

# COUNTY DRAINAGE CANALS AND STRUCTURES

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**2011 AUIR FACILITY SUMMARY FORM – Stormwater Management**

**Facility Type:** County Maintained System of Secondary Stormwater Management Canals & Structures (Category A)

**Level of Service (LOS) Standard**

Stormwater Management continues to effectively manage an important resource. In order to properly address stormwater management, the Stormwater Level of Service (LOS) reflects both Flood Attenuation by controlling flooding through discharge rate (off-site discharge) measured in cubic feet per second (cfs), as well as Water Quality Treatment volume measured in acre-feet for aquifer recharge and water quality protection. All new public and private construction is required by county ordinance to adhere to the current regulations of the South Florida Water Management District (SFWMD). Both LOS standards are accounted for in these regulations. Stormwater discharge rate is computed based on a storm event of 3-day duration and 10-year or 25-year return frequency. More restrictive maximum discharge rates are specified by geographic boundaries detailed in **Ordinance 90-10** and **Ordinance 2001-27**. Water quality treatment volumetric requirements are in general equal to 1 ½ inch of runoff from the proposed developed site area or, if the site contains more than 40% impervious area, equal to the total runoff of 2.5 inches times the percentage imperviousness. Some public works rehabilitation and retrofit projects are occasionally approved with variances to these LOS requirements. Existing, unimproved portions of the Secondary System and sub-divisions completed prior to 1984 were not designed or built to meet these current LOS standards.

Currently, the deficiency of the Secondary System to meet the LOS is anecdotal and based on observations of flooding. Maps of observed flooding are updated by the Stormwater Management Section as observations of flooding are collected following large events on an on-going basis. This includes mainly observations reported through the Emergency Management Services from fire, sheriff, and ambulance crews, from property owners, from Road Maintenance and Stormwater personnel, and, on occasion, by other County staff. The watershed studies currently under development include hydrologic computer models for simulating stormwater routing of prescribed storm events. The hydrologic models will be a predictive tool for identifying and quantifying deficiencies in the Secondary System for meeting their LOS. No LOS is applied for the County roadside tertiary system where the primary focus will be on maintenance by the Road and Maintenance Department. This parallels the process for roadway LOS for the major transportation network that is modeled, but doesn't include local streets. As with transportation, the capital project investments of the stormwater program funding are focused on the secondary drainage canals and structures and the National Pollutant Discharge Elimination System (NPDES) Program.

**Stormwater Capital Improvement Element (CIE)**Refer to Tables 1 and 2 attached

This AUIR specifically addresses the projects in the Stormwater Capital Improvement Element (CIE) providing the basis for updating the progress of the county's capital stormwater program. The Non-CIE component of the Stormwater program is also listed to balance the total program with total program revenue.

### **Total Program Focus**

The FY 12 total stormwater program is significantly reduced as compared to previous years due to decreases in revenue. Program funding is reduced from 2010 by approximately forty-five percent (45%) due to a reduction in dedicated millage from 0.150 mills to 0.100 mills and the projected decrease in taxable value.

The program has 3 major points of focus. The first is the continued completion of the county's largest stormwater capital project - the Lely Area Stormwater Improvement Project (LASIP). LASIP is a multi-year, multi-phased, master planned, regional stormwater improvement project designed to add conveyance capacity, attenuation, and water quality improvement to the county maintained system in the East Naples area. With the reduced funding, all the LASIP projects except the County Barn Road improvements are scheduled to be completed during 2015 consistent with the permit requirements. The County Barn Road improvements is tied into and separately permitted under the multi-laning of County Barn Road which has been delayed based on reduced funding and demand, especially with the completion of Santa Barbara Blvd. Extension project and delayed school construction.

The second program focus is managing the requirements of the National Pollutant Discharge Elimination System (NPDES) Phase II Municipal Separate Storm Sewer System (MS4) Permit (Permit ID FLR04E037). The County MS4 is the publicly owned and operated stormwater treatment and conveyance system which discharges stormwater runoff into surface waters of the state. The system must be operated with all appropriate pollution prevention measures in place to reduce the contamination of stormwater runoff and prohibit illicit discharges from privately maintained systems into the county MS4. Measurable elements of the permit, six (6) total, must include public education and outreach, public participation and involvement, illicit discharge detection and elimination, construction site runoff control, post-construction runoff control and pollution prevention/good housekeeping conduct. Collier County is currently in year 3 of the second 5-year permit cycle. Significant current NPDES efforts to highlight for this report include ongoing updates to the system inventory and drainage atlas GIS database as well as updating the inventory data of all private inputs of the county MS4. This includes field data collection, review of historic site development and roadway plans, field verification, and data input into a GIS database.

The third program component is an evaluation of the Secondary System water level control structures. The evaluation will include an engineering inspection and assessment of their current ability to function, as well as a cost and time schedule for major maintenance/rehabilitation and/ or replacement. The evaluation will utilize results of enhancements to the hydrologic computer models produced in the watershed studies for determining upgrades and replacements.

### **Long-Range Planning and Completion of Watershed Studies**

Future CIE projects are currently being identified and prioritized as part of a long-range stormwater planning process in coordination with the completion of the watershed studies. Planned future projects will be evaluated on the potential for acquiring alternate funding sources

and grants, environmental restoration, benefit to cost analysis, stakeholder vetting, and agreement with the recommendations of the watershed studies. The current watershed study effort includes an existing condition evaluation, alternative analysis (future projects) evaluation with stakeholder and agency input, and recommendations for implementation.

The secondary system of stormwater management canals and structures will be reassessed to determine existing system capacities, current LOS, identifying the location and nature of any existing deficiencies and proposed needed improvements. This assessment will fully document the current capabilities of the secondary system to treat and convey stormwater from the tertiary (roadside) system to the primary system, which is maintained and operated by the Big Cypress Basin of the South Florida Water Management District. Computer modeling will identify where the demand exceeds the capacity of secondary system (specific deficiencies) and propose upgrades to the system. Proposed system upgrades will be developed in consideration of the recommendations of the watershed studies.

An alternate method of calculating LOS recommended by the watershed studies that may provide a grading system that identifies components at highest risk of failure will be evaluated during FY 12.

**Stormwater Program Summary FY 12 thru FY 16**

Capital Improvement Element (CIE)	\$ 25,299,200
Non-CIE Improvement and Maintenance Projects	<u>\$ 3,900,000</u>
Total Stormwater Improvement Budget	\$ 29,199,200

- Attachments:
1. Table 1
  2. CIE Exhibit "A"
  3. Table 2 (CIE Exhibit "H")

**Facility Type:** County Maintained System of Secondary Stormwater Management Canals & Structures (Category A)

**Table 1 - FY 12 - FY16**

**Capital Improvement Element (CIE) Program**

SAP No.	Project	FY 12	FY 13	FY 14	FY 15	FY 16 *	TOTAL
510185	Freedom Park (Gordon River) - Maintenance & Monitoring	\$ 50,000	\$ 50,000	\$ 50,000	\$ 50,000	\$ 50,000	\$ 250,000
511011	LASIP (see note 2)	\$ 4,503,800	\$ 3,847,900	\$ 3,848,500	\$ 3,959,500	\$ 3,995,400	\$ 20,155,100
510059	Belle Meade Area Stormwater Improvements						
51803	Gateway	\$ 200,000					\$ 200,000
	X-fers/Reserves/Debt Service	\$ 939,700	\$ 939,100	\$ 938,500	\$ 938,500	\$ 938,300	\$ 4,694,100
	SubTotal CIE	\$ 5,693,500	\$ 4,837,000	\$ 4,837,000	\$ 4,948,000	\$ 4,983,700	\$ 25,299,200

**Non-CIE Program**

SAP	Project	FY 12	FY 13	FY 14	FY 15	FY 16	Total
60003	NPDES Program	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 500,000
60094	Secondary System Repair	\$ 240,000	\$ 130,000	\$ 130,000	\$ 130,000	\$ 130,000	\$ 760,000
51144	Stormwater MP Planning	\$ 40,000	\$ 150,000	\$ 150,000	\$ 150,000	\$ 150,000	\$ 640,000
60093	Swale Maintenance and Repair	\$ 200,000	\$ 200,000	\$ 200,000	\$ 200,000	\$ 200,000	\$ 1,000,000
	County Wide Stormwater Imp	\$ 1,000,000					\$ 1,000,000
	Sub Total Non-CIE	\$ 1,580,000	\$ 580,000	\$ 580,000	\$ 580,000	\$ 580,000	\$ 3,900,000

<b>Total Program Cost</b>	<b>\$ 7,273,500</b>	<b>\$ 5,417,000</b>	<b>\$ 5,417,000</b>	<b>\$ 5,528,000</b>	<b>\$ 5,563,700</b>	<b>\$ 29,199,200</b>
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**Fund 325 Revenue**

	FY 12	FY 13	FY 14	FY 15	FY 16	Total
Grants (SFWMD/BCB Agreements)	\$ 1,000,000	\$ 1,000,000	\$ 1,000,000	\$ 1,000,000	\$ 1,000,000	\$ 5,000,000
Interest/Misc	\$ 33,000	\$ 20,000	\$ 20,000	\$ 20,000	\$ 20,000	\$ 113,000
Trans fm 001 Gen Fund	\$ 5,788,200	\$ 4,448,000	\$ 4,448,000	\$ 4,559,000	\$ 4,594,700	\$ 23,837,900
Carry Forward	\$ 503,900					\$ 503,900
Revenue Reserve	\$ (51,600)	\$ (51,000)	\$ (51,000)	\$ (51,000)	\$ (51,000)	\$ (255,600)

<b>Total Program Revenue</b>	<b>\$ 7,273,500</b>	<b>\$ 5,417,000</b>	<b>\$ 5,417,000</b>	<b>\$ 5,528,000</b>	<b>\$ 5,563,700</b>	<b>\$ 29,199,200</b>
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**Notes:**

1. Stormwater FY 13 - 16 revenue projections provided by OMB.
2. LASIP completion planned by FY 15, exception is County Barn Rd. (CBR) component as indicated LASIP FY 16. LASIP CBR segment integral with roadway improvements which have been deferred due to shift in traffic to recently completed Santa Barbara Blvd. and deferred proposed school construction.
3. Belle Meade pushed beyond FY 16 due to funding availability.
4. Gateway project funded in FY 12 due to required project completion modifications (FY 10 original final funding year with turn over to CRA).

# Schedule of Capital Improvement

## “Exhibit A & Exhibit H”

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EXHIBIT "A"  
COLLIER COUNTY SCHEDULE OF CAPITAL IMPROVEMENTS  
FISCAL YEARS 2012-2016

STORMWATER MANAGEMENT SYSTEM PROJECTS		CONSTRUCTION	\$ AMOUNT	\$ AMOUNT	\$ AMOUNT	\$ AMOUNT	\$ AMOUNT	\$ AMOUNT
CIE #	PROJECT	SCHEDULE NOTES	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	TOTAL
510185	Freedom Park (Gordon River)	12-16 WQ Monitoring & Exotic Veg.	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$250,000
511011	Lely Area (LASIP)	12-16 D/C/R	\$4,503,800	\$3,847,900	\$3,848,500	\$3,959,500	\$3,995,400	\$20,155,100
518031	Gateway Triangle	Revised Completion - 2012	\$200,000	\$0	\$0	\$0	\$0	\$200,000
510059	Belle Meade Stormwater Improvements	Begins in 2017	\$0	\$0	\$0	\$0	\$0	\$0
51143	Immokalee Urban Improvements	Construction & Funding by CRA	\$939,700	\$939,100	\$938,500	\$938,500	\$938,300	\$4,694,100
	Debt Service / Reserves		\$1,580,000	\$580,000	\$580,000	\$580,000	\$580,000	\$3,900,000
	Non- CIE Projects		\$7,273,500	\$5,417,000	\$5,417,000	\$5,528,000	\$5,563,700	\$29,199,200
STORMWATER MANAGEMENT SYSTEM PROJECT TOTALS								
REVENUE KEY - REVENUE SOURCE								
	GR - Grants / Reimbursements		\$1,000,000	\$1,000,000	\$1,000,000	\$1,000,000	\$1,000,000	\$5,000,000
	CF - Carry Forward		\$503,900	\$0	\$0	\$0	\$0	\$503,900
	RR - Revenue Reduction (less 5% required by law)		(\$51,600)	(\$51,000)	(\$51,000)	(\$51,000)	(\$51,000)	(\$255,600)
	IN - Interest Revenue - misc.		\$33,000	\$20,000	\$20,000	\$20,000	\$20,000	\$113,000
	GF - General Fund		\$5,788,200	\$4,448,000	\$4,448,000	\$4,559,000	\$4,594,700	\$23,837,900
REVENUE TOTAL			\$7,273,500	\$5,417,000	\$5,417,000	\$5,528,000	\$5,563,700	\$29,199,200

STORMWATER MANAGEMENT SYSTEM PROJECTS									
CIE #	PROJECT	CONSTRUCTION	\$ AMOUNT	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	\$ AMOUNT
	Stormwater Management Facilities - Capital Improvements	SCHEDULE NOTES Continuous	\$5,911,700	\$5,911,700	\$6,089,100	\$6,271,700	\$6,459,900	\$6,663,700	\$31,396,100
	STORMWATER MANAGEMENT SYSTEM PROJECT TOTALS								
			\$5,911,700	\$5,911,700	\$6,089,100	\$6,271,700	\$6,459,900	\$6,663,700	\$31,396,100

REVENUE KEY - REVENUE SOURCE									
			FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	TOTAL	
GR - Grants / Reimbursements			\$1,000,000	\$1,000,000	\$1,000,000	\$1,000,000	\$1,000,000	\$5,000,000	
CF - Carry Forward			\$0	\$0	\$0	\$0	\$0	\$0	
CRA - Community Redevelopment Area / Municipal Service Taxing Unit			\$0	\$0	\$0	\$0	\$0	\$0	
GF - General Fund			\$4,911,700	\$5,089,100	\$5,271,700	\$5,459,900	\$5,663,700	\$26,396,100	
REVENUE TOTAL			\$5,911,700	\$6,089,100	\$6,271,700	\$6,459,900	\$6,663,700	\$31,396,100	