

# STORMWATER UTILITY FEASIBILITY STUDY

## FINAL REPORT



SUBMITTED TO: **CITY OF PARKLAND, FL**

DECEMBER 2022

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# Section 1

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## Introduction

The City of Parkland, Florida (the City) contracted with Keith and CDM Smith to consider a stormwater funding program for the City, focusing on a stormwater utility fee. The purpose of the stormwater utility is to provide the necessary funding to maintain an adequate level-of-service (LOS) for the City's stormwater management program. This study includes an analysis of the City's current stormwater management, operations and maintenance, capital improvements, and program administration practices and the current cost of those services. The study also includes consideration of potential future levels-of-service with consideration of the services already being provided by improvement districts within the City's boundaries. Finally, the study includes an evaluation of potential fees and rate structures to fund the program. A brief description of each task is provided below.

### Phase I - Feasibility Study

#### **Task I-1      Stormwater Program Assessment**

The CDM Smith team prepared an analysis of the City's current stormwater management practices and plans to determine the current level of service for operations and maintenance, capital improvements, and program management and administration. The CDM Smith team provided recommendations and planning-level costs regarding improvements to the level of service. The assessment included the following elements:

##### **Task I-1.1      Review of NPDES Phase II Permit Information**

The CDM Smith team reviewed the NPDES Phase II Permit issued to the City of Parkland and subsequent annual reports. This information was used to establish minimum regulatory requirements and obligations for the City.

##### **Task I-1.2      Development of Independent Assessment of Current Program**

The CDM Smith team developed an independent stormwater management program assessment that was used to identify the program's current levels of service. This assessment serves as a baseline for determining the changes, if any, to program structure, staffing, and funding needed to achieve an increased level of service.

The CDM Smith team met with and/or interviewed appropriate staff members to identify and describe programs and services provided by the City of Parkland's stormwater management program in four functional areas – Program Management, Regulatory Compliance, Operations & Maintenance, and Capital Improvements. The CDM Smith team prepared, using available information, an estimate of the current budget for stormwater management-related activities that are provided by the City across all departments.

The CDM Smith team conducted a half-day windshield survey with the City's staff of the critical areas in the City of Parkland to develop an understanding for the condition and operation of the stormwater system. The CDM Smith team reviewed basic stormwater system information

compiled by the City that identifies the location, age, and condition (as available) of elements of the collection system. In addition, the CDM Smith team reviewed the City's stormwater system maintenance plans, Capital Improvement Program, FDEP regulatory requirements (where applicable), and State 303(d) reports to US EPA (if any) to gain a better understanding of minimum commitments the City has related to stormwater. The CDM Smith team also reviewed existing City stormwater management and development standards and requirements to develop an understanding of basic program administration requirements for projecting existing and future staffing and funding needs.

As part of an operations and maintenance evaluation, an adequacy of service evaluation was performed through interviews with personnel responsible for constructing and maintaining the drainage system. This assessment assisted in identifying the allocable cost for maintenance to a storm water funding source based upon the present level of service and also established a basis for projecting increased O&M activities associated with increased levels of service.

To provide for a completely self-sustaining comprehensive storm water utility, other pertinent storm water-related activities were identified and included in the program cost. These costs included storm water planning, complaint response, regulatory compliance and enforcement and project design and inspection.

Finally, the CDM Smith team collaborated with the City of Parkland to identify the current service area of the city and determine which services are provided within the service area. The review also identified what services are being provided by the respective drainage districts that operate within the Parkland city limits.

### **Task I-1.3    Levels of Service Evaluation**

Based on the information gathered in Tasks I-1.2, the CDM Smith team assigned a level of service "grade" to the existing stormwater program in four key service areas: Operations and Maintenance, Program Management and Regulatory Compliance, and Capital Improvements. Grades considered ranged from an "A" for an advance, proactive program to "F" for a non-compliant and reactive program. The CDM Smith team also estimated the cost of improved levels of service based upon benchmarking data compiled by CDM Smith from other projects. The improved level of service costs did not include detailed cost estimates of services to be performed by the City but are adequate to estimate future funding level needs for program-level improvements and assess the impacts on the available funding alternatives.

Annual budget estimates for the current level of service and planning-level estimates of improved program service levels were developed for the Phase I Feasibility Study. These estimates were a lump sum allocation by major activity or department/division to the capital budget or debt service for the City's budget.

### **Task I-2    Identification and Discussion of Alternative Funding Sources**

The CDM Smith team identified and compared the potential funding sources that may be used to fund the existing or recommended stormwater management program. These funding sources considered taxes (ad valorem, municipal service districts, special assessments and local government sales & use taxes), public service enterprise fees (i.e., user fees or stormwater utility fees) and other funding programs (e.g., impact fees, grants, and low interest loans). Authorized in

various subsections of the Florida Administrative Code, funding methods were researched to define the specific limitations allowed by state law and a comparison of each method was offered. The CDM Smith team provided additional focus on the stormwater utility funding option as it is identified as a primary area of interest for the City. The comparison will include a summary of individual program advantages and disadvantages and recommendation of approach.

### Task I-3      **Parcel Analysis**

The CDM Smith team initiated the necessary “desk top” data management activities to identify available parcel information from the Assessor and the City billing system. The CDM team assigned each parcel within the City to one of the following land use categories:

**Table 1-1 Parcel Land Use Categories**

Residential	Non-Residential
Single Family Residential	Commercial
Multifamily Residential (2-10 units)	Commercial Condo Developments
Multifamily Residential (10+ units)	Institutional
Condominiums	Governmental
Vacant Residential	Vacant & Undeveloped

The CDM Smith team used the parcel data provided by the City to estimate impervious area by land uses. For the residential uses, CDM Smith digitized impervious areas (rooftops, parking areas, decks, driveways, sidewalks, etc.) on a representative sample set of up to 300 parcels across each of the residential classifications using base digital aerial images in ArcGIS format provided by the City.

For this Phase, the nonresidential parcel impervious area was estimated based on information in the City files. CDM Smith used this information to help the City to develop a stormwater utility rate structure that equitably apportions the fees to the fee payers (customers). The goal was to develop a fair and equitable equation to allocate stormwater management costs.

### Task I-4      **Rate Structure Alternatives**

The CDM Smith team used the residential and non-residential data to assess up to two rate structures, mixing different residential and non-residential rate variables. Each of the assessed alternatives were compatible with the City’s utility billing system. In particular, CDM Smith considered alternative rates across the various service districts within the City to acknowledge that some stormwater services may be provided by others.

As part of this analysis, CDM Smith considered potential exemptions, assumed to be less than five percent of all accounts. Potential exemptions included roadways (since they are essentially part of the stormwater system), portions of parcels discharging outside of the City and parcels with existing stormwater management facilities that provide complete runoff control and full retention for a given storm event. The rate structure also considers potential credits for on-site stormwater control facilities that reduce the burden of a property’s impervious area on the City’s system.

The rate structure was assessed based on equity and fairness as well as the fiscal consequences of the choices. CDM Smith’s rate model provided stormwater management program costs (from

Existing and Future Program Review) and an assessment of the revenues and costs for various rate structure alternatives.

### **Task I-5      Implementation Requirements**

The CDM Smith team produced requirements necessary for implementation of a stormwater funding mechanism. The requirements included a schedule of recommended tasks to implement a stormwater utility fee program or alternative funding method. The implementation requirements included key activities, milestones, and major decision points for implementation of the funding program.

### **Task I-6      Final Study Report**

The CDM Smith team produced a Feasibility Report summarizing the work of Tasks I-1 through I-5. The Feasibility Report serves as the basis for the stormwater program's modifications to level of service and preferred funding options.

## Section 2

# Stormwater Program Assessment

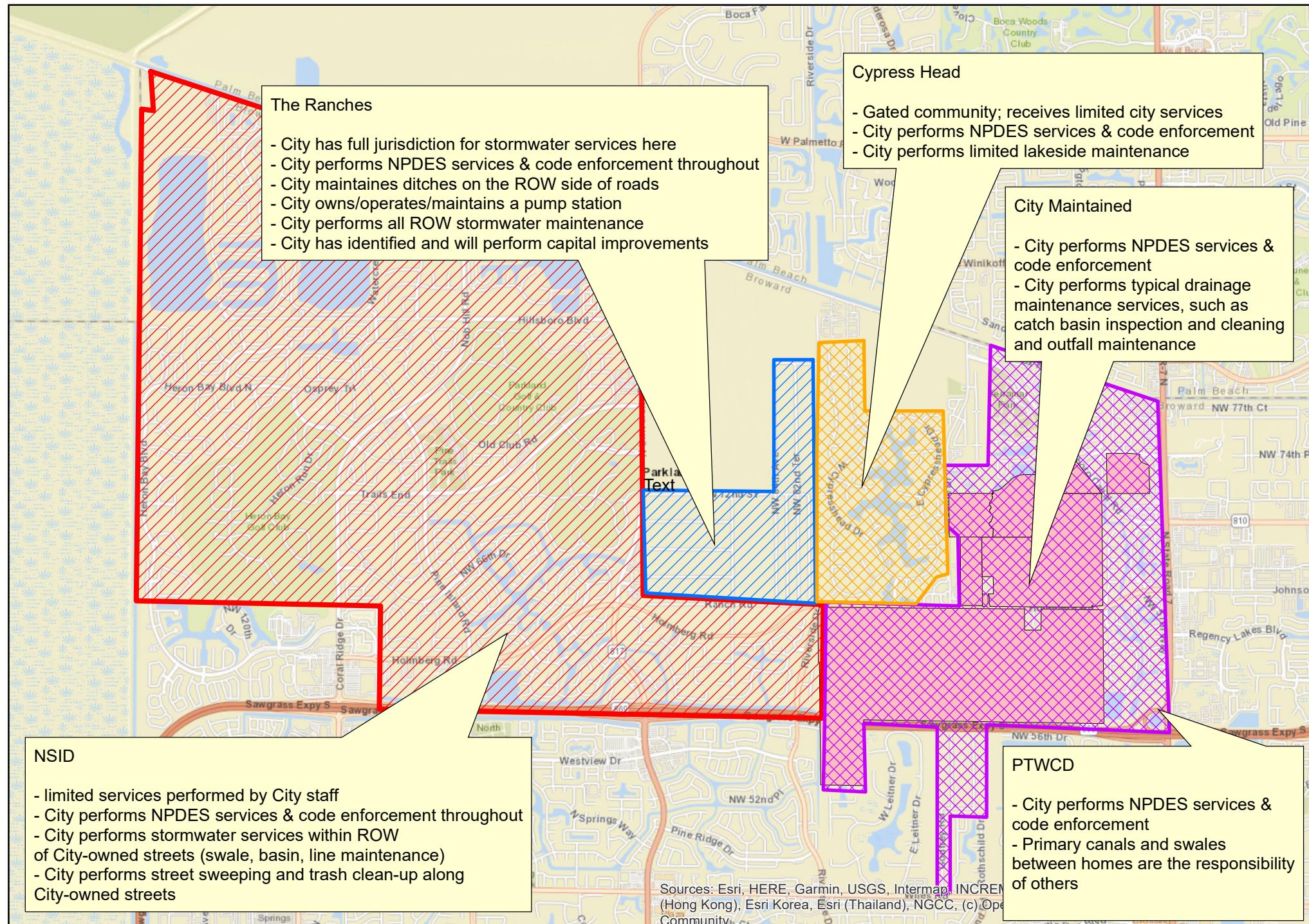
### 2.1 Service Area Characteristics

The City of Parkland is located in northern Broward County, FL and has a land area of approximately 15 square miles. The northern boundary of Parkland coincides with the border of Broward and Palm Beach counties. The eastern boundary of Parkland is Coconut Creek, the southern boundary is Coral Springs and the western boundary is the Everglades.

The current population of the City according to the US Census Bureau is approximately 34,670 (April 2020) and the City's website lists an eventual population of approximately 35,000. Thus, the City is nearing build-out conditions. Land use in the City is dominated primarily by single family housing with some small pockets of commercial development. The US Census Quickfacts lists the median income as approximately \$160,000, and the estimated median house value as \$631,000.

Stormwater runoff in the City is conveyed through a series of natural drainage ways, man-made canals/ditches, swales, catch basins, storm sewer pipes and culverts. However, the City is not responsible for all stormwater-related services within its jurisdictional boundary. Others providing stormwater and drainage related services within the City include North Springs Improvement District (NSID), Pine Tree Water Control District (PTWCD), and Parkland Utilities. In addition, some HOAs provide their own drainage services. CDM Smith and City staff held meetings with each of the Districts to discuss and confirm the servicers provided.

NSID performs a majority of the stormwater service for the western portion of the City. PTWCD performs limited stormwater services in the eastern portion of the City. The Cypress Head subdivision is served by Parkland Utilities and is privately maintained. The City has varying levels of drainage system maintenance responsibilities for the following districts/neighborhoods: "The Ranches", Parkwood IX, Cypress Trail, Riverside Acres and Pine Tree Estates. A map of the various service areas is shown in **Figure 2-1**. Section 2.4 of this document includes a more detailed accounting of the division of services provided across the City.



## 2.2 Stormwater Management Components

For the purposes of this report, stormwater management activities for the City have been organized into four categories as described below:

- **Program Management Services (PGM)** – this area of activities provides for the management and planning of the stormwater assets for the City. Included are program administration, planning, development review, total maximum daily load (TMDL) program management, enforcement and monitoring.
- **Regulatory Compliance Services (MS4)** – this includes the NPDES MS4 permit compliance activities that are not otherwise accounted for in the other categories as well as code enforcement efforts.
- **Operation and Maintenance Services (O&M)** – these activities include the maintenance of the stormwater assets of the City including pipe repair and replacement, pipe cleaning, mowing, street sweeping, ditch clearing and other drainage-related maintenance activities.
- **Capital Improvement Program (CIP)** – this includes major construction of new stormwater assets for the City. Projects are generally identified annually.

## 2.3 Stormwater Levels of Service (LOS)

In an ideal world with unlimited funding, stormwater management activities would be completed at the highest level, routinely maintaining all systems, constructing facilities to control every storm, planning for all watersheds to ultimate build out, and award winning NPDES compliance. In reality, such funding is not available and thus, services must be provided at a reasonable level, desired by the public and efficiently achieved using the limited funding available. This level, known as the LOS, varies depending on the desires of the community and the issues that need to be addressed.

In order to define the stormwater services provided by the City to its citizens, stormwater services will be compared to a set of standards. The term “LOS” is used in this study to describe the magnitude of beneficial results gained by the community and the environment from the City’s stormwater program. A higher LOS will result in more beneficial results in terms of better flood control and protection, better control of erosion and sedimentation, and better water quality and stream habitat. This LOS concept is useful for assessing each of the four major stormwater program areas that have been described previously (Program Management, Regulatory 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 “F” being the lowest. These standard definitions facilitate evaluation of the level of service currently being provided by the City’s 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 2-2**). 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 City’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 LOS. This also provides a basis for determining the revenue required to fund each LOS.

### 2.3.1 Program Management Level of Service Descriptions

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

- Comprehensive planning of 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 management practices.
- A proper staffing level of City 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 City personnel to monitor and enforce City 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 allows the City to qualify and gain priority for potential funding opportunities when they are available to the City 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 City to make better decisions as to where to apply resources to gain the most benefit and as to the effectiveness of past and ongoing activities in achieving desired benefits.

**Figure 2-2**  
**City of Parkland, Florida**  
**Stormwater Utility Feasibility Study**  
**Stormwater Program Level of Service Matrix**

Level of Service	Program Management	Regulatory Compliance	Operation and Maintenance	Capital Improvement Projects
A	Comprehensive Planning & Full Implementation Capabilities	Exemplary Permit Compliance	Fully Preventative/ 100% Routine	Prioritized / Fully-Funded
B	Pro-Active Planning & Systematic CIP Implementation Capabilities	Pro-Active Permit Compliance	Mixture of Routine and Inspection Based	Phased Implementation / Allocated Budgets
C	Priority Planning & Partial CIP Implementation Capabilities	Minimal Permit Compliance	Mixture of Inspection and Responsive Based	Complaint, Inspection-Based / Moderate Budget
D	Reactionary Planning & Minimal CIP Implementation Capabilities	Below Minimum Permit Compliance	Primarily Responsive	Critical Needs Only / Minimum Budget
F	No Planning & No CIP Implementation Capabilities	Non-Compliance	Non-Responsive	No Planning / No Budget

To a large degree, the level of service of the program management area depends upon the corresponding level of service of the other major program areas. This is because City 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 City development and environmental regulations (e.g., plan review and inspections for soil and erosion control and floodplain regulation, and inspections of stormwater facilities controlling existing development). 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.

The Levels of Service for Program Management are described below:

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

### 2.3.2 Regulatory 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 Broward County population based on the 1990 Census was above 100,000, the City became a co-permittee to the County's Phase 1 permit (Permit No. FLS000016). Compliance with the permit requires the City to perform 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 A:** Includes exemplary and/potentially award-winning compliance with State and Federal NPDES permit requirements.
- **LOS B:** Provides proactive compliance with permit conditions and represents activities that are better than simply a minimal compliance with the letter of the permit, no substantive comments or requests from the annual report review and associated FDEP inspection.
- **LOS C:** Middle-of-the-road and minimal accepted LOS with adequate compliance with permit conditions, some comments received during the annual review, but no major compliance issues are received from FDEP.
- **LOS D:** Not complying with permit conditions, characterized by substantive comments on the annual report and during the annual inspection.
- **LOS F:** non-compliance with major permit conditions, with the permittee subject to potential fines from the state for noncompliance.

### 2.3.3 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 City'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 near 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.

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

- **LOS A:** Highest O&M service level that is fully preventative – all maintenance is completed routinely, addressing every stormwater facility once or more each year.
- **LOS B:** Mixture of routine and inspection-based maintenance. Critical structures are routinely maintained, both periodically during each year and possibly before each storm event, and non-critical structures are maintained based on inspection.
- **LOS C:** Inspection based maintenance whereby all structures are routinely inspected by management and maintenance is schedule according to the inspection.
- **LOS D:** Complaint-based maintenance – all maintenance is done based on citizen complaints; generally characterized by work order-based activities resulting from citizen call in complaints.

- **LOS F:** Less than complaint-based maintenance, with limited or no ability to even respond to complaints.

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

### 2.3.4 Capital Improvements 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 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 planning or lack thereof for capital needs, the level of annual funding, and rate of implementation for identified capital improvement needs. 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. However, it should be noted that delayed implementation of some capital improvements would likely increase the costs of the required improvements, thus further delaying the schedule for full implementation.

## 2.4 Description of Current City Stormwater Program

As noted in Section 2.1 and shown in Figure 2-1, stormwater services within the City are provided by various parties and at different levels within five primary services areas. These five distinct service areas have been identified as: City-Maintained Areas, The Ranches, NSID, PTWCD, and Parkland Utility District (i.e. Cypress Head).

For the purposes of this report, the primary stormwater management system is the canal system operated by South Florida Water Management District (SFWMD). The secondary system is a series of canals that discharge to the SFWMD primary canals. The tertiary system is the system of pipes, ditches and swales that discharge to the secondary system.

NSID is a separate improvement district with structured service for stormwater management, among other things. NSID addresses stormwater management on the primary stormwater infrastructure paid for by assessments. Based on conversations with the City, the City provides Code Enforcement and NPDES MS4 permit coverage within the NSID area and occasional emergency maintenance services along City-owned streets within NSID. Otherwise, the remaining stormwater services within this area are performed by NSID staff.

PTWCD provides stormwater services for the secondary canals in its district, but the operation and maintenance activities for the tertiary system is performed primarily by property owners adjacent to the swale system. The City may perform emergency stormwater services within Pinetree as well as stormwater system maintenance within the right-of-way of City-owned streets. The City also performs Code Enforcement and provides NPDES MS4 permit coverage within the PTWCD.

Cypress Head is a large, private gated community within Parkland, served by Parkland Utilities. Since it's within the City's jurisdiction, the City performs Code Enforcement and provides NPDES MS4 permit coverage within Cypress Head. However, all other stormwater services are the responsibilities of the HOA and the drainage system discharges to a series of canals that are not the responsibility of the City.

For the central portion of the City called "The Ranches", City staff provide all stormwater services including Program Management, Regulatory Compliance, Operation and Maintenance and Capital Improvements as required.

For select neighborhoods, the City performs Code Enforcement, NPDES MS4 permit compliance, operations and maintenance of the drainage systems (including ditches, swales, pipes, catch basins, outfall structures, etc). These neighborhoods include: Parkwood IX, Pinetree Estates, Riverside Acres and Cypress Trail. For the purposes of this report, these areas will collectively be referred to as "City Maintained Areas." At present, no stormwater-related capital improvement projects are planned by the City for these areas.

The following subsections describe the types of services performed by the City, the responsible departments/staff and the estimated annual cost of the service provided:

#### **2.4.1 Program Management**

Program management is accomplished by leadership in the Public Works Department and Development Services. Services include administration and planning for the stormwater program. Based on interviews with staff, Program Management services are said to be mostly reactive. The City does not have a comprehensive system to track calls and complaints. The City also does not have a comprehensive inventory of its stormwater assets. However, in parallel to this project, the City was able to fund and complete a stormwater master plan to identify future program needs.

Since a line item allocation was not available in the City's budget, CDM Smith estimated the approximate annual cost of these services though information gathered across City staff interviews. This estimate included 10% of the Public Works Director and the Development Services Director's time, 5% of the Senior Administrative Assistant's time, and 5% of the

Government Affairs Administrator's time. Based on these estimates, the approximate annual stormwater service cost for Program Management is \$46,000. This service is provided city-wide throughout all 5 service districts.

#### **2.4.2 Regulatory Compliance**

Regulatory compliance, which generally includes Code Enforcement and NPDES MS4 permit activities, is completed by staff in the Engineering Department. The permit (FLS000016-004) was issued to Broward County in January 2017 with Parkland (and others) as a co-permittee and expired in January 2022 (permit has yet to be renewed but has been administratively continued until a new permit is issued). Annually, the City staff identify stormwater management accomplishments for the co-permittee annual report with Broward County. Activities performed by City staff and/or through contract services include inspections, education, code compliance/enforcement, aquatic weed control, and tracking of water quality controls at City facilities. Staff noted that the MS4 program is currently stable and that needs are fairly well understood for the near future. An audit of the program in 2016 revealed only minor deficiencies that have been addressed. Staff noted that a complete drainage system inventory would be beneficial, but that the current inventory is satisfactory to regulators.

Since a line item allocation was available in the City's budget to identify the cost of stormwater regulatory compliance, CDM Smith estimated the approximate annual cost of these services through information gathered across City staff interviews. This estimate included 60% of the City Engineer's time, 50% of the time for each of the two Code Enforcement officers, and 20% of the Engineering Inspector's time (i.e. for GIS assistance). Based on these estimates, the approximate annual stormwater service cost for Regulatory Compliance is \$164,000. This service is provided city-wide throughout all 5 service districts.

#### **2.4.3 Operation and Maintenance**

The Public Works Department performs customary stormwater system maintenance work. Along city-owned streets, Public Works performs swale, ditch, catch basin, pipeline, and outfall maintenance. The City also performs street sweeping along these streets. Some of this work is performed with City crews, while other portions of the work are performed through contract services. The City estimates that all catch basins on City streets are inspected approximately three times per year. The City does not have a work order system to track these completed maintenance activities at this time, but has budgeted for implementation of a tracking system in the future. With current staffing, equipment, and funding limitations, most maintenance services are performed in response to customer calls and complaints and typically are not performed on a routine, scheduled basis. These services are performed for the following neighborhoods: Parkwood IX, Pinetree Estates, Riverside Acres and Cypress Trail.

Within "The Ranches" service area, City provided services are more comprehensive, albeit still reactive in nature. The City owns, operates and maintains one pump station in The Ranches. The pump station requires upgrades but it would need to be permitted before these upgrades can be performed. The City maintains the banks of the drainage ditches in the Ranches only along the roadside edge. The banks on the opposite side of the ditches are the responsibility of the property owner. The ditches in The Ranches likely need dredging to improve performance and

flow capacity. Crossing structures such as culverts and other feeder ditches have not been evaluated for maintenance or adequacy.

For the PTWCD, there appears to be a gap in service between what Pinetree provides and what the City provides. PTWCD provides maintenance of the primary canal system but the remaining maintenance of the tertiary system is the responsibility of the property owner (mowing, etc). Significant bank failures were observed in the PTWCD. Currently, PTWCD will have responsibility for repairing the bank failures but the City will be responsible for maintenance of the outfall structures to the ditch. Road conditions were also poor in numerous areas within PTWCD and it's suspected that the inadequacy of the drainage system in the area could be a significant, contributing factor.

A line item allocation is not available in the City's budget to identify all Operations and Maintenance cost related to stormwater. Therefore, CDM Smith developed an estimated, average annual cost for this current service level based on approximate staff time utilized for stormwater activities as well as contracts bid by the City to perform these services. The following table summarizes the cost items used to develop the estimate:

**Table 2-1 Operations and Maintenance Annual Cost Elements**

Cost Category	Description	Average Annual Cost
Staff Labor	15% of crew time	\$74,000
Drain/Line Cleaning	Contract work	\$12,000
Lakeside Maintenance	Contract work	\$10,000
Drainage & Swales	Budget Item for Annual Maintenance of Ternbridge Ditch	\$65,000
Canal Maintenance	Contract work	\$13,000
<b>TOTAL</b>	<b>ANNUAL OPERATIONS &amp; MAINTENANCE COST</b>	<b>\$174,000</b>

#### 2.4.4 Capital Improvements

Until recently, the City did not have a Capital Improvements Plan for stormwater that captured anticipated future needs for the program. Projects performed previously were identified on an as-needed basis, typically to address potential system failures. However, in parallel to this report effort, the City has completed a stormwater master plan that identifies future capital stormwater needs. This effort will inform the discussion of future capital needs in later sections of this report.

According to staff, there are very few structural flooding issues in the City. Staff noted that many areas experience ponding on roadways during significant rain events, but the streets drain within an hour to 90 minutes after the event. Nevertheless, there are known areas of flooding that must be addressed in the future, including issues along Bishop Pit Rd, the intersection of Holmberg Rd and Pine Island Rd, and a significant flooding issue in the Ranches off NW 66<sup>th</sup> Lane. The Stormwater Master Plan addresses these issues.

Based on a review of prior year budget documents and discussions with staff, the City currently spends approximately \$100,000 per year to address stormwater-related flooding projects and/or ditch repair work. These projects included Ternbridge Ditch Maintenance (grant funded), Ranches Drainage Ditch Overgrowth Trimming, and a flood improvement project in the Ranches.

## 2.4.5 Summary

**Table 2-2** summarizes estimated, average annual budgets for the stormwater activities within the City of Parkland for the current level of service. The total expenditure for annual stormwater services is estimated at \$484,000, with the General Fund as the primary funding source.

**Table 2-2 Average Annual Cost of Stormwater-Related Services in Parkland**

Cost Category	% of Total Program Costs	Average Annual Cost
Program Management	10%	\$46,000
Regulatory Compliance	34%	\$164,000
Operations and Maintenance	36%	\$174,000
Capital Improvements	21%	\$100,000
<b>TOTAL AVERAGE ANNUAL PROGRAM COST</b>		<b>\$484,000</b>

Based on a review of the existing City stormwater program by CDM Smith, discussions with City staff members, and the level of service definitions provided previously, the level of service ratings for the current City stormwater program are shown in **Figure 2-3**. Overall, the City is assessed as being a C- for the LOS, primarily due to the reactive nature of program activities to address only the most critical items on an annual basis. Adequate resources have not been allocated in prior years to address known needs and a long-range plan has only recently become available to identify or prioritize the future needs of the program. Also, few of the resources in the budget are dedicated exclusively to address stormwater services. Most resources are shared between departments with competing priorities, which prevents providing a higher level of service.

**Figure 2-3**  
**City of Parkland, Florida**  
**Stormwater Utility Feasibility Study**  
**Independent Assessment of Stormwater Program Level of Service**

Level of Service	Program Management	Regulatory Compliance	Operation and Maintenance	Capital Improvement Projects
A	Comprehensive Planning & Full Implementation Capabilities	Exemplary Permit Compliance	Fully Preventative/ 100% Routine	Prioritized / Fully-Funded
B	Pro-Active Planning & Systematic CIP Implementation Capabilities	Pro-Active Permit Compliance	Mixture of Routine and Inspection Based	Phased Implementation / Allocated Budgets
C	Priority Planning & Partial CIP Implementation Capabilities	Minimal Permit Compliance	Mixture of Inspection and Responsive Based	Complaint, Inspection-Based / Moderate Budget
D	Reactionary Planning & Minimal CIP Implementation Capabilities	Below Minimum Permit Compliance	Primarily Responsive	Critical Needs Only / Minimum Budget
F	No Planning & No CIP Implementation Capabilities	Non-Compliance	Non-Responsive	No Planning / No Budget

Note:  denotes independent level of service determination for given program area

## 2.5 Expanded LOS

The scope of work for the Phase 1 Feasibility study does not include the development of detailed plans and budgets for future levels of service. However, CDM Smith has provided suggested improvements for each program area and has applied program-level benchmarking data generated from prior experience developing stormwater programs to estimate potential annual budgets to provide a higher level of service. This information can be used to consider potential rate implications for a stormwater utility program.

### 2.5.1 Potential LOS Enhancements

**Program Management.** Current program management services are provided across departments. If the program were to migrate to a stormwater utility, it is unclear at this time where the program would be housed and how it would be structured. A new organizational structure may be required, potentially led by a new Stormwater Manager position. With the recent completion of a Stormwater Master Plan, the City has an understanding of potential future capital project needs. Continuing to update and identify this plan as needs evolve will be critical to improving the Program Management level of service. Each of these activities would raise the City's current level of service to a B over time.

**Regulatory Compliance.** As noted in Section 2.4.2, the current regulatory compliance program is stable and well understood with the City meeting minimum regulatory compliance. However, development of a complete stormwater inventory would benefit the program in numerous ways and raise the level of service to B. Other improvements to this area are not recommended at this time until permit requirements change.

**Operations and Maintenance.** At present, no maintenance staff are dedicated solely to providing stormwater management services. Also, the City has limited ability to track activities performed by staff. Raising the level of service will require, at a minimum, development of a routine inspection and maintenance program as well as the ability to document and/or schedule these activities through an asset management approach (i.e. maintenance management system). Also, programs that provide a level of service in the B range typically have at least one dedicated maintenance crew. Based on discussions with staff, a 4-person maintenance crew (1 operator plus 3 technicians) would cost approximately \$225,000 annually. This crew would also need to be outfitted with equipment estimated at a one-time charge of approximately \$200,000 (\$150,000 for a vac truck and \$50,000 for miscellaneous tools). This dedicated crew would provide immediate benefits to the program in terms of the performance capacity of the system and extend the system design life.

**Capital Improvements.** Completion of the Stormwater Master Plan was critical in identifying future stormwater program needs. The master plan identified approximately \$23.5M in capital needs with the Ranches district. An additional \$5M in capital needs were identified within Pine Tree Estates. Fortunately, the City has already received funds from the American Rescue Plan to address the most near-term needs in both districts. Also, the master plan includes reclamation of ditches that would require future political action at an undetermined time. Therefore, this report only considers near-term needs in the Ranches, which includes approximately \$3.5M to add storage capacity for flood control improvements. A project of this size would likely be included in a bond over 20-30 years, with debt service paid for by the stormwater utility, if implemented. Or,

the City may consider pursuing other grants such as those provided by the American Rescue Plan or other infrastructure funding programs to pay for large capital investments.

## 2.5.2 Enhanced LOS Planning Level Cost Summary

As noted above, the current overall LOS for the City is in the C-D range. The additional programs suggested are based on the understanding of the current stormwater programs in the City and experience with other City-wide programs in Florida and the US. The City should strive to achieve at least LOS C over the first 3 to 5 years of the stormwater utility program in order to demonstrate progress. Over time, most cities with a dedicated funding source aim to achieve a LOS B program. **Table 2-3** summarizes planning-level, average annual budget estimates for improved level of service. These costs are developed from CDM Smith databases of other stormwater programs in the southeast and applied on a per capita basis to Parkland. The table can be used to plan for future funding levels. Since the City of Parkland does not provide stormwater services uniformly to all areas within its jurisdiction, expected program costs for Parkland will likely fall between the “min” and “avg” range on this chart. For example, if Parkland planned to budget for a LOS C program, the expected average annual budget will likely fall between \$570,000 and \$1,039,000.

**Table 2-3 Average Annual Program Costs for Improved Levels of Service**

Level of Service	Average Annual Program Cost		
	Min	Avg	Max
LOS A	\$2,046,000	\$2,115,000	\$2,184,000
LOS B	\$936,000	\$1,525,000	\$2,080,000
LOS C	\$589,000	\$1,075,000	\$2,808,000
LOS D	\$416,000	\$728,000	\$971,000

## Section 3

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# Parcel Assessment

A stormwater utility program includes a utility fee or assessment that is generally based upon the amount of impervious area on a customer's land. Generally, the greater the amount of impervious area, the greater amount of the stormwater runoff and subsequently, the greater the effort the city needs to expend to control the runoff. While there are a number of parameters that are related to runoff, the best is the amount of impervious area. Therefore, to understand the stormwater fee or assessment for Parkland, this project included a study of impervious area as well as other parcel information that may be pertinent to the utility fee. It should be noted that most of the methods described below apply to both fees and assessments alike, the word fee below will mean both fee and assessment unless otherwise noted.

It has been found in Florida and other parts of the country that there tends to be two distinct categories of parcels which need study: residential and non-residential. Generally, the impervious areas of residential parcels represent relatively uniform classes while the impervious areas for non-residential parcels vary significantly. This is also true of Parkland, although the non-residential areas represent a very small percentage of the total land area in the City.

Provided in this section is a discussion of the parcels in the study area. The data used in the analysis were obtained from the City of Parkland and augmented by property assessor information provided by Broward County. A brief description of the data and techniques used is provided prior to the consideration of the results for each general parcel type.

### 3.1 Parkland Parcel Data Summary

**Table 3-1** provides a summary of the parcel count across the entire City jurisdiction as well as the percentage of the total parcels categorized by land use type. As noted, the parcel distribution is dominated by residential use, totaling 80 percent of the 12,632 total parcels. 68 percent of all parcels in the City are single family homes and single family parcels represent 85 percent of all residential land-use. Non-residential use is only 2 percent of the total parcels. Approximately 17% of the parcel numbers are labeled as "undeveloped" or include portions of street rights-of-way (ROW).

From an impervious area perspective, residential land uses contain approximately 85% of all impervious area within the City. The remaining is non-residential use. These estimates are based upon a statistical sampling effort to calculate the average impervious area for various types of land use. A gross estimate of non-residential impervious area was also performed by reviewing aerial photography for the City. These measurements are sufficient to create a rate model to support fee development during the feasibility phase.

**Table 3-1 City-wide Parcel Distribution & Estimated Impervious Area**

Parcel Type	Number of Parcels	% of City Parcels	Dwelling Units (d.u.) <sup>1</sup>	Est'd Impervious Area (sq. ft.)		
				Total	Avg/d.u. <sup>3</sup>	
Residential SFH	8,627	68%	8,649	45,338,058	5,242.0	
Residential Semi Detached	504	4%	504	1,030,680	2,045.0	
Residential Condominium	429	3%	429	844,272	1,968.0	
Residential Multifamily	1	0%	396	743,688	1,878.0	
Residential Common Elements/Area	612	5%	0	0	0.0	
<b>Residential Subtotal</b>	<b>10,173</b>	<b>80%</b>	<b>9,978</b>	<b>47,956,698</b>	<b>4,806.2</b>	
Nonresidential estimate**	222	2%	n/a	8,973,000	n/a	
Miscellaneous/mixed use (43)	199	2%		included in total above		
Undeveloped/ROW	2,176	17%				
<b>Non-Residential Subtotals</b>	<b>2,597</b>	<b>20%</b>		<b>8,973,000</b>		
<b>City-Wide Totals</b>	<b>12,770</b>	<b>100%</b>		<b>56,929,698</b>		

<sup>1</sup> Dwelling units count based on City data<sup>2</sup> Impervious Area Estimate includes 10% safety factor<sup>3</sup> Based on measured sample data in Parkland

## 3.2 Impervious Area Assessment

The following section summarizes the impervious area analysis performed for Parkland.

### 3.2.1 Residential Parcels

The various subcategories for residential parcels are discussed below.

**Residential Single-Family Homes (SFH).** According to the database, there are 8,649 single family parcels in Parkland, representing about 68 percent of the parcels. CDM Smith measured a statistically significant sample of these single-family parcels (235 parcels) to develop an estimate of the median impervious area of single-family residential parcels in Parkland.

A statistical summary of the data generated for the 235 single-family parcels is shown in **Table 3-2**. The median impervious area is 5,242 square feet, with a standard deviation of 2,976 square feet (meaning a somewhat wide distribution). Table 3-2 also shows the distribution of the SF parcels. The smallest SF was 2,444 square feet and the largest was 32,452 square feet. A graph of the frequency distribution is provided in **Figure 3-1**. The ratio of the 10th percentile to 90th percentile is approximately 2.76, which indicates a relatively wide distribution of single-family home impervious areas.

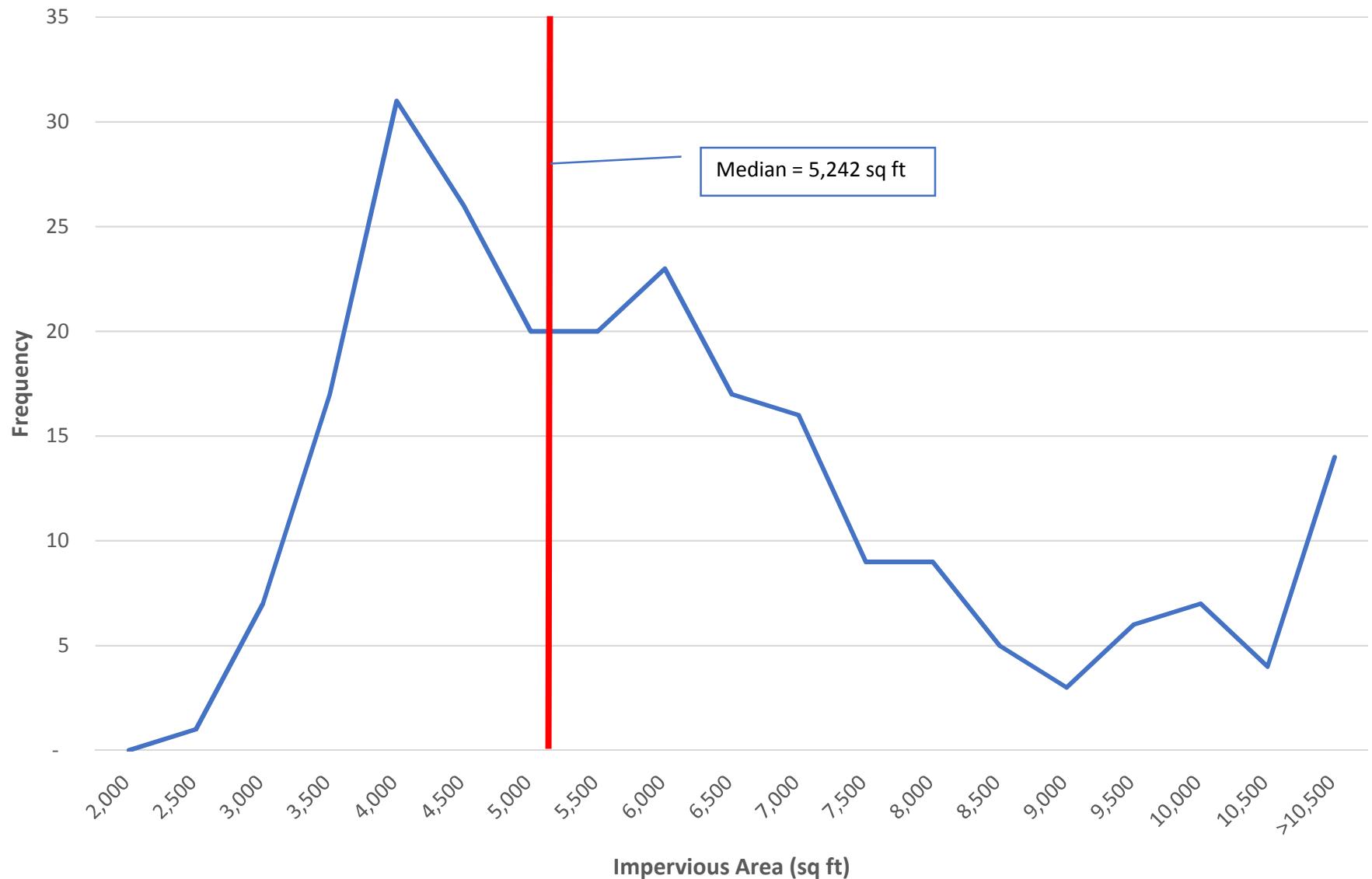
**Multi-family Parcels.** There is only one multifamily parcel in the City representing 396 dwelling units. Impervious area data for the parcels indicate that the average impervious area per multifamily dwelling unit is about 1,878 sq ft, about 1/3rd of the median for single family units.

**Condominiums.** There are 429 condominium units within the City. The average impervious area per unit is 1,968 square feet.

**Table 3-2**  
**City of Parkland Stormwater Utility Feasibility Study**  
**Summary of Single Family Parcel Impervious Area (sq. ft.)**

Impervious Area (sq ft)	Frequency	Single Family General Statistics for Impervious Area (sq ft)	Percentiles	Value
2,000	-	Mean	5%	3,139.5
2,500	1	Median	10%	3,451.0
3,000	7	Mode	15%	3,750.1
3,500	17	Standard Deviation	20%	3,875.6
4,000	31	Sample Variance	25%	4,057.7
4,500	26	Kurtosis	30%	4,216.8
5,000	20	Skewness	35%	4,501.8
5,500	20	Range	40%	4,811.1
6,000	23	Minimum	45%	5,067.7
6,500	17	Maximum	50%	5,241.8
7,000	16	Sum	55%	5,654.8
7,500	9	Count	60%	5,827.6
8,000	9		65%	6,296.3
8,500	5		70%	6,594.9
9,000	3		75%	6,939.4
9,500	6		80%	7,501.9
10,000	7		85%	8,350.0
10,500	4		90%	9,524.8
>10,500	14		95%	10,985.3

**Figure 3-1**  
**City of Parkland Stormwater Utility Feasibility Study**  
**Distribution of Single Family Impervious Area**



**Residential Summary.** Table 3-1 also summarizes the results of all the residential parcel data for the City. From the Parkland data, there are 10,103 residential parcels with 9,978 dwelling units. The total impervious area is about 48 million square feet and the average impervious area per dwelling unit is about 4,800 square feet.

### **3.2.2 Nonresidential Parcels**

Table 3-1 also provides the results for the nonresidential parcels within the City. For the 402 developed non-residential parcels, the total impervious area is 9 million square feet with an average of 22,400 square feet per parcel.

## Section 4

### Rate Structure Analysis

#### 4.1 Purpose

In the previous section, information related to the potential customers within the City was gathered including number of parcels, number of dwelling units, measurements of the impervious areas for various parcel types and estimates of the total impervious area for the City. These data were collected to develop a rate model for potential stormwater utility fees. The purpose of this section is to develop the rate model by defining rate structure alternatives and use the model in various scenarios. This will help the City consider options for the development of the fee and the program associated with the revenues so gathered.

#### 4.2 Stormwater Program Needs

Section 2 of this report included estimated program costs for current and potential future levels of service. **Figure 4-1** provides a summary of the existing stormwater program costs at the current level of service as well as one potential future program cost scenario, which would require an increase of approximately \$226,000 annually in program spending. This spending would be used to hire and outfit a full-time stormwater inspection and maintenance crew as well as increasing the average annual spending for capital projects. It is anticipated that this level of annual spending would allow the Parkland Stormwater Program to improve to LOS C over the next 5 years. Increased spending and program improvements would be required to raise the program to LOS B or A. However, the higher level of spending is not recommended at this point until decisions are made regarding swale and canal reclamation.

Figure 4-1 also includes an indication of which elements of the stormwater program are performed within each of the 5 service districts defined in Parkland. Based on discussions with staff, each district within the City receives benefit from Program Management and Regulatory Compliance. Within the City's jurisdiction (i.e. "The Ranches"), all elements of the City's program are performed. Within PTWCD, the City anticipates providing O&M services to Pine Tree Estates, Riverside Acres, Parkwood IX, and Cypress Trail. This maintenance is required to fill the service gap not provided by PTWCD or HOAs. At this time, no capital improvements are planned for those areas. Within NSID, the City does not anticipate needing to fill a gap in service for O&M and Capital beyond what NSID already provides. The rate analysis performed in Section 4.4 includes consideration of where the City will provide stormwater services to customers across the districts.

**Figure 4-1**  
**City of Parkland Stormwater Utility Feasibility Study**  
**Summary of Stormwater Management Costs**

Program	Services Received				Projected Status Quo Spending						% of Total Program Cost
	NSID	PTWCD	Cypress Head	City Maintained	Ranches	FY19-20	FY20-21	FY21-22	FY22-23	FY23-24	
Program Management	X	X	X	X	X	\$46,000	\$46,900	\$47,800	\$48,800	\$49,800	10%
Regulatory Compliance	X	X	X	X	X	\$164,000	\$167,300	\$170,600	\$174,000	\$177,500	34%
Operation and Maintenance		X		X	X	\$174,000	\$177,500	\$181,100	\$184,700	\$188,400	36%
Capital Improvement Program					X	\$100,000	\$102,000	\$104,000	\$106,100	\$108,200	21%
<b>Total</b>						<b>\$484,000</b>	<b>\$493,700</b>	<b>\$503,500</b>	<b>\$513,600</b>	<b>\$523,900</b>	<b>100%</b>

Notes:

Default annual increase in budget is 2%.

Program	Services Received				Proposed Spending to Achieve LOS C						% of Total Program Cost
	NSID	Pinetree	Cypress Head	City Maintained	Ranches	FY19-20	FY20-21	FY21-22	FY22-23	FY23-24	
Program Management	X	X	X	X	X	\$46,000	\$46,900	\$47,800	\$48,800	\$49,800	6%
Regulatory Compliance	X	X	X	X	X	\$164,000	\$167,300	\$170,600	\$174,000	\$177,500	23%
Operation and Maintenance		X		X	X	\$350,000	\$357,000	\$364,100	\$371,400	\$378,800	49%
Capital Improvement Program					X	\$150,000	\$153,000	\$156,100	\$159,200	\$162,400	21%
<b>Total</b>						<b>\$710,000</b>	<b>\$724,200</b>	<b>\$738,600</b>	<b>\$753,400</b>	<b>\$768,500</b>	<b>100%</b>

Notes:

Default annual increase in budget is 2%.

Increased O&M Spending to Maintain 1 full-time Stormwater Maintenance Crew

Increased Capital Spending to \$150,000 per year

## 4.3 Rate Structure Alternatives

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

### 4.3.1 Equivalent Units

In order to provide an equitable measure of impervious areas for both residential and non-residential developed parcels, stormwater utilities have used an equivalent unit to measure the impervious areas by a uniform base. Similar to other types of utilities such as water, the equivalent unit for a stormwater utility is the relative amount of contribution of a fee payer compared to a residential unit. In other words, the residential unit is the base for the utility fee.

Two methods of defining the equivalent have been employed. The first is named the Single Family Unit, or SFU. As expected by the name, a SFU is defined as the average or median impervious area for single family homes within the municipality. From the information discussed in Section 3 for the City, this method results in a median value of 5,242 square feet for the City. Based on the estimated impervious areas for the City, the total SFUs using this method is 10,860 SFUs.

The second method, known as Equivalent Residential Unit or ERU, is based upon the average or median impervious area for all residential unit types including single family, multifamily, condominium, and apartments. Based on the residential samples measured for impervious areas, the average ERU impervious area is 4,806 square feet. Based on this method, the total estimated ERUs for the City is 11,845 ERUs, a 9 percent increase over the SFU method.

It should be emphasized that the choice of the SFU or ERU base is subject to the policy decisions of the City and that different communities around the U.S. have chosen differently. According to the 2018 Florida Stormwater Association Stormwater Utility Survey, approximately 56% of utilities in Florida use the SFU method while 35% use the ERU method. The remaining 9% use an alternative approach. It should be noted, however, that 87% of the City's dwelling units are single family – this fact points to the SFU basis as being more representative of the City's residential nature.

### 4.3.2 Uniform or Variable Residential Rates

Many utilities have the residential customer pay in relation to the number of dwelling units for the customer. A single-family unit is assigned 1 ERU and a duplex is assigned 2 ERUs, for example. Two other options are possible: variable single-family rates and variable rates by residential type.

**Variable Single-Family Rates.** For this alternative, single family (and for that matter all residential customers) would be assigned a fee based on the impervious area of their property in the same manner as the nonresidential properties. The purpose of this would be to have a fee directly related to amount of impervious area on each customer's property. The City of Parkland

does not have impervious area for all parcels at present, so this option would require significant setup costs. Very few utilities in the country use this approach.

**Variable Rates by Residential Type.** On the other hand, there are some stormwater utilities that have a tiered structure for single family units to recognize that some SF properties are very small and some are extremely large. If each is assigned a fee based on 1 ERU/SFU, then the small properties may appear to pay too much and the large properties appear to pay too little. Previous studies in the US have shown that when the ratio of the 90th percentile to the 10th percentile is greater than 2.5, a tiered structure can be justified. Note this ratio is 2.76 for Parkland which supports a tiered structure. To use a tiered structure, the impervious area of every single-family unit would be needed. However, if not available, this can often be estimated using the County Tax Assessor's information. A possible structure is shown below based on the median, 10th and 90th percentile values of the measured properties. The SFUs for each tier is the endpoint impervious area in the range divided by the median value (5,242 sq ft). Some utilities choose to put a cap on residential properties and begin treating any residential home larger than some value (generally around 10,000 sq ft of impervious area) in the same manner as non-residential parcels.

**Table 4-1 Tiered Single Family Rate Option**

Range of Impervious Areas	SFU Value
0 to 3,451 sq ft	0.7 (based on 10 <sup>th</sup> percentile)
3,452 to 9,525 sq ft	1.0 (based on 50 <sup>th</sup> percentile)
9,526 sq ft and greater	1.8 (based on 90 <sup>th</sup> percentile)

**Non-SF Residential Fees Based on Impervious Areas.** As an alternative to the non-SF residential parcels to be based on dwelling unit (the most administratively simple alternative), the non-SF residential parcels may be addressed in the same manner as the nonresidential parcels; that is, based on total impervious area. From **Table 4-1**, the total number of non-SF residential dwelling units is 1,329; this represents the number of ERUs for non-SF residential by dwelling units. By impervious areas, the non-SF residential parcels represent 544 ERUs (a significant decrease). This indicates that there is a significant difference between the use of dwelling units and the use of non-SF impervious areas.

### 4.3.3 Nonresidential Rates

Nonresidential customer rates for adopted stormwater utilities in the United States are almost always related to the impervious area of the property. For most utilities, the actual impervious area is measured for each nonresidential parcel, and the billing unit assignment is the parcel's impervious area divided by the equivalent base unit (either ERU or SFU depending on the method used). An alternative to this is to assign nonresidential property types a percent of imperviousness based on literature values or a statistically measured sample of imperviousness. However, in the case of the City, there is only a small number of non-residential properties to be considered so the administrative burden of measuring the impervious area for all of them is minor. Therefore, other less accurate rate structures (e.g., percent imperviousness assigned) are not supported.

#### 4.3.4 Exemptions and Credits

Exemptions and credits are related to a reduction in the fee for a customer due to a reduction of the services provided to the customer. For an exemption, the customer has a reduced payment because of special circumstances, such as a reduction in imperviousness due to a portion of the property not draining to the City's stormwater system. A credit on the other hand is related to the reduction in fees due to special action taken by the fee payer such as the design, construction and maintenance of a stormwater pond that reduces both stormwater flows and pollutants associated with runoff. In both cases, however, the amount of the reduction can depend on the service being provided the customer. The inclusion of a credit program to incentivize best management practices on-site is strongly encouraged and should be considered if a stormwater utility is developed for the City.

### 4.4 Rate Alternatives

A few policy choices must be made before evaluating an appropriate rate structure for the City's circumstances. The first choice is between the use of the ERU method or SFU method discussed in Section 4.3. Since 87% of all dwelling units within the City are single family homes, CDM Smith recommends the use of the SFU as the billing unit basis. Use of the SFU method typically also involves implementation of a tiered approach to billing single family homes and separate charges for small housing units such as condos and townhomes.

It was noted that a ratio of the average single-family residential value at the 10<sup>th</sup> and 90<sup>th</sup> percentile of 2.5 or above indicates that the use of residential tiers may be appropriate. For Parkland, this ratio is 2.75, which is only slightly higher than the threshold.

However, the City must also consider that it provides different services across each of the service districts, as highlighted in Section 4.2 and Figure 4-1. Therefore, there will be a need to charge different base fees for different areas within the City to represent the various service charges. If this were to be combined with the tiered single-family method that already includes variable rates for multiple types of residential properties, the rate structure would get quite complicated and would be difficult to explain to customers.

In light of these two factors, CDM Smith recommends the use of the SFU base method without the application of a tiered rate structure. Given this recommendation, the rate model can be used to test various alternative stormwater programs for the City. The assumptions for the rate calculations include the following:

- Use of the SFU base method without single family tiers
- 95% collection rate (includes potential non-payment, loss of revenue from credits awarded and potentially, the cost of billing)
- 2% increase in cost of service due to inflation over time
- No increase in SFUs over time (conservative approach)
- Program Management and Regulatory Compliance services provided in all service districts

- Operations and Maintenance services provided in the Ranches and City Maintained areas, including Pine Tree Estates, Riverside Acres, Parkwood IX and Cypress Trail.
- Capital provided within The Ranches

**Table 4-2** provides a summary of the parcel and SFU breakdown across the 5 service districts. This summary is the basis for the distribution of charges in the rate alternatives shown in the following sections.

**Table 4-2 SFU Basis Across Service Districts**

Parcel Classification	The Ranches	City Maintained	NSID	Cypress Head	Pinetree Water	Sub Total
<b>SFUs</b>						
Residential SFH	74	350	5,748	670	1,785	<b>8,627</b>
Residential Semi Detached	-	-	340	78	86	<b>504</b>
Residential Condominium	-	-	293	-	136	<b>429</b>
Residential Multifamily	-	-	-	-	396	<b>396</b>
Residential Common Elements/Area	-	-	-	-	-	-
NonResidential	590	-	528	54	528	<b>1,700</b>
Miscellaneous/mixed use (43)	-		-	-	-	-
Undeveloped/ROW	-		-	-	-	-
<b>Total</b>	<b>664</b>	<b>350</b>	<b>6,909</b>	<b>802</b>	<b>2,931</b>	<b>11,656</b>

#### 4.4.1 Existing Level of Service Fee Scenario

As noted in Figure 4-1, the existing level of service for the City requires funding of approximately \$484,000 annually, which includes approximately \$100K per year in capital spending. Figure 4-1 also shows the breakdown of funding for each program element and denotes which service district receives each program element. As noted in Section 4.4 above, only property owners in The Ranches would benefit from future, planned capital spending.

Using the SFU breakdown above and the percentage of funding within each of the 5 service districts, the fee required to generate the needed revenues to offset existing program funding is presented in the table to the right. Property owners across the City would pay the \$1.58 per month per SFU for the Program Management and Regulatory Compliance portions of the program that benefit all city property owners. Property owners in PTWCD and other identified City Maintained areas would pay \$5.45 per month per SFU (a difference of \$3.87 per month per SFU) for the increased benefits received from having the City maintain the drainage system in those areas. Property owners in the Ranches would pay \$18.66 per month per SFU (a difference of \$17.08 per month per SFU over the base \$1.58 charge) for the additional maintenance and capital project benefits.

District	Estimated Monthly Fee per SFU
NSID	\$ 1.58
Cypress Head	\$ 1.58
City Maintained	\$ 5.45
PTWCD	\$ 5.45
The Ranches	\$ 18.66

#### 4.4.2 Increased Level of Service Fee Scenario (LOS C)

As noted in Figure 4-1, the suggested level of service for the City is LOS C, which requires funding of approximately \$710,000 annually. This includes approximately \$150K per year in capital spending (via debt service payments over 30 years) to fund the \$3.5M in capital needs identified for the Ranches in the Stormwater Master Plan. Figure 4-1 shows the breakdown of funding for each program element. Using the SFU breakdown above and the percentage of funding within each service district, the table to the right summarizes the estimated monthly user fees to generate the required LOS C revenue. It should be recognized that the large, potential capital needs in the Ranches is born by only 6% of the billing units in the City (664 of 11,656 SFUs, as shown in Table 4-2). This results in a relatively high monthly rate for those customers when compared to other communities across the State.

District	Estimated Monthly Fee per SFU
NSID	\$ 1.58
Cypress Head	\$ 1.58
City Maintained	\$ 9.36
PTWCD	\$ 9.36
The Ranches	\$ 29.18

### 4.5 Stormwater Utility Rate Comparison

Data from the Florida Stormwater Association (FSA) in February 2020 were compiled to compare the monthly rates of city stormwater utilities in Florida. **Table 4-3** shows that the average annual stormwater utility rate is about \$6.33 per month per billing unit (ERU/SFU).

**Table 4-3**  
**City of Parkland Stormwater Utility Feasibility Study**  
**Comparison of Stormwater Utility Fees for Cities and Counties in Florida - FSA February 2020**

Jurisdiction	Monthly Rate per Billing Unit	Jurisdiction	Rate per Billing Unit	Jursisdiction	Rate per Billing Unit	Jursisdiction	Rate per Billing Unit
<b>Cities</b>							
Altamonte Springs	\$6.75	Fort Lauderdale	\$10.00	Medley	\$3.00	Port Richey	\$3.00
Apopka	\$2.08	Fort Meade	\$6.25	Melbourne	\$3.67	Port St. Lucie	\$13.58
Atlantic Beach	\$8.39	Fort Myers	\$7.60	Melbourne Beach	\$3.00	Redington Shores	\$1.50
Auburndale	\$0.75	Fort Pierce	\$4.50	Miami	\$3.50	Riviera Beach	\$9.00
Aventura	\$2.50	Fort Walton Beach	\$4.75	Miami Beach	\$3.25	Rockledge	\$4.25
Bartow	\$3.75	Frostproof	\$3.00	Miami Gardens	\$6.00	Safety Harbor	\$7.25
Bay Harbor Islands	\$5.00	Fruitland Park	\$2.00	Miami Shores	\$3.75	Sanford	\$8.25
Belle Isle	\$4.00	Gainesville	\$9.45	Miami Springs	\$6.00	Satellite Beach	\$8.67
Belleair	\$11.92	Golden Beach	\$2.92	Minneola	\$4.00	Sebastian	\$5.00
Boca Raton	\$3.22	Green Cove Springs	\$3.50	Miramar	\$2.50	South Daytona	\$5.00
Boynton Beach	\$5.00	Gulf Breeze	\$5.07	Mount Dora	\$6.50	South Miami	\$3.00
Bradenton	\$4.50	Gulfport	\$3.95	Mulberry	\$4.00	St. Augustine	\$7.00
Bradenton Beach	\$4.40	Haines City	\$4.93	Naples	\$13.35	St. Cloud	\$6.35
Callaway	\$1.00	Hallandale Beach	\$7.37	Neptune Beach	\$18.41	St. Pete Beach	\$3.92
Cape Canaveral	\$7.00	Hialeah	\$2.50	New Port Richey	\$6.50	St. Petersburg	\$10.00
Cape Coral	\$9.25	Hialeah Gardens	\$2.00	New Smyrna Beach	\$7.33	Stuart	\$4.18
Casselberry	\$7.00	Holly Hill	\$6.00	Niceville	\$4.51	Sunny Isles Beach	\$4.33
Clearwater	\$14.58	Hollywood	\$3.22	North Bay Village	\$7.72	Sunrise	\$8.09
Clermont	\$3.00	Holmes Beach	\$4.50	North Lauderdale	\$6.00	Surfside	\$5.35
Cocoa	\$6.75	Homestead	\$3.37	North Miami	\$6.19	Sweetwater	\$5.00
Cocoa Beach	\$8.50	Indian Creek	\$4.38	North Miami Beach	\$4.50	Tallahassee	\$8.18
Coconut Creek	\$3.71	Indian Harbour Beach	\$4.00	Oakland Park	\$7.00	Tamarac	\$9.57
Cooper City	\$2.93	Jacksonville	\$5.00	Ocala	\$4.71	Tampa	\$6.83
Coral Gables	\$13.30	Jacksonville Beach	\$5.00	Ocoee	\$8.25	Tarpon Springs	\$7.15
Cutler Bay	\$4.00	Jupiter	\$4.98	Oldsmar	\$5.00	Tavares	\$9.25
Daytona Beach	\$10.07	Key Biscayne	\$13.35	Opa-Locka	\$1.90	Tequesta	\$7.13
Debary	\$7.00	Key Colony Beach	\$5.00	Orange City	\$12.55	Titusville	\$7.31
Deland	\$8.69	Key West	\$8.72	Orlando	\$9.99	Treasure Island	\$8.96
Delray Beach	\$5.33	Kissimmee	\$8.45	Ormond Beach	\$8.00	Umatilla	\$4.00
Deltona	\$6.26	Lake Alfred	\$2.00	Oviedo	\$4.00	Venice	\$5.00
Doral	\$4.00	Lake Mary	\$4.00	Palm Bay	\$13.76	Village of Palmetto Bay	\$4.00
Dundee	\$1.00	Lake Worth	\$6.30	Palm Coast	\$11.65	Wellington	\$19.17
Dunedin	\$11.10	Lakeland	\$8.00	Palm Springs	\$3.00	West Melbourne	\$3.00
Eagle Lake	\$4.00	Largo	\$6.65	Palmetto	\$3.68	West Miami	\$2.50
Eatonville	\$4.95	Lauderdale Lakes	\$12.00	Pembroke Park	\$10.12	West Palm Beach	\$13.57
Edgewater	\$10.00	Lauderhill	\$12.19	Pensacola	\$5.28	West Park	\$3.50
El Portal	\$3.00	Leesburg	\$5.50	Pinecrest	\$10.00	Wilton Manors	\$5.31
Eustis	\$3.00	Longwood	\$6.00	Pinellas Park	\$4.00	Winter Garden	\$5.13
Fellsmere	\$4.00	Madeira Beach	\$10.00	Plant City	\$5.50	Winter Haven	\$6.81
Fernandina Beach	\$12.00	Maitland	\$9.60	Polk City	\$1.50	Winter Park	\$11.56
Flagler Beach	\$6.25	Malabar	\$4.50	Pompano Beach	\$4.21	Winter Springs	\$5.50
Florida City	\$2.50	Margate	\$5.15	Port Orange	\$8.25		
<b>Counties</b>							
Alachua County	\$30.00	Hillsborough County	\$3.00	Miami-Dade County	\$5.00	Sarasota County	\$7.55
Bay County	\$3.33	Lake County**		Pasco County	\$7.92	Volusia County	\$6.00
Brevard County	\$5.33	Leon County	\$7.08	Polk County***			
Charlotte County*	\$10.71	Marion County	\$1.25	Pinellas County	\$9.81		
<b>Summary: Cities</b>		<b>Summary: Counties</b>		<b>Summary</b>			
Number	167	Number	14	Number	181		
Average	\$6.21	Average	\$8.08	Average	\$6.33		
Minimum	\$0.75	Minimum	\$1.25	Minimum	\$0.75		
Maximum	\$19.17	Maximum	\$30.00	Maximum	\$30.00		

Note: \* per acre

\*\* 0.4984 milage

\*\*\* 0.1 millage

## Section 5

# Stormwater Utility Implementation Requirements

Based on CDM Smith's experience in the implementation of stormwater funding programs, a two-phased approach is recommended. Phase 1 is the Feasibility Study and Phase 2 is the Implementation. Actually, this document represents a portion of the Phase 1. **Table 5-1** provides an outline of the tasks normally needed to implement a stormwater utility assessment using a non-ad valorem assessment. The schedule and difficulty of these tasks depends on the availability of parcel data and the magnitude of the effort to gain public approval of the program prior to the implementation. Each of the major tasks that need to be completed to implement a dedicated stormwater funding program is described in more detail in this section.

**Table 5-1 Stormwater Utility Implementation Steps**

I. Utility/Assessment Ordinance Support
II. Non-ad Valorem Assessment Database
a. Dwelling Units
b. Impervious Area Database
i. Aerials and Parcel Coverages
ii. Impervious Areas
iii. Field Verification/Review
III. Ch. 197.3632 Process (TRIM Notice, Public Hearing, Certified Role)
IV. Policies and Procedures Manual
V. Public Information Program
a. Stakeholder Committee (Optional)
b. Workshops with Commissioners
c. Public Awareness/Education Program
d. Standard Q&A – FAQ
e. Public Awareness
i. Mail-outs
ii. Meetings
iii. Public Service Announcements
iv. Speakers Bureau

## 5.1 Utility Fee Collection

Once a recommended level of service and rate structure is selected, the next major element of the Feasibility Study Phase is the definition of how the fee or assessment is to be collected. The option preferred by Parkland is a non-ad valorem assessment associated with the annual Tax Collector's bill. For the non-ad valorem assessment, the billing would need to follow the proscribed schedule of Section 197.3632, Florida Statutes (FS), to be legally available to use. The process is:

- Prior to January 1 of the intended implementation year, the City must pass a resolution stating that it intends to use the Uniform Method of Collection in the next year. This is non-binding, meaning that it does not commit the City to create a utility – it simply informs the Property Appraiser and Tax Collector of the potential to use the uniform method for collection. Note that this can be postponed by two months if there are agreements with the Property Appraiser and Tax Collector.
- Agreements between the City and both the County Property Appraiser and Tax Collector must be completed by March 1 in the year of implementation.

- Generally between March and June of the year of implementation, a stormwater utility ordinance and rate resolution must be adopted.
- By June 1 of the year of implementation, the County Property Appraiser provides the parcel information to be used to set up the non-ad valorem assessment roll.
- By September 15 of the year of implementation, the City must adopt a non-ad valorem assessment roll in a public meeting that is advertised and noticed four weeks prior to the meeting and deliver it to the Tax Collector. The advertisement must be in a local paper and the notice must be mailed by first class mail to each new non-ad valorem assessment payer (Note: this can be done using the TRIM notice).

This schedule is very controlled and missing a deadline will eliminate collection of the assessment during that year. The implementation of the assessment has the following elements: ordinance adoption, billing database development along with policies and procedures, and public information/approval.

## 5.2 Ordinance Development

In general, the Ordinance provides codification of the stormwater utility program and includes the following components:

- Statement of the authority to impose the assessment;
- Listing of findings and determinations defining the relationship between service and assessments and between runoff, as measured by imperviousness, and service;
- List of definitions for clarity;
- Declaration of the establishment of the utility along with a definition of the budget process;
- Clear definition of the rate structure including fees for residential and non-residential customers and exemptions;
- Identification of approach to partial payments or delinquent fees, and program for dealing with developed property that may not receive a tax bill;
- Complete statement of appeals and adjustments, authorizing multiple tiers for handling of appeal requests;
- Definition of credits, noting when they are authorized, the conditions under which the credit is maintained, and the amount of credit offered; and
- Limitations on the spending of the utility revenues to specifically listed stormwater activities.

## 5.3 Billing Database Development

With use of the non-ad valorem assessment, the Property Appraiser's records are used to define each "customer"; an appropriate assessment is assigned to each parcel and delivered to the Tax

Collector according to the schedule in Section 197.3632, Florida Statutes. For the most part, the needed information includes dwelling units for residential parcels and the impervious areas for non-residential parcels. Impervious area for non-residential properties is generally derived using GIS methods. Once the base fee or assessment is defined, the amount is adjusted for credits allowed. How these credits work and what is required to obtain them should be defined in a Policy and Procedures Manual that includes forms and protocols.

## 5.4 Public Information/Acceptance

A very important activity associated with the implementation of the stormwater funding program is public awareness which, hopefully, leads to public acceptance. History has shown that the public will most likely embrace a new fee or assessment if they want the service being funded by the revenues. Defining the services desired by the public is one of the areas that the stakeholder committee can help identify along with the desired level of service. Once defined, public information and education should be provided so that once the ordinance is subject to approval, the demand for the service has been confirmed. Methods to educate and inform include:

- Speaker's bureau with a standard presentation;
- Special presentations to select organizations such as civic groups or chamber of commerce organized meetings;
- Newspaper articles or press releases;
- Brochures and pamphlets that can be available in public places or mailed to future customers; and,
- Website information focusing on stormwater problem areas and their solution.

## Section 6

# Findings and Recommendations

The final section of this report represents a summary of the findings related to the stormwater management program review and the analysis of potential rates and revenue generation to support various program levels of service. In addition, this section includes suggestions for implementation of a fully-funded stormwater utility program to replace and/or supplement the existing funding.

## 6.1 Stormwater Program Review Findings

The Keith and CDM Smith team performed an independent assessment of the City's stormwater management program to determine the current level of service of the program, to document existing resources used to support the current program, and to identify potential activities that could be implemented to increase the current level of service. The following is a summary of related findings:

- Stormwater services within the City's boundaries are the responsibility of multiple parties, including NSID, PTWCD, the City and private property owners/HOAs. This mixture of service providers often inhibits the City from meeting citizen expectations and means that citizens across the City do not receive a uniform stormwater service level.
- Limited resources have impacted the City's ability to implement the necessary capital improvement projects.
- Resources allocated for the implementation of mandated, regulatory programs have allowed the City to achieve minimum, regulatory compliance. However, regulatory compliance efforts could be improved if the program had a comprehensive drainage inventory.
- Limited resources prevent the City from pursuing a proactive maintenance and repair program to improve the condition and effectiveness of the existing stormwater infrastructure. Current maintenance practices are performed on an as-needed or emergency basis in response to calls/complaints.
- On a scale of Grade A to Grade F, the City's program received a score of C- to D+, which represents a program that is generally reactive in nature, with minimal capacity to implement necessary improvement projects.
- The average annual cost of stormwater-related services currently performed by the City was estimated at \$484,000. As noted, most of the City's services are focused on areas in direct control of the City, such as "The Ranches" and a few neighborhoods where the City plays an active role in stormwater maintenance operations, including Pinetree Estates, Riverside Acres, Parkwood IX and Cypress Trail. However, the City is experiencing a growing demand for service in these areas to meet customer expectations.

- Activities such as stormwater system inventory development, proactive drainage system maintenance, and implementation of critical capital improvement projects would increase the City's level of service.

## 6.2 Level of Service Options

The current level of service performed by the City has not been adequate to meet customer demands. Thus, it is recommended that the City begin to increase its level of service to not only meet these demands, but also to extend the service life of the infrastructure. This will result in greater customer satisfaction and lower potential capital costs in the long-term as the City should experience less frequent system failures. The following bullets summarize the level of service options:

- Over the next 3-5 years, improve the service level within the City to LOS C, which includes:
  - Establishing a dedicated stormwater maintenance crew within Public Works. The crew will be staffed with an operator and 4 technicians at an annual cost of approximately \$225,000 per year
  - Purchase of jet vac truck and tools for the maintenance crew at a one-time cost of approximately \$200,000
  - Leverage available one-time funding opportunities such as the American Rescue Plan (ARPA) and the Infrastructure Investment and Jobs Act (IIJA) to fund near term, critical capital projects identified in the Stormwater Master Plan
  - Average annual funding required to achieve LOS C is approximately \$710,000
- Over the next 10-15 years, establish a goal to achieve LOS B within the City, which includes:
  - All improvements included for LOS C
  - Development of a full, system-wide stormwater system inventory
  - Develop an asset management program for the stormwater system
  - Establish a dedicated Stormwater Manager position to lead the day-to-day operations of the program
  - Further increase capital spending to more pro-actively address capital needs and fund routine repair/replacement of the stormwater system
  - Average annual funding required to achieve LOS B is approximately \$1,000,000

## 6.3 Stormwater Program Funding and Rate Suggestions

The primary source of revenue for the existing stormwater program activities is the General Fund, which may be used to fund any portion of the current program. History has shown that the competition for limited General Fund revenues is high and stormwater management services do not compete well against other City services. Based on discussions with staff, the preferred

option for primary funding of the future stormwater program is a non-ad valorem assessment associated with the annual Tax Collector's bill. For the non-ad valorem assessment, the billing would need to follow the proscribed schedule of Section 197.3632, Florida Statutes (FS), to be legally available to use. One of the primary benefits of this approach is the ability to fund the program at an adequate level annually without competing with other services. Since the funds are dedicated, the City can move to a more pro-active program where needs are understood and a plan can be developed to meet those needs over a period of time.

For this assessment, a stormwater utility funding strategy is suggested where customers will be charged a fee for service and the fee is based on the impervious area of their property.

Impervious area provides the most direct correlation to stormwater runoff generated, which ultimately must be managed by the City.

CDM Smith suggests the use of the SFU base method to establish the charges. All residential dwelling units would receive a set monthly charge. Non-residential customers would receive a charge based on a comparison of their measured impervious area to the base billing unit. For Parkland, the base Single Family Unit would be 5,242 square feet. Given this suggestion, a rate model was developed to generate an approximate base monthly fee per billing unit that would need to be charged to achieve the desired levels of service. The model also recognizes that the base charge will be different for the different service areas within the City.

As shown in Section 4.4, the currently identified capital needs from the Stormwater Master Plan are located primarily in The Ranches. Most of the near-term capital projects identified will be funded through ARPA. With other funding opportunities such as IIJA possibly available in the future, CDM Smith suggests removing the capital component of the fee for the near-term until those one-time capital project funding opportunities can be assessed and realized. At a future date, the stormwater fee can be re-evaluated to assess whether additional capital funds are required.

**Table 6-1** provides a summary of suggested base fees by Service Areas. These fees will generate sufficient funds to move the City's program to Level of Service C across all areas, with Program Management, Regulatory Compliance and Operations and Maintenance activities funded by stormwater fee revenues and capital needs funded through other sources like ARPA. If unplanned capital projects emerge (beyond those already funded by ARPA) in the near-term, it is suggested that those projects be funded through existing sources such as the General Fund as is currently done.

**Table 6-1 Approximate Base Monthly Fees by SFU by Service Area**

Stormwater Levels of Service	NSID	Cypress Head	PTWCD	City Maintained	The Ranches
Monthly Fee per Base Billing Unit					
Recommended LOS C	\$1.58	\$1.58	\$9.36	\$9.36	\$9.36

Note: These fees are approximate based on a preliminary model. Detailed measurement of all non-residential properties in Parkland would be required to develop final base rates

## 6.4 Implementation Planning

For the City to move forward with implementation of a non-ad valorem, fee-based stormwater funding program, the following steps must be accomplished:

- Selection of a desired level of service and corresponding funding requirement
- Potential coordination with NSID and PTWCD on Memorandums of Understanding (MOUs) to document the services being provided and responsible parties
- Adherence to the proscribed schedule of Section 197.3632, Florida Statutes (FS), to place the charge on the County Tax Bill, which includes public notice requirements and coordination with the County on schedule
- Ordinance development and approval
- Billing database development, which includes the assignment of charges to all parcels within the City
- Execution of a public information and outreach strategy



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