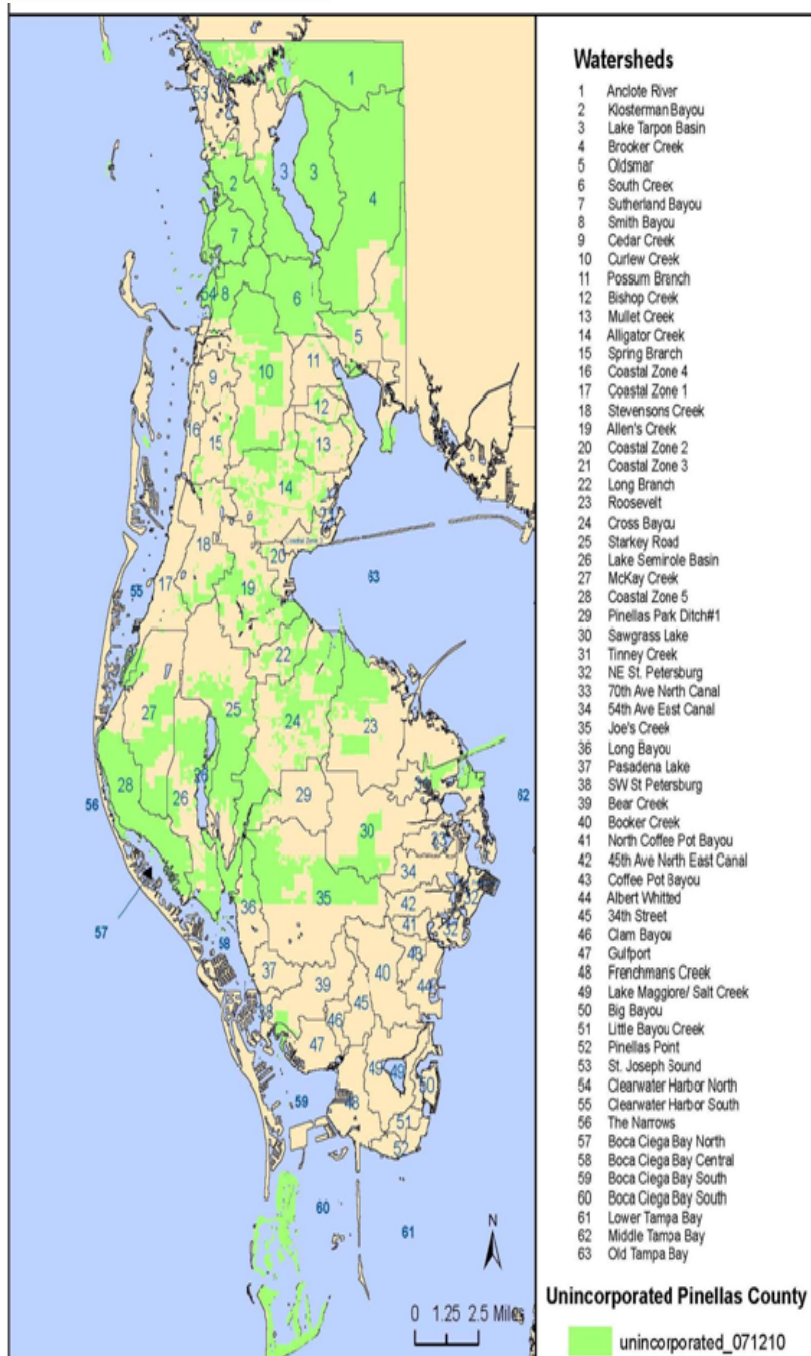




REPORT



Stormwater Governance Study

Prepared for

Pinellas County, Florida

February 2011





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Executive Summary

Pinellas County Stormwater Governance

Pinellas County, Florida, wishes to develop a comprehensive stormwater management program to address stormwater programs in the unincorporated County with potential cooperation with incorporated cities. Stormwater management programs relate to four elements of governmental control and management of stormwater runoff: program management (e.g., administration, planning, enforcement, permitting); NPDES MS4 permit compliance; Operation and Maintenance (O&M, e.g., cleaning, mowing, and minor repair); and capital improvements (i.e., major construction). To this end, the County hired Camp Dresser & McKee Inc. (CDM) with the support of URS Corporation Southern (URS) and Kurt Spitzer & Associates Inc. (KSA) to complete this project. The Pinellas County Stormwater Governance Study includes a description of the federal, state, regional and local regulatory requirements for stormwater management, analysis of the County's current levels of service, a consideration of potential activities to improve the level of service offered, and an assessment of possible funding options available to the County to pay for the current or expanded levels of service. The study considers stormwater programs, expenditures and budgets related to Fiscal Year 2011 (October 2010 to September 2011).

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 NPDES permits.

The control of pollutant discharge in MS4 permits will be through the implementation of best management practices.

- 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 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.
- 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 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. However, further clarification is needed on the definition and delineation of “major drainage systems.”
- The Charter authorizes the County to provide countywide planning.
- The County Comprehensive Growth Management Plan requires the correction of stormwater 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).
- Site plans for new development and significant redevelopment are to be reviewed (Chapter 154).
- The County is to protect major systems from erosion (excessive velocities) and excessive water elevations.

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

Program Management – Regulatory 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 construction enforcement 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.

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. The list above (illicit connections, monitoring and public information) are a few of the obvious ones that should be cooperatively completed for compliance. Monitoring and education 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.

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 is responsible for the “design, construction and maintenance of major drainage systems in both the incorporated and unincorporated area” [Section 2.04(g)]. The nature and definition of a “major system” in the County is not available or clarified. Also unclear are the requirements of the County toward maintenance of stormwater systems in newly annexed areas.

Current Operations and CIP Level of Service Analysis

The County’s current level of service was assessed considering 4 areas of operations: program management, NPDES MS4 compliance, operation and maintenance (O&M), and capital improvements (CIP). These services are currently being provided by the Public Works Department and Building & Development Review Services.

- **Public Works Department – Watershed Management.** The Watershed Management group implements some, and coordinates other portions (such as inspection and enforcement), of the NPDES MS4 permit compliance activities; provides documentation of NPDES MS4 compliance through Annual Reports; provides watershed planning; project management for major water quality or environmental projects; and coordinates TMDL and BMAP programs and water quality monitoring.
- **Public Works Department – CIP & Planning.** This group provides coordination of the FEMA Community Rating Service (CRS) program; maintains the County’s Stormwater Master Plan; provides stormwater related engineering; reviews development plans; and helps support the NPDES MS4 permit compliance. This group also provides support for the development of watershed plans, and pursues grants and other new funding sources.
- **Public Works Department – Civil/Site & Surface Water Management.** These two groups provide design support for the stormwater program.
- **Public Works Department – Permitted Facilities.** This group builds and maintains permitted County facilities. The group provides street sweeping and maintenance of lakes, canals, ditches and culverts within the County. Permitted facilities are inspected monthly. The current budget allows one major rebuild per year.
- **Public Works Department –Highway Operations.** This group provides maintenance of highways and associated stormwater infrastructure not done by the Permitted Facilities group. The work includes slope mowing and roadside pond maintenance and repair.
- **Public Works Department – Vegetation Management.** This group controls aquatic and terrestrial weeds in County ponds, canals, ditches and creeks.
- **Building & Development Review Services.** This department provides site review for stormwater management within new developments and inspection of construction activities.

Based on the consideration of programs being offered by each of the departments, the total estimated expenditures for stormwater management operations in Pinellas County is believed to be \$27.9 million for FY 2011 as itemized below.

Program	Amount	% of Total	Source of Funding
Program Management			
Public Works CIP Support	\$1,193,700	4%	General Fund (0101)
Public Works Watershed Management	\$1,526,600	5%	General Fund (0101)
Development Review Services	\$324,200	1%	General Fund (0101)
NPDES Compliance			
Public Works Watershed Management	\$708,500	3%	General Fund (0101)
Operations & Maintenance			
Permitted Facilities Management	\$2,983,230	11%	General Fund (0101)
Highway Operations	\$10,562,466	38%	Transportation Trust Fund (0201)
Vegetation Management	\$1,697,412	6%	General Fund (0101)
Capital Improvement Program	\$8,892,940	32%	Capital Projects Fund (0401); 5-Year Average
Total	\$27,889,048	100%	

The amounts spent are based on an assessment of the percentage of the FY 2011 department budgets spent for stormwater purposes. For the CIP estimate, a 5-year average was considered (based on information from the Office of Management and Budget) using actual expenditures. Also, using three for the four completed Master Plans in the County and estimating the portion of the recommended CIP needs for these plans, an estimated total CIP need was defined for the unincorporated County (estimated using a construction cost per area). The total CIP estimate was \$207.5 million, a number which may not adequately address any TMDL requirements, which are currently unknown.

Compared to a standard set of stormwater 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, partially routine operation and maintenance program and a slightly above C-level for the 25-year CIP completion program (i.e., to complete a \$207.5 million CIP need spending \$8.9 million per year, about 25 years of such expenditures is needed).

Using available information from other communities in Florida and the southeastern United States, estimates of the total potential budget needs for Pinellas County was provided based on per capita spending and expenditures per road mile. In comparison, the County's current expenditures per capita are slightly higher than other communities with available data; this is due to the built-out nature of the County's development, the support of major systems infrastructure in both the unincorporated and municipal areas, and watershed approach to program costs. The estimated budgets for improved levels of service are:

Existing LOS	\$27,889,000
Existing LOS + CIP LOS C	\$28,101,600
Whole Program LOS B	\$32,022,600
Whole Program LOS A	\$49,368,300

The overall program is illustrated in the following table.

Level	Program Management	NPDES Compliance	Operation & Maintenance ²	Capital Improvements	Total Program Costs
A	Comprehensive Planning + Full Implementation Capabilities	Exemplary Permit Compliance	Fully Preventative/ 100 % Routine	10-Year Plan	\$49,368,250
	\$7,405,238	\$2,468,413	\$18,744,600	\$20,750,000	LOS A
B	Pro-active Planning + Systematic CIP Implementation Capabilities	Pro-Active Permit Compliance	Mixture of Routine and Inspection Based	20-Year Plan	\$32,022,625
	\$4,803,394	\$1,601,131	\$15,243,100	\$10,375,000	LOS B
C - FY2012	Priority Planning + Partial CIP Implementation Capabilities	Minimal Permit Compliance	Inspection Based Only	25-year Plan ¹	\$28,101,590
	\$3,044,500	\$921,050		\$8,892,940	LOS C
C - FY2011	Reactionary Planning + Minimal CIP Implementation Capabilities	Minimal Permit Compliance	Responsive Only (Complaint-based)	50-year Plan	\$27,889,040
		\$708,500			Existing
					Current LOS

Moving to LOS B for all programs would provide the following benefits: increased ability to complete watershed management plans to deal with flooding and water quality improvements, completed stormwater asset GIS database, increased public education programs, expanded enforcement capabilities, and almost 2 times the current level of spending for CIP projects.

Benefits for moving to a LOS A stormwater management program include the potential for a separate stormwater management division, increased project management staff to implement a larger number of CIP projects, increased enforcement staff, full support of the Watershed Atlas, increased stormwater maintenance crews with appropriate equipment, additional maintenance inspection and supervisory personnel, and a significant increase in CIP projects.

Funding Assessment

For the FY 2011 budget, Pinellas County is expected to receive \$352 million (21 percent) in property taxes, \$511.8 million (31.8 percent) in debt proceeds and designated fund balances, and \$271 million (19.1 percent) in service charges, as the major categories. The rest of the budget (28.1 percent) would be from federal/state sources, sales and use taxes, and other minor funding mechanisms. Of the \$1,611.4 million budget for FY 2011, \$580 million will be placed 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 (51 percent), which are based on the property values.

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

- **Special or Non-ad Valorem Assessment.** Authorized by Chapter 403, F.S., special assessments can be used to fund all of the stormwater program components. To be valid, there must be a benefit received by the property being assessed (satisfied via stormwater 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.

- **Stormwater User Fee.** Similar to other user fees such as wastewater, water, and garbage fees, a stormwater 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 stormwater user fees, is related to the amount of impervious area on the property. Over 140 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 stormwater fee. In the case of Pinellas County, such a bill does not exist so this option is not attractive. 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.** Recently re-approved by the citizens of Pinellas County, 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 stormwater 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 Florida Department of Environmental Regulation can pay for a portion of the CIP programs; however, another source is needed for the County's share, as well as for the additional maintenance required for the facility.

As part of this project, the non-ad valorem option was investigated further. Information from the Pinellas County Property Appraiser's office, Department of Revenue, and County GIS was obtained to estimate the potential revenue and assessment needed for various levels of service within the County. The 2010 Property Appraiser's data indicates that there are 90,000 residential parcels in the unincorporated County with about 110,900 dwelling units. This represents over 95 percent of the developed parcels in the unincorporated area. The data also shows that there are about 4,660 non-residential parcels consisting of the following types: commercial, industrial, agricultural (only 50 total), institutional, governmental, and miscellaneous. There are also 5,184 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, or 15.5 percent. Note that this does not include municipalities or public roads.

The common unit of billing for most stormwater assessments is the average impervious area for a dwelling unit; for Pinellas County, this number has been estimated to be about 2,430 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 2,430 square feet, it was estimated that the approximate number of billing units (commonly referred to as an Equivalent Residential or

Runoff Unit or ERU) for Pinellas County is 149,380. This means that for a non-ad valorem assessment of \$10 per year, about \$1.5 million per year would be generated in stormwater revenues.

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.

- Federal and state laws and regulations are sufficient to authorize Pinellas County to manage stormwater programs within the unincorporated County.
- Through the NPDES program, many stormwater functions are accomplished by both the County and regulated cities within the County.
- The Charter and County regulations do not specify precisely the extent of the county-controlled or operated stormwater system.
- The overall level of service for the County is LOS C which is characterized by adequate program management and NPDES compliance functions, better than average (LOS B) O&M program (generally described as a mixture of routine maintenance and inspection based maintenance), and a poorer than average (LOS D) funding of capital improvement program.
- Of all of the stormwater programs, two stand out as needed improvement or enhancement: basin planning and CIP funding. Four of the fifty-two basins have been studied with sufficient detail to define the needed stormwater systems in the County.
- Additional funding for stormwater programs can be derived from Penny for Pinellas (for capital projects) and the development of a new stormwater utility fee (for all 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 standard single family unit basis for the utility structure, the stormwater user fee could generate about \$1.5 million for each \$10 of assessment. Using these estimates, the following rates are estimated to illustrate the potential program:
 - For the LOS C of \$28.1 million for the whole program, the rate would be \$187 per year per ERU.
 - For the LOS C of \$19.2 million for the program without CIP, the rate is estimated to be about \$129 per year per ERU.
 - For the LOS C of \$12.9 million for program management, NPDES compliance and CIP (i.e. without O & M), the rate is estimated to be \$86 per year per ERU.
 - For the LOS C of \$4 million for only the program management and NPDES (i.e., excluding O&M and CIP), the rate is estimated to be \$27 per year per ERU.

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, offered below in no particular order or priority.

The County should continue to encourage 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 clarity needed for operations of stormwater systems (especially, major structure) 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 assets of its citizens that should be managed with precise accounting. To this end, the stormwater 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 however, but separate accounting is needed.

An update to the inventory of stormwater facilities (assets) are needed to provide an asset management approach to stormwater management. To this end, GIS services and field staff are needed along with GIS capable equipment to precisely locate and characterize stormwater related data. The completed GIS system would also support watershed planning, pollution tracking efforts and other NPDES MS₄ compliance requirements.

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.



Section 1 Introduction

Introduction

Pinellas County, Florida, wishes to develop a comprehensive stormwater management program to address stormwater programs in the unincorporated County. Stormwater management programs relate to four elements of governmental control and management of stormwater runoff: program management (e.g., administration, planning, enforcement, permitting); NPDES Municipal Separate Storm Sewer System (MS4) permit compliance; Operation and Maintenance (O&M, e.g., cleaning, mowing, and minor repair of stormwater structures); and capital improvements (i.e., major design and construction). To this end, the County hired Camp Dresser & McKee Inc. (CDM) with the support of URS Corporation Southern (URS) and Kurt Spitzer & Associates Inc. (KSA) to complete this project. A brief description of each task is provided below.

Stormwater Management Program Assessment Task

The purpose of this task is for CDM to analyze the County's existing and potential future stormwater management programs and activities for the unincorporated area, leading to an assessment of the current level of service (LOS) and associated costs. CDM also considered the stormwater governance authorized by existing laws and regulations within the County, municipalities, SWFWMD and the state. To define the current and potential future LOS, CDM 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 will be identified for stormwater activities related to Program Management; NPDES MS4 Compliance (separated from Program Management); 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 this report is to provide the results of this study related to (in order) existing stormwater 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 provided herein updates the information to include FY2010 and projections for FY2011.

The organizational structure, staffing, activities, funding and parcel information have been updated accordingly.



Section 2 Regulatory Requirements

The purpose of this section is to provide information on the governance of stormwater 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 stormwater.

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 Environmental Protection Agency (USEPA), Army Corps of Engineers (USACE), National Oceanic and Atmospheric Administration (NOAA) and US Fish and Wildlife Service. 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 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 unquantified 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:

- Discharge of pollutants to navigable waters was to be eliminated by 1985;
- Protection and propagation of fish, shellfish and wildlife and provide for recreation was to be 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 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	Management Action Plan
5	Implementation

§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 and has 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. Recently, 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 discharges are regulated to control the discharge of stormwater pollution to the "maximum extent practicable," a term not defined in law or regulation.

§1344 provides for dredge and fill activities within navigable waters, a program that is administered by the Corps of Engineers. The legislation allows for the delegation of this authority to the states.

§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 USCOE 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 40CFR 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 (EPA 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 – EPA 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 National Pollutant Discharge Elimination System (NPDES) permits. Detailed information is provided on the definition of who must obtain permits, how they are to apply for the permits and how EPA will enforce the requirements.

2.1.3.2 CFR Part 123 – State Program Requirement

40CFR 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 EPA'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 U.S. Environmental Protection Agency (EPA), 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 Florida Department of Environmental Protection (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, EPA determined that Florida's process for drafting numeric nutrient criteria (NNC) needed to be expedited. EPA 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, EPA promulgated numeric nutrient criteria (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.

While these criteria will not be effective until March of 2012, it is expected that use of the criteria by EPA for TMDLs and eventually, NPDES wastewater and MS4 permits will require significantly more treatment for nutrient than is currently offered by the County.

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 Department of Environmental Protection (DEP), Department of Community Affairs (DCA), and Department of Transportation (DOT).

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 1999 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. 1999 Florida Statutes
Statute Titles with Associated Chapters**

Title	Description	Chapters
I	Construction of Statutes	1-2
II	State Organization	6-8
III	Legislative Branch; Commissions	10-13
IV	Executive Branch	14-24
V	Judicial Branch	25-44
VI	Civil Practice & Procedure	45-88
VII	Evidence	90-92
VIII	Limitations	95
IX	Electors and Elections	97-107
X	Public Officers, Employees, & Records	110-122
XI	County Organization & Intergovernmental Relations	124-164
XII	Municipalities	165-185
XIII	Planning and Development	186-191
XIV	Taxation and Finance	192-221
XV	Homestead & Exemptions	222
XVI	Education	228-246
XVII	Military Affairs & Related Matters	250-252
XVIII	Public Lands & Properties	253-274
XIX	Public Business	279-290
XX	Veterans	292-296
XXI	Drainage	298
XXII	Ports & Harbors	308-315
XXIII	Motor Vehicles	316-325
XXIV	Vessels	326-328
XXV	Aviation	329-333
XXVI	Public Transportation	334-349
XXVII	Railroads & Other Regulated Utilities	350-368
XXVIII	Natural Resources; Conservation, Reclamation, & Use	369-380
XXIX	Public Health	381-408
XXX	Social Welfare	409-430
XXXI	Labor	435-452
XXXII	Regulation of Professions & Occupations	454-493
XXXIII	Regulation of Trade, Commerce, Investments, & Solicitations	494-560
XXXIV	Alcoholic Beverages & Tobacco	561-569
XXXV	Agriculture, Horticulture, & Animal Industry	570-604
XXXVI	Business Organizations	606-623
XXXVII	Insurance	624-651
XXXVIII	Banks & Banking	655-667
XXXIX	Commercial Relations	670-688
XL	Real & Personal Property	689-723
XLI	Statute of Frauds, Fraudulent Transfers & General Assignments	725-727
XLII	Estates & Trusts	731-738
XLIII	Domestic Relations	741-753
XLIV	Civil Rights	760-765
XLV	Torts	766-773
XLVI	Crimes	775-896
XLVII	Criminal Procedure & Corrections	900-985

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; 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.

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.

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 Comprehensive 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.

Subsection 163.03 defines the powers and duties of the Secretary of the Department of Community Affairs, including the supervising and administering the Department of Community Affairs with respect to matters affecting community affairs and local governments; providing assistance in securing federal and state funds; administering emergency aid to stricken communities; and providing technical assistance to local government regarding development, redevelopment, planning and zoning, and transportation.

Subsection 163.07 considers the efficiency and accountability of local governmental services, helping local municipalities and counties deal with conflicts related to the delivery and financing of services. Counties and municipalities are authorized to develop a plan to provide efficient, accountable, and coordinated delivery of local governmental services and through resolution of each government, create a commission responsible for developing the plan and provide a timetable for execution of the plan. The plan itself must conform to all of the comprehensive plans within the cooperating governments.

Part II - Growth Policy Act (subsection 163.2511 to 163.2526). 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 development, job creation, 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. The Department of Community Affairs can offer regulatory and economic incentives to promote such a redevelopment area including an Urban Infill and Redevelopment Assistance Grant Program (§163.2523).

Subsections 163.3161 to 163.3217 comprise the Local Government Comprehensive Planning and Land Development Regulation 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." One of the intents of the Act is that the adopted comprehensive plans have legal status and no public or private developments can be permitted except in conformity with the Act.

Each local government is to prepare a comprehensive plan according to the provisions of the Act and submit the plan for approval to the state land-planning agency (DCA). A new municipality (i.e., incorporated after the adoption of the act) must establish a local planning agency within one year of incorporation and prepare and adopt a comprehensive plan within three years of incorporation. Until the new municipality has adopted such a plan, the county plan is controlling. If a new plan is not adopted in three years, the regional planning agency is to prepare the comprehensive plan. The comprehensive plan must include a public participation program during the adoption process.

The comprehensive plan, commonly referred to as the "comp plan," must be economically feasible and among other items, contain a 5-year capital improvement element for public facilities needed for the orderly development of the community. The plan must also contain the following elements: future land use plan; traffic circulation; general sanitary sewer, solid waste, **drainage**, potable water and natural groundwater aquifer recharge plan; conservation element (conservation, use, and protection of natural resources); recreation and open space plan; housing element; coastal management element; and intergovernmental cooperation program. Chapter 9J-5, Florida Administrative Code, entitled the Minimum Criteria for Review of Local Governmental Comprehensive Plans and Determination of Compliance of the Department of Community Affairs, is the regulatory counterpart of this Act. Subsection 163.3177 also states that it is the intent of the Legislature that "public facilities and services needed to support development shall be available concurrent with the impacts of such development."

Subsection 163.3178 covers the coastal management element of a comprehensive plan, restricting development activities that would damage coastal resources. This element must contain an analysis of the effects of existing drainage facilities and the impact of point and nonpoint source pollution on estuarine water quality.

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.

Within one year after the adoption of the comprehensive plan, the local government must adopt and enforce land development regulations to implement the comp plan elements. These regulations must, among other things, "regulate areas subject to seasonal and periodic flooding and provide for drainage and stormwater management" and "provide that public facilities and services meet or exceed the standards established in the capital improvements element" and are concurrent.

Note: A discussion of the Pinellas County Comprehensive Plan is provided in Section 2.5.8.

2.2.4 Chapter 187 - State Comprehensive Plan

Chapter 187, F.S., provides the 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 "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:

- Encourage the development of strict floodplain management programs design to preserve hydrologically significant wetlands and natural features;
- Protect surface and ground water quality and quantity; and,
- Eliminate the discharge of inadequately treated stormwater runoff.

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, authorizes inter-agency agreements for water resource management, and authorizes the acquisition of property for water or water-related resource protection. 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 DOT;
- 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.

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 Stormwater Governance Study, stormwater has been related to the transport of pollutants from onsite sewage treatment systems and thus, this chapter is remotely related to stormwater 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 National Pollutant Discharge Elimination System (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.

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 prepare 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 case, FDEP must define the data inadequacies. [§403.067(6)(c)]
- Regarding Basin Management Action Plans (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, although the growth management regulations listed are managed by DCA.

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:

"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 less than 10 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 Monroe County, to the South 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 [§62-40.10(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 SWFWMD plan is dated August 2, 1999 (see subsection 2.5.4 below).

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, DCA, 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 2004 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 IIIL is a relatively new classification which includes waters that have “human-induced physical or habitat conditions that prevent attainment of Class III Uses.” It is anticipated that this classification will be used 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, 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.

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 EPA 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 EPA 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.

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 can not 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 – National Pollution Discharge Elimination System (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 systems (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 (MS4s)

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

For the management of growth pursuant to Chapter 163 F.S., Chapter 9J-5 FAC provides the minimum criteria, administered by the Department of Community Affairs (DCA), for the preparation, review and determination of compliance of comprehensive (comp) plans and plan amendments. Using the terminology of the chapter itself, the following divisions are included:

<u>Rule</u>	<u>Description</u>
9J-5.001	Purpose
9J-5.002	General guidelines for exercise of DCA authority
9J-5.003	Definitions
9J-5.004	Public participation procedures
9J-5.005	Format requirements, data requirements and other procedures
9J-5.0053	Minimum criteria for evaluation
9J-5.0055	Minimum criteria to ensure concurrency
9J-5.006 to 9J-5.019	Minimum criteria for comp plan elements
9J-5.022 to 9J-5.024	Establish standards procedures and criteria for review of required land development regulations

From Rule 9J-5.003, a number of definitions are pertinent to the SMMP. These are listed below so that, in the consideration of potential future regulations, new definitions or ordinances may be consistent with state requirements.

Drainage basin or *stormwater basin* is defined as the area topographically to contribute stormwater.

Drainage detention structure is defined as a structure "which collects and temporarily stores stormwater for the purpose of treatment...with the gradual release..."

Drainage facilities or *stormwater management facilities* are defined as "a system of man-made structures designed to collect, convey, hold, divert or discharge stormwater..."

Drainage retention structure is defined as a structure designed to collect and store stormwater without eventual release.

Floodplains are defined as areas inundated during a 100-year flood event or identified as Zone A or V on Flood Insurance Rate Maps (FIRM) or Flood Hazard Boundary Maps (FHBM).

Floodprone areas are defined as those within flood plains.

Level of service is defined as "an indicator of the extent or degree of service provided by, or proposed to be provided by, a facility based upon and related to the operational characteristics of the facility. Level of service shall indicate the capacity per unit of demand for each public facility." This definition is important because it applies to all public facilities, not just transportation (see Subsection 2.5.3, Local Regulations, below).

Natural drainage features are defined as the naturally occurring features of land that accommodate stormwater flow such as river, lakes, floodplains and wetlands.

Natural drainage flow is defined as "the pattern of surface and storm water drainage through and from a particular site before the construction or installation of improvements or prior to regrading."

Nonpoint source pollution is defined as any source of water pollution that is not a point source.

Pollution is defined substantially as provided in Chapter 403 F.S.

Stormwater is defined as "the flow of water which results from a rainfall event."

Stormwater facilities are defined as drainage facilities that are part of a stormwater management system.

Stormwater management system is defined as "described in Rule 17-40.210(21)"; i.e., Rule 62-40.021(29), "a system which is designed and constructed or implemented to control stormwater...to prevent or reduce flooding, over-drainage, environmental degradation and water pollution or otherwise affect the quantity and quality of discharges from the system."

Rule 9J-5.0055 requires a concurrency management system whereby "public facilities and services needed to support development are available concurrent with the impacts of such development." In particular, local governments must adopt level of service standards for public facilities and services for a number of types of facilities and services including drainage. At a minimum, concurrency is satisfied for drainage if development orders or permits are issued subject to the condition that the necessary facilities and services are, or guaranteed to be, in place at the time of issuance [9J-5.0055((3)(a))].

Rule 9J-5.011 provides the regulations for the Sanitary Sewer, Solid Waste, Stormwater Management, Potable Water and Natural Groundwater Aquifer Recharge Element of the Comp Plan. This section requires the identification of: stormwater management facilities, existing and future capacity needs, major natural drainage features and existing regulations/programs to govern land uses and development. Goals, objectives and policies related to stormwater management are also to be provided including the setting of stormwater discharge water quality standards or stormwater management level of service standards.

Rule 9J-5.016 requires the definition of a capital improvements element that provides for the funding and construction or capital improvements needed for concurrency.

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 Florida Department of Transportation. 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 Southwest Florida Water Management District (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 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 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 municipal separate storm sewer system (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.

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 to the requirement for stormwater treatment requirements to be in compliance with the NPDES MS4 permit. First, in Section 134-15, rebuilding on vacant property where structures had been demolished was not to be considered redevelopment. Second, in Section 134-16, sites with 3 acres or less of redevelopment may on a case-by-case basis be considered for reduced code requirements. Also, no new flood control activities are required for this redevelopment unless the site had experienced flooding. However, these sites of small redevelopment are still to be subject to water quality standards.

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

This 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 outlets. Shallow wells and retention are required for irrigation purposes and 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 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). Design details are provided in Section 154-64.

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.

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.”

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 Floodprone areas to be protected; control 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.

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 section 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 Growth Management Plan

In compliance with Chapter 9J-5, FAC, Pinellas County adopted a Comprehensive Growth Management Plan in February 1998. Its latest amendments are in April 2006 as documented in the “Compendium major Findings, Goals, Objectives and Policies: Concurrency Management System, and Monitoring and Evaluation Procedures.” In this document, it is noted that the County is transitioning to a build-out condition which requires public policy to address infill development and redevelopment, rather than new growth at the fringes. Floodplain management is addressed in Subsection 7 of Goals, Objectives and Policies and Concurrency Management is provided in Section IV of the Level of Service Standards.

The Floodplain Management Plan identifies areas that are experiencing flooding to be those that were generally built prior to the County’s participation in the National Flood Insurance Program (NFIP). To this end, Objective 1.2 says that the County is to revise codes which restrain development in flood prone areas to be consistent with the NFIP. Also, Pinellas County is to promote a balanced relationship

between the natural environment and development (Goal 2), which is to be accomplished by a sensitive land use program (Policy 2.1.3), proactive program for managing impacts (Objective 2.2), preservation of natural drainage (Policy 2.2.6) and preservations of natural storage areas (Policy 2.2.9)

In the Natural, Historic and Cultural Resources section, it was determined that the County “practices comprehensive watershed planning and management which addresses stormwater management and natural resource protection, enhancement, and restoration.”

The Surface Water Management element found that the Pinellas County Master Drainage Plan (1980s) provided a major step in a comprehensive approach to identifying and addressing stormwater needs. The County believes in an ecosystem approach to surface water management and is an active participant in the Comprehensive Conservation and Management Plan (CCMP) through the Tampa Bay National Estuary Program. The goals, objectives and policies portion of this element identifies many activities for the County:

- Objective 1.1 – All major stormwater deficiencies identified in the stormwater master plan identified as the responsibility of the [BOCC] will be corrected by the year 2010.
- Objective 1.3 – Stormwater management and resource protection and management objectives shall be mutually supportive.
- Objective 1.4 – Pinellas County shall show measurable improvements in the quality of County waters, and their associated habitats, as a result of management activities.
- Objective 1.5 – Pinellas County shall participate with federal, state, regional, and local agencies and governments in gathering and evaluating the data necessary to identify major pollution problems in the County’s waters.
- Objective 1.6 – Pinellas County shall continue to practice a multi-agency and multi-jurisdictional approach to surface water management.
- Objective 1.8 – Pinellas County shall annually, as part of its capital improvement program, revisit the goals of the Surface Water Management Element and shall prioritize, approve through the adopted budget, and subsequently direct funds towards those project necessary to the achievement of these goals.

2.7 Summary

The previous sections provide information related to the legal and regulatory requirements for stormwater 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 visa 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.

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. However, further clarification is needed on the definition of “major drainage systems”, 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).
- 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, operations and maintenance (O&M) and capital improvement program (CIP).

Program Management

- Administration of Overall Stormwater Management Program
- Code Enforcement (Pre-development and Post-development)
- Staff Orientation/Training
- Inspection (Erosion & Sediment Control, Pre- & Post-construction)

- Permitting, if applicable
- Engineering
- Project Management (CIP, Planning for Basins and Watersheds, Project Priority Ranking, Grant Solicitation and Application)
- Inventory of Stormwater Systems
- Geographic Information Systems and Mapping
- Survey
- Basin/Watershed Planning
- Flood Mitigation Studies
- TMDL and PLRG Participation in BMAP Development and Coordination
- Stormwater Utility Funding and Finance (where applicable)
 - Database Maintenance
 - Adjustments
 - Collections/Billing

NPDES Compliance (Phase 1 MS4)

- Annual Reports and Inspection
- Permit Activities
 - System O&M
 - 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 Receiving Water Quality Sampling
 - Discharge Characterization from Land Uses
 - BMP Efficiency
 - High Risk Industries and Illicit Discharges

- Pollution Load Reduction Analysis
- TMDL Compliance

Operation & Maintenance Activities

- Street Sweeping
- Inspection (Pre- & Post-Construction; Stormwater Facilities for O&M)
- Cleaning and Minor Repair
 - Culverts
 - Pipes
 - Ditches
 - Ponds (Detention and Retention)
 - Swales
 - Wier Manual Gate 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
 - Staff Training

Capital Improvement Program

- Major Facility Permitting, Design and Construction

2.9 Assessment

In general, almost every area of stormwater 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 - 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 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.

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.

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)]. The nature and definition of a “major system” in the County is not available or clarified. 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 Overview of County Organization

The major components of the Pinellas County stormwater management program are administered through the service divisions in the Department of Development Review Services, and Public Works which includes Engineering and Environmental Services and Highway Operations. **Figure 3-1** shows the newest general organizational chart for FY2011.

The current services being provided by these Pinellas County Departments and Service Divisions are described below in Subsection 3.4 following a brief description of how the discussion is to be organized into common components and how each program is to be assessed compared to other similar organizations.

3.2 Stormwater Management Components

For the purposes of this report, stormwater 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 stormwater assets for the County. Included are program administration, planning, development review, enforcement and monitoring.
- **NPDES Compliance Services (MS4)** – this includes the NPDES MS4 permit compliance activities that are not otherwise accounted for in the other categories.
- **Operation and Maintenance Services (O&M)** – these activities include the maintenance of the stormwater assets of the County including mowing, cleaning, litter control, street sweeping, and minor repair.
- **Capital Improvement Program (CIP)** – this includes major construction of new stormwater assets for the County. Projects are generally identified annually in the 5-year or longer CIP program.

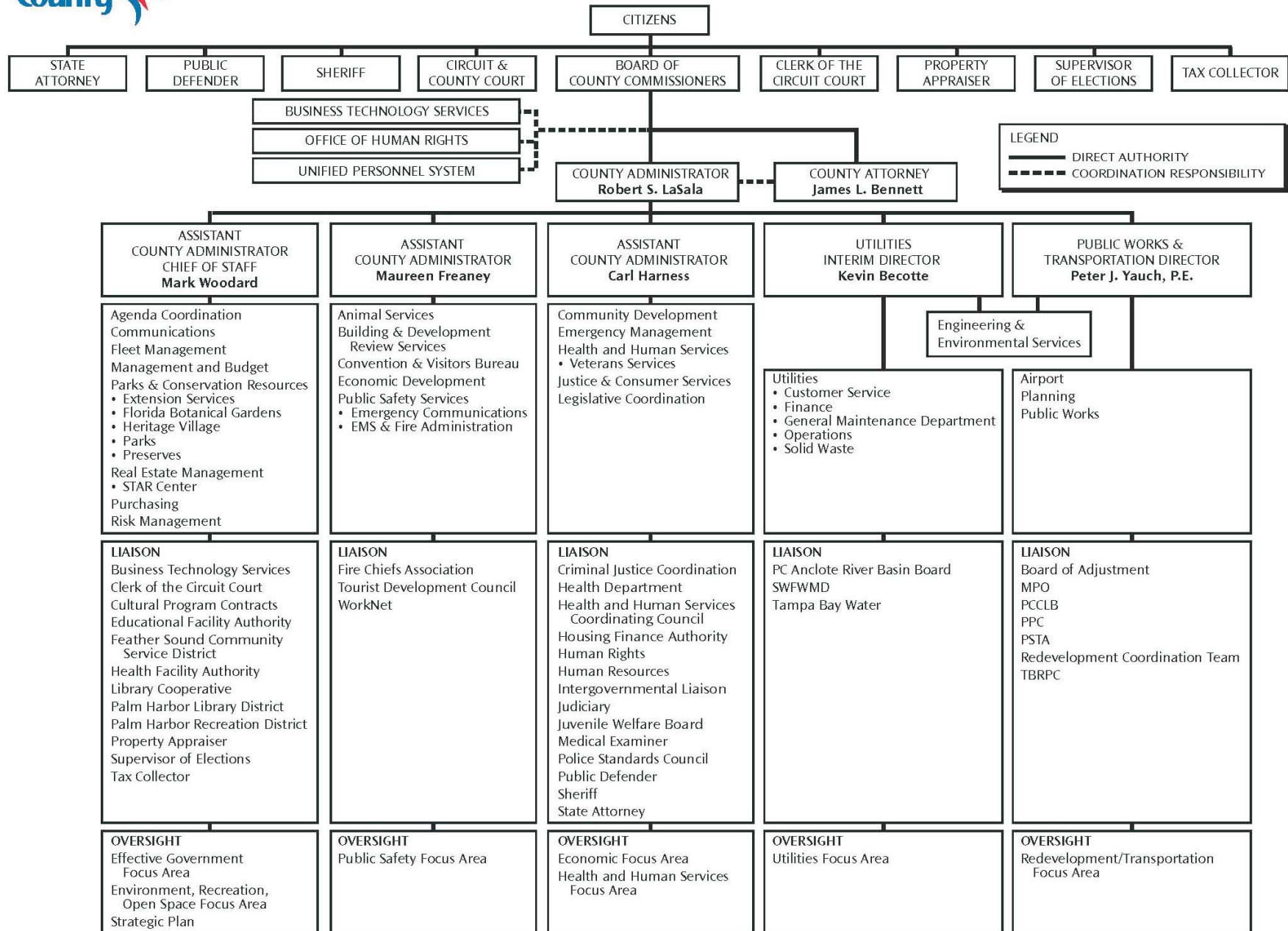
3.3 Stormwater Levels of Service

In order to define the stormwater services provided by the Pinellas County to its citizens, stormwater 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 stormwater 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.



Government Organization Chart

Figure 3-1 General Pinellas County Organization
Chart FY 2011



This level of service concept is useful for assessing each of the four major stormwater program areas that have been described previously (Program Management, NPDES Compliance, Operation 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 “D” being the lowest. These standard definitions facilitate evaluation of the level of service currently being provided by the Pinellas County stormwater 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.

A matrix has been developed to assist in understanding the different levels of service as they relate to the four major program areas (**Figure 3-2**). 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 four 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. These level of service definitions are based on industry standards, experience with other communities’ stormwater programs across the country, and interviews with personnel from other stormwater programs in Florida.

Later in this section, the County’s current stormwater 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.

3.3.1 Operation and Maintenance Level of Service 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 stormwater 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 stormwater 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.

One of the lowest levels of service associated with operation and maintenance (O&M) activities is a responsive type of program (also known as complaint-based). Under a responsive program, O&M staff rely on private citizens or other outside sources to call and report an O&M problem, such as a clogged

**Figure 3-2. Pinellas County, Florida
Stormwater Governance Study Stormwater Program Level of Service Matrix**

<i>Level of Service</i>	<i>Program Management Activities</i>	<i>NPDES Compliance Activities</i>	<i>Operation and Maintenance Program Activities</i>	<i>Capital Improvement Projects</i>
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

catch basin or culvert. O&M staff then respond to this problem to repair or remedy it. Unfortunately, under this approach O&M problems are not reported until there is a significant failure, which in some cases causes damage to the infrastructure that may far exceed the cost of routine maintenance had it been performed earlier. This responsive type of program has been defined a “D” level of service for operation and maintenance. Where the staff cannot even respond to public complaints within a reasonable time (1 to 2 years), a LOS “F” is assigned.

An enhanced level of service for operation and maintenance is an inspection-based program. Under this program, O&M staffs perform periodic inspections of the existing stormwater system. This staff identifies O&M problems before they result in complete failure of elements of the stormwater system. Information gathered by this staff is used to direct O&M activities, ideally before the situation results in a significant failure as under a responsive program. While an inspection-based program is an improvement over a responsive-only program, this approach still allows problems to develop in the system before they are corrected. This can still result in damage to system infrastructure if these problems are not found and corrected in time. This inspection-based type of program has been defined as a “B” level of service for operation and maintenance.

In general, the most desirable level of service for operation and maintenance is a fully preventive program. Under this approach, O&M is performed on a routine schedule, which is planned and conducted based on known historical maintenance requirements of the system. O&M activities are performed before problems occur, thus providing the highest level of protection for system assets and extending the useful life of these assets. This level of service can be more cost-effective than a response-based O&M approach once the initial phase of repairs and backlog maintenance activities are completed. The difficulty lies in transitioning from a responsive or inspection-based program to a fully preventive based program. Even once the transition begins, it may be several years before the full benefits of some routine maintenance are seen in terms of a reduction in O&M problems and failures.

For the purposes of this study, a level of service “B” is used to define a program that has characteristics of a preventive maintenance program, but also requires continued inspection-based (and possibly some responsive-based) activities. If this program is adequately funded and well-managed, the program should be able to continue the transition and reach a fully-preventive maintenance program, as defined by a level of service “A”.

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 overtimes, 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.

3.3.2 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 stormwater 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 Stormwater 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, See Subsection 3.3.3) 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 stormwater 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 stormwater-related issues, and other supporting functions such as information management, finance, billing, and administration.

A level of service “D” defines a program that includes minimal planning and is in partial compliance with federal regulations. At this level of service, the program planning and implementation are not sufficient to allow prioritization of stormwater activities. The program staff is not able to proactively address the needs of the system, and CIP and maintenance are conducted on as-needed basis only.

A program management level of service “C” is characterized by a program that performs some program planning, and that has adequate staff to properly manage overall O&M activities and capital improvement projects under a level of service “C” for those program elements. A level of service “C” includes only partial implementation of planning study recommendations with priorities focused on addressing the most significant existing problems only.

A level of service “B” provides increased implementation of planning study recommendations, including implementation of those recommendations that may not have an immediate need to solve existing problem, but for which an opportunity to implement the recommended facility may be lost in the near future because of pending development. In addition, resources and staffing would be made available to update past planning studies based on new information and to evaluate the impacts of potential development changes on the downstream stormwater system. This level of service increases the available resources to conduct and maintain a stormwater system inventory to support the transition to a combination of routine and inspection-based operation and maintenance.

A level of service “A” provides the County with the resources to conduct a full comprehensive planning program that considers all program objectives including flooding, erosion control, water quality improvement, and other community improvement and habitat preservation goals. Planning would include consideration of countywide priorities and objectives and consider opportunities for receiving

increased benefits through coordinated implementation of improvements and policies. A full system inventory, with associated information management resources, would be performed and maintained with up-to-date information. In a level of service “A” system, all recommendations developed through the basin studies and comprehensive planning process would be fully implemented in a timely manner to support the identified needs of the community and environment. Staff and resources would be available to update and maintain any planning study information as new development takes place and/or as other stormwater system revisions are made.

3.3.3 NPDES Compliance Level of Service 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 stormwater 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 “F” represents non-compliance with major permit conditions. Under these conditions the permittee may be subject to potential fines from the state for noncompliance.

LOS “D” means not complying with permit conditions. This level is characterized by substantive comments on the annual report and during the annual inspection.

The middle-of-the-road and minimal accepted LOS “C” calls for adequate compliance with permit conditions. For this level, some comments received during the annual review, but no major compliance issues are received from FDEP.

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. For this LOS, no substantive comments or requests from the annual report review and associated FDEP inspection.

The highest level of service “A” includes exemplary and/potentially award winning compliance with State and Federal NPDES permit requirements. This type of compliance can be frequently referenced by FDEP to obtain compliance materials so others in Florida can benefit from the program.

3.3.4 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 stormwater 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 stormwater runoff entering these waters.

- Acquiring and preserving stream buffers and other environmentally sensitive areas provide water quality improvement, increased habitat opportunities, 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.

Alternate 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 “F” through “A” correspond to an implementation period of 75 years to 10 years, respectively. The implementation schedule for capital improvements under any of these levels of service could be accelerated through the use of bonding, with annual fees servicing the debt. It should be noted; however, that delayed implementation of some capital improvements would likely increase the costs of the required improvements further delaying the schedule for full implementation.

3.4 Description of Current County Stormwater Program

Provided below is a description of the current activities related to stormwater management within Pinellas County. During Fiscal Year 2011 (FY2011), stormwater activities are performed within Public Works & Transportation. Public Works includes CIP Support (Watershed Management, CIP & Planning [used to be called Transportation Planning], Engineering Administration, Civil/Site and Surface Water Management) and Operations (Permitted Facilities, Highway Operations and Vegetation Management). Each is discussed below. Where possible, the new organization is identified for clarity. However, since the budget discussion is related to current budgets, FY2011 is used.

3.4.1 CIP Support: Watershed Management

Watershed Management is now in Public Works: Engineering and Environmental Services, Environmental Sciences Division. This group is responsible for coordination of the NPDES MS4 permit activities (e.g., annual report, permit coordination, monitoring, inspection, illicit discharges, training and public involvement) and watershed planning (with support from CIP & Planning). Some implementation activities are completed by this group where capital projects are related to water quality or environmental improvements. FDEP total maximum daily load (TMDL) and basin management action plan (BMAPs) activities are also provided by Watershed Management. Watershed Management uses the General Fund for most activities but uses the Pollution Recovery Fund for the Water Atlas and Seagrass Aerials.

The NPDES permit requires the implementation of 9 compliance elements, called the Stormwater Management Program, and documented in an annual report. The compliance elements are: structural controls and collection system operation; areas of new development and significant redevelopment; roadways; flood control projects; municipal waste treatment, storage and disposal facilities; pesticides, herbicides and fertilizers; illicit discharges and improper disposal; industrial and high risk runoff; and construction site runoff. Compliance also includes a substantial monitoring program. Since the NPDES MS4 permit is currently being renewed (its issuance may precede the final production of this report), Watershed Management will have a series of new activities for which it is not set up to implement. These activities include residential construction inspection (this is actually accomplished by BDRS), development of standard operation procedures and additional TMDL/BMAP planning and execution. Potentially, the new permit will increase efforts by an additional 20 to 40 percent. Therefore, while the NPDES program currently is complying with the NPDES permit as it is today, current revenues and efforts will not achieve compliance with the new permit and the LOS will reduce from a C to a D.

For major water quality or environmental capital projects, this group provides project management, permitting, and grant writing.

3.4.2 CIP Support: Transportation & Planning

This group is now called the CIP and Planning Division (also under Engineering & Environmental Services). For stormwater services, CIP and Planning provides:

- coordination for the FEMA Community Rating System (CRS) program;
- maintains the County's Stormwater Master Plan;
- provides, on behalf of Public Works, review for the stormwater management component of development applications and right-of-way use permits to Building and Development Review Services;
- provides engineering, hydrologic and hydraulic reviews for flood management;
- provides review of scope development and consultant agreements for watershed plans;
- provides input in the NPDES MS4 annual report for the Watershed Management Division; and,
- represents Public Works on the NPDES Lead Team.

This group also provides long range planning related to stormwater needs, seeks grant funding and alternative sources of revenue for the Capital Improvement Program, and provides project management for some projects, studies and programs.

3.4.3 CIP Support: Civil/Site & Surface Water Management

In FY2010, these groups were part of Public Works CIP Support. For FY2011, these groups are now part of Engineering & Environmental Services, under the Design Division with some of the staff in Design Support and some in Roadway & Drainage.

3.4.4 Public Works Operations

Public Works Operations is responsible for the operation and maintenance of the stormwater sewer systems, permitted facilities, and open conveyance associated with transportation and/or drainage projects within County-owned public rights-of-way, easements and parcels within unincorporated county as well as for the County-numbered collectors/arterial roadways (for example, 54th Avenue). Stormwater systems that are specific to another purpose are maintained by the managing department and are included in the respective budgets. For example, park facilities and the Pinellas Trail are maintained by Parks and Conservation Resources; while retention ponds associated with county-owned buildings are maintained by Real Estate Management.

Stormwater-related activities performed under the purview of Public Works Operations are funded by two revenue sources: General Fund and Transportation Trust. These funds are distributed into three cost centers: Permitted Facilities Management (General Fund), Highway Operations (Transportation Trust Fund), and Vegetation Management (General Fund). The work is performed primarily by four divisions within the Department (Infrastructure Maintenance, Stormwater Maintenance, Work Management and Vegetation Management) and one division outside of the Department.

One of the major stormwater-related activities performed by the Department is maintenance of the open conveyance systems, such as ditches and channels. Although there has been improvement in the program to move towards an inspection-based program, additional work is needed to collect the inventory information. This program continues to have a large number of complaint-based workload.

Over the last three years, there has been improvement in the service level for the storm sewer system, whereas an inspection program has been developed to include a systematic inspection program for approximately 49,000 assets (structures and pipes). These inspections include minor repair and cleaning as well as identifying additional work needed to the asset.

The vegetation control provided by the Department for the open conveyance systems continue to be performed on a cyclic routine. The sweeping has also continued to be provided on a cyclic routine and is currently performed 12 times per year for arterial roadways and 4 times per year for residential streets.

The Department manages the permitted facilities in compliance with applicable SWFWMD, FDEP, USACE and NPDES permits. There are 637 facilities, covering about 626 acres of ponds and mitigation, and with about 70,400 linear feet of filtration, storage, exfiltration or swales. Almost all of the facilities address stormwater quantity (flooding) and about half address water quality also. **Table 3-1** provides a list of the permitted facilities. The staff systematically maintains the infrastructure of these facilities on a six-month cycle following defined routines and maintenance guidelines. With this cyclic inspection procedure, crews provide maintenance, including litter control, and provide as needed minor defects repair. Historically, staff would be able to provide multiple reconstruction projects during the year, but current budget only allows for one major facility reconstruction per year. All other reconstruction must become a capital project. It should be noted that the Department does not provide maintenance for subdivision ponds. In the event the lack of maintenance of a subdivision pond threatens public infrastructure or the public at large, the County will only perform the work necessary to provide positive flow through the system, provided there is an easement over the property.

Table 3-1. Pinellas County Stormwater Governance Permitted Facilities by Type ¹

Description	Count	Area	LF	Benefits ²		
				Quantity	Quality	Environ-mental
Pond for Attenuation or Storage Only	12	20.9	0	✓		
Dry Detention with Effluent Filtration	82	20.5	14,360	✓	✓	
Dry Retention with Percolation	33	9.5	0	✓	✓	
CDS Units	2	0.0	40			
Mitigation	83	190.0	0	✓		✓
Wet Detention having Mitigation Requirements	15	92.0	0	✓	✓	✓
Special System	25	21.5	0	✓		
Treatment Swale	62	19.0	22,962	✓	✓	✓
Underground Exfiltration	100	0.0	7,744	✓	✓	
Underground Storage	95	0.0	22,342	✓		
Wet Detention with Effluent Filtration	10	11.4	2,945	✓	✓	
Wet Detention with Littoral Shelf	118	241.4	0	✓	✓	✓
	637	626.3	70,393			

Note:

1. Permitted Facilities Staff, January 2011.
2. The Benefits are based upon CDM Experience.

Over the past four years, the Department has reduced the overall budget on an annual basis. Although some areas of stormwater-related activities have been reduced (such as permitted facility reconstruction), other areas have increased due to the requirements of the NPDES permit. Therefore, the Department reallocated staff and equipment from other programs to stormwater-related programs to meet the minimum requirements of the permit for storm sewer and open conveyance inspections/maintenance. The reallocation was also necessitated by the increased amount of storm system failures experienced in recent years. This reallocation accounts for the increase of funds currently expended for stormwater-related activities as compared over past years. It should be noted that this reallocation, in addition to the required budget cuts, has negatively impacted other programs within the Department and has resulted in a substantial decrease in the level of services in sidewalk replacement, mowing, operational support, roadway landscaping and beautification (RL&B) and asphalt maintenance. In order to reduce costs, the Department has also consolidated from a geographical based organization to a countywide program based one which resulted in the closure of four satellite yards (Southeast, Southwest, North and Permitted Facilities).

3.4.5 Operations: Vegetation Management

The Vegetation Management Division controls aquatic and terrestrial weeds in the County's ponds, canals, ditches, and creeks. This division also provides chemical spraying of the right of way, mitigated and planted stormwater sites, and harvesting and removal of weeds. Historically, this group provided vegetation control for major lakes and drainage systems in the County; however, with recent budget cuts, have dropped such control for all systems such as Lake Tarpon.

3.4.6 Building & Development Review Services

The group (BDRS) provides two areas of stormwater services: site review and inspection during construction. BDRS follows private projects from the development and review of the site plan to confirm compliance the County code through inspection during construction and to release through a certificate of occupancy.

3.4.7 Capital Improvement Projects

The Capital Improvement Program budgets for Pinellas County are listed in the FY11 Adopted Budget under non-departmental capital improvements (starting on page). The stormwater related projects are shown in **Table 3-2** for the last 5 years of the CIP Program based on information on projects that are being implemented. Over this time, the average expenditures for CIP were \$8.89 million per year for restoration and stormwater-related construction.

Table 3-3 shows the expected increase in maintenance activities needed to be performed by the County over the next 5 years due to the CIP program. Based upon analysis by the Pinellas County Public Works Department, for the next 5 years the average actual annual expenditures are \$0.728 million.

The revenue for the CIP implementation is the “Penny for Pinellas” sales tax. **Table 3-4** summarizes Penny for Pinellas projects in 4 major areas of the County, showing completed projects as well as future ones. Note that this summary is based on projects listed in anticipation of the vote to extend the Penny for Pinellas in 2007.

In order to estimate the total CIP need of the County, the three of the four completed stormwater basin plans were reviewed to determine estimated costs. **Table 3-5** 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 costs for the unincorporated area were estimated by using the construction cost per acre times the unstudied area (yielding about \$176.9 million) plus the County portion of the three basin plans (about \$30.6 million) for a total of \$207.5 million. With an average spending for CIP of \$8.9 million, it will take 25 years to complete the total CIP needs.

**Table 3-2. Pinellas County Stormwater Governance Study
Summary of CIP Expenditures for FY 2006 to FY 2010**

Project	FY2006	FY2007	FY2008	FY2009	FY2010
Drainage Basin #1					
Anclote Road Drg Outfall					
Riverside Drive, Tarpon Springs					
Drainage Basin #2					
Klosterman Bayou Channel A					
Lake Tarpon Drainage Basin #3					
Lake Tarpon Watershed Mgmt Plan					
Lake Tarpon Water Quality Area 6	\$38,976	\$26,853	\$20,104	\$565,702	\$1,016,018
Lake Tarpon Areas 44&47 Stormwater Treatment					
Lake Tarpon Water Quality Area 23		\$13,358	\$8,887	\$1,817	\$483
Lake Tarpon Ground Water Sptc Tank Leach Test					
Lake Tarpon Quality Area 63		\$14,977	\$18,897	\$25,931	\$606
Brooker Creek Drainage Basin #4					
Brooker Creek Watershed Mgmt Plan					
Tarpon Woods Drainage Improvements			\$227	\$96,387	\$238,812
South Creek Drainage Basin #6					
South Creek Watershed Mgmt Plan					
South Creek Channel R					
Drainage Basin #7					
Sutherland Bayou Channel B					
Sutherland Bayou Channel D					
Smith Bayou Drainage Basin #8					
Bee Branch Channel Improvements	\$54,793	\$827,496	\$1,052,266	\$132,002	\$65,456
Curlew Creek Drainage Basin #10					
Curlew Creek Channel A Culvert & Improve.					
Curlew Creek Channel M Erosion Control		\$15			
Curlew Creek Channel A Belcher Rd to Republic	\$19,321	\$0	\$81,390	\$343,324	\$175
Curlew Creek Channel A improvements		\$172,488			
Curlew Creek Watershed Plan					
NW Pinellas Resource Protection Plan				\$6,770	\$226,180
Curlew Creek Channel M Serendipity Park				\$6	
Alligator Creek Drainage Basin #14					
Alligator Creek Channel A					
Alligator Creek Watershed Mgmt. Plan					
Alligator Creek Watershed Drainage Imp					
Alligator Creek Channel B Drainage Improvements					
Alligator Creek Channel B - Phase II	\$23,713	\$1,688,713	\$95,567	\$8	
Alligator Creek Channel B - Phase 3	\$11,300	\$70,419	\$92,728	\$969,899	\$41,169
Belleair Creek Drainage Improvement Ph 2 of 2					

Table 3-2. Pinellas County Stormwater Governance Study (Continued)					
Summary of CIP Expenditures for FY 2006 to FY 2010					
Project	FY2006	FY2007	FY2008	FY2009	FY2010
Allen's Creek Drainage Basin #19					
Allen's Crk Floodplain Rest Lakeview					
Allen's Crk Watershed Mgmt Plan					
Allen's Crk Erosion control		\$32,129	\$413	\$15,557	\$959,643
Allen's Crk Tributary "5"		\$1,398	\$19,805		
Drainage Basin #21					
Bayside Bridge Treatment Pond @SR60					
Long Branch Drainage Basin #22					
Long Branch Stormwater Pond					
Roosevelt Drainage Basin #23					
Roosevelt Crk Trib 5 Imps					
Roosevelt Creek Watershed Plan	\$32,394	\$99,528	\$43,050	\$56,950	
Cross Bayou Basin #24					
Cross Bayou Watershed Plan	\$175	\$210		\$150	
Cross Bayou Water Quality Rehabilitation	\$2,400	\$15,907			
Cross Bayou Channel 2 - Rena					
Bardmoor Ditch Erosion			\$6,319		
Cross Bayou Revitalization Plan					
Cross Bayou Watershed Projects					
Starkey Drainage Basin #25					
Channel 7 Culvert					
Starkey Basin Watershed Management Plan		\$94	\$18,743	(\$18,690)	
Lake Seminole Drainage Basin #26					
Lake Seminole Watershed Management Plan					
Ridgewood Court Drainage Improv.					
Lake Seminole Retention Pond					
Lake Seminole Control Structure					
Lake Seminole Pond Refurbishment					
Lake Seminole Sediment Removal					
Lake Seminole Alum Injection	\$78,287	\$296,004	\$1,313,723	\$2,406,862	\$1,333,267
Pinellas Trail @ 54th Ave Drainage				\$4,938	
McKay Creek Drainage Basin #27					
McKay Creek Channel Improvements					
Hickory Drive Wetland Restoration					
McKay Creek Imp-Walsingham Rd to Ulmerton					
Coastal Zone 5 Drainage Basin #28					
82nd Ave Drainage Improvements	\$191,781	(\$7,880)			
Ft. Desoto Water Circulation Improvements				\$8	
115th Ln & Irving Ave Drainage Improvements	\$222,239				
Antilles & Oakhurst Drainage	\$0			\$328	

Table 3-2. Pinellas County Stormwater Governance Study (Continued)
Summary of CIP Expenditures for FY 2006 to FY 2010

Project	FY2006	FY2007	FY2008	FY2009	FY2010
Joe's Creek Drainage Basin #35					
Joe's Creek Bridge @ 62nd St N	\$53,685	\$9,617	\$438		
Joe's Creek Channel Improvements					
Joe's Creek Detention Area 2					
Joe's Creek Maintenance Dredging	\$704	\$2,153,356	\$1,411,172	\$643,344	
Lealman Area Drainage Improvements				\$382,415	
Park Blvd. Drainage Improvements	\$205,000				
Erosion Control 49th Street to 66th Street		\$18			
Joe's Creek Watershed Mgmt Plan					
Long Bayou Drainage Basin #36					
46th Ave Drainage Improvements				\$74,654	\$39,906
Bear Creek Drainage Basin #39					
Bear Creek Channel Improvements	\$271,293	\$676,459	\$1,103,745	\$851,387	\$5,276
Flood Control Projects Countywide					
Surface Water Right of Way Reserve/Contingency	\$400	\$608,173			\$3,484
Stormwater Conveyance System Impts.	\$2,917,639	\$5,474,542	\$2,686,204	\$4,216,539	\$1,143,556
Stormwater Projects Permit Monitoring	\$4,875	\$300		\$975	\$780
Surface Water Data Collection	\$212,100	\$213,200	\$191,300	\$198,200	\$184,397
Airborne Laser Swath Mapping					
Drainage Pond Enhancement Program	\$335,370	\$569,474	\$1,815	\$195	
Drainage Channel Dredging Program	\$579,633	\$537,203	\$13,888	\$30,611	\$6
Hidden Meadow & Garland					
Annual Miscellaneous Drainage Projects	\$392,909	\$76,763	\$4,497	\$75,756	\$12,338
Drainage Pond Compliance Program					
Creek Erosion Control Program					
The Glades Drainage			\$7,829	\$3,907	
Basin Management Action Plans		\$34,000	\$90,928	\$76,170	\$58,587
Water Quality Projects					
Regional Stormwater Quality Projects					
Watershed Planning for TMDL					\$3,601
Total Surface Water	\$5,648,986	\$13,604,814	\$8,283,935	\$11,162,102	\$5,333,740
Habitat Restoration/Enhancement Countywide					
Alligator Lake Habitat Rest.	\$62,570	\$32,474	\$19,801	\$21,213	\$4,794
Mobbly Bay Habitat Restoration	\$165,397	\$68,661	\$0	\$42,641	\$13,575
Total Restoration/Enhancement	\$227,967	\$101,135	\$19,801	\$63,854	\$18,369
Total Stormwater Related CIP Expenditures	\$5,876,952	\$13,705,949	\$8,303,736	\$11,225,956	\$5,352,109
5-year Average Expenditures	\$8,892,940				

**Table 3-3. Pinellas County Stormwater Governance Study
Summary of FY 2012-16 5-Year Plan Stormwater CIP Maintenance Needs**

Project		FY12	FY13	FY14	FY15	FY16	Total
Culture & Recreation							
	Ft. DeSoto Dune Walkovers		\$5,000	\$5,000	\$5,000	\$5,000	\$20,000
	Joe's Creek Greenway (Lealman)		\$10,000	\$10,000	\$10,000	\$10,000	\$40,000
	Pop Stansell Park Improvements	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$50,000
Physical Environment: Conservation and Resources							
	Brooker Creek Boardwalk & Trails				\$5,000	\$5,000	\$10,000
	Tarpon Springs Shoreline Stabilization		\$74,000	\$74,000	\$74,000	\$74,000	\$296,000
Physical Environment: Flood Control							
	Antilles & Oakhurst Drainage Improvements					\$5,000	\$5,000
	Bear Creek Channel Improvements		\$10,000	\$10,000	\$10,000	\$10,000	\$40,000
	Bee Branch Drainage Improvements		\$15,000	\$15,000	\$15,000	\$15,000	\$60,000
	Cross Bayou Channel 2 - Rena Drive			\$50,000	\$50,000	\$50,000	\$150,000
	Curlew Creek Channel A Improvements			\$100,000	\$100,000	\$100,000	\$300,000
	Drainage Assessment Projects						\$0
	Lake Seminole Alum Injection	\$400,000	\$500,000	\$500,000	\$500,000	\$500,000	\$2,400,000
	Lake Tarpon Quality Area 23			\$35,000	\$35,000	\$35,000	\$105,000
	Lake Tarpon Quality Area 63					\$45,000	\$45,000
	Lealman Area Drainage Improvements		\$10,000	\$10,000	\$10,000	\$10,000	\$40,000
	Lealman Central Area Drainage Improvements						\$0
	Pinellas Trail - 54th Ave Drainage Improvements				\$20,000	\$20,000	\$40,000
	Stormwater Conveyance System Improvements						\$0
	Stormwater Permit Monitoring						\$0
	Surface Water Data Collection						\$0
	The Glades Drainage Improvements		\$10,000	\$10,000	\$10,000	\$10,000	\$40,000
Totals		\$410,000	\$644,000	\$829,000	\$854,000	\$904,000	\$3,641,000
		5-Year Average CIP Maintenance Needs =			\$728,200		

**Table 3-4. Pinellas County Stormwater Governance Study
Summary of Penny for Pinellas Unincorporated County Projects**

Existing Projects	Future Projects
Lealman Area	
Joe's Creek Ponds #1 & #3	Revitalization Area Res Road & Drain Improvements
46th Avenue Drainage Improvements	
59th St Storm Drain - 58th Ave/Lake McKee	
Lighthouse Creek Outfall	
Joe's Creek Detention Area 2	
62nd Ave Drainage Improvements	
62nd St Drainage Improvements	
Palm Harbor, East Lake & Surrounding Neighborhoods	
Bee Branch h Drainage	Stormwater Conveyance System Improvements
Curlew Creek Drainage	Creek Erosion Control
Klosterman Bayou Channel "A" Drainage	Drainage Pond Compliance Projects
Lake Tarpon Drainage Basin Project	Regional Stormwater Quality Improvement Programs
Lora Ln & Ranch Rd Drainage Improvements	
Toni Woods Drainage Improvements	
Lake Shore Drive	
276 Sheffield Circle	
May Street Drainage Improvements	
Seminole & Surrounding Neighborhoods	
Drainage Pond Enhancement Program	Regional Stormwater Quality
Bardmoor Ditch Erosion Control	Lake Seminole Sediment Removal Program
Neighborhood Stormwater Drainage Improvements	Drainage Improvements
82nd Ave Drainage Improvement	
Neighborhood Underdrain Improvements	
Church Creek Channel Improvements	
115th Ln Drainage Improvements	
Wetland Rehabilitation at St Petersburg College	
Lake Seminole Watershed Management Plan	
St. Petersburg and Surrounding Neighborhoods	
38 th Ave N Drainage Pipe Replacement	Creek Erosion Control
Miles Creek Channel Improvements	Drainage Pond Improvements
Joe's Creek Erosion Control	Stormwater Conveyance System Improvements
Joe's Creek Channel Improvements	
Stormwater System Rehabilitation Projects	

**Table 3-5. Pinellas County Stormwater Governance Study
Estimates for Total Unincorporated County CIP Needs**

Plan	Total Area (ac)	Area In County	Area In Cities	% in County	Costs			Const. Cost per Acre
					Construction	O&M	Total	
Lake Tarpon	6,981.9	5,833.0	1,148.9	83.5%	\$12,887,000	\$1,240,000	\$14,127,000	\$1,845.77
Alligator Creek	5,617.1	1,778.8	3,838.3	31.7%	\$25,743,000		\$25,743,000	\$4,582.96
Lake Seminole	4,802.1	2,407.7	2,394.4	50.1%	\$14,480,000	\$537,000	\$15,017,000	\$3,015.36
	17,401.1	10,019.5	7,381.6	57.6%	\$53,110,000	\$1,777,000	\$54,887,000	\$3,052.11
County Area	Total Area (ac)	Const. Cost per Acre	Total CIP Costs					
Total Unincorporated County Area	67,999.8							
Master Plan Studied Area ¹	10,019.5		\$30,580,574					
Non-studied Unincorp Area	57,980.3	\$3,052.11	\$176,962,085					
Total Estimated CIP Needs			\$207,542,659					

Note:

1. The Total CIP Costs for the Master Plan Studied Area was the total Construction Costs for the Plans times the percentage of area in the County.

3.4.9 Summary

A summary of department budgets is provided in **Table 3-6** along with the percent of each program contributing to the overall stormwater program. Overall, it is estimated that the County's stormwater management programs are about \$27.9 million for FY 2011. **Table 3-7** provides the same data with the CIP costs organized by the four stormwater management categories: Program Management, O&M, NPDES Compliance and CIP.

**Table 3-6. Pinellas County Governance Study
Stormwater Related Operating Budget FY 2011**

Department/Division		Source of Revenue ¹	FY2011 Budget	% Related to Stormwater	FY2011 Stormwater Budget
Public Works CIP Support					
	Watershed Management ²	GF	\$2,235,130	100%	\$2,235,100
	Transportation - Planning ³	GF	\$294,040	45%	\$133,600
	Civil/Site	GF	\$588,480	50%	\$294,200
	Surface Water Mgmt	GF	\$535,340	45%	\$240,900
	Construction Admin & Inspection	GF	\$1,447,500	36%	\$525,000
Subtotal CIP Support			\$5,100,490	67%	\$3,428,800
Public Works Operations					
	Permitted Facilities Mgmt		\$2,983,230	100%	\$2,983,230
	Highway Operations ⁴	Mixture of GF and TTF	\$17,600,110	60%	\$10,562,466
	Vegetation Mgmt		\$2,037,710	83%	\$1,697,412
Subtotal Operations			\$22,621,050	67%	\$15,243,108
Building & Development Review Services					
	Development Review Services	BDRS	\$2,380,780	5%	\$119,000
	Building Inspection	BDRS	\$4,103,360	5%	\$205,200
Subtotal BDRS			\$6,484,140	5%	\$324,200
Total			\$34,205,680	56%	\$18,996,108

- Note:
1. GF is General Fund; TTF is Transportation Trust Fund; BDRS is BDRS Fund.
 2. Budget amount listed is the same as for FY 2010 and 2011. However, Watershed Management was within a different department during FY 2010.
 3. Changed to CIP & Planning.
 4. Includes Contractual Services and Other Direct Costs.

**Table 3-7. Pinellas County Stormwater Governance Study
Summary of Existing Stormwater Expenditures**

Program	Amount	% of Total	Source of Funding
Program Management			
Public Works CIP Support ¹	\$1,193,700	4%	General Fund (0101)
Public Works Watershed Management	\$1,526,600	5%	General Fund (0101)
Development Review Services	\$324,200	1%	General Fund (0101)
NPDES Compliance			
Public Works Watershed Management	\$708,500	3%	General Fund (0101)
Operations & Maintenance			
Permitted Facilities Management	\$2,983,230	11%	General Fund (0101)
Highway Operations	\$10,562,466	38%	Transportation Trust Fund (0201)
Vegetation Management	\$1,697,412	6%	General Fund (0101)
Capital Improvement Program	\$8,892,940	32%	Capital Projects Fund (0401); 5-Year Average
Total	\$27,889,048	100%	
Summary			
Program Management	\$3,044,500	11%	
NPDES Compliance	\$708,500	3%	
Operations & Maintenance	\$15,243,108	55%	
Capital Improvement Program	\$8,892,940	32%	
	\$27,889,048	100%	

Notes:

1. Watershed Management has been split out separately from CIP Support in order to define the program management and NPDES Compliance components provided by Watershed Management.

3.5 Current County Program Level of Service

Based on a review of the existing Pinellas County stormwater 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 stormwater program.
























































3.5.1 Current Program Management LOS

The County currently provides a LOS of “C” related to program management of its stormwater 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 four major watersheds (Lake Tarpon, Lake Seminole, Allen’s Creek and Roosevelt and Brooker) and is currently working on the Cross Bayou Watershed. The Starkey Watershed is scheduled to start in 2011. **Figure 3-3** illustrates the watersheds within Pinellas County.

Legend

Pinellas County Basins

NAME

	34TH STREET
	45TH AVE NORTH EAST CANAL
	54TH AVE EAST CANAL
	70TH AVE NORTH CANAL
	ALBERT WHITTED
	ALLENS CREEK
	ALLIGATOR CREEK
	ANCLOTE RIVER
	BEAR CREEK
	BIG BAYOU
	BISHOP CREEK
	BOOKER CREEK
	BROOKER CREEK
	CEDAR CREEK
	CLAM BAYOU
	COASTAL ZONE
	COASTAL ZONE 1
	COASTAL ZONE 2
	COASTAL ZONE 3
	COASTAL ZONE 4
	COASTAL ZONE 5
	COFFEE POT BAYOU
	CROSS BAYOU
	CURLEW CREEK
	FRENCHMAN CREEK
	GULFPORT
	HILLSBOROUGH COUNTY
	JOES CREEK
	KLOSTERMAN BAYOU
	LAKE
	LAKE MAGGIORE/SALT CREEK
	LAKE SEMINOLE
	LAKE TARPON
	LITTLE BAYOU CREEK
	LONG BAYOU
	LONG BRANCH
	MCKAY CREEK
	MULLET CREEK
	NE ST PETERSBURG
	NORTH COFFEE POT
	OLDSMAR
	PASADENA LAKE
	PINELLAS PARK DITCH #1
	PINELLAS POINT
	POSSUM BRANCH
	ROOSEVELT CREEK
	SAWGRASS LAKE
	SMITH BAYOU
	SOUTH CREEK
	SPRING BRANCH
	STARKEY ROAD
	STEVENSONS CREEK
	SUTHERLAND BAYOU
	SW ST PETERSBURG
	TINNEY CREEK

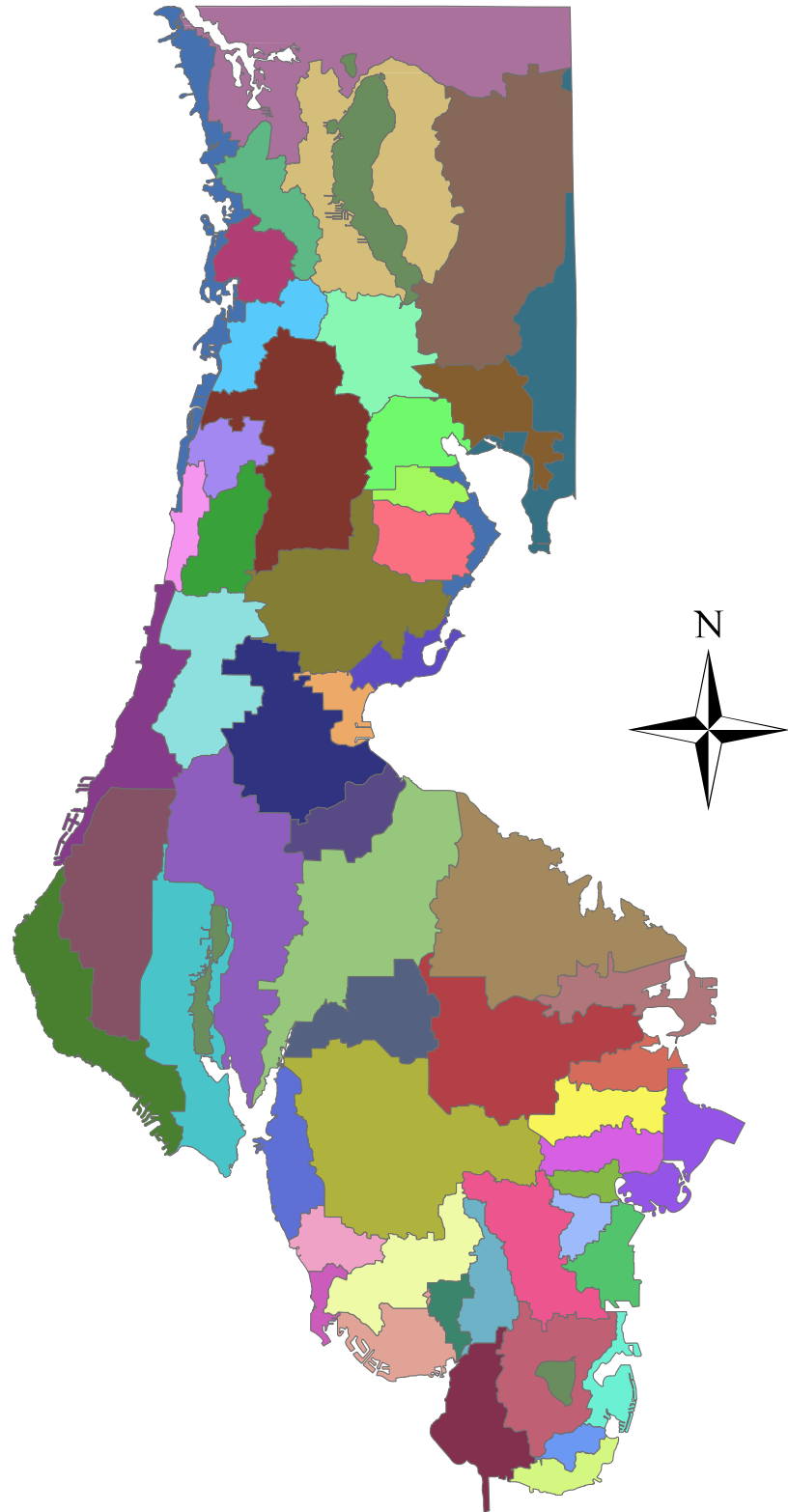


Figure 3-3
Pinellas County Governance Study
Watersheds Map

The County's GPMACS database is an effective tool being used by the Highway Operations. The database contains assets maintained by the Permitted Facilities group. Reports can be generated with inspections that are due, as well as inspection and re-inspection sheets. In addition, construction plans are scanned and are linked to assets in the GPMACS database. This provides an effective way to sort, search, and view plans with little effort. However, the stormwater system inventory for all of the County's stormwater system is not comprehensive. A GIS database of the comprehensive inventory would be greatly beneficial and is required by the new NPDES MS4 permit.

3.5.2 Current NPDES Compliance 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. For most components of MS4 compliance the County is accomplishing minimal activities. However, this decreases to LOS D with the issuance of the new NPDES MS4 permit. Additional requirements include residential construction inspection at a high frequency, development of standard operating procedures for all elements of the NPDES MS4 program, and additional TMDL/BMAP planning and implementation.

3.5.3 Current Operation and Maintenance LOS

The current level of service provided by the County related to its operation and maintenance of stormwater facilities is LOS B- since it currently provides a mixture of routine, inspection-based and complaint-based maintenance. Currently, the 637 permitted stormwater facilities receive scheduled maintenance. Geographical routes have been established for vector and sweeping work. Routes can limit travel time from location to location and assist in increasing agency efficiency. There are established effort levels for street sweeping including sweeping arterial and collector roads once a month.

In addition, there are many other positive programs in place. Permitted Facilities applies recycled materials such as mulch on banks for stabilization and it provides an environmentally friendly approach to recycling as well as lower cost of operations. Additionally, mitigation credits are banked and this allows for optimal use of strategies to meet environmental requirements yet be an effective operation. O&M crews are equipped with digital cameras to document work on a daily basis and are linked back to the Division's database. Digital cameras allow for low cost documentation and identification of work.

Vegetation Management uses routines for scheduling work and minimal number of complaints as a result and having routines improve efficiency and planning efforts.

Staff is licensed by the state and receives annual training. This allows staff to maintain current in procedures and work methods that are being used within their areas of expertise. Mosquito Control and Vegetation Management staffs have dual licenses to share resources between divisions. They also have specialty equipments such as helicopters, harvester, and airboats that are used to address the potential needs of their functions. They involve public and provide information to the public to better provide services to an educated public.

3.5.4 Current Capital Improvements LOS

The existing level of service provided by the County related to capital improvements associated with stormwater management is level "C+" to "B-". Based on the analysis in Subsection 2.4.4 (i.e., \$207.5 million total CIP), with the current expenditures of about \$8.8 million per year, it will take about 25 years to complete CIP program.

3.5.5 Overall Assessment of Existing LOS

Figure 3-4 illustrates the current LOS for Pinellas County based on this assessment. The overall assessment is LOS C+, with Program Management and NPDES MS₄ Compliance at LOS C, O&M at LOS B-, and CIP and B-. When the NPDES MS₄ permit is reissued, the NPDES MS₄ Compliance will reduce to LOS D.

3.6 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, O&M and CIP) within Pinellas County. As noted in Section 3.5.5, 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 stormwater program that each component would meet an LOS of C, B and even A.

3.6.1 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 (Method 1), 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.

The second method (Method 2) 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 3-8** and **Table 3-9** show results for a number of communities in Florida and other states for which population, funding, road miles and levels of service were available. It should be noted that the LOS assignments in Table 3-8 and 3-9 were defined based on program activities and accomplishments, not on cost.

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. Table 3-8 shows that the service costs for the County appear to be slightly higher per capita than is other LOS B communities. Some reasons for this include:

- The O&M program is at a higher level than LOS B which increases the total costs.
- The County is highly urbanized thereby increasing the number of stormwater systems to be planned for and maintained as well as the complexity of O&M due to the urban surrounding.
- Because of the adapted watershed management approach to surface water management in the County, stormwater CIP projects contain both a flood management element as well as a water quality improvement element. This can increase project costs.

To estimate the program needs for higher levels of service for each component, the costs for each element were defined as follows:

- The O&M program is based on the average costs per road mile as indicated in Table 3-8.

- Capital Improvement Costs were based on the total CIP needs divided by the number of years of implementation.
- The Total Program Costs were based on the assumption that the O&M and CIP components of the program should be about 80 percent of the total. Thus, the Total Program Costs were the sum of the O&M plus CIP costs divided by 0.80.
- The Program Management and NPDES Compliance Costs were estimated to be 10 and 5 percent of the Total Program Costs, respectively.

Based on these methods, the costs for the various LOS above the current LOS are shown in **Table 3-10**.

In summary, the total program costs for all elements are:

Existing LOS	\$27,889,000
Existing LOS + New NPDES Requirements	\$28,101,600
Whole Program LOS B	\$32,022,600
Whole Program LOS A	\$49,368,300

3.6.2 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 stormwater 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 \$22.1 million. For the purposes of the costs estimated below, where staff are involved, the overhead identified means the extra costs per staff person for fringe benefits, other services and charges, materials and supplies, and capital outlay. These extra costs are estimated to be about 1.5 to 2.0 times the raw salary; for example, an annual cost of \$100,000 itemized below represents a \$50,000 to \$66,700 annual salary. Also, the costs identified represent overall budgets, which, subject to competitive bidding, may reduce the values suggested.

3.6.2.1 Program Improvements to Achieve LOS C

While the County is rated as a LOS C, two parts of the program need improvement, to achieve a full LOS C. Program Management and CIP are already at LOS C; O&M are above LOS C. Improvements will be needed for NPDES Compliance with the issuance of the new permit.

NPDES MS₄ Compliance

As noted above, once the new NPDES MS₄ permit is issued, the County will slip from a LOS C to a LOS D for NPDES Compliance. There are three major areas where improvements will be necessary to achieve LOS C.

- *Residential Construction Inspection.* In Part III.A.9., Construction Site Runoff, the County is to develop and implement written procedures for site plan review and inspection of development and redevelopment. This includes both public as well as private construction. The procedures must include at least 3 site inspections, documentation of inspections and written enforcement procedures. While the writing of the procedures will be completed in the 1st year of the permit issuance, the ongoing inspection, documentation and enforcement activities must be implemented, requiring additional inspection staff.
- *Standard Operating Procedures.* All of the elements of the NPDES MS₄ permit will require written standard operating procedures (SOP). While this, in itself, will provide for more standardization

in each activity, once the SOPs are written, each one must be followed explicitly and compliance with the SOP must be documented and each SOP must be updated annually.

- *TMDL Prioritization.* Part VIII, Stormwater Discharge Compliance and Water Quality Standards, is a significant new section of the permit. This section does say: “Implementation of BMPs consistent with the provisions of the stormwater management program required pursuant to this permit constitutes compliance with the standard of reducing pollutants to the MEP.” However, the section goes on to require compliance with DEP- and/or EPA-adopted TMDLs and BMAPs, each of which may require numeric pollutant load reductions. It also requires, for those areas with TMDL but without BMAPs, that the County prioritizes watersheds and pollution reduction activities and prepare a schedule of projects for implementation within 4 years of the permit issuance. This is a significant effort that can only be properly accomplished collaboratively with cities and regulatory agencies in Pinellas County.

In total, these new activities will likely increase the revenues needed for NPDES MS4 compliance by 20 to 40 percent; for the purposes of this report, a 30 percent increase is used.

3.6.2.2 Program Improvements to Achieve LOS B

Provided below is a series of improvement for the stormwater program to increase to an LOS B. LOS B is generally a preferred LOS for many communities; however, it may be difficult to achieve. 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 an expanded CIP are completed, the demands on staff will increase. Thus the current LOS will degrade over time without improvements warranted by changes in the CIP program.

Provided below is a description of the recommended activities to achieve LOS B for Pinellas County.

Program Management

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

- *Basin Plans.* The County needs to prioritize each of its basins based on four categories: 1) highly developed basins with stormwater problems; 2) quickly growing basins with high potential for stormwater problems or TMDLS; 3) highly developed basins with no identified stormwater problems; and, 4) low priority basins. One or more basins in the higher priority categories should be completed per year at a cost of \$600,000 or higher depending on the basin size and complexity.
- *Complaint Database.* A digital complaint database would improve response time especially if it is associated with the GIS system. Such a database can identify the location of the complaint for field personnel and document project status, while offering the ability to manage complaints better by illustrating common geographic areas, as well as types, of complaints. Estimated costs are \$100,000 to \$150,000.
- *GIS Information for All Stormwater Facilities.* While there is a reasonable GIS database for most stormwater facilities, additional information is needed for storm sewers, French drains and underdrains. Data should also be collected in the field digitally with GPS support and possibly, field hand-held computers. Furthermore, data from contractors is not digital – such data should be provided in digital format for easy incorporation in the GIS databases. This effort would require field survey, field survey equipment, GIS database setup and management, and requirements for contractors. Estimated costs could be \$500,000.

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 Program on County Website.* To provide a more proactive stormwater education program, the County can create more opportunities for a publicly visible stormwater program. These opportunities may include educational signage at stormwater facilities and additional broadcast educational summaries such as newspaper inserts or brochures. While educational materials are available through the Environmental Management website, additional information with higher level (easier) access is warranted. An increased education program is estimated to cost \$100,000.
- *Expanded Enforcement Capabilities.* A proactive NPDES MS4 program would include sufficient staff to inspect the stormwater system for illicit connections, illegal dumping, high rise industrial discharges and construction with sufficient enforcement ability to deal with any problems encountered in the field. This is consistent with the potential new demands on enforcement with the new NPDES MS4 permit.

Capital Improvements

LOS B for capital improvements means additional expenditures to decrease the time to complete identified stormwater capital deficiencies to a 20-year time frame. Expenditures need to increase by an additional \$1.5 million per year beyond LOS C for a total expenditure of \$10.4 million.

3.6.2.3 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 stormwater management activities for all elements of the program.

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.

- *Separate Stormwater Management Division.* In order to manage the stormwater program at a significantly higher level, the stormwater programs discussed previously can be separated into an additional department in Public Works. This means that the stormwater program management, NPDES compliance and CIP programs are combined into a single cost center with segregated funding. It is not recommended that the O&M functions should be included in this Department since many of these functions overlap other activities and departments. Erosion and sediment control programs should also be consolidated in this division or department allowing less redundant inspections and potentially a higher level of enforcement. Also, with most functions in a single department a greater potential for cross-training and mentoring of newer staff is possible.
- *Increased Project 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.

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

stormwater 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 stormwater 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.
- *Full support of the Watershed Atlas.* The County has already built the watershed 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 stormwater management programs within the County.
- *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.

Operation & Maintenance

The LOS A 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 management system must be employed. For this LOS, dedicated stormwater crews should be organized in a separate group within Public Works.

- *Increased Stormwater Maintenance Crews.* To increase the O&M program to a LOS A, increased crews are required to provide routine maintenance to all County-owned stormwater facilities, not just permitted facilities. As noted previously, there are generally 3 to 4 staff to each crew. One or more crews would be needed at a cost of approximately \$1.0 million per crew including equipment such as trucks, backhoes, vac-trucks, etc.
- *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: a program supervisor (\$100,000), a clerical staff member (\$50,000) and a financial/asset manager (\$75,000).

Capital Improvements

For LOS A, the CIP program would need to increase to ten times the funding as it is today. Annual funding would need to be approximately \$20.8 million per year.

Figure 3-4
Pinellas County Stormwater Governance Study
Stormwater Program Level of Service Matrix - Current Program

Level of Service	Program Management Activities	NPDES Compliance Activities	Operation and Maintenance Program Activities	Capital Improvement Projects
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 ²
C	Priority Planning + Partial CIP Implementation Capabilities	Minimal Permit Compliance ¹	Inspection Based	35-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

Note:

1. While the County achieves a LOS C for NPDES Compliance in FY 2010, when the new permit is issued, the LOS will be D.
2. The County, using the Penny for Pinellas, provides a 25-year LOS.

**Table 3-8. Pinellas County Stormwater Governance Study
Comparison of Program Costs for Various Cities and Counties**

City/County	2000 Population	2000 Pop Density (#/sq mi)	Roads (mi)	PGM	O&M	CIP	Total	LOS	Cost per Capita	Cost per Density	O&M Cost per Roads
Wilmington, NC	92,000	1,850	361	\$1,035,700	\$3,222,178	\$1,507,717	\$5,765,956	A	\$63	\$3,117	\$8,926
Harris County, TX	3,400,578	3,372	7,329	\$12,500,000	\$24,000,000	\$162,700,000	\$199,207,329	A	\$59	\$59,077	\$3,275
Clearwater, FL *	108,787	4,302		\$784,320	\$2,483,680	\$3,268,000	\$6,536,000	B	\$60	\$1,519	
Concord, NC	55,977	1,085		\$838,775	\$1,353,725	\$1,000,000	\$3,192,500	B	\$57	\$2,942	
Austin, TX	656,562	2,648		\$14,000,000	\$7,500,000	\$12,700,000	\$34,200,000	B	\$52	\$12,915	
Wilson, NC	46,000	1,907	214	\$693,000	\$1,008,000	\$399,000	\$2,100,214	B	\$46	\$1,101	\$4,710
Tampa, FL *	303,441	2,708					\$13,726,568	B	\$45	\$5,069	
Charlotte, NC	594,760	2,232	2,261	\$7,281,698	\$12,553,467	\$6,276,734	\$26,114,160	B	\$44	\$11,700	\$5,552
Greensboro, NC	231,715	2,138	941	\$2,226,217	\$4,154,736	\$2,862,146	\$9,244,040	B	\$40	\$4,324	\$4,415
Volusia County, FL	113,671	462	1,056	\$631,000	\$1,662,000	\$2,116,000	\$4,410,056	B	\$39	\$9,546	\$1,574
Raleigh, NC	313,000	2,410	1,244	\$3,000,000	\$4,800,000	\$4,000,000	\$11,801,244	B	\$38	\$4,897	\$3,859
St. Petersburg, FL *	248,232	4,163		\$662,400	\$5,133,600	\$2,484,000	\$8,280,000	B	\$33	\$1,989	
Largo, FL *	69,371	4,429		\$427,892	\$1,116,239	\$316,268	\$1,860,399	B	\$27	\$420	
Wake Forest, NC	16,500	1,614	70	\$222,000	\$164,000	\$325,000	\$711,070	C	\$43	\$441	\$2,343
Jacksonville, FL	735,617	971	3,370	\$1,800,000	\$17,000,000	\$3,500,000	\$22,303,370	C	\$30	\$22,969	\$5,045
Wake County, NC	170,100	755		\$170,000	\$84,000	\$4,628,000	\$4,882,000	C	\$29	\$6,466	
Dallas, TX	1,188,580	3,470		\$1,500,000	\$18,300,000	\$8,000,000	\$27,800,000	C	\$23	\$8,012	
Ft. Lauderdale, FL *	152,397	4,803		\$340,000	\$1,904,000	\$1,156,000	\$3,400,000	C	\$22	\$708	
Miami, FL	362,470	10,161		\$1,100,000	\$2,000,000	\$4,500,000	\$7,600,000	C	\$21	\$748	
Apex, NC	24,700	1,918	100	\$157,000	\$342,000	\$0	\$499,100	C	\$20	\$260	\$3,420
Cary, NC	106,300	2,296	430	\$544,000	\$580,000	\$981,000	\$2,105,430	C	\$20	\$917	\$1,349
Garner, NC	21,800	1,385		\$219,000	\$120,000	\$25,000	\$364,000	C	\$17	\$263	
Concord, NC	55,977	1,085		\$490,000	\$960,000	\$100,000	\$1,550,000	D	\$28	\$1,429	
Houston, TX	1,919,789	3,372		\$8,000,000	\$26,700,000	\$17,000,000	\$51,700,000	D	\$27	\$15,332	
Pasco County, FL	389,776	463	1,448	\$839,900	\$2,095,904	\$5,163,400	\$8,100,652	D	\$21	\$17,496	\$1,447
Raleigh, NC	313,000	2,409	1,244	\$2,500,000	\$2,000,000	\$2,000,000	\$6,501,244	D	\$21	\$2,699	\$1,608
Volusia County, FL	113,671	402	1,056	\$561,190	\$642,200	\$535,610	\$1,740,056	D	\$15	\$4,328	\$608
Miami-Dade Co, FL *	2,253,362	1,158		\$13,466,400	\$6,677,090	\$7,911,510	\$28,055,000	D	\$12	\$24,227	
San Diego, CA	1,223,400	3,772		\$1,000,000	\$5,000,000	\$0	\$6,000,000	F	\$5	\$1,591	

Note: *

Estimated

LOS.

** 2009 Population

LOS	Average	Minimum	Maximum
A	\$61	\$59	\$63
B	\$44	\$27	\$60
C	\$31	\$17	\$81
D	\$21	\$12	\$28
F	\$5		

**Table 3-9. Pinellas County Stormwater Governance Study
Summary of Costs for Stormwater Programs In United States O&M
Programs with Cost per Road Mile**

Municipality	Population	Road Mile	O&M	O&M \$ per Road Mile	LOS
Wilmington, NC	92,000	361	\$3,222,178	\$8,926	A
Harris County, TX	3,400,578	7,329	\$24,000,000	\$3,275	A
Charlotte, NC	594,760	2,261	\$12,553,467	\$5,552	B
Wilson, NC	46,000	214	\$1,008,000	\$4,710	B
Greensboro, NC	231,715	941	\$4,154,736	\$4,415	B
Raleigh, NC	313,000	1,244	\$4,800,000	\$3,859	B
Volusia County, FL	113,671	1,056	\$1,662,000	\$1,574	B
Austin, TX	656,562		\$7,500,000		B
Jacksonville, FL	735,617	3,370	\$17,000,000	\$5,045	C
Apex, NC	24,700	100	\$342,000	\$3,403	C
Wake Forest, NC	16,500	70	\$164,000	\$2,338	C
Cary, NC	106,300	430	\$580,000	\$1,349	C
Wake County, NC	170,100		\$84,000		C
Dallas, TX	1,188,580		\$18,300,000		C
Miami, FL	362,470		\$2,000,000		C
Garner, NC	21,800		\$120,000		C
Raleigh, NC ¹	313,000	1,244	\$2,000,000	\$1,608	D
Pasco County, FL	389,776	1,448	\$2,095,904	\$1,447	D
Volusia County, FL	113,671	1,056	\$642,200	\$608	D
San Diego, CA	1,223,400		\$5,000,000		F
Summary	Avg \$/	Range			
Level of Service	Road Mile	Low	High		
LOS A	\$6,100	\$3,275	\$8,926		
LOS B	\$4,022	\$1,574	\$5,552		
LOS C	\$3,034	\$1,349	\$5,045		
LOS D	\$1,221	\$608	\$1,608		
LOS F					

**Table 3-10. Pinellas County Stormwater Governance Study
Summary of LOS Costs**

Level	Program Management	NPDES Compliance	Operation & Maintenance ²	Capital Improvements	Total Program Costs
A	Comprehensive Planning + Full Implementation Capabilities \$7,405,238	Exemplary Permit Compliance \$2,468,413	Fully Preventative/ 100% Routine \$18,744,600	10-Year Plan \$20,750,000	\$49,368,250 LOS A
B	Pro-active Planning + Systematic CIP Implementation Capabilities \$4,803,394	Pro-Active Permit Compliance \$1,601,131	Mixture of Routine and Inspection Based \$15,243,100	20-Year Plan \$10,375,000	\$32,022,625 LOS B
C - FY2012	Priority Planning + Partial CIP Implementation Capabilities \$3,044,500	Minimal Permit Compliance \$921,050	Inspection Based Only	25-year Plan ¹ \$8,892,940	\$28,101,590 LOS C
C - FY2011	Reactionary Planning + Minimal CIP Implementation Capabilities	Minimal Permit Compliance \$708,500	Responsive Only (Complaint-based)	50-year Plan	\$27,889,040 Existing

 Current LOS

Notes:

1. Actual LOS C is 40-Year Plan, so County is a C+ at a 25-Year Plan.
2. LOS A Costs for O&M are based on the Average Cost per Road Mile from Table 3-7.
3. Capital Improvement Costs are based on total CIP Need of \$207.5 million over the period of time noted.
4. LOS A and B for Program Management and NPDES are 15 and 5 percent of the Total Program Costs.



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 stormwater utility fee (assessment) as one means to fund the stormwater LOS. It should be noted that this assessment was made using the Fiscal Year 2010-2011 Approved Budget (referred to below as the FY 2011 Budget). The newer FY 2012 budget was not available until after this analysis was substantially done.

4.1 Existing Sources of Funding

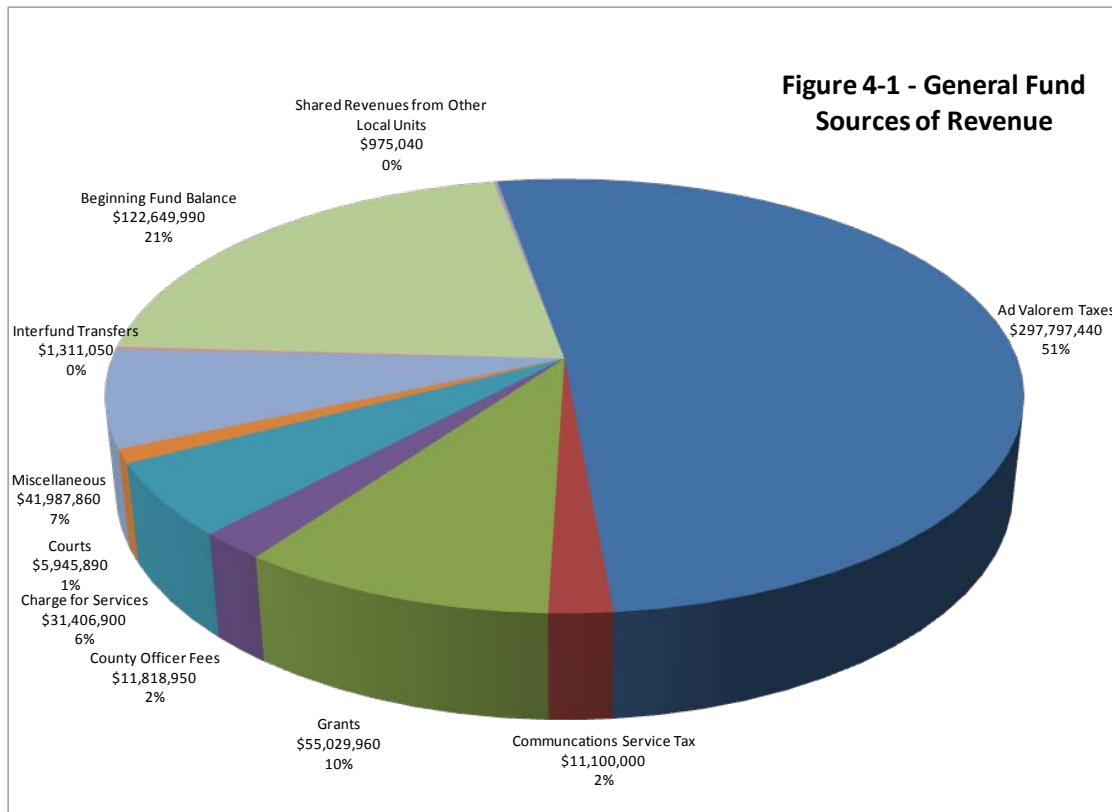
Based on the Pinellas County Budget for FY 2011, there are many sources of revenues for the County budget. The existing sources of revenue for the FY 2011 sum to \$1,611.4 billion and include Property Taxes (21 percent), Service Charges (19 percent), Federal and State Sources (7 percent), and Sales & Use Taxes (5 percent). About 32 percent of the total revenues include debt proceeds and fund balances. A major portion of the revenue is placed in the General Fund, from which most of the County programs are funded. As shown in **Table 4-1**, for FY 2011, the estimated revenue for the General Fund is \$580 million of which almost \$298 million (51 percent) will be from ad valorem taxes at a millage of 4.8108. The millage is applied to the taxable value County-wide, estimated to be \$58.4 billion in the County. Other sources of revenue for the General Fund are illustrated in **Figure 4-1**. The other large sources include the beginning balance (21 percent), and state/federal sources (10 percent).

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. MSBU funds are restricted to properties specifically benefiting from the municipal service. Use of the MSTU funding over multiple years such as to pay a debt service would require a referendum; this would not be required for a MSBU.

The advantage of the use of ad valorem revenues for stormwater services is that ad valorem tax is an existing source of revenue not requiring additional legislative action other than adoption of the millage rate. The public is currently paying such taxes and revenues are currently being used for stormwater services. The disadvantage is the competition for the use of ad valorem taxes usually means that stormwater services are not adequately funded.

**Table 4-1. Pinellas County, Florida Stormwater Governance Study Summary of General Fund Revenues
Adopted FY 2011**

Source		Amount	Percent
Ad Valorem Taxes		\$297,797,440	51.3%
Communications Service Tax		\$11,100,000	1.9%
Grants			
	Federal Grants	\$5,875,790	1.0%
	State Grants	\$666,550	0.1%
	State Shared Revenues	\$46,530,080	8.0%
	Grants From Other Local Units	\$1,957,540	0.3%
Shared Revenues from Other Local Units		\$975,040	0.2%
County Officer Fees		\$11,818,950	2.0%
Charge for Services			
	Gen'l Government	\$811,410	0.1%
	Public Safety	\$24,905,230	4.3%
	Physical Environment	\$521,430	0.1%
	Human Services	\$2,205,220	0.4%
	Culture/Recreation	\$2,958,990	0.5%
	Other	\$4,620	0.0%
Courts			
	Court Related Revenues	\$5,141,570	0.9%
	Judgement & Fines	\$804,320	0.1%
Miscellaneous			
	Permits, Fees, and Special Assessments	\$788,100	0.1%
	Interest & Other Earnings	\$7,120,940	1.2%
	Rents and Royalties	\$1,633,260	0.3%
	Sales - Disposition of Fixed Assets	\$148,800	0.0%
	Sales - Surplus Materials	\$25,810	0.0%
	Contribution - Private Source & Donation	\$58,750	0.0%
	Licenses	\$70,780	0.0%
	Other Miscellaneous Revenues	\$32,141,420	5.5%
Interfund Transfers		\$1,311,050	0.2%
Beginning Fund Balance		\$122,649,990	21.1%
Total		\$580,023,080	100.0%



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 stormwater services such as Development Review Fees (used for review of site plans for stormwater). Others are for specific utility services such as water and sewer services; revenues from these utilities can be used only for the utility itself. Of course, many communities in Florida have adopted a utility fee for stormwater: See New Funding Sources below.

Special Assessments

Also referred to as a non-ad valorem assessment or uniform assessment method, special assessments for stormwater services are authorized in 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 stormwater special assessment can meet both of these criteria. However, the assessment must be set up specifically for stormwater as a new fee.

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 shared with local governments. According to the FY 2011 Budget, a little over 8.8 percent of the sales tax is returned locally. Approximately \$30 million in revenue is identified in the FY 2011 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 stormwater services: they generally generate too small revenues to pay for the needed capital improvements and they can only be used for new growth. Many of the existing stormwater problem areas are related to existing developments; new development is required to provide stormwater attenuation and treatment.

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 costs of local or “neighborhood” roads are assessed against the properties deemed to benefit from the improvements.

The advantage of this revenue is that it is an existing funding source which can resolve stormwater problems associated with roads. The disadvantage is that many problems are not associated with roads so this source is not available. Also, stormwater operating expenses cannot be funded by this source. According to the FY 2011 Budget, approximately \$77 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 services 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 197.3232 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;
- During the first year of the assessment, a first-class mailing to property owners announcing the assessment; 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, governmental (local, state and federal, including 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 stormwater 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 stormwater services, especially related to stormwater quality, and that Sarasota County reasonably apportioned its assessment (their assessment 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 court case and other pertinent reports about the case are provided in the appendix.

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 stormwater 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 stormwater 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.

Stormwater Utility Fee

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 stormwater utility fee started in Florida in October of 1986 with the \$1.00 per month per single family unit equivalent for the city of Tallahassee. In this case and in many others in Florida, the user charge is assigned to the fee payer relative to the contribution to the stormwater problem or burden. For the major of stormwater utilities, the contribution is related to stormwater runoff which, in turn, is related to impervious area (or a combination of pervious and impervious areas). Therefore, for most utilities, 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 stormwater utility fees in Florida are based on a residential equivalent: 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 or an average of all dwelling unit types. In this manner, the fees charged are connected or related to the service being provided.

The fee structure for a stormwater utility fee and a stormwater special assessment can be very similar. The Supreme Court case supported the apportionment of the special assessment for Sarasota which is very similar to many others in Florida. The biggest difference between the two is the billing method: a stormwater utility fee would be billed monthly with other utilities and the non-ad valorem assessment would be billed on the annual tax bill. It should be noted however that the Supreme Court case showed that the legal requirements for the non-ad valorem assessment are greater than for the fee.

The advantages of a stormwater utility fee include:

- revenues can pay for all components of the stormwater 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;
- located on a utility bill, the stormwater 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,
- stormwater utility 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;

- if it is not associated with other utilities, total collection of the stormwater utility fee is difficult; and,
- a stormwater utility 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 stormwater capital improvements.

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, now to 2020. According to the FY 2011 Budget, the estimated revenue from the Penny for Pinellas was \$76.7 million.

An advantage of this method is that it will generate a significant amount of funding for a stormwater 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 stormwater 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 stormwater program includes operational expenses as well.

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 include all 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.

4.2.2 Other Funding Sources

Additional sources are available to local governments to pay for a portion of the stormwater management financial needs. These have been separated from the others because they generally do not generate sufficient funds for the entire stormwater 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 stormwater 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. Stormwater 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 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 stormwater 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 stormwater 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 stormwater 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 stormwater 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 stormwater management facility. In this case, the regional stormwater 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 stormwater 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 funds and 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 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 stormwater purposes. The grants are generally small and currently there are no grants available. Second, the legislature recently allowed low interest loan funds to be made available for stormwater 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. The stormwater loan program is relatively new and the process to obtain the loans can be tedious (if the previous wastewater loan history is any indication of the stormwater loan application process).

In the 2005-06 legislative session, Senate Bill (SB) 444 authorized the Water Protection and Sustainability Program which defines funding for alternative water supplies, TMDL implementation and research, SWIM activities and small community grants. \$100 million is to be annually available, of which 20 percent is for TMDL activities and 10 percent for SWIM activities. Grants will be distributed based on application and approval by each appropriate Water Management District. Even so, counties, cities, water management districts and special districts

can apply for the grants. Currently these revenue sources have limited funding (319(h) grants) due to the economic downturn within the state of Florida.

Federal Government. In recent years, even though the Environmental Protection Agency (EPA) has begun stormwater 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.

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. **Table 4-2** lists all the alternatives along with the stormwater management functions that can be addressed by the alternative. The General Fund and Stormwater Utility alternatives address all aspects of stormwater 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;
- legal ramifications;
- equity;
- revenue capacity;
- ease of implementation;
- initial costs to set up the option; and,
- system O&M costs.

A tabular representation of the results of the review is provided in **Table 4-3**. 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 stormwater 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 would be required. Equity was considered as to whether the charge related to the contribution of, and benefit to, the payer to the stormwater management activities. The revenue capacity was judged on the ability to fund the existing stormwater 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, stormwater utility, pay-as-you-go, fee-in-lieu-of charge, availability charge, and betterment charge). The taxing districts and

**Table 4-2. Pinellas County Stormwater Governance Study
Summary of Funding Options**

Funding Option	Management Services	Operation & Maintenance	Capital Improvements	Growth
Ad Valorem	✓	✓	✓	✓
Municipal Service Districts	✓	✓	✓	✓
Special Assessments			✓	✓
Local Government Sales Tax			✓	✓
Public Service Tax	✓	✓	✓	✓
Stormwater Utility Fee	✓	✓	✓	✓
Impact Fees				✓
Licenses/Permits	✓			
Penalties/Fines	✓			
Grants			✓	✓
Bonds			✓	✓

**Table 4-3. Pinellas County Stormwater Governance Study
Assessment of Funding Options**

Funding Option	Authority	Equity	Revenue Capacity	Ease of Implementation	Initial Costs	System Costs
Ad Valorem Tax	Yes	Low	Sufficient?	Easy	Low	Low
Municipal Service Districts Tax	Vote	Low	Sufficient	Difficult	Moderate	Moderate
Special Assessments	Ordinance	High	Insufficient	Difficult	High	Moderate
Local Government Sales Tax	Vote	Moderate	Insufficient	Difficult	Low	Low
Public Services Tax	Yes	Low	Insufficient	Easy	Low	Low
Stormwater Utility Fee	Ordinance	High	Sufficient	Moderate	Moderate	Low
Impact Fees	Yes	High	Insufficient	Moderate	Low	Low
Fees/Licenses/Permits	Yes	High	Insufficient	Moderate	Low	Moderate
Penalties/Fines	Yes	Moderate	Insufficient	Moderate	Low	Moderate
Grants	Yes	Moderate	Insufficient	Moderate	Low	Low
Bonds	Yes	N/A	Insufficient	Moderate	Low	Moderate

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 stormwater 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.

betterment charges may be the most difficult to adopt because the fees are generally based upon valuation of property.

Legal Ramifications. 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 stormwater 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 stormwater utility since it is based upon the payers potential contribution to the stormwater 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 stormwater management facility. The General Fund and the betterment charge are related to property valuation that does not consider stormwater 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 stormwater 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 stormwater 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 reluctant to do so.

Except for the stormwater utility and bond option, 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. Because the payment of the fee is spread over a large base, the stormwater 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 stormwater 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. Stormwater 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 stormwater 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 stormwater utility operational costs are low because the billing costs are small compared to the revenues collected.

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, Department of Revenue, and County GIS were obtained and summarized by URS. Parcel numbers by various categories (using the Department of Revenue Codes) and number of dwelling units were obtained for the unincorporated County as well as organized by drainage basin. **Table 4-4** shows the summary of the data updated to 2010.

As noted previously, almost all stormwater 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. Since impervious area data for all parcels are not available, an estimate of impervious areas was completed by using recent information from Pasco County where impervious areas were measured. To make the estimates, average impervious areas per dwelling unit were used for residential parcels and average impervious areas by general parcel type were used for non-residential parcels, both estimates of which were made based on assumed percent imperviousness by parcel type.

Table 4-5 shows the results of the impervious area estimates. The total estimated impervious area for the unincorporated County is 346.7 million square feet (sq ft) or about 10,500 impervious acres (note: this excludes roads and other similar infrastructure). With the total area of the unincorporated County as 67,712 acres, the overall imperviousness for the County is 15.5 percent.

An estimate of the potential revenue from a non-ad valorem assessment was obtained by using a simple rate structure to estimate the total Equivalent Runoff Units (ERUs). For residential parcels, the ERUs are equal to the number of dwelling units, 110,930. For non-residential parcels, the ERUs are equal to the estimated impervious area divided by the average impervious area for residential dwelling units (2,430 sq ft) to yield 38,450. The sum is the total estimated ERUs for the unincorporated County, 149,380 ERUs. For an assessment of \$10 per year, the total estimated revenue would be the total ERUs times \$10 or \$1.50 million. Thus, using the data and estimates provided above, it has been calculated that the unincorporated Pinellas County could generate about \$1.50 million for each \$10 per year per ERU of assessment.

To illustrate the use of this information, a number of options can be provided. For the current level of service (\$27.9 million) an assessment of \$187 per year per ERU is estimated. Separating the operating budget from the CIP, which is funded by the Penny for Pinellas Sales Tax, \$19.2 million is needed for Program Management, NPDES Compliance (improved to LOS C) and O&M for the current program. A rate of \$129 per year per ERU is estimated. Finally, for just the Program Management and LOS C NPDES Compliance (\$4 million), a rate of 27 per year per ERU is estimated.

**Table 4-4. Pinellas County Stormwater Management Governance Study
Summary of Parcel Data for Unincorporated County Updated to 2010**

		Parcels			Dwelling Units		
Parcel Type		Number	% of Total	% of Developed	DU	% of Total	Avg No of DU per Parcel
Residential							
	Single Family	60,758	60.8%	64.2%	60,431	54.5%	1.0
	Multi-family	1,998	2.0%	2.1%	9,808	8.8%	4.9
	Mobile Homes	5,300	5.3%	5.6%	5,290	4.8%	1.0
	MHP	104	0.1%	0.1%	7,201	6.5%	69.2
	Condos	21,840	21.9%	23.1%	21,840	19.7%	1.0
	Other	30	0.0%	0.0%	1,014	0.9%	33.8
Subtotal Residential		90,030	90.1%	95.1%	105,584	95.2%	1.2
Non-Residential							
	Commercial	1,666	1.7%	1.8%	3,428		2.1
	Industrial	1,120	1.1%	1.2%			
	Agricultural	50	0.1%	0.1%			
	Institutional	247	0.2%	0.3%	1,916		7.8
	Governmental	112	0.1%	0.1%			
	Miscellaneous	1,464	1.5%	1.5%			
Subtotal NonResidential		4,659	4.7%	4.9%	5,344		
Vacant							
	Residential	4,342	4.3%	4.6%			
	NonResidential	842	0.8%	0.9%			
Subtotal Vacant		5,184	5.2%	5.5%			
Total Unincorporated		99,873	100.0%		110,929	100.0%	
Total Developed		94,689		100.0%	110,929		

Estimated Population at 2.23 People per DU
Unincorporated Population in 2010

247,371
271,478

Table 4-5: Pinellas County Stormwater Management Governance Study
Summary of Parcel Data for Unincorporated County with Impervious Area Estimates

Parcel Type	Parcels			Dwelling Units			Impervious Area Estimate ¹		
	Number	% of Total	% of Developed	DU	% of Total	Avg No of DU per Parcel	Average Imperv. Per DU or Parcel (sq ft)	Estimated Imperv. Area (sq ft)	% of Developed
Residential									
Single Family	60,758	60.8%	64.2%	60,431	54.5%	1.0	2,800	169,207,368	48.8%
Multi-family	1,998	2.0%	2.1%	9,808	8.8%	4.9	1,850	18,145,048	5.2%
Mobile Homes	5,300	5.3%	5.6%	5,290	4.8%	1.0	3,340	17,667,826	5.1%
MHP	104	0.1%	0.1%	7,201	6.5%	69.2	3,340	24,050,733	6.9%
Condos	21,840	21.9%	23.1%	21,840	19.7%	1.0	1,060	23,150,400	6.7%
Other	30	0.0%	0.0%	1,014	0.9%	33.8	1,060	1,075,311	0.3%
Subtotal Residential	90,030	90.1%	95.1%	105,584	95.2%	1.2	2,431	253,296,686	73.1%
Non-Residential									
Commercial	1,666	1.7%	1.8%	3,428	3.1%		22,908	38,164,387	11.0%
Industrial	1,120	1.1%	1.2%		0.0%		40,377	45,222,449	13.0%
Agricultural	50	0.1%	0.1%		0.0%		1,678	83,921	0.0%
Institutional	247	0.2%	0.3%	1,916	1.7%		29,610	7,313,569	2.1%
Governmental	112	0.1%	0.1%		0.0%		7,898	884,629	0.3%
Miscellaneous	1,464	1.5%	1.5%		0.0%		1,207	1,767,559	0.5%
Subtotal NonResidential	4,659	4.7%	4.9%	5,344	4.8%			93,436,515	26.9%
Vacant									
Residential	4,342	4.3%	4.6%						
NonResidential	842	0.8%	0.9%						
Subtotal Vacant	5,184	5.2%	5.5%						
Total Unincorporated	99,873	100.0%		110,929	100.0%				
Total Developed	94,689		100.0%	110,929				346,733,201	100.0%

Note:

- 1 Impervious area estimates based on Pasco County: for residential, estimates based on average impervious area per DU; for non-residential, estimates based on average impervious area per parcel.
- 2 Estimated total area of Unincorporated County is 67,712 acres. The overall % imperviousness is 15.5 percent.



Section 5 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 do not specify precisely the extent of the county-controlled or operated stormwater system. 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 soon-to-be-issued new NPDES MS4 permit that will require 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 Public Works Department.
- The overall level of service for the County is LOS C which is characterized by adequate program management and NPDES compliance functions, average (LOS C) O&M program (generally described as a mixture of routine maintenance and inspection based maintenance along with response based repairs), and a slightly better than average (LOS C+) funding of capital improvement program.
- Of all of the stormwater programs, two stand out as needed improvement or enhancement: NPDES MS4 compliance and basin planning. With the issuance of the new NPDES MS4 permit, additional compliance activities are required.

Three or four 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 standard single family unit basis for the utility structure, the stormwater user fee could generate about \$1.88 million for each \$10 of assessment. The current total program could be funded by the assessment of about \$118 per year per ERU and the operational portion (i.e., without CIP) could be funded by about \$70 per year per ERU.

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 structure) 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 stormwater 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 however, but separate accounting is needed.
- A complete update to the stormwater facilities (assets) are needed to provide an asset management approach to stormwater management. To this end, GIS services and field staff are needed along with GIS capable equipment to precisely locate and characterize stormwater related data.
- Because of the potential TMDL 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.

- In light of a more regional approach to stormwater management, the County needs to approach the internal management of stormwater (and water quality, for that matter) activities in a more watershed related approach. One option is illustrated by the SWFWMD: define watershed specific management teams within multiple departments. That is, for each major watershed, form multi-departmental teams combining disparate perspectives to create panning activities that achieve multiple goals.

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 Stormwater Management.** A common colloquial phrase is “stormwater 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 BMAP (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. For example, if the County represents (based on modeling) 50 percent of the flow at the end of the basin, City X represents 30 percent and City Y represents 20 percent, then these percentages can represent the relative cost of the study as well as the cooperative portions of the implementation. 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.** 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. The new NPDES MS4 will increase this activity by adding single family residential construction inspection.
- **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.

- **Cooperative Agreement on O&M Responsibility.** A common issue in the County is which entity is responsible for maintenance for a particular stormwater facility. In general, the County is responsible for “major drainage systems” and facilities within the unincorporated County (except in the Pinellas Park Water Management District) and the cities are responsible for the secondary and tertiary systems within their city. Identification of individual responsibilities has not been done. This problem is exacerbated with annexation. Cities expect to annex areas without increasing their maintenance responsibilities so County staff continue to maintain a secondary system which is no longer in the unincorporated County. To clarify this problem a clear County-wide definition of O&M responsibilities must be defined collaboratively. O&M responsibility should be identified on the common GIS system.
- **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.



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Acronyms used in Stormwater Governance Report

NPDES = National Pollutant Discharge Elimination System

MS4 = Municipal Separate Storm Sewer System

TMDL's = Total Maximum Daily Loads

MSBU = Municipal Service Benefit Unit

MSTU = Municipal Service Taxing Unit

OFW's = Outstanding Florida Waters

WMD = Water Management District

LOS = Level Of Service

GIS = Geographic Information System