

Town of Windermere

AMONG THE LAKES

FLORIDA



**STORMWATER
MANAGEMENT MASTER
PLAN**

OCTOBER 2023

Town of Windermere

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Presentation Outline

- **Introduction**
- **Goals and Objectives**
- **Data Collection**
- **Stormwater Management and Drainage Infrastructure**
- **Capital Improvement Program**
- **Capital Improvement Program Funding**
- **Questions and Answers**

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Introduction

- **Small Town feel, rural setting.**
- **Set within the Butler Chain-of-Lakes, an Outstanding Florida Water (OFW)**
- **Challenges in stormwater management, particularly in the dirt road sections of the Town**
- **Coordination with Federal and State agencies on providing the protection of the area lakes**
- **Develop a stormwater and drainage infrastructure inventory to identify and maintain the Town's facilities.**
- **Develop a roadmap to address deficiencies to address flooding, water quality and maintenance related activities**
- **Develop a fiscal plan to implement stormwater and drainage improvements**

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Introduction

Town is subdivided into four (4) Major Drainage Basins

- **Lake Bessie**
- **Lake Butler**
- **Lake Crescent**
- **Lake Down**

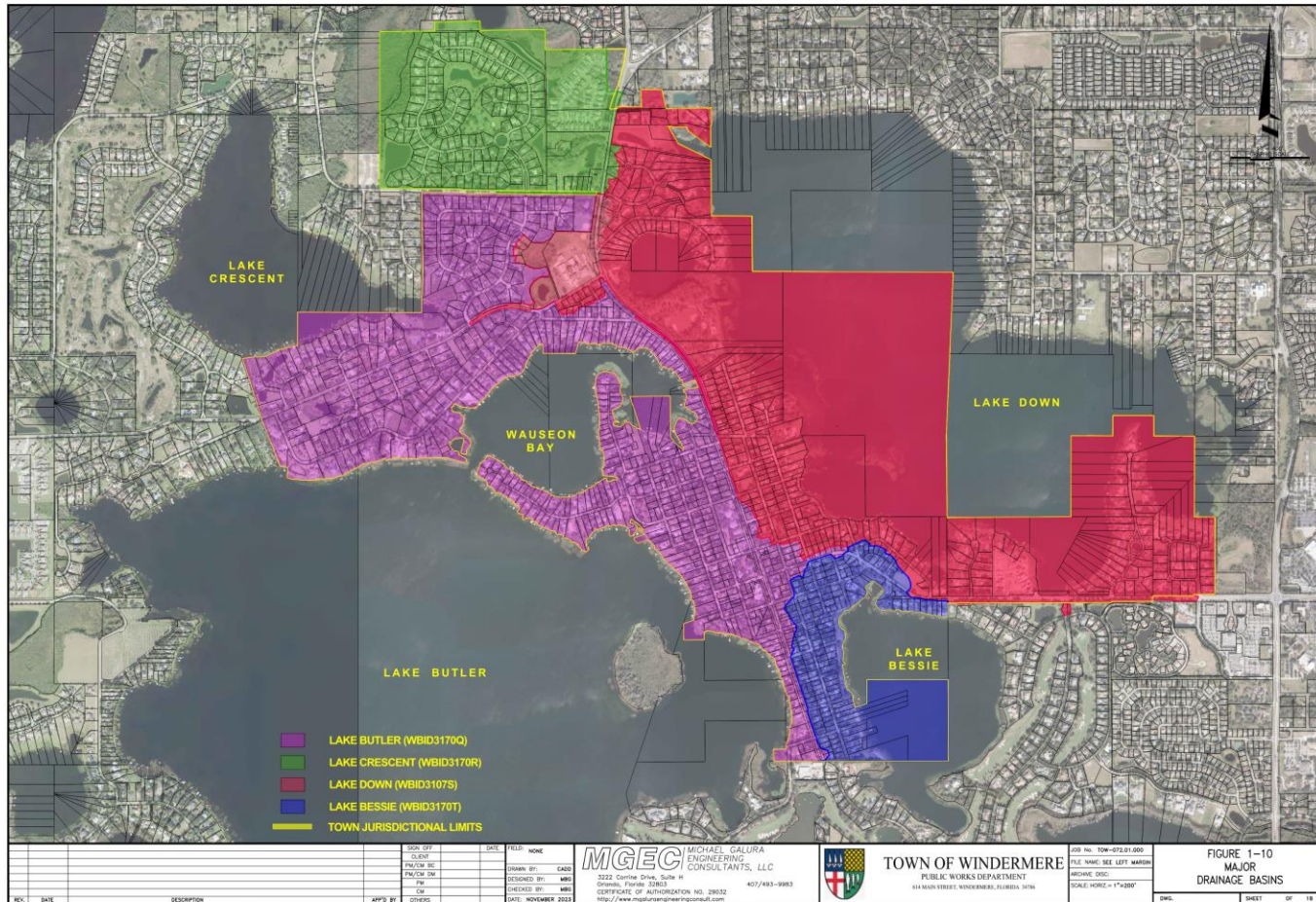
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Introduction



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Goals and Objectives

- **Gain a full understanding of how stormwater affects the Town.**
- **Utilize data and technology to develop a roadmap on how the Town can manage stormwater runoff.**
- **Develop a stormwater management and drainage infrastructure inventory and utilize GIS-based data base to manage and maintain the inventory.**
- **Be in full compliance with the Town's NPDES Phase II MS4 program.**
- **Develop a Short-Term (5-year) and Long Term (20-year) Capital Improvement Program.**
- **Develop a priority list on the implementation of the Capital Improvement Program.**
- **Assess the fiscal requirements to implement the Capital Improvement Program.**

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Data Collection

- **Identify known structures, pipes and other drainage features with the Town limits (i.e., ponds, swales, etc.).**
- **Apply Geographical Information System (GIS) technology to inventory stormwater management and drainage infrastructure.**
- **GIS provides the Town staff with instant access to drainage features and all the information associated with the feature.**
- **Allows the Town to quickly collect data such as debris removal and create a database for reporting for the Town NPDES MS4 Phase II biennial permit renewal.**

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Data Collection

- **Meets State and Federal agency requirements for inventorying stormwater management and drainage infrastructure.**
- **GIS allows Town to quickly update their inventory for newly completed improvements.**
- **GIS provides Staff with a mapping feature that best illustrates the location of the Town's stormwater management and drainage infrastructure.**
- **GIS allows real-time entry of data on tablet by Staff using ArcGIS Online Services.**

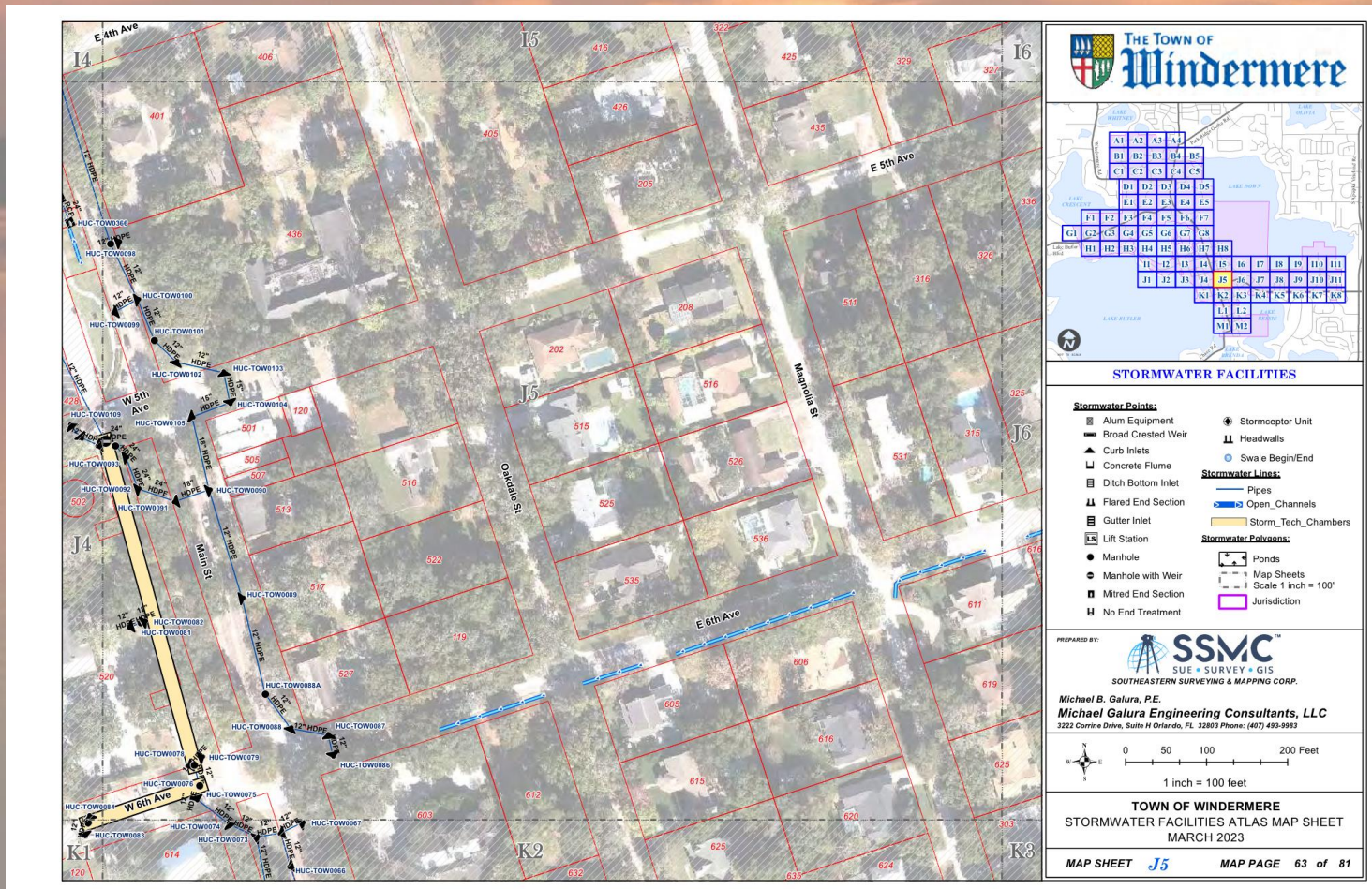
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Data Collection



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Data Collection

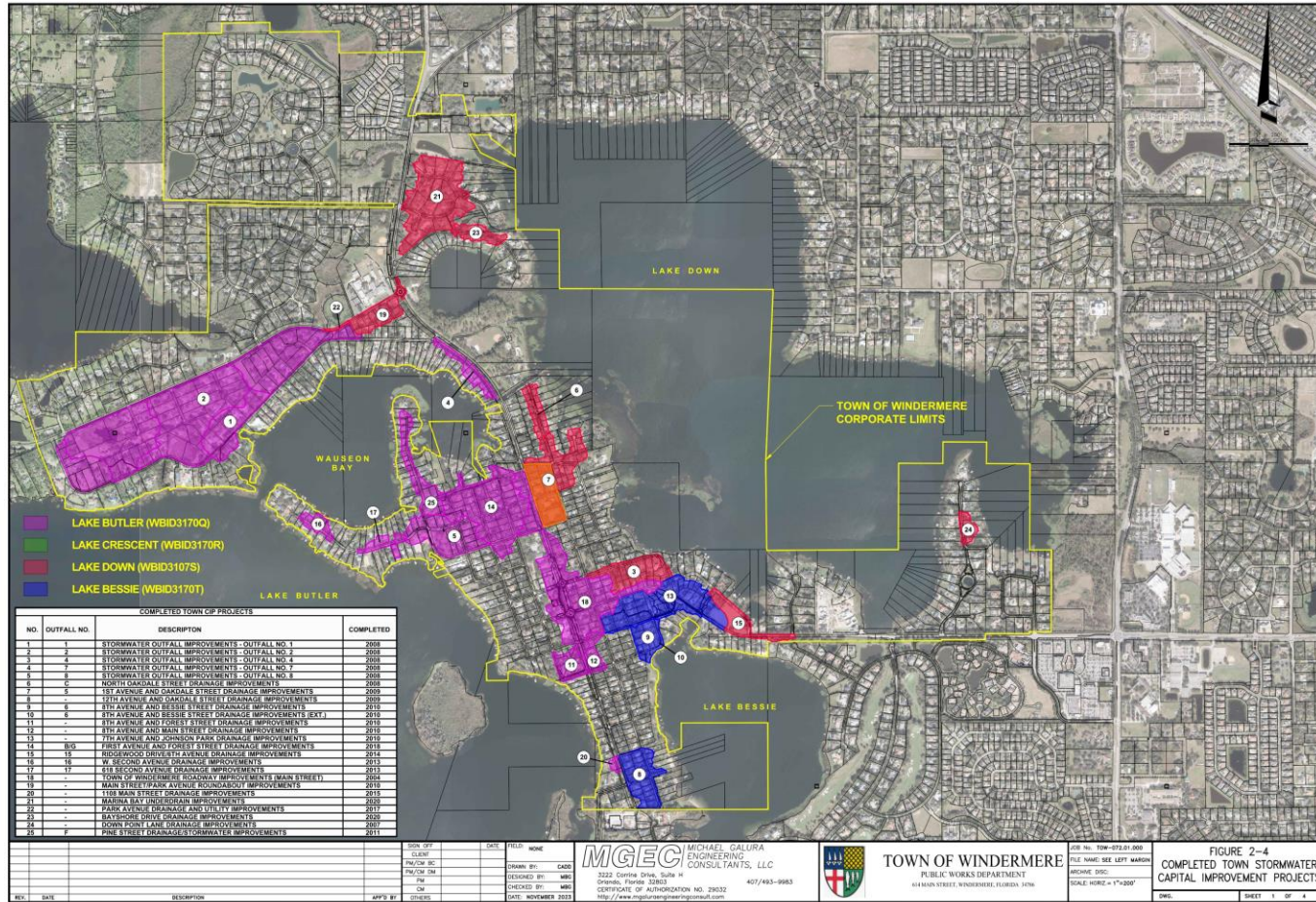


FIGURE 2-4
COMPLETED TOWN STORMWATER
CAPITAL IMPROVEMENT PROJECTS

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TOWN OF WINDERMERE
PUBLIC WORKS DEPARTMENT
614 MAIN STREET, WINDERMERE, FLORIDA 32786

JOB NO. 10W-07.01.000
FILE NAME: SEE LEFT MARGIN
BROWSE DISK:
SCALE: HORIZ. = 1"=200'

REV.	DATE	DESCRIPTION	APP'D BY

SOFT. REV.	DATE	FIELD	NONE

DESIGNER	DATE	FIELD	NONE

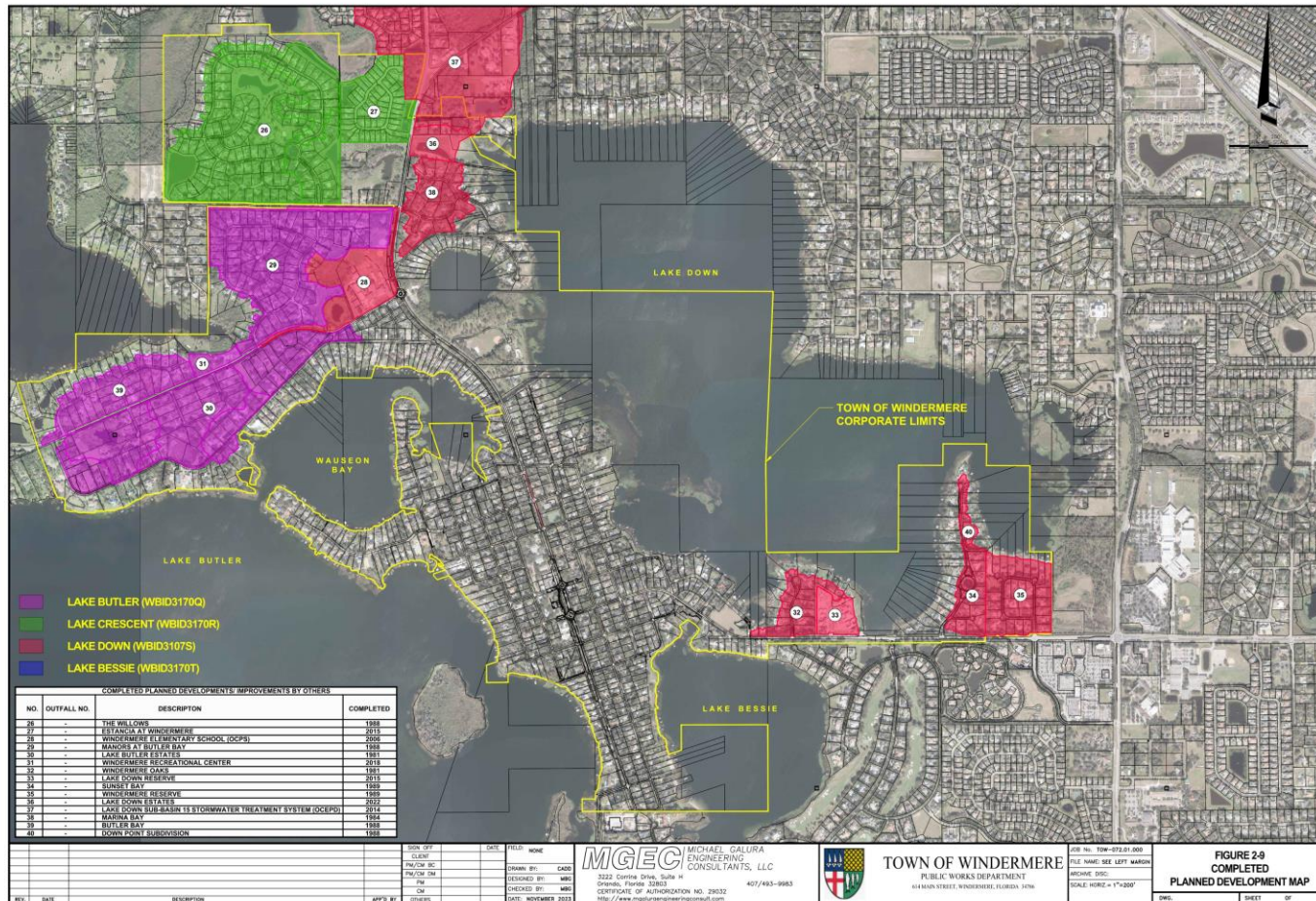
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Data Collection



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Stormwater Management and Drainage Infrastructure

- **Identification and mapping of all known Town maintained stormwater management and drainage features.**
- **Identification and mapping of known Planned Development stormwater management and drainage features.**
- **Identification and mapping of know Orange County stormwater management and drainage features within the Town limits.**
- **Various sources of Information including permitted Town projects, permitted Planned Developments, and Orange County projects.**

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LEGEND
 ● INVENTORIED DRAINAGE STRUCTURE

REV.	DATE	DESCRIPTION	APP'D BY	OTHERS

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JOB No. TW-072.01.000
 FILE NAME: SEE LEFT MARGIN
 ARCHIVE DISC:
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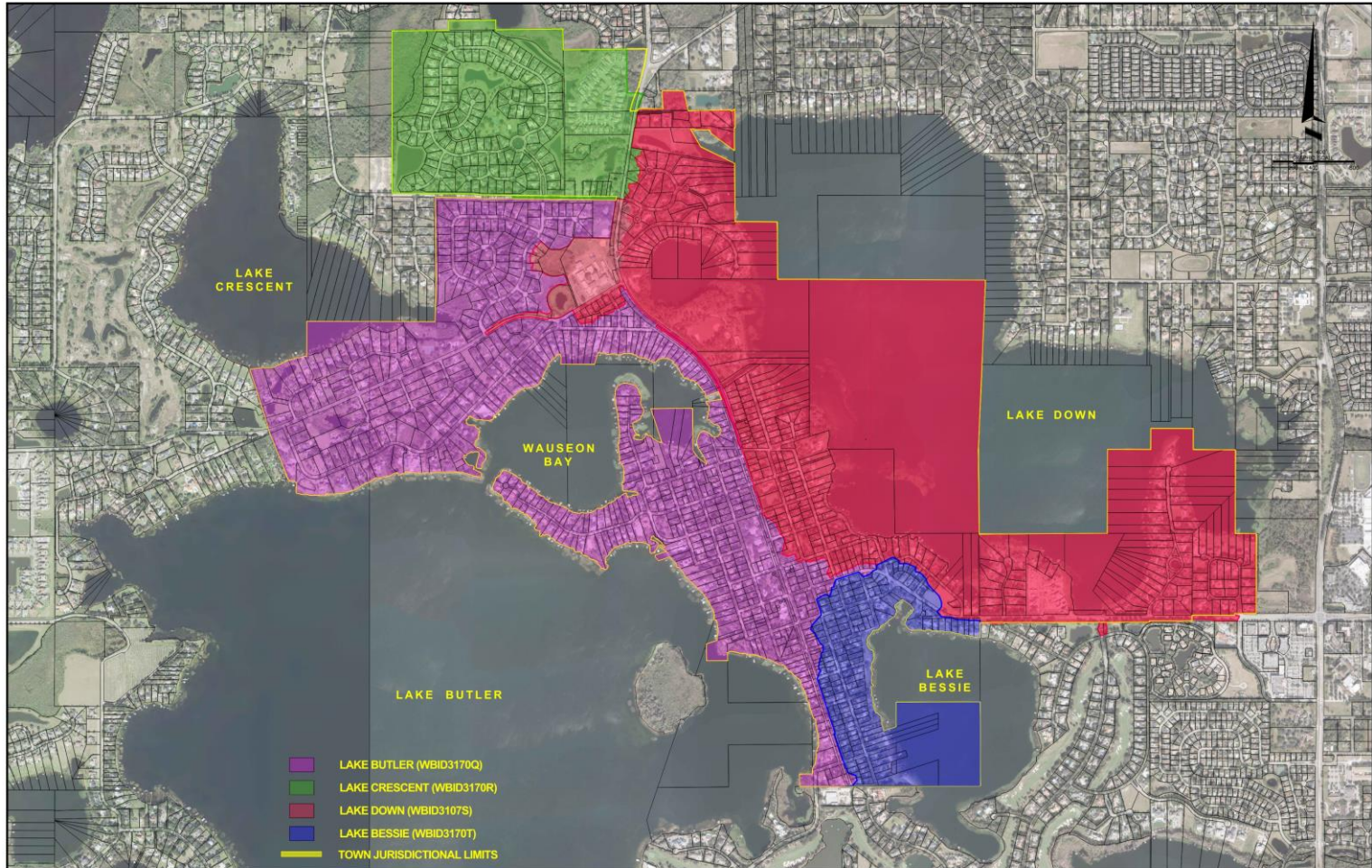
**FIGURE 3-1
 DRAINAGE STRUCTURE
 INVENTORY (3 OF 5)**

DWG. SHEET OF

Town of Windermere

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- LAKE BUTLER (WBID3170Q)
- LAKE CRESCENT (WBID3170R)
- LAKE DOWN (WBID3107S)
- LAKE BESSIE (WBID3170T)
- TOWN JURISDICTIONAL LIMITS

REV.	DATE	DESCRIPTION	APP'D BY	OTHERS

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FIGURE 1-10
 MAJOR
 DRAINAGE BASINS
 DWG. SHEET OF 18

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Capital Improvement Program

- **Capital Improvement Categories**
 1. **Flood Protection**
 2. **Water Quality**
 3. **Maintenance Related Structural Improvements**

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Capital Improvement Program

- **Flood Protection**: Addresses the flood protection of structures (i.e., homes, businesses, etc.); flood protection of roadways and streets; and flood protection of properties.
- **Water Quality**: Addresses the reduction of pollutants being discharged to downstream receiving water bodies.
- **Maintenance Related Structural Improvements**: Addresses minor structural improvements (i.e., pipe replacement, drainage structure repair, etc.).

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Capital Improvement Program

TOWN OF WINDERMERE STORMWATER MANAGEMENT MASTER PLAN

Prioritization of Capital Improvement Program

Rank	CIP No.	Description	Basin	CIP Type	Costs
1	TW-001	W. 2nd Avenue Roadway and Drainage Improvements	Butler	FP*	\$ 2,624,780.00
2	TW-002	7th Avenue and Butler Street Drainage Improvements	Butler	FP*	\$ 693,974.00
3	TW-003A	8th Avenue and Bessie St/East Blvd Drainage Improvements	Bessie	FP*	\$ 720,781.00
4	TW-003B	3rd Avenue and Magnolia Street Drainage Improvements	Down	FP*	
5	TW-004	6th Avenue and Lake Down Retaining Wall Improvements	Down	FP**	\$ 1,434,710.00
6	TW-005	5th Avenue and Lake Street Retaining Wall Improvements	Down	FP**	\$ 729,591.00
7	TW-006	4th Avenue and Magnolia Street Drainage Improvements	Down	FP**	\$ 446,500.00
8	TW-007	Lake Butler Boulevard and Main Street Drainage Improvements	Butler	FP	\$ 212,702.00
9	TW-008	Town Dirt Road Maintenance Plan	Butler/Bessie	MRS	\$ 2,500,000.00
10	TW-009	Town Swale Improvement Plan	Butler/Bessie	WQ	\$ 3,750,000.00
11	TW-010	Bayshore Drive Water Quality and Culvert Improvements	Down	WQ	\$ 252,052.00
12	TW-011	Chase Road Water Quality Improvements	Butler	WQ	\$ 79,751.00
13	TW-012	Stormwater Pond Maintenance Plan (1st Ave and Oakdale St)	Down	MRS	\$ 66,688.00
14	TW-013	Stormwater Pond Maintenance Plan (Ballfields)	Down	MRS	\$ 87,682.00
15	TW-014	Stormwater Pond Maintenance Plan (Ridgewood Drive)	Down	MRS	\$ 53,665.00
16	TW-015	Lake Butler Boulevard Culvert Improvements	Butler	MRS	\$ 175,386.00
17	TW-016	Old Dirt Main Paving and Drainage Improvements	Butler	FP	\$ 904,919.00
18	TW-017	Old Dirt Main Realignment Improvements	Butler	MRS	\$ 248,555.00
19	TW-018	Town Dirt Road Improvement Plan	Butler/Bessie	MRS	\$ 8,776,678.00
20	TW-019	Main Street Culvert Improvements (north of Lake Butler canal)	Down	MRS	\$ 95,064.00
21	TW-020	2nd Avenue and Oakdale Street Culvert Improvements	Down	MRS	\$ 102,685.00
22	TW-021	Park Avenue Ancillary Road Drainage Improvements	Butler	WQ	\$ 440,000.00
23	TW-022	Roadway and Drainage Maintenance Plan	ALL	MRS	\$ 110,000.00
TOTAL					\$ 24,506,163.00

Notes:

(1) FP - Flood Protection

FP* - Flood Protection – Awaiting Phase II HMGP Construction Funding from FEMA (Hurricane Irma)

FP** - Flood Protection – Scheduled for HMGP application submittal under Hurricane Ian (2022)

WQ - Water Quality

MRS - Maintenance Related Structural Improvements

(2) Cost rounded off to nearest thousand dollar, and includes mobilization, contingencies, surveying/engineering/permitting/construction administration costs.

(3) Constr

(4) Phase I design completed, awaiting Phase II construction funding

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Capital Improvement Program

TOWN OF WINDERMERE STORMWATER MANAGEMENT MASTER PLAN

Prioritization of Capital Improvement Program

Rank	CIP No.	Description	Basin	CIP Type	Costs	CIP Duration Years	
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Lake Butler Basin Projects							
1	TW-001	W. 2nd Avenue Roadway and Drainage Improvements	Butler	FP*	\$ 2,624,780	5	
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22	TW-021	Park Avenue Ancillary Road Drainage Improvements	Butler	WQ	\$ 440,000	20	
Lake Down Basin Projects							
4	TW-003B	3rd Avenue and Magnolia Street Drainage Improvements	Down	FP*		5	
5	TW-004	6th Avenue and Lake Down Retaining Wall Improvements	Down	FP**	\$ 1,434,710	5	
6	TW-005	5th Avenue and Lake Street Retaining Wall Improvements	Down	FP**	\$ 729,591	5	
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21	TW-020	2nd Avenue and Oakdale Street Culvert Improvements	Down	MRS	\$ 102,685	5	
All Basin Projects							
23	TW-022	Roadway and Drainage Maintenance Plan	ALL	MRS	\$ 110,000	20	
Lake Butler/Bessie Basin Projects							
9	TW-008	Town Dirt Road Maintenance Plan	Butler/Bessie	MRS	\$ 2,500,000.00	20	
19	TW-018	Town Dirt Road Improvement Plan	Butler/Bessie	MRS	\$ 8,776,678.00	20	
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FP** - Flood Protection – Scheduled for HMGP application submittal under Hurricane Ian (2022)

WQ - Water Quality

MRS - Maintenance Related Structural Improvements

(2) Cost rounded off to nearest thousand dollar, and includes mobilization, contingencies, surveying/engineering/permitting/construction administration costs.

(3) Construction completed by the Town of Windermere (shaded). Construction cost provided by Tonya Elliott-Moore, Public Works Director

(4) Phase I design completed, awaiting Phase II construction funding

(5) Phase I design completed, awaiting Phase II construction funding

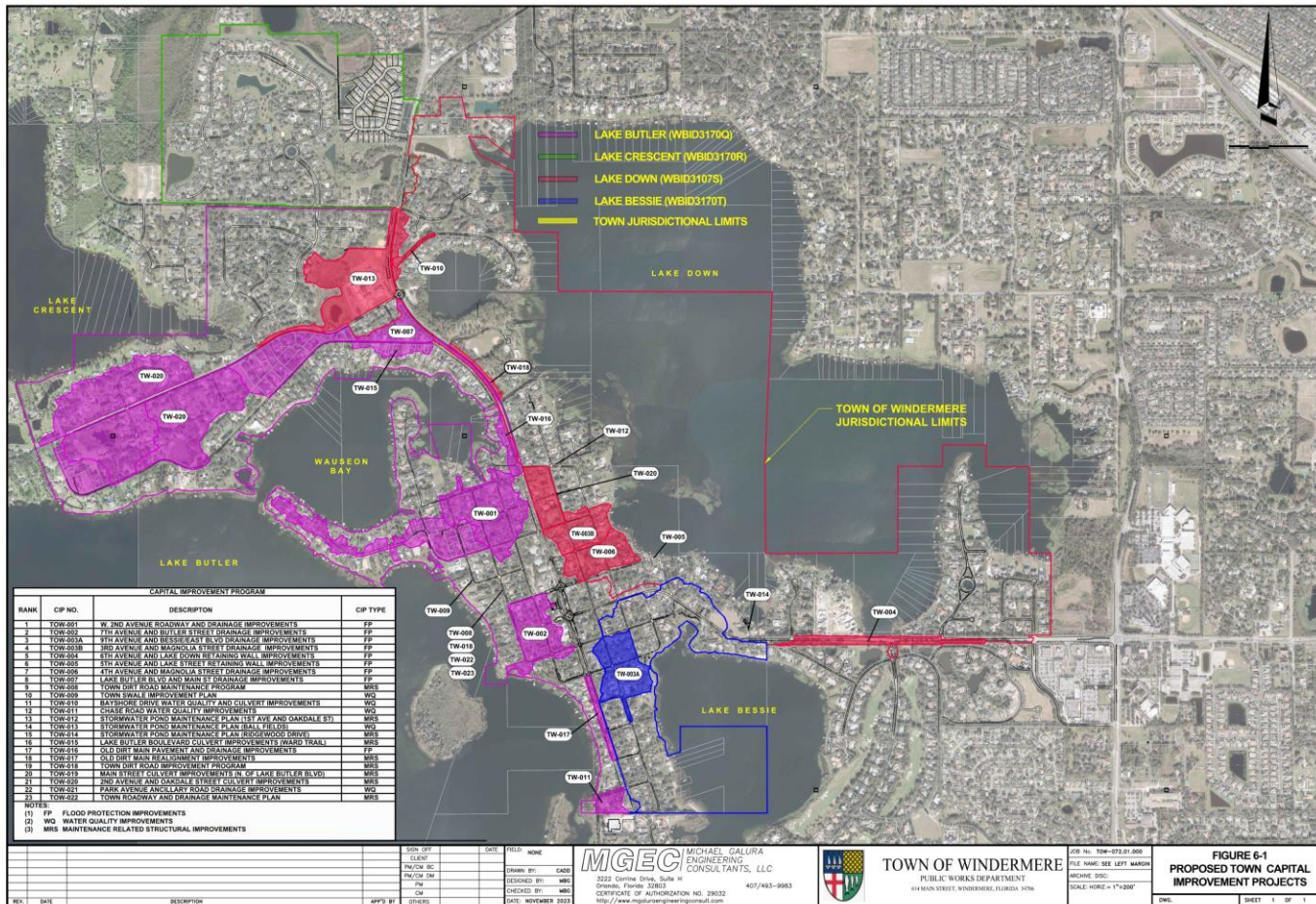
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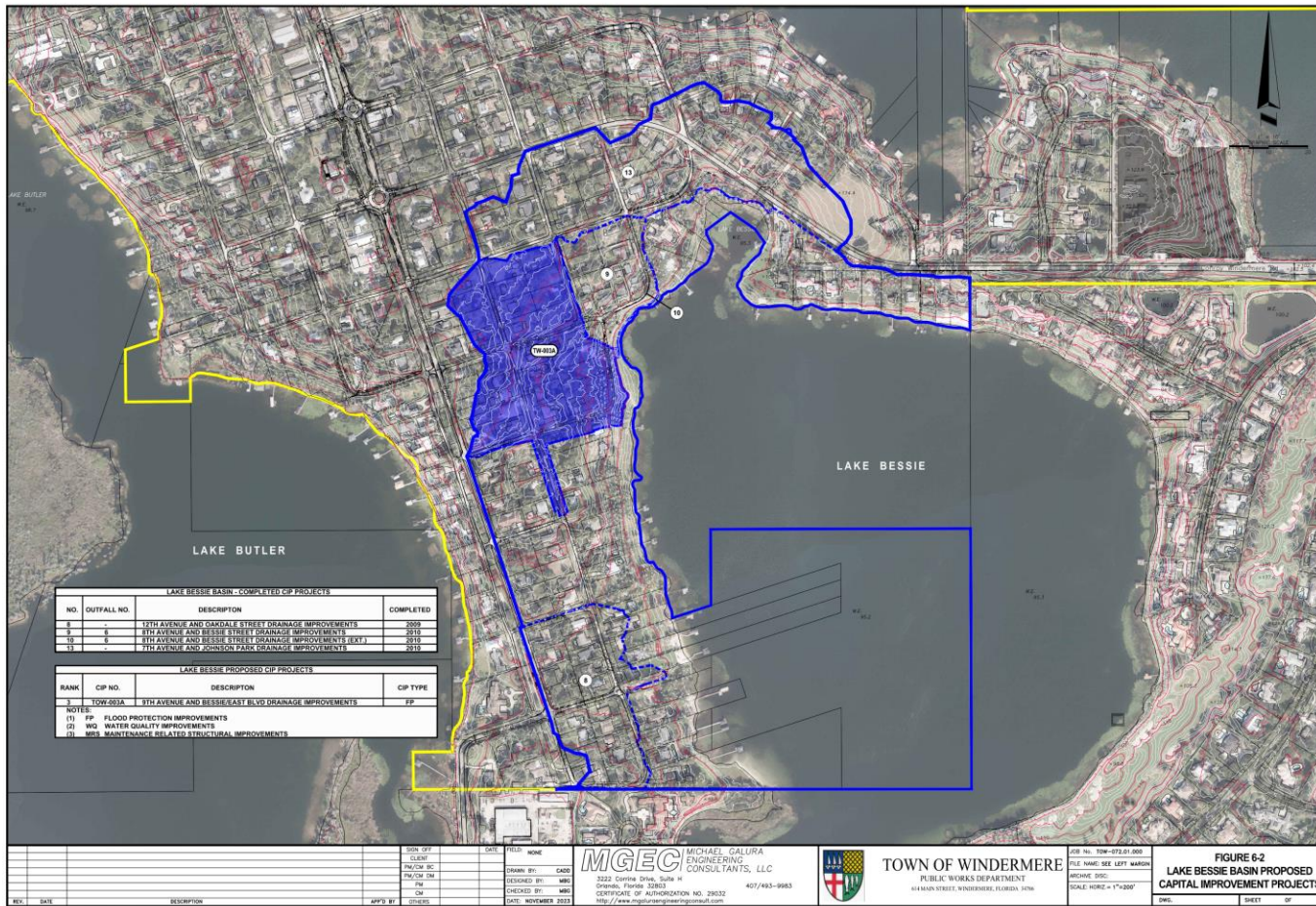
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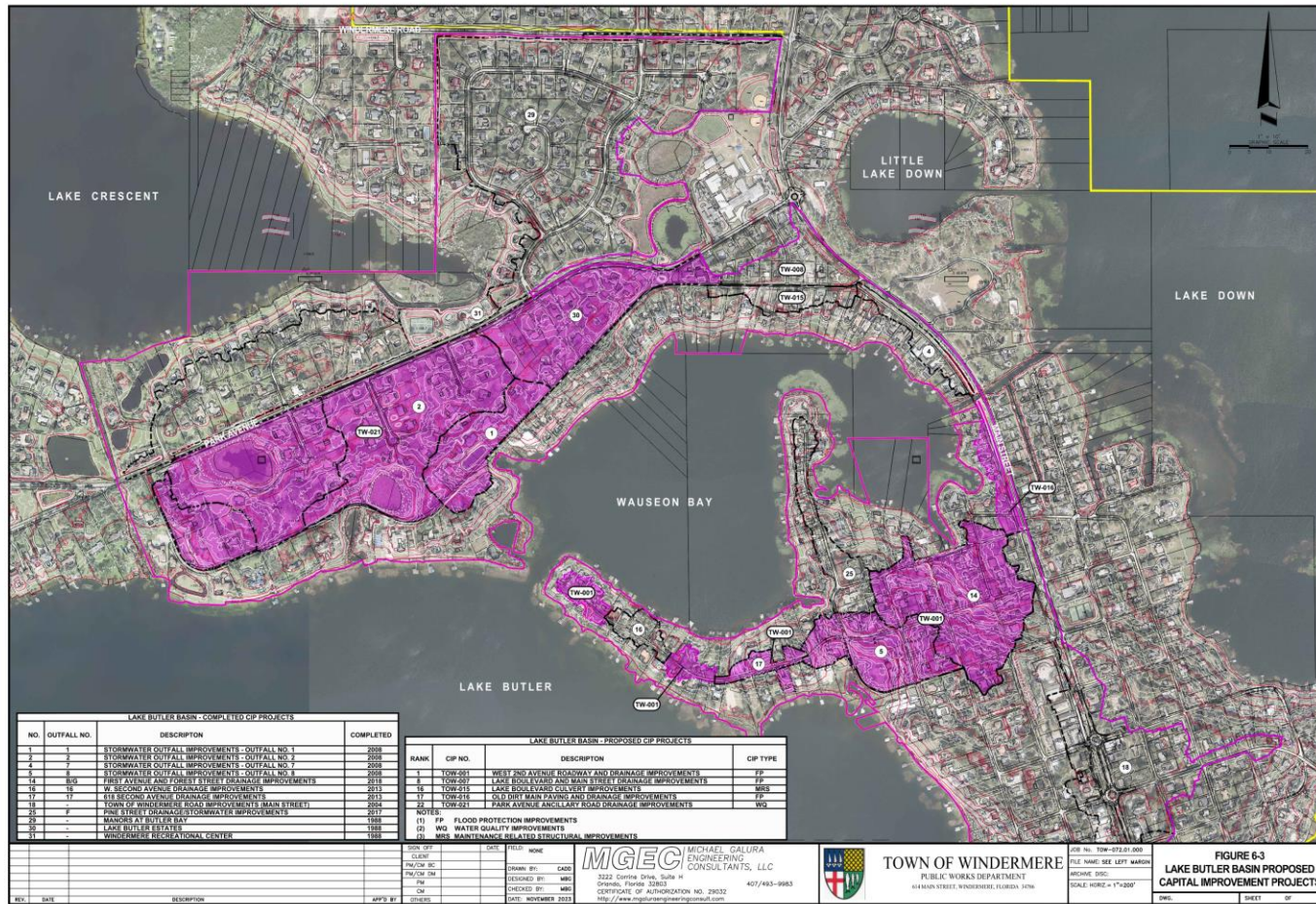
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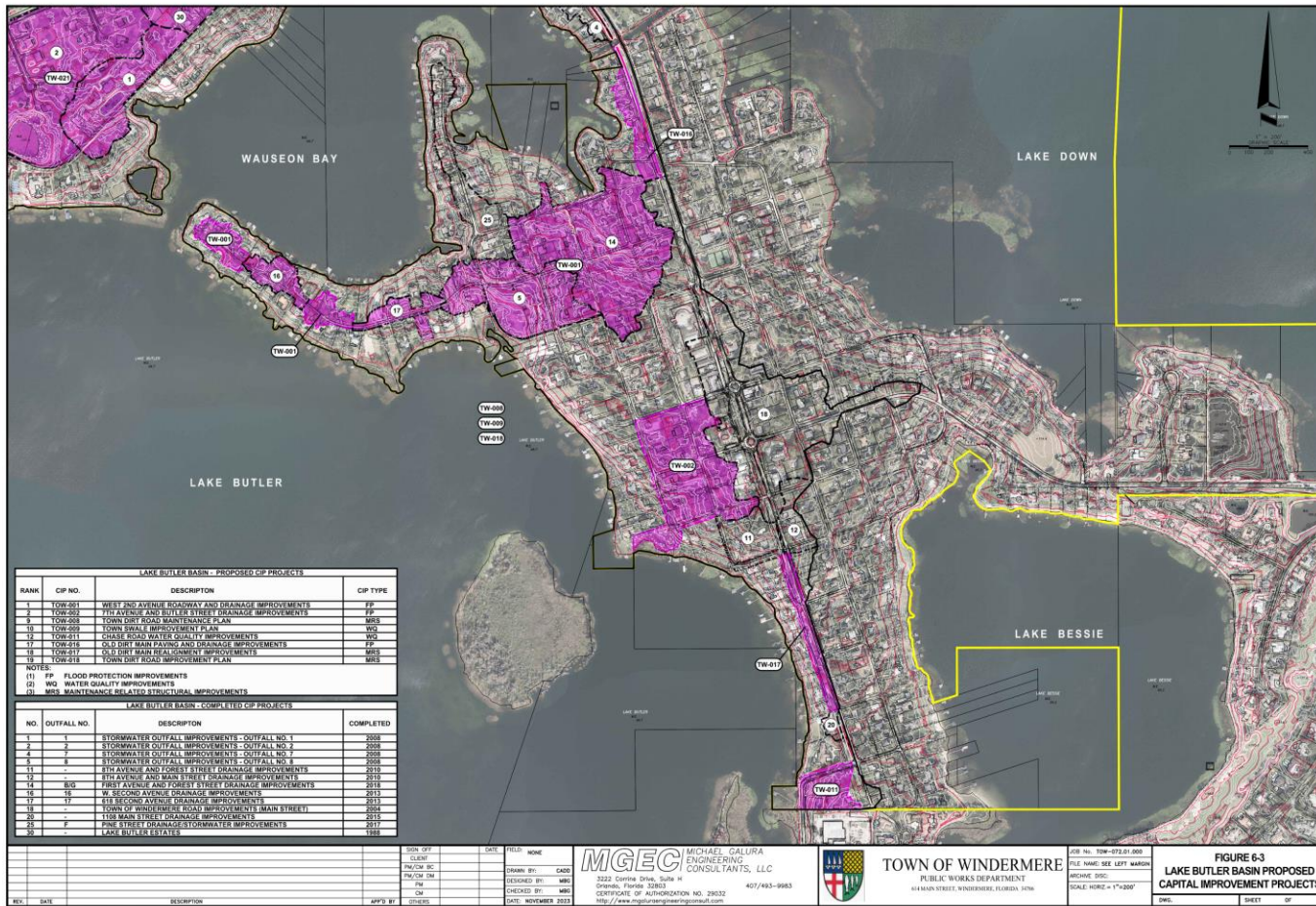
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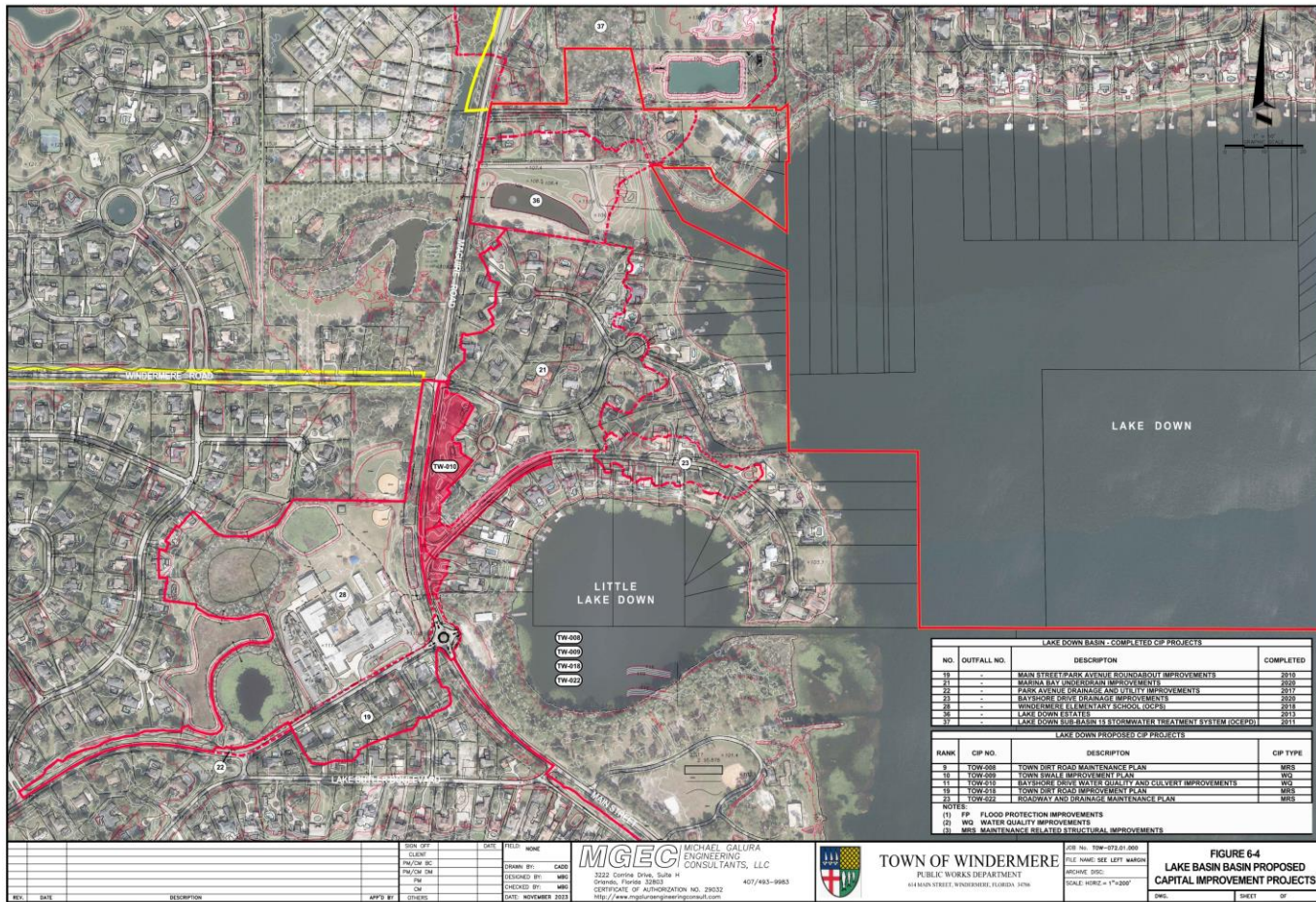
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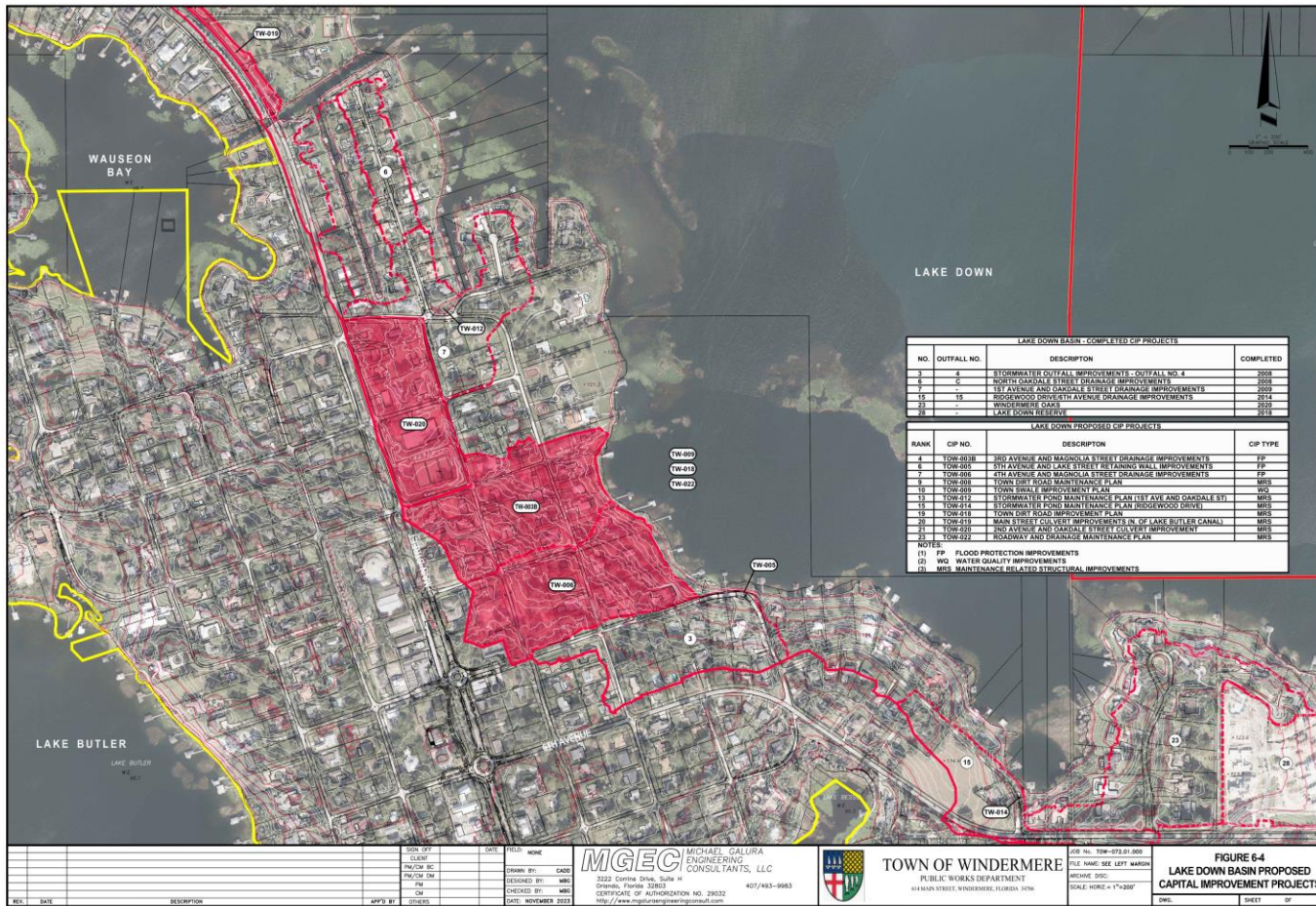
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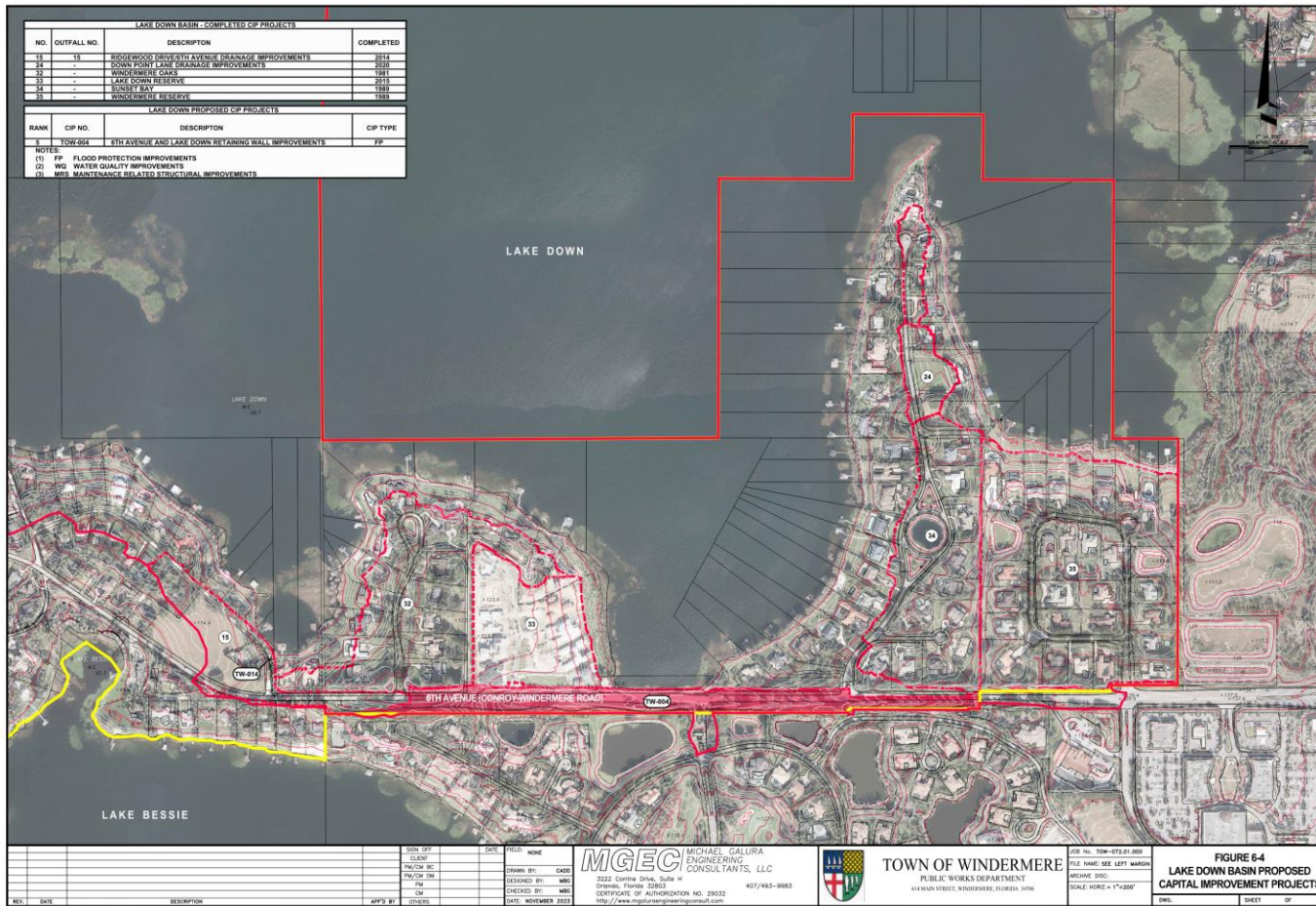
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Capital Improvement Program



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Capital Improvement Program Funding

- **Stormwater Utility (Town of Windermere)**
- **Hazard Mitigation Grant Program (FEMA - Federal Disaster Declaration)**
- **State and Tribal Assistance Grant (USEPA - STAG)**
- **Section 319 Non-Point Source Grant (USEPA/FDEP)**
- **TMDL Water Quality Restoration Program (FDEP)**
- **Clean Water Revolving Fund Loan Program (FDEP)**
- **Cooperative Funding Program (SFWMD)**
- **Butler Chain-of-Lakes Advisory Board (Orange County)**

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QUESTIONS?