

NPDES Maintenance and Compliance Management System

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**Florida Stormwater Association
2013 Annual Conference**

June 14

Agenda

- Project Description
- NPDES Requirements
- Project Overview
- Maintenance and Compliance Management
- Summary

Project Description

Help FDOT District 2 ensure compliance with
NPDES permit requirements



NPDES Requirements

NPDES Requirements

- Inventory of systems (database and mapping)
- Annual inspection and reporting
- Required maintenance activities
- Illicit discharge detection and reporting

Systems Inventory Design Information Database

- Permit Information
 - Permit type, agency, extent, number of systems
- System Design Information
 - Status: active, inactive
 - Unique ID, system type, location, H&H design data
 - Design plans and location map

Inspections and Reporting

- Inspection of all permitted surface and stormwater management systems
- Inspection of all permitted and specified non-permitted stormwater conveyance systems
- Documentation of inspection findings and corrective actions
- Maintenance work orders generated as needed

Maintenance Activities

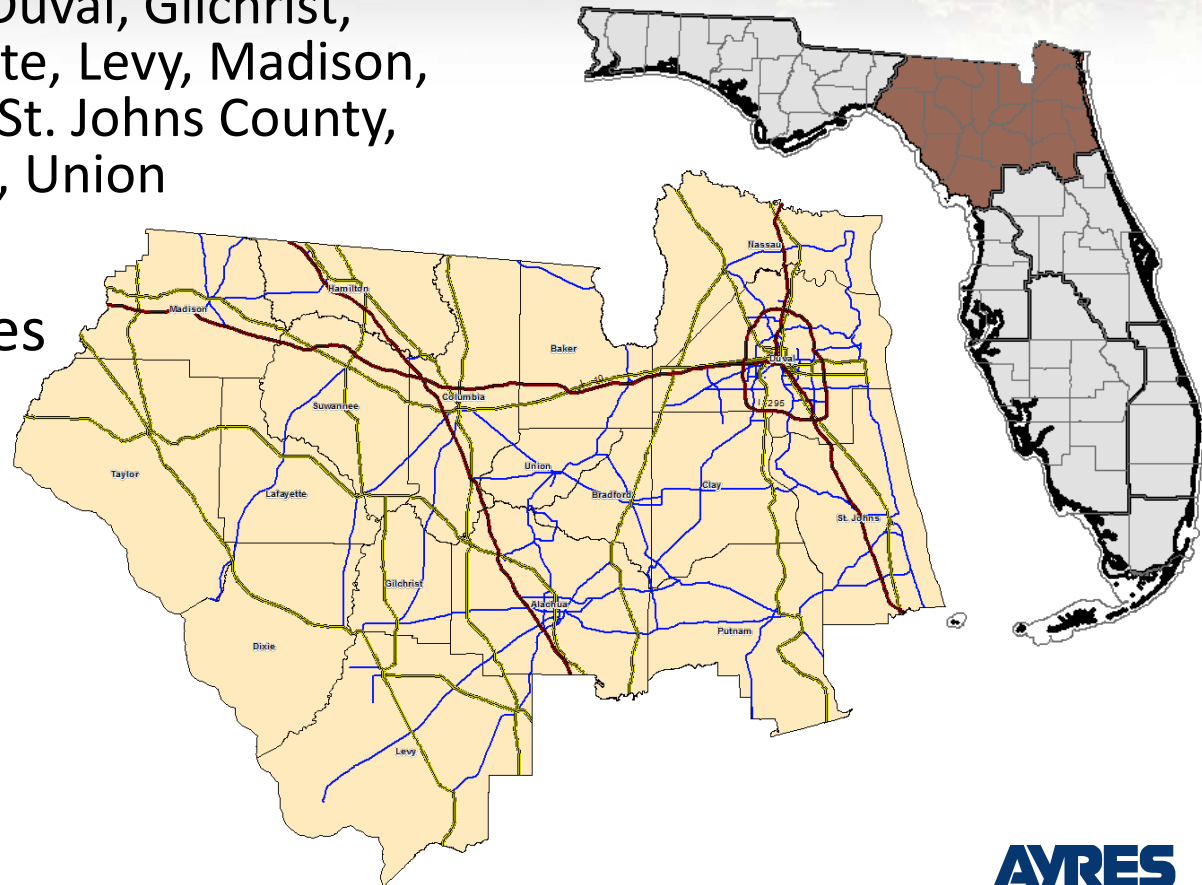
- Trash Removal
- Nuisance Vegetation Removal
- Control Structure Rebuild
- System Modification

The background of the slide features a photograph of a body of water with ripples, and some green foliage on the right side. A thick, solid green wavy line curves across the upper portion of the image, separating the water from the white background below.

Project Overview

Project Overview

- 18 Counties
 - Alachua, Baker, Bradford, Clay, Columbia, Dixie, Duval, Gilchrist, Hamilton, Lafayette, Levy, Madison, Nassau, Putnam, St. Johns County, Suwannee, Taylor, Union
- Regulatory Agencies
 - SJRWMD
 - SRWMD
 - SWFWMD
 - FDEP
 - ACOE



Project Overview

Stormwater Management Facilities

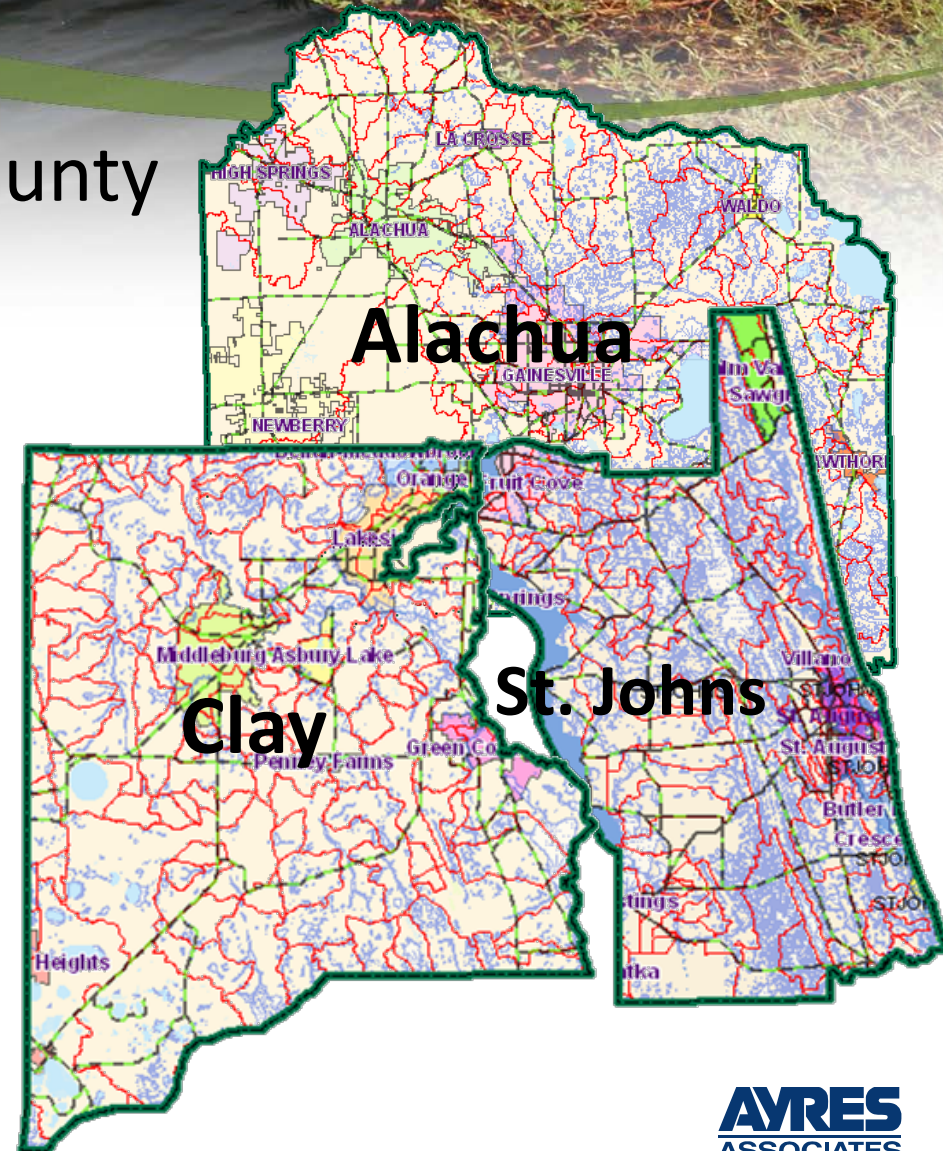
- 450 permits
- 2,700 systems
- 17,000 inspections
- 5,300 maintenance work orders

Project Overview

Stormwater Conveyance Network

- 10,000 features per county
- 50 GIS Shapefiles

- * ☐ FDEP Sinkhole Types
- * ☐ FDEP Waterbody ID's (WBIDs)
- * ☐ AlachuaCoDEPTMDLs
- * ☐ AlachuaCoEPATMDLs
- * ☐ Alachua County Conservation Areas Zone A
- * ☐ Alachua County Conservation Areas Zone B
- * ☐ Alachua County Conservation Areas Zone C
- * ☐ Alachua County Superfund/National Priority List-1998
- * ☐ Alachua County USFWS National Wetland Inventory
- * ☒ Alachua County Hydrography
- * ☐ SJRWMD Land Use
- * ☐ SRWMD Land Use
- * ☐ Alachua County Soils
- * ☐ Section Township Range
- * ☐ COG Parcels
- * ☐ SJRWMD National Wetlands Inventory
- * ☐ FEMA Flood Zones
- * ☐ City Boundaries
- * ☐ GrayScale Aerials
- * ☒ Colored Aerials
- * ☐ USGS Quad Maps
- * ☒ Alachua County Boundary





Maintenance and Compliance Management

Maintenance and Compliance Management

- Centralized information storage database
- Web-based interface
- Custom reports
- Monitoring and tracking tools



The screenshot displays the NPDES (National Pollutant Discharge Elimination System) web interface. The header includes the NPDES logo and the text "Permit Tracking, Hazardous Waste, Stormwater Management System". Below the header is a navigation bar with links: Home, Stormwater Management, Hazardous Waste Management, Systems Locator, GIS, NPDES Information and Links, Drainage Connection / Construction Inspections, Permit Tracking, Reports, Stormwater Inlets, Outfalls, and Options. A left sidebar contains a vertical menu with links: Home, Stormwater Management, Hazardous Waste Management, Permit Tracking, Reports, Stormwater Inlets, Outfalls, Illicit Discharge / Connection, Industrial & High Risk Facilities, Drainage Connection / Construction Inspections, Roadway Maintenance Facility, As-Built Plans, GIS, NPDES Info and Links, and Systems Locator. The main content area features a large photo of a waterway with a concrete structure, and four smaller images: Stormwater Management, Hazardous Waste Management, Permit Tracking, and Reports. Below the main photo is the text "Photos courtesy of South Florida Water Management District and Ayres Associates Inc". At the bottom, contact information is provided: "Call or E-mail questions and comments to: Alan Obaigbena, P.E. Ph: 386-961-7064 SC: 881-7064 Fax: 386-961-7065 E-mail Address: alan.obaigbena@dot.state.fl.us".

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Interface Tools

[Home](#)

[Stormwater Management](#) ▶

[Hazardous Waste Management](#) ▶

[Permit Tracking](#) ▶

[Reports](#) ▶

[Stormwater Inlets](#) ▶

[Outfalls](#) ▶

[Illicit Discharge / Connection](#)

[Industrial & High Risk Facilities](#) ▶

[Drainage Connection / Construction Inspections](#)

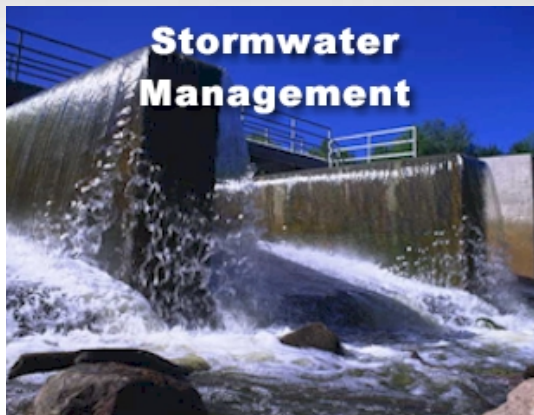
[Roadway Maintenance Facility](#) ▶

[As-Built Plans](#)

[GIS](#) ▶

[NPDES Info and Links](#)

[Systems Locator](#) ▶



Stormwater Management

[System Design Information](#)

[System Inspections](#)

[Maintenance Work Orders](#)



Reports

[Stormwater Management](#)

[Hazardous Waste Management](#)

[Stormwater System Permits](#)

[Drainage Connection Permits](#)

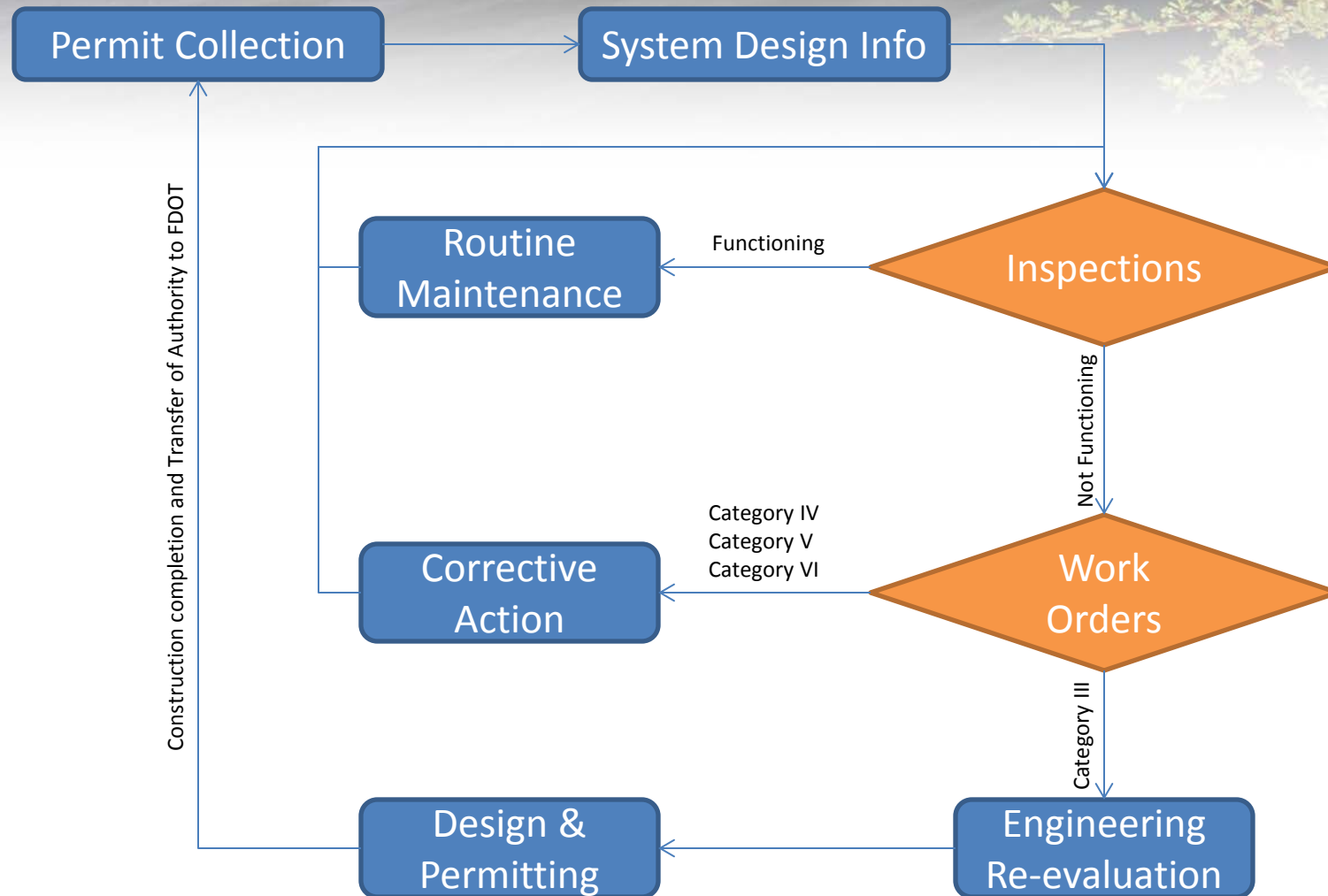
[Stormwater Inlets, Inspections, Work Orders](#)

[Outfalls, Inspections, Work Orders](#)

[Illicit Discharge / Illegal Connection Reports](#)

[Drainage Connection Inspections](#)

Stormwater Management



Stormwater Management Processes and System Types

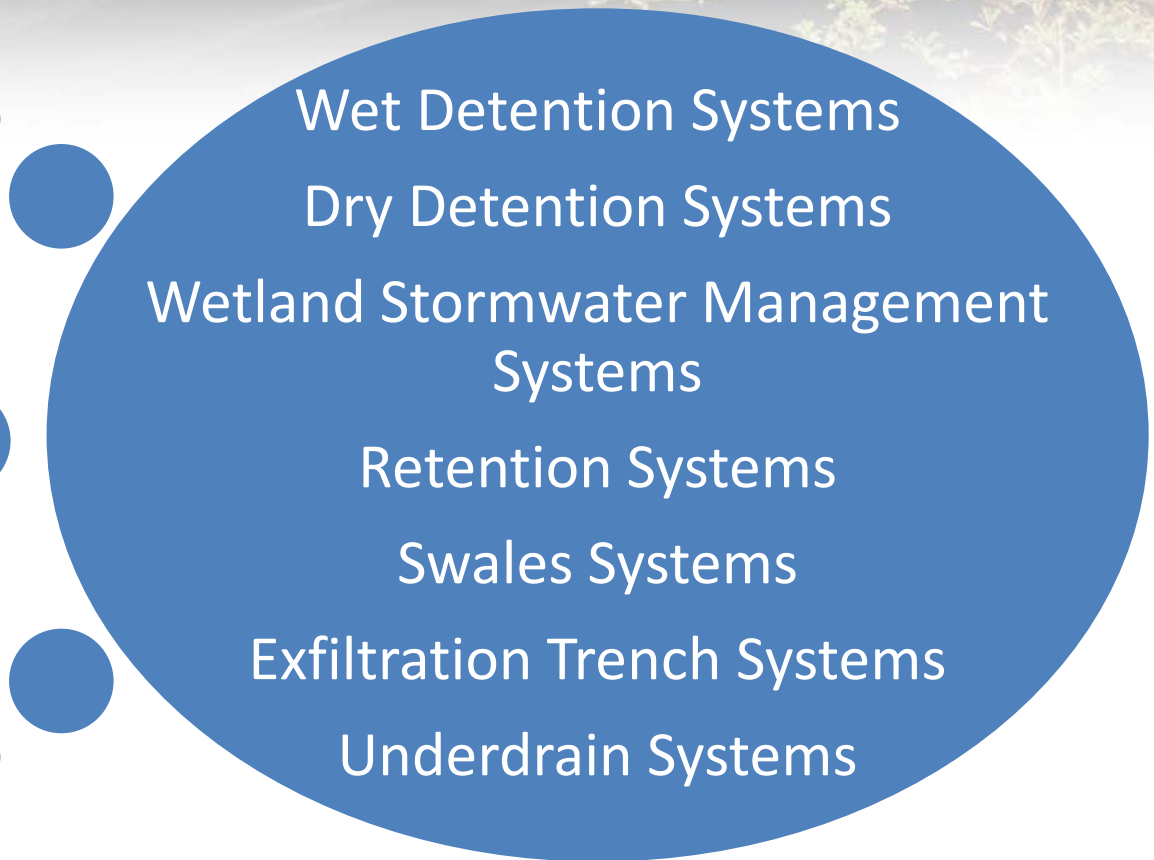
Biological



Physical



Chemical



System Design Information



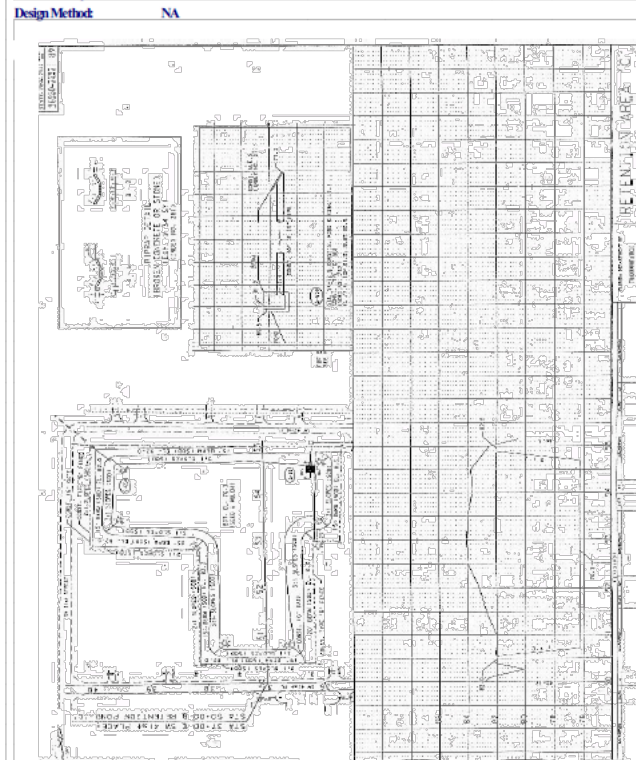
Florida Department of Transportation Stormwater Management - System Design Information

05/24/2013

System ID: 207667-1-52-01-D096 Permit No.: 4-001-0070
Station: 2217+00 Med (AH) SPN: 26080-3522

Latitude: 29 Longitude: -82 County: Alachua Roadway: SR 20
Watershed: Mile Post: 7.854

Delineated Drainage Area	7.78 ac
Impervious Area	2.55 ac
Pervious Area	5.23 ac
Design or Critical Event	25yr/24hr
Pre C (Runoff Coeff) and/or CN	72
Post C (Runoff Coeff) and/or CN	79
Peak Runoff Rate	10.00 cfs
Rainfall Intensity (I)	N/A
Rainfall Intensity - Depth (P)	8.64 in
Q Pre	10.00 cfs
Q Post	10.00 cfs
Seasonal High Water Elevation	At Ground Surface
Design High Water Elevation	1.65 + Ditch Invert
Design Tail Water Elevation	N/A
Pre Time of Concentration	90.00 min
Post Time of Concentration	72.00 min
IDF Curve	N/A
Zone	4
Treatment Volume	0.65 ac-ft
Treatment Volume Elevation	69.12 ft
Treatment Volume Depth	0.75 ft
Type of Weir	Sharp Crested
Shape of Weir	Rectangular
Weir Length/Angle	10.00 ft
Weir Elevation	69.12 ft
Permanent Pool Volume	N/A
Orifice Diameter	N/A
Orifice Area	N/A
Control Device Elevation	N/A
Design Residence Time	N/A
Average Flow Rate (ac-ft/dy)	N/A
Hydraulic Radius (Outfall Pipe)	N/A
Top of System (pond) Berm Elevation	N/A
Bottom of System Elevation	68.37 ft
Design Treatment Volume Recovery Time	35.00 hr
Area of System	7.78
Ditch Block Width	10.00 ft
Ditch Block Height	1.75 ft
Ditch Block Length	2700.00 ft
Length of Underdrain Basin	N/A
Top Width of Underdrain Basin	N/A
Size of Underdrain Pipe	6.00 in
Length of Underdrain Pipe	500.00 ft
Feet of Underdrain Cover	N/A



Field Inspections



Field Inspections



Reporting Interface

Compliance Information

Any offsite impacts	<input type="text" value="No"/>
Condition of control structure	<input type="text" value="Good"/>
Condition of baffle/skimmer	<input type="text" value="N/A"/>
Condition of ditch block	<input type="text" value="N/A"/>
Condition of orifice	<input type="text" value="Good"/>
Condition of inlet/outlet structure	<input type="text" value="Unknown"/>
Apparent erosion problems	<input type="text" value="No"/>
Apparent siltation problems	<input type="text" value="No"/>
Apparent nuisance vegetation problems	<input type="text" value="Yes"/>
Any trash/debris in and around system?	<input type="text" value="No"/>
System appears to be functioning at the time of inspection?	<input type="text" value="Yes"/>
Compliance category	<input type="text" value="Category II"/>

Comments / Recommendations

Inspection Findings

System appears to be functioning as designed at the time of inspection. Nuisance vegetation and debris found in system.

Corrective Action Recommendations

Remove vegetation and trash. Continue routine maintenance.

Estimated Corrective Action/Retrofit Costs

\$500.00

Anticipated Corrective Action Start Date

12/01/2008

pick a date..

Anticipated Completion Date

03/01/2009

pick a date..

Inspected by

B. Quinton, D. Sabeh

Field Inspections



Florida Department of Transportation Stormwater Management - Inspection Report

Page 1 of 2

05/28/2013

Ins. No.: 207792-1-32-01-P005-11/19/2008-4
WMD: SBW/MD
WPI:
County: Alachua
Station: 441+00 LI
Design Method: NA

Permit No.: 4-001-15492-6
SPN:
FPN: 207792-1-32-01
Roadway: SR 222
Mile Post: 7.503
Inspected by: D. Sabell, P. Shipley

Inspection Report

Last Inspection Date: 10/16/2007
Current Inspection Date: 11/19/2008
Any Offsite Impacts: No
Condition of Control Structure: N/A
Condition of Skimmer/Baffle: N/A
Condition of Ditch Block: N/A
Condition of Office: N/A
Condition of Inlet/Outlet Structure: Good

Last Inspection Compliance Category (if applicable):
Apparent Erosion Problems? No
Apparent Siltation Problems? No
Apparent Nutrient Vegetation Problems? No
Any Trash/Debris In and Around System? Yes
Does the system appear to be functioning at time of inspection? No
Compliance Category (if applicable): Category IV

Estimated Corrective Action/Retrofit Cost: \$1,500.00
Anticipated Corrective Action Start Date: 12/01/2008
Anticipated Completion Date: 03/01/2009

Inspection Findings

System appears to be partially functioning as designed at the time of inspection. Filter drain is not working. Stagnant water (no storm).

Corrective Action Recommendations

Investigate to convert to wet pond with bleed down to adjacent ditch. Flush filter drain. Remove trash. Continue routine maintenance.



Florida Department of Transportation Stormwater Management - Inspection Report

Page 2 of 2

05/28/2013

System ID: 207792-1-32-01-P005

Delimited Drainage Area: NA
Impervious Area: NA
Pervious Area: NA
Design of Critical Event: NA
Pre C (Runoff Coeff) and/or CN: NA
Post C (Runoff Coeff) and/or CN: NA
Peak Runoff Rate: NA
Rainfall Intensity (I): NA
Rainfall Intensity - Depth (P): NA
Q Pre: NA
Q Post: NA
Seasonal High Water Elevation: NA
Design High Water Elevation: NA
Design Tidal Water Elevation: NA
Pre Time of Concentration: NA
Post Time of Concentration: NA
IDF Curve: NA
Zone: NA
Treatment Volume: NA
Treatment Volume Elevation: NA
Treatment Volume Depth: NA
Type of Weir: NA
Slope of Weir: NA
Weir Length/Angle: NA
Weir Elevation: NA
Permanent Pool Volume: NA
Orifice Diameter: NA
Orifice Area: NA
Control Device Elevation: NA
Design Residence Time: NA
Average Flow Rate (ac-ft/day): NA
Hydraulic Radius (Rough Pipe): NA
Tip of System (pond) Item Elevation: NA
Bottom of System Elevation: NA
Design Treatment Vol. Recovery Time: NA
Area of System: NA
Ditch Block Width: NA
Ditch Block Height: NA
Ditch Block Length: NA
Length of Underdrain Basin: NA
Top Width of Underdrain Basin: NA
Slope of Underdrain Pipe: NA
Length of Underdrain Pipe: NA
Feet of Underdrain Cover: NA

Underdrain Trench Length: NA
Underdrain Trench Width: NA
Underdrain Depth: NA
Underdrain Pipe Length: NA
Underdrain Pipe Size: NA

Location Map Latitude: Longitude:



Maintenance Work Orders



Florida Department of Transportation Stormwater Management - Maintenance Work Order

Page 1 of 3

05/28/2013



Florida Department of Transportation Stormwater Management - Maintenance Work Order

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05/28/2013

System ID: 207792-1-32-01-P005

Work Order No.: 207792-1-32-01-P005-03/01/2009-WO
Insp. No.: 207792-1-32-01-P005-11/19/2008-1
Work Order Generation Date: 11/20/08
Work Order Expected Completion Date: 3/1/09
Actual Date Work Order was Executed:

Description of Work Required

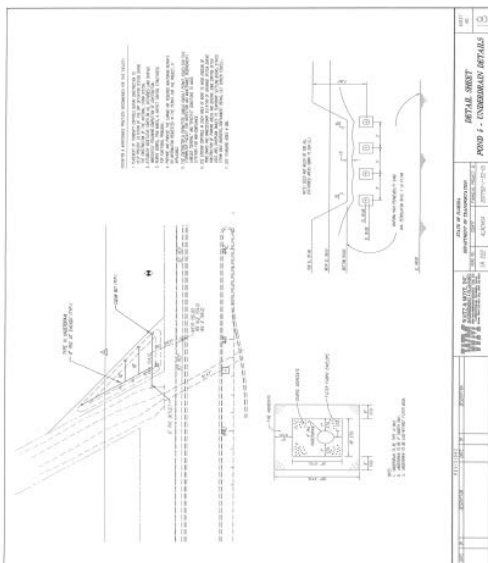
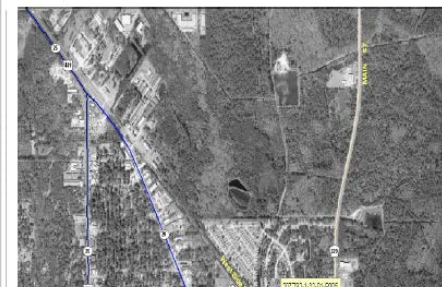
-Remove litter/debris

Flash filter drain. Investigate to convert to wet pond with bleed down to adjacent ditch.

nd Drainage Area NA
out Area NA
Area NA
er Critical Event NA
tuff Coeff) and/or CN NA
tuff Rate NA
Intensity (I) NA
Intensity - Depth (I) NA
NA
NA
High Water Elevation NA
High Water Elevation NA
High Water Elevation NA
e of Concentration NA
et of Concentration NA
ve NA
NA
et Volume NA
et Volume Elevation NA
et Volume Depth NA
Weir NA
t Weir NA
t Angle NA
tation NA
ent Pool Volume NA
Diameter NA
Area NA

Exfiltration Trench Length NA
Exfiltration Trench Width NA
Exfiltration Depth NA
Exfiltration Pipe Length NA
Exfiltration Pipe Size NA

Location Map



Maintenance Engineer:

Signature:

RETURN TO DISTRICT MAINTENANCE OFFICE WHEN COMPLETE

Florida Department of Transportation Stormwater Management - Maintenance Work Order

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05/28/2013

: 207792-1-32-01-P005-03/01/2009-WO

Job No. Funds FSS Acct. No. Control Function Cost Center

Equipment		DOT Number
Class	Description	

Materials

--

Comments

--

Contact Person:

--

Maintenance Work Orders



Google Earth Extension



System ID: 26260-3425-P-1911

System Type: Swale

Permit Number: 4-001-0054GM

FPN:

[System Design Information](#)

[Inspections](#)

[Work Orders](#)

Recent Inspections:

[10/10/08](#)

[10/17/07](#)

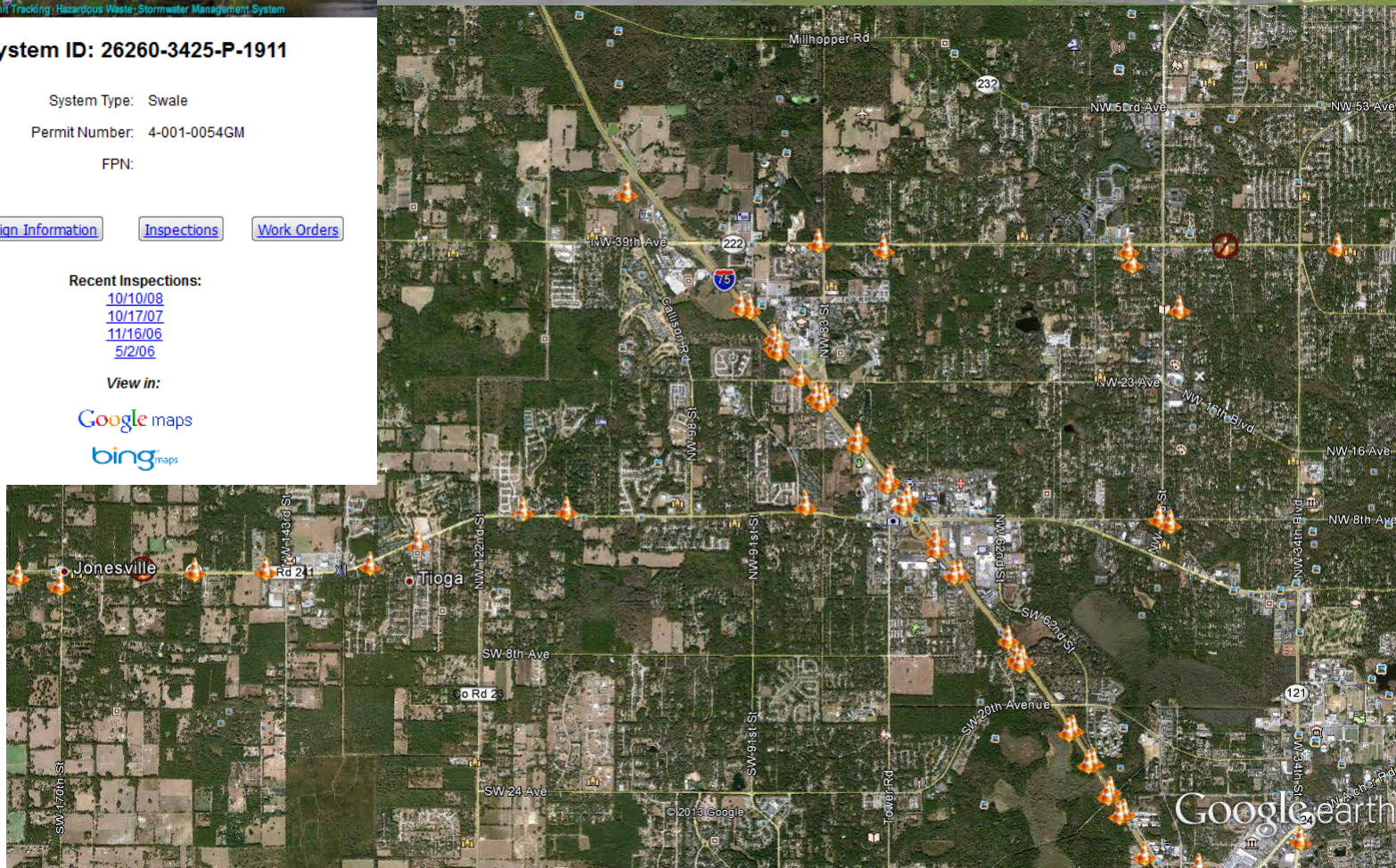
[11/16/06](#)

[5/2/06](#)

View in:

[Google maps](#)

[bing maps](#)





Summary

Summary

[System Design Information](#)

[System Inspections](#)

[Maintenance Work Orders](#)

System Inspections

Please select a system.

- 207667-1-52-01-D097
- 207667-1-52-01-D098
- 207667-1-52-01-D099
- 207667-1-52-01-D100
- 207667-1-52-01-D101
- 207667-1-52-01-D102
- 207667-1-52-01-D103
- 207667-1-52-01-D104
- 207714-1-52-01-P001
- 207714-1-52-01-P002
- 207759-1-52-01-P001
- 207758-1-52-01-P002
- 207758-1-52-01-P003
- 207759-1-52-01-P001

Please select a date.

- 11/7/01
- 10/29/02
- 10/31/03
- 10/21/04
- 11/4/05
- 10/11/07
- 10/24/12
- 1/21/13
- 2/25/13
- 3/4/13

System Inspections

To view or edit an existing inspection, select the County and/or provide the System ID.

Select County

System ID Begins With (Optional)

All Counties

Systems Locator

Stormwater Management

Stormwater Inlets

Stormwater Outfalls

[Stormwater Management](#)

[Hazardous Waste Management](#)

[Stormwater System Permits](#)

[Drainage Connection Permits](#)

[Stormwater Inlets, Inspections, Work Orders](#)

[Outfalls, Inspections, Work Orders](#)

[Illicit Discharge / Illegal Connection Reports](#)

[Drainage Connection Inspections](#)

System Design Information

[Individual](#) [Spreadsheet](#)

System Inspections

[Individual](#) [Spreadsheet](#)

Maintenance Work Orders

Search by County

Search by Permitting Agency

System Inspections

Please select a compliance status.

All [Functioning](#) [Non-Functioning](#)

Maintenance Work Orders

Please select a status.

All [Complete](#) [Incomplete](#)

[Batch Print to PDF](#)

[207667-1-52-01-D097-10/11/2008-I](#)

[207667-1-52-01-D098-10/11/2008-I](#)

[207667-1-52-01-D099-10/11/2008-I](#)

Summary

- Pioneer program by FDOT D2 can be followed by any NPDES permittee
- Various applications



Questions?

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Dori Sabeh: SabehD@AyresAssociates.com