



## Stormwater Resiliency

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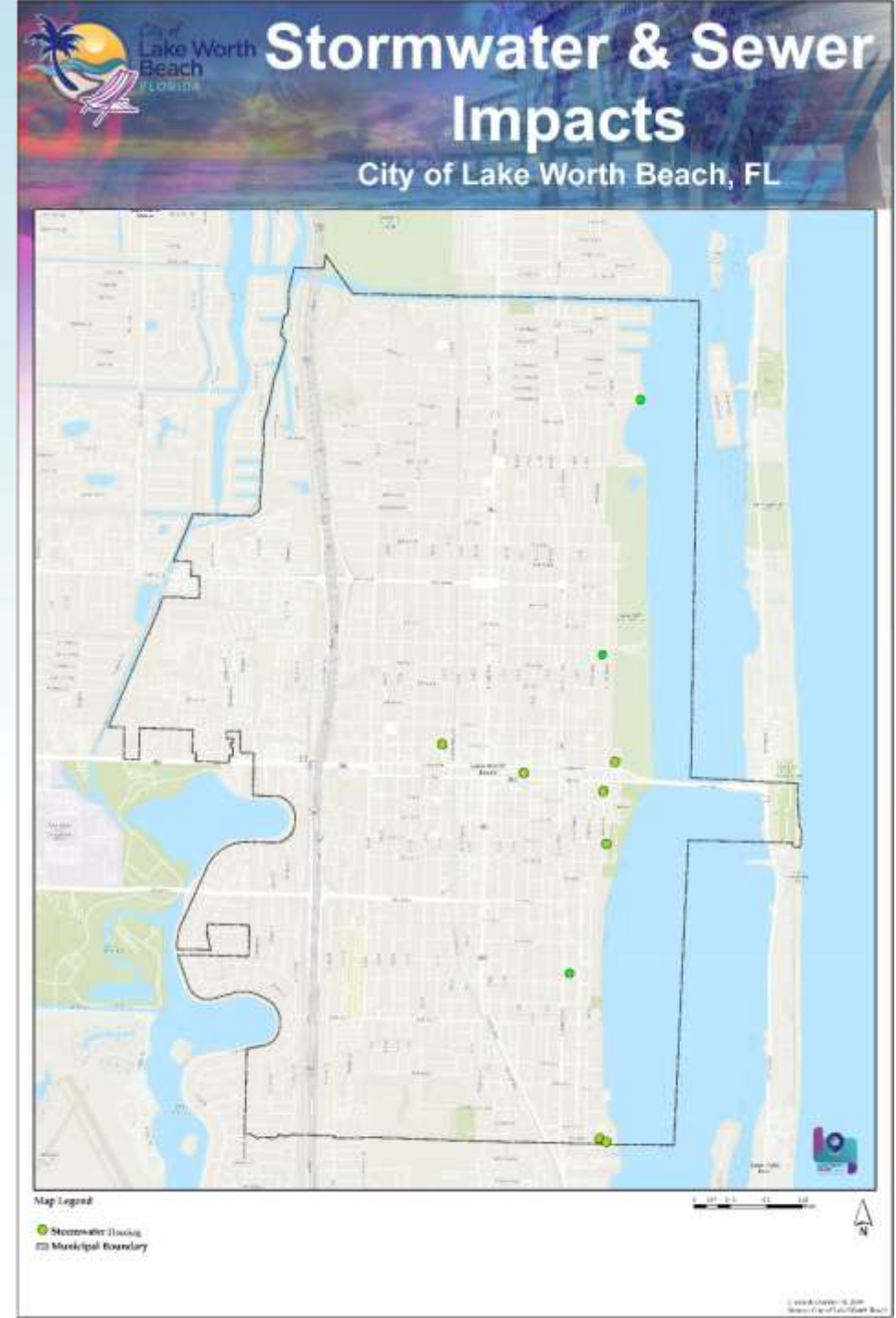
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## Recent Extreme Storm Event:

- Stormwater Impacts from 12/19/2021 event, over 4 inches of rain in very short duration
- Coincided with King Tides that occurred early that morning
- Experienced flooding in several areas of City, as did many municipalities around CLWB
- City ROW and stormwater system designed to handle 3-year storm. SFWMD guidance allows 25-year storm to accumulate in ROW and must recede within 72 hours; water receded in less than 24 hours!



# Stormwater

## Issues & Mitigation Strategies

### Issue:

- **STORMWATER FLOODING** – Stormwater collection system is designed for 3-year event (3 inches). Takes system longer to drain the more intense storm, so water finds way to other places until it can be drained. Compounded by king tides, high groundwater, and intense rainfall.

### Mitigation Strategies for Worst Areas:

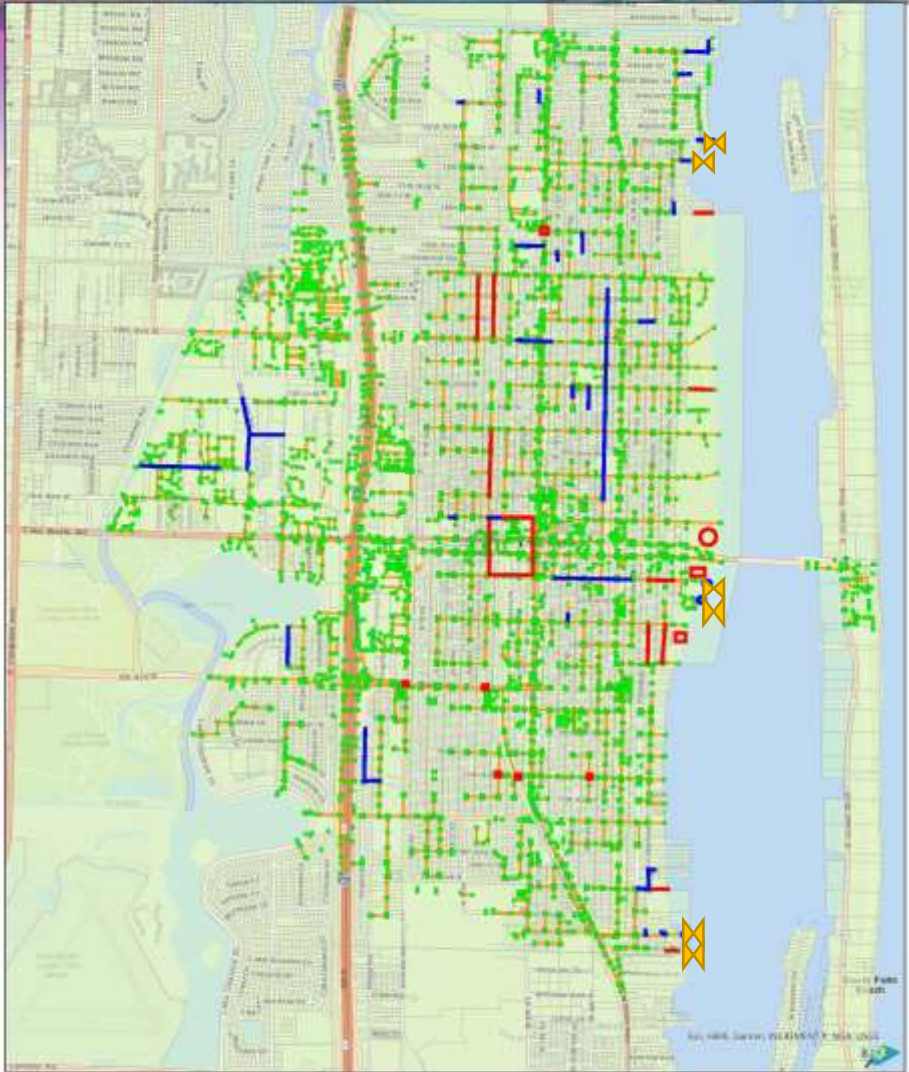
- Installation of tidal check valves to prevent king tide influence on storm system
- Reevaluate storm systems – check for blockages, televise lines.
- Stormwater pump stations, additional retention areas, underground storage chambers





# Stormwater Projects

Water Utilities Department



## Map Legend

- LW\_STORMWATER
- LakeWorth.DBO.STORM\_INLET\_STRUCTURES
  - LakeWorth.DBO.STORM\_GRAVITY\_MAIN\_PIPES
  - Completed Projects
  - Future Projects
  - X TIDAL CHECK VALVE

# Stormwater

## Recent Projects:

- Tidal outfall check valve installations
- Drainage upgrades as part of Neighborhood Road Program:
  - District 1: Palmetto & S Ridge Rd, Virginia Drive
  - District 2: 22<sup>nd</sup> Avenue North and N D St; 14<sup>th</sup> Ave N from Central to Dixie; Florida St from Worthmore to 23<sup>rd</sup> Ave N;
  - District 3: Duke Drive and Holy Cross Lane, Georgia Lane and Furman Lane; 16<sup>th</sup> Ave N and N Lakeside, N M St; N K St from 14<sup>th</sup> to 15<sup>th</sup> Ave N; Wellesley and 18<sup>th</sup> Ave N Resiliency projects
  - District 4: S Lakeside Drive & 15<sup>th</sup> Ave S and Lakeside Palms Ct; 17<sup>th</sup> Ave S east of S Lakeside, 1<sup>st</sup> Ave S
- Drainage improvements on Park of Commerce Phase 1A, 1B and 2
- Stormwater Master Plan Update 2016 by CDM Smith
- Adopt-a-Drain program



# Stormwater

## Future Projects:

- Stormwater Master Plan updated in 2016 with reevaluations dated 2017, 2020 and 2021. Projects identified based on historical problem flood areas, modeling of system and stormwater quality improvements to reduce nutrient discharges to the Intracoastal and Lake Osborne - \$21 million; portion of remaining projects are stormwater quality improvements
- Projects' components:
  - Underground storage at Bryant Park
  - Increase lake size on golf course
  - New outfall and upgrades to existing
  - New inlets, culverts, catch basins, exfiltration trench, weirs
- Annual budget of \$50k for tidal check valve install, repair, maintenance
- CLWB has consistently pursued grants and filed for state assistance for projects
- CLWB part of Coastal Resilience Partnership and Climate Change Compact that provide guidance on best management practices and collaboration and information sharing



# Stormwater

## Capital Projects:

Project	Location	Capital Cost	Status
	North Lakeside Drive, Duke Drive, Notre Dame Drive and 1 Wellesley Drive, Federal Highway	\$ 1,300,000	Partially Complete
	2 15th Avenue North and N Dixie Highway	\$ 574,000	
	3 10th Avenue North to 13th Avenue North, E and F Streets	\$ 735,000	
	4 3rd Avenue North to 6th Avenue North and N F Street	\$ 2,076,000	
	5 6th Avenue South and South A Street	\$ 380,000	
	6 2nd Avenue North to 1st Avenue South, South F Street and Dixie Highway	\$ 2,983,000	
	7 Lake Avenue, 1st Avenue South, South M Street and Golfview Road	\$ 3,011,000	
	8 3rd Avenue South, 5th Avenue South, South Palmway and South Lakeside Drive	\$ 3,411,000	
	9 6th Avenue South and South F Street	\$ 229,000	
	10 10th Avenue South and South G Street	\$ 759,000	
	11 10th Avenue South and Dixie Highway	\$ 528,000	
	12 10th Avenue South and South N Street	\$ 528,000	
	13 18th Avenue South and South Palmway	\$ 500,000	
	14 Palmetto Avenue and South Pine Street	<del>\$ 171,000</del>	Complete
	15 15th Ave South, 17 <sup>th</sup> Ave South, Lakeside Drive, 18 <sup>th</sup> Ave South	\$ 2,000,000	Partially Complete
	16 16th Avenue North, 8th Avenue North, North Golfview Road	\$ 601,000	
	17 1st Avenue South storm repairs	\$ 300,000	
	18 Annual lining & joint repairs	\$ 100,000	
	19 Tidal check valve install/maintenance/repair	\$ 50,000	
	<b>TOTAL:</b>	<b>\$ 20,065,000</b>	



**APPLICATIONS/AWARDS – STATE OF FLORIDA**

**APPLICATIONS SUBMITTED/PENDING REVIEW**

State Legislative Request	10 <sup>th</sup> Ave N and 13 Ave N (check valves and outfalls)	\$350,000 grant/\$350,000 match
State Legislative Request	Parrot Cove Resiliency (check valves and outfalls)	\$450,000 grant/\$450,000 match
FDEP/Resilient Florida Program	Eden Place Mitigation (16 <sup>th</sup> Ave N check valve)	\$300,000 grant/\$300,000 match
FDEP/Resilient Florida Program	S Palm Park Mitigation (18 <sup>th</sup> Ave S pump station, C valve)	\$300,000 grant/\$300,000 match
Lake Worth Lagoon Initiative (ERM Legislative Request)	18 <sup>th</sup> Avenue North Baffle Box	\$250,000 grant/\$250,000 match
SWAG Non-Point	18 <sup>th</sup> Avenue North Baffle Box	\$250,000 grant
FDEP/FRDAP	Bryant Park Playground Phase 1	\$50,000 grant
FDEM	S. Palm Park Mitigation (18 <sup>th</sup> Ave S pump station, C valve)	\$450,000 grant/\$150,000 match

**AWARDED**

FDOS/LSTA	Literacy City Campaign	\$31,100 grant/\$31,870 in-kind
FDOS/DLIS ARPA	Connecting Our Community	\$30,050 grant
FDEO/CDBG-MIT	Water Treatment Plant Lime Bldg and E. Clearwell Roof	\$989,262.00

**UNDERWAY/COMPLETING**

FDOS/DLIS	State Aid to Libraries - Operating	\$7,974 grant
FDOT	Park of Commerce Phase 1B	\$1,500,000 grant/\$998,109 match
FDOT	Lake Worth Road and Roundabout	\$447,075 grant/\$205,715 match
FDOT	Park of Commerce Phase 2	\$3,000,000 grant

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END OF PRESENTATION