Final Report
October 2011

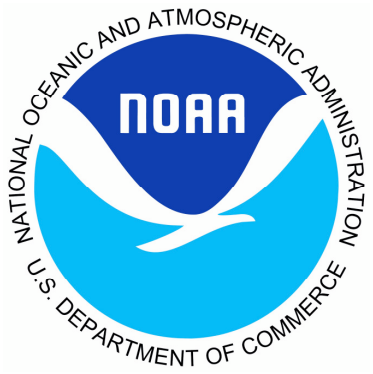
Town of Centreville
Stormwater Utility Phase II Study



Financial assistance provided by the Coastal Zone Management Act of 1972, as amended, administered by the Office of Ocean and Coastal Resource Management, National Oceanic and Atmospheric Administration.

Prepared by

Municipal & Financial Services Group



This report was prepared by the Municipal & Financial Services Group under award number NA10NOS4190204 from the Office of Ocean and Coastal Resources Management (ORCM), National Oceanic and Atmospheric Administration (NOAA), through the Maryland Department of Natural Resources Chesapeake and Coastal Program. The statements, findings, conclusions and recommendations are those of the author and do not necessarily reflect the views of NOAA or the U.S. Department of Commerce.

Municipal & Financial Services Group

October 2011

Eva Kerchner
Zoning Administrator / Watershed Manager
Town of Centreville
101 Lawyers Row
Centreville, MD 21617

Dear Ms. Kerchner:

The Municipal & Financial Service Group is pleased to submit to the Town of Centreville, the attached Stormwater Utility Phase II Report. The document represents the results of our analysis of the cost of providing stormwater service within the Town and our recommendations for how the Town should recover these costs. The study presents several of the key policy issues related to how stormwater costs are recovery and how a stormwater utility should be administered.

It has been our distinct pleasure to work with and for the Town. The assistance provided by the Town staff was essential in the completion of the study. The dedication you and other Town staff provided during the study process should be acknowledged and was vital to the completion and success of the study. Thank you for the opportunity to work with and for the Town of Centreville on this study.

Very truly yours,

David Hyder
Vice President
The Municipal & Financial Services Group

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1. EXECUTIVE SUMMARY

This document was prepared to summarize the work performed by the Municipal & Financial Services Group (MFSG) during the Stormwater Utility Phase II Study authorized by the Town of Centreville ("the Town"). The Town received funding for the Phase II study from the Maryland Department of Natural Resources (DNR) through the Chesapeake & Coastal Program (CCP), Coastal Communities Initiative (CCI). The objective of the study was to build upon the work completed in the Stormwater Phase I Feasibility Study by developing a specific business plan for the implementation of a stormwater utility for the Town and to facilitate public discussion and education.

Implementing a utility has many benefits, including providing the Town with a dedicated funding source to provide funding for maintenance, replacement, improvement and administration of the Town's stormwater collection, treatment and storage system. The stormwater system serves a vital role in protecting the local waterways including the Corsica River which is a valuable community resource. Specific needs that have been identified related to the stormwater system include:

> Maintenance/Deteriorating Assets - Many stormwater drains have damage to headwalls and other important structures that need to be addressed within the short-term.
>
> Flood Control - The Town has several throughways and intersections that experience flooding during rain events.
>
> Regulatory Requirements - The US EPA's Chesapeake Bay Initiative and the resulting Watershed Implementation Plan (WIP) Phase II will require specific actions to meet the reductions in stormwater loadings specified in WIP Phase II.

To assist with the development of a business plan for the stormwater utility, a stormwater advisory council (SWAC) was formed with the goal of providing public education and to solicit feedback from the SWAC related to the development of a stormwater utility. The SWAC was briefed on three separate occasions during the course of the study and provided valuable input that assisted in directing the study.

As part of the Phase I Stormwater Study three levels of service were developed to demonstrate the range of necessary expenditures for the Town's stormwater system. The levels ranged from the essential level of service to an optimal level of service. These levels of service were further examined and refined to provide a more detailed analysis of potential expenditures. Specifically, the expenditures were split into those related to on going maintenance of the system and those related to capital investments. Based on the review of the existing level of service it was noted that the Town has been able to historically provide a high level of service due to its ability to secure grant funding. However grant funding is not a reliable revenue stream and therefore it was necessary to evaluate the level of service that can reasonably be provided by the Town. Based on our review of the level of service we recommend that the Town fund the stormwater system at an essential level of service. This level of service includes existing expenditures plus additional funding for public outreach, increased contract services and maintenance, eventual replacement of existing equipment, funding

for completion of low impact stormwater management facilities and increased funding for replacement of existing stormwater mains.

In addition to grants, the Town currently funds the stormwater system from the General Fund. We recommend that the Town continue to provide funding from the General Fund as the stormwater utility is implemented. As a result, the incremental costs associated with providing the recommended level of service is projected to be approximately $70,000 in 2012. Over time the incremental costs associated with providing the recommended level of service are projected to increase to about $240,000 by 2016.

To generate incremental revenues required to provide the recommended level of service a stormwater fee was developed. Two key factors were considered in the development of the stormwater fee including the rate base (the unit of measure for the fee) and the structure of the fee. The use of impervious area as a rate base is the industry best practice. As part of the Phase I study, the impervious area for the five major land uses in the Town was estimated. Given that this data was available and that impervious area relates directly to runoff and the impact on the stormwater system it was selected as the preferred rate base. The structure of the fee (how it should be imposed) was developed to allow for the equitable allocation of costs but also to create a structure that could be easily administered by the Town. A fee structure was developed that provides an average impervious area for all single family residential properties (at 3,200 square feet of impervious) which equates to on equivalent residential unit (ERU). For non-single family properties the ERU concept would be applied based on the "multiples" of ERUs located on the property. For example, a commercial property with 41,600 square feet of impervious area would be divided by the ERU value of 3,200 square feet resulting in 13 ERU's which would billed to the property. Based on the recommended level of service and the fee structure, the stormwater fee in 2012 would be $2.50 per month or $7.50 per quarter per ERU. In subsequent years the Town will need to increase the fee depending on factors such as the availability of grants and regulatory requirements.

As part of the business plan for the implementation of the stormwater utility and fee it was necessary to address the administration of the utility. Specifically, the Town must decide whether or not it will provide credits in the form of reductions in the stormwater fee for onsite stormwater mitigation. We recommend that the Town implement a credit program to encourage on-site stormwater management. The credit program should be designed such that it provides a reduction in the fee for those properties that provide a significant amount of stormwater management on their property in the form of volume control and/or water quality. A maximum credit ceiling should be established at 50% to recognize that all properties benefit from the management of stormwater in Town. Lastly we recommend that the Town impose the stormwater fee on a quarterly basis on the utility bill and that all properties within the Town be charged the stormwater fee with the exception of public roads and right-of-ways.

2. BASIS FOR THE STUDY

2.1 Background

The Town of Centreville (the Town) provides stormwater management for all residents and businesses throughout the Town. It has invested significant capital to develop the stormwater system, which consists of approximately 700 inlets, extensive stormwater pipe and 43 stormwater best management practices (BMPs) consisting of ponds and basins. The Town currently manages the stormwater assets through the General Fund.

The Town has been exploring the opportunity to create a utility since early 2010. In February of 2010, the Town hired URS Corporation to complete a Stormwater Utility Phase I Study. The study was funded with a grant provided by the National Oceanic and Atmospheric Administration (NOAA), through the Maryland Department of Natural Resources Chesapeake and Coastal Program. The study was facilitated by conducting field investigations, interviews with Town staff and GIS analysis of impervious area. Specifically, the study scope of services included:

- Evaluation of the current stormwater infrastructure and operations and a high-level forecast of future stormwater needs (defining level of service).

- Evaluation of the potential issues associated with creating a stormwater utility for the Town.

After the study was completed, URS communicated its findings and conclusions to the Town. Table 1 illustrates the findings associated with the Phase 1 review of the stormwater assets.

Table 1 - Phase-I Stormwater Asset Findings

Stormwater Assets	Town Stormwater Practices	Town Stormwater Expenses	Performance of Current Stormwater System
Approximately 700 inlets	Maintenance of inlets	3 Full time equivalent	Inlets in good shape
Extensive stormwater pipe	Mowing of open channels	Current annual expenses estimated at $195,000	Town experiences ponding during rain events
43 Stormwater Ponds and Basins*	Daily / weekly street sweeping		System may be undersized
Vac-Tron and Sweeper Truck**	Construction on as needed basis		Age and condition of lines unknown

**Represents Best Management Practices (BMP's) – 41 are privately owned and maintained*
*** 10 years old*

URS concluded that it was appropriate for the Town to move forward with exploring the idea of implementing a stormwater utility. To continue in the process, three specific recommendations were provided by URS:

- The Town needs to create a Stormwater Citizens Advisory Committee (SWAC) – to help define any program that is implemented by the Town.

- The Town should prepare a business plan to provide a solid foundation for the implementation of a utility.

- The Town needs to research and decide on the level of service the utility will provide.

2.2 Scope of Work

In the spring of 2011, the Town received another grant from the National Oceanic and Atmospheric Administration (NOAA), through the Maryland Department of Natural Resources Chesapeake and Coastal Program to hire a consultant to address the recommendations provided by URS in the form of a Phase II Stormwater Study. As part of a competitive procurement the Town selected and engaged the Municipal & Financial Services Group to complete the study. The scope of services set forth in the contract between the Town of Centreville and the Municipal and Financial Services Group ("MFSG") specifies two major tasks:

Public Outreach and Education

- ✓ Formation of and workshops with a stormwater advisory council (SWAC) with a goal of education and soliciting feedback related to the development of a stormwater utility.
- ✓ Workshops with Town Council and other government agencies to educate and solicit input.
- ✓ Public outreach and education via mailers, website material, FAQ's, articles in local media and public forums.

Development of Business Plan

- ✓ Assess the existing stormwater management program by reviewing Phase I and refine the levels of service by developing a financial model.
- ✓ Evaluate the basis for a fee along with alternative billing methodologies.
- ✓ Evaluate policies and procedures associated with a stormwater management fee and the implementation of an ordinance.

The following sections of the report provide the completed scope of work for the Phase II Stormwater Utility Study for the Town.

3. POLICY CONSIDERATIONS AND STORMWATER ADVISORY COUNCIL

There are currently approximately 6 stormwater utilities in the State of Maryland and well over 600 utilities around the country. Stormwater utilities are becoming more common around the United States and industry experts agree that the number of utilities will grow exponentially over the next decade as Federal and State regulatory requirements force localities to address issues with their stormwater systems. Prior to the development of a stormwater utility it is important to ask some basic questions which frame some policy considerations. The following section of the report examines a number of these key considerations.

3.1 Stormwater as a Utility

The most basic question surrounding the formation of a stormwater utility is why it should be considered as a separate utility. The simple answer is that the community is accustomed to managing its infrastructure through utilities, including the water system and the wastewater system. In its most basic form a utility is comprised of the delivery of a measurable service and the management of the assets required to deliver the service. The stormwater system meets both of these characteristics in that the system provides the service of managing stormwater impacts from each property owner via an extensive system of assets that must be maintained by the Town to ensure that the system continues to operate properly and meet regulatory requirements. As a result the stormwater system is a logical candidate for a separate utility.

3.2 Benefits of Stormwater as a Utility

There are a number of benefits to managing stormwater as a utility and reasons why the Town is currently managing other services such as water service as a utility. These benefits include the following:

Fiscal Accountability - The formation of a stormwater utility and collection of a stormwater fee provides increased fiscal accountability. The fees collected would be accounted for in an enterprise fund and would be exclusively used for stormwater needs. When stormwater management is addressed through the general fund, needs are more easily ignored and put off for other projects. Additionally, the level of the fees would be driven by a defined level of service addressing maintenance needs and regulatory requirements.

Dependable Revenue Stream - The formation of a stormwater utility and collection of a stormwater fee provides a dependable revenue stream. A stormwater fee would allow the Town to better manage the stormwater system. Specifically, a dependable revenue stream would allow the Town to proactively manage the system, which would result in lower life-cycle costs.

Improved Equity - A stormwater utility provides improved equity among property owners within the Town as costs associated with operating and maintaining the system would be allocated to property owners based on their stormwater impact. Under the current approach property owners fund the stormwater system based on the value of their property which has very little correlation with their stormwater impact. Additionally, tax-exempt properties

currently do not assist in funding the stormwater operations but do generate stormwater and impact the system.

Pubic Awareness - The formation of a stormwater utility assists in increased public awareness of stormwater issues. Due to the fact that the current revenues for stormwater are unseen and included in taxes the public is often not aware of the service they are receiving as well as the cost the Town incurs while providing stormwater service. Increased public awareness allows for public education and may result in property owners taking action to manage stormwater on their property.

In summary there are a number of benefits associated with the formation of stormwater as a utility and why at this time it makes sense for the Town to consider implementation of a utility. However there are a number of considerations that must addressed (as outlined in the scope of work) prior to the implementation of a utility. The remainder of the report addresses each of these considerations and provides the suggested business plan for the implementation of a stormwater utility.

3.3 Stormwater Advisory Council

As mentioned in the scope of work, one of the tasks for the study was to form a stormwater advisory council (SWAC) with the goal of providing public education and to solicit feedback from the SWAC related to the development of a stormwater utility. To facilitate the formation of the SWAC, the Town recommended that members of the Environmental Advisory Committee serve on the SWAC as the Committee members include a wide range of individuals with diverse backgrounds. Once the SWAC was formed, MFSG met with the SWAC on three separate occasions to conduct workshops. The workshops were used to brief the SWAC on the progress of the study but to primarily solicit input on the key decisions related to the formation of a stormwater utility for the Town. The feedback provided by the SWAC was vital for the completion of the study.

4. LEVEL OF SERVICE

The first step in the formation of a stormwater utility is to address different levels of service that can be provided by the Town. URS completed an initial analysis which identified three levels of service associated with a stormwater utility above the existing funding from the General Fund (which is termed the existing level of service). With the help of Town staff, MFSG was able to identify the major building blocks of revenue requirements for each level of service including: operating and maintenance, capital and replacement costs. The levels of service were developed by utilizing the expenditures in each level of service identified in the Phase I study and further refining each of the components (operating and capital) to arrive at realistic expenditures for each level of service. A summary breakdown of the major cost components associated with all three levels of service is shown below.

- Existing
  - Includes basic salaries, supplies, and contract services
  - Capital improvements for which grant funding has been secured
  - No repair and replacement of existing stormwater assets

- Essential
  - Includes funding for Existing Level of Service
  - Additional O&M for public outreach, increased contract services and maintenance
  - Replacement of Vac-tron and Street Sweeper
  - Low Impact Development (LID) restoration projects to control 1 inch storm event (19 Acres)
  - Repair and replacement of stormwater collection system over 100 year period

- Enhanced
  - Includes funding for Essential Level of Service
  - Additional O&M for increased staffing and increased maintenance
  - LID restoration projects to control 1 inch storm event (155 Acres)
  - Repair and replacement of stormwater collection system over 70 year period

- Optimal
  - Includes funding for Enhanced Level of Service
  - Additional O&M for further increased staffing and increased maintenance
  - LID restoration projects to control 2.7 inch storm event
  - Repair and replacement of stormwater collection system over 50 year period

The costs associated with each level of service for the first year of an operational stormwater utility are shown in Table 2.

Table 2 - Level of Service Expenditures Year 1

	Existing	Essential	Enhanced	Optimal
Operating & Maintenance Expenses	$146,480	$170,980	$198,480	$343,480
Cash/Grant Funded Capital Projects	$300,000	$300,000	$300,000	$377,000
Repair and Rehabilitation	$ -	$20,000	$28,571	$40,000
Total Revenue Requirements	**$446,480**	**$490,980**	**$527,051**	**$760,480**

One of the major finding in the study was that the Town has been able to provide a high level of service in recent years primarily due to grant funding. The Town has received numerous grants that have allowed for significant capital investments in the stormwater system. However, grants cannot and will not continue indefinitely and therefore are not a reliable source of revenue in the future.

4.1 Assumptions Used in the Study

In order to project the current and recommended level of service for the stormwater system, it is necessary to make several assumptions regarding future economic conditions and growth within the Town (which can be varied as needed from year to year) made regarding various items are shown on the following page:

Element	Assumption
Inflation Rate - O&M Expenses	3.0% per year
Salaries	4.0% per year
Energy (Fuel)	3.0% per year
Supplies	3.0% per year
Maintenance	3.5% per year
Interest Rate on Borrowing	5.0%
Debt Maturity	10 - 30 years
Administration Costs on Financing	1.5% of principal

The study was conducted using the adopted budget for Year 1 of when the utility would be implemented. MFSG recommends the utility use FY 12 (the Town functions on a fiscal year of July 1 to June 30) as the base year upon which forecasted figures were developed. The level of service analysis considers a ten-year planning period (2012 - 2021). Each building block included in the total cost of providing the level of service will be addressed in the proceeding sections, but it may be helpful to see the overall financial picture of the incremental costs associated with each level of service before the section breakdowns.

Current funding through grants and the General Fund along with the incremental costs of each level of service for a 5-year period are shown in Table 3. For purposes of the forecast it is assumed that the level of grant funding does not continue at the current levels and is no longer available by year 3 of the projection period.

Table 3 - Level of Service Forecast

	2012	2013	2014	2015	2016
Current and Future Grant Funding	$300,000	$200,000	$ -	$ -	$ -
Current Funding from the General Fund	$122,193	$122,193	$122,193	$122,193	$122,193
Total Current Funding	**$422,193**	**$222,193**	**$122,193**	**$122,193**	**$122,193**
Existing Incremental Costs above Current	$24,287	$28,703	$33,253	$37,940	$42,768
Essential Incremental Costs above Current	$44,500	$45,585	$153,711	$157,548	$194,510
Enhanced Incremental Costs above Current	$80,571	$82,824	$192,156	$197,240	$235,488
Optimal Incremental Costs above Current	$314,000	$323,370	$440,037	$452,681	$498,721

As shown in Table 3, depending on the level of service the incremental costs vary significantly. After a detailed analysis of each level of service options and discussion with Town staff, the Essential level of service was selected and is the recommended level of service to pursue for the stormwater utility. Funding the essential level of service is recommended for a number of reasons.

Allow for augmenting the existing level of service to allow for management and maintenance of the stormwater system at a sustainable level.

Minimize the initial stormwater fee impact on the Town residents and business.

Allow for the initial establishment of a fee that can be adjusted in future years as funding requirements become more defined as a result of new regulatory requirements.

The following section of the report provides details for each of the building blocks discussed above for the existing and recommended essential level of service.

4.2 Operating and Maintenance Costs

The following section of the report provides an analysis of the operating and maintenance costs of the stormwater system under the existing and recommended level of service.

4.2.1 - O&M Costs - Existing Level of Service

The day-to-day operating and maintenance (O&M) expenses for the stormwater system are budgeted in four major categories including salaries, supplies, contract services and maintenance. The actual O&M expenses for FY 2012 were used as a base year for O&M costs. Inflation factors previously identified were used to project the future O&M expenses for the planning period. Table 4 presents the O&M expenses forecasted through FY 16 under the existing level of service.

Table 4 - Stormwater O&M Expenses – Existing Level of Service

	FY 12	FY 13	FY 14	FY 15	FY 16
Salaries	$110,541	$113,857	$117,273	$120,791	$124,414
Supplies	$35,939	$37,039	$38,173	$39,342	$40,547
Contract Services	$ -	$ -	$ -	$ -	$ -
Maintenance	$ -	$ -	$ -	$ -	$ -
Total O&M Expenses	**$146,480**	**$150,896**	**$155,446**	**$160,133**	**$164,961**
Annual % Increase		*3.01%*	*3.02%*	*3.02%*	*3.02%*

Table 4 demonstrates that overall operating expenses are anticipated to increase at around 3.0% per year over the projection period. The next section provides an assessment of the necessary increased O&M activities to meet the recommended level of service.

4.2.2 - O&M Costs - Recommended Level of Service

The Phase I Stormwater Utility Study completed by URS for the Town provided specific recommendations for additional operating and maintenance activities necessary to properly maintain the stormwater system including maintenance of previously completed retrofit projects and preparation of drainage inventory. MFSG has also included recommendations associated with administrative costs and contract services associated with implementation of the utility. Table 5 presents the incremental recommended level of service O&M expenses and the resulting total O&M expenses through FY 16.

Table 5 - Incremental O&M Expenses - Recommended Level of Service

	FY 12	FY 13	FY 14	FY 15	FY 16
Salaries	$4,500	$4,635	$4,774	$4,917	$5,065
Supplies	$ -	$ -	$ -	$ -	$ -
Contract Services	$15,000	$15,000	$0	$0	$0
Maintenance	$5,000	$5,150	$5,305	$5,464	$5,628
Total Incremental O&M Costs	**$24,500**	**$24,785**	**$10,079**	**$10,381**	**$10,692**
Existing O&M Costs	*$146,480*	*$150,896*	*$155,446*	*$160,133*	*$164,961*
Total Recommend LOS O&M Costs	**$170,980**	**$175,682**	**$165,526**	**$170,517**	**$175,657**

It has been assumed that in the first two year of operation the stormwater utility would require additional support with utility set-up costs associated with contract services but that this would diminish within the first two years of the utility implementation. Exhibit 1 presents the total recommended O&M expenditures over the projection period.

Exhibit 1 - Operating and Maintenance Expense Forecast - Recommended Level of Service

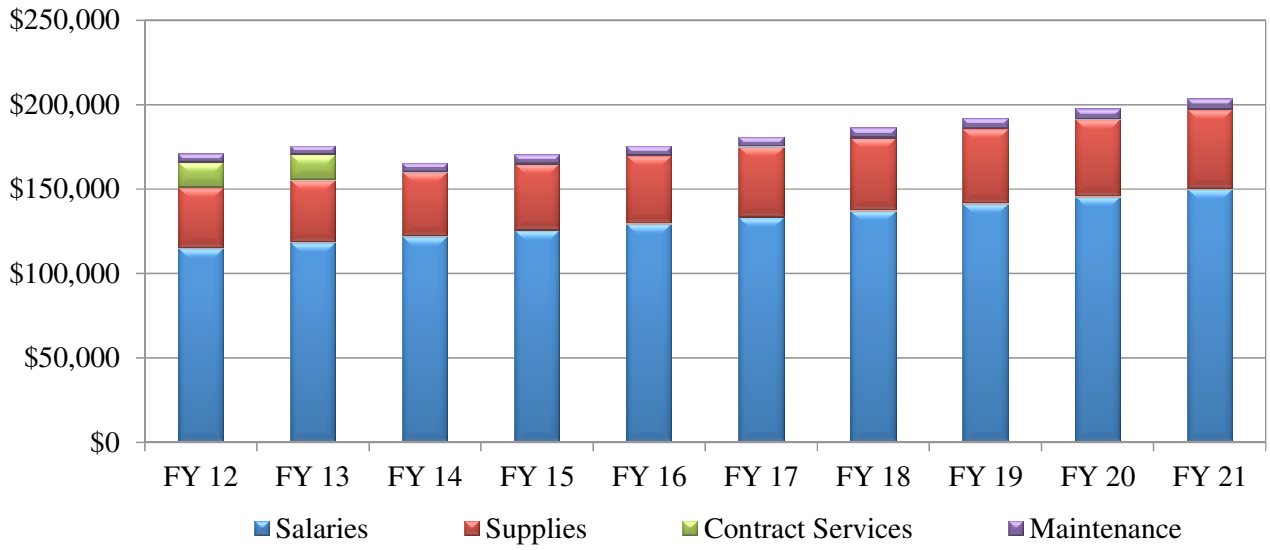


Exhibit 1 shows that the recommended level of service includes O&M expenses that total slightly over $200k by the end of the planning period in FY 21.

4.3 Capital Costs

The ownership of a stormwater system is inherently capital intensive. While capital investments have a pronounced impact on the cost of providing stormwater service, the projects are vitally important to ensure the continued operation of the stormwater system and to meet regulatory requirements.

The following section of the report presents the capital costs for the stormwater system.

4.3.1 - Capital Costs - Current Level of Service

Currently the Town only has capital projects associated with current and future grant funding. The budgeted grant funding totals $200k in FY 12 and $300k in FY 13. As previously stated, future grant funding will not continue indefinitely and therefore future capital projects need to be identified and budgeted for appropriately.

4.3.2 - Capital Costs - Recommended Level of Service

The increased investments in capital spending recommended to bring the current level of service up to the recommended level include additional capital projects and increased repair and replacement of the stormwater system.

4.3.2.1- Capital Improvement Projects

The recommended level of service includes three capital projects totaling $0.6 million for the planning period. Currently all projects are budgeted to be cash funded. A list of the capital projects and associated costs are shown through FY 16 in Table 6.

Table 6 - Capital Improvement Projects - Recommended Level of Service

	FY 12	FY 13	FY 14	FY 15	FY 16
Replacement of Vac-tron	$ -	$ -	$ -	$ -	$33,000
Replacement of Street Sweeper	$ -	$ -	$33,000	$33,000	$33,000
LID Restoration Projects*	$ -	$ -	$89,000	$91,670	$94,420
Total CIP Projects	**$ -**	**$ -**	**$122,000**	**$124,670**	**$160,420**

**(Control of 1 inch storm event) - 19 Acres*

As mentioned above, there is current grant funding to support capital projects in FY 12 and FY 13, therefore additional projects aren't necessary until FY 14.

4.3.2.2 - Repair and Replacement

To assist the Town in managing its capital assets, MFSG completed a high-level review of the stormwater systems buried infrastructure (stormwater mains). Assumed reinvestment rates were considered on a 50 to 100 year replacement cycle basis with the goal of the review to provide the Town with an estimate of the annual investment required in the system's buried assets to properly maintain the system and to maximize the system's useful life. To meet the essential recommended level of service, it was determined that the Town should invest in the system at a level that would allow for a 100 year replacement cycle. A 4% inflation rate for replacement costs was assumed for annual replacement costs of the system. Table 7 shows the estimated replacement costs through FY 16 for the stormwater system.

Table 7 - Stormwater Repair and Replacement Costs

	FY 12	FY 13	FY 14	FY 15	FY 16
Recommended Level of Service	$20,000	$20,800	$21,632	$22,497	$23,397

4.4 -Total Current and Recommended Level of Service

The summation of all of the components of the existing and recommended level of service provides an estimate of the total level of service. Table 8 presents the total existing level of service.

Table 8 - Total Revenue Requirements - Existing Level of Service

	FY 12	FY 13	FY 14	FY 15	FY 16
Salaries	$110,541	$113,857	$117,273	$120,791	$124,414
Supplies	$35,939	$37,039	$38,173	$39,342	$40,547
Contract Services	$ -	$ -	$ -	$ -	$ -
Maintenance	$ -	$ -	$ -	$ -	$ -
Total O&M Expenses	***$146,480***	***$150,896***	***$155,446***	***$160,133***	***$164,961***
Cash/Grant Funded Capital Project	$300,000	$200,000	$ -	$ -	$ -
Repair and Replacement	$ -	$ -	$ -	$ -	$ -
Total Capital Expenses	***$300,000***	***$200,000***	***$ -***	***$ -***	***$ -***
Total Current Level of Service	***$446,480***	***$350,896***	***$155,446***	***$160,133***	***$164,961***
Net Revenue Requirements less Grant Funding	**$146,480**	**$150,896**	**$155,446**	**$160,133**	**$164,961**

Table 8 demonstrates the current level of service expenditures in FY 12 less grant funding will be approximately $146k increasing to approximately $165k by FY 16. Table 9 builds on Table 8 by adding in the additional recommended O&M and capital expenditures to reach the recommended level of service.

Table 9 - Total Revenue Requirements - Recommended Level of Service (LOS)

	FY 12	FY 13	FY 14	FY 15	FY 16
Current LOS O&M Expenses	$146,480	$150,896	$155,446	$160,133	$164,961
Incremental O&M Expenses	$24,500	$24,785	$10,079	$10,381	$10,692
Total O&M Expenses	***$170,980***	***$175,681***	***$165,524***	***$170,514***	***$175,653***
Current LOS Capital Costs	$300,000	$200,000	$ -	$ -	$ -
Incremental Capital Costs	$20,000	$20,800	$143,632	$147,167	$183,817
Total Capital Expenses	***$320,000***	***$220,800***	***$143,632***	***$147,167***	***$183,817***
Total Recommended LOS	***$490,980***	***$396,481***	***$309,156***	***$317,681***	***$359,471***
Net Revenue Requirements less Grant Funding	**$190,980**	**$196,481**	**$309,156**	**$317,681**	**$359,471**

5. CURRENT REVENUES AND FUNDING GAP

The development of the existing and recommended level of service in the previous section of the report, demonstrates that annual amount of revenue that needs to be generated to fund the operation and maintenance of the stormwater system under each level of service. The following section of the report reviews the current funding sources and examines whether the funding is sufficient to meet the current and recommended level of service.

5.1 Current Revenues and Funding Gap Analysis

The Town has historically funded stormwater operations from the General Fund. The comparison of the current revenues available for stormwater funding and existing and recommended level of service allows for determination of the potential funding gap. Table 10 presents a forecast of available revenues and the defined levels of service.

Table 10 - Funding Gap Analysis

	FY 12	FY 13	FY 14	FY 15	FY 16
Total General Fund funding	$122,193	$122,193	$122,193	$122,193	$122,193
Existing Level of Service less grant funding	$146,480	$150,896	$155,446	$160,133	$164,961
Funding Gap	**$24,287**	**$28,703**	**$33,253**	**$37,940**	**$42,768**
Recommended Level of Service less grant funding	$190,980	$196,481	$309,156	$317,681	$359,471
Funding Gap	**$68,787**	**$74,288**	**$186,963**	**$195,488**	**$237,278**

Table 10 demonstrates that the current revenues available for stormwater will not be sufficient to meet either the existing or recommended level of service. It is important to note that since the revenues currently available are not sufficient to meet the existing level of service should additional revenues not be identified the Town will be required to reduce its level of service. As demonstrated in Table 10, to meet the recommended level of service substantial addition funding will be required in the outer years of the forecast.

6. STORMWATER FEE ANALYSIS

Prior to developing the stormwater fee it is important to evaluate the primary objective for the fee. As identified the fee would be used to generate revenues but the primary objective for the stormwater fee is to equitably assess the cost of providing stormwater service to property owners based on their impact to the stormwater system. In order to meet this objective two key items need to be addressed which include the unit of measure for the fee, often termed the rate base and how the fee would be structured. Each of these items is discussed below.

6.1 Rate Base

The rate base used to develop the stormwater fee defines the unit of measure for the fee. A variety of rate bases are used by localities that have implemented stormwater fees. Some examples include property type, total area of property, intensity of development (tied to zoning), impervious area and water usage. The industry best practice rate base is the use of impervious area, as it directly correlates with stormwater runoff and impact on the system. Impervious area has been determined to be the single most important factor influencing the rate of peak runoff, the total runoff quantity and transporter of pollutant loadings found in stormwater.

Impervious area is defined as any surface that does not allow for the penetration of water such as driveways, roofs and sidewalks. Often times when an alternative rate base is selected it is due to the fact that the impervious data is not readily available. URS provided total impervious area in Phase I of the study, based on information provided by the County. Exhibit 2 presents the total amount of impervious area within each of the main property classes within the Town.

Exhibit 2 - Impervious Area by Property Class (square feet)

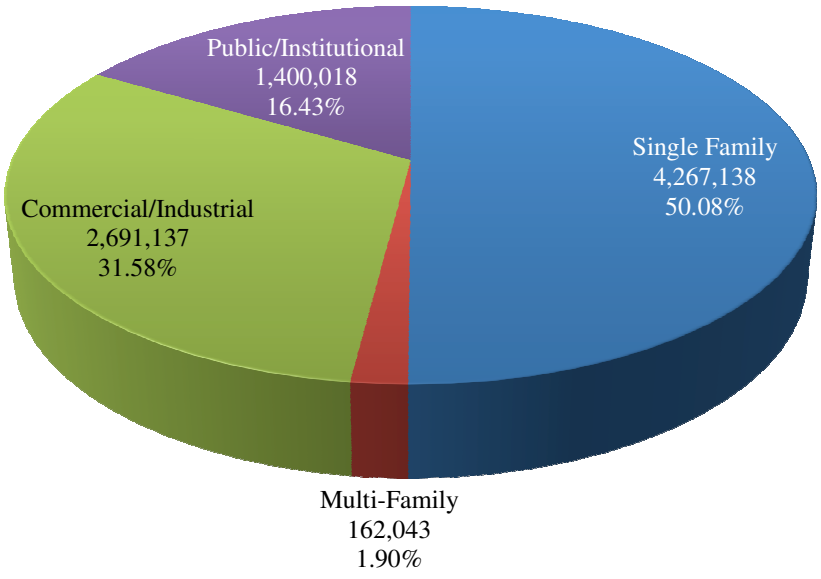


Exhibit 2 demonstrates that approximately half of the impervious area within the Town is within the single family residential property class. The public / institutional property class includes Town-

owned properties. Based on discussions with the Town and the SWAC it was determined that all properties within the Town be considered for the stormwater fee including Town-owned properties since all properties contribute stormwater.

6.2 Fee Structure

The design of the structure for the stormwater fee needs to include several key considerations. These considerations include the following items:

Equity - The fee structure should provide an equitable allocation between the fees collected and the costs of providing the service.

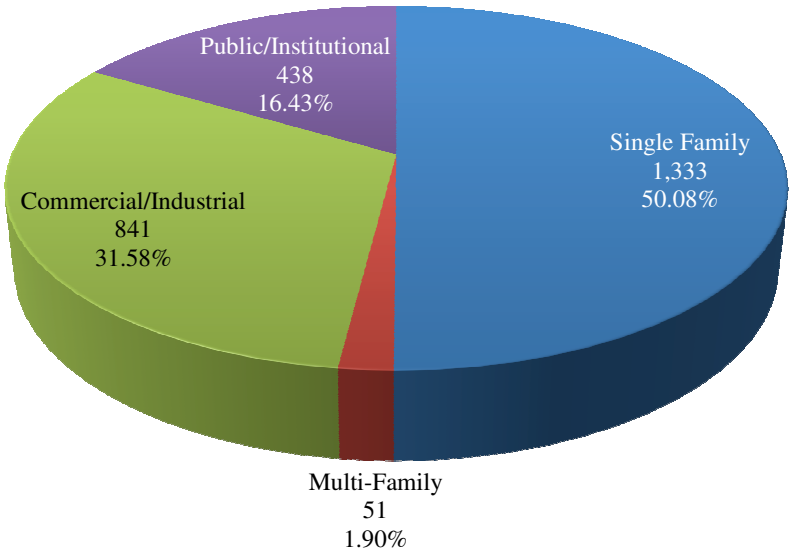
Ease of Understanding - The fee structure should be easy to understand, particular in the case of the initial adoption of the new fee to assist in gaining public acceptance.

Administrative Simplicity - The fee structure should require a minimal amount of staff time for administration and implementation.

Review of the key considerations reveals that the fee structure requires the need to strike a balance between the need for equity within the fee structure and the need for property owners to be able to understand the fee and the Town to administer it. To strike this balance the most common approach taken in fee structure design and the recommended structure for the Town is to develop a standard unit of the rate base often termed an equivalent runoff unit (ERU). The ERU is set based on the average impervious area for single family residential properties. In the Town the average impervious square footage for single family residential properties is 3,200 square feet. MFSG recommends taking the ERU value and applying it to all single family residential property owners resulting in all property owners in this class to paying the same stormwater fee regardless of impervious area on their property. This approach results in meeting the objective of being easy to understand and administer.

Due to the large variation of impervious among non-single family properties it is not equitable to develop average ERU that would be charged to all non-single family properties. As a result for non-single family properties the ERU concept would be applied based on the "multiples" of ERUs located on the property. For example, a commercial property with 41,600 square feet of impervious area would be divided by the ERU value of 3,200 square feet resulting in 13 ERU's which would billed to the property. Using the average residential impervious area of 3,200 sq. ft., total equivalent residential units in each customer class was possible to be extracted. A breakdown of ERUs by customer class is shown in Exhibit 3.

Exhibit 3 - Number of ERUs by Property Class
(based on 3,200 sq. ft. average SFR)



7. CREDITS

The establishment of a stormwater fee recognizes that the stormwater runoff from individual properties results in a cost. The Town must manage all above ground and buried assets associated with the stormwater system. Property owners who mitigate the stormwater runoff on their property reduce the cost of operating and maintaining the stormwater system and therefore it is common for a stormwater utility to offer credits in the form of a reduction in stormwater fees. Credits are typically offered to qualifying properties in return for implementing qualifying on-site stormwater management controls. This section of the report provides an overview of typical credits. This section does not substitute for a credit manual which should be developed if the Town decides to implement a stormwater utility and a credit program.

7.1 Credits

A stormwater fee credit program implemented by stormwater utilities vary significantly across the Country. Some utilities maintain very simple programs to limit the administrative burden in managing a credit program and others maintain extremely complex programs that provide very specific credits. Simple credit programs are employed most often because the costs associated with administering complex credits tend to out-weigh the amount of the associated credit. However in any credit program several key considerations must be addressed. The key considerations include:

> Who is eligible to receive a stormwater fee credit, all property owners or just non-residential?
>
> What stormwater management control activities qualify for credits?
>
> How much of a fee reduction is offered with each control activity and is there a maximum credit that is offered?

The way in which each of these considerations is addressed is largely dependent on the policies of the governing body of the utility. As there is no one-size fits all credit program, each program is going to reflect unique nature of each utility.

7.1.1 Eligibility

The majority of credit programs around the Country focus on non-residential customers only. The primary reason for this focus is the intent of the stormwater fee credit is to offer a reduction in the fee to property owners that have on-site stormwater management controls that truly have a measurable impact on the reduction of stormwater runoff. In general the amount of impervious area on a residential property and the available on-site control activities are both limited. For example, installing rain barrels, while a good thing to do, has a very limited ability to significantly reduce stormwater runoff. A 1-inch rainfall event running off 1,000 square feet of roof will generate approximately 600 gallons of water and a typical rain barrel can capture 55 gallons of water. Therefore a property owner would need at least 10 rain barrels to capture all of the runoff from a 1-inch event. Most property owners have nowhere near this many rain barrels. The other primary reason why residential customers are typically not eligible for credits is to limit the administrative

burden of managing the credit program. However there are utilities that offer credits to residential properties to ensure that all properties are treated the same. Most often the available credit is very limited to match the limited control activities available to residential properties.

7.1.2 Stormwater Management Control Activities

The key factors that influence the cost of management of a stormwater system include the quantity of runoff (both total volume and peak volume) and the quality of the runoff (what the stormwater runoff is carrying to local waterways). Therefore on-site stormwater manage control activities that qualify for a credit must address one or both of these factors. Examples of quality and quantity control and be seen in Table 11.

Table 11 - Stormwater Management Control Activities

Control Activity	Examples
Volume Control	Private Detention/Retention Basins, Rain Harvesting, Green Roofs
Water Quality Control	Rain Gardens, Permeable Pavement, Best Management Practices

7.1.3 Level of Credits

Once the control activities are defined it is necessary to determine the appropriate level of the fee reduction or credit for each activity. It is important to set the level of the credit to be consistent with the actual ability of the control activity to reduce the runoff and or improve the quality of the runoff. In other words the level of the credit should not be arbitrary but rather represent the effectiveness of handling the stormwater quantity and/or quality. Based on industry practice most volume control activities provide credits in the range of 5% to 30%, water quality controls similarly provide 5% to 30% and direct discharge credits range between 20% to 50%. Typically a maximum credit is set to ensure that all properties contribute to funding the stormwater system due to the shared benefit provided to the entire locality. Additionally, each property owner should share in the cost due to the fact that system is available and ready to receive stormwater runoff even if runoff is mitigated on-site. We recommend that the Town limit the maximum available credit to 50%. Table 12 illustrates the credit program and estimated number of residents qualifying for each credit.

Table 12 - Stormwater Credit Plan

Credit Description	Maximum Credit	# of Property Owners
Stormwater Basin	25.00%	660
Rain Barrels, Cisterns	10.00%	50
Rain Gardens, Pervious Pavement	15.00%	20
Commercial On-Site Stormwater Management Facility	50.00%	100

In conclusion, we recommend that the Town implement a stormwater fee credit program to encourage on-site stormwater mitigation similar to the program shown in Table 12. However, it also is important to note that any reduction in revenues via a stormwater fee credit will result in less revenue generated for the management of the utility and/or an increase in the necessary stormwater fee. Ultimately, the credit program needs to be set based on policy of the utility's governing body.

8. ADMINISTRATION

In order to implement a stormwater utility the Town will need to address several administrative considerations. While this section of the report does not provide an exhaustive discussion of the potential administrative considerations, its addresses those that are most common and provide a framework that will allow for a smooth implementation of a stormwater utility. Some of the considerations will require direction from the Town Staff and/or the Town Council prior to implementation. Each key consideration is discussed below.

8.1 Billing Methodology

To implement a stormwater fee the Town will need to decide on how to bill the property owners. The options available to the Town would be to impose the fee on the property tax bill, on the utility bill or to generate a separate stormwater bill. There are pluses and minuses to using each of these methods of billing the stormwater fee and all three approaches are used by utilities around the United States. Collecting the stormwater fee on the utility bill is the most common approach for a number of reasons. The fee is generating revenues for the operation of a utility and therefore it makes sense that it would be collected with other utility related fees. Conversely, placing the fee on the property tax bill implies that the fee is some form of a tax which is in direct contrast to the goal of the fee. Additionally, placing the fee on the utility bill provides greater transparency since property owners will actually see the fee as compared to the property tax bill which is often included in an escrow funded in monthly mortgage payments. As a result we recommend that the Town place the stormwater fee on the utility bill.

8.2 Appeals

The implementation of a stormwater utility and stormwater fee will require the Town to be prepared to handle challenges from property owners. As a result the Town will need to establish an appeals process. The process does not need to be complicated but should address how appeals are handled and a process for a timely resolution. The appeals process could be modeled after other utility appeals such as leaks related to the water system. After reviewing several appeals processes MFSG recommends that property owners be able to appeal their stormwater utility fee by providing data demonstrating that the actual storm water runoff be substantially different from the calculations for the customer class fee calculated. Appeals should be made to the administrator of the utility who may make individual adjustments based on available information. Fee alterations should only be made valid moving forward in billings and under no circumstances shall a credit be issued for past fees.

Should the proposed adjustment affect the charge and the calculation for all or majority of parcels in one customer class, the administrator will propose any and all adjustments to the Town Council who will consider modifying the fee. If a property owner is still unsatisfied, they may personally appeal the utility administrator's decision to the Town Council.

8.3 Maintenance of Billing Database

The billing database for the stormwater fee will be a fairly static set of data. Significant changes to the amount of impervious area on a year to year basis are not expected. However, the Town should

implement a process that captures changes made at individual properties to ensure that the appropriate stormwater fee is imposed. To aide in the accuracy of the ERUs associated with each non-residential property, Town should consider a community wide review of impervious area every five to seven years to ensure continued integrity of the billing database.

9. STORMWATER FEES, IMPACTS AND BENCHMARKING

9.1 Stormwater Fees

The establishment of the rate base and the fee structure allows for the determination of the actual stormwater fees. Applying the potential credits based on approximate affected ERU's provided by URS in Phase I also needs to be applied to the collected revenues needed per year. Table 12 presents the stormwater fee calculation.

Table 12 - Stormwater Fee Calculation - Quarterly Fee

	FY 12	FY 13	FY 14	FY 15	FY 16
Total Incremental Costs : Essential Level of Service	$68,787	$74,288	$186,963	$195,488	$237,278
Total ERU's	2,663	2,663	2,663	2,663	2,663
Recommended Quarterly Fee per ERU*	**$7.50**	**$10.50**	**$13.50**	**$16.50**	**$19.50**

**The fee has been rounded up to the nearest $0.50 as to relieve some of the administrative burden on the proposed stormwater fee.*

Table 12 presents what the stormwater fees would need to be in through FY 16 to fund the recommended essential level of service. It should be noted however that the fees show in Table 12 assume that grant funding is no longer available in future years, should grants be secured by the Town the fees would not need to be increased at the level shown in the table.

9.2 Sample Stormwater Bills

The following charts present sample bills for various customers with the stormwater fee associated with a recommended level of service. The table is intended to provide insight into how the alternative would impact various types of customers served by the Town.

Table 13 – Sample Bills

Customer Class	Impervious Area (sq. ft.)	Equivalent ERU's	FY 12 Recommended Quarterly Bill
Residential	3,200	1.0	$7.50
Residential	4,800	1.0	$7.50
Multi-Family	32,000	10.0	$75.00
Commercial/Industrial	16,000	5.0	$37.50
Commercial/Industrial	22,400	7.0	$52.50
Public/Institutional	6,400	2.0	$15.00
Public/Institutional	16,000	5.0	$37.50

While the sample bills provided in Table 13 provide some insight into how customers will be impacted, it is important to note that these are just samples.

9.3 Utility Comparison

It may be useful for the Town to compare sample bills of various local utilities with a bill calculated using proposed rates for the Town. The following Table represents a comparison of a quarterly bill for 1 ERU (equivalent residential unit), along with some other benchmarking statistics. The most current rates were used in the comparison; the bills may not reflect unknown rate increases within the comparison utilities.

Table 14 - Benchmarking Comparison

Municipality	Population	Quarterly Billing Rate Per ERU	Annual Revenue Generated
Virginia Beach, VA	433,746	$21.69	$21,058,267
Takoma Park, MD	18,027	$12.00	$350,000
Rockville, MD	60,734	$12.30	$1,927,928
Suffolk, VA	83,659	$15.72	$4,056,979
Fayetteville, NC	121,015	$9.00	$4,800,000
Chesapeake, VA	220,111	$22.05	$14,431,471
Norfolk, VA	234,220	$24.99	$3,500,000
Lewes, DE	2,932	$15.00	$200,000
Washington, DC	599,657	$8.01	$13,000,000
Centreville	3,533	$7.50	$73,188*

*Revenues include credit reductions

10. RECOMMENDATIONS

Treating stormwater as a utility is appropriate as it is how the Town treats other utilities it provides to residents (i.e. water and wastewater) and stormwater is comprised of the basic elements of any utility including asset management and service delivery. The stormwater system must be managed and provides a vital service to all residents and businesses in the Town.

10.1 Recommendations

The following recommendations were developed during the course of the stormwater utility study. The recommendations are presented to the Town's staff and Council for consideration and adoption.

- We recommend that the Town formally implement a stormwater utility for the Town as it provides many benefits to the Town including:
  - ✓ Fiscal Accountability – fees are driven by level of service and needs
  - ✓ Dependable Revenue Streams – allows for pro-active management of the system resulting in lower life-cycle costs
  - ✓ System Equity – users would contribute based on stormwater impact rather than property value and currently all tax-exempt properties pay nothing
- We recommend that the Town provide an essential level of service to allow for management and maintenance of the stormwater system. The essential level of service will provide a comparable level of service that property owners have already been receiving due to significant grant funding which will not continue indefinitely and therefore cannot be considered a reliable source of revenue.
- We recommend the Town use impervious area as the rate base for a stormwater fee for the following reasons:
  - ✓ It is the industry best practice and most common approach for a rate base.
  - ✓ Impervious area relates directly to runoff and demand on the stormwater system and is easily measured and verified.
  - ✓ The use of impervious area has been upheld in court cases regarding rate base.
- We recommend the Town implement the a stormwater fee associated with providing an essential level of service to residents of the Town.

Table 15 – Recommended Quarterly Fee per ERU

	FY 12
Quarterly Fee per ERU (Equivalent Residential Unit)*	$7.50

**1 ERU equates to 3,200 square feet of impervious area*

- We recommend that the Town implement a credit program to encourage on-site stormwater management and to assist in the differentiation of a fee from a tax as property owners can reduce their fee.

- We recommend that the Town impose the stormwater fee on a quarterly basis and be represented on the utility bill, similar to water and sewer charges.

- We recommend the Town exempt public roads from the stormwater fee.

Stormwater Utility Phase #2
Created by: Municipal & Financial Services Group

Schedule

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SCHEDULE 1 - ASSUMPTIONS

Inflation Factors	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Salaries	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
Energy (Fuel)	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%
Supplies	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
Maintenance	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
Low Impact Development Project Maintenance	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%

Full Time Employee	Salary and Benefits
Field Employee	$ 50,000
Public Works Superintendent	$ 80,000
Watershed Manager	$ 100,000

Impervious Area Growth	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Single Family	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Multi-Family	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Commercial/Industrial	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Public/Institutional	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Roads	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Projected Debt Assumptions

	Debt Issuances				
	Bond 1	Bond 2	Bond 3	Bond 4	Bond 5
Fund CIP Beginning Year	0	6	11	12	13
Fund CIP Ending Year	5	10	11	12	13
Year of Issue	1	2	3	4	5
Interest Rate on Borrowings	5.00%	5.00%	5.00%	5.00%	5.00%
Debt Maturity	10	30	30	30	30
Debt Administrative Expense (% of Principal)	1.50%	1.50%	1.50%	1.50%	1.50%

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SCHEDULE 2 - OPERATING & MAINTENANCE EXPENSES

	FTE Equiv.	Employee Type	Level of Funding	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Salaries														
7010-0000 Salaries - Other			**Existing**	$66,093	$68,076	$70,118	$72,222	$74,388	$76,620	$78,918	$81,286	$83,725	$86,236	$88,823
7110-0000 Pension Expense			**Existing**	$3,059	$3,151	$3,245	$3,343	$3,443	$3,546	$3,653	$3,762	$3,875	$3,991	$4,111
7120-0000 Workman's Comp Insurance			**Existing**	$1,100	$1,133	$1,167	$1,202	$1,238	$1,275	$1,313	$1,353	$1,393	$1,435	$1,478
7130-0000 Health & Life Insurance			**Existing**	$12,013	$12,373	$12,745	$13,127	$13,521	$13,926	$14,344	$14,774	$15,218	$15,674	$16,144
7140-0000 Education, Training/Advertise			**Existing**	$20,000	$20,600	$21,218	$21,855	$22,510	$23,185	$23,881	$24,597	$25,335	$26,095	$26,878
7210-0000 Payroll Taxes - FICA			**Existing**	$5,056	$5,208	$5,364	$5,525	$5,691	$5,861	$6,037	$6,218	$6,405	$6,597	$6,795
Administration / Customer Service	0.05	Field Employee	**Level I**		$2,500	$2,575	$2,652	$2,732	$2,814	$2,898	$2,985	$3,075	$3,167	$3,262
Public Outreach			**Level I**		$2,000	$2,060	$2,122	$2,185	$2,251	$2,319	$2,388	$2,460	$2,534	$2,610
Level II Additional Staff to Manage Projects	0.10	Field Employee	**Level II**		$5,000	$5,150	$5,305	$5,464	$5,628	$5,796	$5,970	$6,149	$6,334	$6,524
Level III Additional Staff to Manage Projects	0.20	Field Employee	**Level III**		$10,000	$10,300	$10,609	$10,927	$11,255	$11,593	$11,941	$12,299	$12,668	$13,048
Supplies														
8110-0000 Repairs and Maintenance			**Existing**	$10,000	$10,300	$10,609	$10,927	$11,255	$11,593	$11,941	$12,299	$12,668	$13,048	$13,439
8191-0000 Gas, Oil, Vehicles			**Existing**	$1,100	$1,144	$1,190	$1,237	$1,287	$1,338	$1,392	$1,448	$1,505	$1,566	$1,628
6210-0000 Operating Supplies			**Existing**	$7,000	$7,210	$7,426	$7,649	$7,879	$8,115	$8,358	$8,609	$8,867	$9,133	$9,407
7455-0000 Corsica River Watershed Restoration			**Existing**	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
7530-0000 Legal			**Existing**	$1,000	$1,030	$1,061	$1,093	$1,126	$1,159	$1,194	$1,230	$1,267	$1,305	$1,344
7810-0000 Telephone			**Existing**	$1,000	$1,030	$1,061	$1,093	$1,126	$1,159	$1,194	$1,230	$1,267	$1,305	$1,344
8010-0000 Rent			**Existing**	$10,000	$10,300	$10,609	$10,927	$11,255	$11,593	$11,941	$12,299	$12,668	$13,048	$13,439
8020-0000 Electricity			**Existing**	$1,000	$1,040	$1,082	$1,125	$1,170	$1,217	$1,265	$1,316	$1,369	$1,423	$1,480
8210-0000 Printing & Duplication			**Existing**	$1,997	$2,057	$2,119	$2,182	$2,248	$2,315	$2,385	$2,456	$2,530	$2,606	$2,684
8520-0000 Lodging, Food & Travel			**Existing**	$1,425	$1,468	$1,512	$1,557	$1,604	$1,652	$1,702	$1,753	$1,805	$1,859	$1,915
8750-0000 Liability Insurance			**Existing**	$350	$361	$371	$382	$394	$406	$418	$430	$443	$457	$470
Contract Services														
7440-CSWU Contract Services - Corsica Stormwater Utility			**Existing**	$15,000										
Utility Set Up Costs			**Level I**		$15,000	$5,000								
Preparation of Drainage Inventory			**Level I**			$10,000								
Maintenance														
Maintenance of Previously completed Retrofit Projects			**Level I**		$5,000	$5,150	$5,305	$5,464	$5,628	$5,796	$5,970	$6,149	$6,334	$6,524
LID Projects Maintenance (Short term - 19 acres)			**Level II**		$12,500	$12,875	$13,261	$13,659	$14,069	$14,491	$14,926	$15,373	$15,835	$16,310
LID Projects Maintenance (Long term - 155 acres)			**Level III**							$100,001	$103,001	$106,091	$109,274	$112,552
Nonpoint Source Reduction Programs (TMDLS)			**Level II**		$10,000	$10,300	$10,609	$10,927	$11,255	$11,593	$11,941	$12,299	$12,668	$13,048
Stormwater Management Basin Maintenance			**Level III**		$100,000	$103,000	$106,090	$109,273	$112,551	$115,927	$119,405	$122,987	$126,677	$130,477
Permitting Compliance (NPDES)			**Level III**		$35,000	$36,050	$37,132	$38,245	$39,393	$40,575	$41,792	$43,046	$44,337	$45,667
Total Operating & Maintenance Expenses - Existing				**$157,193**	**$146,480**	**$150,896**	**$155,446**	**$160,133**	**$164,961**	**$169,936**	**$175,060**	**$180,340**	**$185,779**	**$191,382**
Total Operating & Maintenance Expenses - Level 1				**$157,193**	**$170,980**	**$175,681**	**$165,524**	**$170,514**	**$175,653**	**$180,949**	**$186,404**	**$192,023**	**$197,813**	**$203,777**
Total Operating & Maintenance Expenses - Level II				**$157,193**	**$198,480**	**$204,006**	**$194,699**	**$200,564**	**$206,605**	**$212,829**	**$219,240**	**$225,845**	**$232,649**	**$239,658**
Total Operating & Maintenance Expenses - Level III				**$157,193**	**$343,480**	**$353,356**	**$348,529**	**$359,009**	**$369,804**	**$480,924**	**$495,379**	**$510,268**	**$525,605**	**$541,403**
Level I - Incremental Costs					$24,500	$24,785	$10,079	$10,381	$10,692	$11,013	$11,343	$11,684	$12,034	$12,395
Level II - Incremental Costs					$52,000	$53,110	$39,253	$40,431	$41,644	$42,893	$44,180	$45,505	$46,870	$48,277
Level III - Incremental Costs					$197,000	$202,460	$193,084	$198,876	$204,843	$310,989	$320,319	$329,928	$339,826	$350,021

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SCHEDULE 3 - CAPITAL IMPROVEMENT PROJECTS

Project	Total Cost	Funding Source			Level of Funding	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
		Cash	Bond	Grants												
7440-0000 Contract Services		0%	0%	100%	**Existing**	$ 177,160										
7440-PROG Contract Services - Programmatic		0%	0%	100%	**Existing**	$ 20,000										
Future Grant Funded Contract Services		0%	0%	100%	**Existing**		$ 300,000	$ 200,000								
Replacement of Vac-tron		100%	0%	0%	**Level I**						$33,000					
Replacement of Street Sweeper		100%	0%	0%	**Level I**				$33,000	$33,000	$33,000					
LID Restoration Projects (Control of 1 inch storm event) - 19 Acres	$ 445,000	100%	0%	0%	**Level I**				$89,000	$91,670	$94,420	$97,253	$100,170			
LID Restoration Projects (Control of 1 inch storm event) - 155 Acres	$ 3,630,254	100%	0%	0%	**Level II**							$ 181,513	$ 186,958	$ 192,567	$ 198,344	$ 204,294
LID Restoration Projects (Control of 2.7 inch storm event)* - 19 Acres	$ 385,000	100%	0%	0%	**Level III**		$ 77,000	$ 79,310	$ 81,689	$ 84,140	$ 86,664					
LID Restoration Projects (Control of 2.7 inch storm event)* - 155 Acres	$ 3,140,798	100%	0%	0%	**Level III**							$ 157,040	$ 161,751	$ 166,604	$ 171,602	$ 176,750
Total Capital Improvement Projects - Level 1						**$ 197,160**	**$ 300,000**	**$ 200,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
Total Cash Funded CIP						$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total Debt Funded CIP						$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total Grant Funded CIP						$ 197,160	$ 300,000	$ 200,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total Capital Improvement Projects - Level 1						**$ -**	**$ -**	**$ -**	**$ 122,000**	**$ 124,670**	**$ 160,420**	**$ 97,253**	**$ 100,170**	**$ -**	**$ -**	**$ -**
Total Cash Funded CIP						$ -	$ -	$ -	$ 122,000	$ 124,670	$ 160,420	$ 97,253	$ 100,170	$ -	$ -	$ -
Total Debt Funded CIP						$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total Grant Funded CIP						$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total Capital Improvement Projects - Level II						**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 181,513**	**$ 186,958**	**$ 192,567**	**$ 198,344**	**$ 204,294**
Total Cash Funded CIP						$ -	$ -	$ -	$ -	$ -	$ -	$ 181,513	$ 186,958	$ 192,567	$ 198,344	$ 204,294
Total Debt Funded CIP						$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total Grant Funded CIP						$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total Capital Improvement Projects - Level III						**$ -**	**$ 77,000**	**$ 79,310**	**$ 81,689**	**$ 84,140**	**$ 86,664**	**$ 157,040**	**$ 161,751**	**$ 166,604**	**$ 171,602**	**$ 176,750**
Total Cash Funded CIP						$ -	$ 77,000	$ 79,310	$ 81,689	$ 84,140	$ 86,664	$ 157,040	$ 161,751	$ 166,604	$ 171,602	$ 176,750
Total Debt Funded CIP						$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total Grant Funded CIP						$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -

*Assumes completion of control of 1 inch storm event

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SCHEDULE 4 - PROJECTED DEBT SERVICE

Level I - Essential

Future Debt By Future Series Bond	Total Bond Amount	Year 1	2	3	4	5	6	7	8	9	10
Bond 1	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Bond 2	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Bond 3	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Bond 4	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Bond 5	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total Payment per Year		**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**

Level II - Enhanced

Future Debt By Future Series Bond	Total Bond Amount	Year 1	2	3	4	5	6	7	8	9	10
Bond 1	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Bond 2	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Bond 3	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Bond 4	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Bond 5	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total Payment per Year		**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**

Level III - Optimal

Future Debt By Future Series Bond	Total Bond Amount	Year 1	2	3	4	5	6	7	8	9	10
Bond 1	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Bond 2	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Bond 3	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Bond 4	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Bond 5	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total Payment per Year		**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**

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SCHEDULE 5 - STORMWATER UTILITY - REPAIR AND REPLACEMENT

Stormwater System		
Assumed Value of Stormwater System	$ 2,000,000	
Assumed Reinvestment Rate - Level I	100	Years
Assumed Reinvestment Rate - Level II	70	Years
Assumed Reinvestment Rate - Level III	50	Years
Asset Replacement Inflation	4.00%	

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Repair, Replacement and Rehabilitation - Level I	$20,000	$20,800	$21,632	$22,497	$23,397	$ 24,333	$ 25,306	$ 26,319	$ 27,371	$ 28,466
Repair, Replacement and Rehabilitation - Level II	$ 28,571	$ 29,714	$ 30,903	$ 32,139	$ 33,425	$ 34,762	$ 36,152	$ 37,598	$ 39,102	$ 40,666
Repair, Replacement and Rehabilitation - Level III	$ 40,000	$ 41,600	$ 43,264	$ 44,995	$ 46,794	$ 48,666	$ 50,613	$ 52,637	$ 54,743	$ 56,932

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SCHEDULE 6 - REVENUE REQUIREMENTS

Existing Level of Service

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Operating & Maintenance Expenses	$122,193	$146,480	$150,896	$155,446	$160,133	$164,961	$169,936	$175,060	$180,340	$185,779	$191,382
Grant Funded Operating and Capital Projects	$232,160	$300,000	$200,000	$0	$0	$0	$0	$0	$0	$0	$0
Cash Funded Capital Projects	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Projected Debt Service Payment	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Repair & Rehabilitation	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Revenue Requirements	**$354,353**	**$446,480**	**$350,896**	**$155,446**	**$160,133**	**$164,961**	**$169,936**	**$175,060**	**$180,340**	**$185,779**	**$191,382**
Net Revenue Requirements less Grant Funding	$122,193	$146,480	$150,896	$155,446	$160,133	$164,961	$169,936	$175,060	$180,340	$185,779	$191,382
Incremental Costs		**$24,287**	**$28,703**	**$33,253**	**$37,940**	**$42,768**	**$47,743**	**$52,867**	**$58,147**	**$63,586**	**$69,189**

Level I - Essential

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Operating & Maintenance Expenses	$122,193	$170,980	$175,681	$165,524	$170,514	$175,653	$180,949	$186,404	$192,023	$197,813	$203,777
Grant Funded Capital Projects	$232,160	$300,000	$200,000	$0	$0	$0	$0	$0	$0	$0	$0
Cash Funded Capital Projects	$0	$0	$0	$122,000	$124,670	$160,420	$97,253	$100,170	$0	$0	$0
Projected Debt Service Payment	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Repair & Rehabilitation	$0	$20,000	$20,800	$21,632	$22,497	$23,397	$24,333	$25,306	$26,319	$27,371	$28,466
Total Revenue Requirements	**$354,353**	**$490,980**	**$396,481**	**$309,156**	**$317,681**	**$359,471**	**$302,534**	**$311,880**	**$218,342**	**$225,184**	**$232,243**
Net Revenue Requirements less Grant Funding	$122,193	$190,980	$196,481	$309,156	$317,681	$359,471	$302,534	$311,880	$218,342	$225,184	$232,243
Incremental Costs		**$68,787**	**$74,288**	**$186,963**	**$195,488**	**$237,278**	**$180,341**	**$189,687**	**$96,149**	**$102,991**	**$110,050**

SCHEDULE 6 - REVENUE REQUIREMENTS

Level II - Enhanced

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Operating & Maintenance Expenses	$122,193	$198,480	$204,006	$194,699	$200,564	$206,605	$212,829	$219,240	$225,845	$232,649	$239,658
Grant Funded Capital Projects	$232,160	$300,000	$200,000	$0	$0	$0	$0	$0	$0	$0	$0
Cash Funded Capital Projects	$0	$0	$0	$122,000	$124,670	$160,420	$278,765	$287,128	$192,567	$198,344	$204,294
Projected Debt Service Payment	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Repair & Rehabilitation	$0	$28,571	$29,714	$30,903	$32,139	$33,425	$34,762	$36,152	$37,598	$39,102	$40,666
Total Revenue Requirements	**$354,353**	**$527,051**	**$433,720**	**$347,602**	**$357,372**	**$400,450**	**$526,356**	**$542,520**	**$456,010**	**$470,095**	**$484,619**
Net Revenue Requirements less Grant Funding	$122,193	$227,051	$233,720	$347,602	$357,372	$400,450	$526,356	$542,520	$456,010	$470,095	$484,619
Incremental Costs		**$104,858**	**$111,527**	**$225,409**	**$235,179**	**$278,257**	**$404,163**	**$420,327**	**$333,817**	**$347,902**	**$362,426**

Level III - Optimal

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Operating & Maintenance Expenses	$122,193	$343,480	$353,356	$348,529	$359,009	$369,804	$480,924	$495,379	$510,268	$525,605	$541,403
Grant Funded Capital Projects	$232,160	$300,000	$200,000	$0	$0	$0	$0	$0	$0	$0	$0
Cash Funded Capital Projects	$0	$77,000	$79,310	$203,689	$208,810	$247,084	$435,805	$448,879	$359,170	$369,946	$381,044
Projected Debt Service Payment	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Repair & Rehabilitation	$0	$40,000	$41,600	$43,264	$44,995	$46,794	$48,666	$50,613	$52,637	$54,743	$56,932
Total Revenue Requirements	**$354,353**	**$760,480**	**$674,266**	**$595,483**	**$612,813**	**$663,682**	**$965,396**	**$994,871**	**$922,076**	**$950,293**	**$979,379**
Net Revenue Requirements less Grant Funding	$122,193	$460,480	$474,266	$595,483	$612,813	$663,682	$965,396	$994,871	$922,076	$950,293	$979,379
Incremental Costs		**$338,287**	**$352,073**	**$473,290**	**$490,620**	**$541,489**	**$843,203**	**$872,678**	**$799,883**	**$828,100**	**$857,186**

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SCHEDULE 7 - ERU CALCULATIONS

ERU size 3,200 Square feet

Impervious Area (sq. ft)	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Single Family	4,267,138	4,267,138	4,267,138	4,267,138	4,267,138	4,267,138	4,267,138	4,267,138	4,267,138	4,267,138
Multi-Family	162,043	162,043	162,043	162,043	162,043	162,043	162,043	162,043	162,043	162,043
Commercial/Industrial	2,691,137	2,691,137	2,691,137	2,691,137	2,691,137	2,691,137	2,691,137	2,691,137	2,691,137	2,691,137
Public/Institutional	1,400,018	1,400,018	1,400,018	1,400,018	1,400,018	1,400,018	1,400,018	1,400,018	1,400,018	1,400,018
Roads	3,957,426	3,957,426	3,957,426	3,957,426	3,957,426	3,957,426	3,957,426	3,957,426	3,957,426	3,957,426
Total	**12,477,762**	**12,477,762**	**12,477,762**	**12,477,762**	**12,477,762**	**12,477,762**	**12,477,762**	**12,477,762**	**12,477,762**	**12,477,762**

ERU's										
Single Family	1,333	1,333	1,333	1,333	1,333	1,333	1,333	1,333	1,333	1,333
Multi-Family	51	51	51	51	51	51	51	51	51	51
Commercial/Industrial	841	841	841	841	841	841	841	841	841	841
Public/Institutional	438	438	438	438	438	438	438	438	438	438
Roads	1,237	1,237	1,237	1,237	1,237	1,237	1,237	1,237	1,237	1,237
Total	**3,899**	**3,899**	**3,899**	**3,899**	**3,899**	**3,899**	**3,899**	**3,899**	**3,899**	**3,899**

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SCHEDULE 8 - RATE ANALYSIS

Customer Class	Exempt (YES/NO)
Single Family	NO
Multi-Family	NO
Commercial/Industrial	NO
Public/Institutional	NO
Roads	YES

Total ERU's	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Single Family	1,333	1,333	1,333	1,333	1,333	1,333	1,333	1,333	1,333	1,333
Multi-Family	51	51	51	51	51	51	51	51	51	51
Commercial/Industrial	841	841	841	841	841	841	841	841	841	841
Public/Institutional	438	438	438	438	438	438	438	438	438	438
Roads	0	0	0	0	0	0	0	0	0	0
Total	**2,663**	**2,663**	**2,663**	**2,663**	**2,663**	**2,663**	**2,663**	**2,663**	**2,663**	**2,663**

Alternative 1 - Flat Rate

Monthly Rate per ERU	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Single Family	$5.00	$5.50	$6.05	$6.66	$7.32	$8.05	$8.86	$9.74	$10.72	$11.79
Multi-Family	$5.00	$5.50	$6.05	$6.66	$7.32	$8.05	$8.86	$9.74	$10.72	$11.79
Commercial/Industrial	$5.00	$5.50	$6.05	$6.66	$7.32	$8.05	$8.86	$9.74	$10.72	$11.79
Public/Institutional	$5.00	$5.50	$6.05	$6.66	$7.32	$8.05	$8.86	$9.74	$10.72	$11.79
Roads	$5.00	$5.50	$6.05	$6.66	$7.32	$8.05	$8.86	$9.74	$10.72	$11.79

Annual Revenues Collected										
Single Family	$80,009	$88,010	$96,811	$106,492	$117,141	$128,855	$141,741	$155,915	$171,506	$188,657
Multi-Family	$3,038	$3,342	$3,676	$4,044	$4,448	$4,893	$5,383	$5,921	$6,513	$7,164
Commercial/Industrial	$50,459	$55,505	$61,055	$67,161	$73,877	$81,264	$89,391	$98,330	$108,163	$118,979
Public/Institutional	$26,250	$28,875	$31,763	$34,939	$38,433	$42,276	$46,504	$51,154	$56,270	$61,897
Roads	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Potential Revenue Collected w/ No Credits	**$159,756**	**$175,732**	**$193,305**	**$212,636**	**$233,899**	**$ 257,289**	**$ 283,018**	**$ 311,320**	**$ 342,452**	**$ 376,697**
(Credits)	**($13,380)**	**($14,718)**	**($16,190)**	**($17,809)**	**($19,590)**	**$ (21,549)**	**$ (23,703)**	**$ (26,074)**	**$ (28,681)**	**$ (31,549)**
Net Revenue Collected	**$146,376**	**$161,014**	**$177,115**	**$194,827**	**$214,310**	**$ 235,740**	**$ 259,315**	**$ 285,246**	**$ 313,771**	**$ 345,148**

Alternative 2 - Break-even Flat Rate

Existing Level of Service	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Total Incremental Costs	$24,287	$28,703	$33,253	$37,940	$42,768	$47,743	$52,867	$58,147	$63,586	$69,189
Monthly Rate per ERU	**$1.00**	**$1.00**	**$1.50**	**$1.50**	**$1.50**	**$1.50**	**$2.00**	**$2.00**	**$2.00**	**$2.50**
Potential Revenues Collected										
Single Family	$16,002	$16,002	$24,003	$24,003	$24,003	$24,003	$32,004	$32,004	$32,004	$40,004
Multi-Family	$608	$608	$911	$911	$911	$911	$1,215	$1,215	$1,215	$1,519
Commercial/Industrial	$10,092	$10,092	$15,138	$15,138	$15,138	$15,138	$20,184	$20,184	$20,184	$25,229
Public/Institutional	$5,250	$5,250	$7,875	$7,875	$7,875	$7,875	$10,500	$10,500	$10,500	$13,125
Roads	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Potential Revenue Collected w/ No Credits	**$31,951**	**$31,951**	**$47,927**	**$47,927**	**$47,927**	**$47,927**	**$63,903**	**$63,903**	**$63,903**	**$79,878**
(Credits)	**($2,676)**	**($2,676)**	**($4,014)**	**($4,014)**	**($4,014)**	**($4,014)**	**($5,352)**	**($5,352)**	**($5,352)**	**($6,690)**
Net Revenue Collected	**$29,275**	**$29,275**	**$43,913**	**$43,913**	**$43,913**	**$43,913**	**$58,551**	**$58,551**	**$58,551**	**$73,188**

Town of Centreville
Stormwater Utility Study Phase II

SCHEDULE 8 - RATE ANALYSIS

Level I - Essential										
Level I - User Defined										
Monthly Rate per ERU	**$2.50**	**$3.50**	**$4.50**	**$5.50**	**$6.50**	**$7.00**	**$7.00**	**$7.00**	**$7.00**	**$7.00**
Potential Revenues Collected										
Single Family	$40,004	$56,006	$72,008	$88,010	$104,011	$112,012	$112,012	$112,012	$112,012	$112,012
Multi-Family	$1,519	$2,127	$2,734	$3,342	$3,950	$4,254	$4,254	$4,254	$4,254	$4,254
Commercial/Industrial	$25,229	$35,321	$45,413	$55,505	$65,596	$70,642	$70,642	$70,642	$70,642	$70,642
Public/Institutional	$13,125	$18,375	$23,625	$28,875	$34,125	$36,750	$36,750	$36,750	$36,750	$36,750
Roads	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Potential Revenue Collected w/ No Credits	**$79,878**	**$111,829**	**$143,781**	**$175,732**	**$207,683**	**$223,659**	**$223,659**	**$223,659**	**$223,659**	**$223,659**
(Credits)	**($6,690)**	**($9,366)**	**($12,042)**	**($14,718)**	**($17,394)**	**($18,732)**	**($18,732)**	**($18,732)**	**($18,732)**	**($18,732)**
Net Revenue Collected	**$73,188**	**$102,463**	**$131,739**	**$161,014**	**$190,289**	**$204,927**	**$204,927**	**$204,927**	**$204,927**	**$204,927**
Level II - Enhanced										
Total Incremental Costs	$104,858	$111,527	$225,409	$235,179	$278,257	$404,163	$420,327	$333,817	$347,902	$362,426
Monthly Rate per ERU	**$3.50**	**$3.50**	**$7.50**	**$7.50**	**$9.00**	**$13.00**	**$13.50**	**$13.50**	**$13.50**	**$13.50**
Annual Revenues Collected										
Single Family	$56,006	$56,006	$120,013	$120,013	$144,016	$208,023	$216,024	$216,024	$216,024	$216,024
Multi-Family	$2,127	$2,127	$4,557	$4,557	$5,469	$7,900	$8,203	$8,203	$8,203	$8,203
Commercial/Industrial	$35,321	$35,321	$75,688	$75,688	$90,826	$131,193	$136,239	$136,239	$136,239	$136,239
Public/Institutional	$18,375	$18,375	$39,376	$39,376	$47,251	$68,251	$70,876	$70,876	$70,876	$70,876
Roads	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Potential Revenue Collected w/ No Credits	**$111,829**	**$111,829**	**$239,634**	**$239,634**	**$287,561**	**$415,366**	**$431,342**	**$431,342**	**$431,342**	**$431,342**
(Credits)	**($9,366)**	**($9,366)**	**($20,070)**	**($20,070)**	**($24,084)**	**($34,788)**	**($36,126)**	**($36,126)**	**($36,126)**	**($36,126)**
Net Revenue Collected	**$102,463**	**$102,463**	**$219,564**	**$219,564**	**$263,477**	**$380,578**	**$395,216**	**$395,216**	**$395,216**	**$395,216**
Level III - Optimal										
Total Incremental Costs	$338,287	$352,073	$473,290	$490,620	$541,489	$843,203	$872,678	$799,883	$828,100	$857,186
Monthly Rate per ERU	**$11.00**	**$11.50**	**$15.00**	**$15.50**	**$17.00**	**$26.50**	**$27.50**	**$27.50**	**$27.50**	**$27.50**
Annual Revenues Collected										
Single Family	$176,019	$184,020	$240,027	$248,027	$272,030	$424,047	$440,049	$440,049	$440,049	$440,049
Multi-Family	$6,684	$6,988	$9,115	$9,419	$10,330	$16,103	$16,711	$16,711	$16,711	$16,711
Commercial/Industrial	$111,009	$116,055	$151,376	$156,422	$171,560	$267,432	$277,524	$277,524	$277,524	$277,524
Public/Institutional	$57,751	$60,376	$78,751	$81,376	$89,251	$139,127	$144,377	$144,377	$144,377	$144,377
Roads	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Potential Revenue Collected w/ No Credits	**$351,464**	**$367,439**	**$479,269**	**$495,245**	**$543,171**	**$846,708**	**$878,660**	**$878,660**	**$878,660**	**$878,660**
(Credits)	**($29,436)**	**($30,774)**	**($40,140)**	**($41,478)**	**($45,492)**	**($70,914)**	**($73,590)**	**($73,590)**	**($73,590)**	**($73,590)**
Net Revenue Collected	**$322,028**	**$336,665**	**$439,129**	**$453,767**	**$497,679**	**$775,794**	**$805,070**	**$805,070**	**$805,070**	**$805,070**

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SCHEDULE 9 - CREDIT ANALYSIS

Credit Description	Credit Allowed	Assumed Participation (ERUs)									
		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Stormwater Basin	25.00%	660	660	660	660	660	660	660	660	660	660
Rain Barrels, Cisterns	10.00%	50	50	50	50	50	50	50	50	50	50
Rain Gardens, Pervious Pavement	15.00%	20	20	20	20	20	20	20	20	20	20
Commercial On-Site Stormwater Management Facility	50.00%	100	100	100	100	100	100	100	100	100	100

Alternative 1	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Flat Rate per ERU	$ 5.00	$ 5.50	$ 6.05	$ 6.66	$ 7.32	$ 8.05	$ 8.86	$ 9.74	$ 10.72	$ 11.79
Credit Reduction	*$ 13,380*	*$ 14,718*	*$ 16,190*	*$ 17,809*	*$ 19,590*	*$ 21,549*	*$ 23,703*	*$ 26,074*	*$ 28,681*	*$ 31,549*
Alternative 2										
Existing Level of Service - Unit Rate per ERU	$ 1.00	$ 1.00	$ 1.50	$ 1.50	$ 1.50	$ 1.50	$ 2.00	$ 2.00	$ 2.00	$ 2.50
Credit Reduction	*$ 2,676*	*$ 2,676*	*$ 4,014*	*$ 4,014*	*$ 4,014*	*$ 4,014*	*$ 5,352*	*$ 5,352*	*$ 5,352*	*$ 6,690*
Level I - Essential - Unit Rate per ERU	$ 2.50	$ 2.50	$ 6.00	$ 6.50	$ 7.50	$ 7.50	$ 7.50	$ 7.50	$ 7.50	$ 7.50
Credit Reduction	*$6,690*	*$6,690*	*$16,056*	*$17,394*	*$20,070*	*$ 20,070*	*$ 20,070*	*$ 20,070*	*$ 20,070*	*$ 20,070*
Level I - Essential - Unit Rate per ERU - User Defined	$ 2.50	$ 3.50	$ 4.50	$ 5.50	$ 6.50	$ 7.00	$ 7.00	$ 7.00	$ 7.00	$ 7.00
Credit Reduction	*$6,690*	*$9,366*	*$12,042*	*$14,718*	*$17,394*	*$18,732*	*$18,732*	*$18,732*	*$18,732*	*$18,732*
Level II - Enhanced - Unit Rate per ERU	$ 3.50	$ 3.50	$ 7.50	$ 7.50	$ 9.00	$ 13.00	$ 13.50	$ 13.50	$ 13.50	$ 13.50
Credit Reduction	*$ 9,366*	*$ 9,366*	*$ 20,070*	*$ 20,070*	*$ 24,084*	*$ 34,788*	*$ 36,126*	*$ 36,126*	*$ 36,126*	*$ 36,126*
Level III - Optimal - Unit Rate per ERU	$ 11.00	$ 11.50	$ 15.00	$ 15.50	$ 17.00	$ 26.50	$ 27.50	$ 27.50	$ 27.50	$ 27.50
Credit Reduction	*$ 29,436*	*$ 30,774*	*$ 40,140*	*$ 41,478*	*$ 45,492*	*$ 70,914*	*$ 73,590*	*$ 73,590*	*$ 73,590*	*$ 73,590*

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SCHEDULE 10 - RATE SUMMARY

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Alternative 1										
Monthly Flat Rate	**$5.00**	**$5.50**	**$6.05**	**$6.66**	**$7.32**	**$8.05**	**$8.86**	**$9.74**	**$10.72**	**$11.79**
Alternative 2										
Current Level Monthly Charge per ERU	**$1.00**	**$1.00**	**$1.50**	**$1.50**	**$1.50**	**$1.50**	**$2.00**	**$2.00**	**$2.00**	**$2.50**
Level I - Essential Monthly Charge per ERU	**$2.50**	**$2.50**	**$6.00**	**$6.50**	**$7.50**	**$7.50**	**$7.50**	**$7.50**	**$7.50**	**$7.50**
Level I - Essential - User Defined Monthly Charge per ERU	**$2.50**	**$3.50**	**$4.50**	**$5.50**	**$6.50**	**$7.00**	**$7.00**	**$7.00**	**$7.00**	**$7.00**
Level II - Enhanced Monthly Charge per ERU	**$3.50**	**$3.50**	**$7.50**	**$7.50**	**$9.00**	**$13.00**	**$13.50**	**$13.50**	**$13.50**	**$13.50**
Level III - Optimal Monthly Charge per ERU	**$11.00**	**$11.50**	**$15.00**	**$15.50**	**$17.00**	**$26.50**	**$27.50**	**$27.50**	**$27.50**	**$27.50**

Town of Centreville
Stormwater Utility Study Phase II

SCHEDULE 11 - MONTHLY SAMPLE BILLS - YEAR 1

	#	#	%	$	#	#
Residential	1.0	$ 5.00	$ 2.50	$ 2.50	$ 3.50	$ 11.00
Residential	1.5	$ 7.50	$ 3.75	$ 3.75	$ 5.25	$ 16.50
Multi-Family	0.8	$ 3.75	$ 1.88	$ 1.88	$ 2.63	$ 8.25
Multi-Family	10.0	$ 50.00	$ 25.00	$ 25.00	$ 35.00	$ 110.00
Commercial/Industrial	5.0	$ 25.00	$ 12.50	$ 12.50	$ 17.50	$ 55.00
Commercial/Industrial	7.0	$ 35.00	$ 17.50	$ 17.50	$ 24.50	$ 77.00
Public/Institutional	2.0	$ 10.00	$ 5.00	$ 5.00	$ 7.00	$ 22.00
Public/Institutional	5.0	$ 25.00	$ 12.50	$ 12.50	$ 17.50	$ 55.00