



City of Sanibel



Oisin Dolley, PE – City Engineer
Jordan Varble, PE – Johnson Engineering

December 3, 2024

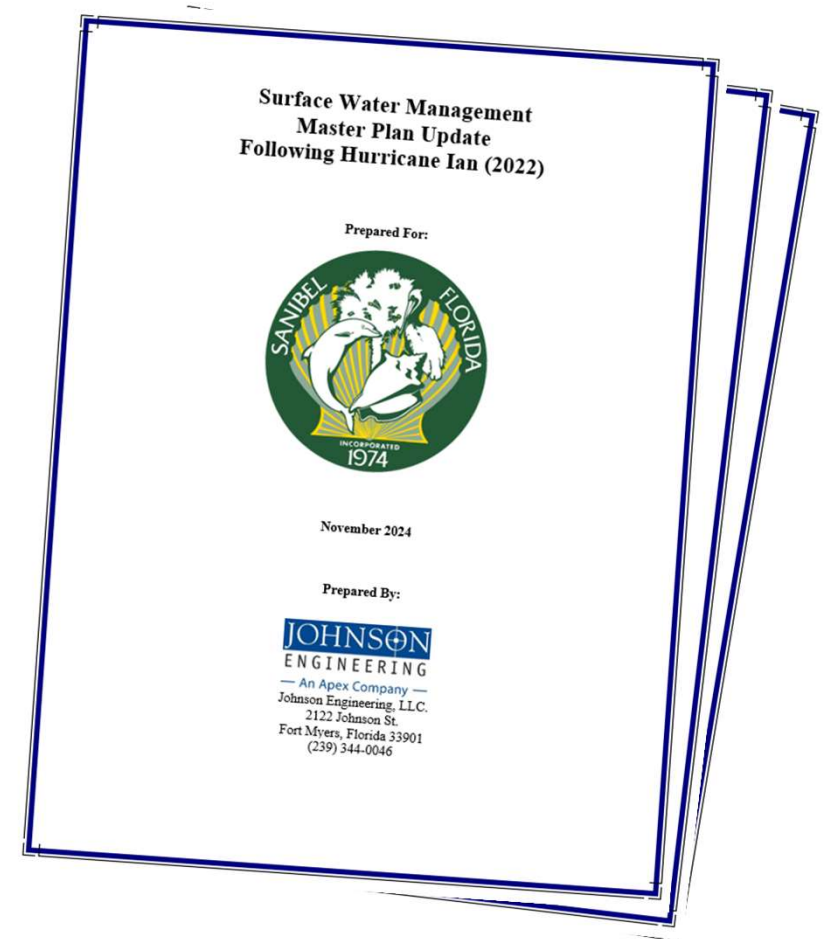
STORMWATER MASTER PLAN Existing Stormwater Infrastructure Assessment

OVERVIEW - SURFACE WATER MANAGEMENT MASTER PLAN

1. Introduction
2. Data Collection
3. Surface Water Management Damages Post-Hurricane Ian
4. Surface Water Management Resiliency
5. Recommendations



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OVERVIEW - SURFACE WATER MANAGEMENT MASTER PLAN



3. Surface Water Management

Damages Post-Hurricane Ian

- Added culverts and swales not previously mapped
- Culvert Repair List



NOTES (applies to all sheets)

- The drainage features shown are a work in progress. Errors and omissions do exist.
- Only those sheets necessary to show the Drainage Features are included. This map book consists of 87 pages.
- Unique ID abbreviations:
 IN = Inlet
 PE = Pipe End Treatment
 MJ = Manhole/Junction Box
 IDs for Control Structures are not consistently formatted and include BR, CSE, CSW, SWW-1, TBE and TBW.
- Automated labeling has been used on these sheets. In some places leaders may cross each other, drainage features or other labels even though they should not.
- Counts of drainage features that occur on each map are shown in the legend, formatted as "IC=123".
- Some categories of drainage features are not shown. These include swales and discharge points.
- Some drainage features are not clearly visible due to the proximity of the features and scale of the maps.
- These maps are not intended to depict which drainage features are to be part of NPDES inspections.
- Some drainage features are privately owned and are shown to provide a more complete understanding of the overall drainage system.
- The parcels shown are from Lee County government and are dated April 29, 2024.
- The aerial photographs shown were provided by Lee County government and were taken in 2024.

Sanibel Post-Ian Surface Water Management
Lee County, Florida



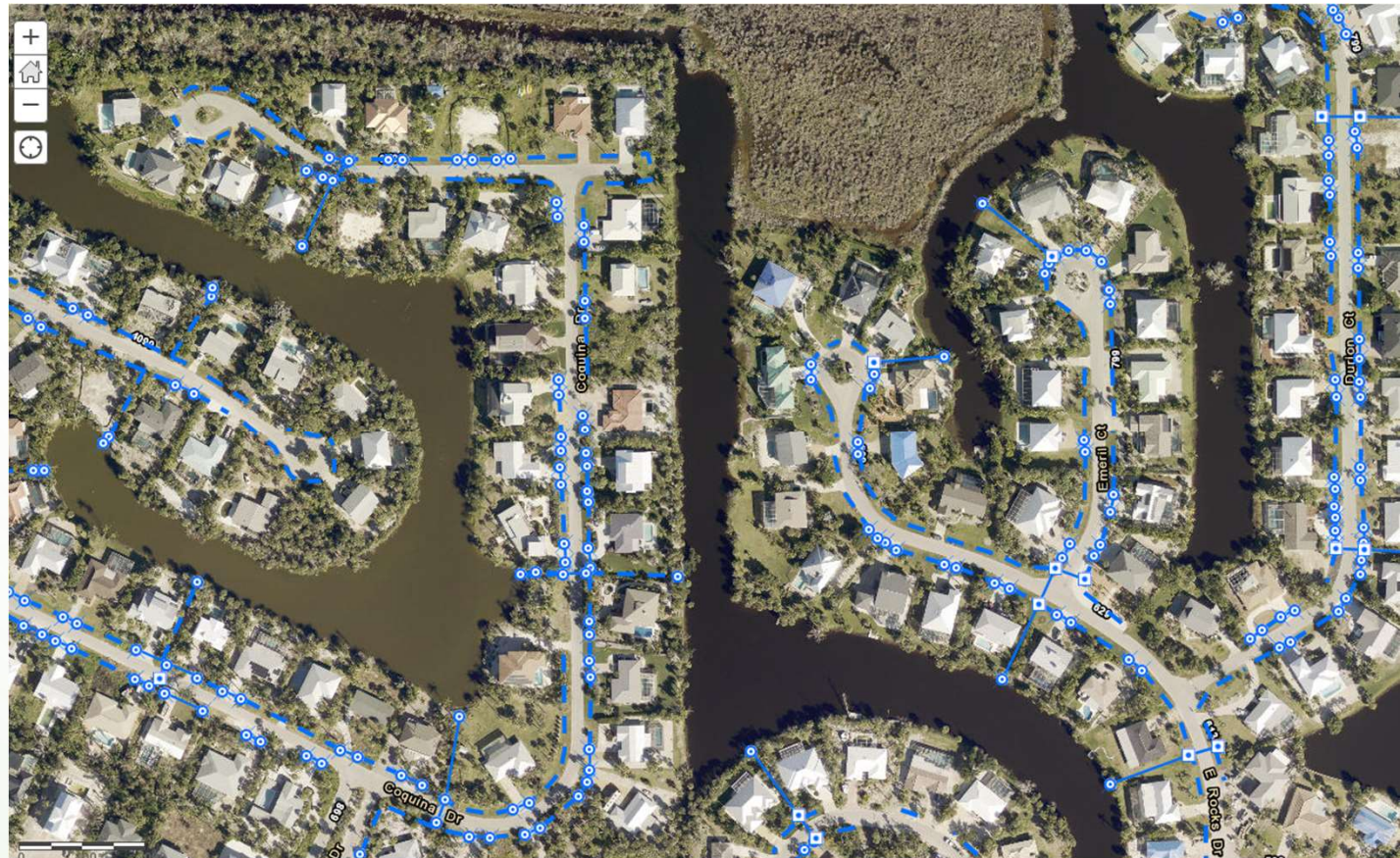
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FORT MYERS, FLORIDA 33901
PHONE (239) 334-0066
E.B. #642 & L.B. #642

Drainage Features
Index Map

DATE	PROJECT NO.	FILE NO.	SCALE	SHEET
September 2024	20236161-001	-	As Shown	1

3. IDENTIFICATION OF STORMWATER MANAGEMENT DAMAGE REPAIRS

- Previous Mapping Focused on Primary Infrastructure
- Developed Comprehensive Map to Include Driveway Culverts
 - 820 Culverts Added to Map
 - 1,763 Pipe Ends Added to Map
 - 2,224 Swales Added to Map
 - Updated Drainage Map Book and added GIS Mapping



3. IDENTIFICATION OF STORMWATER MANAGEMENT DAMAGE REPAIRS

- Visual Inspection of Newly Added Features



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3. IDENTIFICATION OF STORMWATER MANAGEMENT DAMAGE REPAIRS

- Major Blockages & Urgent Issues Completed
- Stormwater Culvert Cleaning Bid Package
 - List of 513 Bid Items
 - Contractor NTP Anticipated May 2025



Funding Summary



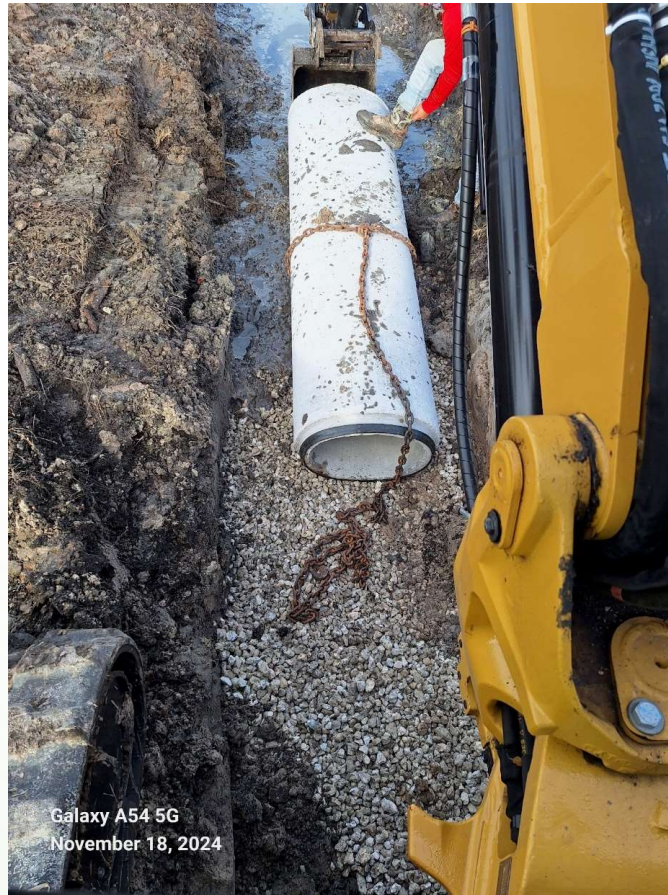
FDEP Stormwater Grant	\$	Funding from 10,000,000 Grant
Stormwater Master Plan (Johnson)	\$	230,000 Actual
City Completed Repairs (FY 23)	\$	55,000 Actual
Culvert Repair Project Cost Estimate (From Master Plan List)	\$	2,000,000 Estimate
Beach Road Weir Rehab	\$	750,000 Estimate
General Bridge and Box Culvert Repairs	\$	200,000 Estimate
City Planned Repairs	\$	200,000 Estimate
Repair Project Management (Johnson)	\$	200,000 Estimate
Subtotal	\$	3,635,000
Remaining	\$	6,365,000 Available For Additional Items

Normal Maintenance (Non-Grant)		
Canal Trimming (FY23)	\$	6,000 Actual
Bridge, Box Culvert and Weir Repairs (FY23)	\$	185,904 Actual
In House Staff Work (FY23)	\$	270,000 Actual
Canal Trimming (FY24)	\$	10,000 Actual
In House Staff Work (FY24)	\$	270,000 Estimate
Remaining Johnson Master Plan Design	\$	151,024 Actual
Additional Johnson Scope	\$	50,000 Estimate
Total	\$	942,928 Actual + Estimate

Major Blockages & Urgent Issues



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Galaxy A54 5G
November 18, 2024



Galaxy A54 5G
November 18, 2024

Annual Sanibel River Clearing - \$200k



OVERVIEW - SURFACE WATER MANAGEMENT MASTER PLAN



1. Introduction

- Workshop with Local Environmental Partners
 - › June 2024
 - › Ongoing Collaboration
- Public Workshop February 2025
- Council Workshop March 2025 (TBD)



OVERVIEW - SURFACE WATER MANAGEMENT MASTER PLAN



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2. Data Collection

- Water Level Datalogger Installations
 - › 10 Locations Installed by Johnson Engineering
 - › 4 Locations Installed by SCCF
- Weir Policy to be Reviewed



OVERVIEW - SURFACE WATER MANAGEMENT MASTER PLAN

2. Data Collection

- Hydrologic Budget: Precipitation and Evapotranspiration (ET)
- Normalized Difference Vegetation Index (NDVI)
 - › Ratio Between Red and Near Infrared Satellite Bands (Landsat USGS/NASA)
 - › Useful in Analyzing Plant Health Over Time & Predictor of ET

NDVI Before Hurricane Ian (2013-22)



NDVI After Hurricane Ian (2022-23)



OVERVIEW - SURFACE WATER MANAGEMENT MASTER PLAN

4. Surface Water Management Resiliency

- *Preparing for the Next 50 Years*

