

Creating a Stormwater Utility

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This article originally appeared in the September 1992 issue of Public Works? , published by Public Works Journal Corporation, 200 South Broad Street, Ridgewood, NJ 07450. ? 1992 Public Works Journal Corporation. All Rights Reserved.

ST. PETERSBURG has long been viewed as a desirable place to vacation or live. Its superb climate, availability of beaches, numerous land and water recreational activities, housing availability, educational opportunities, job opportunities, and access to the fine arts have all played major roles in the creation of this image. Based on this image, St. Petersburg experienced several decades of unprecedented growth and has become an active community of approximately 250,000 people. The citizens have become accustomed to a "quality of life" that is second to none.

This high quality of life is a precious resource and when it is threatened, St. Petersburg has historically shown the ability to devise solutions to end those threats. In the late 1980s, the city became increasingly aware of the threat to the quality of life caused by stormwater runoff. In 1989, the City Council made a very important decision to adopt a stormwater utility to deal with the problems created by stormwater runoff.

Stormwater management costs, along with other public works improvements, have traditionally relied on ad valorem tax revenues for financing. This practice has faced increased resistance in recent years and the competition for available municipal general revenues has left such activities without adequate levels of funding. Concurrently, there has been a gradual shift in funding of municipal operations from the property tax base to user fees. The stormwater utility is an effective alternative to traditional financing for stormwater management. However, it is essential to involve citizens, homeowner's associations, and community action groups in the development of such a utility to ensure that all understand the need and reasons for an added user fee. The positive community response and strong support of the initiative in St. Petersburg was a direct result of citizen involvement and public education. The process used and the experience gained in St. Petersburg may be helpful in other municipalities considering the creation of a stormwater utility.

What is the Problem?

The first step in addressing the issue was being able to define the problem. St. Petersburg described the problem as stormwater runoff. Runoff that causes *pollution* and runoff that causes *flooding*. The bottom line to this problem like so many other problems was money, or more accurately stated, the lack of money to address pollution and flooding caused by stormwater runoff.

Recently, a comprehensive plan was developed by the city's Planning Department to help chart the course for the community into the next century. A major section in the plan was devoted to the current and future issues relating to the safe and effective removal and treatment of stormwater. With the use of a Master Storm Drainage Plan developed by the city's Engineering Department, 120 drainage projects were identified at an estimated construction cost in excess of \$100 million. The projects included the enlargement and/or replacement of large and small stormwater collection piping systems, ditches, and channels necessary to make streets passable during rain events and to keep homes dry during exceedingly large storms.

Flooding, however, was just one component to the stormwater problem. Growth in the community created more sources of pollution such as oil, grease, and heavy metals from vehicle emissions; yard wastes, fertilizers, and nutrients from new households, parks, and golf courses that are washed into the lakes and bays. This resulted in a cumulative effect of diminishing their biological, recreational, commercial, and esthetic value. This environmental concern has not been going unnoticed and various federal, state, and local authorities have created and passed

mandates directed at solving this problem. St. Petersburg's challenge was and will continue to be to satisfy the requirements of these mandates as well as to maintain the "quality of life" citizens have become accustomed to and demand. Two components of the stormwater problem, "quantity" (or flooding) and "quality" (or pollution) were identified. There was, however, a third problem common to a solution of the "quantity and quality" problems which was perhaps the most important. The lack of available funding was a major obstacle to the completion of the identified drainage improvements and satisfying the requirements of mandates to clean up and protect water resources.

Great effort was given to studies that identified the components of the newest threat to the quality of life. In summary, stormwater runoff created both quantity and quality problems, either of which can be effectively addressed without a dedicated source of revenue. The next step was to devise a system that could adequately solve the identified problem. In this instance, the proposed system was a stormwater utility.

Prior to selecting the stormwater utility as a funding method, the city discussed the problems of stormwater management in several workshops. Through these informal work sessions, the governing body and administration established objectives for selecting a funding source.

The City Council asked the administration to identify the various funding methods available and to evaluate each of the methods based on the established objectives for the ideal funding method. After reviewing numerous methods for funding, the administration identified six funding options for consideration. The funding alternatives were: 1) Drainage Capital Improvement Program, financed by the General Fund; 2) General Obligation Bonds, financed by ad valorem taxes; 3) Revenue Bonds, financed by existing ad valorem revenue taxes; 4) Special Assessment Bonds, financed by assessments against benefited property; 5) Municipal Service Taxing Unit, financed by ad valorem taxes against property benefited; and 6) Stormwater Utility, financed by user charges.

After researching the other five alternatives, the stormwater utility was selected over other alternative funding options as being most representative of the ideal funding source. The stormwater utility would be easy to implement; would represent an equitable allocation of costs; would provide a uniform and consistent source of revenue; would address capital funding needs as well as annual operating and maintenance needs; would not result in an increase in property taxes; would not negatively impact the city's debt capacity; and would be based on a "cost of service" basis. This new utility would be funded by a fee similar to water and sewer fees and it would be based on a property owner's contribution to the stormwater problem.

What Is a Stormwater Utility?

In the most complete sense, a stormwater utility is an organization that provides for stormwater system operations and maintenance including collection, disposal, and treatment; provides capital improvements including both new construction and reconstruction of existing facilities; and provides a dedicated revenue source. Simply stated, a stormwater utility is an organization complete with its own revenue source that collects, treats, and disposes of stormwater while at the same time maintaining the current and future collection systems. In addition, this organization will be capable of addressing new issues such as the environmental mandates that arise with respect to stormwater in the future. Most importantly, it is designed to provide an all-important revenue source dedicated to solving the problems related to stormwater.

St. Petersburg's history of solving problems that pose threats to its quality of life is well known. In the mid 1970s, St. Petersburg faced the dual threat of dwindling sources of potable water and the increased pollution of Tampa Bay from the discharge of treated wastewater. This dual problem was solved by the creation of the country's largest reclaimed water system. It is estimated that the use of this system will provide St. Petersburg with an adequate water supply through the year 2020. In addition, this system has ended St. Petersburg's discharge of wastewater into Tampa Bay. St. Petersburg is the only city in the region to have this distinction. The key to this success was funding from a federal grant in conjunction with a dedicated revenue source supplied by water and sewer fees. A computerized traffic signal system that will operate traffic signals based on the flow of traffic is being installed to help ease traffic congestion. Again, this solution is being fueled by a dedicated revenue source; in this case, the Local Option Gas Tax which is designed to be used for traffic concerns only. A key to addressing the problems that

threaten the quality of life has been a dedicated source of revenue. The key to solving the stormwater runoff threat was no different.

Why Do We Need a Stormwater Utility?

Two of the first questions asked by citizens following the announced proposal to create a new fee were “why do we need it?” and “what will I get for my money?” The first benefit was an increase in the activities needed to maintain the current system. It was estimated that \$10 million in deferred stormwater maintenance such as dredging ditches, repairing damaged pipes, catch basins, and flap gates, was needed. Secondly, an increased frequency of activities such as street sweeping, cleaning catch basins, machine and hand cleaning of ditches, and slope mowing was needed to assure the effective operation of the nearly 60 miles of open ditches, 71 lakes, 12,000 catch basins, and 250 miles of storm sewer that make up the system. In addition to an increase in the activities associated with the operations and maintenance of the storm water removal system, the rate of capital improvements to the system would increase. With a dedicated revenue source, the 120 needed capital improvement projects identified in the Master Storm Drainage Plan would be prioritized, budgeted, and scheduled for completion.

Until recently, the funding of stormwater needs at the local level has generally been discretionary. However, local, state, and federal mandates have been adopted that require that the problems created by stormwater runoff be addressed. St. Petersburg was no exception and steps were required to position the city financially to deal with the requirements. The city’s own Comprehensive Plan, Florida’s Management and Storage of Surface Water Act, and the Water Quality Act of 1987 established the city’s requirements to address the problems of stormwater pollution and flooding.

Following a lengthy review of the stormwater problems and identifying the city’s needs in terms of dollars, evaluation of numerous alternate methods of funding and the mandates facing the city, the City Council adopted a Resolution of Intent to adopt the stormwater utility concept. The city administration was authorized to proceed with the development of the utility and to present a final report to the City Council for consideration and possible adoption.

The administration reviewed approximately 50 different stormwater utility plans in existence at the time, 14 active utilities in the state of Florida. Following an exhaustive review of stormwater utilities, the administration selected the city of Tallahassee’s plan as a model to follow in structuring its own plan.

How Are Costs Allocated?

There are many variables that affect or contribute to the amount of stormwater runoff generated. Those variables include the type of soil, the slope of the land, the detention of stormwater, the retention of stormwater, and impervious surfaces. Research showed that St. Petersburg was nearly all flat with sandy soil, had little to no detention or retention, and insignificant differences in vegetation. Impervious surface created by improvements such as buildings, driveways, gazebos, patios, sidewalks, and streets was determined to be the only significant variable in determining a property’s contribution of stormwater runoff and thus the basis for establishing a fair and equitable rate. All parcels of land in the city were assigned to one of six land classifications (single-family, multifamily, commercial, institutional, industrial, and governmental). The number of parcels and the amount of impervious surface in each land classification was determined.

Initial determination of the amount of impervious area in each land classification was obtained from the Pinellas county Tax Appraiser’s property records. The information in the tax appraiser’s database was available via the Master Appraisal File and the Name-Address-Legal file and was the source of most of the needed raw data. The city’s geographic information system was used to digitize lots on aerial photos to complete the data since driveways and sidewalks were not included in the tax assessor’s data base. Actual field measurements were taken on a statistically significant sample of the properties to confirm the digitizing results. See Table 1.

Table 1- Summary of Impervious Area Land Use

Land Use	Number Of Parcels	Impervious Area (Square Feet)	Average Impervious Area (Square Feet)
Single Family	68,075	131,257,363	2,719
Multifamily	5,719	35,394,816	6,189
Commercial	2,863	52,267,749	18,256
Institutional	477	10,313,556	21,622
Industry	595	11,154,744	18,747
Government	172	11,928,112	69,349

Ideally, cost allocation should be based on a lowest denominator that is common to all properties and by which all properties could be referenced. Single-family residences represented 87 percent of all parcels and 52 percent of the impervious surface in St. Petersburg. Additionally, single-family parcels had the lowest average square footage of all the land classifications. Therefore, this land classification was selected as an ideal reference point for the stormwater utility fee. By extracting information from the county tax assessor's records, employing aerial photography, and digitizing technologies in conjunction with actual field measurements of a statistical sample set, it was determined that the average impervious/hard surface area for a single-family residence in St. Petersburg was 2,719 sq ft. This figure, termed a single family unit or SFU, was established as the lowest common denominator to which all properties would be referenced and was the basis for charging the stormwater utility fee. Quite simply, all single-family residences would be charged a flat fee based on one SFU and all other properties will be charged based on the amount of actual impervious surface. For example, if it was determined that a business has 5,438 sq ft of impervious surface, the business would be charged for two SFUs because the business contributes twice as much to the problem as the average single family residence. The stormwater utility fee would be included as a separate item on the monthly utility bill already received by citizens of the community.

It is important to note that most stormwater utilities are based on an Equivalent Residential Unit (ERU). The ERU generally is based on the average impervious area of all residential units combined (single-family, multifamily, mobile homes, apartments, condominiums, etc.) However, St. Petersburg based the fee on an SFU and did not include other types of residential units in establishing the fee base. Information obtained from the tax appraiser's database indicated that the average impervious area for residential property other than single-family varied significantly from one property to the next, and also was considerably less than the average impervious area of the single-family classification. As an example, the average impervious area per apartment unit was calculated to be 27 percent of the average impervious area of a single-family unit. Based on this information and the objective to provide an equitable allocation of cost, the decision was made to exclude non-single-family residential property from the fee base calculation.

The establishment of the fee base as 2,719 sq ft (1SFU) provided a common base and reference for all property classifications. Since the SFU value was based on the average impervious area of a single-family unit, all single-family property was assigned a value of 1 SFU. All other properties were actually field measured to determine the impervious area of each parcel. The measured impervious area of each parcel was divided by 1 SFU (2,719 sq ft) to determine the total number of SFUs for each property (Table 2).

A total of 112,595 SFUs was determined by dividing the amount of impervious surface by 2,719 sq ft and adding the SFUs for each land classification. The total SFUs were adjusted downward for bad debts, appeals, and adjustments. In St. Petersburg, a value of 15 percent was used resulting in total estimated SFUs of approximately 95,844.

Table 2 -Summary of Land Use by Single Family Units

Land Use	Number Of Parcels	Average Impervious Area (Square Feet)	Number Of SFUs
Single Family	68,075	2,719	68,075
Multifamily	5,719	6,189	13,017
Commercial	2,863	18,255	19,222
Institutional	477	21,622	3,793
Industry	595	18,747	4,102
Government	172	69,30	4,386

How Are Fees Calculated?

The establishment of the stormwater fee (or rate pa SFU) should be based on the needs of the utility. In St. Petersburg's case, operation and maintenance costs and capital improvement needs were the major factors in establishing the rate. Prior to adoption of the stormwater utility, the city's stormwater operation and maintenance needs were financed through the Public Utility Fund. The stormwater charges were based on the water meter size and totaled \$1.31 per equivalent 5/8 in. meter. This charge would have generated annual revenues of \$2,047,500. The stormwater utility fee for operations and maintenance was calculated by allocating the cost of existing operation and maintenance (\$2,047,000) to 95,844 SFUs, resulting in an SFU monthly charge of \$1.78. Start-up costs and subsequent annual administrative costs were estimated at \$100,000 for an SFU charge of \$0.09, and street sweeping was transferred from the general fund to the stormwater utility at an estimated cost of \$0.44 per SFU. The sum of these items totaled \$2.31 per SFU, which was established as the fee needed to support the operations and maintenance portion of the city's stormwater management program.

The funding for stormwater capital improvements was discussed at great length by the City Council. The Council reviewed the list of 120 master drainage projects and the \$100 million cost estimate along with projections of cost to deal with the quality issues of stormwater runoff. Table 3, revenue projections based on different fees and number of SFUs , was reviewed by the Council.

Table 3 -Revenue Projections, Various Rates per SFU

SFUs	\$1.00	\$1.00	\$3.00	\$4.00
95,000	\$1,140,000	\$2,280,000	\$3,420,000	\$4,560,000
100,000	\$1,200,000	\$2,400,000	\$3,600,000	\$4,800,000
105,000	\$1,260,000	\$2,520,000	\$3,780,000	\$5,040,000
110,000	\$1,320,000	\$2,640,000	\$3,960,000	\$5,280,000

Based on the city's capital improvement needs and estimated costs, the City Council established a stormwaeter capital improvements fee of \$2.19 to be added to the operations and maintenance fee of \$2.31. The capital improvement fee was estimated to generate sufficient revenues to allow the city to complete approximately 40 percent of the projects over a ten year period. In effect, the new fee would allow the city to move forward with its highest priority projects in a short period of time.

The City Council adopted the stormwater utility ordinance and monthly rate of \$4.50 per SFU on November 30, 1989 with an effective date of January 1, 1990. The utility was to be implemented in three phases. The initial phase

included all parcels with an active water account. This allowed the city to begin immediate billing of these parcels with minor modifications to the billing and collecting system. The second phase of implementation included developed parcels with inactive water accounts and the final phase included developed properties with no water account.

A system to solve the problem and a dedicated revenue source to fund this system has been established. The result has been an increase in the activities needed to maintain the current system. Backlogged maintenance such as dredging ditches, repairing damaged pipes, catch basins, and flap gates is underway. The frequency of activities such as street sweeping, cleaning catch basins, machine and hand cleaning of ditches, and slope mowing, needed to assure the effective operation of the nearly 60 miles of open ditches, 71 lakes, 12,000 catch basins, and 250 miles of storm sewer that make up the system has been increased. In addition to an increase in the activities associated with the operations and maintenance of the storm water removal system, the rate of capital improvements to the system has increased significantly. With a dedicated revenue source, the 120 needed capital improvement projects identified in the Master Storm Drainage Plan have been prioritized, budgeted, and scheduled for construction.

The merit of a plan sometimes has little to do with its acceptability. The successful adoption and implementation of a new stormwater user fee was critical to the city's future and hinged on public acceptance. It was the city's belief that public involvement, education and information was the key to the success of the new utility proposal. The city's education and information efforts were highlighted by the development of an eight minute videotape describing the stormwater utility in detail. The videotape was aired approximately 175 times on the local government television channel and was individually presented at numerous group meetings throughout the community. To supplement the video, the administration solicited opportunities to speak at various organization meetings that included: Council of Neighborhood Associations, Chamber of Commerce, Clergy Association, Pinellas Industrial Council, Pinellas and Bay Area Apartment Associations, Florida Manufactured Housing Association, St. Petersburg Junior College, University of South Florida, Eckerd College, Pinellas County School Board, and numerous Neighborhood Associations. A stormwater informational brochure was developed and distributed to individuals at the group meetings and placed at selected locations throughout the community. Special training was conducted for the city's customer service representatives and a phone bank "hot line" was established to deal specifically with questions regarding the new utility. In addition, more than 200 individual letters were mailed in response to citizen inquiries. The degree of public acceptance was evidenced by the overwhelming support for the new utility at the final reading and public hearing of the ordinance creating the stormwater utility.

Residents and visitors alike have grown accustomed to a high quality of life in the "Sunshine City" and St. Petersburg has grown at a tremendous rate. While encouraged by the benefits this growth brings, the city also is faced with the threats growth creates to a high quality of life. New streets, sidewalks, homes, businesses, and schools created new sources for increasing quantities of stormwater runoff that causes flooding of intersections, avenues, and streets. On occasion, even homes stand in the way of advancing flood waters. Growth also increased the kinds and amounts of pollutants that threaten the biological, recreational, commercial, and esthetic value of lakes, streams, and bays. Now, as in the past, St. Petersburg is meeting the challenge of protecting one of its most valuable resources. The stormwater utility is designed to do just that.

Acknowledgements. Special acknowledgements to Nilo Priede of Camp Dresser & McKee Inc. for his review and valuable advice; City Engineering Director Mike Connors for his technical support; and City Administrative Services officer Roy Otto for his public information and education efforts.