

Prepared for

City of Dade City

Stormwater Master Plan Report



Project No.: 19545
Date: September 2012

Certification

**CERTIFICATION
Lakeland**

Engineering Certification

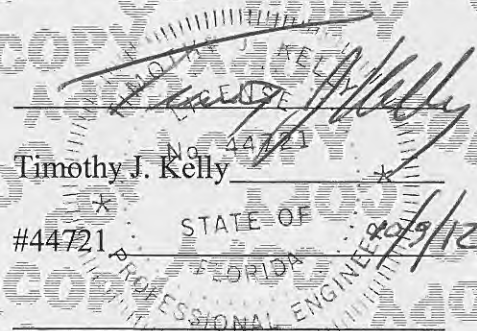
I hereby certify that I am a registered professional engineer in the State of Florida practicing with AMEC Environment & Infrastructure, Inc., (AMEC) 2000 E. Edgewood Drive, Suite 215, Lakeland, FL 33803, a corporation authorized to operate as a business providing engineering consulting services (5392) by the State of Florida Department of Professional Regulation, Board of Engineers. I further certify that I, or others under my direct supervision, have prepared the engineering evaluations, findings, opinions, calculations, conclusions or technical advice hereby represented in this report.

SIGNATURE: _____

NAME: _____

LICENSE No: _____

DATE: _____


TIMOTHY J. KELLY
No. 44721
STATE OF FLORIDA
PROFESSIONAL ENGINEER
2/19/12

Report Title: City of Dade City Stormwater Master Plan

Report Contains:

- Main Report
- Executive Summary
- Appendix A – ICPR (DVD)
- Appendix B – Water Quality
- Appendix C – Existing City Stormwater Codes & Ordinances
- Appendix D – Downtown Plans
- Appendix E – References
- Appendix F – Dade City 14th Street Wetland Evaluation

An original copy of the report has been retained on file at the Engineer's office.

Report

**CITY OF DADE CITY
STORMWATER MASTER PLAN
FINAL**

Prepared for:



**CITY OF DADE CITY
Dade City, Florida**

Prepared by

AMEC Environment & Infrastructure, Inc.
2000 E. Edgewood Drive, Suite 215
Lakeland, Florida 33803

AMEC Project No. 19545

September 2012

TABLE OF CONTENTS

EXECUTIVE SUMMARY	1
1.0 INTRODUCTION	11
1.1 Overview	11
2.0 WATERSHED DESCRIPTION	13
2.1 Overview	13
2.2 Climate	19
2.3 Soils	19
2.4 Physiography and Hydrology	24
2.5 Existing and Future Land Use	25
3.0 MAJOR DRAINAGE SYSTEMS	32
3.1 Area 1 Subwatershed	32
3.2 Area 2 Subwatershed- Downtown Drainage Basin	43
3.3 Area 3 Subwatershed	49
3.4 Area 4 Subwatershed	51
4.0 HYDRAULIC/HYDROLOGIC MODEL METHODOLOGY	63
4.1 General Methodology and Database Development	63
4.2 Hydrology	65
4.3 Hydraulics	69
4.4 Boundary Conditions	70
5.0 FLOODING LEVEL OF SERVICE DESIGNATIONS	71
6.0 SUMMARY OF MODELING RESULTS – EXISTING CONDITIONS	75
6.1 Area 1 Subwatershed	75
6.2 Area 2 Subwatershed	79
6.3 Areas 3 and 4 Subwatersheds	81
7.0 EXISTING ENVIRONMENTAL REGULATIONS AND EXISTING WATER QUALITY CONDITIONS	82
7.1 Federal Regulations of Stormwater	82
7.2 State of Florida Regulations of Stormwater	83
7.3 Southwest Florida Water Management District (SWFWMD) Regulations of Stormwater	84
7.4 City of Dade City Stormwater Regulations	85
7.5 Current Water Quality Conditions in the Dade City Area	92
8.0 POLLUTANT LOADING MODELING	93
8.1 Pollutant Load Estimation Variables	95
9.0 EXISTING CONDITIONS WATER QUALITY LEVEL OF SERVICE	95
10.0 ALTERNATIVES ANALYSIS	99
10.1 Whitehouse Avenue and 10 th Street Problem Area	99
10.2 Downtown Problem Area	122
10.3 Howard Avenue Street Problem Area	136
11.0 RECOMMENDATIONS AND POTENTIAL FUNDING SOURCES	143

LIST OF FIGURES

Figure 2-1	General Location Map
Figure 2-2	Watershed Map
Figure 2-3	Topographic Map
Figure 2-3A	Topographic Map
Figure 2-4	Soil Classification by Type
Figure 2-5	Soil Type by Hydrologic Group (HSG)
Figure 2-6	SWFWMD Land Use/Land Cover
Figure 2-7	Existing Land Use
Figure 2-8	Master Planned Unit Development's
Figure 2-9	Future Land Use
Figure 3-1	Subwatershed Area 1 Map
Figure 3-1A	Large Scale – Potential Basins of Special Concern
Figure 3-2	Subwatershed Area 1 Map (Area 1A – West of 17 th Street)
Figure 3-3	Subwatershed Area 1 Map (Area 1B – 14 th & 15 th Street Area)
Figure 3-4	Subwatershed Area 1 Map (Area 1C - Tommytown Area)
Figure 3-5	Subwatershed Area 1 Map (Area 1D – Whitehouse Avenue)
Figure 3-6	Subwatershed Area 1 Map (Area 1E - US 301 Right of Way & Discharge)
Figure 3-7	Subwatershed Area 2 Map
Figure 3-8	Subwatershed Area 2 Map (Downtown Area)
Figure 3-9	Subwatershed Area 2 Map (East Pasco Government Center)
Figure 3-10	Subwatershed Area 3 Map (Key Map)
Figure 3-11	Subwatershed Area 3 Map (Panel 1 – Northwest)
Figure 3-12	Subwatershed Area 3 Map (Panel 2 – Northeast)
Figure 3-13	Subwatershed Area 3 Map (Panel 3 – Southwest)
Figure 3-14	Subwatershed Area 3 Map (Panel 4 – Southeast)
Figure 3-15	Subwatershed Area 3 Map (Howard Avenue)
Figure 3-16	Subwatershed Area 4 Map
Figure 3-17	Subwatershed Area 4 Map (CR 35A/Old Lakeland Highway)
Figure 3-18	Subwatershed Area 4 Map (Morgan Street Area)
Figure 10-1	Basin 1W, Area 1A (Proposed Oak Court C.I.P.)
Figure 10-2	Basin 1W, Area 1A (Proposed 17 th Street C.I.P.)
Figure 10-3	Basin 1W, Area 1A (Proposed Oak Court C.I.P. “Phase 2”)
Figure 10-3A	Basin 1W, Area 1A (Proposed Beauchamp Pond Expansion)
Figure 10-4	Basin 1W, Area 1C (Proposed Mocerri Avenue Pond System)
Figure 10-5	Basin 1W, Area 1B (Proposed Osceola Street Ditch Improvements)
Figure 10-6	Basin 1E, Area 1E (Proposed 6 th Street/Pond Avenue)

LIST OF EXHIBITS

Exhibit 1	Capital Improvement Project for Flood Reduction (Whitehouse Avenue)
Exhibit 1A	Reduced Whitehouse Avenue Excavation with Construction of Additional Outfall under CSX R/W
Exhibit 2	5 Year Flood Areas (Whitehouse Avenue) Before & After CIP Implementation
Exhibit 3	25 Year Flood Areas (Whitehouse Avenue) Before & After CIP Implementation
Exhibit 4	100 Year Flood Areas (Whitehouse Avenue) Before & After CIP Implementation
Exhibit 5	Mean Annual Flood Areas (Whitehouse Avenue) Before & After CIP Implementation
Exhibit 6	ICPR Existing Conditions Node Diagram – North
Exhibit 6A	ICPR Existing Conditions Node Diagram – South
Exhibit 6B	ICPR Existing Conditions Downtown Area Detail
Exhibit 7	ICPR Existing Conditions Node Diagram North
Exhibit 7A	ICPR Existing Conditions Node Diagram - South
Exhibit 7B	ICPR Existing Conditions Downtown Area Detail
Exhibit 8	Proposed Changes to Irvin Park Pond

LIST OF APPENDICES

Appendix A	ICPR (On DVD)
Appendix B	Water Quality
Appendix C	Existing City Stormwater Codes & Ordinances
Appendix D	Downtown Plans
Appendix E	References
Appendix F	Dade City 14 th Street Wetland Evaluation

LIST OF LARGE SCALE MAPS (On DVD)

Figure 2-3A		Topographic Map	Key Map
Figure 2-3A	Panel 1	Topographic Map Panel 1	Northwest
Figure 2-3A	Panel 2	Topographic Map Panel 2	Northeast
Figure 2-3A	Panel 3	Topographic Map Panel 3	Southwest
Figure 2-3A	Panel 4	Topographic Map Panel 4	Southeast
Figure 3-1		Subwatershed Area 1 Map	

EXECUTIVE SUMMARY

The City of Dade City has commissioned an update of the City's Stormwater Master Plan (SMP) so that problem drainage areas can be assessed for flooding extent and conceptual capital improvement (CIP) projects can be developed with projected effectiveness and cost of those CIPs. AMEC Environment & Infrastructure, Inc. (AMEC) was selected in late 2010 to conduct a city-wide inventory of drainage structures and to develop an updated SMP. Coincident to this work, AMEC was also tasked with providing engineering design for the Downtown CIP to improve drainage in the downtown area. A cooperative agreement with the Southwest Florida Water Management District (SWFWMD) was also secured, adding sufficient funding to allow AMEC to create a flood routing drainage model for improved estimation of flooding within the City's problem areas. The "problem areas" are generally consistent with the drainage areas identified in the City's 1965 Master Plan and the four major sub-basins shown on Figure 2-2 (page 16) of this report. Topographic survey was conducted only in portions of downtown that were directly related to the anticipated storm sewer improvements for the area. Topography for the remaining sections of the City was obtained from recent topographic coverage's provided by SWFWMD and obtained via plane-mounted laser technology.

It is important to develop a "degree of flooding" which can be used as a rating system to compare the extent of flooding problems at different locations. The City's Comprehensive Plan identifies a "satisfactory" drainage level of service as a condition having "periodic minor flooding for a few hours and no property damage during a 25 year- 24 hour storm event or a 10 year- 1 hour storm event". The SMP correlates the "Satisfactory" LOS to an equivalent LOS rating of "C". Similarly, "Excellent", "Good", "Poor" and "Unsatisfactory" LOS ratings from the Comprehensive Plan have been designated as "A", "B", "D" and "F" LOS ratings, respectively, in the SMP. The goal of any stormwater capital improvement projects proposed in this Stormwater Master Plan is therefore to achieve this LOS rating and to accommodate a 25 Year- 24 Hour design storm event (8.5" in 1 day). A summary of other flood level of service ratings between the City Comprehensive Plan and this SMP is included in **Table ES.1**.

The LOS standards discussed above are typically associated with systems in lower-lying areas where water tends to collect and where flow velocities are typically not high. Since the downtown area is built on a sloped land surface, there is movement of the stormwater along the streets and sidewalks. This movement of water is rapid and can potentially be dangerous particularly to pedestrians. In addition, waves caused by traffic movement can cause property damage to parked vehicles and structures due to their close proximity to the roadways. In consideration of these facts, it is prudent for the City to consider a modified version of the LOS standards presented in Table ES.1 to apply to the downtown and other areas of town where appropriate. **Table ES.2** is recommended to address the differences in the types of flooding that are experienced in the City of Dade City.

A flood routing model was created and encompassed the key problem flooding areas of the City as noted by City staff. The key areas of flooding or of concern included the following:

- Whitehouse Avenue/10th Street
- Stormwater Pumping Station at the Pasco Cogen Plant
- Downtown generally bounded by Church St. to Pineapple Ave./7th Street to 5th Street
- Howard Avenue west of the Hardy Recreational Trail

It is noted the edges of town that flood due to the Withlacoochee River flooding its associated floodplains were not proposed for assessment and this was not included in the scope of this project. The above areas were analyzed under a large number of storm events from the 2.33 year/24 hour storm which is 4.75 inches in 1 day on up to the 100 year/24 hour storm which corresponds to 12 inches of rainfall in 1 day. Additionally, intense storm events of shorter duration were also considered for the downtown portion of the drainage model including the 2 year/1 hour design storm (2.3" in 1 hour) on up through the 100 year/8 hour storm event (9.2" in 8 hours), among others. A discussion on the intent of conducting these additional modeling analyses is included below. The results of the flood modeling are tabulated in **Table ES.3**.

**Table ES.1
Level of Service Definition Interpretations**

Comprehensive Plan Rating	City Comprehensive Plan Definitions	Master Plan Interpretation- LOS Description	Master Plan Interpretation- LOS Rating
Excellent	No flooding or property damage during significant 25 year- 24 hour storm event	No flooding	A
Good	Only very minor flooding and no property damage during significant 25 year- 24 hour storm event	Street flooding is 3" or less above the crown	B
Satisfactory	Periodic minor flooding for a few hours and no property damage during a 25 year- 24 hour storm event or a 10 year- 1 hour storm event	Street flooding is more than 3" above the crown of road, but less than 6"	C
Poor	Chronic flooding and minor property damage (yards, not building flooding) during a 25 year- 24 hour storm event	Street flooding is more than 6" above the crown of road, but less than 12"	D
Unsatisfactory	Chronic flooding and minor property damage and disruption of traffic flow during a 25 year- 24 hour storm event	Structure flooding; Street flooding is more than 12" above the crown of road	F

**Table ES.2
Drainage Level of Service for Downtown and Business Areas¹**

Comprehensive Plan Rating	City Comprehensive Plan Definitions	Master Plan Interpretation- LOS Description	Master Plan Interpretation- LOS Rating
Excellent	No flooding or property damage during significant 25 year- 24 hour storm event or a 10 year- 1 hour storm event	No flooding	A
Good	Only very minor flooding and no property damage during a 25 year- 24 hour storm event or a 10 year- 1 hour storm event	Street flooding is 3" or less above the curb line	B
Satisfactory	Periodic minor flooding and no property damage during a 25 year- 24 hour storm event or a 10 year- 1 hour storm event	Street flooding is 3" or less above the crown	C
Poor	Chronic flooding and disruption of traffic flow during a 25 year- 24 hour storm event or a 10 year- 1 hour storm event	Street flooding is more than 3" above the crown of road, but less than 6"	D
Unsatisfactory	Chronic flooding and minor property damage and disruption of traffic flow during a 25 year- 24 hour storm event or a 10 year- 1 hour storm event	Structure flooding; Street flooding is more than 6" above the crown of road.	F

¹ This drainage LOS standard is to apply to lands having sufficient topography to shed water quickly and that flood waters recede within a matter of minutes after the end of the storm. The criteria is meant for highly impervious areas such as the City's downtown core area where shallow flood depths move with sufficient velocity that safety to pedestrians or property damage from waves becomes an issue.

**Table ES.3
Existing Drainage Level of Service**

Location (ID)	Predicted Existing Drainage Level of Service
Whitehouse Ave/10 th St	“F” rating for all 24 hour storm events
Downtown Area	“F” rating through “B” rating depending on location and storm event
Howard Avenue	“F” rating through “C” rating depending on storm event

When comparing different problem areas, the above information must be interpreted carefully. The different problem areas have differing causes and types of flooding problems as follows. The Whitehouse Avenue area is at the bottom of a “bowl” with the only existing relief being the Pasco Cogen Plant stormwater pumping station that pumps stormwater easterly toward the Withlacoochee River. Stormwater runoff coming down 7th Street, US Highway 301 and the adjacent areas arrives at the drainage network connected to the pump station so quickly that the stormwater has to back up in the system, particularly westerly toward 10th Street. The pumping station’s capacity is insufficient to prevent flooding in the area. Additionally, the 10th Street area north of Whitehouse Avenue is naturally lower than the ground elevation near US Highway 301. Flooding durations in the Whitehouse Avenue area generally last from hours to days (depending on the storm characteristics) with street and yard flooding common and structure flooding likely under the larger storm events.

The flood prone section of Howard Avenue is similarly a topographic low compared to the adjacent area. Stormwater runoff to Howard Avenue from the contributing drainage area occurs too quickly for the City’s pumping station to keep up and discharge excess water to the south along the recreational trail. As a result, water fills the Howard Avenue pond and spills out onto Howard Avenue until flood waters are pumped down. Flooding durations in the Howard Avenue area generally last for hours to the better part of a day (depending on the storm characteristics) with street flooding common.

The downtown area, due the excessive amount of impervious surface, experiences frequent flooding from even afternoon rainfall events. This flooding is different from the flooding in the other two areas just by the nature of the topography downtown. There are very few drainage inlets and piping in the downtown area and the stormwater must be conveyed overland in the shallowest portions of the area (generally the curb line, sidewalks and low points in the street). Therefore intense rainfall events produce stormwater with moderate to high flow depths in order to be conveyed down the street to lower elevations. This was the reason that shorter duration rainfall events were also analyzed during this project. Flooding durations downtown generally last from less than an hour to several hours (depending on the storm characteristics) with street, parking area and sidewalk flooding common.

Conceptual improvements to the above areas were developed and are described in detail in Chapter 10 of this report. Please reference **Table ES.4** for an abbreviated summary of the conceptual stormwater CIPs and the associated estimated benefits and costs. **Table ES.5** summarizes the CIP costs and potential outside funding mechanisms for those projects.

**Table ES.4
Summary of Conceptual Stormwater CIPs**

Problem Area	CIP Description	PRIMARY PURPOSE/ Secondary Benefits	Estimated Benefits	Estimated Implementation Costs
1	Whitehouse Ave/10 th St.- Pond Construction (Phase 1- Initial Pond Expansion only)	-FLOOD REDUCTION (REGIONAL) -Water Quality -Natural System Enhancement -Preservation of Water Resource - Public Education	Property ¹ flooding reduced from 35± to 12± units (25 YR storm) & 25± to isolated yard flooding (5 YR Storm) (after Phase 2 Implementation)	\$110,000±
1	Whitehouse Ave/10 th St.- Pond Construction (Phase 2- Expanded Pond Construction)	“	“	\$500,000±
1	Moseri Avenue Pond Construction	-FLOOD REDUCTION (REGIONAL)	Flood reduction not modeled separately however flood prone Dade Oaks Apartments will benefit.	\$58,000±
1	Osceola Street at Davis Avenue Ditch Improvements	-FLOOD REDUCTION (LOCAL)	Flood reduction not modeled separately however hydraulic capacity will improve and existing flow “bottleneck” will be eliminated.	\$106,000±
1	Oak Court Ditch Improvements (Pave ditch)	-FLOOD REDUCTION (LOCAL)	Improved flow capacity of ditch will reduce ditch overflows onto private properties. Reduced routine maintenance.	\$48,000±
1	Pipe part of conveyance ditch along 17 th Street, and under Oak Court	-FLOOD REDUCTION (LOCAL)	Reduction in instances of hazardous flows on 17 th Street near Oak Court during intense storm events, improved conveyance to pond system at Beauchamp Avenue, reduction in maintenance costs.	\$25,000±
1	17 th Street Storm sewer from Meridian Ave. to Oak Court to Beauchamp Pond	-EROSION REDUCTION (LOCAL)	Reduction in erosion of private property at outfall location and controlled conveyance of stormwater to pond.	\$219,000±

Problem Area	CIP Description	PRIMARY PURPOSE/ Secondary Benefits	Estimated Benefits	Estimated Implementation Costs
1	Beauchamp Pond Expansion	-FLOOD REDUCTION (REGIONAL)	Flood reduction not modeled separately however the severity of the infrequent flooding of adjacent properties will be reduced.	\$115,000±
1	St. Joe Road Ditch Erosion Repair	-EROSION REPAIR (LOCAL)	Reduction in erosion of private property at outfall location.	\$31,000±
2	Downtown Storm sewer & Irvin pond Modifications	-FLOOD REDUCTION (REGIONAL) -Water Quality -Preservation of Water Resource -Public Education - Passive Recreation	Street and parking area ³ flooding reduced from 6-12" down to none (5 YR Storm) and 3-6" down to none (Mean Annual Storm ⁴)	\$1,800,000±
1	6 th Street/ Pond Avenue Berm Construction	-FLOOD REDUCTION (LOCAL)	Flood reduction not modeled separately however improvements may reduce frequency and severity of flooding at church property.	\$25,000±
2	Howard Avenue Storm Lift Station Upgrade	-FLOOD REDUCTION (LOCAL)	Street flooding reduced from 3-6" down to none (5 YR Storm) ⁶	\$82,000±
4	Ferguson Avenue Canal Improvements	-NUISANCE STAGNANT WATER COMPLAINTS (LOCAL)	Stagnant pools will be graded to reduce the frequency and depth of standing water behind homes.	\$40,000±

Notes:

- ¹ Property Flooding may be limited to yard and parcel flooding and not actual structure flooding. Floor elevations of low structures were not surveyed for this project.
- ² Assigning the benefits of the reduced flooding to downtown is difficult. Safety for pedestrian and vehicular traffic is improved and parking space usage along the previously flooded roads would be improved for the duration of the storm events. The limits of the primary improvements are on 7th, 6th and 5th streets generally from Pasco Avenue north to Pineapple Avenue.
- ³ The frequency of public works or emergency personnel having to shut the road to through traffic will be reduced significantly and the associated inconvenience to the motoring public reduced as well.
- ⁴ Applies to majority of locations reviewed for flooding.
- ⁵ Elevations of roadways is based on LIDAR data which according to peer review of the data has an accuracy of ±4". This is not survey-level data meeting technical standards as defined by State statutes.
- ⁶ The frequency of public works or emergency personnel having to shut the road to through traffic will be reduced significantly and the associated inconvenience to the motoring public reduced as well.

**Table ES.5
Concept CIP Cost Summary & Potential Funding Sources**

Project	Potential Partnering Agencies/Reasons	Estimated Cost Range to City
Whitehouse Ave/10 th St.- Phase 1 - Pond Construction	FDOT/Contribution at Outfall PCHA/Contribution of Stormwater PCSB/Property Owner State of Florida (CDBG)	\$36,000-\$110,000
Phase 2 – Expanded Pond Construction	PCSB/Property Owner PCHA/Contribution of Stormwater State of Florida (CDBG)	\$250,000 - \$500,000
Moseri Avenue Pond Construction	PCHA/Benefits from Project	\$29,000 - \$58,000
Osceola St. at Davis Ave. Ditch Improvements	None	\$95,000 - \$106,000
Oak Court Ditch Capacity Improvements	None	\$40,000-\$50,000
Pipe part of conveyance Ditch along 17 th Street, and under Oak Ct. (&17 th Street Existing Storm Sewer Upgrade)	None	\$80,000-\$95,000
17 th Street Storm sewer from SR 52 to Oak Ct.	FDOT	\$125,000-\$150,000
Beauchamp Pond Expansion	State of Florida (CDBG)	\$65,000-\$130,000
St. Joe Road Ditch Erosion Improvements	Pasco County	\$26,000-\$31,000
Irvin pond Modifications	SWFWMD/Cooperative Funding FDOT/Meridian Ave. Drainage Improvements FDEP ¹	\$450,000-\$1.8M
6 th Street/Pond Avenue Berm Construction	None	\$22,000 - \$25,000
Howard Avenue Storm Lift Station Upgrade	None	\$80,000-\$90,000
Ferguson Avenue Canal Improvements	None	\$25,000 - \$40,000
Total		\$1.31M-\$3.19M

¹ FDEP grant funding could potentially be pursued for some types of water quality projects however, FDEP would require that the City have a dedicated source of funding such as a stormwater utility.

It is anticipated that the ongoing requirements of the City’s NPDES MS4 permit and periodic infrastructure replacement will absorb a large part of any stormwater budget adjustments the City can make using General Funds. One dedicated source of funding which could be used is a municipal service benefit unit which provides benefits to specific areas of the municipality, similar to a special assessment which is primarily used for local road improvements. Therefore it would work on a more project/problem area specific basis. Another alternative would be a city-wide stormwater utility. This type of dedicated funding could provide services city-wide and could be applied to the problem areas in a systematic manner. An added benefit of a stormwater utility would be its ability to address the costs associated with the demands from the NPDES and TMDL programs.

In the event a stormwater utility is adopted within the City, the approximate duration for funding the above concept projects would vary depending on the adopted utility rate. **Table ES.6** presents several potential scenarios of CIP project completion based on various levels of funding. The most rapid path for implementation of the CIPs would be cooperative funding assistance from other agencies and a higher level of utility income and could potentially result in sufficient funding being available within 5± years. On the other end of the spectrum, if no cooperative funding is secured and annual utility revenues for CIP projects is at a lower level of \$125,000, the time period for fully funding the concept CIP projects is ±25 years.

**Table ES.6
Hypothetical CIP Funding Scenarios**

Annual Stormwater Utility Revenues Dedicated to CIP Projects	Approximate Time Period to Fund City’s Share Assumed Maximum Cooperative Funding (Years)	Approximate Time Period to Fund City’s Share with No Cooperative Funding (Years)
\$125,000	10.5	25.5
\$250,000	5+	13±

Notes:

1. CIP Costs of \$1.25M to City based on assumptions associated with concept improvements shown in Table 11.2 and described in report.
2. CIP Costs of \$3.06M to City based on assumptions associated with concept improvements shown in Table 11.2 and described in report.
3. The conceptual level of funding of the Stormwater Utility shown in Table 11.3 would be dedicated to the CIP projects. Additional Utility revenue would be required for administration, maintenance and operations, regulatory (NPDES, TMDL) and any other costs that the City desires to absorb under the Utility program, if adopted in the future.