and bays as a result of an increase in the amount of impervious area resulting from land development. An increase in stormwater and contaminated water sources can cause beach closures, nuisance conditions and degraded ecosystems.

Since 2003, Danvers' stormwater discharges are regulated under U.S. Environmental Protection Agency's (EPA's) *National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems*, here after referred to as the "Small MS4" General Permit. This permit contains six-Minimum Control Measures (MCM) that permittees are required to implement. The six MCM include:

- Public Education and Outreach
- Public Involvement and Participation
- Illicit Discharge Detection and Elimination
- Construction Site Stormwater Runoff Control
- Post-Construction Stormwater Management in New Development and Redevelopment
- Pollution Prevention and Good Housekeeping in Municipal Operations

3.1.1 Expected Changes in the "Small MS4" Program

The 2003 General Permit expired in April 2008, but has been administratively continued and remains in force and in effect. On January 25, 2010, the EPA released the draft NPDES *General Permit for Discharges from Small Municipal Separate Storm Sewer Systems in Massachusetts North Coastal Watersheds* for public comment. The EPA is in the process of making changes based on comments received before the final permit takes effect. When this permit becomes effective, Danvers must submit a Notice of Intent and must comply with the conditions of the new permit to maintain authorization to discharge. The general requirements proposed in the 2010 draft General Permit that apply to Danvers are much more specific in terms of required program elements and schedule for compliance.

3.2 DANVERS STORMWATER MANAGEMENT PROGRAM

Danvers stormwater management program is located within the Department of Public Works (DPW). Currently, stormwater management tasks are carried out by various departments of the DPW. The Town has made significant progress in the development of its stormwater management program under the 2003 NPDES "Small MS4" General Permit, but considerable work remains to be done to ensure compliance with the anticipated requirements of the draft General Permit expected to be reissued in the coming months. A sustainable funding source is needed to implement the ongoing stormwater management program and capital improvements. A significant portion of the stormwater costs rely on Town Meeting approval in order to proceed.

Some key elements of the current Stormwater Management Plan (SMP) are:

- A wide-reaching public educational program that includes outreach at public schools and direct mailings with the electric bills;

- Drainage mapping that is nearly complete;
- Outfall inventory and dry weather sampling at all outfalls;
- Development and adoption of two new stormwater bylaws in 2011, the *Bylaw to Regulate Illicit Discharges to the Municipal Storm Drain System* and the *Stormwater Management and Land Disturbance Bylaw*;
- Record keeping and annual reporting to the EPA;
- Site inspections of construction sites and stormwater best management practices (BMPs);
- Town-wide street sweeping, catch basin cleaning, and as-needed drainage system maintenance; and
- Design and construction of capital improvement projects, which include improvements such as fixed culverts (over 6 major repairs in the last 5 years), brook cleaning and stabilization, bank stabilization, and headwall repairs.

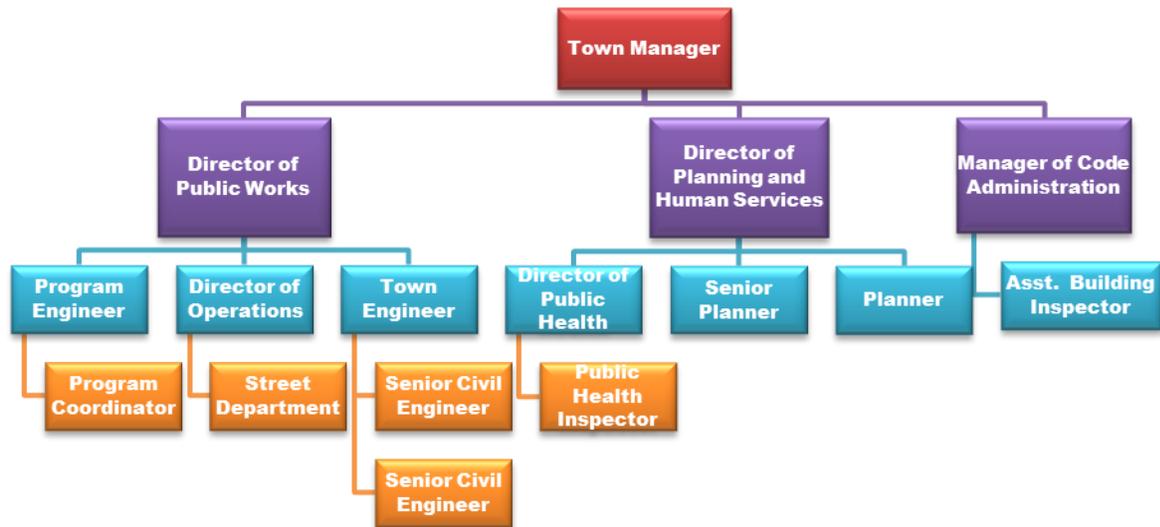
3.2.1 Town Organizational Structure and Overview

Danvers is located in Essex County Massachusetts and is home to over 26,000 residents. It is located on the Danvers River which is fed from the Porters' River, Crane River and Waters River. There is 0.8 square miles of water within its 14.1 square mile footprint. Danvers has a Town Manager who reports to a five (5) person Board of Selectman. The Town achieves funding each year through a vote at Town Meeting.

The Town Manager has retained key staff which results in a continuous stormwater effort. While the Town of Danvers stormwater program cuts across multiple departments within Town, the DPW is responsible for the overall program. Additionally, the DPW was named the Stormwater Authority in the Stormwater Management and Land Disturbance Bylaw. This Bylaw and the Bylaw to Regulate Illicit Discharges to the Municipal Storm Drain was approved at the May 2011 Town Meeting and by the Attorney General on September 5, 2011.

The following Figure 3-1 displays the Town of Danvers organizational structure. Please note that all titles in BLUE are part of the Stormwater Advisory Committee.

Figure 3-1: Danvers Organizational Structure



The Town does not have any staff exclusively dedicated to implementation of the SMP, rather the responsibility is shared by personnel in several Town departments. The Town’s capable staff makes it possible to perform many SMP tasks in-house, so many existing costs are related to salaries, time, and opportunity costs of lost time. The staff utilizes engineering consultants and contractors where possible to augment program capabilities.

3.3 CURRENT STORMWATER FUNDING APPROACH

Stormwater Management in the Town is currently funded by the General Fund and the Sewer Enterprise Fund. The Town has done well meeting drainage and stormwater management needs using funding available through these two sources. However, this study has identified a number of anticipated future needs that would benefit from an additional, dedicated funding source.

4. COST OF SERVICE

This section provides an overview of the Town's current and future stormwater needs. Based on a detailed cost of service spreadsheet developed by the Town, Danvers currently spends approximately \$625,000 annually on stormwater management, including operations and maintenance expenses. Future program costs, estimated using the Town's Capital Improvement Plan (CIP), are projected to be \$1,310,000.

4.1 EXISTING STORMWATER COSTS

The estimated costs for the Danvers Stormwater Management Program presented in the section below are based on detailed discussions with the Town and a review of the Town's Capital Improvement Plan, Warrant Articles and Town Budgets. The costs were compiled and grouped into major categories, based on a 5-year average of the reviewed material. Some key elements of the current SMP are:

- A wide-reaching public educational program that includes outreach at public schools and direct mailings with the electric bills;
- Drainage mapping that is nearly complete;
- Outfall inventory and dry weather sampling at all outfalls;
- Development and adoption of two new stormwater bylaws in 2011, the *Bylaw to Regulate Illicit Discharges to the Municipal Storm Drain System* and the *Stormwater Management and Land Disturbance Bylaw*;
- Record keeping and annual reporting to the EPA;
- Site inspections of construction sites and stormwater BMPs;
- Town-wide street sweeping, catch basin cleaning, and as-needed drainage system maintenance; and
- Design and construction of capital improvement projects, which include improvements such as fixed culverts (over 6 major repairs in the last 5 years), brook cleaning and stabilization, bank stabilization, and headwall repairs.

The Town of Danvers currently spends an estimated total of \$625,000 annually on Stormwater Management. Approximately 38%, or \$235,000 of this amount represents debt service on completed projects and the rest, 62%, or \$390,000, represents compliance, operations and maintenance, salaries and labor, and Geographic Information System (GIS) management.

Table 4-1: Current Stormwater Costs

Description	Estimated Current Annual Expenditures
MCM #1: Public Education & Outreach	\$37,000
MCM #1: Public Involvement/Participation	\$0
MCM #3: Illicit Discharge Detection & Elimination	\$36,000
MCM #4: Construction Site Stormwater Control	\$0
MCM #5: Post Construction Site Stormwater Management	\$0
MCM #6: Pollution Prevention & Good Housekeeping	\$67,000
Drainage Maintenance & Repair (Materials & Supplies Installed by DPW Staff)	\$25,000
Stormwater Vehicle Maintenance	\$10,000
GIS Program	\$15,000
SWMP & MS4 Annual Report	\$5,000
Administrative (Staff Salaries)	\$195,000
Debt Service on Capital Projects	\$235,000
Total	\$625,000

4.2 DANVERS STORMWATER UTILITY DRIVERS

One critical step in creating a stormwater utility is to identify the compelling reasons for Danvers to enhance their stormwater program. Improving stormwater services will cost money. A “compelling case” must be clearly communicated to convince stakeholders and citizens to invest more in the local stormwater program.

The Town and Woodard and Curran identified the following drivers for a more robust stormwater management program in Danvers:

- Protect Receiving Waters.** Danvers is part of Salem Sound and resides in the Ipswich River and North Coastal Watersheds. Of the twelve receiving waters listed for Danvers, nine are considered by EPA and the Massachusetts Department of Environmental Protection (MassDEP) to be impaired.² Many of the pollutants of concern listed for these nine waters are associated with stormwater runoff, such as pathogens, organic enrichment, turbidity, suspended solids, and nutrients.
- Drainage System Operation & Maintenance.** Parts of Danvers’ drainage infrastructure are up to 100 years old, but the majority was built starting in the 1960s. Given the age of the drainage system and the Town’s coastal location, flooding does occur at various locations in Danvers. In

² Information on Danvers’ receiving waters, impairment status, and pollutants of concern is available on EPA’s website. URL: <http://www.epa.gov/region1/npdes/stormwater/ma.html>

2006 a Stormwater Capital Improvement Plan was created, which identified a long-term process with prioritized projects to reduce stormwater related flooding concerns and improve the integrity of the Town's aging drainage infrastructure including culverts and headwalls. Of the ten locations identified as being subject to flooding, the recommended improvements were completed at two locations. There is approximately \$8.8M of Capital Improvement Projects identified for future implementation as funding becomes available.

- **“Small MS4” Program Compliance.** Continued activities to remain in compliance with Federal mandate to manage stormwater in accordance with the “Small MS4” General Permit requirements administered town-wide. The General Permit for Massachusetts is currently being revised by EPA, and the Town anticipates a number of new and enhanced requirements.
- Specific needs for the future Small MS4 program compliance include:
 - **Local Stormwater Permitting & Enforcement.** Need for increased oversight and inspections to verify compliance with applicable local, State, and Federal stormwater regulations and ensure proper construction of BMPs at development and redevelopment sites.
 - **Data Management & Tracking.** Need to improve data management, ideally linked to the Town's GIS, to track stormwater management activities, specifically long-term operation and maintenance activities associated with Town-owned and privately-owned stormwater BMPs, outfall monitoring efforts, monitoring changes in impervious area (IA) and directly connected impervious area (DCIA), and other Small MS4 requirements to measure program results.
- **Additional Staffing.** Additional Town staff will be necessary to address the aforementioned needs, specifically to:
 - Administer the Small MS4 program, including reporting to EPA, record keeping, program coordination, public education and outreach, and more.
 - Complete all necessary operation and maintenance. The Town currently has personnel to do some catch basin cleaning, street sweeping, and other maintenance, but typically contract work each year to allow capacity for the DPW to address other public works priorities.

Review and approve all development and redevelopment projects Town-wide for consistency with local Bylaws governing construction site runoff control and post-construction stormwater management.

4.3 FUTURE STORMWATER COSTS

According to the Town's Capital Improvement Plan submitted to EPA as part of the Clean Watersheds Needs Assessment, the Town has approximately 21 stormwater/drainage projects, with a total estimated cost of \$8,810,000, that need to be completed over the course of the next five years. These projects will add an estimated \$530,000 in annual debt service to the Town's Stormwater Program. In addition to debt service, increases in future program costs are estimated to cost \$1,310,000 when EPA reissues the Small MS4 General Permit.

The Town can expect the cost of the stormwater program to escalate over the next five to ten years as capital projects are implemented and the NPDES “Small MS4” General Permit evolves. The future cost estimate is conservative due to the uncertainty in the “Small MS4” General Permit requirements. We did not include any capital equipment costs. This fall, the Town purchased a new vacuum truck which should

last 10 to 15 years. The Town could reasonably budget upwards of \$500,000 to purchase new equipment within the next ten years, such as street sweepers, dump trucks, and/or a backhoe to meet enhanced permit requirements for drainage system operation and maintenance. Likewise, the current and future cost of fuel for stormwater related activities was not included in our estimate.

Table 4-2: Future Stormwater Costs

Description	Estimated Future Annual Expenditures
MCM #1: Public Education & Outreach	\$40,000
MCM #1: Public Involvement/Participation	\$3,000
MCM #3: Illicit Discharge Detection & Elimination	\$60,000
MCM #4: Construction Site Stormwater Control	\$5,000
MCM #5: Post Construction Site Stormwater Management	\$12,000
MCM #6: Pollution Prevention & Good Housekeeping	\$80,000
Drainage Maintenance & Repair (Materials & Supplies Installed by DPW Staff)	\$30,000
Stormwater Vehicle Maintenance	\$10,000
GIS Program	\$70,000
SWMP & MS4 Annual Report	\$10,000
Administrative (Staff Salaries)	\$230,000
Debt Service on Capital Projects	\$760,000
Total:	\$1,310,000

5. FUNDING EVALUATION

This section evaluates the potential to fund the Danvers Stormwater Management Program using a stormwater utility. It should be noted that there is always a degree of uncertainty associated with projected cost and budgetary estimates. The Town should continue to refine and improve these estimates over time.

5.1 RATE METHODOLOGY

Unlike water and electrical utilities that are able to track user consumption with meters, stormwater utilities can only make estimates regarding the amount of runoff from each parcel of land. In order to develop a proper stormwater management rate, the Town must identify and quantify the impacts on surface water due to development. The conversion of pervious areas (forests and fields) to impervious areas (pavement, roof tops, and other hard surfaces) is typically associated with an increase in stormwater. These impacts include increases in the peak flow, volume of discharge, and amount of pollution.

Danvers needs to invest in its public drainage system in order to accommodate the increase in stormwater runoff that occurs when pervious area is converted to impervious area. One rate methodology approach that is used by the majority of stormwater utilities is based on calculating the amount of impervious area in the municipality.

Runoff managed will be billed based on the amount of pavement and rooftop (or other impervious surfaces) on a property. This is a measure of the amount of runoff generated from a property and is the most common way to bill for this volume. Sewage will continue to be billed based on water and sewer usage and runoff will be billed based on the amount of impervious area.

5.2 EQUIVALENT RESIDENTIAL UNIT (ERU) ANALYSIS

The Town of Danvers, with assistance from Woodard & Curran, performed the data analysis to determine a proposed impervious cover-based stormwater fee. The Town has a well-structured GIS and accurate impervious cover information, which is essential to developing a rational legal fee structure. Town staff was able to use newly generated impervious cover information based on a Fall 2012 town fly-over rather than relying on the state's impervious cover GIS layer. The impervious cover data and parcel data from the Assessor's office were overlaid to calculate square footage of impervious cover within each parcel in town.

From this parcel data, the Town was able to estimate an ERU. An ERU represents the typical amount of impervious area found on a single family residential parcel. This is a common method of establishing a stormwater fee structure as it is easy to understand by most ratepayers. For example, if a commercial property has five times the ERU measurement, meaning five times more impervious cover, than a typical single family residential property, they would pay five times the fee charged the single family residence. See illustrations in Figures 5-1 and 5-2.

Figure 5-1: Residential Equivalent Dwelling Unit

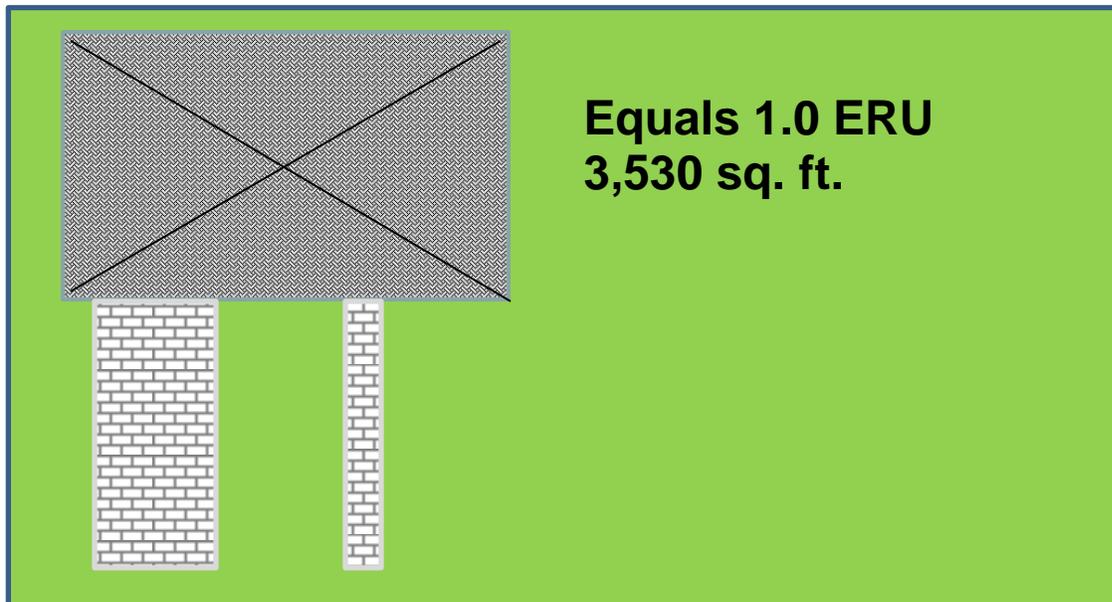
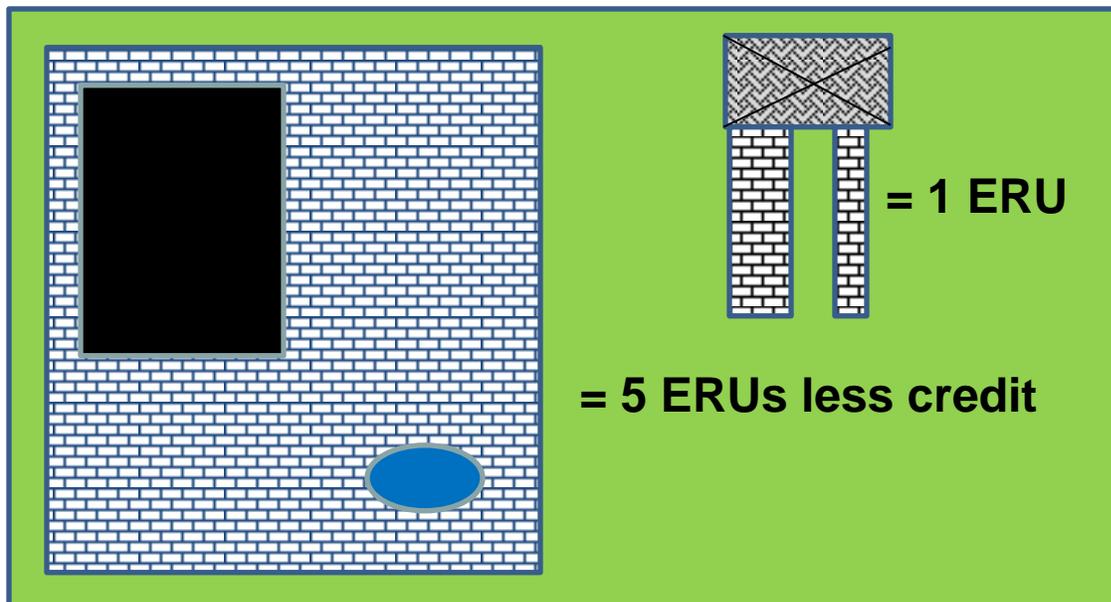


Figure 5-2: Commercial Equivalent Dwelling Unit



Town staff first classified all parcels by land use as:

- Single Family Residential;
- Other Residential (e.g., condominiums and multi-family residential);
- Non-Residential (e.g., commercial, industrial, institutional properties); or
- Non-Billable.

Non-billable parcels are non-parcels (such as water or street rights-of-way) or parcels with no impervious area. Additional non-billable parcels can be assigned by the Town (such as Town-owned properties) during subsequent steps toward stormwater utility implementation. The ERU analysis also assumes that the utility will be town-wide and include a fee for tax-exempt and state- and federal-owned properties.

Next the Town calculated the median³ impervious cover in square feet on all of the validated⁴ single family parcels. This is the most common method used to calculate the ERU when the impervious cover data for residential parcels is reasonably accurate.⁵ The estimated ERU is 3,530 sq. ft. Table 5-1 summarizes the total ERUs calculated for major land use classifications in town based on the total impervious area.

Table 5-1: Total ERUs by Major Property Type

Land Use Classification	ERUs
Single Family Residential	5,802
Other Residential	2,500
Non-Residential	8,755
Total	17,057

5.3 DANVERS' REVENUE ESTIMATES

For this Study, a flat rate structure known as an Equitable System was chosen. This is only one of a number of alternative rate structures that the Town might wish to consider for their stormwater utility. Descriptions of other types of rate structures are included in Appendix A. These other types of fee systems are based on impervious cover but vary in their methods of calculating stormwater fees for non-residential properties. The Equitable System assesses the same fee per ERU to every property town-wide regardless of land use type. The monthly fee for a parcel is calculated by multiplying the number of ERUs within the parcel by the monthly rate per ERU for the utility.

The following table shows the fee structure for Danvers' current and future stormwater program costs. Based upon this rate structure example, a single family homeowner would currently pay \$36.64 per year or \$3.05 per month. This would escalate to \$76.80 per year or \$6.40 per month over the next five to ten years. In both cases, the Town would generate just under their desired annual revenue goals.

³ The *median* is the middle value of the set of single family parcels, as opposed to the *mean*, which is the average.

⁴ When performing the GIS-based impervious cover analysis for each parcel, less than 5% of the parcels showed errors. For example, there were some duplicate parcels or overlapping parcels with incorrect impervious area calculations. This incorrect parcel data was excluded from the ERU analysis but should be validated and included in an updated ERU calculation.

⁵ Rhode Island Department of Environmental Management (RIDEM) Office of Water Resources. *Stormwater Utility District Feasibility Study Final Report. Westerly Rhode Island.* December 2011.

Table 5-2: Stormwater Utility Estimated Fee per ERU

	Current Program Costs	Future Program Costs
Desired Revenue	\$625,000	\$1,310,000
ERU	3,530 sq. ft.	3,530 sq. ft.
Total ERUs in Utility	17,057	17,057
Est. Stormwater Utility Fee	\$36.64/yr./ERU	\$76.80/yr./ERU
	\$3.05/mo./ERU	\$6.40/mo./ERU
Total Revenue	\$624,286.20	\$1,309,997.60

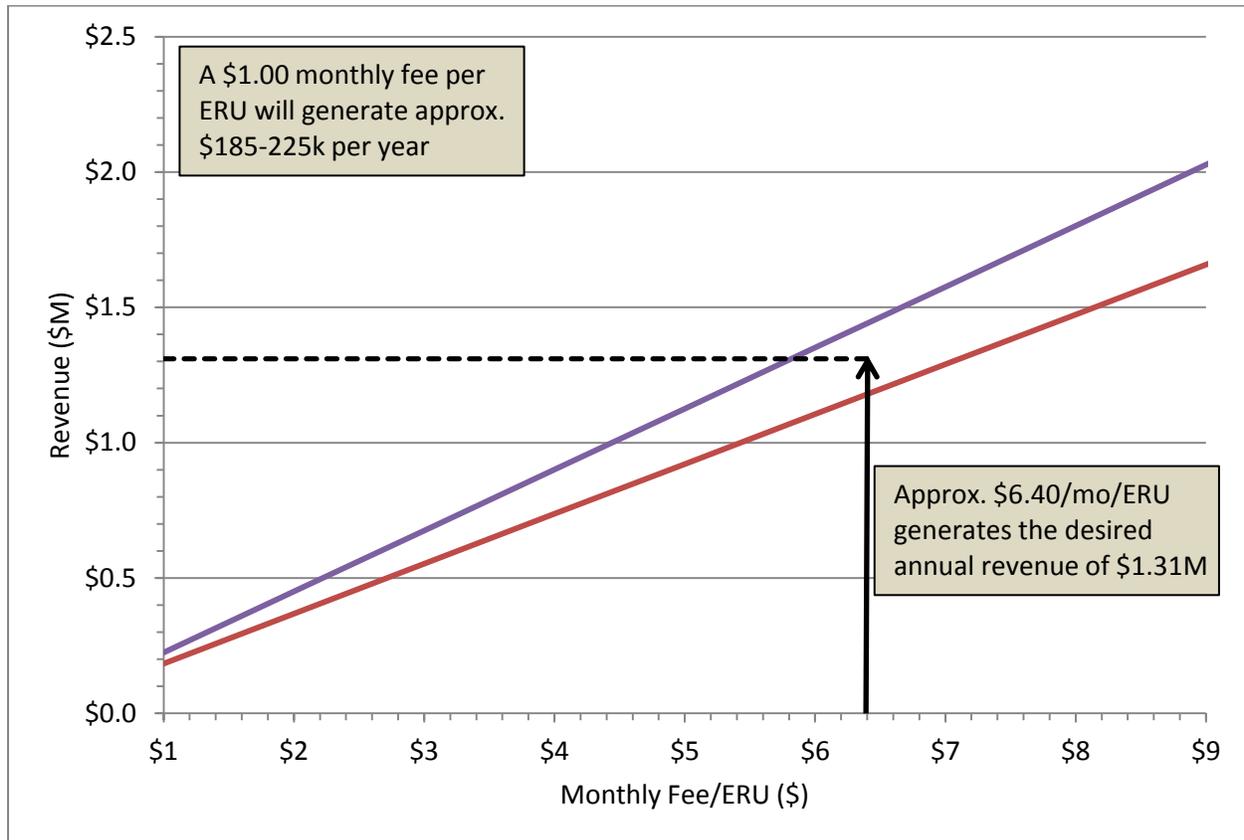
The estimated stormwater fees for other land use classifications are shown in Table 5-3.

Table 5-3: Example Stormwater Utility Fees by Parcel Classification

	Single Family Residential	Other Residential	Non-Residential
Current Program Costs	\$36.64/yr.	\$89.45/yr.	\$482.38/yr.
	\$3.05/mo.	\$7.45/mo.	\$40.15/mo.
Future Program Costs	\$76.80/yr.	\$187.50/yr.	\$1,011.10/yr.
	\$6.40/mo.	\$15.63/mo.	\$84.26/mo.

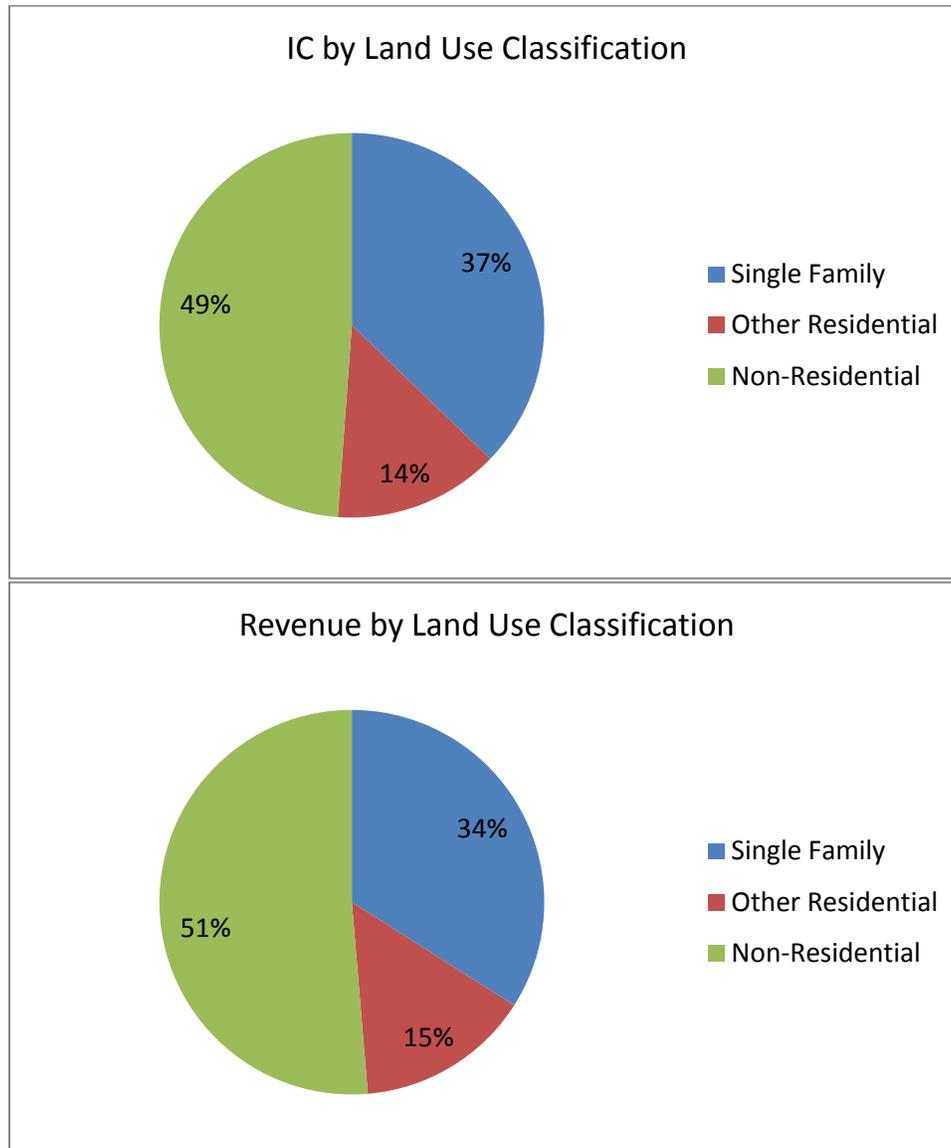
Because this is a preliminary estimate of the ERU as well as the expected future cost, the following figure provides another estimate of the amount of revenue that could be generated with an impervious-based fee, accounting for the expected uncertainty. We estimate that for every one dollar per ERU per month the Town can roughly generate between \$185,000 and \$225,000 annual revenue. To account for the variability in this preliminary calculation, we assumed the total number of ERUs for billable accounts in Danvers could increase or decrease by ten percent.

Figure 5-3: Projected Revenue Range



To check the overall equity of the proposed rate structure, we compared the impervious cover percentage by parcel classification to the projected revenue by land use classification. For each major parcel type, the projected revenue is within three percent of the percentage impervious cover. In future phases, this type of comparison can be performed with more accuracy and for more refined land use types, such as tax-exempt properties and other large residential properties, with the goal of correcting inequities in the fee structure.

Figure 5-4: Impervious Cover (IC) and Revenue Percentages by Land Use Classification



5.4 CREDIT SYSTEM

Once the rate structure has been established, it is important for a community to evaluate and institute a credit system. A credit system is important in rate structure equality; it offers businesses an opportunity to lower their stormwater utility fees if they make site improvements that reduce stormwater impacts from their property. These incentives can help reduce the Town’s stormwater management costs by reducing the volume of runoff that is managed by the Town and improving water quality.

Credits can be provided for onsite stormwater management with low impact development (LID) and other types of “green” infrastructure and sustainable design. Typical stormwater utility abatements run between 25% - 75% of the stormwater assessment when a credit is applied. Examples of practices used by stormwater utilities that qualify for credits include:

-
- Drywells
 - Infiltration Chambers
 - Detention Ponds
 - Bioretention
 - Rain Water Harvesting Systems

Abatements are generally not given for sump pumps, rain barrels or water filtration systems. Some utilities choose to give other types of discounts, such as in Newton there is a reduced rate for elderly residents.

5.5 OFFSETTING COSTS

As an entirely new revenue stream, the fees generated by an impervious cover-based stormwater utility will offset some or all stormwater expenditures by the Town. Since these funds, have in the past, come from either the General Fund or the Sewer Enterprise Fund, the new revenues will reduce the funds which need to be raised through property taxes and/or wastewater charges. Although this impact was not explored in this preliminary study, the Town may wish to quantify how this revenue shift could impact residents and businesses in Danvers in terms of net expenditures for sewer, stormwater, and property taxes. For example, residential customers may “break even” given a new stormwater fee and reduced sewer charges, but commercial properties with low sewer use may have a substantial net increase in their combined levy due to the new stormwater fees.

6. STAKEHOLDER PROCESS AND END OF STUDY ATTITUDES

The Town of Danvers, in conjunction with Woodard & Curran and Salem Sound Coast Watch identified key stakeholders in the stormwater utility feasibility process. In order to generate opinions regarding the use of a stormwater user fee as a mechanism to fund the stormwater management program in the Town, a Sustainable Stormwater Funding Study stakeholder meeting was held at Danvers Town Hall on November 29, 2012. The meeting provided information on the requirements of a successful stormwater management program and potential funding options. Following the presentation, local stakeholders participated in a discussion regarding the logistics of implementing a stormwater utility and completed an anonymous survey. Attendees included:

Barbara Warren, Salem Sound Coast Watch
Mark Carleo, Danvers Public Health Inspector
Kristan Farr, Danvers Planning Department
Renee Hunter, Danvers Engineering Department
Gail Bernard, Danvers DPW Program Coordinator
Richard Maloney, Danvers Building Inspector
Martha Duffield, Danvers Program Engineer
Kate Day, Danvers Senior Planner
Rick Rodgers, Danvers Town Engineer
David Lane, DPW Director
Emily Scerbo, Woodard & Curran
Jessica Richard, Woodard & Curran

The presentation materials, including the sign-in sheet and survey, are included in Appendix B. The presentation was delivered to MassBays separately and is available from the Town by request.

6.1 STAKEHOLDER DISCUSSIONS

During the stakeholder meeting the group was asked to identify compelling reasons to improve stormwater services that would be important to citizens and other stakeholder in the community. The responses are paraphrased below:

- Mandate
- Not a priority for funding when there are competing funds
- Control and prevent flooding
- Control pollution and improve water quality
- Address aging infrastructure
- Reduce sewer rate
- More equitable way to spread costs
- Potential credits for improvements

- Concern for coastal waters
- Beach closure
- Goose waste and dog waste
- People would appreciate funding mechanism for innovative and proactive solutions
- Planning Board would support
- More shifted to commercial

The group was then asked to identify hurdles that could slow or derail the transition to a more comprehensive stormwater program with user fee funding. The results are summarized below:

- “Cost me more!”
- Unfunded federal mandate
- Commercial properties will argue we’re killing business
- Can’t deduct from income tax
- Cost to administer a new separate utility

6.2 STAKEHOLDER SURVEY

During the Stakeholder meeting, an anonymous 6-question survey was passed out. The outcome of the survey is summarized below.

- 1. Question 1: Approximately how often do you encounter stormwater related issues in your position?**
 - *40% answered daily, 30% answered weekly, 20% answered monthly, and 10% answered yearly*
- 2. Question 2: How strongly do you agree with this statement? *All of Danvers’ stormwater management and drainage needs are being met.***
 - *50% answered neutral, 20% answered agree, 20% answered disagree, and 10% answered strongly agree*
- 3. Question 3: In your opinion, which phrase below best completes this statement? *Clean water bodies and environmental protection is _____ for Danvers.***
 - *90% answered a high priority, and only 10% answered somewhat important*
- 4. Question 4: Top 5 most compelling reasons to improve stormwater services that you think would be important to citizens and other stakeholders in the community.**
 - *A majority of the people cited the regulatory compliance mandate as the most compelling reason to improve stormwater services, followed closely by water quality improvements, flood prevention, and aging infrastructure improvements. Other popular reasons included equitable distribution of costs, sewer rate reduction, pollution control, beach closure prevention, and potential credits for improvements.*
- 5. Question 5: Top 5 hurdles that you think could slow or derail the transition to a more comprehensive stormwater program with user fee funding.**

-
- *A majority of the people cited the unfunded federal mandate as the number one hurdle to a more comprehensive stormwater program, followed closely by the costs to administer a new program, losing the tax deduction, and objections from commercial businesses. Other hurdles included the board of selectmen, people on fixed budgets, and the perception that Mother Nature is not related to the customer.*

6. Question 6: At the end of this meeting, how do you feel about a stormwater user fee being develop for the Town of Danvers?

- *55% answered “Let’s move cautiously toward implementation,” 22% answered “Let’s move to the next step,” and 22% answered “I still need more convincing that this is the right approach.”*

7. Question 7: Please share any additional thoughts you have on this workshop, the Town’s stormwater program, or funding options.

- *I think it is necessary in order to fund required infrastructure repairs as well as mandated regulations. However, I believe it will be very difficult to get approved in a town whose residents seem to get what they want in most cases.*
- *This will only work over time with new mandate and details and plans to back up change.*
- *Good session!*
- *Objections seem justified and tough to refute.*
- *You will need to be very careful and 100% honest in describing this to the public.*
- *Mother nature not related to customer*

6.3 STORMWATER MESSAGE / IMPLEMENTATION

The stakeholders discussed key program priorities and messages for the stormwater program. The stakeholders were asked to identify the key messages that would be to be developed in order to “sell” a stormwater utility. These key messages would provide the framework for a future stormwater utility public outreach and education campaign. The messages, paraphrased into short statements, are:

- Reduce bill – stress off general budget
- Reduce closings at Sandy Beach
- Reduce flooding – stabilize banks
- Quicker staff response
- Equitable
- Credits incentives
- Better for children/future
- Increase in significant storms/foul weather frequency, duration, intensity
- Break out stormwater/sewer on current sewer bill
- Look at how other communities introduced
- Homeowners need message that combined cost will be minimized, perhaps slightly more

7. CONCLUSION

This section of the report identifies the next steps and additional information necessary for the Town to further assess the feasibility of a local stormwater utility.

Danvers currently funds a robust stormwater management program, but anticipated future needs for both regulatory compliance and drainage system operation and maintenance is expected to roughly double stormwater expenditures in the next five to ten years. Stakeholder feedback indicates that there is a compelling need to improve the Town's stormwater management program. The majority of the stakeholders cited the regulatory compliance mandate as the most compelling reason to improve stormwater services, followed closely by water quality improvements, flood prevention, and aging infrastructure improvements. Additional reasons included equitable distribution of costs, sewer rate reduction, pollution control, beach closure prevention, and potential credits for improvements.

A stormwater user fee could generate sufficient revenue to support an enhanced program. While several hurdles were identified, they appear manageable with an appropriate public participation and educational outreach program.

7.1 NEXT STEPS

This Study is a first step by the Town to consider a stormwater utility to fund their evolving stormwater program, to operate and maintain the Town's drainage infrastructure to meet the needs of residents and property owners, and to protect public health and the environment. In order to continue moving forward with the formal evaluation of a stormwater utility, the Town should create a broader "stakeholder" group comprised of members of the Danvers Stormwater Committee, residents, businesses and environmental groups. The purpose of the Stakeholder group will be to guide the next steps and work with the community and gain its support. The Stakeholder Group will work with and inform the Danvers Board of Selectmen of their findings and request support in moving forward with the creation of a Stormwater Management Business Plan. The key steps to creating a Stormwater Management Business Plan include:

1. Develop a Public Outreach and Education Campaign
2. Establish, Define and Organize Structure of Stormwater Utility
3. Perform Detailed Cost of Service Analysis
4. Perform a Detailed Financial and Funding Analysis
5. Develop a Credit System
6. Develop a Rate Structure and Perform a Rate Structure Analysis
7. Establish a Billing and Database Management System
8. Adopt a Stormwater Utility Ordinance
9. Implement Stormwater Utility

The Stakeholder Group, with support of the Board of Selectmen, should develop a proposed schedule to move forward with the steps listed above.

APPENDIX A: RATE STRUCTURE EXAMPLES

Appendix D: Example Rate Structures

Rate structures can be constructed in several ways. The first is by using an Equivalent Residential Unit (ERU) with an associated fee. After calculating an ERU for a municipality to equal 2,500 sqft, determine the sum of ERUs in the municipality. Small Residential properties (single family/duplex) are equivalent to 1 ERU and Large Residential properties (triplex) are equivalent to 2 ERU, regardless of the amount of impervious cover they contain. Once you have determined the total number of ERUs in the municipality, divide the total desired revenue for the stormwater program by the total ERUs in the municipality to find your fee per ERU.

Standard Equivalent Runoff Unit fee system:

Area of Equivalent Residential Unit (ERU)	2,500 sq ft
<i>Total desired revenue for stormwater program</i>	<i>\$1,000,000.00</i>
Sum of ERUs within the utility	310,000 ERUs
Small Residential (single family/duplex: 1 ERU)	\$3.23/mo
Large Residential (triplex: 2 ERU)	\$6.46/mo
Other Properties (per ERU)	\$3.23/mo/ERU
<i>Total revenue</i>	<i>\$1,000,000.00</i>

A commonly used variation of this system is to determine an ERU for residential properties and calculate a separate ERU for all non-residential properties. This type of rate structure is ideal for municipalities that would like to shift the burden of paying for the stormwater program from residents to property owners creating higher volumes and more impaired stormwater on their property as a result of large areas of connected impervious cover.

Variation Equivalent Residential Unit fee system:

Area of Residential Equivalent Residential Unit (ERU)	2,500 sq ft
<i>Total desired revenue for stormwater program</i>	<i>\$1,000,000.00</i>
Number of residential parcels within the utility	150,000
Sum of residential ERUs within the utility	220,000 (80,000 Sm 70,000 Lg)
Small Residential (single family/duplex: 1 ERU)	\$3.23/mo
Large Residential (triplex: 2 ERUs)	\$6.46/mo
<i>Total revenue from residential parcels</i>	<i>\$710,600.00</i>
Area of Non-residential Equivalent Residential Unit (ERU)	1,000 sq ft
<i>Remaining desired revenue</i>	<i>\$289,400.00</i>
Number of non-residential parcels within the utility	9,000
Sum of non-residential ERUs within the utility	90,000
Other Properties (per ERU)	\$3.23/mo/ERU
<i>Total revenue from non-residential parcels</i>	<i>\$290,700.00</i>

Another possible fee structure is to create a stratified system in which total area of impervious cover for all non-residential parcels are sorted in ascending order and tiers are assigned based on the distribution of the data. Residential parcels are typically still subject to a flat rate determined by an ERU as described in the previous two rate structures. This is another fee system that shifts the financial burden from residents to property owners with larger areas of impervious cover.

Stratified fee system:

Area of Equivalent Residential Unit (ERU)	2,500 sq ft
Small Residential (single family/duplex: 1 ERU)	\$2.50/mo
Large Residential (triplex: 2 ERUs)	\$5.00/mo
Other Properties (Tier 1 – 2,500 – 12,500 sq ft)	\$500/mo
Other Properties (Tier 2 – 12,501 – 30,500 sq ft)	\$1,000/mo
Other Properties (Tier 3 – 30,501 – 50,500 sq ft)	\$1,500/mo
Other Properties (Tier 4 – 50,501+ sq ft)	\$2,000/mo

There are also proportional systems, in which the residential parcels are charged a flat fee based on an ERU as in the aforementioned systems. However, the fees for all other property types are comprised of the product of multiplying the total impervious cover in the parcel by a fee per square footage OR the fees for all other parcel types are comprised of the flat fee AND the product of multiplying total impervious cover in excess of the ERU by an additional fee per square footage. Proportional fee system #1 has a flat rate for Small Residential (single family/duplex) and Large Residential (triplex) and all other properties are charged a fee per square foot of impervious cover. Proportional fee system #2 has a flat rate for Small Residential (single family/duplex) and Large Residential (triplex) and all other properties are charged a flat rate for the first 2,500 sqft of impervious cover in the parcel and are charged a fee per square foot for of impervious cover in excess of 2,500 sqft.

Proportional fee system #1:

Area of Equivalent Residential Unit (ERU)	2,500 sq ft
<i>Total desired revenue for stormwater program</i>	<i>\$1,000,000.00</i>
Number of residential parcels within the utility	150,000
Sum of residential ERUs within the utility	220,000 (80,000 Sm 70,000 Lg)
Small Residential (single family/duplex: 1 ERU)	\$2.50/mo
Large Residential (triplex: 2 ERUs)	\$5.00/mo
<i>Total revenue from residential parcels</i>	<i>\$550,000.00</i>
<i>Remaining desired revenue</i>	<i>\$450,000.00</i>
Fee per sqft of impervious cover	\$.0016
Sum of IC in other properties within the utility	292,500,000 sqft
<i>Total revenue from other properties</i>	<i>\$468,000.00</i>

Proportional fee system #2:

Area of Equivalent Residential Unit (ERU)	2,500 sq ft
<i>Total desired revenue for stormwater program</i>	<i>\$1,000,000.00</i>
Number of residential parcels within the utility	150,000
Sum of residential ERUs within the utility	220,000 (80,000 Sm 70,000 Lg)
Small Residential (single family/duplex: 1 ERU)	\$2.50/mo
Large Residential (triplex: 2 ERUs)	\$5.00/mo

<i>Total revenue from residential parcels</i>	<i>\$550,000.00</i>
<i>Remaining desired revenue</i>	<i>\$450,000.00</i>
Other Properties: flat rate + product of \$.0034 x sqft of impervious cover in excess of 2,500 sqft	\$2.50 + (\$.0034 x sqft >2,500 sqft)
Revenue from flat rate x number of other parcels	\$225,000.00
Sum of IC >2,500sqft in other properties within the utility	67,500,000 sqft
<i>Total revenue from other properties</i>	<i>\$454,500.00</i>

Finally, there are purely proportional fee systems in which each square foot of impervious cover is multiplied by a fee per square footage. However, these systems require a lot of initial work to create, as well as constant adjustment as there is development and deconstruction within the municipality. It can be said that proportional systems are the most equitable, but as it is a primary purpose of an SUD to encourage property owners to disconnect contiguous impervious surfaces and allow for natural hydraulic processes and infiltration to occur, it is often beneficial to disproportionately charge properties with larger swaths of impervious cover to motivate a change in behavior.

Pure Proportional fee system:

<i>Total desired revenue for stormwater program</i>	<i>\$1,000,000.00</i>
Sum of sqft of impervious cover within the utility	842,500,000
All Properties	\$.0012 x sqft IC
<i>Total revenue</i>	<i>\$1,011,000.00</i>

APPENDIX B: PRESENTATION MATERIALS



Town of Danvers, MA
Sustainable Stormwater Funding Stakeholder Meeting
Massachusetts Bays Program (MBP) Research and Planning Grant
Sign-in Sheet

Date: November 29, 2012 Time: 1:00 – 3:00 P.M.

Location: Daniel J. Toomey Hearing Room, Danvers Town Hall

Attendees:

Name (please print)	Title/Department	Signature
BARBARA WARREN	SSCW	Barbara Warren
Mark Carles	Health	[Signature]
Kristan Farr	TOD Planning	[Signature]
Renee Hunter	TOD ENGINEERING	[Signature]
SANTA CLAUS	The MAU	S Claus
Gail Bernard	DPW	Gail Bernard
MARTHA DURAND	DPW	Martha Durand
Emily Scerbo	w+c	Emily Scerbo
Kate Day	Sr. Planner	Kate Day
Richard Scerbo	Town Engineer	Richard Scerbo
DAVID LANE	DPW DIR.	
Jessica Richard	w+c	[Signature]



**Town of Danvers Sustainable Stormwater Funding Study
Stakeholder Meeting, November 29, 2012**

Question 6: At the end of this meeting, how do you feel about a stormwater user fee being developed for the Town of Danvers?

- A. It won't work.
- B. I still need convincing that this is the right approach.
- C. Let's move to the next step.
- D. Let's move cautiously toward implementation.
- E. I strongly support implementing a stormwater user fee right now.

Question 7: Please use this space to share any additional thoughts you have on this workshop, the Town's stormwater program, or funding options.
