Indian Hills Recreation Area Stormwater Improvements

Prepared By:
Fort Pierce Engineering Department

Indian Hills Recreation Area Stormwater Improvements

* Truly a "Partnership Project"
  * The Indian Hills Recreation Area Stormwater Project has been a huge success incorporating help from multiple agencies. Those participating included:
    * Florida Communities Trust
    * Florida Department of Environmental Protection
    * South Florida Water Management District
    * St. Lucie River Issues Team
    * Treasure Coast Resource Conservation & Development Council
    * St. Lucie County
    * City of Fort Pierce

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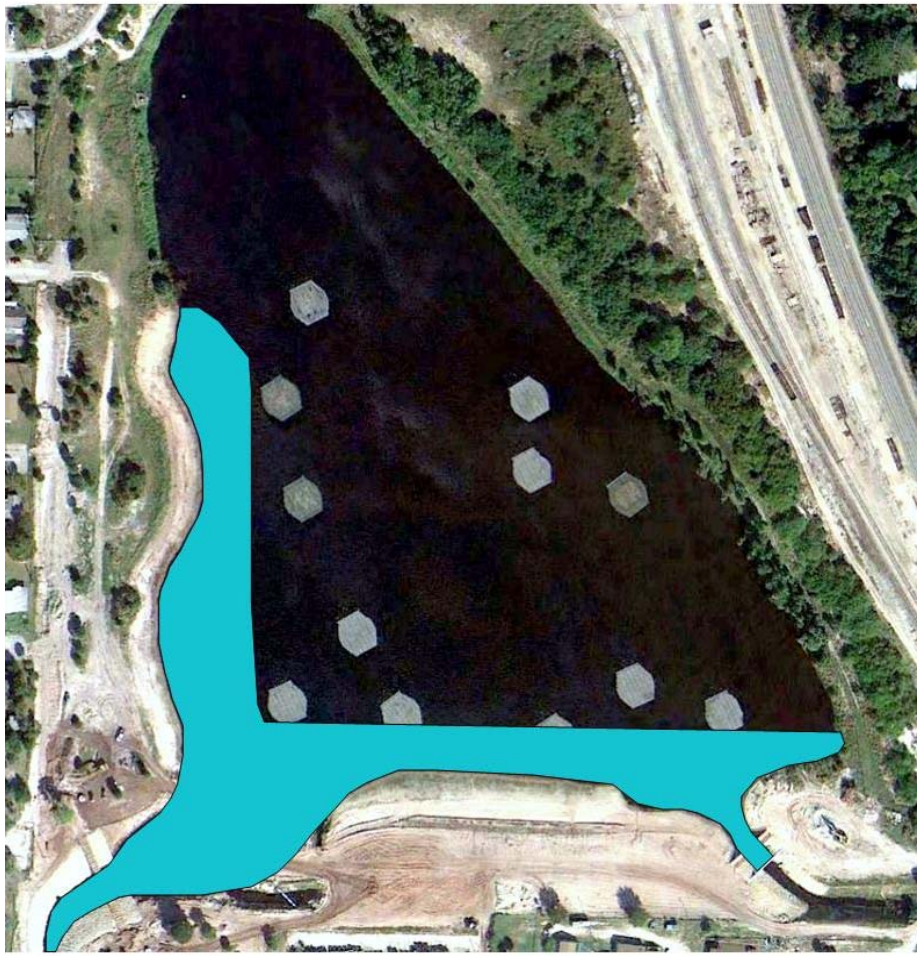
* This stormwater project provides treatment for a 1,242 acre watershed of urban and commercially developed land.
* A treatment train of six different Best Management Practices (BMP's) have been joined together to improve the water quality of stormwater runoff that discharges into the Indian River Lagoon.
* These BMP's consist of:
    1. ***Expansion of an existing 17 acre stormwater treatment lake***

Indian Hills Recreation Area Stormwater Improvements



* The water surface area of the existing lake was increased by 6.7 acres resulting in a total excavated volume of 95,000 CY

Indian Hills Recreation Area Stormwater Improvements

2. ***Construction of a new outfall structure***
   - The weir structure was relocated to increase residence time in lake.

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3. ***Construction of an Alum Injection Plant***

* Injection rate is calculated automatically based on velocity and depth of water flowing through the entrance channel

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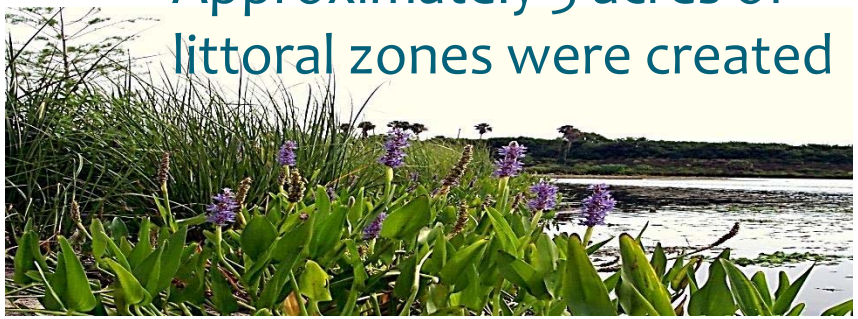
4. *Creation of Littoral Zones*

* Plantings consist of three distinct zones ranging from "Transitional" to "Emergent Aquatics" to "Submergent Aquatics"
* Approximately 3 acres of littoral zones were created



Indian Hills Recreation Area
Stormwater Improvements

5. *Floating Aquatic Plant System*

* Mats constructed of closed cell foam were planted with aquatic nutrient accumulators. Twelve floating "islands" were installed and anchored totaling 1 acre of growing surface

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6. *Bio Swales*

* Pre-treatment bio swales were constructed on the western property line providing treatment of runoff of the adjacent residential neighborhood prior to discharging into the stormwater lake.

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Pervious Paver Parking Area

* In addition to the stormwater improvements, recreational amenities were added allowing visitors to enjoy the improvements while being educated about the stormwater protection system and the importance of preserving our natural resources.

Pedestrian Bridge

0.94 mile pedestrian trail around perimeter of lake

Indian Hills Recreation Area
Stormwater Improvements

- **Project Costs:**
  - **Design** $ 101,572
  - **Construction** $2,787,588
  - **Materials Testing** $ 29,900
  - **Inspection / Environmental Monitoring** $ 81,000

TOTAL **$3,000,060**

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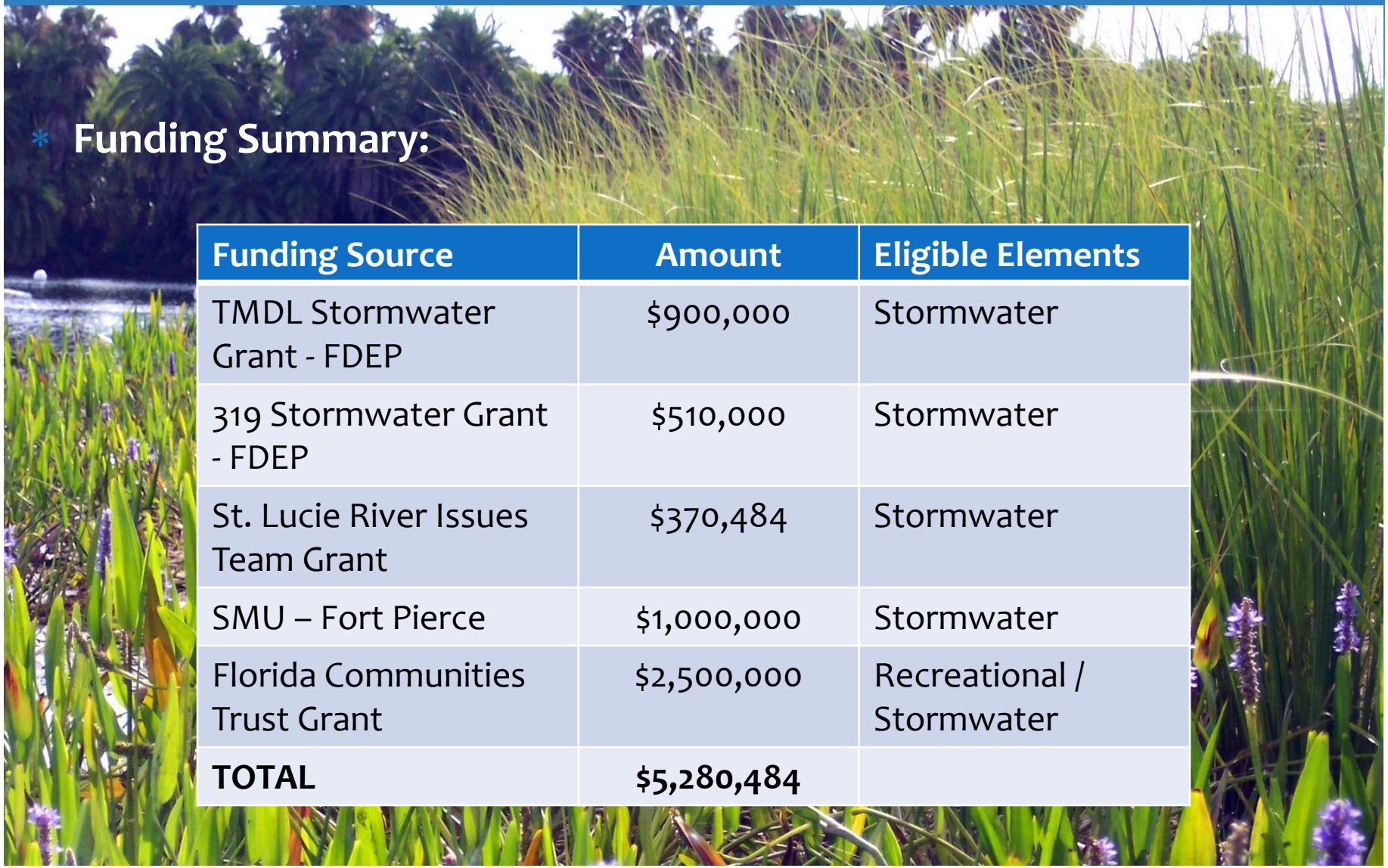
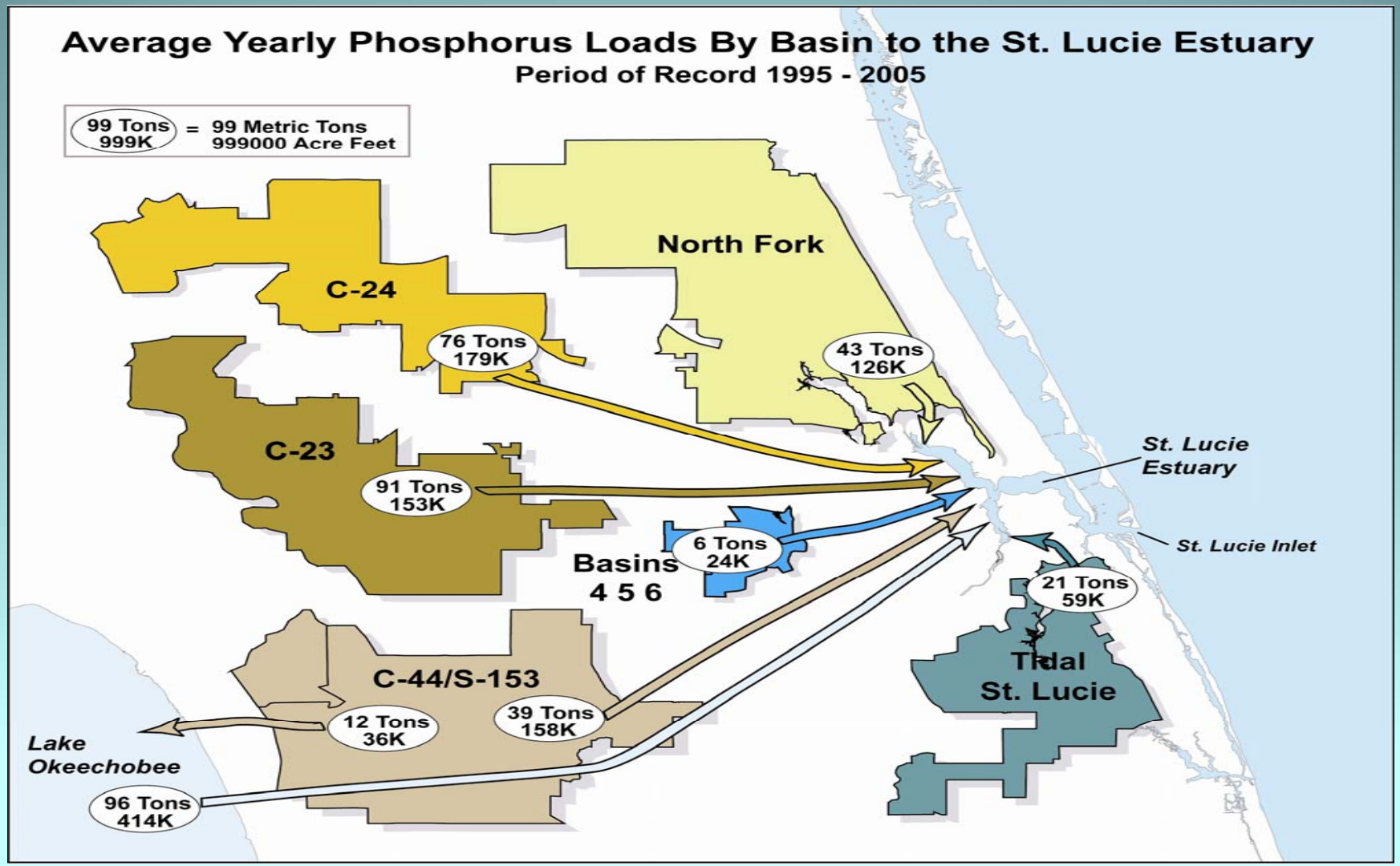


* **Funding Summary:**

Funding Source	Amount	Eligible Elements
TMDL Stormwater Grant - FDEP	$900,000	Stormwater
319 Stormwater Grant - FDEP	$510,000	Stormwater
St. Lucie River Issues Team Grant	$370,484	Stormwater
SMU – Fort Pierce	$1,000,000	Stormwater
Florida Communities Trust Grant	$2,500,000	Recreational / Stormwater
TOTAL	**$5,280,484**	


ST. LUCIE COUNTY
FLORIDA
Platt's Creek Compensatory Mitigation Project
June 11, 2015
SOUTH FLORIDA WATER MANAGEMENT DISTRICT
sfwmd.gov
CITY of PORT ST. LUCIE
FLORIDA
"A City for All Ages"

Platt's Creek PROMA



Platt's Creek PROMA

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Station	Summary Rankings				Ranking by Parameter				
	Overall Ranking	Total Nitrogen, Total Phosphorus and Total Copper	Total Nitrogen and Total Phosphorus	Inorganic Nitrogen and Soluble Reactive Phosphorus	Total Copper	Total Phosphorus	Soluble Reactive Phosphorus	Total Nitrogen	Inorganic Nitrogen
SLT-36	1	1	2	1	4	3	1	2	1
SLT-2	2	2	4	4	9	1	2	12	12
SLT-3	2	2	3	4	13	6	6	3	8
SLT-39	4	6	7	2	11	4	3	17	4
SLT-6	5	6	1	3	29	2	5	1	3
SLT-24	6	4	6	8	8	8	10	12	15
SLT-22	7	10	12	10	10	5	11	23	16
SLT-7	7	9	10	11	14	11	14	12	14
SLT-35	9	11	20	9	3	30	15	11	11
SLT-37	9	5	15	21	NA	24	33	6	7
SLT-14	11	12	5	7	30	13	17	5	6
SLT-5	12	8	7	20	15	9	4	12	35
SLT-9	13	14	12	13	24	7	8	21	21
SLT-30	14	12	24	22	1[a]	17	12	30	30
SLT-34	14	20	15	11	32	20	23	10	5
SLT-8	14	15	27	18	1	26	18	26	19
SLT-13	17	17	9	14	36	18	20	4	13
SLT-33	17	28	29	6	16[a]	21	9	35	10
SLT-27	19	16	19	19	16[a]	16	13	22	25
SLT-28	20	19	29	22	5[a]	15	7	41	35
SLT-37A	21	26	23	14	25	37	31	9	2

NOTE:

[a] Total number of samples collected at the station was eight or less.
NA - No available samples.
Ties are indicated by the ranks being equal in a column.

Platt's Creek PROMA

ST LUCIE COUNTY

PLATT'S CREEK STORMWATER MANAGEMENT FACILITIES
PROJECT NO. 0307

LOCATION MAP

APRIL 2003

BOARD OF COUNTY COMMISSIONERS

JOHN BRUHN	DISTRICT 1
DOUG COWARD	DISTRICT 2
PAULA LEWIS	DISTRICT 3
FRANNIE HUTCHINSON	DISTRICT 4
CLIFFORD BARNES	DISTRICT 5

COUNTY ADMINISTRATION

DOUGLAS M. ANDERSON	ADMINISTRATOR

PUBLIC WORKS DEPARTMENT

DONALD B. WEST, P.E.	DIRECTOR OF PUBLIC WORKS
MICHAEL V. POWLEY, P.E.	COUNTY ENGINEER

LIST OF DRAWINGS

DWG. No.	TITLE
	GENERAL
G-1	TITLE SHEET, LIST OF DRAWINGS AND LOCATION MAP
G-2	SYMBOLS, ABBREVIATIONS AND GENERAL NOTES
G-3	EXISTING SITE PLAN
G-4	PLANTING DRAWING KEY MAP (NOT INCLUDED IN THIS CONTRACT)
	CIVIL
C-1	SITE PLAN AND CIVIL DRAWING KEYMAP
C-2	DEMOLITION PLAN
C-3	PROPOSED GRADING PLAN (NOT INCLUDED IN THIS CONTRACT)
C-4	PROPOSED GRADING PLAN
C-5	PROPOSED GRADING PLAN (NOT INCLUDED IN THIS CONTRACT)
C-6	PROPOSED GRADING PLAN
C-7	SITE CROSS SECTIONS
C-8	SITE CROSS SECTIONS (NOT INCLUDED IN THIS CONTRACT)
C-9	PUMP STATION SITE PLAN SHEET 1
C-10	PUMP STATION SITE PLAN SHEET 2
C-11	MISCELLANEOUS DETAILS SHEET 1
C-12	MISCELLANEOUS DETAILS SHEET 2
C-13	MISCELLANEOUS DETAILS SHEET 3
C-14	MISCELLANEOUS DETAILS SHEET 4
	PLANTING
P-1	PROPOSED PLANTING PLAN (NOT INCLUDED IN THIS CONTRACT)
P-2	PROPOSED PLANTING PLAN (NOT INCLUDED IN THIS CONTRACT)
P-3	PROPOSED PLANTING PLAN (NOT INCLUDED IN THIS CONTRACT)
P-4	PROPOSED PLANTING PLAN (NOT INCLUDED IN THIS CONTRACT)
P-5	PROPOSED WETLANDS PLANTING DETAILS SHEET 1 (NOT INCLUDED IN THIS CONTRACT)
P-6	PROPOSED WETLANDS PLANTING DETAILS SHEET 3 (NOT INCLUDED IN THIS CONTRACT)
	MECHANICAL
M-1	STORM WATER PUMP STATION MECHANICAL PLANS AND SECTION
	STRUCTURAL
S-1	STORM WATER PUMP STATION STRUCTURAL NOTES
S-2	STORM WATER PUMP STATION STRUCTURAL PLANS AND SECTIONS
S-3	STORM WATER PUMP STATION STRUCTURAL WALL DETAILS
S-4	STORM WATER PUMP STATION STRUCTURAL DETAILS
	ELECTRICAL
E-1	ELECTRICAL LEGEND AND SYMBOLS
E-2	ELECTRICAL SITE PLAN
E-3	ELECTRICAL ONE LINE DIAGRAM
E-4	ELECTRICAL SCHEMATIC DIAGRAM
E-5	ELECTRICAL SCHEMATIC AND RISER DIAGRAM
E-6	ELECTRICAL DETAILS
E-7	ELECTRICAL DETAILS
E-8	ELECTRICAL DETAILS

TITLE SHEET, LIST OF DRAWINGS AND LOCATION MAP SHEET 1 OF DRAWING No. G-1

HAZEN AND SAWYER

ROBERT B. TAYLOR, JR. P.E. (GENERAL, CIVIL & MECHANICAL) No. 42185

TALAL S. ABI-KARAM, P.E. (STRUCTURAL) No. 48658

MARK E. LUTHER, P.E. (ELECTRICAL) No. 35801

Platt's Creek PROMA

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Regulatory Mitigation Plan

- Platt's Creek – Update
  - 47.87 acres of wetland creation
    - 13.54 acres of Hydric Hammock
    - 23.10 acres of Depression Marsh
    - 12.70 acres of Floodplain Swamp
    - 13.65 acres of Mesic Flatwood buffer
  - Creation of 22.30 functional gain units
    - Crosstown: functional loss of 11.25
  - Includes woodstork mitigation
  - Includes floodplain compensation
  - Provides 11.05 functional gain units to County for future projects
  - Construction expected to be complete summer 2015
  - Projected cost: $2.6 million


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