



Stormwater Master Plan Implementation Commission Workshop

April 16, 2025



**CDM
Smith**



Introduction

Meeting Agenda

1. Highlights of Citywide Stormwater Master Plan
2. Phase I Large Capital Improvement Projects Discussion
3. Discussion of Funding Levels, Fee Structures, and Rate Adjustments



Established City-Desired Level of Service Goal

Chosen LOS Goal = Alternative “2” (~\$900M CIP Program, 2022)

- Major roadways and evacuation routes:
 - Brief duration, less than 6-inches over road crowns in the 10-year storm
- Residential streets:
 - Brief duration, less than 6-inches over road crowns in the 5-year storm
- Citywide:
 - Flooding maintained below building finished-floor elevations in the 100-year recurrence interval design storm wherever practicable
 - **2.9:1** Benefit to Cost Ratio



Not Meeting LOS

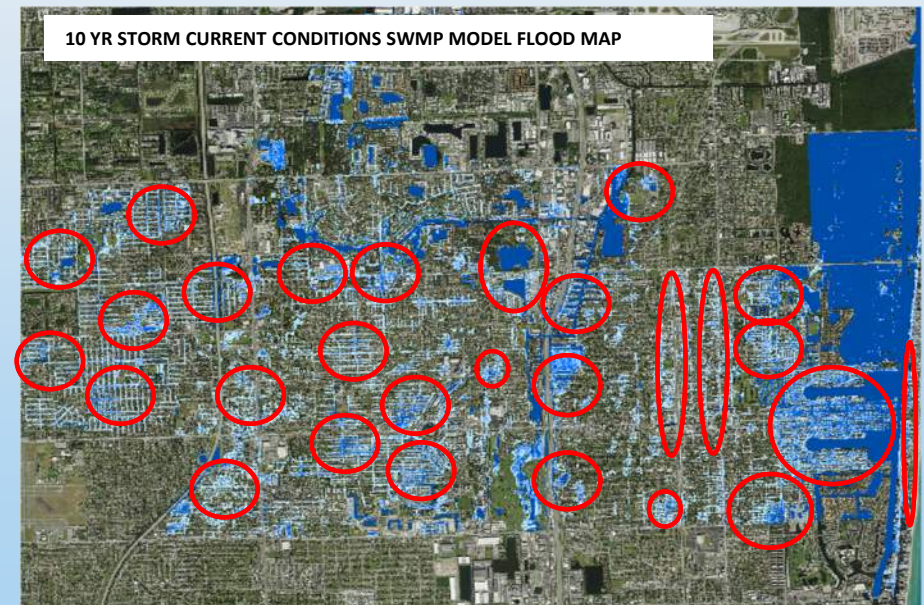
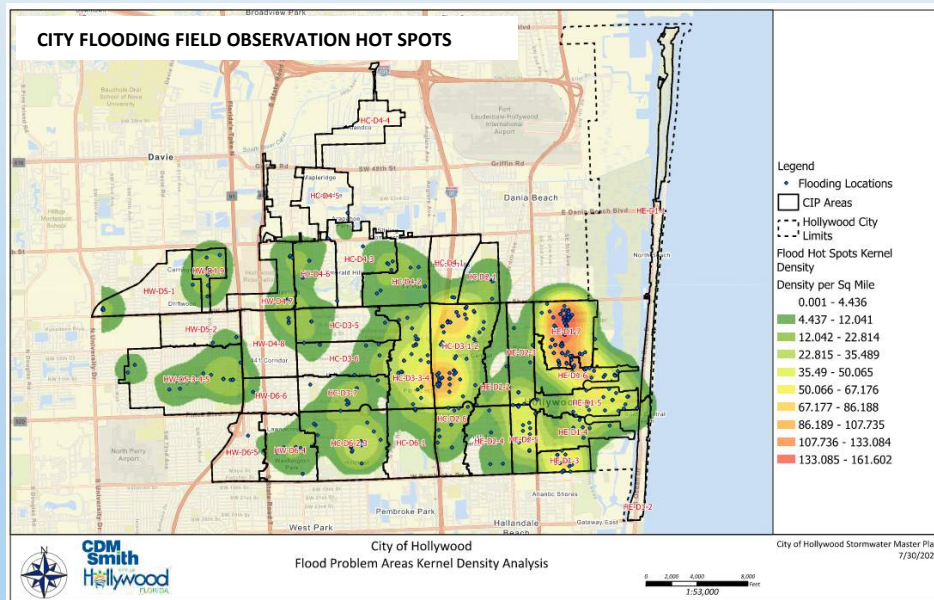


Allowable for Short Duration

Citywide SWMP Implementation Strategy

DPU is recommending a “two-step” approach:

1. Focus on the long-term large capital projects based on the urgency of the area (Bond Projects)
2. Continue to address the smaller, urgent, interim projects throughout the City now in the flooding hotspot areas (pay-as-you-go within the SWU fee)



There Are Two Types of Stormwater Projects Under This Program

1. Interim Projects (\$100K - \$4 million)

- SWMP-Identified Interim Projects
- City Renewal and Replacement Projects (R&R backlog)
- Proposed to be “Pay-as-you-go” from SWU funds, and immediately implementable



2. Large Area SWMP CIP Area Projects (\$25 to \$40 million)

- Neighborhood-scale improvements designed to meet the SWMP LOS goal
- Bond/loan/grant funded



Interim CIP Project Criteria

- ✓ **Addresses Identified Flooding “Hot Spot” Locations Citywide** - provides some noticeable flood relief until larger CIP projects can be constructed – lowers flood stages from existing levels and allows faster dissipation of standing water after storms
- ✓ **More rapidly implementable** – smaller or simpler in design and construction
- ✓ **Lesser scale** - several projects per year can be designed/permitted, budgeted, and constructed
- ✓ **Coordinated** – Integrated into future SWMP CIP
- ✓ **Includes City Backlog of R&R Projects** - City renewal and replacement projects previously identified as necessary system repairs



Identified SWMP CIP Interim Projects

1. D1 SW08/SW07 and Discharge Pipe Improvements (Moffett Area)
2. D1 HBCG Stormwater Pipe and Swale Improvements (East Johnson Grant Hayes)
3. D1 Eco Grande GC Stormwater Ditches (Taft Harding Coolidge Scott)
4. D1 Arthur St and W Lake Park Entry Dr Backflow Valves (Hollywood Lakes North)
5. D1 East Washington Street Stormwater Pipe Outfall Connection
6. D2 Cody Street Stormwater Improvements
7. D2 Fletcher-Mayo Street Exfiltration Systems
8. D2 Royal Poinciana Exfiltration Systems
9. D2 Taylor Polk Street Improvements
10. D3 Highland Gardens Exfiltration Systems (Washington St)
11. D3 Johnson St Culvert FDOT JPA (Northcentral)
12. D3 Rainbow Drive Stormwater Swale (Hospital Area)
13. D3 Park & Johnson (Hospital Access) Stormwater Improvements
14. D3 Johnson St & N Park Rd Drainage Improvements
15. D3 Harding Pond Stormwater Pipe Outfall to Rotary Park (Liberty St)
16. D3 Pierce Street Detention Pond and Stormwater Pipe (Northcentral)
17. D3 N 26th Ave and Harding Stormwater Improvements
18. D4 CS-22 Structure Backflow Prevention Modification
19. D4 Driftwood Neighborhood Exfiltration Systems
20. D5 Boulevard Heights Neighborhood Exfiltration Systems
21. D6 S 62nd Ave City Gateway Entry Exfiltration Systems (Beverly Park)

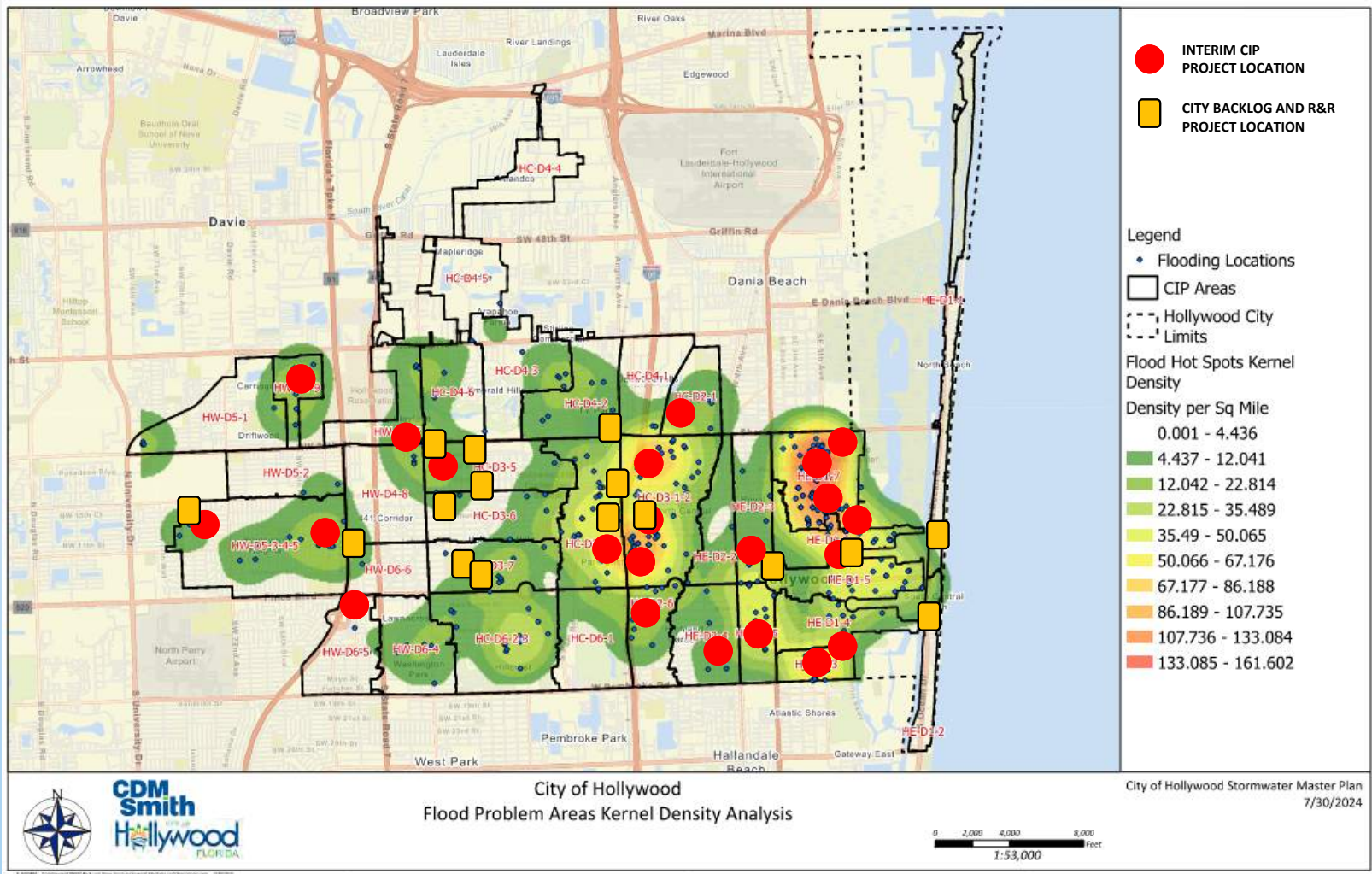


Additional City Stormwater R&R Backlog Projects (Non-SWMP CIP)

1. D1 - Stormwater Point I/I Repairs Along A1A
2. D1 - SR A1A BFPs Installations with FDOT
3. D1 - Monroe & Southlake Wapro repair
4. D1 - SW02 Emergency Repairs
5. D1 - Wapro Installation Taft and 14th Ave
6. D2 - Dewey Street and S 20th Avenue Improvements
7. D3 - Sunset Park Storage, Ditches Restoration
8. D3 - Hollywood Hills - Polk St (N 56 Ave - N 48 Ave)
9. D3 - Lincoln Street west of N 56th Avenue Improvements
10. D3 - Garfield Street and N Golf Drive Improvements
11. D4 - 36th & N 52 Ave Stormwater Improvements
11. D4 - Emerald Lakes Outfall N. 34th Street
12. D4 - N 31st Place (The Club at Emerald Hills Golf Course) Outfall Repair
13. D4 - Allen Street and N 57th Avenue Improvements
14. D4 - W. Park Road and N 57th Ave Improvements
15. D5 - Cleveland Street west of N 74 Way Drainage Improvements
16. D5 - Pershing Street west of N 65th Ave Improvements
17. D5 - Cleveland Street W of N 74 Way Drainage Improvements
18. D5 - Sheridan Street Drainage Improvements (70 Ave - 66 Ave)
19. Citywide – Add'l Temporary Pump Installations
20. Citywide - Recapture Swale Improvements



Interim SWMP CIP Project Locations (2025-2030)



Hollywood Beach Area On-Going, Near-Term, and Future Projects

- FDOT is currently in-progress with its phased stormwater master plan for its roadway/system (SR A1A) to meet its LOS with additional future SWPSs installed as State funding is apportioned (New Stormwater Piping and ~18+/- new SWPSs)
- First 4 SWPSs from FDOT/CRA (Grant Project) on A1A are designed and ready for construction:
 - SWPS 11: SR-A1A/Azalea Terrace
 - SWPS 12: SR-A1A/Van Buren Street
 - SWPS 13: SR-A1A/Sherman Street
 - SWPS 14: SR-A1A/Franklin Street
- Additional 2 SWPSs in design development by City/CRA:
 - SWPS 15: SR-A1A/Foxglove
 - SWPS 16: SR-A1A/Jefferson
- CRA Side Streets Roadway Leveling and Drainage Project – Nearing completion
- Tidal Flooding Maintenance Projects - Pipe inspections and repairs for leaks and backflow prevention repair, replacement and installation – In Progress



Initial Identified Large SWMP CIP Areas Based on Urgency

1. North and South 14th Ave Corridor:

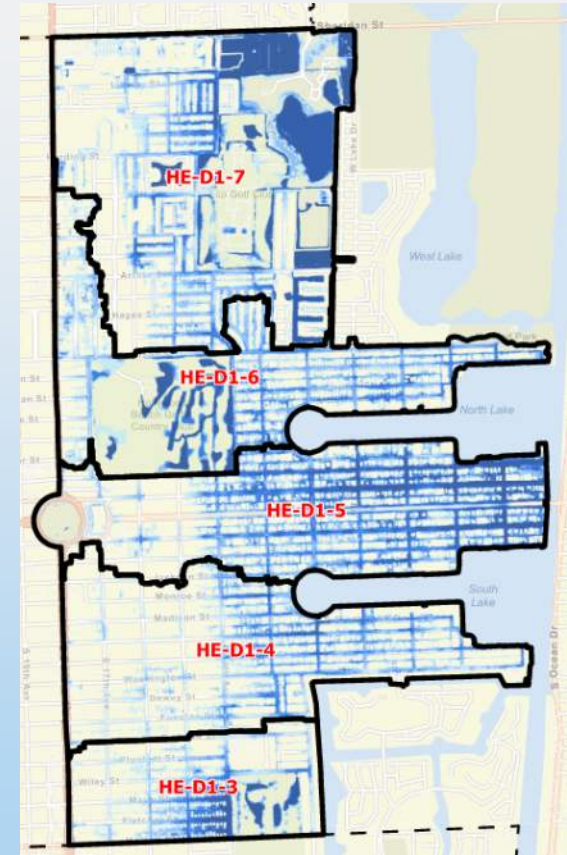
1. D1-3 Hollywood Lakes South (Moffett Neighborhood)
2. D1-7 Hollywood Lakes North (Eco GC Neighborhood)
3. D1-5 Hollywood Lakes Central (N&S of Hollywood Blvd)*
4. D1-4 Hollywood Lakes South Lake*
5. D1-6 Hollywood Lakes North Lake **

2. D2-1 Oakwood Hills (Liberia Neighborhood)

3. D3-2 North Central South (Sunset Park Neighborhood)

4. D3-1 North Central North (Phase I - West)

- Seawall project area
- ** HBGC permit Condition



EXISTING CONDITIONS FLOODING

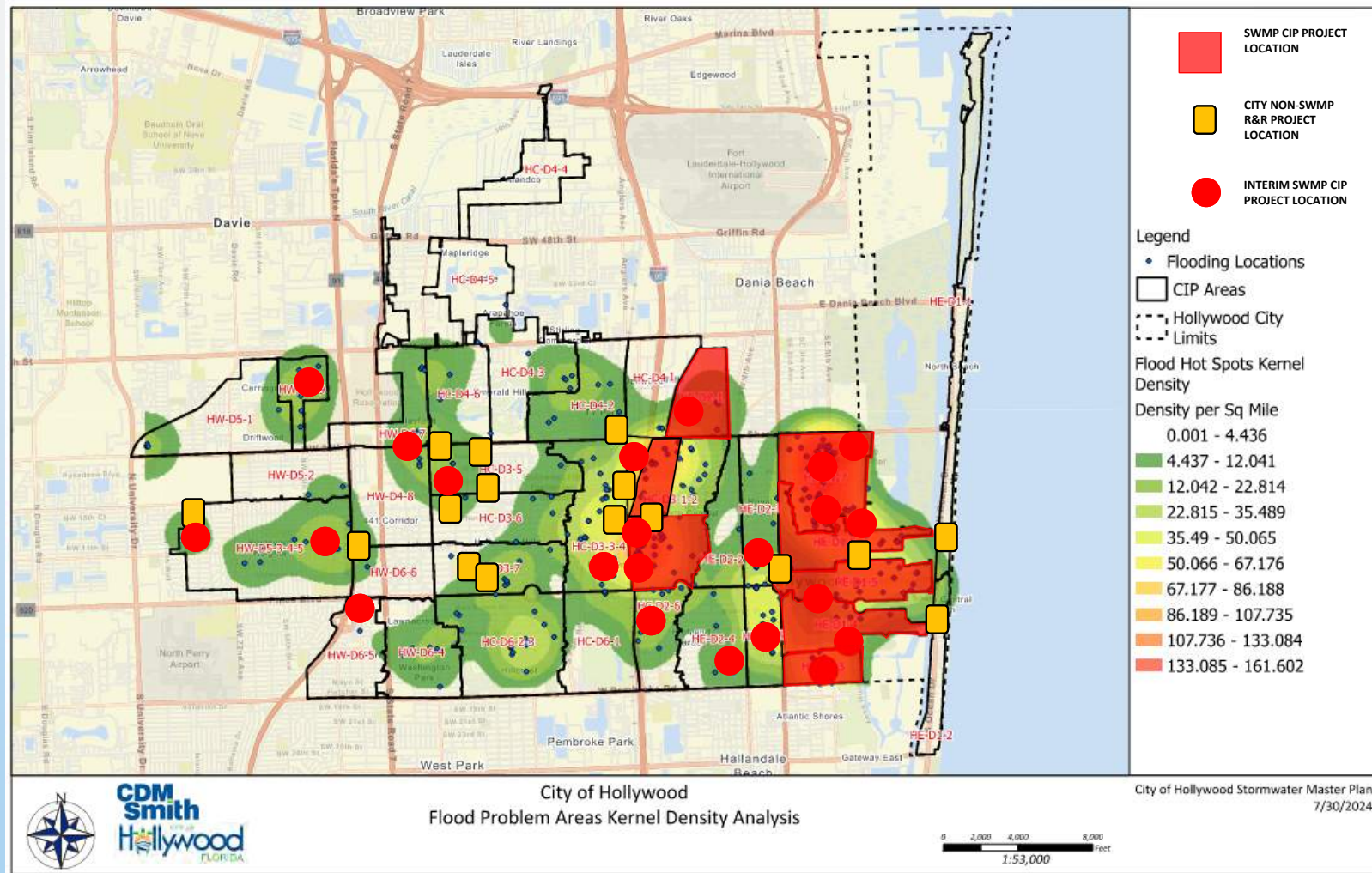
“Urgency” Indicators for Initial Large CIP Flooding Projects

The first DPU-recommended large project areas align with:

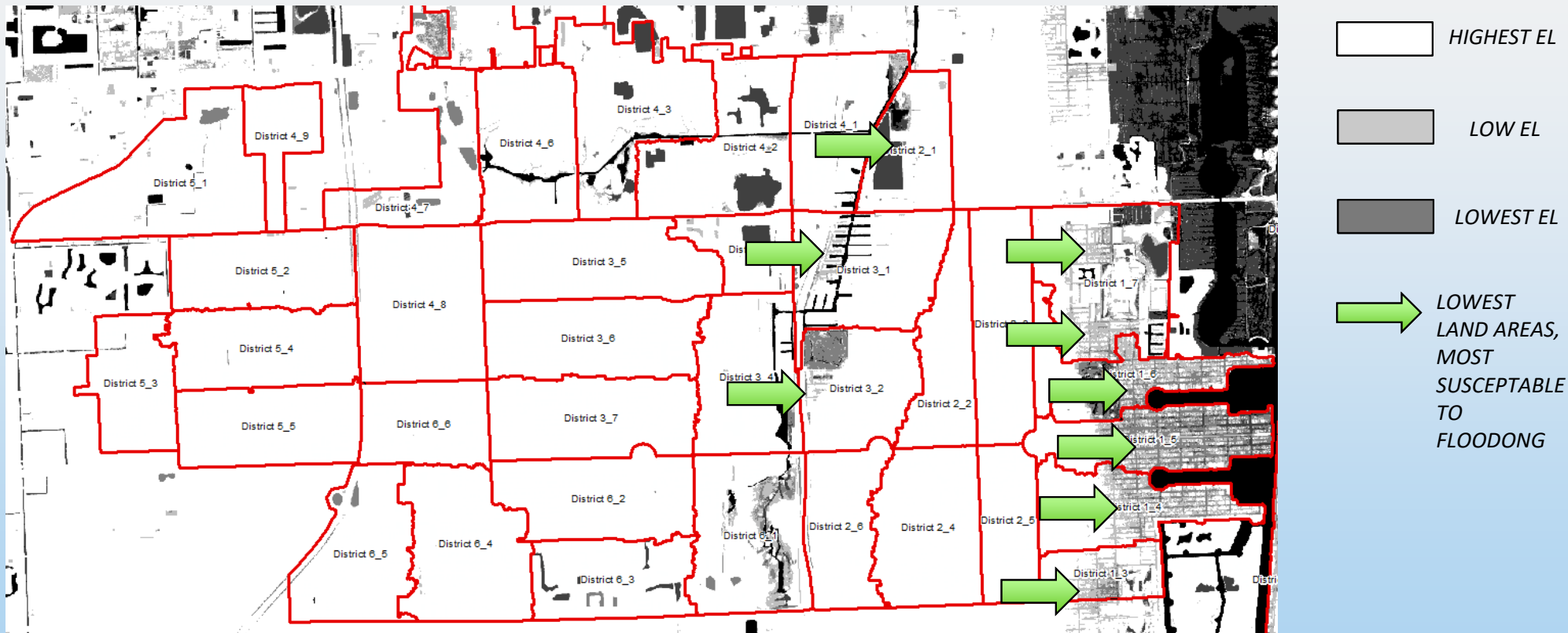
- ✓ Lowest land elevations in the City
- ✓ Directly affected by sea level rise and tidal flooding
- ✓ Locations where temporary pumps must be deployed by the City to lower flooding during storms
- ✓ Locations of the most stranded vehicles due to flooding and fire department highwater rescue vehicle deployment
- ✓ Locations Identified as Infrastructure Vulnerability in the City’s Vulnerability Study
- ✓ These areas also correspond to:
 - Some of the deepest areas of widespread flooding in the City’s stormwater model
 - Frequently the focus of local news media for flooding issues



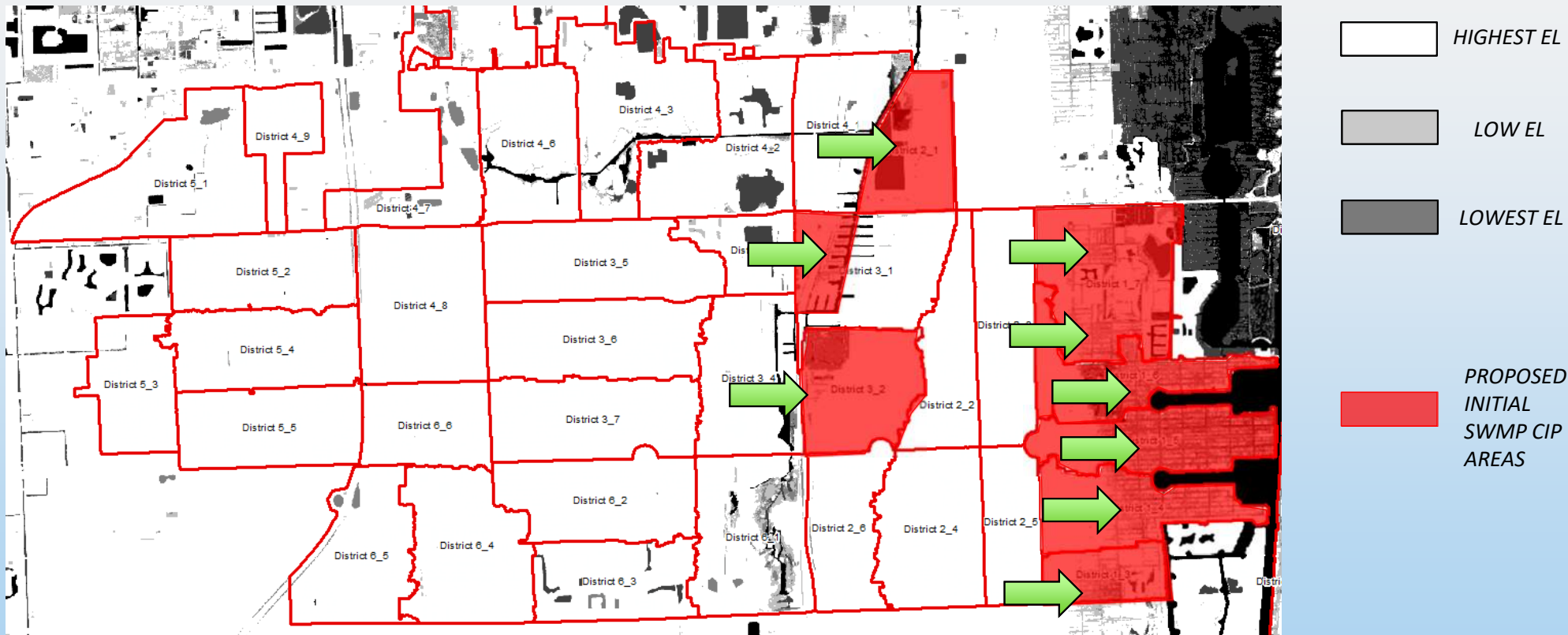
Initial Identified Large SWMP CIP Areas and Hot Spots Flooding



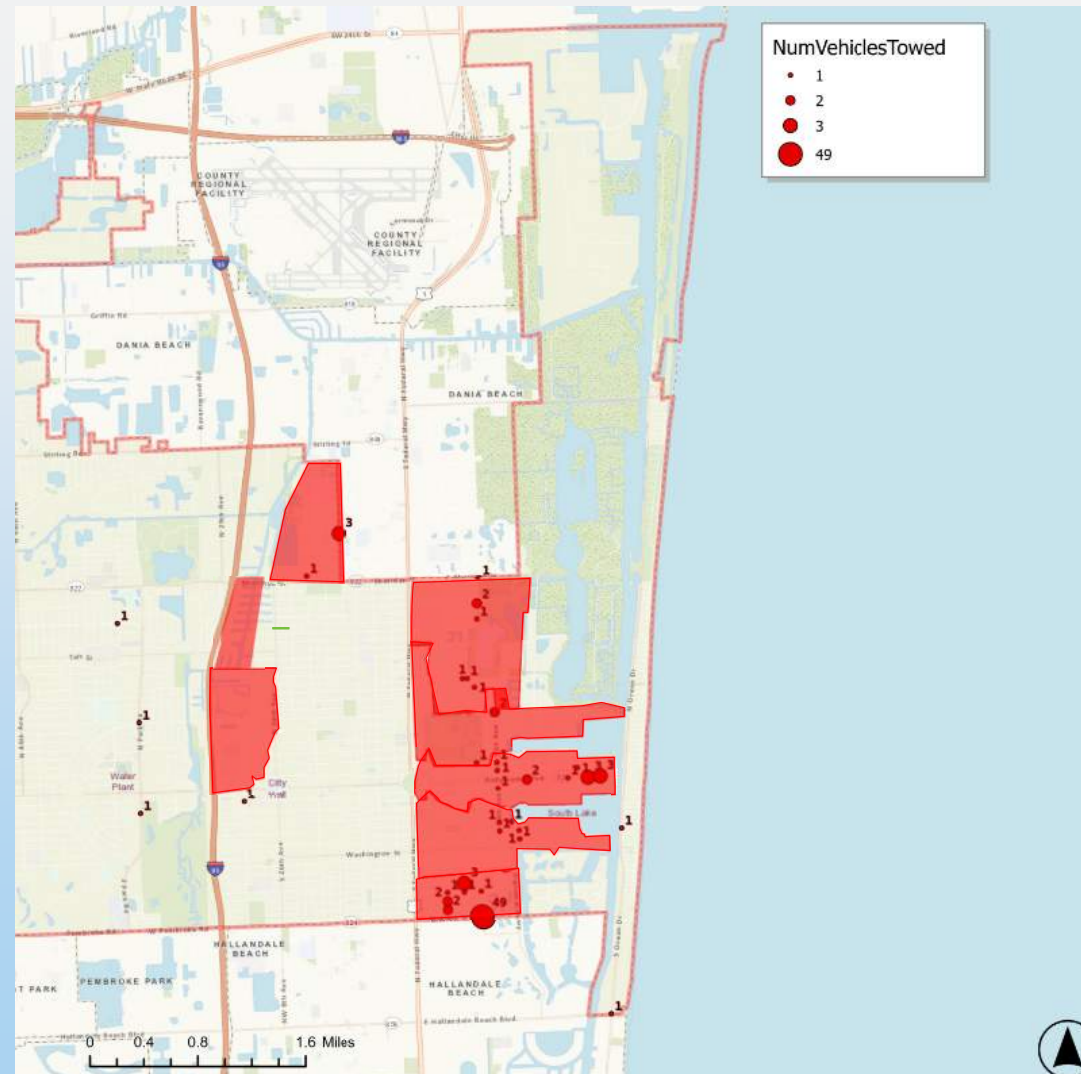
Initial CIP Areas Correspond to the Lowest Elevations in the City



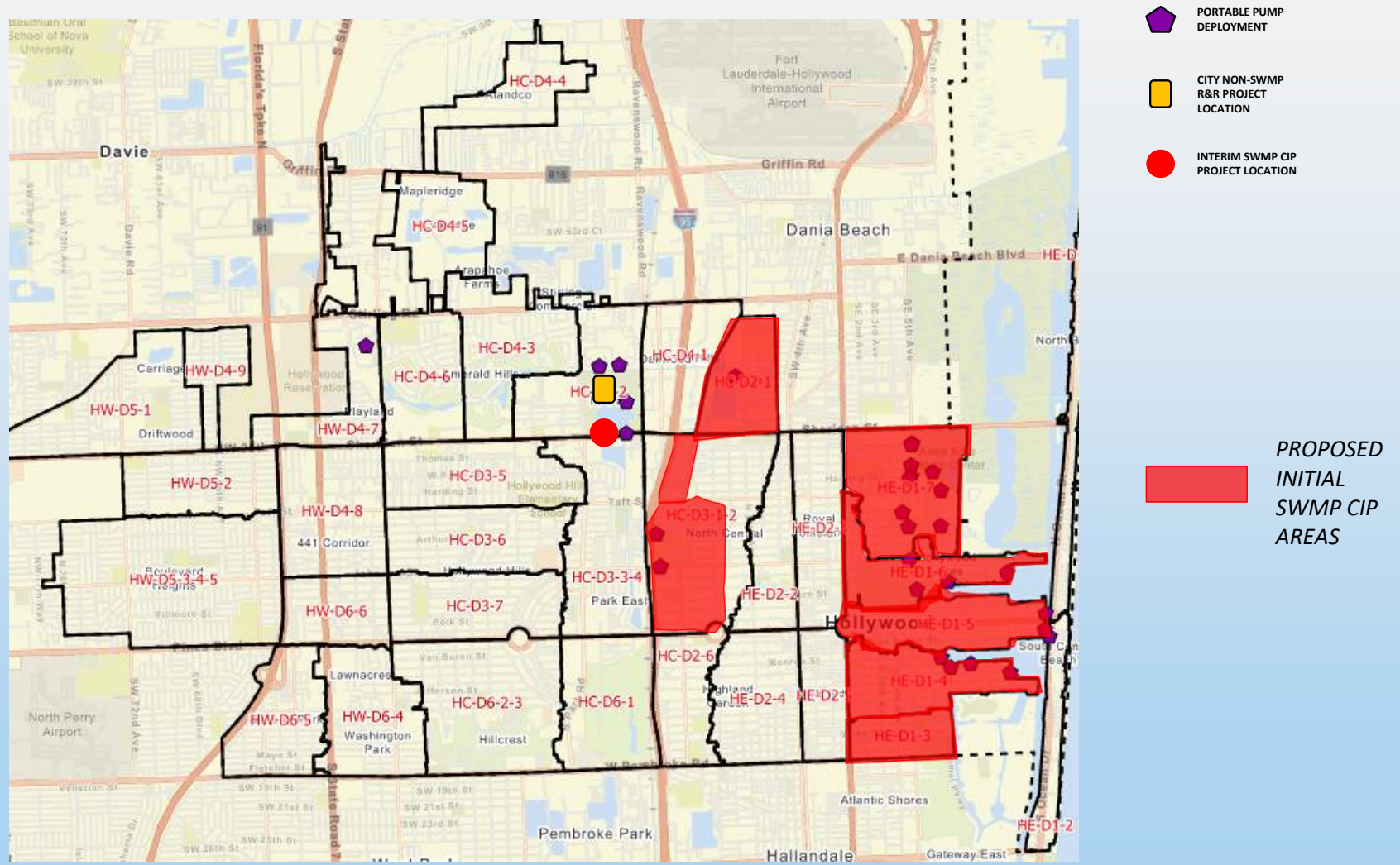
Initial CIP Areas Correspond to the Lowest Elevations in the City



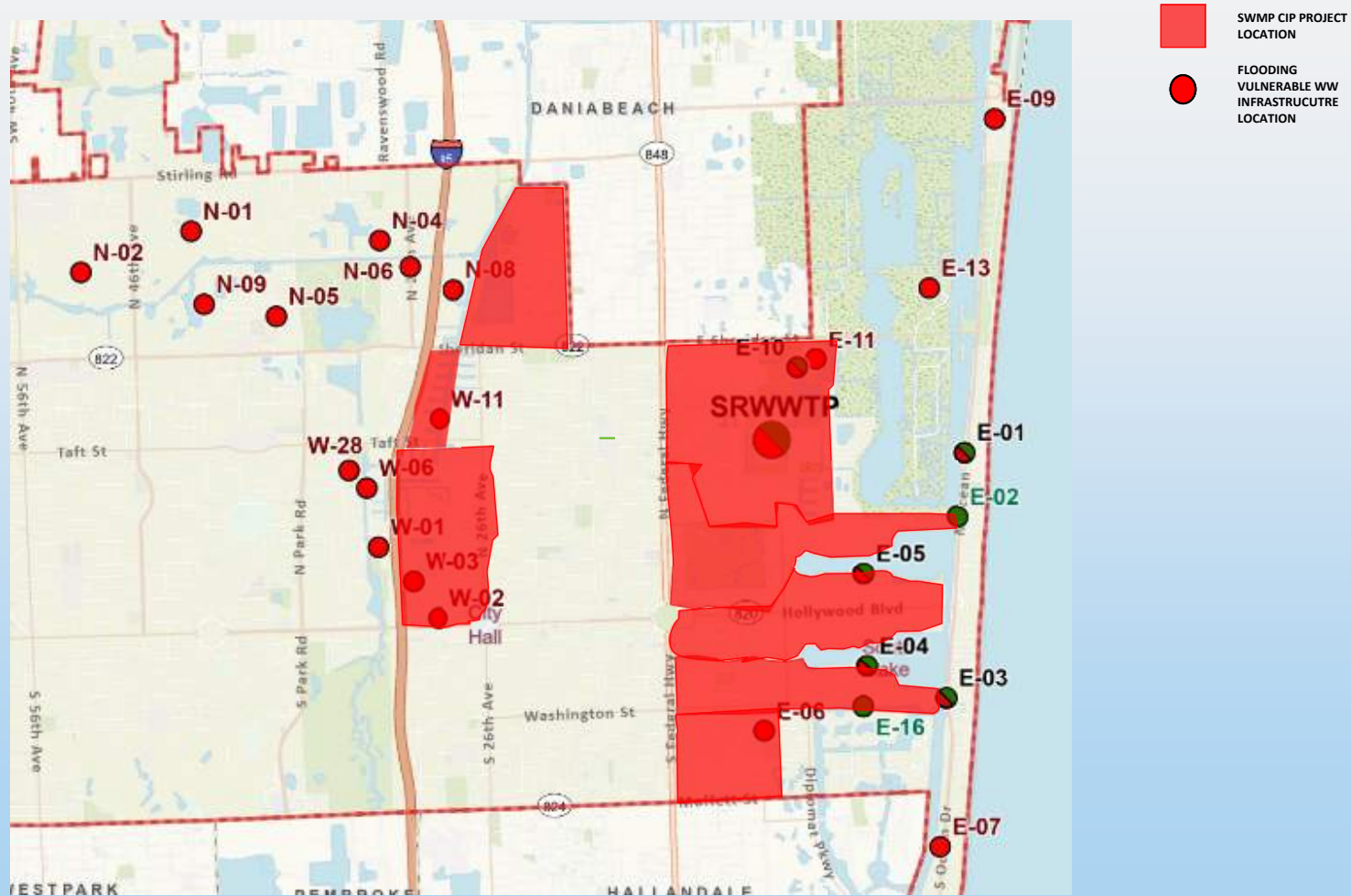
Initial CIP Areas Correspond to the Highest Stranded Vehicle & Rescue Tow Locations



Initial CIP Areas Correspond to the DPU Temporary Pump Deployment



Initial CIP Areas Address Flooding in 12 of 27 Identified Vulnerable WW Facilities



Stormwater Utility Overview

CITY OF HOLLYWOOD, FLORIDA CODE OF ORDINANCES

§ 54.03 STORMWATER MANAGEMENT UTILITY FEE

USE: The storm water fee is used by the City of Hollywood to operate and make continuous improvements to the storm drainage system

BASIS: The fee is assessed based on the estimated amount of stormwater runoff contributing from a property

BILLING: The fee is billed monthly on the City's utility bill. Fees for parcels not receiving utility bill sent by County, reimbursed monthly, or billed separately.

RATE: The current rate = \$10.62/ERU per month (\$127.44 SF annually)

MEASUREMENT: An ERU is an Equivalent Residential Unit and represents the average imperviousness of a single-family residential property within the City

FEE:

- All parcels charged flat fee on imperviousness
- SF Residential properties = 1 ERU
- Non-Single Family Residential (Multi) = ERU rate x factor (0.53)
- Non-Residential properties = SWU Rate x # ERUs based on impervious area

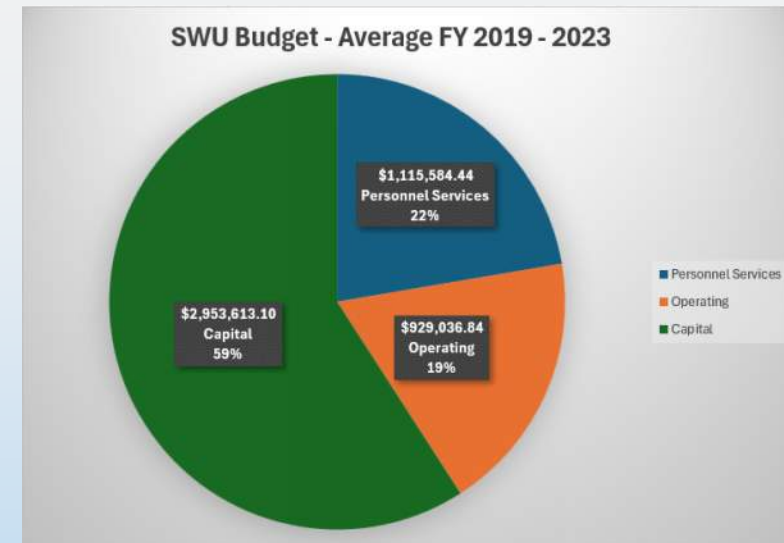
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Current Financial Status of Stormwater Utility Budget

1. Utility is underfunded to operate, maintain, and improve the stormwater system at the current rate of \$10.62/ERU per month, flat fee:
 - Backlog of needed projects
 - Shortfall of staff and equipment, doesn't account for inflation
 - No reserves for emergency or for bond qualification

SWU revenue adjustments are required to fund immediate needs:

- Desired interim relief CIP projects
 - Capital costs to maintain system - R&R projects backlog
 - Equipment maintenance and new equipment
 - Increased system operation costs
 - Labor and additional staff needs
- Currently, on average, only \$2-3M/annually is available to address all of the stormwater capital project needs --> creates a continuous backlog
 - DPU has proposed to earmark \$10.7M annually to address the interim stormwater capital needs budget while the SWMP Large CIP future financing is being acquired



Source: City of Hollywood DPU SWU 2023 Budget Data

CIP Implementation Methods

1. Choose CIP projects and determine costs and fees

- What does it cost to implement the desired program.

2. Determine the tolerable rate increase and schedule and select projects to that budget

- What can the resultant revenue buy.



Initial Stormwater Utility Rate Adjustment Can Be a One or Two-Step Process



1. Two-step (two smaller sequential increases) provides:

- Minimum revenue generation for immediate system operation needs and interim relief CIP and system R&R capital projects without delay (pay-as-you-go funding)
- Additional time to finalize decisions on the first group of large SWMP capital project areas
- Additional time to perform a final rate study and other due diligence to support bonds and other financing methods that will be required for the final capital program budget amount

2. One-step (single larger increase to the projected future rate) provides:

- Revenue generation for immediate system operation needs and interim relief CIP and system R&R capital projects without delay (pay-as-you-go funding)
- Immediate building of equity (reserve set aside) in the SWU fund for future financing qualification
- Additional initial funding to accelerate or perform more projects more rapidly



Initial Stormwater Utility Rate Adjustment Options to Consider

OPTION A

- \$18/ERU (MINIMUM INITIAL PAY AS YOU GO)
 - START INTERIM PROJECTS AND CITY R&R PROJECTS CITYWIDE
 - CREATE A CONTINGENCY FUND
 - STUDY AND FINALIZE FUTURE RATE INCREASE AND FUNDING NEEDS

EXISTING RATE (SF RES):

- \$10.62/ERU MO
- \$127.44/YR

OPTION B

- \$20/ERU (PAY AS YOU GO “PLUS”)
 - START INTERIM PROJECTS AND CITY R&R CITYWIDE
 - CREATE A CONTINGENCY FUND
 - PLUS CREATE A RESERVE FUND TO QUALIFY FOR FUNDING ASISTANCE
 - PLUS START SOME DESIGNS OF LARGE GROUP 1 SWMP CIP
 - STUDY AND FINALIZE FUTURE RATE INCREASE AND FUNDING NEEDS

OPTION A: “MINIMUM” RATE:

- \$18.00/ERU MO
- \$216.00/YR
- → \$7.38/MO INCREASE

OPTION B: “PLUS” RATE:

- \$20.00/ERU MO
- \$240.00/YR
- → \$9.38/MO INCREASE

OPTION C

- \$22/ERU (YRS 1-5), \$42/ERU (YRS 5-10)
 - START INTERIM PROJECTS AND CITY R&R CITYWIDE
 - START DESIGN OF GROUP 1 CIP, INITIAL BONDING
 - CREATE CONTINGENCY FUND
 - PLUS ACCELERATED FINANCING RESERVES TO QUALIFY SOONER FOR FUNDING ASISTANCE
 - STUDY AND PROVIDE BACKUP FOR THE FUTURE RATE INCREASE

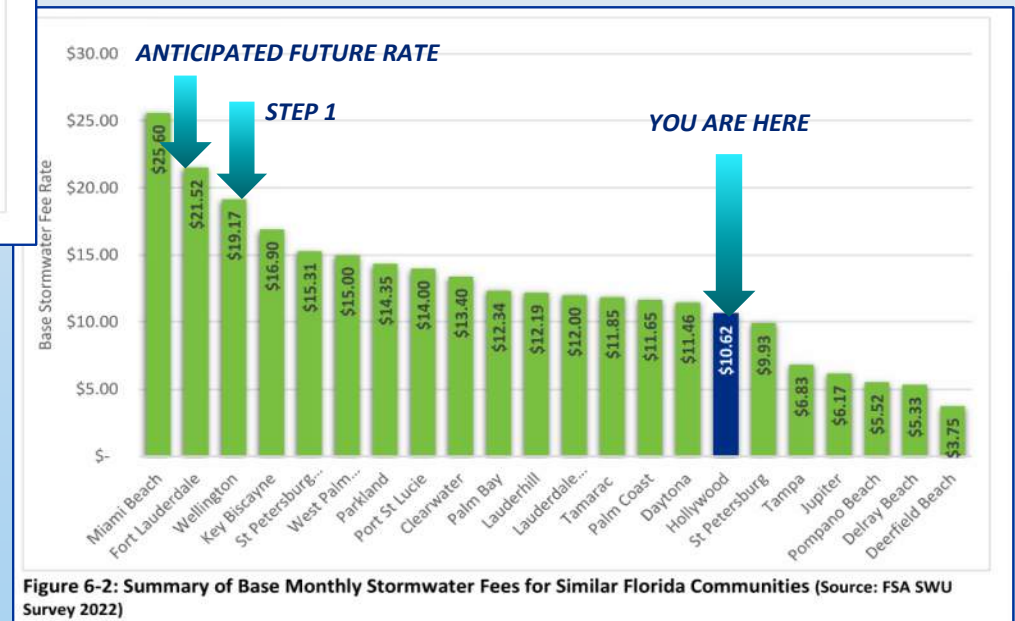
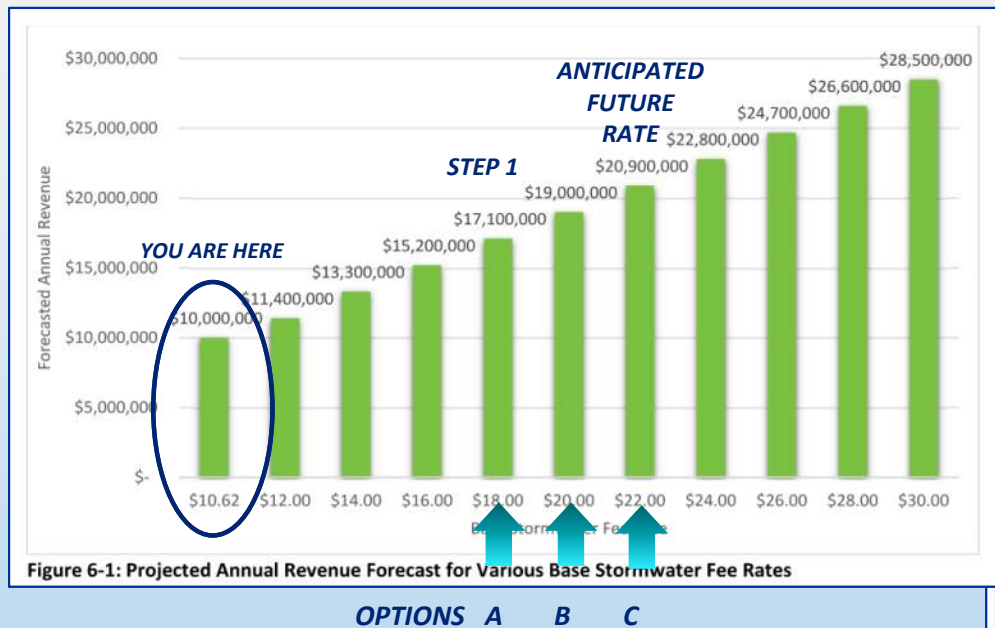
OPTION C: FUTURE INITIAL RATE:

- \$22.00/ERU MO
- \$264.00/YR
- → \$11.38/MO INCREASE

OPTION D

- Zoned Rate Structure (rate varies by area and CIP selected)

Stormwater Utility Rate Comparisons



Initial Stormwater Utility Rate Adjustment – Typical Rate Impacts

EXAMPLE PARCEL 2 – 900 FEDERAL HWY (JOHNSON ST)

- Non-RES (Commercial) – Johnson Plaza
- Type – Strip mall and parking lot
- Impervious Area (sqft) = 18,000
- Number of Billed ERUs = 8

SWU RATE/ERU	SWU FEE \$/MONTH	MONTHLY \$ CHANGE	ANNUAL \$ CHANGE	ANNUAL Bill
\$10.62	\$84.96	--	--	\$1,019.52
\$18.00	\$144.00	(+) \$59.04	(+) \$708.48	\$1,728.00
\$20.00	\$160.00	(+)75.04	(+)900.48	\$1,920.00
\$22.00	\$176.00	(+)91.04	(+)1,092.48	\$2,112.00
\$42.00	\$336.00	(+)251.04	(+)3,012.48	\$4,032.00



Initial Stormwater Utility Rate Adjustment – Typical Rate Impacts

EXAMPLE PARCEL 1 – 4000 PRESIDENTIAL CIRCLE

- Non-RES (Commercial)
- Type - Large office building and parking lot
- Impervious Area (sqft) = 383,131
- Number of Billed ERUs = 170

SWU RATE/ERU	SWU FEE \$/MONTH	MONTHLY \$ CHANGE	ANNUAL \$ CHANGE	ANNUAL Bill
\$10.62	\$1,808.37	--	--	\$21,700.44
\$18.00	\$3,065.04	(+) \$1,256.67	(+) 15,080.04	\$36,780.48
\$20.00	\$3,405.60	(+) 1,597.23	(+) 19,166.76	\$40,867.20
\$22.00	\$3,746.16	(+) \$1,937.79	(+) 23,253.48	\$44,953.92
\$42.00	\$7,151.76	(+) 5,343.39	(+) 64,120.64	\$85,821.12



Initial Stormwater Utility Rate Adjustment – Typical Rate Impacts

EXAMPLE PARCEL 3 – 5951 SHERIDAN STREET

- Non-RES (Commercial) – KFC
- Type – Restaurant with parking lot and drive through
- Billed Impervious Area (sqft) = 18,787
- Number of Billed ERUs = 8.35

SWU RATE/ERU	SWU FEE \$/MONTH	MONTHLY \$ CHANGE	ANNUAL \$ CHANGE	ANNUAL Bill
\$10.62	\$88.68	--	--	\$1,064.16
\$18.00	\$150.30	(+) \$61.62	(+) \$739.44	\$1,803.60
\$20.00	\$167.00	(+) \$78.32	(+) \$939.84	\$2,004.00
\$22.00	\$183.70	(+) \$95.02	(+) \$1,140.24	\$2,204.40
\$42.00	\$350.70	(+)262.02	(+)3,144.28	\$4,208.40



CIP SWU Fee – Alternate SWU Billing Methods

1. FLAT FEE (Current Method)

- All residents of the City pay equally for the common operation, maintenance, and improvement of the citywide stormwater system in the shared City ROWs.

2. RATE ZONES

- Zones established by stormwater collection area characteristics and infrastructure CIP installed.



Example Rates Impacts by Initial Starting Fee - Citywide Flat Fee ~\$300M Initial Program (Subject to Change)

RATE ZONE	ZONE NAME	CURRENT NO. ERUs	BASE FEE	RATE YEARS 1-5	RATE YEARS 5-10	INITIAL BONDED SWMP CIP AMMT
NA	CITYWIDE	81,500	\$18.00	\$18.00	\$23.50	\$0M
NA	CITYWIDE	81,500	\$20.00	\$20.00	\$26.12	\$0M
NA	CITYWIDE	81,500	\$22.00	\$22.00	\$42.00	\$294M

Discussion of Rates by Zone - Implementation Issues

1. Prepare SWU Ordinance language and handling dispute resolutions
2. It could be potentially argued that only paying residents in the Zone improved should be allowed to use their local roadways in the improved areas during storms, and others should seek alternate State and County routes for their passage from west to east (to the beaches, hotels, businesses, and City parks and golf courses), which is unenforceable and not practical.
3. If any project is not implemented fully or modified in scope/cost from the SWMP (regulatory changes, unavailable ROW, unforeseen conditions, etc.) the fee adjustments would need to be recalculated and changed accordingly for each zone for each time a project adjustment or cost change is made.
4. If the City decides to apply zone fees, once started, the billing methodology cannot easily be revoked and returned to a flat fee again, as a portion of the CIP will have already been paid for by a select group of SWU accounts, requiring refunds or other SWU fee adjustments.



Discussion of Rates by Zone - Implementation Issues (Con't)

5. The argument for further zones within zones can be made for equity as well if projects are phased as proposed driven by available funding and construction limitations.
6. Some projects share CIP between zones (common pipes, pump stations, and storage ponds) and costs were assigned to the primary use zone in the SWMP. Each project would need to be evaluated on a case-by-case basis for potential proportionate distribution of cost for fee equity.
7. If a competitive grant is awarded for a project in one zone and not another, the project costs and thus the fee disparity can be large. Areas receiving grant matching would potentially need to refund a portion of the fees only in those areas of the zone.
8. If a large rate increase affects an economically disadvantaged neighborhood within a Zone, it may be difficult to collect funds.
9. The larger Interim CIP projects may want to be removed and added to the Zone CIP for equity.



Discussion of Rates by Zone Implementation Issues

If the rates are perceived as too high in a particular Zone:

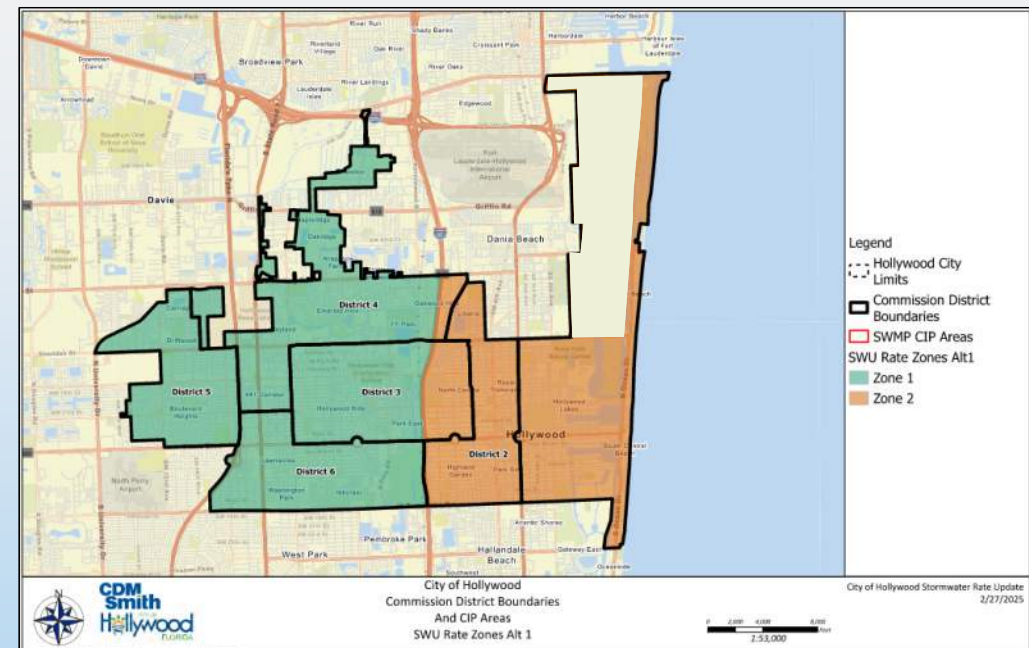
- a. The number of projects implemented can be reduced below the \$300M bond capacity to a more palatable number, or
- b. Projects can be performed over a longer period of time in smaller phases, extending the full CIP Areas' completion dates past the 15-20 year goal timeframe, or
- c. Alternately, the City can choose to initially implement a project in each Zone to the same \$300M (or less) budget and keep the rates relatively equal in all zones eliminating the need for zones – some identified worst flooding areas will be deferred.



Option D: Rate Zones - Two Zone Alternative

Analysis based on:

- East and West of City generally divided by I-95
- About half of City by area
- ✓ Shares CIP between more ERUs keeping individual fees lower
- ✓ Greatly simplifies zone billing system



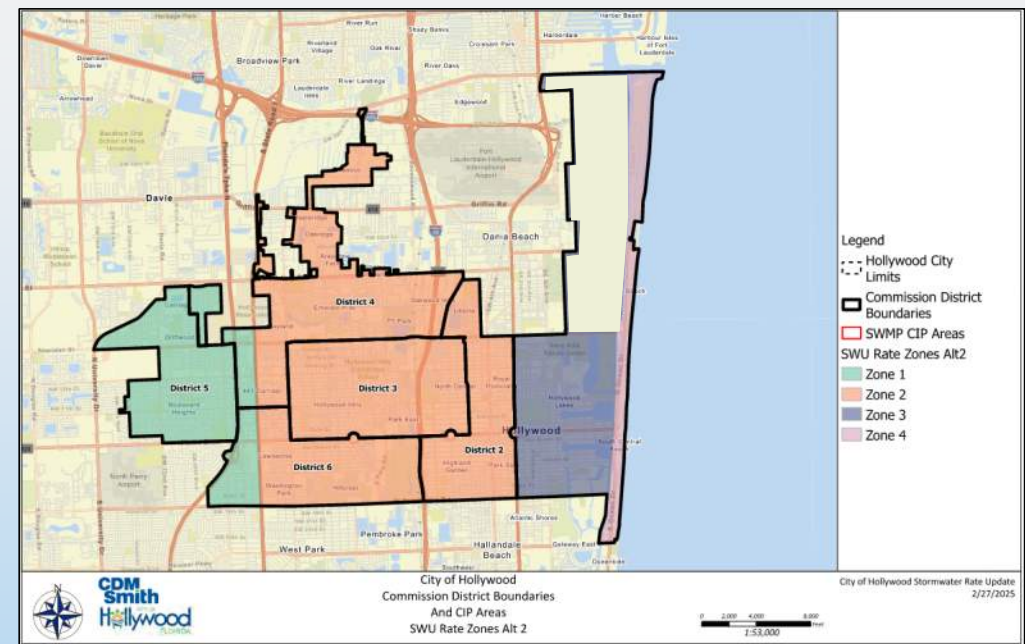
1. **WEST** – Western City limits to I-95
2. **EAST** – I-95 to Eastern City limits

Option D: Rate Zones - 3 or 4 Zone Alternative

Rate Zones Development (3/4 Zones)

Engineering analysis based on:

- Stormwater flow
 - Topography
 - Stormwater management system connectivity
 - Land use, building coverage, and density characteristics
 - Beaches can be considered part of Zone 3 East if desired
-
- ✓ Higher SWU fees in areas of initial CIP improvements due to less ERUs
 - ✓ Lower fees in areas of future improvements



1. **WEST** – Western City limits to US-441 (SR-7)
2. **CENTRAL** – US-441 to US-1
3. **EAST** – US-1 to the ICW
4. **BEACH** – Barrier Island (Include in Zone 3?)

Example Impact of Rates by Zone for Bond CIP for a ~\$300M Initial Program Impacts Two Zone System (Subject to Change)

RATE ZONE	ZONE NAME	CURRENT NO. ERUs	BASE FEE	RATE YEARS 1-5	RATE YEARS 5-10	INITIAL BONDED SWMP CIP AMMT
1	WEST	48,273	\$22.00	\$22.00	\$23.50	\$0
2	EAST	33,227	\$22.00	\$22.00	\$56.26	\$294M
NA	CITYWIDE	81,500	\$22.00	\$22.00	\$42.00	\$294M

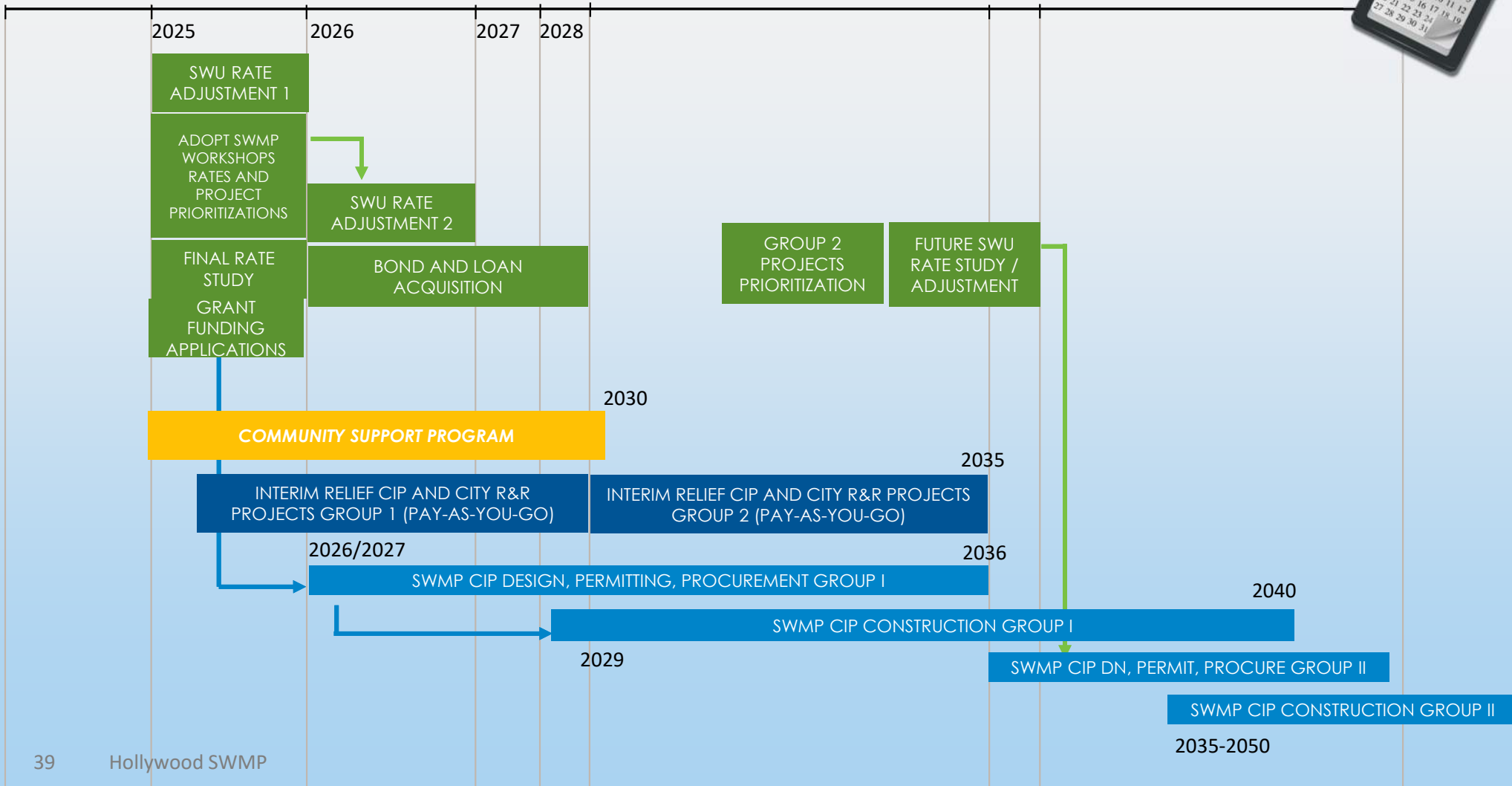
Example Impact of Rates by Zone for Bond CIP for a ~\$300M Initial Program Impacts Three Zone System (Subject to Change)

RATE ZONE	ZONE NAME	CURRENT NO. ERUs	BASE FEE	RATE YEARS 1-5	RATE YEARS 5-10	INITIAL BONDED SWMP CIP AMMT
1	WEST	14,246	\$22.00	\$22.00	\$23.50	\$0
2	CENTRAL	50,807	\$22.00	\$24.72	\$31.97	\$72M
3	EAST	16,447	\$22.00	\$22.42	\$63.51	\$222M
NA	CITYWIDE	81,500	\$22.00	\$22.00	\$42.00	\$294M

Example Impact of Rates by Zone for Bond CIP for a ~\$300M Initial Program Impacts Four Zone System (Subject to Change)

RATE ZONE	ZONE NAME	CURRENT NO. ERUs	BASE FEE	RATE YEARS 1-5	RATE YEARS 5-10	INITIAL BONDED SWMP CIP AMMT
1	WEST	14,246	\$22.00	\$20.26	\$23.50	\$0
2	CENTRAL	51,116	\$22.00	\$24.69	\$31.91	\$72M
3	EAST	13,461	\$22.00	\$22.90	\$72.39	\$222M
4	BEACH	2,677	\$22.00	\$22.00	\$23.50	\$0
NA	CITYWIDE	81,500	\$22.00	\$22.00	\$42.00	\$294M

SWMP Citywide Program Implementation Planning Timeline



Community Support Program Until Completion of Major Stormwater CIP

CONSTRUCTION

- Interim Projects – Accelerated SWMP CIP Projects
 - 22 Projects totaling ~\$46M in Years 2025 through 2030 and beyond
- Robust Stormwater R&R Program
 - 24 Projects totaling ~\$15M, commencing in 2025 and continuing annually through 2030 and beyond
- Joint Participation Projects with FDOT
 - 4 Stormwater Stations commencing construction (~\$35 million)
 - 2 Stormwater Stations under design (~\$15 - \$20 million)
 - Continuous Inflow/Infiltration inspection and repair program
 - Johnson Street Culvert
- Continued Coordination with Development Services, DCM and other City Departments on major projects:
 - HBGC, Lakes Shoreline Protection, Orangebrook, Sunset Park

OPERATIONS

- Contract live phone system for 24/7 reporting of flood issues
- Enhanced Public Outreach
 - Frequent Periodic Public Program Update Meetings
 - More frequent updates on web site
 - Promotion and use of Hollywood Connect System
- Instituted and programmed SOPs ensuring consistent performance
 - Flooding “Hot Spots Play Book” SOP (updated annually)
 - King Tide SOP (updated annually)
 - Pump Routes Staffing and Scheduling SOP
 - Pre-Storm Analysis and Flood Forecast SOP
 - Post Storm Analysis and Telemetry SOP
- Assimilation of Community Flooding reports into GIS for data analytics
- Leveraging Inter-Departmental resources

2025

COMMUNITY SUPPORT PROGRAM

2030



24/7 Live Operator

- COH General Information Number **(954) 967-4357**
- DPU Emergency Number **(954) 921-3046**



Discussion Point of Workshop

1. Agreement to adopt of Citywide Stormwater Master Plan
 2. Agreement on the first Group of Large CIP Projects
 3. Agreement on the funding level and structure for the Stormwater Utility
- Resolutions can be brought forward on the next available Commission Meeting



