



REPORT

Updated Surface Water Governance Study

Prepared for

Pinellas County, Florida

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**CDM
Smith**





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Appendix 1 Pinellas County Surface Water Governance Study Rate Model June 2013



Executive Summary

Pinellas County Surface Water Governance

Pinellas County, Florida, wishes to develop a comprehensive surface plan to address surface water programs in the unincorporated County with potential collaboration with incorporated cities. Surface water management programs relate to three elements of governmental control and management of stormwater runoff: program management (e.g., administration, planning, enforcement, permitting); NPDES MS4 permit compliance with NPDES - Operation and Maintenance (NPDES O&M, e.g., cleaning, mowing, and minor repair); and capital improvements (i.e., major construction). To this end, the County originally hired CDM Smith Inc. (CDM Smith) with the support of URS Corporation Southern (URS) and Kurt Spitzer & Associates Inc. (KSA) to complete a preliminary report for this program. The Pinellas County Stormwater Governance Study included a description of the federal, state, regional and local regulatory requirements for surface water management, analysis of the County's current levels of service, a consideration of potential activities to improve the level of service offered, an assessment of possible funding options available to the County to pay for the current or expanded levels of service and a preliminary rate structure consideration for a surface water user fee.

Recently, the County asked CDM Smith to update the preliminary study to address the county-wide strategic planning process currently underway. Completed by CDM Smith, the updated study considers surface water programs, expenditures and budgets related to Fiscal Year 2013 (October 2012 to September 2013) and provides an assessment of potential rate structure options for a surface water utility fee. It should be noted that, since the current County programs focus on surface water (which includes stormwater), "stormwater" this document has been changed to "surface water."

Regulatory Requirements

A summary of major regulatory requirements includes the following:

Federal Requirements

The Clean Water Act requires the control of the discharges of pollutants to the waters of the United States through National Pollutant Discharge Elimination System (NPDES) permits. The control of pollutant discharge in municipal separate storm sewer system (MS4) permits will be through the implementation of best management practices. Also, Total Maximum Daily Loads (TMDLs) are to be completed in water bodies which do not attain designated uses and ultimately are required to be implemented through NPDES permits for municipal and County permittees.

State Requirements

- The County has the authority to prepare and enforce comprehensive plans; establish and administer drainage programs; create Municipal Service Benefit Unit (MSBU), Municipal Service Taxing Unit (MSTU), or special district areas for drainage services; establish ditches, drains or canals to control runoff if petitioned; and, establish drainage levels of service.
- Minimum statewide surface water requirements are related to the recovery of treatment volumes, fencing for the protection of the public, and extra treatment for discharge to Outstanding Florida Waters (OFWs).
- The minimum state treatment standards require an 80 percent reduction of the average annual load of pollutants that would cause or contribute to water quality violations.
- The State may issue total maximum daily loads (TMDLs) and associated basin management action plans (BMAPs) which will require the control of pollutant loading into County surface waters.

WMD Requirements

- Permits are required from the Southwest Florida Water Management District (SWFWMD) for construction and modification of surface water management systems.

Pinellas County Requirements

- The Charter authorizes the County to design, construct, and maintain major drainage systems in both the unincorporated and municipal parts of the County. The term “major drainage system” has been defined in Pinellas County; however, further clarification is needed on the responsible agent for “major drainage systems” maintenance, especially in conjunction with annexation.
- The Charter authorizes the County to provide countywide planning.
- The County Comprehensive Plan requires the correction of surface water deficiencies, development of watershed plans, consideration of regional systems, and water quality improvements.
- Discharges of pollutants to the MS4 are to be controlled (Chapter 58).
- The control of fertilizer use required by County ordinance to minimize the discharge of nutrient enriched runoff to surface waters (Chapter 58).
- Site plans for new development and significant redevelopment are to be reviewed (Chapters 134 and 154).
- The County is to protect major systems from erosion (excessive velocities) and excessive water elevations.

Areas identified where city-county partnerships may be attained include:

Program Management – Code Enforcement. The County and all of the cities are required to have post-development stormwater controls as well as during construction (by NPDES permit). Some of the cities and the County already share common private construction inspection activities – addition of other municipalities should be considered.

Program Management - TMDL Participation in BMAP Development. Depending on the basin or watershed, some or all of the cities and the County may participate in the development of the BMAP for a particular pollutant. Working together, the County and cities can support each other to optimize the ability to achieve the TMDL loading reductions ultimately to be required.

Program Management – Biological Corroboration. With the new Florida Numeric Nutrient Criteria (NNC), corroboration of nutrient impairment is necessary. It is possible that many of the streams cross municipal boundaries. As a result, collaborative approaches to confirm or deny nutrient impairment are warranted.

NPDES Compliance – Illicit Connections, Monitoring, Public Information. As proven in many communities around Florida, joint NPDES compliance programs provide compliance activities for participants and save time, staff and costs. Illicit connections, monitoring and public information/education are a few of the obvious ones that should be cooperatively completed for compliance. For example, the County inspections and enforcement through an interlocal agreement with the Florida Department of Transportation (FDOT) for FDOT roads and drainage system and water quality monitoring for NPDES MS4 compliance are already shared programs.

Capital Improvement Program – Basin/Watershed Studies. As watershed or basin divides do not follow jurisdictional lines, studies of runoff behavior within basins or watersheds should be cooperatively considered. One way to do this is for all of the jurisdictions affected in the watershed or basin to financially participate in the study based on area. Another is for the County to complete such studies where multiple jurisdictions are affected – the distribution of capital cost should be based on either volume of flow contributed during the design storm event or drainage basin area. Currently, the costs associated with Watershed Plan development are cooperatively funded through the SWFWMD, Pinellas County, and the cities. This partnership should continue as the opportunities are created or arise.

Operation and Maintenance. The overlap of activities for O&M is difficult to assess. Both the County and each city is responsible for maintenance of facilities respectively owned; however, the Charter says the County has “all special and necessary power to furnish ... the services” for the “design, construction and maintenance of major drainage systems in both the incorporated and unincorporated area” [Section 2.04(g)]. The services provided by the County related to the maintenance of surface water systems in newly annexed areas are unclear in some areas.

Current Operations and CIP Level of Service Analysis

The County’s current level of service (LOS) was assessed considering 3 areas of operations: program management, NPDES MS4 compliance including, operation and maintenance (O&M), and capital improvements (CIP). These services are currently being provided mostly by the Department of Environment and Infrastructure (DEI). Activities include:

- In-house engineering design and consultant management for drainage-related capital projects;
- Asset management of surface water infrastructure;
- Concrete related repair and maintenance for drainage structures, pipes and underdrains;
- Response and repair in response to complaint or emergency;
- Mowing associated with the drainage system including ditches and ponds;

- Inspection, maintenance and certification of drainage facilities associated with the capital improvement program;
- Maintenance of open conveyance systems;
- Roadway sweeping;
- Vegetation management in County lakes, ponds, rights-of-way, and drainage areas.
- Ambient monitoring of water quality in County surface waters;
- NPDES permit compliance;
- Development review;
- TMDL support include BMAP collaboration; and,
- Watershed Planning related to water quantity (flooding) and water quality.

Based on the consideration of program being offered by DEI, the total estimated expenditures for surface water management operations in Pinellas County is estimated to be \$21.4 million for FY 2013, including Penny for Pinellas funding.

	Annual Amount	% of Total
Program Management	\$1,258,681	10.7%
NPDES - MS4 Compliance	\$1,562,520	13.2%
NPDES - O&M Program	\$8,972,345	76.1%
Total Program Costs	\$11,793,546	100.0%

The amounts spent are based on an assessment of the percentage of the FY 2013 department budgets spent for surface water purposes. For the CIP estimate, a 10-year average was considered. Excluding the Penny for Pinellas and Engineering funding, the total existing program costs are estimated to be \$11.8 million per year, as indicated in the inset table.

Compared to a standard set of surface water management operations criteria, the level of service (LOS) for the County is currently assessed to be LOS C. This is based on the level of planning currently completed, adequate compliance with the NPDES MS4 permit, primarily inspection and response based operation and maintenance program and a slightly above LOS C for the drainage CIP completion program.

To improve the LOS for the County, additional programs in each area were considered. For Program Management, a site plan compliance program is suggested as well as an ongoing program for watershed plan development consistent with the Pinellas County Comprehensive Plan. For MS4 compliance, the Adopt-a-Pond program should be reconsidered as well as biological monitoring to address new state numeric nutrient criteria. For NPDES O&M, additional street sweeping should be completed as well as expanding the open and closed conveyance maintenance program. Finally, for CIP, while the Penny for Pinellas addresses some of the needs, additional funding is needed for water quality related CIP. The estimated funding needs for the existing and new programs excluding the Penny for Pinellas, additional Water Quality CIP and Engineering are itemized below:

	Annual Amount	% of Total
Program Management	\$2,252,342	12.6%
NPDES - MS4 Compliance	\$2,253,491	12.6%
NPDES - O&M Program	\$13,379,790	74.8%
Total Program Costs	\$17,885,623	100.0%

Excluding the Penny for Pinellas, Engineering and additional water quality CIP, the total proposed funding needs are \$17.9 million, an increase of about \$6.1 million above the existing program.

It was also estimated that, as before, excluding Penny for Pinellas, Engineering and WQ CIP, to achieve a full LOS B would require \$19.0 million per year in funding, only about \$1.15 million more than the proposed funding. Finally, LOS A is estimated to be \$24.4 million per year which is \$6.5 million more than the proposed funding and \$5.4 million above LOS B. Additional budgets for CIP (Penny for Pinellas and WQ CIP) would be needed to increase the CIP LOS as well.

Funding Assessment

For the FY 2013 budget, Pinellas County is expected to receive \$364.6 million (21.5 percent) in property taxes, \$611 million (36 percent) in non-operating revenue and fund balances, and \$411.9 million (24.3 percent) in service charges, as the major categories. The rest of the budget (18.2 percent) would be from federal/state sources, sales and use taxes, and other funding mechanisms. Of the \$1,695.6 million budget for FY 2013, \$543.7 million is in the General Fund, from which the majority of County service programs are funded. The majority of the General Fund is made up of ad valorem taxes (48.1 percent), which are based on the property values.

New sources of funding to achieve the existing or higher levels of service include:

- **Non-ad Valorem Assessment.** Special assessments can be used to fund all of the surface water program components. To be valid, there must be a benefit received by the property being assessed (satisfied via surface water management activities) and the cost of the service/benefit must be rationally apportioned to the payer of the assessment. A stringent schedule is required by Chapter 197, F.S., taking almost a year to implement the program. Since the bill would be associated with the tax bill (in a separate section of the form), the ability to implement this type of bill is available to the County in the unincorporated area as well as, in certain circumstances, in the incorporated areas.
- **Surface Water User Fee.** Similar to other user fees such as wastewater, water, and garbage fees, a surface water utility fee is based on service or benefit received by the utility with the fee based on the benefit received. The benefit is generally related to runoff associated with the fee payer's property which, for most surface water user fees, is related to the amount of impervious area on the property. Over 150 such utility fees have been implemented in Florida, the first of which in Tallahassee which started in 1986. To use this type of funding program, a billing system (such as a water utility bill) is used as the vehicle to send out the surface water fee. In the case of Pinellas County, a single utility bill covering the entire unincorporated County does not exist so this option is not attractive (it should be noted that, while multiple utility bills including those for municipalities and the County, cover the unincorporated County, use of this method would be difficult to implement and maintain). However Chapter 403 F.S. specifically provides that "fees" assessed pursuant to Section 403.0893 F.S. may use the non-ad valorem assessment levy, collection and enforcement method as provided in Chapter 197 F.S.
- **Local Government Infrastructure Sales Tax.** This sales tax adds an additional penny of sales tax to the existing state sales tax per dollar. The tax was approved for an additional 10 years from 2010 to 2020. The revenues from this source can only be used for capital improvements.

- **Impact Fees.** Impact fees are imposed on new construction because the new development creates an impact on the existing utilities (e.g., increased water needs or sewer capacity needs). Such fees can be used only for construction in the area of the impact and only for new growth. The limitations restrict the use of these revenues to pay for a full surface water program.
- **Grants/Cost Sharing.** While very few opportunities for construction grants are available, most federal, state or regional sources of funding call for a cost-shared program, generally at a 50 percent level and do not fund maintenance activities once the project has been constructed. Cooperative funding from the SWFWMD as well as through the FDEP can pay for a portion of the CIP programs; however, another revenue source is needed for the County's share, as well as for the ongoing operation and maintenance required for the life of the facility.

Excluding the Penny for Pinellas which funds the drainage related CIP, in comparison of the alternatives, only two provide sufficient revenue to fund the majority, or all, of the surface water program revenue needs: taxes and stormwater utility revenues (either by fee or assessment). While taxes have been the historical source of the non-CIP surface water program funding, this source is less fair and equitable than surface water utility revenues because taxes are based on the assessed value of each parcel rather than the surface water services provided to each parcel. On the other hand, surface water utility revenues are based on service needs of each parcel, provide a long-term and sustainable source, and allows for adjustments to reward good stormwater management behavior by customers.

Rate Structure Assessment

As part of this project, the non-ad valorem option was investigated further. Information from the Pinellas County Property Appraiser's office was obtained to estimate the potential revenue and assessment needed for various levels of service within the County. The 2012 Property Appraiser's data indicates that there are 115,500 residential parcels in the unincorporated County representing about 123,500 dwelling units. This represents over 90 percent of the parcels in the unincorporated area. The data also show that there are about 4,400 non-residential parcels consisting of the following types: commercial, industrial, institutional, governmental, and miscellaneous. There are also 8,050 vacant parcels. The distribution of parcels and dwelling units for each watershed was estimated. Using a sample measured impervious areas by parcel type (DOR Code), the impervious areas of parcels were estimated for Pinellas County, yielding 346.7 million square feet of impervious area. Note that this does not include municipalities or public roads.

The common unit of billing for most surface water assessments is the average impervious area for a dwelling unit; for Pinellas County, this number has been estimated to be about 2,339 square feet. With billing unit for a residential customer related to the number of dwelling units and the billing unit for a non-residential customer related to their impervious area divided by 2,339 square feet, it was estimated that the approximate number of billing units (commonly referred to as an Equivalent Runoff Unit which for this study was based on the median single family detached impervious area) for Pinellas County is 164,425. This number was modified based on rate structure claims.

Rate structure options considered are listed below.

- Use of all residential parcels to define a billing unit (instead of just single family detached). This option did not result in a significant change in the revenue, showing only a 0.1 percent change.

- Three tiered single family. In this case, single family detached parcels would be tiered into 3 categories: small (less than 1,576 square feet of impervious area), large (greater than 4,368 square feet) and medium (all the rest). This option would generate about 5 percent more revenue.
- Four tiered single family. This is the same as above except a very large single family detached is identified (those greater than 10,000 square feet of impervious area). These would be handled in the same manner as a commercial parcel due to their size. This option is not much different than the three-tiered approach.
- Tiered rates for non-single family residential. For this option, multifamily, mobile homes and condominiums would be assigned a reduced number of billing units based on dwelling units and class average impervious area (for example, if the average mobile home is about 50 percent of the size of a median single family detached home, mobile homes could be assigned 50 percent of a single family detached value). This option would generate over 15 percent less revenue, requiring the assessment per billing unit to increase for both residential and non-residential parcels.
- Credits for Stormwater Facilities. A credit (reduced fee) was considered for parcels with approved and maintained stormwater facilities. A credit of 75 percent of the fee was considered; however, the fiscal consequence of this choice was estimated only because the number of such facilities in the unincorporated County is unknown. Also, to receive a credit, each applicant would need to demonstrate that the facility was built properly and has been maintained to retain and treat stormwater according to, or to exceed, current code. A simple mitigation credit policy will be offered for the 2013 non-ad valorem assessment and an expanded mitigation credit process will be provided in 2014.
- Adjustments for Schools, Governmental and/or churches. Although not exempted by state law, an adjustment for these types of properties was considered, decreasing the overall revenue by over 4 percent.

Finally, the level of service and potential revenue for unincorporated County residents in the Pinellas Park Water Management District (PPWMD) were also considered. Currently the unincorporated county residents receive maintenance and capital improvements for the primary system (major drainage facilities) as well as for the secondary systems (facilities that drain to the primary system). In PPWMD, unincorporated county residents pay for primary system maintenance and capital improvements through the Chapter 298 PPWMD; however, these residents still receive maintenance and capital improvements for the secondary system from the county as well as MS4 compliance, planning and street sweeping, for example. After reviews of the program information and infrastructure, and from personal communications, it was determined that there was no overlap in services by the County and PPWMD.

Based on review by County staff, the preferred rate structure includes:

- ERU based on the median impervious area of single family detached parcels.
- Single family (DOR 00 and 01) tiered structure with small, medium, large and very large homes.
- Very large homes (> 10,000 square feet) to be considered in the same manner as non-residential parcels (i.e., by impervious area).
- Residential condominiums (DOR 04) based on building and common areas distributed equally to each condo unit.

- Non-residential condos (in DOR 11 and 41) based on building and common areas distributed based on percent of total building area.
- Mobile homes (DOR 02) and mixed use (DOR 07) assigned ERUs based on the single family detached tiered structure using the PAO data.
- Mobile homes in parks (DOR 28) assigned ERUs in the same fashion as non-residential parcels (i.e., impervious area divided by the ERU impervious area).
- Multifamily (DOR 03 and 08) and Co-ops (DOR 05) assigned ERUs in the same fashion as non-residential parcels.
- Non-residential (DOR 10 to 99) parcels assigned ERUs using the PAO impervious area divided by the ERU impervious area.
- Inclusion of all properties in the assessment.
- Rate structure to include adjustment policy (credits) based on a Policy and Procedures Document to be developed in the 1st year of implementation.

Based on these rate structure choices, the total number of ERUs for the unincorporated is estimated to be 169,938.0 ERUs. This means that each \$10 in annual rate generates about \$1.55 million in annual revenue, assuming a 91 percent collection (i.e., 169,938.0 ERUs x \$10 x 0.91).

According to Section 3, the existing funding requirement (excluding the Penny for Pinellas) is \$11.8 million. With the estimated ERUs and 91 percent collection, the rate needed to generate this revenue would be about \$76 per ERU per year. For the proposed program of \$17.9 million, the rate would have to be \$116 per ERU per year. For LOS B, the estimated budget was \$19.0 million requiring a rate of \$123 per year per ERU.

Summary and Findings

Based on the research, study and analysis of the surface water program for Pinellas County, and in some cases, at the suggestion of County staff, the following summary and findings are offered to define, and provide improvements to, the existing surface water program in Pinellas County.

- Federal and state laws and regulations are sufficient to authorize Pinellas County to manage surface water programs within the unincorporated County.
- Through the NPDES program, many surface water functions are accomplished by both the County and regulated cities within the County.
- The overall level of service for the County is LOS C which is characterized by adequate program management and NPDES MS4 compliance functions, an average (LOS C) NPDES O&M program (generally described as a mixture of inspection based and reactive maintenance. The CIP Program, based on the Penny for Pinellas, is adequate for the identified drainage construction needs; however, with old closed infrastructure and new TMDL requirements, additional funding is needed.
- Of all of the surface water programs, three stand out as needed improvement or enhancement: surface water conveyance maintenance and rehabilitation, watershed planning, and CIP funding.

Six of the fifty-two basins have been studied with sufficient detail to define the needed surface water systems in the County.

- Additional funding for surface water programs can be derived from the development of a new surface water utility fee (for all components of the surface water program). Based on an analysis of the data from the Pinellas County Property Appraiser, it has been estimated that using the preferred rate structure, the unincorporated County would have about 169,938.0 billing units (ERUs) and the surface water user fee could generate about \$1.55 million for each \$10 of annual assessment. Using these estimates, the following rates are estimated to illustrate the potential program:

Example Program	Program Funding Need	Cost per ERU per Year ¹	Cost per ERU per Month ²
Proposed Surface Water Management Program + LOS B	\$19,040,534	\$123.10	\$10.30
Proposed Surface Water Management Program	\$17,885,623	\$115.70	\$9.60
Proposed Program - pipe repair (PR)* and mowing*	\$16,744,755	\$108.30	\$9.00
Proposed program - PR*, mowing*, and vegetation management (VM)**	\$14,995,228	\$97.00	\$8.10
Proposed program - PR*, mowing*, VM,** and Adopt-A-Pond	\$14,526,335	\$93.90	\$7.80
Existing Surface Water Management Program	\$11,793,546	\$76.30	\$6.40
Total Estimated ERUs	169,938.0		
Notes:			
1. Calculated as Funding Need divided by Total ERUs and 91% (assumes 5% loss and 4% for PAO and Tax Collector). Rounded to nearest \$0.10.			
2. Calculated as the Annual Cost divided by 12. Rounded to the Nearest \$0.10.			
* Service costs shift back to Transportation Trust			
** Service costs shift back to Transportation Trust and General Fund			

Program Needs and Recommendations

Based on the findings of the report, the following recommendations are offered to improve the overall surface water governance and services provided by Pinellas County, offered below in no particular order or priority.

The County should continue to encourage a regional (watershed) approach to surface water quantity and quality related activities. This would include participation by various cities and the water management district.

There are sufficient surface water facilities managed by the County to take on a more asset management approach to the surface water programs. Asset management considers the surface water system in the County to be assets of its citizens that should be managed with precise accounting. To this end, the surface water program within the County can be set up as a utility, similar to the other utilities in the County. This does not require separate utility like funding, but separate accounting is needed.

Because of the TMDL activities that will be required of the County and most communities within the County, the County should convene a multi-jurisdictional, TMDL committee to prepare for looming regulatory requirements.

A surface water utility fee, administered by a non-ad valorem assessment would generate about \$1.55 million for each \$10 per billing unit per year. Excluding Penny for Pinellas revenues, current funding (generally from the General Fund and Transportation Trust Fund) was estimated at \$11.8 million and

proposed funding needs were estimated at \$17.9 million, requiring estimated rates of \$76 per year per SFU and \$116 per year per ERU, respectively.



Section 1 Introduction

Introduction

Pinellas County, Florida, wishes to develop a comprehensive plan to address surface water programs in the unincorporated County. Surface water management programs relate to four elements of governmental control and management of surface water runoff: program management (e.g., administration, planning, enforcement, permitting); NPDES Municipal Separate Storm Sewer System (MS4) permit compliance including special compliance activities (e.g., monitoring, inspection, etc.) and NPDES Operation and Maintenance (O&M, e.g., cleaning, mowing, and minor repair of surface water structures); and capital improvements (i.e., major design and construction). To this end, the County originally hired Camp Dresser & McKee Inc. (the predecessor of CDM Smith Inc.)) with the support of URS Corporation Southern (URS) and Kurt Spitzer & Associates Inc. (KSA) to complete this project. In 2013, the County hired CDM Smith to update the Governance Study to address changes to the County organization, surface water expenditures and potential funding needs. A brief description of each task is provided below.

Surface water Management Program Assessment Task

The purpose of this task was for CDM Smith to analyze the County's existing and potential future surface water management programs and activities for the unincorporated area, leading to an assessment of the current level of service (LOS) and associated costs. CDM Smith also considered the surface water governance authorized by existing laws and regulations within the County, municipalities, Southwest Florida Water Management District (SWFWMD) and the state. To define the current and potential future LOS, CDM Smith interviewed various staff and reviewed County documents to identify activities and costs and to project such costs for 10 years into the future. LOS and associated costs were identified for surface water activities related to Program Management; NPDES MS4 Compliance activities (including those related to O&M) and Capital Improvements (CIP).

Presentations and Meeting Task

Two basic types of meetings were completed: status and staff meetings to discuss the project itself and presentations to the Board of County Commissioners (BOCC). The presentations are to provide the BOCC with a summary of conclusions made as part of this study.

The rest of the report was to provide the results of this study related to (in order) existing surface water governance authorities, existing and potential future levels of service, identification of potential existing and future programs that could be funded via a dedicated funding source and finally, recommendations.

Governance Update

The original Governance Report was provided to County staff in July, 2007. Due to changes in administration and focus, the report was not presented to the BOCC, nor finalized. The report was updated again in February 2011 to include FY2010 and projections for FY2011. As a result of newer information on the County organization, changes to the NPDES MS4 permit requirements included in a new MS4 permit, and a better understanding on the potential costs related to Total Maximum Daily Load (TMDL) implementation, this document includes additional updates to each of the surface water related programs. The organizational structure, staffing, activities, funding and parcel information were updated accordingly.

Governance Re-evaluation

In 2013, CDM Smith updated the Governance Study based on a new organizational structure, new funding information and new parcel data in order to better understand the current surface water program administered by the County. The overall surface water program will be part of the Quality Pinellas Community (QPC), undertaken by the BOCC as an on-going sustainability planning and adaptive management process to provide services to the citizens of the County. The QPC is the overall approach to County services including a vision and mission statement, values and principles and performance metrics. Other elements include plans for an effective government; urban regeneration and built environment; natural environment; healthy communities; safe communities; as well as other plans related to the local culture and public investments. To augment this overall process, each Department is to prepare a plan to address each of the above referenced elements. This report updates the Governance Study in regards to the QPC.



Section 2 Regulatory Requirements

The purpose of this section is to provide information on the governance of surface water management within Pinellas County by describing the federal, state, regional and local authority given to the County through law, regulation, rule and ordinances. This section is not intended to be a legal review; rather, to provide an overview of authorities given to Pinellas County to manage surface water.

2.1 Federal Law and Regulations

Federal regulatory requirements are best understood by a description of the various agencies with jurisdiction over stormwater flooding and/or water quality. In particular, federal regulations are administered by the United States Environmental Protection Agency (USEPA), United States Army Corps of Engineers (USACE), National Oceanic and Atmospheric Administration (NOAA) and United States Fish and Wildlife Service (USFWS). Federal laws and regulations are contained in the United States Code (USC) and Code of Federal Regulations (CFR), respectively, and sometimes refer to more than one federal agency. The federal government regulates sources of pollution via dozens of federal laws, the most important of which for the purposes of this discussion are the National Environmental Policy Act (NEPA) and its amendments (42 USC §4321-4347) and the Clean Water Act (CWA) and its amendments (33 USC §1251 *et seq.*; that is, Title 33 of the US Code from §1251 to §1387).

2.1.1 National Environmental Policy Act (NEPA)

NEPA, originally adopted in 1969, provides the fundamental national policy of environmental protection. The specific purposes of NEPA include: "to declare a national policy which will encourage productive and enjoyable harmony between man and his environment, to promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man; to enrich the understanding of the ecological systems and natural resources important to the Nation; and to establish a Council on Environmental Quality" (CEQ). Congress directed that, "to the fullest extent possible", laws and regulations as well as agencies of the federal government will:

- Use a systematic approach integrating natural, social and environmental sciences in planning and decision making;
- Identify and develop methods with the CEQ to ensure that un-quantified environmental benefits are considered with economic and technical ones;
- Consider environmental impacts, alternatives, short- and long-term impacts and resource commitments for legislation and governmental action significantly affecting the environment;

- Develop and study alternatives to actions related to unresolved conflicts related to resource uses;
- Make available to state and local governments as well as individuals environmental information; and,
- Use ecological information for planning and resource-oriented projects.

These provisions have been the foundation of most environmental activities since their adoption in 1969.

2.1.2 The Clean Water Act (CWA)

The Clean Water Act, a 1977 amendment to the Federal Water Pollution Control Act of 1972, provides the basis for USEPA regulatory authority, allowing them to set effluent standards for industries (technology-based) and water quality-based effluent limits where necessary to meet water quality standards.

Fundamentally, the CWA states that it is unlawful to discharge to waters of the United States (navigable waters) unless the discharge is permitted under the National Pollutant Discharge Elimination System (NPDES) program. The purpose of the CWA is to restore and maintain the "chemical, physical and biological integrity of the Nation's waters" using the following goals and policies:

- Elimination of the discharge of pollutants to navigable waters by 1985;
- Protection and propagation of fish, shellfish and wildlife and provide for recreation achieved as an interim goal by mid-1983;
- Elimination of the discharge of toxic pollutants in toxic amounts;
- Provide financial assistance to construct public facilities;
- Develop and implement "area wide waste treatment management planning processes;"
- Develop technology to eliminate discharges through major research and demonstration projects; and,
- Develop and implement programs for the control of nonpoint sources.

The first and last goals led to the development of the NPDES program. Originally, USEPA regulated discharge to navigable waters by defining point sources as discharges through a pipe; e.g., wastewater treatment plant or industrial discharge. In the CWA amendments of 1987, point source was defined as discharges from a pipe or open but confined conveyance, opening the door for regulation of stormwater discharges.

§1312 of the CWA states that if the discharge of pollutants from a point source (or group of point sources) that provides technology-based treatment levels (e.g., secondary treatment for wastewater treatment plants) interferes with the attainment of designated uses, then water quality based effluent limits are required.

§1313 requires each state to submit water quality standards to the USEPA and to review these standards every three years, starting in October, 1972. These standards can be no less stringent than those adopted by the USEPA and become the basis for the determination of impairment. §1313(d)(1) requires that each state must identify and rank those waters for which minimum treatment is not sufficient to maintain the applicable water quality. From this list, each state must prepare total maximum daily loads (TMDLs). A TMDL is a determination of the maximum loading that a water body can assimilate accounting for point sources, nonpoint sources, natural background and a margin of safety to account for unknowns. "Such load shall be established at a level necessary to implement the applicable water quality standards with seasonal variations and a margin of safety..." The list of ranked water bodies is commonly referred to as

the "303(d) Priority List" (based upon the CWA numbering system). The state of Florida is currently working on the latest update to its list. An update must be filed with the USEPA every even year.

§1315(b) requires each state to prepare a report to Congress starting in April, 1976 (and every other year thereafter), describing the water quality of all navigable waters within the state. The description must include an analysis of the degree to which the waters are attaining water quality standards. This report (referred to as the 305(b) Report using CWA numbering) is produced by the Florida Department of Environmental Protection (FDEP) in even numbered years.

§1329 provides for nonpoint source (NPS) management programs. Originally contained in Section 319 of the 1987 Amendments to the CWA, this section establishes a national program to control the discharge of pollution from nonpoint sources by requiring the preparation of a Nonpoint Source Management Program. The most recent FDEP update to Florida's NPS Management Program is dated November, 1999, wherein the FDEP defines a watershed management approach based upon a 5-phased program:

<u>Phase</u>	<u>Program</u>
1	Initial Basin Assessment
2	Coordinated Strategic Monitoring
3	Data Analysis and TMDL Development
4	Basin Management Action Plan (BMAP) Development
5	Begin Implementation of BMAP

§1342 provides the regulatory authority for the NPDES permitting program and allows for the delegation of such permitting to each state. FDEP obtained delegation for the wastewater and industrial NPDES permits in 1995 and obtained such authority for stormwater discharges in October of 2000. The NPDES permits are 5 years in duration and according to §1342(o), renewal permits cannot be issued with conditions that are less stringent than the previous ones (anti-backsliding provision).

§1324(p) adds stormwater discharges to the NPDES program based upon population and significant contribution. Municipalities with populations of 100,000 or more are required to obtain an NPDES permit (MS4), as are stormwater discharges from specific industrial activities (Multi Sector Generic Permit) as well as construction activities (Construction Generic Permit). Also included are discharges that are judged to contribute to a violation to a water quality standard. These discharges are referred to as the Phase 1 stormwater discharges. In the early 2000's, the USEPA promulgated regulations pertaining to stormwater discharges from municipalities with population under 100,000. These "small" municipalities are referred to as Phase 2 dischargers. The stormwater discharges are regulated to control the discharge of stormwater pollution to the "maximum extent practicable," a term not defined in law or regulation.

§2317 states that an interim goal administered by the Corps of Engineers is "no overall net loss of the Nation's remaining wetlands base ... and a long-term goal to increase the quality and quantity of the Nation's wetlands." The USACE is to work with the USEPA and Fish and Wildlife Service to meet this long-term goal.

2.1.3 Code of Federal Regulations Title 40

Based upon the laws identified above, the USEPA has issued regulations codified in Title 40 of the Code of Federal Regulations, commonly referred to as 40 CFR. The most pertinent sections of 40 CFR include those in Chapter I - Environmental Protection Agency. This chapter has 14 Subchapters (A through R) categorizing 799 parts. Subchapter D considers Water Programs, Parts 100 to 149, the most applicable of which are §122 (USEPA Administered Permit Programs), §123 (State Program Requirements), §124

(Procedures for Decision-making), §130 (Water Quality Planning and Management) and §131 (Water Quality Standards). These regulations implement the requirements of the CWA described above.

2.1.3.1 CFR Part 122 – USEPA Administered Permit Programs: NPDES

This regulation provides federal requirements for the permitting of sources of pollutants to waters of the United States. Of particular interest is 40 CFR Section 122.26 which requires storm water discharges from small (< 100,000 people in urbanized areas), medium (100,000 to 250,000 people) and large (> 250,000 people) to obtain NPDES permits. Detailed information is provided on the definition of who must obtain permits, how they are to apply for the permits and how the USEPA will enforce the requirements.

2.1.3.2 CFR Part 123 – State Program Requirement

40 CFR allows states to offer stormwater regulatory programs that are equal to or better than the federal counterparts so that states can be delegated NPDES authority. This part of the federal regulations defines the requirements for states to accept the NPDES program.

2.1.3.3 CFR Part 124 – Procedures for Decision Making

This part provides rules for the application for, issuance, denial and revocation of federal permits. Subparts A, B, and C provide general steps and procedures for the USEPA's processing of permits and Subpart D contains specific procedures for stormwater permit.

2.1.3.4 CFR Part 131 – Water Quality Standards for State of Florida's Lakes and Flowing Waters

In 2001, as part of a plan approved by the USEPA, the state of Florida began to develop numeric nutrient rules to replace the existing narrative nutrient criteria currently in Florida's code. The current Florida narrative rule simply says that nutrients cannot be discharged so as to cause an imbalance of natural flora or fauna in receiving waters. The numeric nutrient rule was to assign specific criteria to achieve this target in lakes, streams and, eventually, estuaries. Over the last 10 years, the FDEP has been working with a technical advisory committee (TAC) to scientifically determine numeric criteria to protect Florida's natural biology. As a result of the settlement of a lawsuit in 2009, the USEPA determined that Florida's process for drafting numeric nutrient criteria (NNC) needed to be expedited. The USEPA declared that it would issue draft NNC for lakes and streams for the state of Florida in January 2009, and draft criteria for estuaries by November 2011. In November 2010, USEPA promulgated NNC for lakes and flowing waters in Florida to become effective in March 2012. In Pinellas County, although the exact boundaries of the NNC criteria application are not clear, the criteria are as follows:

<u>Water Body Type</u>	<u>TN (mg/l)</u>	<u>TP (mg/l)</u>	<u>Chlorophyll a (µg/l)</u>
Streams	1.54	0.12	
Colored Lakes	1.27	0.05	20
Clear Lakes (High CaCO ₃)	1.05	0.03	20

Also, for springs, the Nitrate concentration cannot be greater than 0.35 mg/l. These values are annual averages and are not to be exceeded once in three years.

As of March 2013, the USEPA and FDEP have announced an agreement for the USEPA to withdraw their NNC in favor of the ones adopted by FDEP in 2012 (see Subsections 2.3.6 and 2.3.7) and with the stipulation that FDEP will complete NNC for some estuaries as well as control discharges to water bodies not considered in the FDEP 2012 rule. Therefore, it appears that the EPA NNC will be rescinded in 2013.

2.2 State of Florida Statutes

State laws and regulations are best described through individual law or regulation, rather than by the administrating agency, since the laws or regulations may apply to multiple agencies. Regulatory agencies that are responsible for the environment include the FDEP, Department of Economic Opportunity (DEO), and Florida Department of Transportation (FDOT).

The statutes are organized into forty-seven Titles, depending on the subject matter, each of which is made up of one or more chapters. **Table 2-1** lists the Titles and chapter numbers for all of the 2012 Florida Statutes (F.S.). Only a few of the statutes are pertinent to the control of stormwater runoff; these are discussed in more detail below.

Table 2-1.
2012 Florida Statutes Statute Titles with Associated Chapters

Title	Description	Chapters	Title	Description	Chapters
I	Construction of Statutes	1-2	XXV	Aviation	329-333
II	State Organization	6-8	XXVI	Public Transportation	334-349
III	Legislative Branch; Commissions	10-11	XXVII	Railroads & Other Regulated Utilities	350-368
IV	Executive Branch	14-24	XXVIII	Natural Resources; Conservation, Reclamation, & Use	369-380
V	Judicial Branch	25-44	XXIX	Public Health	381-408
VI	Civil Practice & Procedure	45-88	XXX	Social Welfare	409-430
VII	Evidence	90-92	XXXI	Labor	435-452
VIII	Limitations	95	XXXII	Regulation of Professions & Occupations	454-493
IX	Electors and Elections	97-107	XXXIII	Trade, Commerce, Investments, & Solicitations	494-560
X	Public Officers, Employees, & Records	110-122	XXXIV	Alcoholic Beverages & Tobacco	561-569
XI	County Organization & Intergov. Relations	124-164	XXXV	Agriculture, Horticulture, & Animal Industry	570-604
XII	Municipalities	165-185	XXXVI	Business Organizations	606-623
XIII	Planning and Development	186-191	XXXVII	Insurance	624-651
XIV	Taxation and Finance	192-221	XXXVIII	Banks & Banking	655-667
XV	Homestead & Exemptions	222	XXXIX	Commercial Relations	668-688
XVI	Teacher Retirement/Higher Ed Bonds	228-243	XL	Real & Personal Property	689-723
XVII	Military Affairs & Related Matters	250-252	XLI	Frauds, Fraudulent Transfers & General Assignments	725-727
XVIII	Public Lands & Properties	253-274	XLII	Estates & Trusts	731-739
XIX	Public Business	279-290	XLIII	Domestic Relations	741-753
XX	Veterans	292-296	XLIV	Civil Rights	760-765
XXI	Drainage	298	XLV	Torts	766-774
XXII	Ports & Harbors	308-315	XLVI	Crimes	775-896
XXIII	Motor Vehicles	316-325	XLVII	Criminal Procedure & Corrections	900-985
XXIV	Vessels	326-328	XLVIII	K-20 Education Code	1000-1013

2.2.1 Chapter 125 - County Government

Chapter 125 F.S. defines the powers and duties of county government. It is intended to clarify and supplement the powers conferred upon county government and the countywide electorate by the Florida Constitution. The powers specified in Section 125.01, F.S., are not intended to be exclusive or restrictive but are to be liberally construed to carry out the purposes of this selection of the statutes and to secure for the counties the board exercise of home rule power of the Florida Constitution. Powers include:

- Prepare and enforce comprehensive plans for development;
- Establish and administer programs for drainage and to cooperate with governmental agencies in the development and operation of such programs;
- Establish municipal service taxing or benefit units within which drainage services may be provided from revenues derived from service charges, special assessments or taxes collected within the unit (this requires concurrence from a municipality if the district includes a municipality; and,

- Establish special districts to include both unincorporated and incorporated areas within which municipal services are provided funded by service charges, special assessments or taxes within the district. Agreements with the County and municipalities are required.

The statute also considers general obligation and revenue bonds, loans to public agencies, the purchase or privatization of water, sewer or wastewater reuse utilities, and the proposed purchase of real property.

The 2012 Legislature modified Section 125.022, F.S., through House Bill (HB) 503 stating that “...after July 1, 2012, a county may not require as a condition of processing or issuing a development permit that an applicant obtain a permit or approval from any state or federal agency unless the agency has issued final agency action that denies the federal or state permit...” The same language is amended to Section 166.033, F.S., and in Section 373.4141, F.S.

2.2.2 Chapter 157 - Drainage by Counties

Chapter 157 F.S. allows counties to establish a “ditch, drain or canal” to control runoff in lands that are low, wet or submerged or liable to become submerged based upon the petition of the landowners through which the drainage structure is to pass. The commission can appoint a three-person committee to control the facility, supervise its construction and levy taxes for its construction and maintenance.

2.2.3 Chapter 163 - Local Government Community Planning Act

Chapter 163 F.S. is entitled “Intergovernmental Programs” and is comprised of six parts. Only those parts and sections that are pertinent to stormwater management are discussed below.

Part I - Florida Interlocal Cooperation Act of 1969 (subsection 163.01 to 163.07). This section allows governments to enter into agreements of cooperation on the basis of mutual advantage. Such a contract, known as an interlocal agreement, is a joint exercise of governmental power and provides for the purpose of the agreement, duration of agreement, definition of organization needed to administer the programs, manner of financial support including equitable allocation of costs, provision for funding of the programs, as well as a number of other administrative issues. An interlocal agreement, for example, can be entered into between the County and one or more cities for the purpose of stormwater management and control or funding of such activities.

Part II - Growth Policy Act (subsections 163.2511 to 163.2520). This act regulates the infill and redevelopment of urban cores as methods to reduce urban sprawl. A local government may identify an area as an urban infill and redevelopment area for the purposes of “targeting economic development, job creation, housing, transportation, crime prevention, neighborhood revitalization and preservation, and land use incentives.” The plan for redevelopment must be collaborative and based upon a neighborhood participation process.

Subsections 163.3161 to 163.3217 comprise the Community Planning Act. The purpose of this Act is to use and strengthen the role, processes and powers of local governments “in the establishment and implementation of comprehensive planning programs to guide and control future development consistent with the proper role of local government.” One of the intents of the Act is that “local governments have the ability to preserve and enhance present advantages” and to “encourage the most appropriate use of land, water and resources...” It is also the intent of the Act that “adopted comprehensive plans ... have the legal status” of the Act and that no public or private development can be permitted “except in conformity with comprehensive plans.” Finally, it is the intent of this section to authorize local governments to have “the ability to ... encourage the most appropriate use of land, water,

and resources consistent with the public interest; overcome present handicaps; and deal effectively with future problems that may result from the use and development of land within their jurisdiction.”

Subsection 163.3180 defines the concurrency requirements of the Act. Concurrency refers to the requirement that the infrastructure (e.g., drainage, sewage treatment, and potable water) required to service the new growth is in place concurrent with the new development. In particular, drainage facilities (among others) must “be in place and available to serve new development no later than the issuance by the local government of a certificate of occupancy or its functional equivalent.” The sufficiency of the drainage facilities is dependent on the local levels of service defined by the local government within the comp plan.

The comprehensive plan, commonly referred to as the “comp plan,” must be economically feasible and among other items, contain a capital improvement element that includes a 5-year capital improvements component identifying the public facilities needed for the orderly development of the community. The plan must also contain the following elements: future land use; transportation; sanitary sewer, solid waste, **drainage**, potable water and natural groundwater aquifer recharge; conservation (conservation, use, and protection of natural resources); recreation and open space; housing element; coastal management; and intergovernmental coordination. A major objective of this plan is to coordinate implantation of the comp plan with the plans of other agencies and governments.

2.2.4 Chapter 187 - State Comprehensive Plan

Chapter 187, F.S., provides the adopted State Comprehensive Plan required by Chapter 186, F.S. Section 187.201(8) lists specific goals and policies for water resources, with the goal to “assure the availability of an adequate supply of water for all competing uses deemed reasonable and beneficial and shall maintain the functions of natural systems and the overall present level of surface and ground water quality.” Also “Florida shall improve and restore the quality of waters not presently meeting water quality standards.” Specific policies include:

- “Ensure the safety and quality of drinking water supplies and promote the development of reverse osmosis and desalinization technologies for developing water supplies.
- Identify and protect the functions of water recharge areas and provide incentives for their conservation.
- Encourage the development of local and regional water supplies within water management districts instead of transporting surface water across district boundaries.
- Protect and use natural water systems in lieu of structural alternatives and restore modified systems.
- Ensure that new development is compatible with existing local and regional water supplies.
- Establish minimum seasonal flows and levels for surface watercourses with primary consideration given to the protection of natural resources, especially marine, estuarine, and aquatic ecosystems.
- Discourage the channelization, diversion, or damming of natural riverine systems.
- Encourage the development of a strict floodplain management program by state and local governments designed to preserve hydrologically significant wetlands and other natural floodplain features.

- Protect aquifers from depletion and contamination through appropriate regulatory programs and through incentives.
- Protect surface and groundwater quality and quantity in the state.
- Promote water conservation as an integral part of water management programs as well as the use and reuse of water of the lowest acceptable quality for the purposes intended.
- Eliminate the discharge of inadequately treated wastewater and stormwater runoff into the waters of the state.
- Identify and develop alternative methods of wastewater treatment, disposal, and reuse of wastewater to reduce degradation of water resources.
- Reserve from use that water necessary to support essential non-withdrawal demands, including navigation, recreation, and the protection of fish and wildlife.”

2.2.5 Chapter 373 - Florida Water Resources Act

Chapter 373, F.S., consists of six parts, the two pertinent parts of which are described below.

Part I - State Water Resources Plan. This part of the Florida Water Resources Act includes requirements for the setting of minimum flows and levels for water bodies based upon regional priorities (373.042), authorizes inter-agency agreements for water resource management (373.046), and authorizes the acquisition of property for water or water-related resource protection (373.139). For the minimum flows and levels, Subsection 373.042 requires each water management district to set minimum flows for all surface waters and minimum water levels for ground waters.

Part IV - Management and Storage of Surface Waters. Consisting of Subsections 373.403 to 373.461, F.S., this part provides:

- definitions pertinent to the management of surface waters;
- exemptions (including the authorization of general permits);
- mitigation banks and off-site regional mitigation;
- mitigation requirements for transportation projects proposed by FDOT;
- additional criteria for activities in surface waters and wetlands (see below for more details);
- permit processing;
- wetland delineation methodologies and formal determinations;
- concurrent permit reviews;
- prohibitions, violations and penalties (see below for more details); and,
- The Surface Water Improvement and Management Act (see below for more details).

Section 373.414, F.S., requires that, as part of the demonstration that an activity will not be harmful to water resources or inconsistent with district objectives, the governing board of the water management district or FDEP will require the applicant to provide "reasonable assurance that state water quality standards applicable to waters ... will not be violated and reasonable assurance that such activity ... is not contrary to the public interest. Furthermore, if the activity "significantly degrades or is within an

Outstanding Florida Water", the applicant must provide reasonable assurance that "the proposed activity will be clearly in the public interest" (emphasis added). This section also provides specific criteria for FDEP or the water management districts to apply in consideration of this two-modal test of reasonable assurance, as well as criteria for the review of potential mitigation measures provided in case the applicant is unable to meet one or more of the reasonable assurance criteria.

Subsection 373.414(3) defines the legislative intent to provide for the use of certain wetlands as a natural means to manage stormwater and to incorporate such wetlands into a comprehensive stormwater management plan subject to ecological and resource management constraints.

A critical section within Part IV is §373.430 F.S. (Prohibitions, violation, penalty, and intent). It is a violation of Part IV to cause pollution so as to "harm or injure human health or welfare, animal, plant or aquatic life or property;" "fail to obtain any permit required ... or violate or fail to comply with any rule, regulation, order or permit ...;" and "knowingly make any false statement." The section provides for penalties for violation of Part IV and is the foundation of the environmental management regulatory programs implemented by the FDEP and water management districts.

Sections 373.451 to 373.4595 are together called the Surface Water Improvement and Management Act (or SWIM Act). The Legislature found that the water quality of many surface waters was degraded and natural systems altered to an extent detrimental to the right of the public to enjoy such waters. Further, it found that it is the duty of the state to enhance the environmental and scenic value of surface waters. Factors contributing to the decline include point and nonpoint source pollution and destruction of natural systems. The SWIM Act required each water management district to prepare plans and implement programs for the improvement and management of surface waters. FDEP was also authorized to conduct statewide research to aid the understanding of impairment and restoration.

As noted previously, the Florida Legislature in HB 503 modified Chapter 373.4141, F.S., to preclude an agency of the state from requiring an applicant to obtain any other local, state or federal permit as a condition of issuance. The bill also modifies Chapter 373.4144, F.S., to encourage FDEP to work with other permitting agencies (state and federal) to create general permits for activities "which will cause only minimal adverse environmental effects when performed separately and which will have only minimal cumulative affects..."

2.2.6 Chapter 376 - Pollutant Discharge Prevention and Removal

The first part of Chapter 376, F.S., is called the Pollutant Discharge Prevention and Control Act (§376.011 to §376.21). This Act controls the discharge of pollutants from vessels and terminal facilities to coastal waters of the state and defines the duties and powers of FDEP to implement the Act.

2.2.7 Chapter 380 - Land and Water Management

Chapter 380 F.S. provides for the management of land and water within the state of Florida. Part I of the statute is called "The Florida Environmental Land and Water Management Act of 1972," Part II is related to coastal planning and management and Part III considers the Florida Communities Trust. There appears to be no specific provisions in this Chapter that are pertinent to Pinellas County governance of stormwater.

2.2.8 Chapter 381 - Public Health, General Provisions

Chapter 381, F.S., relates to Public Health and is mentioned here because it regulates onsite sewage treatment and disposal systems (§381.0065 to §381.0068, F.S.). While not specifically a matter for the

Pinellas County Surface Water Governance Study, stormwater has been related to the transport of pollutants from onsite sewage treatment systems and thus, this chapter is remotely related to surface water management and may become more of an issue if TMDLs for the County are prepared related to total or fecal coliform.

2.2.9 Chapter 403 - Air and Water Pollution Control Act

Chapter 403, F.S., is the major statute related to the environmental management of the state, especially Part I - Pollution Control (Subsections §403.021 to §403.4132, F.S.). The legislative declaration (§403.021, F.S.) states that it is to be the public policy "to provide that no wastes be discharged into any waters of the state within first being given the degree of treatment necessary to protect the beneficial uses of such waters." To understand the provisions of this Act, a few definitions are pertinent:

Contaminant is defined as "any substance which is harmful to plant, animal or human life.

Pollution is defined as "the presence ... of any substances, contaminants, noise, or manmade or man-induced impairment or air or waters or alteration of the chemical, physical, biological, or radiological integrity of air or water in quantities of levels which are or may be potentially harmful or injurious to human health or welfare, animal or plant life, or property or which unreasonably interfere with the enjoyment of life or property, including outdoor recreation unless authorized by applicable law."

Waters are defined as including "rivers, lakes, streams, springs, impoundments, wetlands, and all other waters or bodies of waters, including fresh, brackish, saline, tidal, surface, or underground waters. Waters owned entirely by one person other than the state are included only in regard to possible discharge on other property or water."

Wastes are defined as "sewage, industrial wastes, and all other liquid, gaseous, solid, radioactive, or other substances which may pollute or tend to pollute any waters of the state."

Stormwater management program is defined as "the institutional strategy for stormwater management including urban, agricultural and other stormwater."

Watershed is defined as "the land area which contributes to the flow of water into a receiving body of water."

Subsection 403.061, F.S., grants FDEP the power and duty to control and prohibit pollution of air and water, including the responsibility to develop and comprehensive program for the prevention, abatement and control of the pollution of the waters of the state. FDEP can group waters into classes related to the present and future "most beneficial uses" of the water. This section is implemented through the classification system provided in Chapter 62-302, [Florida Administrative Code](#) (see Section 2.5.3.7 below). This section also authorizes FDEP to establish water quality standards, including provision for reasonable mixing zones, except in Outstanding Florida Waters, and special standards for wetlands. To accomplish the implementation of pollution control programs, FDEP is authorized to establish a permitting system for the operation, construction, or expansion of pollution sources.

Subsection 403.0885, F.S., authorizes FDEP to establish a state NPDES permitting program in accordance with Section 402 of the Clean Water Act (Public Law 92-500, as amended, 33 U.S.C. ss. 1251 et seq.) and to pay entirely for the program through permit fees. This allows the state to assume delegation of the NPDES permitting program from the U.S. Environmental Protection Agency.

In 2012, the Florida Legislature, through HB 503, modified Chapter 403.061, F.S., to authorize zones of discharge to groundwater to extend the a “facility’s or property owners property boundary” and extend “vertically to the base of a specifically designated aquifer or aquifers.”

The major change authorized by HB 503 was the modification of Chapter 403.814, General Permits. A new subsection (known as the 10-2 rule) grants a general permit “for the construction, alteration and maintenance of a stormwater system serving a total project area of up to 10 acres.” Later in the modification a project when certified by a Florida P.E., a general permit can be obtained if the total project is less than 10 acres, the impervious area is less than 2 acres, no wetlands or surface water are impacted, pipes are less than 24 inches, the project is not part of a common larger plan, and the project does not violate other standards. This change states that there is a rebuttable presumption that, if the stormwater management system is designed, operated and maintained according to Chapter 373, the discharge will comply with water quality standards.

2.2.10 Florida Watershed Restoration Act

During 1999, the Florida Legislature passed the Florida Watershed Restoration Act which creates a new Section 403.067 F.S. covering Total Maximum Daily Loads (TMDL). As noted in the discussion of the Clean Water Act (Subsection 2.1.2 above), a TMDL is the estimated total loading that a water body can assimilate accounting for point sources, nonpoint sources, natural background and a margin of safety to account for unknowns without exceeding water quality standards. Subsection 403.067(1) states that the TMDL process is “scientifically based” and is necessary to “fairly and equitably allocate pollution loads to both nonpoint and point sources.” Further the allocation of load will include cost-effectiveness as a consideration and may be implemented through “non-regulatory and incentive-based programs.” The first step in the TMDL process is to prepare a 303(d) Priority List (see Subsection 2.5.1.2 above) for which the TMDL calculation is to be completed according to a schedule. Based upon the list, FDEP is to conduct TMDL analyses and allocate the loading. The allocation process is subject to rule adopted in 2002 (See subsection 2.3.8 below regarding Chapter 62-304). TMDLs can be based upon a Pollutant Load Reduction Goal (PLRG, see Subsection 2.3.3 below). Allocation of the TMDL will be pursuant to rule and will include consideration of existing treatment levels, different impacts by pollutant sources, the availability of treatment technology, economic and technical feasibility, cost-benefit analysis, reasonable schedules, and moderating provisions of the rules. The TMDLs will ultimately be adopted by administrative regulation.

During the 2005 legislature the Florida Watershed Restoration Act was modified by Senate Bill 444. The bill modifies §403.067 as follows:

- TMDLs are to establish load allocations that attain “pollutant reductions ... established to achieve water quality standards ...” [§403.067(6)(b)]
- The TMDL analysis may provide a preliminary allocation of pollutant loads to point and nonpoint sources that may be finalized in a BMAP. [§403.067(6)(b)]
- FDEP may adopt TMDLs that, because of lack of data, are phased subject to additional data collection. In such cases, FDEP must define the data inadequacies. [§403.067(6)(c)]
- Regarding BMAPs, the law states:
 - FDEP may develop BMAPs to address watershed or water body TMDL implementation;

- BMAPs can integrate strategies using existing water quality and pollution reduction programs, but must address potential future increases due to growth.
- The BMAP is to be developed using stakeholders from the watershed.
- The BMAP must include: management strategies, schedule for implementation including milestones, feasible funding sources; an assessment mechanism and an equitable allocation of pollutant reduction requirements.
- All or part of the BMAP must be adopted by the FDEP Secretary.
- BMAP requirements are to be inserted into NPDES permits “in a timely manner”. If no allocation exists when an NPDES permit comes due for renewal, the law allows for a compliance schedule to provide time for the BMAP to be completed.
- For MS4 permit holders, implementation of TMDLs or BMAPs is to be accomplished by best management practices related to the Maximum Extent Practical (MEP) standards defined by NPDES regulations and permits.
- The BMAP implementation schedule can exceed 5 years.
- A discharger is not subject to additional regulatory restriction related to pollutant load reduction if there is a BMAP in place and the discharger is in compliance with the BMAP load reductions and schedule required (known as a “safe harbor”).

Finally, §403.067(8)(c) requires FDEP to submit a report to the legislature prior to adoption of rules for pollutant trading. The report is to contain recommendations on rules, the basis for equitable economically based agreement and proper tracking of pollutant loads traded.

2.3 State of Florida Regulations

Regulations are counterparts to the state statutes. These are contained mainly in Chapter 6 of the Florida Administrative Code (FAC). As in the case of the state statutes, descriptions of pertinent regulations are provided below. It should be noted that for the most part, the regulations are administered by FDEP.

2.3.1 Chapter 62-4 - Permits

Chapter 62-4 provides general regulations regarding the “issuance, denial, renewal, extension, transfer, modification, suspension and revocation of any permit” required by FDEP. The three parts of the Chapter include Part I - General, Part II - Specific Permits, and Part III - General Permits. The fundamental statement in the rule is contained in §62-4-030 FAC:

“Any stationary installation which will reasonably be expected to be a source of pollution shall not be operated, maintained, constructed, expanded, or modified without the appropriate and valid permits issued by the Department, unless the source is exempted by Department rule. The Department may issue a permit only after it receives a reasonable assurance that the installation will not cause pollution in violation of any of the provisions of Chapter 403, F.S., or the rules promulgated thereunder.”

The rest of the chapter deals with exemptions, procedures to obtain a permit, fees, special and general permits, and special provisions. The key phrases here are “exempted”, and “reasonable assurance.”

Exemptions include structural changes that do not alter the "quality, nature, and quantity of ... water contaminant ... discharges or which will not cause pollution"; and existing or proposed installations which FDEP determines does not or will not discharge contaminants in sufficient quantity "as to contribute significantly to the pollution problems in the State."

Procedures for obtaining a permit from FDEP including processing time and fees are covered in §62-4.050. Fees for implementation of the FDEP regulatory and surveillance program are defined in §62-4.052. Also, typically FDEP issues permits with both general and specific permit conditions; the general permit requirements are listed in §62-4.160.

In Part II (Specific Permits; Requirements), three sections are of particular importance. The first set of requirement is listed in §62-4.242, entitled "Antidegradation Permitting Requirements, Outstanding Florida Waters; Outstanding National Resource Waters; Equitable Abatement."

Antidegradation. This rule refers to the antidegradation policy defined in §62-302.300 and 62-302.700 discussed below. In particular, the policy states that FDEP may permit a discharge that will not reduce the receiving water quality below its classification if the degradation is "necessary or desirable under federal standards and under circumstances which are clearly in the public interest." §62-4.242 describes the factors that the department must consider in evaluating this two-pronged qualification, which is applicable to stormwater discharges as well as wastewater or industrial discharges to surface waters. The criteria to evaluate these two qualifications include: whether the project is important to and beneficial to public health, safety and welfare; whether the discharge will adversely affect the conservation of fish and wildlife and their habitat; whether the discharge will affect water-based recreation including fishing in the area; and whether the discharge is consistent with any SWIM Plan.

Outstanding Florida Waters. §62-4-242(2) regulates discharges to Outstanding Florida Waters (OFW). Basically, FDEP may not issue a permit for a direct discharge to an OFW or which significantly degrades an OFW unless the discharge is clearly in the public interest and either a FDEP permit was issued prior to designation as an OFW or the existing ambient water quality will not be lowered outside an approved mixing zone. Similar, yet more stringent requirements apply to Outstanding National Resource Waters (ONRW).

Equitable Abatement. A rarely used or quoted portion of the FAC [§62-4.242(4)] provides for the protection and enhancement of surface waters with quality artificially lowered below that necessary for their designated use. Under these circumstances, no permit to discharge pollutants can be issued unless "water quality standards once achieved would not be violated as a result of the proposed activity or discharge", the discharge is "necessary or desirable under federal standards and it is "clearly in the public interest." The rest of the rule considers the equitable allocation of allowable discharge under the circumstances to multiple discharges.

§62-4.243 provides exemptions to two types of artificial water bodies: artificial water bodies classified for agricultural supplies; and water bodies classified for navigation, utility and industrial use.

§62-4.244 describes FDEP regulations related to mixing zones. A mixing zone is an area adjacent to a point of discharge allowed to be degraded to minimum conditions [§62-3.051(1)] so as "to provide an opportunity for mixing and thereby reduce the cost of treatment." Specific restrictions on the applicability of mixing zones are listed.

2.3.2 Chapter 62-25 - Regulation of Stormwater Discharge

The state of Florida is one of the states in the United States that have adopted regulations for stormwater discharges. These regulations are contained in Section 62-25. This section states that "the discharge of untreated stormwater may reasonably be expected to be a source of pollution of waters of the state and is, therefore, subject to Department regulation." A new stormwater discharge facility is defined as a facility not in existence before February 1, 1982, or for which a permit was issued prior to this date, or an existing structure that has been modified. Other definitions are provided for detention, filtration, regional stormwater discharge facility, retention, stormwater management system, swale, and wetlands stormwater discharge facility. Also "stormwater" is defined as "the flow of water which results from, and which occurs immediately following, a rainfall event."

§62-25.025 provides design and performance standards for stormwater discharge facilities. Particular standards include:

- Retention and detention basins must provide treatment volume capacity again within 72 hours.
- Filtration system must have a safety factor of two or more unless otherwise proven.
- Swales must percolate 80 percent of the runoff from a 3-year, 1-hour design storm within 72 hours.
- Permanently wet retention and detention facilities must be fenced unless the side slopes are no steeper than 4 unit's vertical to 1 unit horizontal (4:1) out to 2 feet below the control elevation.
- Control of oil and grease is necessary in areas subject to such runoff.
- Facilities discharging to OFWs must include 50 percent more treatment than minimum requirements.

Exemptions to these rules include facilities for: one single family unit, duplex, triplex or quadruplex (if not part of a larger subdivision); single family residential project of less than 10 acres and less than 2 acres of impervious surface; facilities made up entirely of properly designed swales; facilities discharging to regional stormwater facilities; facilities for agricultural lands that are part of a Conservation Plan; and facilities for silvicultural lands.

§62-25.035 requires a general permit for the construction of four types of facilities:

- facilities that discharge to a permitted stormwater facility;
- facilities that provide retention or detention with filtration of the first inch of rainfall or for projects of less than 100 acres, treatment of the first 1/2 inch of runoff;
- modification or reconstruction of an existing government-operated facility "not intended to serve new development, and which will not increase pollution loading, or change points of discharge in a manner that would adversely affect the designate uses; or,
- facilities that use a combination of stormwater management systems.

For the most part, these regulations are delegated to the water management district, and in the particular case of Pinellas County, to the Southwest Florida Water Management District through the Environmental Resource Permit process.

2.3.3 Chapter 62-40 - State Water Policy

The State Water Policy is intended "to provide water policy goals, objectives, and guidance for the development and review of programs, rules, and plans relating to water resources, as expressed in Chapters 187, 373, and 403, Florida Statutes." The chapter also explains and expands upon the various roles of state, regional, and local governments in the planning and implementation of the State Water Policy. While the chapter provides overall water program policy, the rule is not to be used as standards and criteria for individual permit review [§62-40.110(4)].

Part III of the chapter provides general policies related to water supply, water quality protection and management, flood protection and floodplain protection, natural systems protection and management, and management policies. Programs, rules and plans must seek to follow these policies if "economically and environmentally feasible, not contrary to the public interest and consistent with Florida law." A few pertinent policies are listed below:

- "Restore and protect the quality of ground and surface water by solving current problems and ensuring high quality treatment of stormwater and wastewater."
- "Encourage nonstructural solutions to water resource problems and give adequate consideration to nonstructural alternatives whenever structural works are proposed."
- "Manage the construction and operation of facilities which dam, divert, or otherwise alter the flow of surface waters to minimize damage from flooding, soil erosion or excessive drainage."

Part IV provides policies related to resource protection and management. §62-40.432 deals with surface water management and protection through policies for stormwater management programs. The major policies within this subsection are listed below.

- The primary goals for the state's stormwater management program include: maintain the pre-development characteristics of a site; reduce stream channel erosion, pollution and flooding; reduce stormwater pollution loading; encourage reuse; enhance groundwater recharge; maintain estuarine salinity regimes; and address stormwater management on a watershed scale.
- Watershed management plans are to be developed by each water management district consistent within the SWIM and NPDES programs.
- In the development of an overall stormwater management program within the state, FDEP will be the lead agency responsible for the overall program goals, objectives and guidance. The water management districts are to administrate the stormwater management program through watershed specific goals, objectives and plans and the definition of watershed-specific pollution load reduction goals. Local governments implement stormwater management programs with the support of the state and water management district.
- §62-40.432(5) defines the minimum stormwater treatment performance standards for the state. When adopting rules pertaining to stormwater management, the state and water management districts must require that new stormwater facilities "achieve at least 80 percent reduction of the average annual load of pollutants that would cause or contribute to violations of state water quality standards." If the discharge is to OFW, the reduction increases to 95 percent of the annual average load.
- The water management districts must develop pollution load reduction goals (PLRGs) for older stormwater management systems (constructed prior to February 1982) and adopt them as part of a SWIM plan (see below) or other comprehensive water management plan. Pollution load reduction

goals are "estimated numeric reductions in pollutant loadings needed to preserve or restore designated uses or receiving bodies of water and maintain water quality consistent with applicable state water quality standards." PLRGs are to be determined for SWIM waters first (by December 1994), then for waters identified by water management district priorities. PLRGs are part of the building blocks for watershed management, SWIM plans, and TMDLs.

§62-40.450 notes that local governments have the primary responsibility for flood protection including land use control, development regulations, level of service definition and maintenance activities.

§62-40.520 requires each water management district to prepare a comprehensive water management plan known as the District Water Management Plan (DWMP). The plan must deal with water supply, flood protection, water quality management, and protection of natural systems. The most recent Southwest Florida Water Management District (SWFWMD) Strategic plan is dated January 4, 2013.

2.3.4 Chapter 62-43 - Surface Water Improvement and Management Act

Enacted pursuant to the Surface Water Improvement and Management (SWIM) Act, §62-43 provides regulations for the development of priority lists, preparation and review of management plans, and distribution of SWIM Trust Funds. As a first step, each of the water management districts were to submit to FDEP a list of SWIM priority water bodies of regional or statewide significance that required restoration or protection. For each of the water bodies prioritized, the water management districts were to prepare restoration/protection plans for the review of FDEP, DOE, and other state agencies. FDEP would then distribute the SWIM Trust Funds to the approved plans. The funding of this program by the legislature has been limited and some of the water management districts have taken over the program. A 2013 summary report on SWIM priority waters prepared by SWFWMD identifies 10 water bodies, with Tampa Bay listed as first and Lake Tarpon listed as seventh.

2.3.5 Chapter 62-113 - Delegations

Chapter 62-113 lists all of the delegation agreements reached by FDEP related to the implementation of regulations. Agreements with particular pertinence include:

- Agreement #82-18: delegates to SWFWMD permitting authority for construction of water supply wells.
- Agreement #84-19: delegates water quality certification for agricultural dredge and fill to SWFWMD.
- Agreement #89-13: delegates MSSW permitting to SWFWMD.
- Agreement #91-8: delegates the permitting of certain aquaculture activities to SWFWMD.
- Agreement #98-4: defines division of responsibilities relative to wetland determinations.

2.3.6 Chapter 62-302 - Surface Water Quality Standards

Probably the most important regulation for the implementation of state statutes on pollution control is §62-302 FAC, since it provides the water quality standards for surface waters in the state. The water quality standards refer to the designated use classifications as well as the specific water quality criteria to achieve the designated use and the moderating provisions of mixing zones, zone of discharge, site specific alternative criteria, exemption and equitable allocation. The Findings section (§62-302.300) reiterates that "pollution which causes or contributes to new violations of water quality standards or to continuation of existing violation is harmful to the waters of this state and shall not be allowed."

Subsection §62-302.300(17) defines the two-pronged test for permitting: "necessary and desirable under federal standards" and "under circumstances which are clearly in the public interest."

Water quality criteria are defined to achieve the present and future most beneficial uses of state waters. In Florida, the beneficial uses have been categorized as follows:

Class I	Potable Water Supplies
Class II	Shellfish Propagation and Harvesting
Class III	Fish Consumption; Recreation, Propagation and Maintenance of a Healthy, Well-Balanced Population of Fish and Wildlife
Class III L	Fish Consumption; Recreation or Limited Recreation; Propagation and Maintenance of a Healthy, Well-Balanced Population of Fish and Wildlife
Class IV	Agricultural Water Supplies
Class V	Navigation, Utility and Industrial Use

Class III Limited or Class III L is a relatively new classification adopted in 2010 which includes waters that have "human-induced physical or habitat conditions that prevent attainment of Class III Uses." This classification will be considered for artificial or significantly altered waterbodies such as man-made concrete channels.

Each of these classifications have specific water quality criteria assigned to them and are listed above generally in order of the degree of protection afforded in the regulation although Classes I, II and III share many criteria. Unless specifically identified by rule, all Florida waters are designated as Class III. Exceptions to this include secondary and tertiary canals wholly within agricultural areas and a list of waters provided in the rule. For Pinellas County, Old Tampa Bay, Mobbly Bay and Tampa Bay ("south and westward to the Sunshine Skyway, except Safety Harbor north of an east-west line through Phillipi Point"); and Tampa Bay and Gulf Waters ("west of Sunshine Skyway, excluding waters north of SR 682 and waters that are both west of Pinellas Bayway and north of an east-west line through the southernmost point of Pine Key") are defined as Class II. At a minimum, however, surface waters in the state must be free from components within discharges which cause nuisance settleables and floatables; produce color, odor taste or otherwise nuisance conditions; are acutely toxic; are present in concentrations that are carcinogenic, mutagenic or teratogenic; or pose a serious danger to public health, safety or welfare. These are known as the "Free Froms." Specific water quality criteria by designated use are provided in a table included in the rule as §62-302.530.

§62-302.700 lists waters that have a special designation of OFW, Outstanding National Resource Waters (ONRW) and otherwise. For Pinellas County, the list includes the following areas:

Outstanding Florida Waters

Pinellas Waters (§62-302.700(9)(b)25)
 Caladesi Island State Park
 Honeymoon Island State Recreation Area
 Anclote Key State Preserve
 Weedon Island State Preserve
 Gateway
 Boca Ciega Bay Aquatic Preserve

Outstanding National Resource Waters

None

The last section in the surface water quality regulations is §62-302.800, Site Specific Alternative Criteria (SSAC). In the case of a water body that does not meet applicable water quality criteria due to natural background or "man-induced conditions which cannot be controlled or abated," an affected person or FDEP can petition to establish alternative water quality criteria. The regulations require a demonstration be made to the Department showing that the conditions are natural or not abatable and defining new criteria considering spatial, seasonal and diurnal variations.

In 2011 and 2012, FDEP modified Chapter 62-302, FAC to include numeric nutrient criteria. While the actual nutrient criteria are the same as those proposed by the USEPA (since USEPA used Florida data), the application of the NNC is different. In particular, §302.531, FAC, states that the criteria apply in a hierarchical order:

- Where site specific interpretation of the narrative criteria:
 - TMDLs that interpret the narrative criteria;
 - Site specific alternative criteria (SSAC) for one or more nutrients or nutrient response variables;
 - Estuary specific interpretations; or,
 - Other site specific interpretations such as Reasonable Assurance Demonstrations or Level II Water Quality Based Effluent Limitations (WQBEL).
- Where site specific information has not been established:
 - If there is an establish and quantifiable cause and effect relationship among nutrients and a response variable, the NNC will be set to protect the response variable;
 - If there is no established relationship, then the NNC criteria apply (see above), except that for streams, there must be corroborative biological health information to support or reject the nutrient problem.

This last condition is one that separates the state's criteria from the USEPA's: Florida's require biological confirmation and the USEPA's does not. Florida's rule also adds NNC for estuaries in Florida from Clearwater Harbor to Biscayne Bay. These criteria were set generally based on existing studies and in many cases, define criteria to maintain the existing conditions. For Pinellas County, the criteria are listed in **Table 2-2**.

Table 2-2.**Section 62-302.532, FAC. NNC for Pinellas Estuaries**

Estuary	Total Phosphorus	Total Nitrogen	Chlorophyll <i>a</i>
Clearwater Harbor/ St. Joseph Sound	Annual geometric mean values not to be exceeded more than once in a three year period. Nutrient and nutrient response values do not apply to tidally influenced areas that fluctuate between predominantly marine and predominantly fresh waters during typical climatic and hydrologic conditions.		
a. St. Joseph Sound	0.05 mg/L	0.66 mg/L	3.1 ug/L
b. Clearwater North	0.05 mg/L	0.61 mg/L	5.4 ug/L
c. Clearwater South	0.06 mg/L	0.58 mg/L	7.6 ug/L
Tampa Bay	Annual totals for nutrients and annual arithmetic means for chlorophyll <i>a</i> , not to be exceeded more than once in a three year period. Nutrient and nutrient response values do not apply to tidally influenced areas that fluctuate between predominantly marine and predominantly fresh waters during typical climatic and hydrologic conditions.		
a. Old Tampa Bay	0.23 tons/million cubic meters of water	1.08 tons/million cubic meters of water	9.3 ug/L
b. Hillsborough Bay	1.28 tons/million cubic meters of water	1.62 tons/million cubic meters of water	15.0 ug/L
c. Middle Tampa Bay	0.24 tons/million cubic meters of water	1.24 tons/million cubic meters of water	8.5 ug/L
d. Lower Tampa Bay	0.14 tons/million cubic meters of water	0.97 tons/million cubic meters of water	5.1 ug/L
e. Boca Ciega North	0.18 tons/million cubic meters of water	1.54 tons/million cubic meters of water	8.3 ug/L
f. Boca Ciega South	0.06 tons/million cubic meters of water	0.97 tons/million cubic meters of water	6.3 ug/L
g. Terra Ceia Bay	0.14 tons/million cubic meters of water	1.10 tons/million cubic meters of water	8.7 ug/L

Finally, §62-302.800(3), FAC, allows for a Type III Site Specific Alternative Criteria for Nutrients. The Type III SSAC can be approved if it is shown that the waterbody achieves the narrative criteria, there are sufficient data to characterize the waterbody, and downstream protection is provided.

2.3.7 Chapter 62-303 - Impaired Waters Rule

Chapter 62-303 of the Florida Administrative Code provides regulations on how waters are listed as impaired relative to 303(d) of the Clean Water Act. As noted previously, every 2 years, states are supposed to identify and list to USEPA waters that do not meet their designated uses and that will be studied to determine their “total maximum daily load.” This list of waters is known as the 303(d) Impaired Waters Lists (referring to the section of the Clean Waters Act). In 1999, the Watershed Restoration Act (Subsection 403.067, Florida Statutes) defined the protocols for development of an impaired waters list as well as for TMDL activities in Florida. Based on the suggestions of a technical advisory committee put together by FDEP, an impaired waters rule (IWR) was developed and adopted in 2001 to provide FDEP the methods to define a water body impaired. The rule defines a two step process increasing the likelihood of impairment as the steps progress. Step one results in a planning list that includes waters that may be impaired and step two results in a verified list that, with some surety, give

the USEPA and the State a list with reduced false positives (e.g., waters that appear impaired but are really not). The protocols for this listing process is provided in this rule for aquatic life support, bacteriological issues, interpretation of nutrient criteria, support for primary contact and recreation, fish and shellfish consumption, and drinking water support.

Additions to Chapter 62-303, FAC, were also made to accommodate the Florida NNC. Of particular importance is the addition of a definition of Biological Health Assessments that will be used to evaluate the biological health of streams and lakes. Also, the interpretation of the NNC listed in Chapter 302, FAC, is clarified in this chapter including a statement of statistically significance sampling and trends. This Chapter also adds a new list: historically, the rule has called for a Planning List (waterbodies for which there is an indication of impairment) and a Verified List (waterbodies for which impairment has been confirmed). The new list is called the Study List – waterbodies on this list have evidence of impairment but the causative pollutant has not been identified. FDEP intends to obtain sufficient data over time to identify the causative pollutant or move the Study List waterbodies to a unimpaired state based on addition and scientifically reliable data and study.

2.3.8 Chapter 62-304 – Total Maximum Daily Loads

This chapter is relatively new and is a consequence of the Watershed Restoration Act; it provides adopted TMDLs within the state, divided by FDEP district office. Each adopted TMDL is listed along with the water body, wasteload allocation, load allocation, and margin of safety. This rule is annually modified to include adopted TMDLs. TMDLs for the Southwest FDEP District office are contained in §62-304.600, FAC.

2.3.9 Chapter 62-330 - Environmental Resource Permitting

The chapter adopts by reference the Environmental Resource Permitting (ERP) process from the water management districts, so that the state operates under a consistent set of permitting regulations. The correlation among the water management districts relative to specific regulations is described in subsection 2.4 below.

2.3.10 Chapter 62-343 - Environmental Resource Permit Procedures

Similar to Chapter 62-341, this regulation provides for common regulatory authority for FDEP to implement the ERP process as well as the determination of the landward extent of wetland and surface waters.

2.3.11 Chapter 62-504 - State Revolving Loan Program for Stormwater Facilities

For a number of years, the state of Florida has operated a low-interest loan program for wastewater capital improvements. Recently, the state authorized that ten percent of the funds available for such loans were be potentially allocated to stormwater related projects. Chapter 62-504 regulates the low-interest loan (referred to as the State Revolving Loan) process. Loans can be procured for stormwater facilities related to collection, storage, retention, treatment or disposal of stormwater and residuals, land for stormwater facilities, construction and procurement, acquisition of stormwater facilities, and a list of other activities provided in §62-504.300. Access to the loans is obtained by submitting an application to FDEP and if granted, a loan agreement is negotiated with the Department.

Loans are distributed by FDEP based upon a priority list. Each year effective July 1, the priority list is adopted defining projects potentially fundable for the next fiscal year. Priority ranking is based upon a

scoring system detailed in §62-504.650. A base score is assigned based upon reduction of a documented health hazard, reduction of coliform discharged to surface or ground waters, compliance with total maximum daily load limitations, reduction of saltwater intrusion, compliance with NPDES MS4 permit conditions, and reduction in pollutant loadings. A multiplier to the base score is provided for discharges to special waters.

2.3.12 Chapter 62-520 - Ground Water Classes, Standards, and Exemptions

Chapter 62-520 FAC is the counterpart of ground water to the surface water rules in §62-302 FAC. In particular, §62-520 states that the "present and future most beneficial uses of all ground waters of the state have been designated by the Department by means of the classification system set forth in this chapter ..." Subsection 62-520.400 defines the minimum standards for all ground waters (see "Free Froms" above). The classifications of ground waters are:

Class F-I	Potable water use; in a single source aquifer in §62-520.460 with TDS < 3000 mg/l and specifically reclassified as F-I.
Class G-I	Potable water use; in a single source aquifer with TDS < 3,000 mg/l.
Class G-II	Potable water use; with TDS < 10,000 mg/l; unless otherwise classified.
Class G-III	Non-potable water use; in unconfined aquifers with TDS < 10,000 mg/l; or TDS 3,000 to 10,000 and either has been reclassified or exempted.
Class G-IV	Non-potable water use, in unconfined aquifers with TDS > 10,000 mg/l.

§62-520.420 provides standards for G-I and G-II ground waters. Both must meet primary and secondary drinking water standards (Rules 62-550.310 and 62-550.320, with exceptions). If the natural background concentrations exceed drinking water standards then the natural background concentrations become the prevailing standard. The standards do not apply within a permitted zone of discharge.

For G-III ground water, §62-520.430 states that only the minimum criteria (Free Froms) apply except in the case of an underground injection facility that has received an aquifer exemption. Class G-IV ground water standards are set on a case-by-case basis. Class F-I ground waters only apply in Flagler County.

Exemptions for installations discharging to Class G-I and G-II are considered in §62-520.500. Exemptions are possible only if granting the exemption is in the public interest and does not interfere with existing uses; compliance with the regulations is unnecessary to protect ground water supplies; the costs of compliance outweigh the benefits, a monitoring program is established; and public health, safety and welfare are not endangered. Existing discharges to Class G-II waters are exempt from the secondary drinking water standards unless FDEP determines that one or more standard is needed to protect a potable source; however, all installations discharging to Class G-II ground waters cannot cause a violation of secondary drinking water standards at any water well outside the zone of discharge.

2.3.13 Chapter 62-522 - Ground Water Permitting and Monitoring Requirements

§62-522.300 states that no installation can directly or indirectly discharge to ground water any contaminant that causes a violation of water quality standards, except within a zone of discharge. No zone of discharge is allowed for wells or sinkholes that "allow direct contact with Glass G-I and G-II

ground water", except in the cases of recharge using surface waters or inter-aquifer transfers. Also, no zone of discharge is allowed for discharges that pose an "imminent hazard" to the public.

For Class G-I, no zone of discharge is allowed (§62-522.400) except that "domestic effluent or reclaimed water and stormwater discharge sites authorized by Department permit or rule shall have zones of discharge extending no more than 100 feet from the site boundary " or property boundary, whichever is less. For Class G-II ground waters, the Department can establish a zone of discharge subject to certain provisions. §62-522.410(3)(c) states that stormwater facilities are not required to obtain a permit to establish a zone of discharge. The zone is 100 feet from the site or to the site boundary. Stormwater facilities are exempted from the ground water monitoring requirements.

2.3.14 Chapter 62-528 - Underground Injection Control

The purpose of this chapter is to "protect the quality of the State's underground sources of drinking water and to prevent the degradation of the quality of other aquifers..." To this end, the rule establishes the State Underground Injection Control Program. Classification of wells include Class V, Group 6 stormwater wells used to drain stormwater runoff or for lake level control [§62-528.300(1)(e)6]. FDEP must identify and protect (except where exempted) "all aquifers or parts of aquifers" as an underground drinking water sources. An aquifer can be exempted after a public hearing.

Part B of Chapter 62-528 considers criteria and standards for Class V wells. These wells are for the injection of "non-hazardous fluids into or above formations that contain underground sources of drinking water." Exploratory well testing and well construction requirements are provided in §62-528.603 and §62-528.605, respectively. Monitoring is required of Group 6 (stormwater) wells by §62-528.615 and requirements for monitoring are to be included in the permit.

2.3.15 Chapter 62-621 – NPDES Generic Permits

Generic permits are allowed under Federal NPDES permitting regulations for the stormwater discharge from certain types of operations. These permits are allowed for: petroleum contaminated sites; discharge from produced non-contaminated ground water; concrete batch plants; discharge from large and small construction activities; stormwater discharge from industrial activities (also called Multi-Sector Generic Permit); and discharge from Phase II Municipal Separate Storm Sewer System (MS4). General conditions reference federal regulation under 40 CFR 122.28 and specific conditions are listed in this rule.

2.3.16 Chapter 62-624 – Municipal Separate Storm Sewer Systems

Referencing federal regulations 40 CFR 122.26, Chapter 62-624 codifies the delegation of the implementation of these NPDES requirements in the state of Florida. Generally, §62-624.300 requires that operators of Phase I and Phase II MS4 must obtain a 5-year permit as defined by the chapter. Elements of the permits, process for permit re-application, standards for issuing or denying individual permits, monitoring requirements and annual report requirements are included in this rule.

2.3.17 Chapter 9J-5 - Minimum Criteria for Review of Local Government Comprehensive Plans

In June, 2011, Rule 9J-5 related to the minimum review criteria for local comprehensive plans was repealed in its entirety, through House Bill 7207. The bill also extended existing permits by 2 years.

Pinellas County did adopt a comprehensive growth management plan and approved major updates in 2008 (discussed below).

2.3.18 Chapter 14-86 - Drainage Connections

The last element of Florida regulations to be considered is Chapter 14 of the Florida Administrative Codes that relates to the FDOT. In particular, Chapter 14-86 addresses drainage connections to transportation facilities from adjacent properties. A "drainage connection" is "any structure, pipe, culvert, device, paved or unpaved area, swale, ditch, canal, or other feature whether natural or created which is ... conveys stormwater runoff or other surface discharge from adjacent property to the Department's facility." To connect to an FDOT facility, a permit is required except in the following instances:

- Single family improvements not part of a larger common plan;
- Agricultural or silvicultural improvements regulated by FDEP or WMD that meet accepted drainage practices; and
- Other improvements for which the post-development impervious area is less than 40 percent, less than 5000 square feet of buildings and paved surfaces, no work is done in the FDOT right-of-way to alter drainage, and the property is located in an area with positive outlet.

All other connections require a permit. The permit applicant must provide assurances that the peak flow and volumes are provided for in an approved management plan as either allowed by regulation or such that the post-construction discharge rates are no more than the pre-construction rates. Also the applicant's discharge cannot exceed a proportional share of the total facility capacity and meets all applicable water quality standards. Upon receipt of the permit, the drainage connection is not exempt from other state regulations. The permit can be revoked if the connection is not constructed according to the permit, emergency conditions exist, false or misleading information was provided in the permit application, or a notice of connection is not submitted to the Department in a timely manner after construction.

2.4 Water Management District Regulations

The SWFWMD regulates and controls the management of public water within south-central Florida, including Pinellas County.

2.4.1 Chapter 40D-1 - General and Procedural

Describing the basic permitting authority of the SWFWMD, §40D-1.602 states that, unless exempt by statute or District rule, a permit must be obtained for a number of activities including construction or modification of a surface water management system (e.g., stormwater facility, dam, impoundment, or reservoir). The permitting regulations are contained in §40D-4, §40D-40 and §40D-400.

2.4.2 Chapter 40D-4 - Environmental Resource Permits

Implemented pursuant to Part IV Chapter 373 F.S., this chapter is for the Environmental Resource Permitting process. It is the policy of the District to regulate activities in wetlands or other surface waters and to control the management and storage of surface waters within the boundaries of the District. The operating principle is that "unless expressly exempt by law or District rule, an Environmental Resource Permit shall be obtained from the District prior to" construction or operation of a new surface water system; alteration, removal or abandonment of a surface water system; or establishment of a mitigation bank [§40D-4.041(1)]. This is done through individual ERP permits (§40D-4), general permits (§40D-40), and no-notice and noticed general permits (§40D-400). To determine whether an activity may affect surface waters, an entity can petition the District for a formal determination of the landward extent of wetlands or surface waters. Exemptions include alterations on land less than 10 acres; land with less than

2 acres of impervious surface; activities not in wetlands; activities not in lakes, stream or other waters; activities not using drainage pumps or other structure; activities not using pipes larger than 24 inches; discharges that meet water quality standards; activities part of a conservation plan approved by the Conservation District Board; activities not expected to have a significant adverse impact and maintained systems. Conditions for issuance of an ERP permit are listed in §40D-4.301 and 302.

2.4.3 Chapter 40D-40 - Environmental Resource General Permits

Chapter 40D-40 allows general ERP permits for "certain surface water management systems which have been determined not to be harmful to the water resources of the District and to be not inconsistent with the objectives of the District." Three general ERPs are allowed: Minor Surface Water Management Systems, Surface Water Management Systems, and Site Conditions Assessment. Also, General Environmental Resource Construction and Operation Permits are required for changes to certain water management systems.

2.4.4 Chapter 40D-400 – Noticed and No-Notice General Environmental Resource Permits

The last type of permitted activity includes general Environmental Resource Permits for activities that have "minimal adverse impacts to the water resources of the District, both individually and collectively." Certain minor surface water management activities can be implemented after notice to the District; others can be completed without notice.

2.4.5 Basis of Review for Environmental Resource Permit Applications

The last major element of the regulatory arena within SWFWMD is the Basis of Review. The purpose of this regulation is to "identify the usual procedures and information used by the District staff in permit application review." Describing each element of the Basis of Review is beyond the scope of this document.

2.5 Local Regulations

The Pinellas County Code is in three parts: Part I – Charter; Part II – Code; and Part III – Land Development Code. Provided below are the pertinent parts of the Code related to stormwater management. In general, each Part is divided, as necessary, into Chapter, Article and Section or Chapter, Article, Division and Section.

2.5.1 County Charter

The adoption of the county charter by the voters of Pinellas County in 1980 granted specific opportunities for the county government to address stormwater problems.

In the non-charter county, in the event of conflicts between a municipal ordinance and that of the county on the same subject; municipal ordinances generally prevail inside the city's boundaries. However, the Florida Constitution requires county charters to specify which ordinance prevails in what policy area.

Subsection 2.04 of the Pinellas County Charter lists those programmatic areas where county ordinances may apply countywide and supersede those of a city. One such policy areas as described in subsection 2.04(g) area is the design, construction and maintenance of major drainage systems in both the unincorporated and incorporated area. Another area is countywide planning (Section 2.04(s)) as

described in special law, which provides that the Board of County Commissioners has oversight authority on most planning.

In addition to the authority and powers specifically conferred by statutes and the charter, programs adopting initiatives that implement water quality policies and other programs effectuating measures that address water quantity or quality measures may be within the purview of the county in such programs were construed to be a county purpose.

2.5.2 Chapter 110 – Special Assessments

Upon the written petition of 60 percent of the area described in the petition, this chapter of the County Code allows property owners to request the construction of drainage improvements and to create an assessment district to pay for the construction. The Board of County Commissioners may also initiate special improvement programs without the petition. The assessment is levied on benefited properties and may be based on front footage or any other method defined by the BOCC. A noticed hearing is required for adoption of the special assessment.

2.5.3 Chapter 58 – Environment; Article VI – Stormwater & Surface Water Pollution

In general, this chapter of the County Code is to address the regulatory authority required by the NPDES MS4 permit issued to Pinellas County. The purpose of the Article is to “prevent and abate pollution through the regulation and control of connection and discharges to the separate storm sewer system or receiving waters of the County and to limit the use of the separate storm sewer system to the collection, conveyance, treatment, and disposal of stormwater through appropriate regulation and enforcement” [Section 58-237]. The Article allows for inspection and monitoring of systems to enforce the code and authorizes the county administrator to require the elimination or cessation of an illicit discharge. Except as authorized, any discharge to the MS4 or surface waters of Pinellas County not composed entirely of stormwater is prohibited.

In 2010, Article XIII, Landscape Maintenance and Fertilizer Use Application, was added to this part of the code. This article regulates the use of fertilizer use by “establishing a restricted season for fertilizer application, fertilizer free zones, low maintenance zones, exemptions, training and licensing requirements.” The purpose of the regulation is to “minimize negative secondary and cumulative environmental effects associated with the misuse of fertilizers and improper landscape maintenance practices.”

2.5.4 Chapter 134 – Land Development Code: General and Administrative Provisions

Part III of the Code of Pinellas County is the Land Development Code, including Chapters 134 to 170. Modifications to Chapter 134 regarding redevelopment were made in 2010. The modifications eliminated certain exemptions for redevelopment projects to the requirement for stormwater treatment. While no new flood control activities are required for redevelopment sites under 3 acres unless the site had experienced flooding. These sites are still to be subject to water quality standards.

2.5.5 Chapter 138 – Zoning; Article II – Administration and Enforcement

This Article pertains to the site plan requirements and review procedures section of the zoning code. The Article requires a site plan review for all new construction except single family dwellings, duplexes and

triplexes; additions to existing uses where the addition of new impervious is 25 percent or more of the remaining permeable area of the parcel; all subdivisions; and all construction that disturbs 1 acre or more near the County's MS4. The site plan review process is described and the requirements of the site plan itself are provided in Section 138-178. Included must be, among many other things, the location of existing storm sewers and the location and dimensions of proposed retention/detention areas and details of outfall structures. Shallow wells, open surface water bodies or reclaimed water with low volume design irrigation system purposes are required to reduce runoff.

2.5.6 Chapter 154 – Site Development and Platting

Article II of this chapter defines the drainage requirements for site development. In particular, a completed "drainage system" must be provided, that adequately drains the subject area, passes runoff from outside the development and is "suitable for low cost maintenance by normal maintenance methods." If the Federal Emergency Management Act (FEMA) 100-year floodplains are not defined for the development, the developer must do so. New construction or substantial improvements must obtain a drainage plan review. As defined in Section 138-176, plan review is required for: all new construction except single family, duplexes or triplexes; additions to existing uses where impervious is equal to 25 percent or more of the remaining pervious area¹; all subdivisions; and all construction that disturbs 1 area or more or "that is in close proximity to the County's MS4." The latter requirement for "close proximity" exceeds the requirements of state and federal NPDES regulations for construction activity. The plan must provide: all offsite runoff is carried through the site; onsite detention and/or retention is provided as required; existing drainage systems are not blocked; and the drainage system as proposed can be maintained. Also, surface water runoff cannot be diverted across major drainage divides as defined by the County SWMP.

Drainage systems are to be designed for the 25-year frequency, 24-hour duration design storm event (9.0 inches) and the 100-year, 24-hour event (12.0 inches) to include or pass through runoff. Design details are provided in Section 154-64. Regarding water quality, Section 154-70 states that all redevelopment that adds 3,000 square feet or more of impervious area or 25 percent of the lot must meet the stormwater treatment requirements for the whole site. Also, detention must be provided so that the peak rate of the 25-year, 24-hour storm will be less than or equal to the peak rate of the undeveloped site.

It should be noted that Section 134-15 defines "redevelopment" as development activity "when it occurs on a parcel of land that currently contains a legally permitted or legally nonconforming building, or that contained such a structure on or after September 14, 1982."

It should be noted that the stormwater and floodplain sections of this code are currently under review to update the code with best practices, elimination of conflicts and redundancies, and address redevelopment site constraints.

2.5.7 Chapter 158 – Floodplain Management

This chapter notes that according to the Charter, Section 2.04(g) authorizes the County to regulate the design, construction and maintenance of major drainage systems in both the unincorporated and municipal areas of the County. The purposes of the chapter are to restrict or prohibit uses that are dangerous due to water or erosion; require that properties in flood prone areas to be protected; control

¹ Note: §138-176(3) states that if the new impervious area is less than 25% of the remaining pervious area, these requirements must be followed only if deemed necessary by the County administrator or designee.

alterations to natural floodplains; control dredging, filling and other development that increased flooding or erosion; and prevent or control the construction of flood barriers. Section 158-6 states that the chapter applies to all lands “adjacent to major drainage systems within the incorporated and unincorporated areas of the county excepting those lands specifically exempted through enactment of an ordinance by a local government authority.” Such exempting is possible for cases where the entire watershed is in the municipality (or other government) and runoff has no substantial effect of flooding or water quality of another government or the unincorporated County.

It should be noted that flood prone areas are addressed in Chapter 170 and that work is being done currently to combine these two sets of floodplain and flood prone area regulations and to update them to address the latest FEMA requirements.

2.5.8 Chapter 166 – Environmental and Natural Resource Protection; Article III – Management and Storage of Surface Waters

Division 1 of this article states that the policy of the BOCC includes the control and regulation of the management and storage of surface water in harmony with the SWFWMD and with the drainage element of the County Comprehensive Plan. The applicable sections of §40D-40.011 are made part of this ordinance. The article applies to all territory “within the legal boundaries” of the County. Section 166-115 states that the BOCC has the authority to “issue, deny and enforce compliance with surface water management permits in accordance with chapters 40D-4 and 40D-40, F.A.C., for projects less than 100 acres in total project area...”

2.6 Pinellas County Comprehensive Plan

In compliance with the statutory and administrative code growth management mandates in Chapter 163, F.S., and Chapter 9J-5, FAC, Pinellas County adopted a Comprehensive Plan in 1989. Major evaluations and updates occurred in 1998 and 2008, but the Plan is continually maintained and updated when the need arises.

In 2011, the State eliminated Chapter 9J-5, rolling most of the planned requirements directly into Chapter 163, F.S., renaming it the Community Planning Act. The theme of the County’s Comprehensive Plan is “Planning today for a sustainable tomorrow” and the sustainability ethic is woven throughout the entire Plan.

In the section called Governing Principles for a Sustainable Future, the document notes that public policy needs to adapt and respond as the focus of development shifts from rapid growth to infill and redevelopment. Goals of particular interest include:

Natural Resources

- Goal 2: the County will “conserve, protect, restore and appropriately manage its natural systems and living resources [to] ensure the highest environmental quality possible.”
- Goal 4: the County will continue to be “a leader in the protection and restoration of our surface waters and dependent habitats and resources ...”
- Goal 6: the County will “preserve, protect, restore and manage the natural resources of its floodplains to maintain or enhance water quality, plant and animal diversity and aquatic productivity, to protect the flood storage value and purpose and to protect the public and minimize property damage.”

Surface Water Management

- Goal 1: “Surface waters shall be managed to provide flood protection for the citizens..., to preserve and enhance the water quality of receiving waters, and for the purposes of natural resource protection, enhance and restoration, plant and wildlife diversity, and estuarine productivity.”
Note: in this section, level of service (LOS) standards are provided for flood management. Also, in review of the objectives to achieve this goal, the plan identifies the need for the development of individual watershed management plans.

2.7 Summary

The previous sections provide information related to the legal and regulatory requirements for surface water management within Pinellas County from federal, state, regional and local laws, regulations and ordinances. To understand this section, it must be remembered that waters of the U.S. can flow from one city to another, from the unincorporated County to a city, or vice versa. Provided below is a summary of the important points related to Pinellas County governance.

Federal Requirements

The Clean Water Act requires the control of the discharge of pollutants to the waters of the United States through NPDES permits.

The control of pollutant discharge in MS4 permits will be through the implementation of best management practices for new development and redevelopment.

TMDLs are to be completed in water bodies which do not attain designated uses and ultimately are generally implemented through NPDES permits for municipal and County permittees. Generally these will require pollutant load reductions.

State Requirements

The County has the authority to prepare and enforce comprehensive plans; establish and administer drainage programs; create MSBU, MSTU or special district areas for drainage services; establish ditches, drains or canals to control runoff if petitioned; and, establish drainage levels of service.

Minimum statewide stormwater requirements are related to the recovery of treatment volumes, fencing for the protection of the public and extra treatment for discharge to OFWs.

The minimum state treatment standards require an 80 percent reduction of the average annual load of pollutants that would cause or contribute to water quality violations.

Specific TMDL requirements are defined in state rules, defining site specific loading limitations required of the County.

Numeric nutrient criteria apply to streams, lakes and estuaries in Pinellas County. Corroboration of nutrient impairment must be provided in streams using biological assessment techniques.

WMD Requirements

Permits are required from the SWFWMD for construction and modification of surface water management systems.

Pinellas County Requirements

- The Charter authorizes the County to design, construct and maintain major drainage systems in both the unincorporated and municipal parts of the County. The term “major drainage system” has been defined in Pinellas County; however, further clarification is needed on the responsible agent for “major drainage systems” maintenance, especially in conjunction with annexation.
- The Charter authorizes the County to provide countywide planning.
- Discharges of pollutants to the MS4 are to be controlled (Chapter 58).
- The control of fertilizer use required by County ordinance to minimize the discharge of nutrient enriched runoff to surface waters (Chapter 58).
- Site plans for new development and significant redevelopment are to be reviewed (Chapters 134 and 154).
- The County is to protect major systems from erosion (excessive velocities) and excessive water elevations.

2.8 Municipal Stormwater Programs

In order to compare the County programs to the programs accomplished within municipal governments within the County, a general list of stormwater activities is provided below. The list has been divided into 4 categories for easier comparison: program management, NPDES compliance, NPDES operations and maintenance (NPDES O&M) and capital improvement program (CIP).

Program Management

- Administration of Overall Stormwater Management Program
- Code Enforcement (Pre-development and Post-development Maintenance)
- Staff Training and Development
- Public Engagement and Involvement
- Inspection (Erosion & Sediment Control During Construction)
- Permitting, if applicable
- Engineering
- Project Management
- Assessment and Inventory of Stormwater Systems
- Geographic Information Systems and Mapping
- Survey
- Basin/Watershed Planning
- Flood Mitigation Studies
- Floodplain Management
- TMDL, Pollution Load Reduction Goal (PLRG) Participation and BMAP Activities
- Stormwater Utility Funding and Finance (where applicable)

- Database Maintenance
- Adjustments
- Collections/Billing

NPDES Compliance (Phase 1 MS4)

- Annual Reports and Inspection (for MS4 Compliance)
- Permit Activities
 - Development Review
 - Roadway Maintenance
 - Flood Control Projects
 - Municipal Transfer, Storage & Disposal Facilities (TSDs)
 - Pesticide, Herbicide and Fertilizer Control
 - Illicit Connections (Regulation, Detection, Investigation, Enforcement)
 - Illicit Discharges (and Illegal Dumping)
 - Industrial and High Risk Runoff
 - Construction Site Runoff Control
- Inventory of Outfalls and MS4
- Monitoring
 - Cross Boundary Discharges
 - Ambient Water Quality Sampling
 - Biological Monitoring
 - Discharge Characterization from Land Uses
 - BMP Efficiency
 - High Risk Industries and Illicit Discharges
- Pollution Load Reduction Analysis
- TMDL Compliance

NPDES MS4 Compliance - Operation & Maintenance Activities

- Street Sweeping
- Inspection (Pre- & Post-Construction; Stormwater Facilities for O&M)
- Cleaning, Restoration and Minor Repair
 - Culverts
 - Pipes
 - Ditches and Channels
 - Ponds (Detention and Retention)

- Swales
- Weir Operations
- End-of-Pipe Devices (e.g., Baffle Box, Exfiltration Trench, Swirl Concentrator, etc.)
- Drainage Inlets
- Mowing
- Pump Operation and Maintenance
- Equipment Yards
 - Inspection
 - Material Storage Control
 - Vehicle/Equipment Repair

Capital Improvement Program

- Major Facility Permitting, Design and Construction

2.9 Assessment

In general, almost every area of surface water management is covered in municipal activities as well as in County activities. However there are some areas of potential overlap or at least potential duplication:

Program Management – Code Enforcement. The County and all of the cities are required to have pre-development and post-development stormwater management as well as during construction (by NPDES permit). Some of the cities and the County already share common enforcement activities. Local governments should evaluate and consider consolidation of these functions.

Program Management - Participation in TMDL and BMAP Development. Depending on the basin or watershed, some or all of the cities and the County may participate in the development of the BMAP for a particular water body. Working together, the County and cities can support each other to optimize the ability to achieve the TMDL loading reductions ultimately to be required.

Program Management – Biological Corroboration. With the new Florida NNC, corroboration of nutrient impairment is necessary. It is possible that many of the streams cross municipal boundaries. As a result, collaborative approaches to confirm or deny nutrient impairment are warranted.

NPDES Compliance – Illicit Connections, Monitoring, Public Information. As proven in many communities around Florida, joint NPDES compliance programs provide compliance activities for participants and save time, staff and costs. Illicit connections, monitoring and public information are a few of the actions that should be cooperatively completed for compliance. Monitoring is already being done cooperatively by the County and Cities. NPDES outreach is also accomplished cooperatively with some Cities.

Capital Improvement Program – Basin/Watershed Studies. As watershed or basin divides do not follow jurisdictional lines, studies of runoff behavior within and water quality issues basins or watersheds should be cooperatively considered. One way to do this is for all of the jurisdictions affected in the watershed or basin to financially participate in the study based on area. Another is for the County to complete such studies where multiple jurisdictions are affected. The distribution of capital cost should be based on either volume of flow contributed during the design storm event or drainage basin area. The

County currently collaborates with the SWFWMD and local municipalities in the area and is encouraged to continue to do so.

Operation and Maintenance. The overlap of activities for O&M is difficult to assess. Both the County and each city is responsible for maintenance of facilities respectively owned; however, the Charter says the County has the power to furnish “design, construction and maintenance of major drainage systems in both the incorporated and unincorporated area” [Section 2.04(g)]. While the definition of a “major drainage system” has been defined (open channel that drains 200 acres or more), there is a mixture of governments providing O&M activities for such systems – this needs to be clarified or codified. Also unclear are the requirements of the County toward maintenance of stormwater systems in newly annexed areas.



Section 3

Level of Service Analysis

3.1 Surface Water Management Components

For the purposes of this report, surface water management activities for the Pinellas County have been organized into four categories as described below:

- **Program Management (PGM)** – this area of activities provides for the management and planning of the surface water assets for the County. Included are program administration, planning, development review, enforcement and non-MS4 related monitoring.
- **NPDES Compliance Services**– this includes the NPDES MS4 permit compliance activities that are not otherwise accounted for in the other categories. Also, as will be explained below, with increased O&M efforts, it may be possible to achieve some of the pollutant reduction actions required to achieve state and/or federal mandated total maximum daily load (TMDL) targets. For the purposes of this report, NPDES MS4 compliance is separated into 2 components: those activities not related to O&M such as annual reports, monitoring and special inspections (called NPDES Non-O&M); and those activities related to O&M (called NPDES O&M below).
- **NPDES Compliance Services – Operation and Maintenance (NPDES O&M)** – required by the NPDES MS4 permit, NPDES O&M includes inspection of facilities, sediment and trash removal, repairs as needed, periodic restoration, mowing, maintenance of the vegetative cover (as appropriate), maintenance of inflow and outflow structures, removal of exotic vegetation, restoration of filtration capacity, pump maintenance, and repair/restoration of pipes, inlets and weir structures.
- **Capital Improvement Program (CIP)** – this includes major construction of new surface water assets for the County. Projects are generally identified annually in the 10 year CIP program. The element includes allocations for surface water conveyance system improvements, flood control, channel erosion, and newly required projects that may be needed to meet the TMDL pollutant loading reductions.

3.2 Surface Water Management Level of Service

In order to define the surface water services provided by the Pinellas County to its citizens, surface water services will be compared to a set of performance standards known as “level of service” or LOS. The term “level of service” is used in this study to describe the magnitude of beneficial results gained by the community and the environment from the County’s surface water program. A higher level of service will result in more beneficial results in terms of better flood control and protection, better control of erosion and sedimentation, and better water quality and stream habitat.

This level of service concept is useful for assessing each of the major surface water program areas that have been described previously (Program Management, NPDES Compliance which includes Operations and Maintenance, and Capital Improvements).

For the purposes of this study, different levels of service have been defined and assigned standard letter grades, with “A” being the highest and “F” being the lowest. These standard definitions facilitate evaluation of the level of service currently being provided by the Pinellas County surface water program, and allow consideration of alternative levels of service, with their associated benefits and costs. A level of service “F” is considered to be below the minimum regulatory requirements and expectations of the community.

Figure 3-1
Surface Water Governance Study: Surface Water Program Level of Service Matrix

Level of Service	Program Management Activities	NPDES Compliance Activities		Capital Improvement Projects
		Non-O&M Related Compliance Activities	Operation and Maintenance Program Activities	
A	Comprehensive Planning + Full Implementation Capabilities	Exemplary Permit Compliance	Fully Preventative/ 100% Routine	10-year Plan
B	Pro-Active Planning + Systematic CIP Implementation Capabilities	Pro-Active Permit Compliance	Mixture of Routine and Inspection Based	20-year Plan
C	Priority Planning + Partial CIP Implementation Capabilities	Minimal Permit Compliance	Inspection Based	40-year Plan
D	Reactionary Planning + Minimal CIP Implementation Capabilities	Below Minimum Permit Compliance	Responsive Only (Complaint-based)	50-year Plan
F	No Planning + No CIP Implementation Capabilities	Non-Compliance	Less than full response to all complaints	75-year or More Plan

A matrix has been developed to assist in understanding the different levels of service as they relate to the major program areas (**Figure 3-1**). Within this matrix, the first column contains the level of service letter grade identification ranging from “A” to “F.” Subsequent column headings are provided for the three program areas, and each box within the matrix contains a brief description of the key elements required to achieve the given level of service for each program area.

To support a better understanding of the matrix, more detailed descriptions of how the different levels of service are defined within each program area are provided below. The level of service definitions are

based on experience with other communities' surface water programs across the country and interviews with personnel from other surface water programs in Florida.

Later in this section, the County's current surface water program is assigned a letter grade for each program area based on these LOS definitions. Estimated costs are then provided for each level of service within each program area.

These estimated costs provide a basis for understanding the relative differences between the increasing levels of service and the associated program improvements needed to increase the level of service. This also provides a basis for determining the revenue required to fund each level of service.

3.2.1 Program Management Level of Service Descriptions

A high level of service related to program management provides benefits to the community and environment through the following means:

- Comprehensive planning of surface water management activities and practices increases the opportunity to implement recommendations prior to development or redevelopment occurring, thus decreasing the costs and improving the effectiveness of these best managed practices.
- A proper staffing level of County personnel to oversee and manage other program areas (i.e., operation and maintenance and capital improvements) improves the cost-effectiveness and efficiency of these program areas.
- A proper staffing level of County personnel to monitor and enforce County surface water rules and regulations increases the level of compliance by the regulated community, better protecting the community and environment from unlawful activities.
- Full compliance with all state and federal regulatory programs (NPDES permit compliance activities excluded) allows the County to qualify and gain priority for potential funding opportunities when they are available to the County and avoids potential fines and/or environmental damage that may result from non-compliance. The data and information gained from monitoring activities required by these programs allows the County to make better decisions as to where to apply resources to gain the most benefit and to the effectiveness of past and ongoing activities in achieving desired benefits. The enforcement activities specific to the NPDES permit requirements are assessed in the NPDES permit compliance category.

To a large degree, the level of service of the program management area depends upon the corresponding level of service of the other two major program areas, operation and maintenance and capital improvements. This is because County staff members are required to oversee and manage these other program areas to ensure their cost-effectiveness and efficiency.

However, there are other elements within the program management area that are not related to O&M or capital improvements. These include enforcement of County development and environmental regulations (e.g., plan review and inspections for soil and erosion control and floodplain regulation, inspections of surface water facilities controlling existing development and illicit discharge and connection control). Other activities that would fall under the program management category include public information and education about surface water-related issues, and other supporting functions such as information management, finance, billing, and administration.

- **LOS A:** Basin and watershed planning completed or scheduled dealing with existing and future surface water problems (drainage and water quality); complete inventory of surface water system in a GIS database.
- **LOS B:** Increased planning for drainage basins looking not only at existing problems but also future problems that may be caused by growth, partial surface water system inventory and sufficient management to administer the program and complete limited CIP projects.
- **LOS C:** Partial planning of watershed or drainage basins, limited surface water system inventory and some ability to manage capital improvement projects; planning focused on dealing with major or significant existing problems.
- **LOS D:** Poor management characterized by minimal or no planning, some ability to perform project management for capital projects, poor inventory of surface water system and limited staff to administrate the program.
- **LOS F:** No management or planning, separate of County administration, no system inventory and no ability to accomplish CIP projects or planning.

3.2.2 NPDES Compliance Level of Service Non-O&M Related Descriptions

Many Counties and Cities in Florida have either Phase 1 (for permittees with population above 100,000) or Phase 2 (for permittees with population below 100,000) municipal separate storm sewer system (MS4) permits issued by the State of Florida Department of Environmental Protection (FDEP). Since the unincorporated County population based on the 1990 Census was above 100,000, Pinellas County has a Phase 1 permit (Permit No. FLS000005). Compliance with the permit requires the County to accomplish various surface water management activities, which can be completed at various levels. Compliance is measured by the state by annual reports prepared by the permittee documenting all of the permit related activities accomplished during the permit year. Thus, there is a level of service which can be assigned to the NPDES program. The levels can be described as follows.

- **LOS A:** Includes exemplary and/potentially award winning compliance with State and Federal NPDES permit requirements.
- **LOS B:** Provides proactive compliance with permit conditions and represents activities that are better than simply a minimal compliance with the letter of the permit, no substantive comments or requests from the annual report review and associated FDEP inspection.
- **LOS C:** Middle-of-the-road and minimal accepted LOS with adequate compliance with permit conditions, some comments received during the annual review, but no major compliance issues are received from FDEP.
- **LOS D:** Not complying with permit conditions, characterized by substantive comments on the annual report and during the annual inspection.
- **LOS F:** Non-compliance with major permit conditions, with the permittee subject to potential fines from the state for noncompliance.

3.2.3 NPDES Compliance Level of Service O&M Related Descriptions

A high level of service related to operation and maintenance provides benefits to the community and environment through the following means:

- The useful life of the County's surface water infrastructure is extended through proper operation and routine maintenance of these assets. This results in cost savings by delaying the need for major rehabilitation or replacement of these assets.
- Cleaning of catch basins, culverts, and stream channels maintains the hydraulic capacity of these items, thus decreasing the frequency of flooding that may occur upstream of and in the vicinity of these areas.
- Regular removal of trash, debris, sediment, and excess vegetation from the surface water system improves water quality of streams and downstream waterways as well as the aesthetic value of these areas to the community. Regular street sweeping and greenway maintenance achieves similar benefits.

The Levels of Service for O&M are described below:

- **LOS A:** Highest O&M service level that is fully preventative – all maintenance is completed routinely, addressing every surface water facility once or more each year.
- **LOS B:** Mixture of routine and inspection based maintenance. Critical structures are routinely maintained, both periodically during each year and possibly before each storm event, and non-critical structures are maintained based on inspection.
- **LOS C:** Inspection based maintenance whereby all structures are routinely inspected by management and maintenance is schedule according to the inspection.
- **LOS D:** Complaint-based maintenance – all maintenance is done based on citizen complaints; generally characterized by work order based activities resulting from citizen call in complaints.
- **LOS F:** Less than complaint-based maintenance, with limited or no ability to even respond to complaints.

Once achieved, a level of service “A” may be less costly than lower levels of service because it should reduce the frequency of high-cost capital expenditures such as repairs to failed facilities, unscheduled labor overtime, and high administrative costs. The difficulty, however, is that the transition from a lower level of service to a level of service “A” cannot be achieved immediately.

3.2.4 Capital Improvement Level of Service Descriptions

A high level of service related to capital improvements provides benefits to the community and environment through the following means:

- Construction of surface water system storage and conveyance improvements reduces flooding in known problem areas, thus better protecting public and private property from flood damage.
- Protection and/or improvement of existing lakes, ponds, and wetlands supports downstream water quality objectives by providing treatment of surface water runoff entering these waters.

- Acquiring and preserving stream buffers and other environmentally sensitive areas provide water quality improvement, increased habitat opportunities, floodplain storage, and improved aesthetic value of the community of surrounding environment.
- Restoration and/or stabilization of streams and other areas subject to erosion reduce sediment transport, thus decreasing the need for downstream maintenance and improving downstream habitat.

Levels of service associated with capital improvements primarily distinguish between the level of funding and rate of implementation for identified capital improvement needs. Levels of service “A” through “F” generally correspond to an implementation period.

- **LOS A:** Completes the CIP needs in 10 years.
- **LOS B:** Completes the CIP needs in 20 years.
- **LOS C:** Provides funding to address the CIP needs in 30 to 40 years.
- **LOS D:** Funds the CIP program over 50 to 60 years.
- **LOS F:** Provides minimal funding for CIP over a period of greater than 75 years.

For the purposes of this document, there are two types of projects that will be considered: projects related to known flood-related problems identified in the watershed or basin studies and projects required to achieve a TMDL-demanded load reduction. The LOS analysis defined above applies to either.

3.3 Description of Current County Surface Water Program

The major components of the Pinellas County surface water management program are administered through the Department of Environment and Infrastructure (DEI). **Figure 3-2** (located at the end of the section) provides the County organization as of May 2013 showing DEI. Major support of the surface water management program comes from the Transportation and Stormwater Division. Additional support comes from Engineering and Technical Support and Administrative and Business Support within DEI and Building Development & Review Services, not in DEI. Each of these is described below.

3.3.1 Department of Environment and Infrastructure

This department was created in October 2011 with the merger of the Departments of Public Works and Transportation, Utilities and part of Environmental Management. DEI Services include solid waste, water and wastewater, transportation management, drainage, surface water quality, vegetation management, mosquito control, and urban forestry. For surface water management services, funding is provided from the General Fund and Transportation Trust as well as Penny for Pinellas for capital improvements. This department provides:

- In-house engineering design and consultant management for drainage-related capital projects;
- Asset management of surface water infrastructure;
- Concrete related repair and maintenance for drainage structures, pipes, and underdrains;
- Response and repair in response to complaint or emergency;

- Mowing associated with the drainage system including ditches and ponds;
- Inspection, maintenance and certification of drainage facilities associated with the capital improvement program;
- Maintenance of open conveyance systems;
- Roadway sweeping;
- Vegetation management in County lakes, ponds, rights-of-way, and drainage areas.
- Ambient monitoring of water quality in County surface waters;
- NPDES permit compliance;
- Development reviews;
- TMDL support include BMAP collaboration;
- Watershed Planning related to water quantity (flooding) and water quality; and,
- Floodplain Management.

Additional support within DEI includes work management administration and geographic information system (GIS) support.

3.3.2 Building Development and Review Services

This unit provides code enforcement, site plan review, building inspections, commercial and residential plan reviews and permitting in the unincorporated area of the County, as well as by contract to several municipalities. Construction plans are reviewed and ongoing construction projects are inspected at various times. While most of the inspections are for building code compliance, the surface water management during and after construction is part of the review. Code enforcement officers are empowered to enforce appropriate codes and the division also investigates citizen complaints. Currently,

this program is funded through the General Fund and through user fees. The program is not considered further in this report.

Table 3-1
Pinellas County Stormwater Governance Study
Penny for Pinellas CIP Expenditures

Year	Annual Expenditures	10-Year Window	10-Year Rolling Average
2000	\$5,658,059		
2001	\$7,295,907		
2002	\$4,006,144		
2003	\$5,938,208		
2004	\$8,448,028		
2005	\$7,542,626		
2006	\$8,044,686		
2007	\$15,712,214		
2008	\$10,210,995		
2009	\$13,041,902	2000 to 2009	\$8,589,877
2010	\$5,858,450	2001 to 2010	\$8,609,916
2011	\$7,493,970	2002 to 2011	\$8,629,722
2012	\$4,870,674	2003 to 2012	\$8,716,175
Total	\$104,121,863		

3.3.3. Capital Improvement Projects (CIP)

As noted above, engineering support for capital improvements is provided by DEI. The CIP program is funded currently by the Penny for Pinellas Fund. **Table 3-1** shows the actual expenditures of the County for CIP from 2000 to 2012 for stormwater improvement projects as well as a rolling 10-year average starting in 2009. Historically, looking at the last 10 years, the County has, on average, spent about \$8.7 million on capital projects.

In order to estimate the total CIP need of the County, the two of the six completed watershed management plans were reviewed to determine estimated costs for flood

control and water quality related activities. **Table 3-2** shows the summary of the review. Data included are total area of basin studied, area within the Unincorporated County, total construction costs as well as associated costs, and total construction cost per acre. The estimated CIP flood-related costs for the unincorporated area were estimated by using the construction cost per acre times the unstudied area (yielding about \$150 million) plus the County portion of the three basin plans (about \$11 million) for a total of \$161 million. With approximately \$6.5 million of the \$8.7 million CIP expenditures related to flood control, it will take about 25 years to complete all of the flood-related CIP costs.

Table 3-2
Pinellas County Governance Study

Summary of Project Costs - Roosevelt Creek				Summary of Project Costs - Alligator Creek			
Project No.	Description	Total Cost	Flood Control	Item No.	Description	Total Cost	Flood Control
1	Feather Sound Reuse	\$600,000	No	1	Structural Improvements	\$6,765,000	Yes
2	Mosquito Ditches in Gateway Tract	\$2,167,650	No	2	Channel Improvements	\$1,060,000	Yes
3	Mosquito Ditches in Feather Sound	\$2,546,450	No	3	Water Quality Improvements	\$3,323,000	No
4	40th Street and Carillon	\$1,290,900	Yes	4	Ecological Improvements	\$3,210,000	No
5	34th Street and 118th Street	\$2,261,600	Yes	5	Land Purchases	\$11,385,000	Yes
6	Smart Box in Lakes Subdivision	\$1,492,550	Yes		Total for Watershed	\$25,743,000	
7	Flood Areas in Feather Sound	\$538,075	Yes		Total Flood Control Related	\$19,210,000	74.6%
8	Tributary H in Master Plan: 40th Street	\$3,513,000	Yes		Alligator Total Area	5,691.0	ac
9	Tributary H in Master Plan: Ulmerton to 40th	\$6,032,800	Yes		Flood Control Cost per Area	\$3,375.5	\$/ac
10	Feather Sound Pond Modification	\$5,304,750	No				
	Total for Watershed	\$25,747,775			Alligator Unincorp Co	2,005.0	ac
	Total Flood Control Related	\$15,128,925	58.8%		Alligator Unincorp Co Cost	\$6,767,888	
	Roosevelt Total Area (sq km)	32.3	sq km				
	Roosevelt Total Area (ac)	7,983.4	ac				
	Flood Control Cost per Area	\$1,895.0	\$/ac				
	Roosevelt Unincorp Co Area	2,255.1	ac				
	Roosevelt Unincorp Co Cost	\$4,273,506					
Summary Using Roosevelt and Alligator Studies							
	Total Area in Unincorporated County	63,983.0	ac		Estimated Flood Cost per Acre	\$2,511.2	
	Total Unincorp in Roosevelt & Alligator	4,260.1	ac		Estimated Flood Remaining Cost	\$149,974,807	
	Remaining Unincorp Co	59,722.9	ac		Estimated Total Unincorp Co Cost	\$161,016,200	
					Estimated WQ Cost per Acre	\$1,254.3	
					Estimated WQ Remaining Cost	\$74,910,481	
					Estimated Total WQ Cost	\$92,062,331	

As indicated above, about \$2.2 million of the current program CIP expenditures of \$8.7 million is for non-flood related ancillary activities based on the Roosevelt Creek and Alligator Creek Basin Plans. These activities include wetland rehydration, plantings, monitoring, and other non-flood related practices. While some of these costs may help achieve TMDL related nutrient reductions, they were not added to the basin plans with this in mind. Therefore, for the purposes of this report, it has been assumed that these non-flood related basin plan projects are independent of the TMDL nutrient reductions. It is recommended, however, that as much as possible, these non-flood related activities should be coordinated with the TMDL program to achieve the most cost effective outcomes.

From Table 3-2, the total estimated CIP costs for non-TMDL, water quality related projects is \$92.1 million. This estimate is based on the water quality cost per acre of \$1,254 distributed throughout the unincorporated County.

3.3.4 Summary

A summary of department budgets is provided in **Table 3-3** along with the percent of each program contributing to the overall surface water program. Overall, it is estimated that the County's surface water management programs are about \$21.4 million for FY 2013. Table 3-1 also provides the same data with the CIP costs organized by the three surface water management categories: Program Management, NPDES

MS4 and O&M, and CIP. The total funding for 2013 excluding Engineering and Penny for Pinellas (\$888,588 for Engineering and \$8,716,175 for CIP) was \$11.8 million

Table 3-3				
Pinellas County Governance Study				
Summary of Current Expenditures				
Program		Type	Annual Amount	% of Total
Program Management				
Engineering		Existing	\$888,588	4.2%
Watershed Planning		Existing	\$481,540	2.3%
Systems & Support		Existing	\$777,141	3.6%
NPDES - Non-O&M				
Compliance - Non O&M		Existing	\$493,150	2.3%
Environmental Monitoring		Existing	\$859,320	4.0%
TMDLs		Existing	\$210,050	1.0%
NPDES - Operation and Maintenance				
Response		Existing	\$640,894	3.0%
Stormwater Management		Existing	\$4,870,646	22.8%
Vegetation Management		Existing	\$1,749,527	8.2%
Mowing - Stormwater Facilities Only		Existing	\$424,333	2.0%
Streets (pipe repair)		Existing	\$716,535	3.3%
Alum System O&M		Existing	\$570,410	2.7%
Capital Improvement Program				
Penny CIP ¹		Existing	\$8,716,175	40.7%
Total Program Costs			\$21,398,309	100.0%
Summary				
Program Element			Annual Amount	% of Total
Program Management			\$2,147,269	10.0%
NPDES - MS4 Compliance			\$1,562,520	7.3%
NPDES - O&M Program			\$8,972,345	41.9%
CIP Program			\$8,716,175	40.7%
Total Program Costs			\$21,398,309	100.0%
Note: ¹ The 10-year average CIP expenditures from 2003 to 2012.				
² TMDL and Regional SW Quality budget from Penny for Pinellas.				

Creek and Allen's Creek Watersheds. **Figure 3-3** (located at the end of this section) illustrates the watersheds within Pinellas County.

The County's Agile Assets database is an effective tool being used by the Transportation and Stormwater Division. The database contains information on the permitted facilities maintained by the County. Reports can be generated for the permitted facilities with inspections that are due, as well as inspection and re-inspection sheets. In addition, construction plans are scanned and are linked to the permitted facilities in the Agile Assets database. This provides an effective way to sort, search, and view plans with little effort. However, the surface water system inventory for all of the County's surface water system is not comprehensive and not included in the asset management process described above. A GIS database of the comprehensive inventory would be greatly beneficial and an inventory is required by the new NPDES MS4 permit.

3.4 Current County Program Level of Service

Based on a review of the existing Pinellas County surface water program by CDM, discussions with County staff members, and the level of service definitions provided previously, the following level of service ratings are provided for the current County surface water program.

3.4.1 Current Program Management LOS

The County currently provides a LOS of "C" related to program management of its surface water program. There are a number of positive activities currently being supported by the County including development review services and construction inspections. Also, the County has developed watershed management plans that address both water quality and drainage for six major watersheds (Lake Tarpon, Lake Seminole, Roosevelt, Brooker, Starkey and Cross Bayou) and is currently working on the McKay

3.4.2 Current NPDES Compliance Non-O&M Related LOS

Based on this assessment of the compliance activities for Pinellas County, the NPDES MS4 permit compliance program would receive an assignment of LOS C+. Some of the elements required for permit compliance are completed by the County adequately for minimal compliance. However, even with the new permit issued in 2013, the County is providing some compliance activities proactively, especially NPDES MS4 monitoring.

3.4.3 Current NPDES Compliance O&M Related LOS

The current level of service provided by the County related to its operation and maintenance of surface water facilities is LOS C- since it currently provides some inspection-based maintenance, but is mostly complaint-based maintenance. Permitted surface water facilities receive scheduled inspections and minor maintenance. However, this is a small component of the O&M program. The rest of the O&M program is based on customer complaints. DEI performs limited maintenance on open channels due to reduced resources including operational and technical staff and equipment.

Vegetation Management staff are licensed by the state and receive annual training. This allows staff to maintain current in procedures and work methods that are being used within their areas of expertise.

3.4.4 Current Capital Improvements LOS

The existing level of service provided by the County related to flood control capital improvements associated with surface water management is level "C+". Based on the analysis in Subsection 3.3.3 (i.e., \$161 million total flood related CIP), with the current expenditures of about \$8.7 million per year, it will take about 25 years to complete drainage CIP program. It should be noted that this rating is based on known CIP needs related to drainage improvements and the funding spent each year to achieve the drainage needs, not on the efficiency of the program. However, as new water quality based needs are identified through watershed plan and TMDL studies, additional funding will be required. Incorporating these potential costs, the LOS will decrease.

3.4.5 Overall Assessment of Existing LOS

The overall assessment is LOS C, with Program Management being LOS C, NPDES MS4 Compliance – Non-O&M at LOS C+, NPDES MS4 Compliance - O&M at LOS C-, and Flood-related CIP at LOS C+. As water quality related CIP costs are better identified, at the current CIP rate of spending, the CIP LOS will reduce.

3.5 Expanded LOS

Provided below is a summary of the methods used and results of the cost estimates for an expanded or increased LOS for each program element (i.e., program management, NPDES compliance, and CIP) within Pinellas County. As noted in Section 3.4.5, the current overall LOS for Pinellas County is an LOS of C. The costs and programs identified below describe the enhancements needed for the County to provide its citizens a surface water program that each component would meet a preferred LOS and improvements to LOS B and A.

3.5.1 Expanded LOS Costs

In estimating the programs and costs of increasing the overall LOS for Pinellas County, two alternatives are available: a bottom-up analysis and a top-down analysis. For a bottom-up analysis, information on

the extent of the infrastructure is used along with data on performance (e.g., x number of miles of ditch maintained per crew hour) to estimate the personnel and equipment needs to achieve a higher LOS. This method was not used for this study.

The second method to consider an expanded LOS is the top-down approach. This approach uses standard unit costs to estimate the total program cost. Typically, costs are related to population (i.e., cost per capita) or to road mile, with the latter tending to relate best to O&M costs and the former relating to total and program management costs. **Table 3-4** show results for a number of communities in Florida and other states for which population, funding, road miles and levels of service were available. The data showed that for total program costs, the cost per capita appeared to relate to LOS best and for O&M, the lane miles related to the LOS best. It should be noted that the LOS assignments in Table 3-4 were

defined based on program activities and resources, not on cost or effort.

Table 3-4				
Pinellas County Stormwater Governance Study				
Summary of LOS Costs for Various Cities and Counties				
Total Program Costs (\$ per Capita)				
LOS	Number	Average	Min	Max
A	2	\$61	\$59	\$63
B	11	\$44	\$27	\$60
C	9	\$31	\$17	\$81
D	6	\$21	\$12	\$28
F	1	\$5	\$5	\$5
O&M Costs (\$ per Road Mile)				
LOS	Number	Average	Min	Max
A	2	\$6,100	\$3,275	\$8,926
B	6	\$4,022	\$1,574	\$5,552
C	8	\$3,034	\$1,349	\$5,045
D	2	\$1,221	\$608	\$1,608
F	0			

Information on the Pinellas County population was obtained from the Census Bureau of other sources such as Pinellas County budget documents. Based on these data, the top-down estimated costs for the different LOS above the current LOS for Pinellas County for each program element can be defined with some caveats. Table 3-4 shows that the service costs for the County appear to be consistent with the LOS costs. For O&M costs, the County is currently expending about \$8.97 million per year at a LOS C-and the table shows that for other surface water programs, the average LOS C is \$8.0 million. However, due to the County's development history, built-out urban environment, and infrastructure age, it is difficult to make a more accurate assessment of services beyond annual expenditures

which is likely to be much higher in areas like Pinellas County. For the total program costs, with the County at LOS C with total costs of \$11.8 million (excluding Penny for Pinellas) while Table 3-4 shows that LOS C averages about \$8.4 million but ranges from \$4.6 million to \$21.9 million. The fact that the County is a little above average is understandable since the services provided by Pinellas County are for built-out conditions, requiring a more robust program than the less developed municipalities and counties included in Table 3-4. Nevertheless the data are useful in projecting higher LOS costs for the County. For the analysis provided below on higher LOS funding needs, the results are general in nature and should be considered only for planning purposes.

3.5.2 Expanded LOS Programs

Provided below is a description of additional programs that can be implemented to improve levels of service. The programs suggested are based on the understanding of the current surface water programs in the County and experience with other County-wide programs in Florida and the US. As noted above, the current LOS is C with an annual expenditure of about \$21.2 million including \$8.7 million from Penny for Pinellas. Also, the costs identified represent overall budgets, which, subject to competitive bidding, may reduce the values suggested.

3.5.2.1 Program Improvements to Achieve LOS B

Provided below is a series of improvements for the surface water program to increase to an LOS B. LOS B is generally a preferred LOS for many communities. In most cases, the major improvement required to achieve LOS B is the more routine-based maintenance. It should be noted, however, that as the level of redevelopment expands and the improvements required by completed watershed plans are implemented, the demands on staff will increase.

Provided below is a description of the recommended activities to achieve LOS B for Pinellas County, funding for which is estimated to be \$30.9 million including CIP funding. This represents a \$9.6 million increase from the existing program.

Program Management

The biggest needs for program management currently appear to be related to watershed planning and staffing. The County has completed six watershed management plans which identified major CIP needs in the County; and additional watersheds must be completed to have a complete picture of the CIP needs in the County. In particular, the following programs are recommended:

- *Watershed Plans.* The County needs to prioritize each of its watersheds based on four categories: 1) highly developed watersheds with surface water problems; 2) quickly redeveloping watersheds with high potential for surface water problems or TMDLS; 3) highly developed basins with no identified surface water problems; and, 4) low priority watersheds basins. One or more watersheds in the higher priority categories should be completed per year at a cost of \$600,000 depending on the basin size and complexity. These costs have historically been accounted for in the Penny for Pinellas; recently however, an audit recommended that these costs should not be included in Penny for Pinellas budget. For the preferred costs identified below, an increase of \$600,000 for watershed plan is proposed and with cooperative funding this should achieve LOS B.
- *Site Plan Compliance and Floodplain Management.* As part of an effort to confirm site planning is consistent with the current County ordinances, including floodplain management, additional efforts related to review and compliance of development plans are warranted. It has been estimated by County staff that additional costs for this effort is \$188,952. To achieve LOS B, additional staff and associated equipment are recommended to expand the GIS, research and environmental programs. It has been estimated that 6 additional staff in these areas is \$332,952.
- *Surface Water Assessment Support.* If the funding for the surface water program is to be a surface water assessment, additional staff will be needed to administer the assessment program. Activities related to maintenance of the non-ad valorem assessment database annually, GIS support for impervious area interpretation, processing of adjustments such as credits, and responses to questions by the public. It has been estimated that 2 full time equivalent (FTE) staff are required for this support with a budget of \$198,460.

NPDES Compliance

To achieve an LOS B for NPDES Compliance, a more proactive set of programs is necessary for all elements. Possible improvements could include:

- *Increased Public Education and Engagement Program* To provide a more proactive surface water education program, to assess public awareness, and to produce positive behavior change, the County can create more opportunities for a publicly visible surface water program. These opportunities may include educational signage at surface water facilities and additional broadcast educational summaries such as newspaper inserts or brochures. While educational materials are

available through the Watershed Management website, additional information with higher level (easier) access is warranted. An increased education program is estimated to cost \$50,000.

- *Increased Public Involvement.* Historically, Pinellas County has participated in an Adopt-a-Pond program to include the general public in cleanup activities related to the management of community surface water ponds. Restoring capacity and function within these systems may improve local drainage conditions and result in an improvement in water quality. The return to the Adopt-a-Pond program at the same level of service as the previous program has been estimated to cost \$468,893 by County staff.
- *Biological Monitoring.* FDEP has recently adopted numeric nutrient criteria that call for the biological confirmation of nutrient impairment. That is, if the ambient nutrient concentrations are above targets set in the rules, biological confirmation is required to show that nutrients are indeed causing an imbalance to aquatic flora and fauna. As a result, additional biological monitoring is of benefit to the County to confirm or deny nutrient impairment. It has been estimated that such biological monitoring will cost \$172,078.

NPDES – O&M

The major improvements to achieve LOS B are needed in NPDES – O&M. To increase the LOS for the NPDES - O&M program, the following programs are suggested:

- *Inspection Based Maintenance.* LOS B is characterized by a mixture of routine maintenance of specific critical facilities with inspection based maintenance for the rest. To accomplish this effort, two types of staff are needed. The first is inspectors who will routinely visit stormwater facilities to document operability and condition. Inspector reports will help define the priority of maintenance. The second is identified below in the open and closed conveyance programs providing repair and replacement of major conveyances within the County. To achieve LOS B, additional staff and equipment are needed including a planning coordinator, equipment operator and public work specialist (with appropriate equipment) estimated at \$822,859.
- *Increased Street Sweeping.* FDEP has recently adopted a procedure to provide nutrient reduction credits for street sweeping activities. Based on preliminary estimates, the County's data supports that additional street sweeping will reduce the County's discharge of nutrients to streams, canals, and ultimately to nearshore waters. The County has suggested that a modest increase in street sweeping would cost \$40,000 to provide LOS B. This estimate is based on current contractual costs and is subject to change as a result of procurement.
- *Open Conveyance Program.* To reduce flooding and the control of runoff to near shore waters, an increase in the maintenance of open conveyances (such as ditches and canals) is warranted. The suggested level of service results in a 10-year maintenance cycle. It has been estimated that such a program would cost an additional \$1,966,727 per year.
- *Closed Conveyance Repair and Replacement.* Similar to the open conveyance program, the closed conveyances require methodical repair and replacement as many are at or near their design-life of 40 to 50 years. This program is estimated to cost \$2,400,718 based on information provided by County staff.

Capital Improvement Program

The final element in the improvements needed to increase the LOS to B is additional capital improvement funding. As noted previously, the majority of CIP funding is derived from the Penny for Pinellas mainly for drainage related projects. However, with new improvements required for water quality improvements, along with expanded maintenance, it is expected that additional CIP annual

funding is required. It has been proposed that this annual funding should be \$1,998,558 based on previous watershed studies and the estimated LOS B funding would require an additional \$310,000 per year.

The total estimated LOS B funding needs is estimated to be \$30.4 million, which is about \$1.15 more than the proposed funding program. The major additions from the proposed program are increased watershed plans, additional inspectors, and slightly more water quality CIP funding.

3.5.2.2 Program Improvements to Achieve LOS A

As noted previously, LOS A is the highest LOS and is not achieved by many communities in Florida or the US. LOS A is characterized by exemplary surface water management activities for all elements of the program. It has been estimated that the funding needed for LOS A is \$42.1 million which includes CIP funding, an increase of \$11.2 million above LOS B.

Program Management

To improve to LOS A, most of the major activities would have started in the changes made for the lower LOS programs. Additional improvements are listed below.

- *Increased Program Management Staff.* Along with the increased program management, CIP and NPDES programs, additional project management staff are needed to complete the new, and increased number of projects. The project management additions should be a mixture of environmental and engineering staff to accomplish permitting, design, and project oversight work. Also suggested are for LOS A are additional Geographic Information System (GIS) staff for geo-referenced mapping of the infrastructure. GIS activities are already being accomplished; however, for LOS A, increased use of GIS intelligence is warranted. An additional budget of \$258,716 has been estimated for these purposes.
- *Watershed Plans.* To increase to LOS A, additional watershed plans should be completed at a faster rate. For LOS B, it was proposed that more than one study per year could be completed for about \$900,000. For LOS A, doubling of this work would be accomplished for an additional \$900,000.

NPDES Compliance

LOS A for NPDES compliance means that while minimum compliance activities were achieved for LOS C and additional activities were provided in LOS B, LOS A calls for a program that is recognized by the State of Florida as exemplary and is identified to other communities as a source of recommended surface water management program examples. To achieve this LOS, the County could provide the following improvements:

- *Increased Inspection/Enforcement Staff.* An exemplary NPDES program should include sufficient staff to inspect the surface water system for illicit connections and illegal dumping, high risk industrial discharges, and construction runoff. The staff should have strong enforcement capabilities as well as training to encourage environmental compliance. Estimated costs are \$170,000.
- *Full support of the Water Atlas.* The County has already built the water atlas of the County with the support of the University of South Florida. The current site is operational and merged with the Tampa Bay Estuary Program (TBEP) and the Manatee County Atlas in order to share costs. Full support of the atlas would provide additional and publicly-available water resource data through the internet. Such a website would expand public education and participation, allowing citizens to access water quantity and quality data as well as the status of surface water management programs within the County. Estimated costs are \$60,000.

- **Additional TMDL and BMAP Compliance Tools.** During the next 5 years, compliance with TMDLs and associated BMAPs will become a potentially significant expense for the County. To achieve LOS A, the County would need to provide a comprehensive planning and implementation plan to comply with the TMDLs and to work collaboratively with local stakeholders and FDEP on BMAPs. These are exemplified in the Tampa Bay Nitrogen Consortium which collaborated to develop an FDEP and EPA approved plan to achieve nitrogen goals for Tampa Bay. This effort included stakeholders from across the Tampa Bay area. TMDL compliance in Pinellas County will call for the collaboration of stakeholders in the County itself and is one of the ways cooperative programs make sense for the County and Cities. Estimated costs are \$127,103.

It has been estimated that the additional funding allocated for these program enhancements is about \$357,103.

NPDES - Operation & Maintenance

The LOS A NPDES - O&M program is characterized by a fully routine maintenance program using asset management tools. To accomplish this LOS, a complete inventory is needed and an automated (electronic) and GIS-based maintenance/work management system must be employed. For this LOS, dedicated surface water crews should be organized in a dedicated group within DEL.

- **Increased Surface Water Maintenance Crews.** To increase the O&M program to a LOS A, increased crews are required to provide routine maintenance to all County-owned surface water facilities, not just permitted facilities. As noted previously, there are generally 3 to 4 staff to each crew. Assuming \$465,000 per crew including new equipment such as trucks, backhoes, vacuum trucks, etc., approximately 8 crews would be added to achieve LOS A.

Supervisory Personnel. To manage the additional crews as well as orchestrate the maintenance program, additional management staff would be required. For the purposes of this program, three additional staff members are recommended: 2 program supervisors (\$200,000), 1 clerical staff member (\$50,000) and 1 financial/asset management manager (\$75,000). The total personnel increases are \$325,000.

▪ **Capital Improvements**

To increase the capital improvement LOS to A, additional funding of about \$5.8 million is suggested. This expenditure, along with the increases to LOS B would be for water quality based improvement and would approximately double (1.93 times) the current Penny for Pinellas funding for drainage projects.

3.5.3 Summary of Suggested Improvements

Based on suggested improvements identified above, **Table 3-5** provides a summary of existing and proposed/enhanced costs for the surface water management program. The total expanded program funding need would be about \$29.5 million. Excluding the Engineering Services, Penny for Pinellas and Watershed CIP funding, the total expanded funding need would be about \$17.9 million which is about \$6.1 million more than the existing funding requirement. It can be noted that this proposed, expanded level of funding is only slightly less than the LOS B requirements.

In summary, **Table 3-6** provides the total funding requirements for the various LOS including the existing services. As noted previously excluding CIP, the proposed funding is only slightly less than LOS B (about \$1.15 million) while LOS A is \$11.7 million more than LOS B.

Table 3-5
Pinellas County Governance Study
Summary of Expenditures with Enhancements and New Programs

Program	Type	Annual Amount	% of Total
Program Management			
Engineering	Existing	\$888,588	3.0%
Systems & Support	Existing	\$777,141	2.6%
Watershed Planning	Existing	\$481,540	1.6%
Surface Water Assessment Support	New	\$204,709	0.7%
Site Plan Compliance	New	\$188,952	0.6%
Watershed Plan Development	New	\$600,000	2.0%
NPDES - Non-O&M			
Compliance - Non O&M	Existing	\$493,150	1.7%
Environmental Monitoring	Existing	\$859,320	2.9%
TMDLs	Existing	\$210,050	0.7%
Public Education	Enhanced	\$50,000	0.2%
Adopt-a-Pond	New	\$468,893	1.6%
Biological Monitoring	New	\$172,078	0.6%
NPDES - Operation and Maintenance			
Response	Existing	\$640,894	2.2%
Stormwater Management	Existing	\$4,870,646	16.5%
Vegetation Management	Existing	\$1,749,527	5.9%
Mowing - Stormwater Facilities Only	Existing	\$424,333	1.4%
Streets (pipe repair)	Existing	\$716,535	2.4%
Alum System O&M	Existing	\$570,410	1.9%
Increased Street Sweeping	Enhanced	\$40,000	0.1%
Open Conveyance Program	Enhanced	\$1,966,727	6.7%
Closed Conveyance R&R	New	\$2,400,718	8.1%
Capital Improvement Program			
Penny CIP ¹	Existing	\$8,716,175	29.6%
Watershed Plan CIP ³	New GF	\$1,998,558	6.8%
Total Program Costs		\$29,488,945	100.0%

Summary

Program Element	Annual Amount	% of Total
Program Management	\$3,140,930	10.7%
NPDES - MS4 Compliance	\$2,253,491	7.6%
NPDES - O&M Program	\$13,379,790	45.4%
CIP Program	\$10,714,734	36.3%
Total Program Costs	\$29,488,945	100.0%

Notes: ¹ Based on completed Watershed Plans, Drainage CIP represents 75% of the CIP costs and Water Quality represents the remaining 25%. The 10-year Average CIP expenditures was used: 2003 - 2012.

² TMDL and Regional SW Quality budget from Penny for Pinellas.

³ Based on Total WQ CIP of \$92.1 million minus 10-year Penny WQ CIP completed over 40 years. Not to be included in Surface Water Assessment.

Table 3-6
Pinellas County Governance Study
Summary of LOS Revenue Needs

LOS	Total Annual Funding Need	Total Annual Funding Need Excluding CIP ¹
Existing	\$21,398,309	\$11,793,546
Proposed	\$29,488,945	\$17,885,623
LOS B	\$30,954,083	\$19,040,534
LOS A	\$42,106,350	\$24,393,027

Note: ¹ For LOS A, the CIP Funding was assumed to be 40% of Total Need.

Figure 3-2 Pinellas County Surface Water Governance Study: County Organization

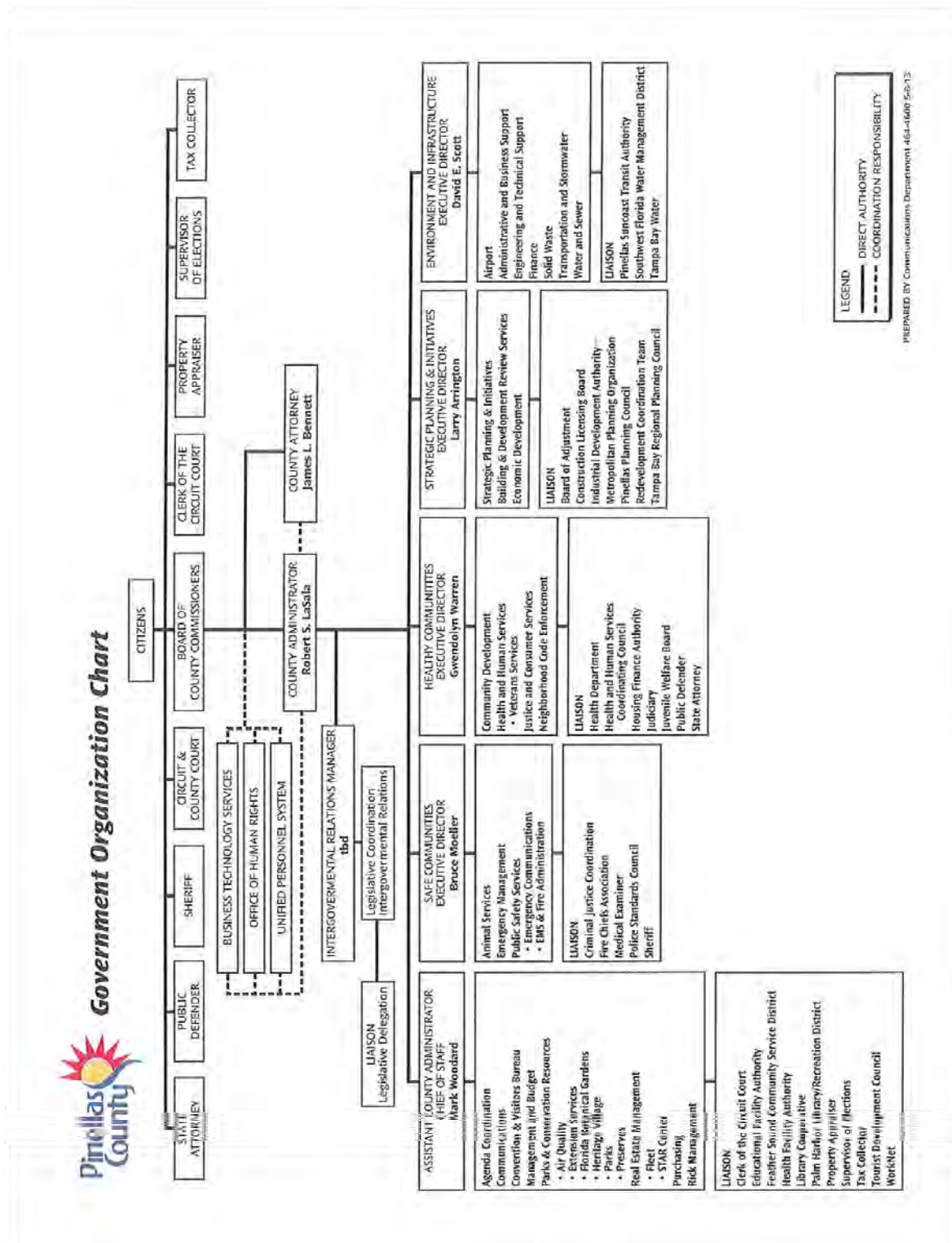
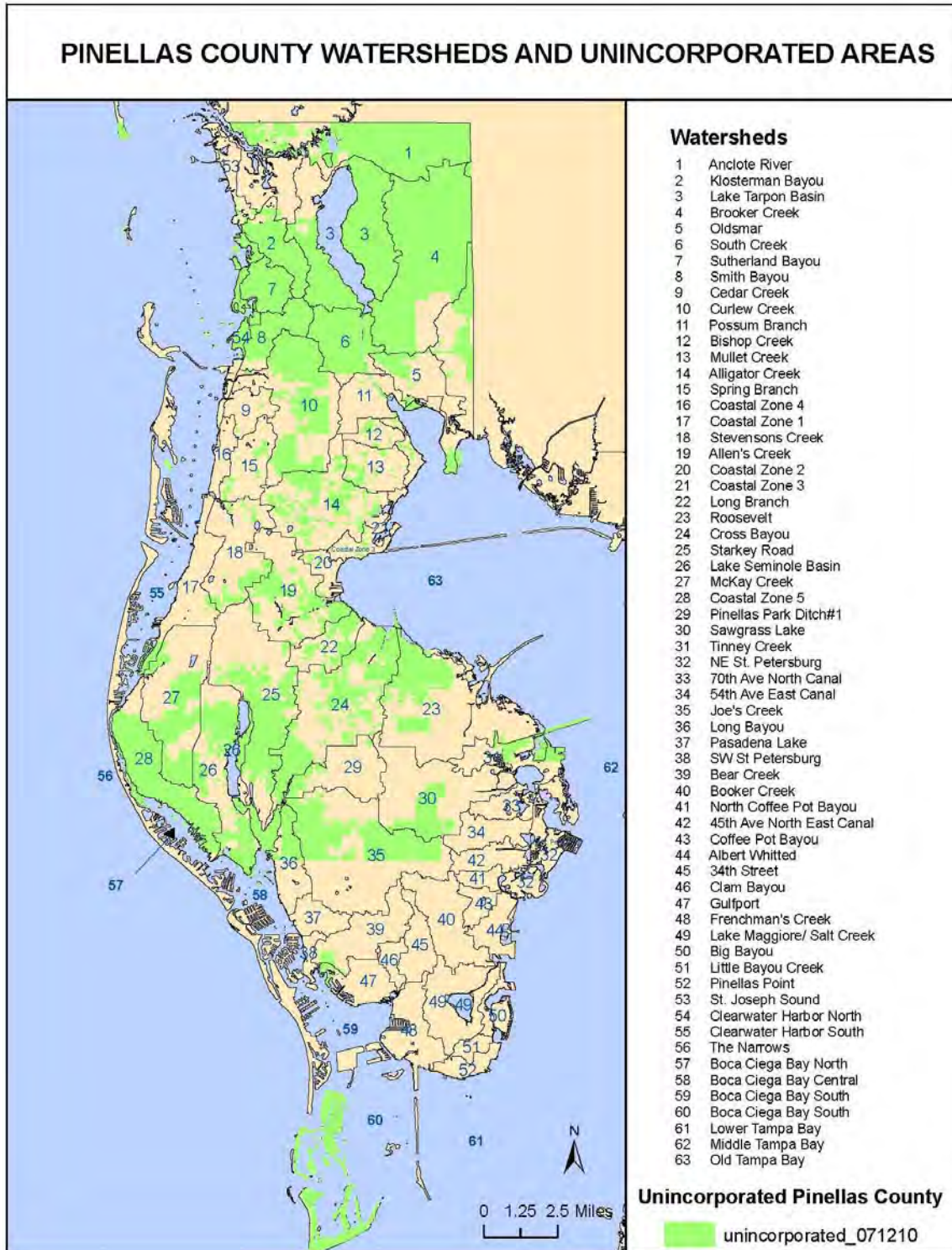


Figure 3-3 Pinellas County Surface Water Governance Study: Watersheds





Section 4 Funding Assessment

The existing Level of Service (LOS) and potential activities needed to increase the LOS have been defined in Section 3.0 along with the associated funding needed for each level. This section identifies the sources of current funding for Pinellas County, considers alternative funding sources and provides more detail on the surface water utility fee (assessment) as one means to fund the surface water LOS. It should be noted that this assessment was made using the Fiscal Year 2013 Annual Operating and Capital Budget (referred to below as the FY 2013 Budget).

Table 4-1		
Pinellas County, Florida		
Stormwater Governance Study		
Summary of Resources and Balances		
Requested FY 2013		
Source	Amount	Percent
<i>Taxes</i>		
Ad Valorem	\$364,599,180	21.5%
Communications Services	\$10,735,680	0.6%
Local Business Taxes	\$690,650	0.0%
Sales Use & Fuel Taxes	\$119,333,720	7.0%
Licenses and Permits	\$7,711,890	0.5%
<i>Intergovernmental Revenue</i>		
Federal Grants	\$15,094,450	0.9%
Local Government Grants	\$14,185,300	0.8%
Shared Local Revenue	\$826,930	0.0%
State Grants	\$16,509,850	1.0%
State Shared Revenue	\$61,918,440	3.7%
<i>Charges for Services</i>		
General Government	\$1,412,840	0.1%
Culture/Recreation	\$5,707,470	0.3%
Human Services	\$1,900,090	0.1%
Other	\$10,568,760	0.6%
Physical Environment	\$223,238,760	13.2%
Public Safety	\$68,208,480	4.0%
Transportation	\$2,545,200	0.2%
Court Related Revenue	\$5,182,150	0.3%
Internal Service Charges	\$93,166,690	5.5%
Excess Fees - Constitutional Officers	\$9,285,650	0.5%
Fines & Forfeitures	\$2,215,660	0.1%
Interest Earnings	\$2,871,540	0.2%
Rents, Surplus and Refunds	\$13,280,180	0.8%
Miscellaneous	\$33,484,160	2.0%
Non-Operating Revenue	\$11,721,430	0.7%
Beginning Fund Balances	\$599,238,480	35.3%
	\$1,695,633,630	100.0%

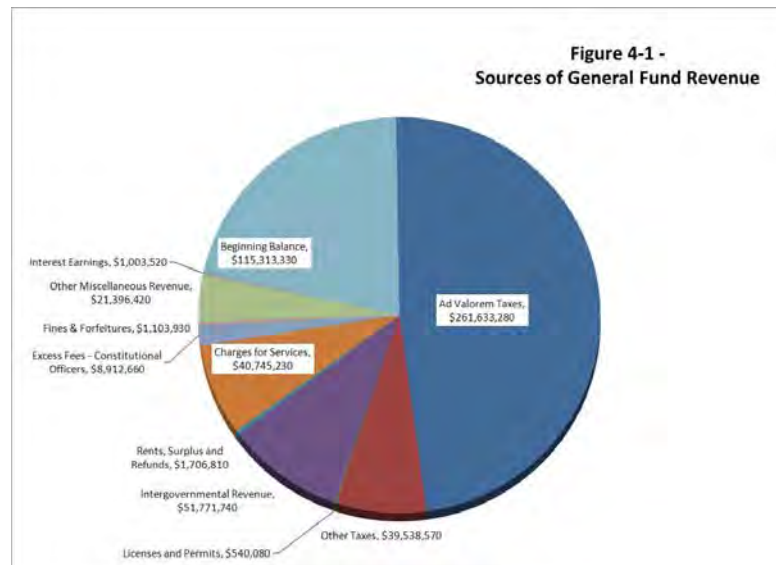
4.1 Existing Sources of Funding

Based on the Pinellas County Budget for FY 2013, there are many sources of revenues for the County budget (see **Table 4-1**). The existing sources of revenue for the FY 2013 sum to \$1,695.6 million and include Taxes (29 percent), Service Charges (24 percent), Federal and State Sources (6 percent), and other revenues including Sales & Use Taxes (7 percent). About 36 percent of the total revenues include non-operating income and fund balances.

About one-third of the budget is the General Fund, from which most of the County non-enterprise operating programs are funded. Sources of revenue for the County General Fund are illustrated in **Figure 4-1**. For FY 2013, the estimated revenue for the General Fund is \$543.7 million of which \$261.6 million (48 percent) will be from ad valorem taxes at a millage of 5.0105. The millage is applied to the taxable value County-wide, estimated to be \$54.4 billion in the County. The beginning balance of \$115.3 million is a non-recurring resource.

Additional County revenues include funding by municipal service taxing unit (MSTU), which is currently set at 2.0857 mills. MSTU revenues can be used for any county service and according to Chapter 125.01, does not require a referendum. If ad valorem taxes are levied to provide municipal services within the unit, the millage on any parcel by all MSTUs and the municipality may not exceed 10 mills and are included in the Roll-back rate. Depending on the magnitude of other ad valorem millage, an extraordinary or unanimous vote may be required. Use of the MSTU funding to pay a debt service would require a referendum.

The advantage of the use of ad valorem revenues for surface water services is that ad valorem tax is an existing source of revenue not requiring additional legislative action other than adoption of the millage rate.



General Fund revenues are currently being used for many County services including surface water services. The disadvantage of using this source of funding is the competition for the use of General Fund usually means that surface water services are not adequately funded.

Proprietary Sources

Proprietary sources identified in the budget are those funds collected for a particular service and earmarked for such services. Some of these can be used for surface water services such as Development Review Fees (used for review of site plans for stormwater). Others, called Enterprise Funds, are for specific utility services such as water and sewer services; revenues from these utilities can be used only for the utility itself. According to the FY 13 Annual Budget, Enterprise Funds make up \$411.9 million of the budget.

Special Assessments

Also referred to as a non-ad valorem assessment or uniform assessment method, special assessments for surface water services are authorized in home rule and Chapter 403.0893, Florida Statutes (FS), and the methodology to implement described in Chapter 197.3632 FS. The basic rules for a legitimate special assessment area: (1) the services provided must be of special benefit to the individual properties; and (2) the assessment must be fairly and reasonably apportioned according to the benefits received. The Florida Supreme Court decision regarding the special assessment for Sarasota County (20 Fla. Law Weekly, S600-S603, January 1990) concludes that a surface water special assessment can meet both of these criteria.

½ Cent Sales Tax

The ½ Cent Sales Tax, identified as a state source, applies \$0.005 to each dollar of sales of products within a county. The ½ Cent Sales Tax was imposed by the state legislature and a little over 8 percent of the sales tax (excluding the local option Penny for Pinellas) is shared with local governments. Approximately \$38 million in revenue is projected for Pinellas County in the FY 2013 Budget.

Impact Fees

Impact fees are restricted in use. The fees must be used for capital construction related to new growth in the area in which they are collected. The advantage of an impact fee is that they can generate funds for specific projects in a benefited area such as for development impacts. This is further described below as New Funding Sources. The significant disadvantages are based upon the experience of other communities in the application of impact fees to surface water services: they generally generate too small revenues to pay for the needed capital improvements and they can only be used for new growth in the area of collection. It can be difficult to separate the fees collected to isolate the revenue for a specific area. Many of the existing surface water problem areas are related to existing developments; new development is required to provide surface water attenuation and treatment. According to the FY 2013 Annual Budget, the County does not currently use impact fees.

Special Revenue Funds

Special revenue funds are special funds set aside for specific needs and as with enterprise funds, are restricted. Pertinent sources of special revenue funds include the Transportation Trust Fund for the O&M of transportation facilities (\$28.7 million) mostly generated through state-shared gas taxes and local option gas taxes; Building & Development Review Fund (\$9.1 million) from licenses and permits and transfers; and Special Assessments for Drainage (\$1.1 million, Fund F 1095) as noted on page J-89 of the FY 2013 Budget, mostly funded from previous balances. These funds are usually generated through one of the other funding methods.

Local Option Gas Tax

The local option gas tax is one of many sources which are related to gas taxes and are placed in a specific fund to account for the construction, reconstruction, and major maintenance of County roads. Arterial and collector roads are funded through Gas Tax Bonds, the Constitutional Gas Tax, and the Six-Cent Local Option Gas Tax.

The advantage of this revenue is that it is an existing funding source which can resolve surface water problems associated with roads. The disadvantage is that many problems are not associated with roads so this source is not available. Also, surface water operating expenses cannot be funded by this source. According to the FY 2013 Budget, approximately \$13 million is projected as revenue to the County.

4.2 Assessment of Alternative Funding Sources

4.2.1 New Funding Sources

Special Assessments or Non-ad Valorem Assessments

As discussed previously, a special or non-ad valorem assessment is a method to charge property owners in any County for certain services and facilities provided by the County. The two major criteria to judge the validity of a special assessment are the property must receive special benefit from the service and the assessment must be reasonably apportioned according to the benefit. The assessment is billed through the Tax Collector's Office on the annual tax bill; however, to properly collect the assessment, a rigorous protocol must be followed as defined in Chapter 197.3632 FS which includes:

- Adoption of a resolution during the year prior stating that the non-ad valorem assessment may be billed in the following year;
- An agreement with the Property Appraiser and Tax Collector to implement the non-ad valorem assessment;

- Development of a non-ad valorem assessment roll, consistent with the Property Appraiser's data for the Tax Collector, and provided to the Tax Collector in September of the year in which the assessment is to be collected;
- During the first year of the assessment, a first-class mailing to property owners announcing the assessment (this must be done in future years if the rate increases); and,
- A public hearing in which the non-ad valorem assessment roll is adopted prior to September 15 of the year in which the assessment is billed.

It is clear that the schedule is stringent, the data requirements are specific, and implementation starts during the year prior to billing.

It is important to note that the non-ad valorem assessment is not a tax and is sent to taxed and non-taxed property alike. That is, tax-exempt property, such as homesteaded residential properties valued less than \$25,000, schools, and institutional (churches and non-profit agencies) properties, must pay the assessment. On this point, the Sarasota Church of Christ took Sarasota County to the Florida Supreme Court in objection to the county's special assessment for surface water services. While the details of the case and court decision are numerous, the results of the case were essentially that property does indeed receive special benefit from surface water services, especially related to surface water quality, and that Sarasota County reasonably apportioned its assessment (their assessment at that time was based upon an assessment for developed property only, a rate structure using impervious area alone, a uniform rate for residential properties, and an individual assessment for non-residential properties based upon actual impervious areas). This case was important in the understanding of special assessments in Florida and since the case concluded, Sarasota County and others have modified their rate structures to improve the apportionment by including undeveloped properties, pervious as well as impervious areas, and credits and adjustments.

The advantages of a special assessment include:

- Such a method is already being used in the county for lighting, paving and solid waste services;
- A billing mechanism is already in place with the Tax Collector;
- Revenues can pay for all components of the surface water management program;
- Property owners are given an assessment which is equitably apportioned to them in relation to the benefits they receive;
- Tax-exempt properties pay for the assessment in recognition that they receive special benefits from the surface water services provided by the county;
- Non-payment is minimal due to the ability to place a tax lien;
- The majority of property owners (residential) will pay the fee from an escrow account from which they normally pay property taxes; and,
- The method has been adjudicated up to the Florida Supreme Court where it was upheld.

The disadvantages of a special assessment include:

- Because it is on the tax bill, it is perceived by the public as a tax;

- The cost of starting the assessment is moderate considering the one year advanced notice and stringent guidelines of Chapter 197 FS;
- Tax-exempt parcels have objected to the assessment based upon the experience of other municipalities who have adopted, or attempted to adopt, the assessment; and,
- A lien cannot be placed on governmental properties to require payment.

Surface Water Enterprise Fees Collected by Utility Bills

Governments can charge customers for services it provides for the following reasons: fees in exchange for a services or privilege (e.g., admission fees); fees to fund a regulatory responsibility (e.g., building fees, and inspection fees); and fees for a service for which the customer's own actions or property creates the need for the revenue (e.g., utility fees, impact fees, etc.). For the last two categories, there must be a reasonable connection (nexus) between cost of the service or regulatory activity and the fee charged. Fees such as these are usually charged on a utility bill which may include other fees (e.g., electric, water, sewer, solid waste fees, cable, etc.).

The use of surface water fee started in Florida in October of 1986 with the \$1.00 per month per single family unit equivalent for the city of Tallahassee. According to the most recent FSA information, there are now about 160 surface water fees in Florida. In this case and in many others in Florida, the user charge is assigned to the fee payer relative to the contribution to the surface water problem or burden. For the majority of surface water fees, the contribution is related to surface water runoff which, in turn, is related to impervious area (or a combination of pervious and impervious areas). Therefore, for most user fees, the fee is based upon the relative amount of impervious area. Since residential impervious area varies much less than does non-residential imperviousness, almost all surface water fees in Florida are based on a definition of billing unit using some measure of residential impervious area (average single family impervious area alone or average of all residential parcel impervious areas); that is, residential fees are generally uniform equal to or a fraction of the single family unit rate, and non-residential fee depend on the relative amount of impervious area compared to either single family dwelling units (61 percent of respondents for the 2011 FSA Survey) or an average of all dwelling unit types (30 percent of respondents). In this manner, the fees charged are connected or related to the service being provided.

The advantages of a surface water fee include:

- revenues can pay for all components of the surface water management program;
- customers pay a fee which is equitably related to the benefits they receive;
- tax-exempt properties pay the fee just as they pay for water and sewer services;
- a dedicated and stable funding source;
- generally located on a utility bill, the surface water fee is not perceived as a tax and is generally significantly less than the monthly water/garbage fees;
- where bills are sent monthly, cash flow is improved or annual bills; and,
- surface water fees are consistent with and can be associated with other municipal utility fees such as water or sewer.

Disadvantages of the utility fee include:

- the cost of starting the assessment is moderate considering the data analysis necessary to assign each fee payer a correct fee;
- properties that do not have utilities and yet have impervious area (e.g., parking lots) would need to receive a bill (usually resolved by sending the bill to the utility account of the owner or by sending a separate surface water bill);
- if it is not associated with other utilities, total collection of the surface water fee is difficult; and,
- a surface water fee is generally new to a municipality so there is additional political and public scrutiny and resistance to adopting the fee.

Local Government Infrastructure Sales Tax

Similar to the ½ Cent Sales Tax discussed above, the local government infrastructure sales tax allows the county to collect up to 1 percent on sales within the county. The revenues can be used for capital improvements for infrastructure, land acquisition, and landfill closures. This sales tax must be approved by voters in a referendum and has the ability to generate significant revenues. A local government infrastructure sales tax could be used for surface water capital improvements.

An advantage of this method is that it can generate a significant amount of funding for a surface water capital improvement program. Generally, the sales tax is used for all of the county's capital improvements (government buildings, sports arenas, entertainment halls, etc.) so that the surface water program is only a part of the overall program. Another advantage is that because it is a sales tax applied to everyone who purchases material in the County, both citizens and tourists alike pay for the capital improvements. That is, not just citizens pay for the improvements. A disadvantage of the sales tax include that a citizen vote is required: generally, voters are reluctant to vote for an additional tax. Also, the revenues can only be used for capital improvements which the overall surface water program includes operation and maintenance and planning expenses as well.

In Pinellas County, the Local Infrastructure Sales Tax is called "Penny for Pinellas" and was adopted for use by referendum in 1989 and extended in 1997 and 2007. While this is not a new revenue source, it is a current source of capital funding for surface water infrastructure. According to the FY 2013 Budget, the projected revenue for FY 2013 from the Penny for Pinellas is \$75.9 million.

Public Service Tax

Another major source of new funding would be a public service tax, which can be up to 10 percent of the purchases of electric, gas, water, garbage, telecommunications (only up to 7 percent) and fuel oil (up to 4 cents per gallon). It would be the county's choice as to which utility would be taxed. The tax would not include municipalities in a County. No referendum would be required to adopt a public service tax and the revenues could be used for any county service. This option is already available to the County, but the revenues are rarely sufficient to cover the surface water revenue needs.

4.2.2 Other Funding Sources

Additional sources are available to local governments to pay for a portion of the surface water management financial needs. These have been separated from the others because they generally do not generate sufficient funds for the entire surface water program and in many cases are ear-marked to fund specific programs.

Impact Fees

Water, wastewater and solid waste utilities use impact fees as well as utility fees to support their programs. Impact fees are imposed on new construction because the development causes an *impact* on the utility service (e.g., increased water or sewer capacity, or increased collections). The concept is that a one-time fee is charged to the new development to pay for the construction of new facilities which services the fee payer. Once the development has been connected to the utility service, normal monthly fees are imposed to pay for the actual service received.

There are four major restrictions on the use of impact fees:

- Impact fees must be used for construction of facilities related to the utility;
- Impact fees must be defined based upon a clear connection between the fee and the construction required;
- Impact fees must be used for facilities, or incremental increases in facilities, required for new growth; and,
- Impact fees must be used in the area of the growth.

Impact fees can be used only for the design and construction of major CIP projects related to new growth. None of the other surface water management functions can be funded by impact fees. For this reason, impact fees should be considered as a supplemental funding source.

Impact fees represent a method of capital cost recovery for growth-related construction. A new development will increase the runoff volume, timing and peak flow from the property. Surface water regulations require that the post-development runoff peak flow must be no more than the pre-development runoff peak flow and the first half-inch or inch of runoff must be treated (detention). While the regulations help to maintain pre-development conditions, there are still increased services (in the form of construction of conveyances or storage) required by the municipality as a result of the new development. From this perspective, there are three possible methods to administer impact fees to recover capital costs.

Fixed Impact Fees. In this method, a uniform impact fee is imposed on a new development based upon a characteristic of the development. Possible characteristics include total land area, number of homes, etc. The impact fee would be used for the municipality to deal with the increased runoff volume and would be independent of any regulatory requirement imposed on the development.

Fee-In-Lieu-Of Charge. Another method of recovering capital costs is to require developments to pay an up-front charge for the capital improvements needed to service the development in lieu of a developer-built onsite surface water facility. The charge would be representative of the runoff contribution of the development to the regional facility in the watershed. The concept is that regional surface water facilities may be less costly than individual systems, and can be better maintained than onsite systems. The advantages for the municipality include capital cost recovery for the regional system and better maintenance. The advantage for the development is more land for development (since none is required for the onsite surface water facility). The fee-in-lieu-of charge is paid prior to the construction of the regional facility. The major issue with the fee-in-lieu-of charge is that the regional facility must be built prior to the completion of the development.

There are two general situations when a fee-in-lieu-of charge is appropriate. The first occurs when there is a large incremental cost to be incurred by the municipality to accommodate the new development. The second is when the addition of a sizable development precipitates the need for a new surface water system, not just an expansion of the existing system.

Availability Charge. Similar to the fee-in-lieu-of charge, the availability charge is applied to a development to connect to an existing surface water management facility. In this case, the regional surface water facility must be constructed with excess capacity, the excess to be *sold* to developments based upon need. The original cost of the facility can be funded by whatever mechanism the municipality desires (bonds, pay-as-you-go sinking funds, etc.) and the capital cost to oversize the facility to accommodate growth is recovered through the availability charge. For this method to work, a master plan is required in order to define the amount of excess capacity needed for the future build-out.

Of the three options for capital cost recovery, the fee-in-lieu-of and availability charges are closely related to the particular benefits received. Implementation is on a project-by-project basis. In this way, each project can be categorized as construction for either existing problems, or for growth, so capital recovery charges can be negotiated depending on the development's requirements. These charges are fair, since the development pays only for what it needs (i.e., the charge is related to the service provided in the capital improvement).

Grants/Cost Sharing.

Another method to provide funding for capital portions of the surface water management program is through grants (external funding without significant cost to the municipality) and cost sharing (partial external funding). In neither of these cases is the cost to the municipality zero. Furthermore, grants can only be used for capital construction projects and not for the maintenance of the facility constructed. For grants, there are costs related obtaining the grant (applications, environmental assessments, etc.). However, for either grants or cost sharing, governments may be able to accomplish the study, design and construction of capital projects for half or less of the total cost. Sources of grants and cost sharing funds include the following:

Water Management District (WMD). There are two sources of WMD funding, both of which require cost sharing: Cooperative Funding Program and Surface Water Improvement Program (SWIM) funds. Cooperative funds provide generally 50 percent funding for projects which are mutually beneficial to the municipality and WMD. Cooperative funding can also provide the revenue for capital construction, generally for water quality, flooding, and ecosystem enhancement projects as well as water supply improvements. SWIM funds refer to the Surface Water Improvement and Management Act which was developed to improve the quality of priority water bodies in Florida. Recently such funding has been limited although there are some funds available. As with cooperative funds, SWIM funds are for cost shared projects.

State of Florida. As with the water management district, there are a number of ways to fund projects with the state of Florida (usually through the Florida Department of Environmental Protection, FDEP). First, periodically, the legislature provides FDEP with grant funding to surface water purposes. The grants are generally small and currently there are limited grant funding available. Second, the legislature allows low interest loan funds to be made available for surface water management projects. Previously, the federal government provided Florida with seed money to start a low interest loan program for wastewater treatment plant improvements throughout the state. These loans have interest rates less than the Prime Lending Rate.

In the 2005-06 legislative session, Senate Bill (SB) 444 authorized the Water Protection and Sustainability Program which defined funding for alternative water supplies, TMDL implementation and research, SWIM activities and small community grants. A total of \$100 million was to be annually available, of which 20 percent was for TMDL activities and 10 percent for SWIM activities. Grants would be distributed based on application and approval by each appropriate Water Management District. Even so, counties, cities, water management districts and special districts could apply for the grants. Currently these revenue sources have limited funding (319(h) grants) due to the economic downturn within the state of Florida.

Additional funding is available annually from the state with TMDL Water Quality Restoration Grants which are defined by Chapter 62-305, FAC, and authorized by Section 403.890, FS. Grant applications can be submitted anytime during the year but ranking is done in March, July and November. Eligibility includes:

- Projects that reduce pollutant loadings from urban areas;
- The project is at 60 percent design or more;
- The project is permitted or scheduled for approval at the next appropriate regulatory agency;
- The project includes monitoring to estimate the actual load reduction;
- The construction of the project will be done within 3 years;
- The applicant provides a minimum of 50 percent matching funding; and,
- Grant funds are used for construction, monitoring or public information.

Criteria for ranking include: impairment status of receiving water body; estimated load reduction; percent of local funding; cost effectiveness based on cost per pound removed; inclusion of a robust education component; and whether the local government has a dedicated funding source such as a stormwater utility fee.

Federal Government. In recent years, even though the Environmental Protection Agency (EPA) has begun the third round of surface water management permits (National Pollutant Discharge Elimination System municipal separate storm sewer system permits, commonly referred to as NPDES MS4 permits), no new funding has been provided from the federal government to the states. Of course, the low interest loan program for the states is seeded by the federal government, but direct grant or cost sharing money is not available. There are funds potentially available for water resources projects through the Army Corps of Engineers and sometimes as a direct consequence of federal legislative activity. As above, there are generally some costs to obtain these funds and the funds are usually restricted to capital projects which have significant public or statewide benefits.

Additional funding is available from FEMA grants generally in the form of Hazard Mitigation Assistance Grants and Disaster Grants. Hazard Mitigation Assistance (HMA) grants provide funding for mitigation activities associated with disaster loss and protection of life and property from future disasters. Disaster grants are for financial and direct assistance to families whose property has been damaged or destroyed due to a federally-declared disaster, and whose losses are not covered by insurance. Available assistance includes temporary housing, repair, replacement, housing construction as well as financial assistance.

4.2.3 Comparison of Alternatives

Based upon the discussion provided in the previous subsections the various funding alternatives can be compared and assessed for use in the study area. The General Fund and Surface Water Utility alternatives address all aspects of surface water management. For this reason, these options are capable of being the foundation of the funding.

Each of the alternatives was also reviewed relative to the following considerations:

- the County's authority to implement;
- equity;
- revenue capacity;
- ease of implementation;
- initial costs to set up the option; and,
- system maintenance and upkeep costs.

A tabular representation of the results of the review is provided in **Table 4-2**. If a form of the alternative is already used in the study area, it was assumed that the authority is available for the implementation of a surface water management related funding. Legal constraints were judged based upon the legal efforts necessary to implement the alternative or, once implemented, the magnitude of legal involvement that would be required. Equity was considered as to whether the charge related to the payer's contribution to, and benefit to, the surface water management activities. The revenue capacity was judged on the ability to fund the existing surface water management requirements. Implementation was reviewed relative to the magnitude of efforts required to initiate the alternative. Finally, the system operation cost was judged based on the funding necessary for the actual operation of the alternative.

Authority to Implement. Most of the alternatives are either already addressed in ordinances (general fund, permit fees and penalties) or require new ordinances (taxing districts, surface water utility, pay-as-you-go, fee-in-lieu-of charge, availability charge, and betterment charge). The taxing districts and betterment charges may be the most difficult to adopt because the fees are generally based upon valuation of property.

**Table 4-2. Pinellas County Surface water Governance Study
Assessment of Funding Options**

Funding Option	Authority	Equity	Revenue Capacity	Ease of Implementation	Initial Costs	System Costs
Ad Valorem Taxes/MSTU	Yes	Low	Sufficient?	Easy	Low	Low
Municipal Service Taxing District	Vote	Low	Sufficient	Difficult	Moderate	Low
½ Cent Sales Tax	Yes	Low	Insufficient	Easy	Low	Low
Impact Fees	Yes	High	Insufficient	Moderate	Low	Low
Local Option Gas Tax	Yes	Low	Insufficient	Easy	Easy	Easy
Special Assessments	Ordinance	High	Sufficient	Moderate	Moderate	Moderate
Surface Water Utility Fee	Ordinance	High	Sufficient	Moderate	Moderate	Low
Local Government Sales Tax	Vote	Moderate	Insufficient	Difficult	Low	Low
Public Services Tax	Yes	Low	Insufficient	Easy	Low	Low
Grants	Yes	Moderate	Insufficient	Moderate	Low	Low

Note:

"Authority" refers to the authority needed by the County to implement the funding mechanism.

"Equity" refers to how strongly the fees or assessments are related to the fee payer's contribution to the problem.

"Revenue Capacity" refers to the ability of the option to fund the entire surface water program.

"Ease of Implementation" refers to the efforts needed to fully implement the option.

"Initial Costs" refer to the costs to set up the option.

"System Costs" refer to the cost of the option relative to the revenues.

Authority. (Note that this subsection does not represent a legal opinion; rather it is to identify, based on experience, the ease or difficulty to address the legal issues related to the funding alternative.) The majority of the alternatives are expected to have minimal or moderate legal involvement. The moderate involvement is generally related to the decisions made in the judgment as to the appropriate fee for a fee-in-lieu-of charge, availability charges, and developer incentives. Legal involvement in issuance of debt may also be moderate.

Two of the options are noteworthy. The legal ramification of special taxing districts may be complex and vigorously contested because a particular group is singled out for additional taxes. This may also be true for betterment charges since a judgment must be made as to the exact amount the properties have increased in value as a result of the installation of a surface water management facility. Special assessment districts may not suffer these same ramifications, but in general they must be approved by the majority of payers in the district.

Equity. The most equitable alternative is the surface water utility since it is based upon the payers' potential contribution to the surface water runoff in the study area. Other alternatives such as the fee-in-lieu-of charge or availability charge can also be equitable since they are related to the payers' relative impact on the surface water management facility. The General Fund and the betterment charge are related to property valuation that does not consider surface water runoff contribution. Nevertheless, the General Fund is an accepted means of financing government services.

Revenue Capacity. The General Fund currently is the major revenue source for the surface water management program for the study area. Indications are that only limited expansion, if any, is available through this alternative and that the elected officials are reluctant to expand the use these sources for surface water management funding. The Ad Valorem Tax option is identified as sufficient with a question

mark. This is because, while ad valorem taxes have the capacity to pay for the whole program, governments are generally do not do so.

Except for the surface water utility, ad valorem taxes (which include an MSTU) and special assessment options, all of the other options have very limited capacities to produce funds for the overall program. Generally, these options provide funds for a localized O&M or CIP program. Bonds are used for CIP funding as well as capitalized O&M and depending on the ability to pay a long-term debt service, the revenue capacity is large. However, bonds are generally used for capital construction, not for program management. Because the payment of the fee is spread over a large base, the surface water utility can certainly fund the existing program as well as an expanded one.

Ease of Implementation. The general fund, permit fee and penalties are already in place so that no effort is needed for implementation. The pay-as-you-go sinking fund is relatively easy to set up: a fund is defined by ordinance that may not be used until certain project documentation related to planning and costs are approved. The surface water utility requires a moderate effort to implement since it is a new funding mechanism that will require public hearings as well as the preparation of a billing mechanism. Developer's incentives also require a moderate effort due the decisions necessary to equitably define the incentives. The majority of the other alternatives are complex to implement because the associated ordinances must define the criteria for the charges.

Initial Costs. For the most part, the initial costs relative to the revenue capacity of the funding source are low. Exceptions are special assessments that take more than a year to collect the first revenues and require rigorous schedules and public meetings. Special taxing districts and betterment charges are moderately costly due to the public involvement in the area of the assessment. Surface water utility costs are moderate due to the need to collect impervious area data and to update the data periodically.

System Operation Costs. The system operation costs are generally minimal or moderate in comparison to the total program costs. The costs were judged as moderate when surface water management services are increased because the County must be involved in the day-by-day judgments associated with the fees. This is true for fee-in-lieu-of charge, availability charges and betterment charges. The surface water utility or special assessment operational costs are moderate because the billing costs are small compared to the revenues collected but monthly updates to the database are required. Operational costs for a surface water fee billed through a non-ad valorem assessment are relatively low because the billing system is already available and data need to updated only once a year.

4.3 Funding By Non-ad Valorem Assessment

As part of the scope of work, the county wished to consider the non-ad valorem funding option further. To do so, data from the Pinellas County Property Appraiser (PAO) were obtained and summarized by Ennead LLC (referred to below as Ennead). Parcel numbers by various categories (using the Department of Revenue Codes) and number of dwelling units were obtained for the unincorporated County. **Table 4-3** shows the summary of the data updated to 2012.

Table 4-3

Pinellas County, Florida

Stormwater Governance

Summary of Parcel Data

All Parcels in Unincorporated Pinellas County Including Those in PPWMD

Parcel Type	No. of Parcels	% of Total	Estimated Dwelling Units	% of Total	Impervious Area (sq ft)	% of Total	Avg. Imperv. Per DU	Total Parcel Area (sq ft)	% of Total	% Impervious
Residential										
Single Family	79,174	61.9%	79,174	64.1%	232,808,994	56.8%	2,940	843,041,024	11.3%	27.6%
SFR with > 1 DU	86	0.1%	177	0.1%	424,567	0.1%	2,399	3,161,801	0.0%	13.4%
Mobile Home	6,489	5.1%	6,489	5.3%	10,238,622	2.5%	1,578	4,624,880,438	62.0%	0.2%
Mobile Home with >1 DU	15	0.0%	34	0.0%	37,997	0.0%	1,118	218,213	0.0%	17.4%
Condominium ⁴	27,531	21.5%	27,531	22.3%	53,878,167	13.2%	1,957	765,288	0.0%	See note 1
Multifamily 2-9 DUs	2,120	1.7%	5,059	4.1%	5,949,125	1.5%	1,176	39,588,219	0.5%	15.0%
Multifamily >9 DUs	73	0.1%	4,816	3.9%	7,788,197	1.9%	1,617	20,806,833	0.3%	37.4%
Misc Residential	58	0.0%	193	0.2%	135,483	0.0%	702	402,041	0.0%	33.7%
Subtotal Residential	115,546	90.3%	123,473	100.0%	311,261,152	76.0%	2,521	5,532,863,857	74.1%	5.6%
Nonresidential										
Commercial	2,321	1.8%			38,677,700	9.4%		359,461,222	4.8%	10.8%
Industrial	1,230	1.0%			32,901,210	8.0%		97,246,342	1.3%	33.8%
Agricultural	0	0.0%			0	0.0%		0	0.0%	
Institutional (no churches)	182	0.1%			5,423,098	1.3%		39,218,211	0.5%	13.8%
Churches	126	0.1%			3,689,992	0.9%		24,391,783	0.3%	15.1%
City/County	80	0.1%			5,038,633	1.2%		339,298,871	4.5%	1.5%
Governmental (no City, County, Schools)	13	0.0%			2,738,986	0.7%		51,163,708	0.7%	5.4%
Public Schools	32	0.0%			5,663,720	1.4%		36,634,437	0.5%	15.5%
Miscellaneous	402	0.3%			22,401	0.0%		138,819,989	1.9%	0.0%
Subtotal Nonresidential	4,386	3.4%			94,155,740	23.0%		1,086,234,563	14.6%	8.7%
Vacant										
Vacant Residential	5,201	4.1%			604,582	0.1%		278,797,195	3.7%	0.2%
Vacant Commercial	686	0.5%			803,168	0.2%		70,369,885	0.9%	1.1%
Vacant Industrial	222	0.2%			224,192	0.1%		17,597,233	0.2%	1.3%
Vacant Institutional	17	0.0%			0	0.0%		474,141	0.0%	0.0%
Sewage Disposal	650	0.5%			18,515	0.0%		93,303,650	1.2%	0.0%
Rec and Park Land	382	0.3%			2,494,561	0.6%		1,614,405	0.0%	See note 3
Rivers/Lakes	268	0.2%			26,411	0.0%		82,361,585	1.1%	0.0%
No Ag Acreage (with homesite)	134	0.1%			4,695	0.0%		293,398,451	3.9%	0.0%
ROW	490	0.4%			1,752	0.0%		7,329,518	0.1%	0.0%
Subtotal Vacant	8,050	6.3%			4,177,876	1.0%		845,246,063	11.3%	0.5%
Total Unincorporated	127,982	100.0%			409,594,768	100.0%		7,464,344,483	100.0%	5.5%
Total Developed	119,932	93.7%			405,416,892	99.0%		6,619,098,420	88.7%	6.1%
Estimated Unincorporated Population ²			275,345							
Estimated 2011 Population (FY13 Operating Budget)			270,559							

Notes:

¹ Since condominiums are generally located in a single building but their impervious area is individually recorded, the % impervious is misleading.

² Estimated Persons per Dwelling Unit= 2.23 2010 Census

³ The some of the PAO total area is missing for these parcels so, % impervious is misleading.

⁴ Average Condominium impervious area based on County measurement in May 2013.

As noted previously, almost all surface water utilities (by fees or assessments) are based on impervious areas. For residential parcels, since general classes of types seem to have similar impervious areas per parcel, fees and assessments are typically based on the number of dwelling units on the parcel. For non-residential parcels, the fees or assessments are typically based on the individual amount of impervious area on the parcel. For the purposes of this report, impervious area information on each parcel in the Unincorporated County was obtained by Ennead through the Property Appraiser's database by adding the appropriate areas from the Sub-area Records and the Extra Features Records for each parcel. The list of Sub-area codes along with the codes used to define impervious areas is provided in **Appendix 1**.

Table 4-3 also shows the results of the impervious areas for various parcel types along with the number of parcels, number of dwelling units for residential parcels, average impervious area per dwelling unit, total parcel area, and percent impervious. The total estimated impervious area for the unincorporated County is 385.9 million square feet (sq ft) or about 8,859 impervious acres (note: this excludes roads and other similar infrastructure). With the total area of the unincorporated County as 171,358 acres according to these data, the overall imperviousness is 5.2 percent. It should be noted that the information for condominiums (condos) is misleading. Condos represent a single parcel even if they are in a multi-unit condo building. The data show that there are about 30.2 million sq ft of impervious for 27,531 units (or 1,096 sq ft per unit), but only 765,288 sq ft of total parcel area – clearly, the condos are in multi-story buildings. Based on measurements of 244 condominiums in the unincorporated County, for the purposes of this report, the average impervious area per unit was 1,957 square feet. The estimate of the total impervious area for condos is 53,878,167 square feet. This number is shown in Table 4-3.

Table 4-4 shows the same results for Unincorporated County parcels in the Pinellas Park Water Management District (PPWMD). Of the 127,982 parcels in the Unincorporated County, only 4,616 of them are within the PPWMD, the majority of which are single family detached units. This area was separated from the rest of the Unincorporated County to consider this area if the revenue requirements were different than the rest of the Unincorporated County. Funding of the construction and

Table 4-4										
Pinellas County, Florida										
Stormwater Governance										
Summary of Parcel Data FY12										
All Pinellas Park Water Management District Parcels in Unincorporated Pinellas County										
Parcel Type	No. of Parcels	% of Total	Estimated Dwelling Units	% of Total	Impervious Area (sq ft)	% of Total	Avg. Imperv. Per DU	Total Parcel Area (sq ft)	% of Total	% Impervious
Residential										
Single Family	3,695	80.0%	3,695	81.7%	7,587,311	51.6%	2,053	28,895,879	31.1%	26.3%
SFR with > 1 DU	4	0.1%	9	0.2%	9,189	0.1%	1,021	73,646	0.1%	12.5%
Mobile Home	147	3.2%	147	3.3%	198,510	1.3%	1,350	14,718,874	15.8%	1.3%
Mobile Home with >1 DU	1	0.0%	2	0.0%	2,155	0.0%	1,078	8,847	0.0%	24.4%
Condominium	75	1.6%	75	1.7%	86,405	0.6%	1,152		0.0%	
Multifamily 2-9 DUs	163	3.5%	401	8.9%	397,336	2.7%	991	2,052,783	2.2%	19.4%
Multifamily >9 DUs	7	0.2%	193	4.3%	771,093	5.2%	3,995	2,025,619	2.2%	38.1%
Misc Residential	0	0.0%	0	0.0%	0	0.0%		0	0.0%	
Subtotal Residential	4,092	88.6%	4,522	100%	9,051,999	61.5%	2,002	47,775,648	51.4%	18.9%
Nonresidential										
Commercial	161	3.5%			2,204,391	15.0%		14,320,180	15.4%	15.4%
Industrial	58	1.3%			1,579,622	10.7%		5,229,521	5.6%	30.2%
Agricultural	0	0.0%			0	0.0%		0	0.0%	
Institutional (no churches)	17	0.4%			627,717	4.3%		4,829,677	5.2%	13.0%
Churches	10	0.2%			144,988	1.0%		797,762	0.9%	18.2%
City/County	2	0.0%			59,589	0.4%		239,023	0.3%	24.9%
Governmental (no City, County, Schools)	2	0.0%			627,717	4.3%		12,922,057	13.9%	4.9%
Public Schools and Colleges	3	0.1%			357,822	2.4%		1,515,697	1.6%	23.6%
Miscellaneous	0	0.0%			0	0.0%		0	0.0%	
Subtotal Nonresidential	253	5.5%			5,601,846	38.1%		39,853,917	42.9%	14.1%
Vacant										
Vacant Residential	155	3.4%			7,887	0.1%		4,440,947	4.8%	0.2%
Vacant Commercial	74	1.6%			37,332	0.3%		2,570,222	2.8%	1.5%
Vacant Industrial	7	0.2%			0	0.0%		108,997	0.1%	0.0%
Vacant Institutional	2	0.0%			0	0.0%		25,343	0.0%	0.0%
Sewage Disposal	16	0.3%			0	0.0%		952,161	1.0%	0.0%
Rec and Park Land					8,059	0.1%		610,000	0.7%	1.3%
Rivers/Lakes	4	0.1%			0	0.0%		856,598	0.9%	0.0%
No Ag Acreage (Misc)	9	0.2%			0	0.0%		7,279,490	7.8%	0.0%
ROW	4	0.1%			0	0.0%		856,598	0.9%	0.0%
Subtotal Vacant	271	5.9%			53,278	0.1%		5,297,545	19.0%	1.0%
Total Unincorporated	4,616	100.0%			14,707,123	100.0%		92,927,110	100.0%	15.8%
Total Developed	4,345	94.1%			14,653,845	99.64%		87,629,565	94.30%	16.7%

maintenance of the PPWMD primary surface water infrastructure is already provided by an ad valorem tax. After consideration of the infrastructure in the area, programs provided, the PPWMD and personal communication, the LOS costs estimated for the rest of the Unincorporated County excluded costs for the primary surface water infrastructure. As a result, the programs provided by the County and the benefits for the properties within and without PPWMD are the same with no overlap or redundancy. For this reason, further consideration of the PPWMD was not needed.

To illustrate the use of this information, a number of example rates can be considered depending on the LOS chosen, the types of services that are funded through the assessment and the chosen rate structure. **Table 4-5** illustrates various rates depending on which components are funded by the utility assessment based on the preferred rate structure (see Section 5).

Table 4-5			
Pinellas County Stormwater Governance Study			
Example Stormwater Utility Rates (Excludes CIP Funded by Penny for Pinellas)			
Example Program	Program Funding Need	Cost per ERU per Year ¹	Cost per ERU per Month ²
Proposed Surface Water Management Program + LOS B	\$19,040,534	\$123.10	\$10.30
Proposed Surface Water Management Program	\$17,885,623	\$115.70	\$9.60
Proposed Program - pipe repair (PR)* and mowing*	\$16,744,755	\$108.30	\$9.00
Proposed program - PR*, mowing*, and vegetation management (VM)**	\$14,995,228	\$97.00	\$8.10
Proposed program - PR*, mowing*, VM,** and Adopt-A-Pond	\$14,526,335	\$93.90	\$7.80
Existing Surface Water Management Program	\$11,793,546	\$76.30	\$6.40
Total Estimated ERUs	169,938.0		
Notes:			
1. Calculated as Funding Need divided by Total ERUs and 91% (assumes 5% loss and 4% for PAO and Tax Collector). Rounded to nearest \$0.10.			
2. Calculated as the Annual Cost divided by 12. Rounded to the Nearest \$0.10.			
* Service costs shift back to Transportation Trust			
** Service costs shift back to Transportation Trust and General Fund			

Table 4-6 shows the surface water utility rates in Florida in July 2011 from FSA and updated for cities in Pinellas County by County staff in March 2013. The average rate for the 15 municipalities in Pinellas County with a surface water utility fee is \$6.34 per month per ERU (~\$76 per year per ERU). The range of fees for Pinellas cities is \$1.50 per ERU per month to \$13.40 per ERU per month.

Table 4-6

Pinellas County Stormwater Governance Study

Comparison of Stormwater Utility Fees for Cities and Counties in Florida - FSA July 2011 (updated by Pinellas staff)

Stormwater Utility	Monthly Rate per ERU	Stormwater Utility	Monthly Rate per ERU	Stormwater Utility	Monthly Rate per ERU	Stormwater Utility	Monthly Rate per ERU
Cities							
Altamonte Springs	\$6.75	Fort Lauderdale	\$3.53	Medley	\$3.00	Port Orange	\$8.25
Apopka	\$2.08	Fort Meade	\$4.25	Melbourne	\$3.00	Port St. Lucie	\$10.25
Atlantic Beach	\$8.39	Fort Myers	\$4.80	Melbourne Beach	\$3.00	Redington Beach	\$2.50
Auburndale	\$0.75	Fort Pierce	\$4.50	Miami	\$3.50	Redington Shores	\$1.50
Aventura	\$2.50	Fort Walton Beach	\$3.00	Miami Beach	\$3.25	Riviera Beach	\$4.50
Bartow	\$3.75	Frostproof	\$3.00	Miami Gardens	\$4.00	Rockledge	\$3.75
Bay Harbor Islands	\$5.00	Fruitland Park	\$2.00	Miami Shores	\$3.75	Safety Harbor	\$7.25
Belle Isle	\$4.00	Gainesville	\$8.15	Miami Springs	\$3.67	Sanford	\$6.79
Belleair	\$11.92	Golden Beach	\$2.92	Minneola	\$4.00	Satellite Beach	\$4.50
Boca Raton	\$2.90	Gulfport	\$2.87	Miramar	\$2.50	South Daytona	\$5.00
Boynton Beach	\$5.00	Haines City	\$2.00	Mount Dora	\$5.00	South Miami	\$3.00
Bradenton	\$2.50	Hallandale Beach	\$3.35	Mulberry	\$4.00	St. Augustine	\$5.00
Bradenton Beach	\$8.33	Hialeah	\$2.50	Naples	\$12.01	St. Cloud	\$6.35
Cape Canaveral	\$3.00	Hialeah Gardens	\$2.00	Neptune Beach	\$3.00	St. Pete Beach	\$3.00
Cape Coral	\$6.25	Holly Hill	\$6.00	New Port Richey	\$3.36	St. Petersburg	\$6.84
Casselberry	\$7.00	Hollywood	\$3.22	New Smyrna Beach	\$2.50	Stuart	\$3.76
Clearwater	\$13.40	Holmes Beach	\$4.50	Niceville	\$4.25	Sunny Isles Beach	\$2.50
Clermont	\$3.00	Homestead	\$3.18	North Bay Village	\$2.25	Sunrise	\$4.50
Cocoa	\$5.00	Indian Creek	\$4.39	North Lauderdale	\$3.00	Surfside	\$2.50
Cocoa Beach	\$6.00	Indian Harbour Beach	\$3.00	North Miami	\$5.64	Sweetwater	\$2.50
Coconut Creek	\$3.22	Jacksonville	\$5.00	North Miami Beach	\$4.50	Tallahassee	\$7.95
Cooper City	\$20.80	Jacksonville Beach	\$5.00	Oakland Park	\$6.00	Tamarac	\$9.58
Coral Gables	\$3.50	Jupiter	\$4.37	Ocala	\$4.00	Tampa	\$3.00
Cutler Bay	\$4.00	Key Biscayne	\$7.50	Ocoee	\$7.00	Tarpon Springs	\$5.65
Daytona Beach	\$7.48	Key West	\$7.05	Oldsmar	\$3.50	Tavares	\$4.50
DeBary	\$7.00	Kissimmee	\$7.64	Opa-Locka	\$1.90	Tequesta	\$7.13
Deland	\$5.81	Lake Alfred	\$2.00	Orlando	\$9.99	Titusville	\$6.15
Delray Beach	\$5.33	Lake Mary	\$3.00	Ormond Beach	\$5.00	Treasure Island	\$13.04
Deltona	\$6.26	Lake Worth	\$5.80	Oviedo	\$4.00	Venice	\$5.00
Doral	\$4.00	Lakeland	\$6.00	Palm Coast	\$8.00	West Melbourne	\$3.00
Dundee	\$1.00	Largo	\$5.32	Palmetto	\$3.68	West Miami	\$2.50
Dunedin	\$9.30	Lauderdale Lakes	\$4.57	Pembroke Park	\$6.25	West Palm Beach	\$8.48
Eagle Lake	\$4.00	Lauderhill	\$12.19	Pensacola	\$5.70	West Park	\$3.50
Eatonville	\$4.95	Leesburg	\$6.00	Pinecrest	\$4.00	Wilton Manors	\$3.50
Edgewater	\$8.00	Longwood	\$6.00	Pinellas Park	\$4.00	Winter Garden	\$4.00
El Portal	\$3.00	Madeira Beach	\$5.00	Plant City	\$5.50	Winter Haven	\$2.68
Eustis	\$3.00	Malabar	\$3.00	Polk City	\$1.50	Winter Park	\$11.56
Florida City	\$2.50	Margate	\$3.57	Pompano Beach	\$3.00	Winter Springs	\$5.50
Counties							
Bay County	\$3.33	Hillsborough County	\$1.00	Miami-Dade County	\$4.00	Volusia County	\$6.00
Brevard County	\$3.00	Leon County	\$1.67	Pasco County	\$3.92		
Charlotte County*		Marion County	\$1.25	Sarasota County	\$7.55		
Summary: Cities		Summary: Counties		Summary		Pinellas County Cities	
Number	152	Number	10	Number	162	Number	15
Average	\$4.93	Average	\$3.52	Average	\$4.86	Average	\$6.34
Minimum	\$0.75	Minimum	\$1.00	Minimum	\$0.75	Minimum	\$1.50
Maximum	\$20.80	Maximum	\$7.55	Maximum	\$20.80	Maximum	\$13.40
Note: * per acre		Pinellas County Cities					

Section 5

Rate Structure Analysis

As part of this assessment of the Pinellas County Governance Study for the consideration of a Surface water utility, a number of potential rate structures were considered. For this section, the rate structure options are considered independent from the fee.

5.1 Purpose

In the previous section, information related to the potential customers within the unincorporated County was gathered including number of parcels, number of dwelling units, and impervious areas for various different parcel types. These data were collected to develop a rate model for the stormwater assessment which is intended to estimate the potential rates and revenues depending on rate structure options.

5.2 Rate Model

The rate model for the County is a series of worksheets within a spreadsheet that provide the following (see example worksheets in Appendix 1):

- A ten-year estimate of program costs for Management, Compliance and Implementation, Operation and Maintenance (O&M); and Capital Improvement Program (CIP). The CIP costs are separated so that a Pay-As-You-Go funding can be compared to a bonded program. The change in revenue needs is based on the Consumer Price Index (CPI) for all program costs.
- An options worksheet allows the user to identify whether or not a rate structure option is to be simulated. Options include single family detached equivalence or residential equivalence (known as an ERU, or Equivalent Runoff Unit); potential credits and the amount of credits (percent reduction in fee); various exemptions that might be offered; and variable non-single family residential rates. This spreadsheet also accumulates the number of extra cost needed to administer the rate structure options.
- A worksheet showing the resultant annual revenue from the options selected for rates in \$10 increments from \$10 per year per ERU to \$300 per year per ERU
- A worksheet with a 10-year projection of rates and program needs is provided with the ability to test the effect of a pay-as-you-go CIP program compared to a bonded program with annual debt service. For the 10-year bonded CIP, 2 bonds are simulated for each of the 5 years (20-year repayment, 7 percent loan rate, 25 percent coverage and 12 percent financing costs).
- The final worksheet in the file is the summary of data used for the other worksheets. This table is shown in **Table 5-1** for the data from this study.

Table 5-1
Pinellas County Stormwater Management Program
Summary of Parcel Data May 2013)

Type	No. of Parcels	No. of Dwelling Units	2013 Impervious Area (sq ft)	Imperv./ DU or Parcel	% of Median SF	Billing Unit Equivalent	ERUs Based on Equivalent	ERUs For Subsidy	% Affected by Credits (Estimated)	Fraction of ERUs	Total ERUs with Options
Residential (1)											
Single Family - Small	15,821	15,821	20,231,117	1,315	0.6		15,821		5%	100%	15,821.0
Single Family - Medium	47,533	47,533	119,863,030	2,339	1.0		47,533		5%	100%	47,533.0
Single Family - Large	15,496	15,496	88,469,284	5,441	2.3		15,496		5%	100%	15,496.0
Single Family - Very Large	324	324	4,245,563	13,104	2.3	2,339	324		5%	100%	324.0
Single Family > 1 DU	86	177	424,567	2,399			177		5%	100%	177.0
Multifamily (2)	2,193	9,875	13,737,322	1,391		2,339	9,875		5%	100%	9,875.0
Mobile Home - Small	3,198	3,183	3,859,670	1,213	0.5		3,183		5%	100%	3,183.0
Mobile Home - Medium	3,298	3,298	6,356,045	1,927	1.0		3,298		5%	100%	3,298.0
Mobile Home - Large	8	8	39,809	4,976	2.5		8		5%	100%	8.0
Condominiums (4)	27,531	27,531	53,878,167	1,957		2,339	27,531		5%	100%	27,531.0
Misc Residential	58	193	135,483	702			193		5%	100%	193.0
Subtotal Residential	115,546	123,439	324,454,937	2,628			123,439	0			123,439.0
Non-residential											
Commercial	2,321		38,677,700	16,664		2,339	16,536		5%		16,536.0
Industrial	1,230		32,901,210	26,749		2,339	14,066		5%		14,066.4
Agricultural	0		0			2,339	0				0.0
Institutional w/o Churches	182		5,423,098	29,797		2,339	2,319		5%		2,318.6
Churches	126		3,689,992	29,286		2,339	1,578	1,578	5%		1,577.6
Governmental w/o Schools	13		5,038,633	387,587		2,339	2,154	2,154	5%		2,154.2
City/County	80		2,738,986	34,237		2,339	1,171	1,171	5%		1,171.0
Schools	32		5,663,720	176,991		2,339	2,421	2,421	5%		2,421.4
Miscellaneous	402		22,401	56		2,339	10		5%		9.6
Subtotal Non-Residential	4,386		94,155,740	21,467			40,255	7,324			40,254.7
Vacant											
Vacant Residential	5,201		604,582			2,339	258	0	5%		258.5
Vacant Commercial	686		803,168			2,339	343	343	5%		343.4
Vacant Industrial	222		224,192			2,339	96	96	5%		95.8
Vacant Institutional	17		0			2,339	0	0	5%		0.0
Subtotal Vacant	6,126		1,631,942	266			698	439			697.7
Special Parcels											
Rec and Parkland	382		18,515			2,339			5%		0.0
Sewage Disposal	650		2,494,561			2,339			5%		0.0
Rivers/Lakes	268		26,411			2,339			5%		0.0
No Ag Acreage (with homesite)	134		4,695			2,339			5%		0.0
ROW	490		1,752			2,339			5%		0.0
Subtotal Special	1,924		2,545,934				0	0			0.0
Total Developed	119,932	123,439	418,610,677				163,694	15,527			163,693.7
Total Parcels	127,982	123,439	422,788,553	2,633				7,324			164,391.4

Note:

- (1) Small SF is 10th percentile and below; Large is 90th percentile and above. Very large is greater than 10,000 sq ft.
- (2) Multifamily includes parcels with DOR Codes 03 and 08.
- (3) For Residential, column represents Impervious per Dwelling Unit. For Non-residential, column represents Impervious per Parcel.
- (4) Condominium average impervious areas based on measurement by County staff in May 2013.

Type	Imperv. Only	Type	ERUs	%
Single Family Equivalent	2,339	Residential	123,697	75.2%
Equivalent DU	2,628	NonResid	40,694	24.8%
People per Dwelling Unit (2010 Census)		Current	164,391	0.0%
Comparable Population		Original	164,425	
Current Population (FY13 Budget)				
Median Household Value				
Median Household Income				

5.3 Stormwater Program Needs

As defined in Section 3 the program costs for the County were estimated and projected for potential future levels of service scenarios. **Table 5-2** provides a summary of the existing stormwater program needs for program management, NPDES MS4 compliance, and NPDES – O&M costs for the County. No CIP costs are included in this table as they are to be funded through other sources.

Table 5-2 Pinellas County Stormwater Governance Study		
Summary of Funding Including Proposed and Expanded Programs (Excluding Engineering, and CIP)		
	Annual Amount	% of Total
Program Management	\$2,252,342	12.6%
NPDES - MS4 Compliance	\$2,253,491	12.6%
NPDES - O&M Program	\$13,379,790	74.8%
Total Program Costs	\$17,885,623	100.0%

5.4 Rate Structure Alternatives – Unincorporated County

As noted previously, most of the stormwater utilities in the United States are based on the impervious area of the customer's property. Actually, the majority of stormwater utilities have a uniform rate for all residential and nonresidential parcels, with the residential customer's fee based on the number of dwelling units and the nonresidential customer's fee based on the impervious area. The purpose of this section is to discuss the alternatives for the stormwater utility rate structure. Alternatives include uniform and variable rates for both residential and non-residential customers, exemptions, and credits.

5.4.1 Equivalent Units

In order to provide an equitable measure of impervious areas for both residential and non-residential developed parcels, stormwater utilities have used an equivalent unit to measure the impervious areas by a uniform base. Similar to other types of utilities, the equivalent unit for a stormwater utility is the relative amount of contribution of a fee payer compared to a residential unit. In other words, the residential unit is the base for the utility fee. For the purposes of this document, the billing unit will be called an Equivalent Residential Unit or ERU.

Two methods of defining the equivalent have been employed. The first is based on the use of single family detached parcels. In this case, the ERU is defined as the average or median impervious area for single family detached within the county. From the recent information obtained from the County, this method results in a median value of 2,339 square feet and an average value of 2,943 square feet for the Unincorporated County (see Table 4-4). The second method to define an ERU is based upon the average or median impervious area for all residential unit types including single family, multifamily and mobile homes. For Pinellas County, the average impervious area for all residential parcels is 2,329 sq. feet, not significantly different than the value based on single family detached parcels only.

Prior to any rate structure adjustments, from the rate model using the median single family impervious area, the number of ERUs is 164,425 billing units, while, for the all-residential method, there are 164,602 billing units (a 0.1 percent increase). The slight difference is because, while the residential ERUs stay the same, the nonresidential billing units are based on a smaller denominator.

It should be emphasized that the choice of the equivalent base is subject to the policy decisions of the County and that different communities around the U.S. have chosen differently. In Florida, 50 percent of the 10 counties with assessments or fees use the single family base and 30 percent use the all-residential-base base (20 percent use some other equivalent). For all cities and counties (81 respondents), 61 percent use the single family basis, 30 percent use the all-dwelling unit base and 9 percent use another method. In the case of Pinellas County, about 64 percent of the dwelling units are single family and about 22 percent are condominiums.

5.4.2 Uniform or Variable Residential Rates

Many utilities have the residential customer pay in relation to the number of dwelling units for the customer. A single family unit is assigned 1 ERU and a duplex is assigned 2 ERUs, for example. In Florida, 70 percent of counties use this method. Two other options are possible: tiered single family rates and rates set by residential type. Each of these is considered below.

Uniform Residential Billing Units. As noted above, most of the counties use this method – each dwelling unit is assigned 1 billing unit. Thus for this method, all single family detached parcels would be assigned 1 ERU, and other non-single family residential parcel would be assigned billing units based on

the number of dwelling units. A 200-unit apartment would receive 200 ERUs and a condominium would receive 1 ERU.

Tiered Single Family Billing Units. For this alternative, single family detached properties (DOR Code 01) would be assigned a fee based on the impervious area of their property in the same manner as the nonresidential properties. The purpose of this would be to have a fee directly related to amount of impervious area on each customer's property. Most stormwater assessment datasets do not have the impervious area readily – the Pinellas County Property Appraiser does. That is, using the footprint plus appurtenances and some extra features, a value for impervious area for single family can be defined. The driveway is excluded but can be added as a unit average number. Therefore, impervious area data for each single family parcel is not a significant limitation in the County.

There are some stormwater utilities that have a tiered structure for single family units to recognize that some single family properties are very small and some are extremely large. If each is assigned a fee based on 1 ERU, then the small properties may appear to pay too much and the large properties appear to pay too little. Previous studies in the US have shown that when the ratio of the 90th percentile to the 10th percentile is greater than 2.5, a tiered structure can be justified. In the case of Pinellas County, the ratio of the 90th percentile and 10th percentile is 4.11, a value which suggests a tiered methodology.

**Table 5-3 Pinellas County Surface Water Governance Study
Potential Tiered Single Family Rate Structure**

Category	Minimum Impervious Area (sq ft)	Maximum Impervious Area (sq ft)	No. of Parcels	Total Impervious Area (sq ft)	Ratio to Median Single Family
Small	200	1,576	15,821	20,231,117	0.6
Medium	1,576	4,368	47,474	119,862,850	1.0
Large	4,368	9,999	15,496	88,469,284	2.3
Very Large	10,000	13,871	324	4,245,563	*
Total			79,115	232,808,814	

*Note: based on parcel impervious area.

To use a tiered structure, the impervious area of every single family unit would be needed. A possible structure is shown in **Table 5-3** on the median, 10th and

90th percentile values of the measured properties. The ERUs for the each tier is the midpoint impervious area in the range divided by the median value (2,339 square feet). Also, because many of the public tend to believe that very large home need to pay more, homes greater than 10,000 square feet can be billed as a commercial property is (i.e., based on impervious area). For the Unincorporated County, there are 324 such parcels. Table 5-3 shows a potential tiered structure using the 10th and 90th percentile values.

If a variable billing rate is done for the Small, Medium and Large SF parcels, there would a 4.8 percent change in revenue as the large single family parcels generally generate revenue to compensate for the small ones. If the very large single family tier is considered, an additional 1,167 ERUs are generated (a 0.7 percent increase over the tiered SF parcels).

Non-SF Residential Billing Units Based on Impervious Areas. As an alternative to the non-SF residential parcels (e.g., Multifamily and Mobile Homes) to be based on dwelling unit (the most administratively simple alternative), the non-SF residential parcels may be based on the average impervious area for each class. According to the parcel dataset summarized in Table 5-1, there are estimated to be 44,122 non-SF dwelling units in the unincorporated County (35.7 percent of the total residential dwelling units) excluding Single Family with more than 1 dwelling unit. The data also show that the average impervious per dwelling unit for non-SF residential parcels is variable (see inset). If these parcels were assigned billing units based on their relative average impervious area, then the number of billing units would decrease to 139,098, a 15.4 percent decrease.

According to the FSA 2011 Survey, 70 percent of the counties and 58 percent of all SWU in Florida have a rate structure with multifamily customers assigned the same number of billing units as the single family detached customers (i.e., 1 billing unit per dwelling unit).

Residential Type	Ratio of Average Impervious Area to SF
Single Family	1.0
Single Family w/ >1 DU	1.0
Multifamily	0.6
Mobile Home	0.7
Mobile Home w/ > 1 DU	0.5
Condominiums	0.8
Misc. Residential	0.3

5.4.3 Nonresidential Rates

Nonresidential customer rates for adopted stormwater utilities in the United States are almost always related to the impervious area of the property. For most utilities, the actual impervious area is measured or inferred for each nonresidential parcel, and the ERU assignment is the parcel's impervious area divided by the residential equivalent. An alternative to this is to assign nonresidential property types a percent imperviousness based on literature values or a statistically measured sample of imperviousness. However, in the case of Pinellas County, all of the non-residential parcels have impervious area from the PAO and these data are already part of the assessment database; therefore, other less accurate rate structures (e.g., percent imperviousness assigned) are not supported.

In 2012, the Florida Legislature passed House Bill (HB) 1197 which considered governmental stormwater assessments for bona fide agricultural properties. The bill modifies Chapter 163, FS, to state that "A governmental entity may not charge an assessment or fee for stormwater management to a bona fide farm operation on land classified as agricultural land ... if the farm operation has an [NPDES] permit, [ERP] or works-of-the-district permit or implements [BMPs] adopted under Chapter 120 ..." For governments who have adopted such assessment or fees prior to March 2009, they may continue to do so if the program allows for adjustments for the adoption of BMPs. As a new assessment the agricultural parcels in Table 5-1 and in the rate model were assigned zero impervious area.

The FSA 2011 Survey shows that 83 percent of the respondents use an impervious area for fee setting, 7 percent use pervious and impervious area, and 10 percent use other methods (such as intensity of development). For counties, 60 percent use impervious area, 20 percent use the gross area, and 20 percent use either intensity of development or other methods

5.4.4 Adjustments and Credits

Adjustments are related to a reduction in the fee for a customer due to a reduction of the services provided to the customer. For an adjustment, all or some of the fee is eliminated because of special circumstances, such as a reduction in imperviousness due to a portion of the property not draining to the County's stormwater system. A credit, on the other hand, is related to the reduction in fees due to special action taken by the fee payer to reduce the need for stormwater services such as the design, construction and maintenance of a stormwater pond that reduces both stormwater flows and pollutants associated with runoff. In both cases, however, the amount of the reduction can depend on the reduction of services being provided the customer.

As noted in Section 2, the basic services of any stormwater program are program management, NPDES MS4 (which includes NPDES MS4 compliance and NPDES O&M), and capital improvements (CIP). Expanding CIP, for a total recommended program of \$17.9 million (see Table 5-2) shows the portions of each component. In particular, for Program Management, NPDES – MS4 compliance and NPDES O&M, the percentages are 12.6, 12.6, and 74.8 percent, respectively.

To consider the potential reduction in services due to special activities done by the customer on their property, each of the basic services must be considered. The Stormwater Management and NPDES – Non-O&M costs for any particular customer would be the same regardless BMPs from the property because these costs relate to services that are not reduced based on customer activity; thus, the only service that can be reduced based on customer activity is NPDES O&M. For an example, the maximum potential credit allowed could be about 74.8 percent (the percentage for NPDES O&M), which for this report is rounded to 75%. If a customer has a stormwater facility that reduces the runoff and treats stormwater pollutants, the O&M services provided by the County can be reduced. Since the surface water infrastructure is built to handle runoff from properties developed since about 1984, some communities only allow an adjustment for private facilities that exceed current codes (resulting from the fact that the County would have reduced service for a private property with a facility exceeding code). For this reason, the amount of the reduction for credits should be related to the reduced services provided to the property based on 75 percent or less.

Control of Stormwater Runoff

One of the adjustments that can be considered is related to the reduction of stormwater runoff to the County's stormwater system. For many stormwater utilities, the only circumstance in which a reduction is meaningful to the overall stormwater system is for the 100-year storm event, a major level of service measure. The control of stormwater for the 100-year storm event can be accomplished for two characteristics of the event: rate and volume. Rate control allows the total amount of runoff to be discharged to the stormwater system over a prolonged period of time. Volume control reduces the total amount of runoff ultimately discharged to the stormwater system. Thus, volume control reduces the runoff volume (the basic measure of stormwater service) and can reasonably be assigned an adjustment. Similarly, in an area with special controls, such as ones that prohibit a positive discharge, an adjustment of up to 75 percent may be considered.

It should be noted that these adjustments are related to specific characteristics of the customer's property. An adjustment for the control of the 100-year storm event and the discharge of property runoff to non-municipal stormwater systems requires site specific information. If an adjustment for these conditions is allowed by the County, then the customer must petition the County for the adjustment by providing parcel specific data such as photographs or engineering drawings.

Credits for Stormwater Facilities

These adjustments are for customers who, except for mitigating circumstances, would have to pay the whole fee. Mitigating circumstances include onsite stormwater facilities that attenuate and treat stormwater runoff. For example, compare three properties: one built with no detention ponds, one built with a detention pond that is not maintained, and the last with a maintained pond. In the first case, stormwater runs off the land uncontrolled and untreated to the County's stormwater system. In the second, while the runoff was originally controlled, due to lack of maintenance, runoff is no longer controlled and is no better than the first case. In the last example, runoff is controlled and treated, thereby reducing the burden on the County's system. Of these three cases, the third clearly has reduced the services that the County needs to provide and deserves a reduction in fee (credit).

There are a number of methods used to adjust the fees for credits. The most common methods include a percentage reduction and relative reduction. In the percentage reduction, if the customer designs and builds an on-site stormwater facility, then a straight percentage reduction on the fee based on the Capital Improvement budget components of the revenue needs; however, for Pinellas County, since there are no CIP costs included in the preferred program to be newly funded, construction of a BMP alone does not

reduce the services. Only if the facility is also maintained by the customer would the services be reduced. For the second, the reduction is relative to an ideal stormwater facility. For example, assuming that to treat stormwater runoff, a property needs 0.1 acre-feet (ac-ft) of storage for every acre of impervious land. The ideal with this assumption for a 10-acre site with 50 percent imperviousness would be 0.5 ac-ft of storage. If this parcel constructs a pond with 0.5 ac-ft, then the site gets the maximum credit. If the actual pond is smaller, then the credit is relative to the ratio of the actual size and the ideal. Clearly, the first method is easier to administer but the second is more site-specific.

Either of the credit methods can be administered within County. However, to keep the program simple initially, the percentage reduction can be allowed if credits are authorized. Also, it is important that facilities are maintained annually to retain the credit. Therefore, the credit should require annual certification of maintenance via photographic evidence and should be checked periodically by County staff through random and unannounced site inspection. Furthermore, since the County wishes to encourage the construction and maintenance of private stormwater ponds according to County standards, the 75 percent credit for detention ponds should be allowed only if the pond meets or exceeds County code as certified by a Florida licensed engineer.

A second type of adjustment for stormwater treatment would be for an incentive to reduce stormwater runoff and treat stormwater on site. For example, if a property owner uses Low Intensity Development (LID) and/or Green Infrastructure (GI) techniques (e.g., Directly Connected Impervious Area (DCIA) reduction, vegetative buffers, rain gardens, cisterns, etc.) both the runoff volume and the runoff pollutants are reduced, decreasing the effort required by the County to deal with the volume and pollutants. Since on-site stormwater facilities and LID techniques reduce the capital needs of the County, the adjustment should be no more than 15 percent of the separate utility fee. However, since the County does not have specific LID protocols and methods, it is recommended that this credit should not be part of the rate structure until a standard protocol has been defined by County staff.

Because the data required have not been obtained and the policies associated with these types of adjustments have not been prepared, it is suggested that during the first year of implementation, a policies and procedures manual should be prepared documenting the adjustment policies. The manual should also document the procedures used to create the non-ad valorem assessment role and to obtain adjustments if warranted.

5.5 Consequences of Rate Structure Options

Using the rate model, the number of billing units, called an ERU, changes depending on the rate structure options. **Table 5-4** provides the revenue consequences for each of the general rate structure options in comparison to the base rate structure (i.e., single family-defined billing unit, 1 billing unit defined for each dwelling unit for all residential parcels, and 1 ERU defined for each 2,339 square feet of impervious area on nonresidential parcels).

**Table 5-4 Pinellas County Stormwater Governance Study
Summary of Consequences for Rate Structure Options**

Option	Total ERU	% Change in Rate from Base
Base Rate Structure	164,425	
All Residential Based Fee	164,602	0.1%
Tiered Single Family	172,335	5.4%
Tiered Single Family w/Large SF Extra	173,502	5.5%
Variable Non-Single Family Residential	152,541	-7.2%
Credit for Pond at 80%	157,848	-4.0%
No Fee for Schools, Government or Churches	157,101	-4.5%
Vacant Parcel is Excluded	163,728	-0.4%

The all-residential BRU alternative does not indicate a difference and the tiered single family rate structure options increase the billing units by a little more than 5 percent. Since 22 percent of the dwelling units are multifamily, mobile homes and condos, a tiered rate structure for these types of parcels would reduce the ERUs by over 7 percent. For the credit analysis, it was assumed that 5 percent of

all parcels would qualify for the credit – under these circumstances, there would be a loss of 4.0 percent. Finally, if public schools, governments and churches were not billed, there would be loss of 4.5 percent. The exclusion of parcels considered vacant by the PAO would reduce the total ERU by 0.4 percent (note that many of these have impervious area).

Based on review by County staff, the preferred rate structure includes:

- ERU based on the median impervious area of single family detached parcels.
- Single family (DOR 00 and 01) tiered structure with small, medium, large and very large homes.
- Very large homes (> 10,000 square feet) to be considered in the same manner as non-residential parcels (i.e., by impervious area).
- Residential condominiums (DOR 04) based on building and common areas distributed equally to each condo unit.
- Non-residential condos (in DOR 11 and 41) based on building and common areas distributed based on percent of total building area.
- Mobile homes (DOR 02) and mixed use (DOR 07) assigned ERUs based on the single family detached tiered structure using the PAO data.
- Mobile homes in parks (DOR 28) assigned ERUs in the same fashion as non-residential parcels (i.e., impervious area divided by the ERU impervious area).
- Multifamily (DOR 03 and 08) and Co-ops (DOR 05) assigned ERUs in the same fashion as non-residential parcels.
- Non-residential (DOR 10 to 99) parcels assigned ERUs using the PAO impervious area divided by the ERU impervious area.
- Inclusion of all properties in the assessment.
- Rate structure to include adjustment policy (credits) based on a Policy and Procedures Document to be developed in the 1st year of implementation.

According to Section 3, the existing funding requirement (excluding the Penny for Pinellas) is \$11.8 million. With the estimated ERUs, the rate needed to generate this revenue would be about \$76 per ERU per year. For the proposed program of \$17.9 million, the rate would have to be \$116 per ERU per year.

5.6 PPWMD

During the consideration of the level of service (LOS) for stormwater services, the LOS for properties within the Pinellas Park Water Management District (PPWMD) was considered. Based on discussions with the County staff, and a review of the services provided by the PPWMD compared to the County services, it was concluded that the LOS inside and outside the PPWMD were the same for Program Management and NPDES LOS MS₄ programs.

For unincorporated County residents in PPWMD, the O&M and CIP for the primary drainage system is funded by the PPWMD ad valorem assessment. However, secondary tertiary drainage system O&M and CIP are provided and funded by the County. For this reason study the primary system O&M and CIP were removed from this analysis for unincorporated County residents of the PPWMD. Therefore the services identified herein are received by all residents in the Unincorporated County and therefore the rates apply to all properties.



Section 6 Summary and Findings

Based on the research, study and analysis of the stormwater program for Pinellas County, and in some cases, at the suggestion of County staff, the following summary and findings are offered to define, and provide improvements to, the existing stormwater program in Pinellas County.

Governance (Section 2)

- Federal and state laws and regulations are sufficient to authorize Pinellas County to manage stormwater programs within the unincorporated County, including flood controls, sediment and erosion programs, environmental management and water quality improvements.
- Through the NPDES program, many stormwater functions are accomplished by both the County and regulated cities within the County.
- The Charter and County regulations specify the extent of the county-controlled or operated stormwater system. However, due to annexation both the County and cities are sometimes working on the primary system (in particular major drainage conveyance systems). This leads to some confusion over which entity is to manage certain systems especially after annexation.
- Two regulatory issues will cause a change in stormwater management activities within the County: the new NPDES MS4 permit that requires an increase in compliance activities and TMDL/BMAP pollution reduction activities which may require both structural and non-structural projects.

Existing and Expanded Levels of Service (Section 3)

- The stormwater programs within the County are provided by various departments and divisions, the majority of which are in the Transportation and Stormwater Division of the Department of Environment and Infrastructure.

The overall level of service for the County is LOS C which is characterized by adequate program management and NPDES compliance non-O&M functions, average (LOS C-) NPDES compliance O&M program (generally described as a mixture of routine maintenance and inspection based maintenance along with response based repairs), and an average (LOS C) funding of flood related capital improvement program.

- Of all of the stormwater programs, three stand out as needed improvement or enhancement: NPDES MS4 non-O&M related compliance, watershed planning, and water quality related capital improvement funding.

Six of the fifty-two basins have been studied with sufficient detail to define the needed stormwater systems in the County. Basins should be prioritized relative to flooding or water quality improvements needed and redevelopment potential and basin plans should be systematically completed.

Funding Analysis (Section 4)

- Current funding of programs within the County include various types of sources including federal and state sources, special assessments, ad valorem taxes, service charges, interest, intergovernmental sources and fund balances.
- Additional funding for stormwater programs can be derived from the development of a new stormwater utility assessment (for all or some of the components of the stormwater program). Based on an analysis of the data from the Pinellas County Property Appraiser, it has been estimated that using a preferred rate structure based on a billing unit defined by single family dwelling unit median impervious, the stormwater user fee could generate about \$1.55 million annually for each \$10 of assessment. The current total program excluding Engineering and the Penny for Pinellas revenue could be funded by the assessment of about \$76 per year per ERU.

Rate Structure Analysis (Section 5)

- Pinellas County Property Appraiser's Office (PAO) data were obtained to estimate the potential revenue for the unincorporated County based on various rate structures. The data provided sufficient information to estimate the number of parcels by different categories, number of dwelling units, and estimated impervious area.
- Based on a billing unit (known as an ERU) defined by the median impervious area for single family detached parcels (estimated to be 2,339 square feet), each dwelling unit assigned 1 ERU, and non-residential properties assigned 1 ERU for each 2,339 square feet of impervious area on their property, the total estimated number of billing units is 164,425 ERUs. (This number represents the value without rate structure choices).
- Various options were considered and compared to the base of 169,938 ERU.
 - Changing the definition of a billing unit to include all dwelling units results in no significant change in ERU.
 - Providing a tiered single family detached rate structure with the very small homes receiving less than 1 ERU and large homes receiving more than 1 ERU would slightly increase the revenue. A rate structure with the very large homes (greater than 10,000 square feet of impervious area) would not generate significantly more than a 3-tiered approach.
 - A tiered non-single family residential rate structure with mobile homes, multifamily and condominiums receiving less than 1 ERU would decrease the revenue by about 7 percent.
 - Assuming 5 percent of the properties in the Unincorporated County could have access for a credit for an onsite stormwater facility that is properly maintained, the revenue would reduce by about 4 percent with a maximum credit of 75 percent.

- Unincorporated County residents in the Pinellas Park Water Management District (PPWMD) were specially considered as they already pay for primary stormwater system maintenance and CIP by a valorem assessment. Maintenance and CIP for the secondary and tertiary stormwater system is currently being provided by the County. After reviews of the program and information and infrastructure, and from personal communication, it was determined that there was no overlap in services by the County and PPWMD.

The preferred rate structure based on review of the alternatives includes: single family detached median impervious area billing unit; single family detached tiers with small, medium, large, and very large homes; residential condominium based on distributed impervious area; mobile homes based on the single family tiers; mobile homes in parks, multifamily and non-residential parcels based on impervious area divided by the billing unit impervious area; and a credit policy to be developed in the near future.

Program Needs and Recommendations

Based on the findings of the report, the following recommendations are offered to improve the overall stormwater governance and services provided by Pinellas County. These are not offered in any particular order or priority.

- The County should continue to push for a regional (watershed) approach to stormwater quantity and quality related activities. This would include participation by various cities and the water management district.
- The County should clarify, potentially by ordinance, the extent of the County's responsibilities on stormwater operations throughout the County. There is clearly confusion on operations of all levels of stormwater systems (especially, major systems) within municipal boundaries and after annexation. This also means that for basin studies, cooperative funding and implementation responsibilities should be spelled out systematically.
- There are sufficient stormwater facilities managed by the County to take on a more asset management approach to the stormwater programs. Asset management considers the stormwater system in the County to be considered assets of its citizens that should be managed with precise accounting. To this end, the surface water program within the County can be set up as a utility, similar to the other utilities in the County. This does not require separate utility-like funding but separate accounting is needed.
- Because of the potential TMDL reduction activities that will be required of the County and most communities within the County, the County should convene a TMDL committee to prepare for looming regulatory requirements. The committee should include the County as well as each of the municipalities within the County.
- Additional programs are needed for NPDES MS4 compliance and to methodically rehabilitate older infrastructure. For this reason, watershed studies need to be completed for all basins in the County to include both flood control and water quality. Also, recurring funding for open and closed conveyances need to be included in the revenue needs.

Potential Cooperative Programs and Activities

In review of the regulatory requirements, level of service analysis and funding assessment, a number of cooperative opportunities are available. For this report, "cooperative opportunities" means activities or

actions that can be accomplished cooperatively among the County and the cities which may either reduce participant costs for a common level of service or improve the level of service for participants with no increase in costs (i.e., “economy of scale”). Potential opportunities for cooperation are listed below.

- **Regional Approach to Surface Water Management.** A common colloquial phrase is “water recognizes no political boundaries,” meaning that runoff controls and treatment must be done on a basin- or watershed-wide basis. To this end, the County and cities can cooperatively study and implement flood controls and water quality projects on a regional basis. This will be especially important in a built-out area such as the County, and as Total Maximum Daily Loads (TMDLs) become required. The costs to comply with TMDL requirements as defined by Basin Management Action Plans (BMAPs), which are unknown at this time, may be substantial and both regional and cooperative programs will be necessary. Relative cost allocation for such activities can be achieved by considering the relative proportion of total flow at the outlet(s) of the study. Historically, cost allocations have been done using the relative contributing drainage area; however, since runoff is directly related to land use and soil types and these can be significantly different within a single basin, allocation by relative runoff amounts can be more equitable. To achieve this goal, a policy document should be collaboratively prepared with support of the County and cities.
- **Cooperative Construction Site Inspection.** As required by their NPDES MS4 permits, the County and cities must provide public and private construction site inspection to control site sediment discharges and confirm stormwater management during construction. The County already provides this for some cities; however, other cities can participate, providing an economy of scale. To do this, the County and cities must have common construction site regulatory requirements and based on available information may be the difficult part of this cooperative activity.
- **Inventory/GIS of Stormwater System.** The County and cities have stormwater facilities that they operate and maintain. A common GIS system with stormwater systems identified and characterized can enhance each participant’s ability to manage these assets and provide crucial information for watershed planning and NPDES compliance. Each participant would be responsible for their component of the GIS system (e.g., provide updates based on new construction); however, a cooperative field crew can identify facility characteristics including GPS location, inverts, etc., using state-of-the-art GPS and survey equipment that may not be available to each participant but cost effective for multiple participants. A digital complaint database and work order system can be included as part of the GIS to allow location and local inventory data to be available to field crews. As part of this process, field computers can be made available so that field data can be entered into the database from the site. Furthermore, to increase the data available in the system, as-built drawings should be commonly required in digital format so that County, city and even private construction data are available. It should be noted that the County is currently collecting as-built drawings digitally, but this program needs expansion.
- **Cooperative Funding.** Since all of these activities will require additional, or at least dedicated, funding, a common funding mechanism is warranted. Two major possible mechanisms include a County-wide millage (ad valorem tax) dedicated to cooperative programs or a County-wide non-ad valorem assessment (utility fee) for the same purpose. In the second case, many of the cities already have stormwater utility fees associated with other utility bills (e.g., water and sewer); however, this would be a new program for the unincorporated County.

Appendix 1

Pinellas County Surface Water Governance Study Rate Model June 2013

Pinellas County, FL

Surface Water Management Program



Surface Water Utility Rate Model

by
CDM Smith Inc.
June 2013
Unincorporated County
Preferred Level of Funding

**Pinellas County Surface Water Management Program
Summary of Surface Water Management Costs**

Annual CPI Increase	1.5%		1.8%	1.7%	2.0%	1.9%		2.1%	2.0%	2.0%	2.0%
Program	Projected										
	FY13-14	FY14-15	FY15-16	FY16-17	FY17-18	FY18-19	FY19-20	FY20-21	FY21-22	FY22-23	
Surface Water Management	\$2,252,342	\$2,286,127	\$2,327,277	\$2,366,841	\$2,414,178	\$2,460,047	\$2,511,708	\$2,561,942	\$2,613,181	\$2,665,445	
NPDES - Non-O&M	\$2,253,491	\$2,287,293	\$2,328,465	\$2,368,049	\$2,415,410	\$2,461,302	\$2,512,990	\$2,563,249	\$2,614,514	\$2,666,805	
NPDES - O&M	\$13,379,790	\$13,580,487	\$13,824,936	\$14,059,960	\$14,341,159	\$14,613,641	\$14,920,527	\$15,218,938	\$15,523,316	\$15,833,783	
Capital Improvement Program	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
Total	\$17,885,623	\$18,153,907	\$18,480,678	\$18,794,849	\$19,170,746	\$19,534,990	\$19,945,225	\$20,344,130	\$20,751,012	\$21,166,032	

Component	Level of Service (LOS)			
	Current	Expanded	LOS B	LOS A
SW Mgmt	\$1,258,681	\$2,252,342	\$2,584,394	\$3,743,110
MS4-Non O&M	\$1,562,520	\$2,253,491	\$2,253,491	\$2,610,594
MS4-O&M	\$8,972,345	\$13,379,790	\$14,202,649	\$18,039,323
CIP				
Total	\$11,793,546	\$17,885,623	\$19,040,534	\$24,393,027

Pinellas County Surface Water Funding Model

Utility Fee Options

Options:

- (1) Should the Equivalents be based upon single family units (1) or all dwelling units (0)?
- (2) Should Single Family be all 1 ERU (1) or tiered (0)?
- (3) Should Very Large SFU be the same as other SF (1) or based on impervious area(0)?
- (4) Should credits be offered for on-site stormwater ponds (0) or not (1)?
If a credit is offered, what is the reduction in fees allowed (percent)?

- (5) Should residential rates be uniform by dwelling unit (1) or variable (0)?

If 0, please specify below the SFU/dwelling unit relative to a single family dwelling.

Residential Type	Median Impervious Area (sq ft)	Percent of Median SF	ERU per Unit
Single Family (SF)	2,339	100%	1.00
Single Family w/>1 DU	2,399	103%	1.00
Multi-Family	1,391	59%	0.60
Mobile Homes	1,213	52%	0.50
Condominiums	1,957	84%	0.80
Miscellaneous Res.	702	30%	0.30

- (6) Should Mobile Homes be assigned 1 ERU (1) or based on SF Tiers (0)?
- (7) Should Condominiums be assigned 1 ERU (1) or based on Impervious Area (0)?
- (7) Should Multi-family be treated like Non-residential (0) or like residential (1)?
- (8) Should special exemptions be offered?
Public Schools should (0) or should not (1) be exempted?
Government Properties should (0) or should not (1) be exempted?
Churches should (0) or should not (1) be exempted?
- (9) Should Vacant Properties be included (1 = Yes, 0 = No)?

Note: Standard or basic utility fee based upon all answers = 1.

Number of Staff Needed for Option:

0 staff.

* If variable residential rates chosen, then SF Very Large is by actual impervious area similar to a commercial parcel.

Answer
1
0
0
1
75%
1

0
0
0
1
1
1
1

Pinellas County Surface Water Management Program
Surface Water Utility Revenues

Options Chosen

Equivalence

Residential

Credits

Collection Percentage

Start Value

Increment

Single Family Detached

Uniform Rates

No Credits for Ponds

91.0%

\$10.00

per Year per SFU

\$10.00

per Year per SFU

Total Estimated ERU's

169,938

(see Parcel Data)

Estimated Stormwater Utility Revenues

FY13 Revenues for Various Rates			FY13 Revenues for Various	
Rate (\$ per Year)	Annual Revenue (nearest \$1,000)	Comparable Tax Rate	Rate (\$ per Year)	Annual Revenue (nearest \$1,000)
\$10.00	\$1,546,000	0.0284	\$160.00	\$24,743,000
\$20.00	\$3,093,000	0.0568	\$170.00	\$26,289,000
\$30.00	\$4,639,000	0.0852	\$180.00	\$27,836,000
\$40.00	\$6,186,000	0.1137	\$190.00	\$29,382,000
\$50.00	\$7,732,000	0.1421	\$200.00	\$30,929,000
\$60.00	\$9,279,000	0.1705	\$210.00	\$32,475,000
\$70.00	\$10,825,000	0.1989	\$220.00	\$34,022,000
\$80.00	\$12,371,000	0.2273	\$230.00	\$35,568,000
\$90.00	\$13,918,000	0.2558	\$240.00	\$37,114,000
\$100.00	\$15,464,000	0.2842	\$250.00	\$38,661,000
\$110.00	\$17,011,000	0.3126	\$260.00	\$40,207,000
\$120.00	\$18,557,000	0.3410	\$270.00	\$41,754,000
\$130.00	\$20,104,000	0.3694	\$280.00	\$43,300,000
\$140.00	\$21,650,000	0.3978	\$290.00	\$44,847,000
\$150.00	\$23,197,000	0.4263	\$300.00	\$46,393,000

**Pinellas County Surface Water Management Program
Ten-Year Program Costs**

CIP Program Funding Strategy

☒ **Yes** Pay-As-You-Go Funding
☐ **No** Bonded Financing

Coverage: 25.0%
Interest: 3.0% per year
Duration: 20 years
Financing Costs: 12.0%
Principal: \$0 (1st 5-year CIP Needs)

Suggested
25.0%
7.0% per year
20 years
12.0%

Admin Costs	
Basic Admin:	\$25,000
Credits:	\$0
Total	\$25,000

\$0 (2nd 5-Year CIP Needs)

Calculate Annual Debt \$0 \$0

Increase in ERU Growth		1%		Collection/Fee Reduction		91% (1)					
Annual CPI Increase		1.5%	1.8%	1.7%	2.0%	1.9%	2.1%	2.0%	2.0%	2.0%	
Program		FY13-14	FY14-15	FY15-16	FY16-17	FY17-18	FY18-19	FY19-20	FY20-21	FY21-22	FY22-23
Surface Water Management		\$2,252,342	\$2,286,127	\$2,327,277	\$2,366,841	\$2,414,178	\$2,460,047	\$2,511,708	\$2,561,942	\$2,613,181	\$2,665,445
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NPDES - O&M		\$13,379,790	\$13,580,487	\$13,824,936	\$14,059,960	\$14,341,159	\$14,613,641	\$14,920,527	\$15,218,938	\$15,523,316	\$15,833,783
CIP (PAYG or 1st Bond Debt Service)		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
CIP (2nd Bond Debt Service)							\$0	\$0	\$0	\$0	\$0
Utility Administration Cost		\$25,000	\$25,375	\$25,832	\$26,271	\$26,796	\$27,305	\$27,879	\$28,436	\$29,005	\$29,585
Total		\$17,910,623	\$18,179,282	\$18,506,509	\$18,821,120	\$19,197,542	\$19,562,296	\$19,973,104	\$20,372,566	\$20,780,017	\$21,195,618
Tax Rate Required		0.3291	0.3341	0.3401	0.3459	0.3528	0.3595	0.3670	0.3744	0.3819	0.3895
ERU's		169,938	171,637	173,353	175,087	176,838	178,606	180,392	182,196	184,018	185,858
Surface Water Utility Fee (1)		\$115.82	\$116.39	\$117.31	\$118.13	\$119.30	\$120.36	\$121.67	\$122.88	\$124.09	\$125.32

Note: (1) Utility fee based upon a variable collection rate, 2% for the PAO and 2% for the Tax Collector.
(2) Basic Admin Costs based on \$25,000 for a single additional staff for utility billing.
(3) Credits Admin Costs based on \$25,000 staff member

**Pinellas County Surface Water Management Program
Summary of Parcel Data (March 2013)**

Type	No. of Parcels	No. of Dwelling Units	2013 Impervious Area (sq ft)	Imperv./ DU or Parcel	% of Median SF	Billing Unit Equivalent	ERUs Based on Equivalent	ERUs For Subsidy	% Affected by Credits (Estimated)	Fraction of ERUs	Total ERUs with Options
Residential (1)											
Single Family - Small	15,821	15,821	20,231,117	1,315	0.6		15,821		5%	60%	9,492.6
Single Family - Medium	47,533	47,533	119,863,030	2,339	1.0		47,533		5%	100%	47,533.0
Single Family - Large	15,496	15,496	88,469,284	5,441	2.3		15,496		5%	230%	35,640.8
Single Family - Very Large	324	324	4,245,563	13,104	2.3	2,339	1,815		5%	100%	1,815.1
Single Family > 1 DU	86	177	424,567	2,399			177		5%	100%	177.0
Multifamily (2)	2,193	9,875	13,737,322	1,391		2,339	5,873		5%	100%	5,873.2
Mobile Home - Small	3,198	3,183	3,859,670	1,213	0.6		3,183		5%	60%	1,909.8
Mobile Home - Medium	3,298	3,298	6,356,045	1,927	1.0		3,298		5%	100%	3,298.0
Mobile Home - Large	8	8	39,809	4,976	2.3		8		5%	230%	18.4
Condominiums (4)	27,531	27,531	53,878,167	1,957		2,339	27,531		5%	84%	23,034.7
Misc Residential	58	193	135,483	702			193		5%	100%	193.0
Subtotal Residential	115,546	123,439	311,240,057	2,521			120,928	0			128,985.6
Non-residential											
Commercial	2,321		38,677,700	16,664		2,339	16,536		5%		16,536.0
Industrial	1,230		32,901,210	26,749		2,339	14,066		5%		14,066.4
Agricultural	0		0			2,339	0				0.0
Institutional w/o Churches	182		5,423,098	29,797		2,339	2,319		5%		2,318.6
Churches	126		3,689,992	29,286		2,339	1,578	1,578	5%		1,577.6
Governmental w/o Schools	13		5,038,633	387,587		2,339	2,154	2,154	5%		2,154.2
City/County	80		2,738,986	34,237		2,339	1,171	1,171	5%		1,171.0
Schools	32		5,663,720	176,991		2,339	2,421	2,421	5%		2,421.4
Miscellaneous	402		22,401	56		2,339	10		5%		9.6
Subtotal Non-Residential	4,386		94,155,740	21,467			40,255	7,324			40,254.7
Vacant											
Vacant Residential	5,201		604,582			2,339	258	0	5%		258.5
Vacant Commercial	686		803,168			2,339	343	343	5%		343.4
Vacant Industrial	222		224,192			2,339	96	96	5%		95.8
Vacant Institutional	17		0			2,339	0	0	5%		0.0
Subtotal Vacant	6,126		1,631,942	266			698	439			697.7
Special Parcels											
Rec and Parkland	382		18,515			2,339			5%		0.0
Sewage Disposal	650		2,494,561			2,339			5%		0.0
Rivers/Lakes	268		26,411			2,339			5%		0.0
No Ag Acreage (with homesite)	134		4,695			2,339			5%		0.0
ROW	490		1,752			2,339			5%		0.0
Subtotal Vacant	1,924		2,545,934				0	0			0.0
Total Developed	119,932	123,439	405,395,797				161,183	15,527			169,240.3
Total Parcels	127,982	123,439	409,573,673	2,526				7,324			169,938.0

Note:

- (1) Small SF is 10th percentile and below; Large is 90th percentile and above. Very large is greater than 10,000 sq ft.
- (2) Multifamily includes parcels with DOR Codes 03 and 08.
- (3) For Residential, column represents Impervious per Dwelling Unit. For Non-residential, column represents Impervious per Parcel.
- (4) Condominium average impervious areas based on measurement by County staff in May 2013.

Type	Imperv. Only
Single Family Equivalent	2,339
Equivalent DU	2,521

People per Dwelling Unit (2010 Census)	2.23
Comparable Population	275,269
Current Population (FY13 Budget)	270,559
Median Household Value	\$172,900

Type	ERUs	%
Residential	129,244	76.1%
NonResid	40,694	23.9%
Current	169,938	3.4%
Original	164,425	