**Department of Regulatory and Economic Resources (RER) Division of Environmental Resources Management (DERM)** 

### **RER-DERM SmartCover Pilot Study**



RESOURCES

Galo Pacheco, M.Sc., P.E. Interim Chief, Water and Wastewater Division



Monday, January 6<sup>th</sup>, 2025

#### **RER - DERM SmartCover Pilot Study**

#### Total Units installed: 426

- Units Installed under Phase I: 192 (May 2023)
- Units Installed in Phase II: 234 (October 2024)

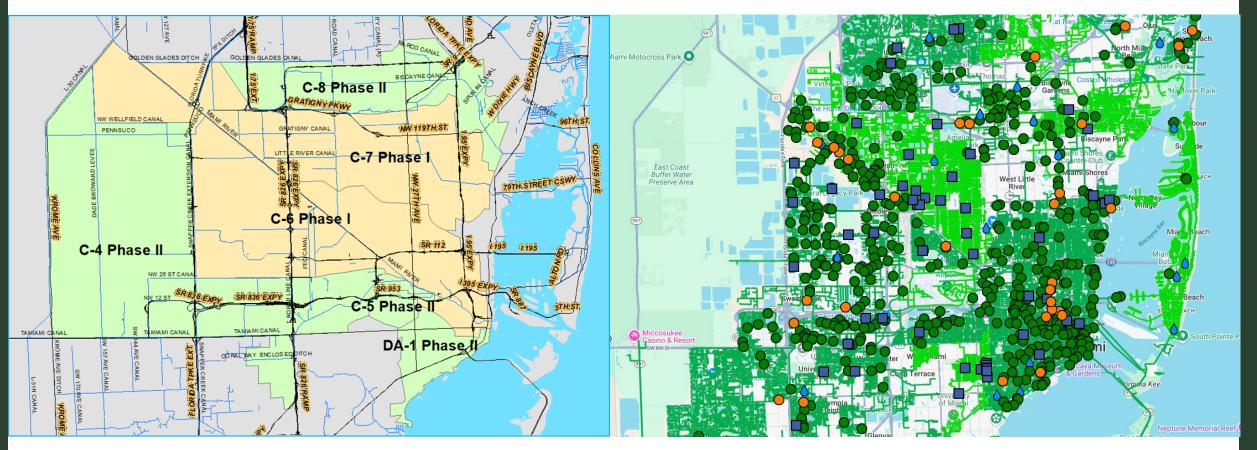
Utilities	Units Quantity (PH1)	Units Quantity (PH2)
Bay Harbour Island	1	
Opa-Locka	4	5
CNM	6	11
Hialeah Gardens	20	
Medley	33	
WASD	128	218
Total	192	234

- Criteria: Key manholes and pump stations, Historical SSOs, Citizen complaints, Sanitary Sewer Basin Moratoria.
- Real-time collection system monitoring, reporting and spill prevention
- Analysis of Inflow & Infiltration (I&I)
- Participating utilities receive the alarms and have access to dashboard



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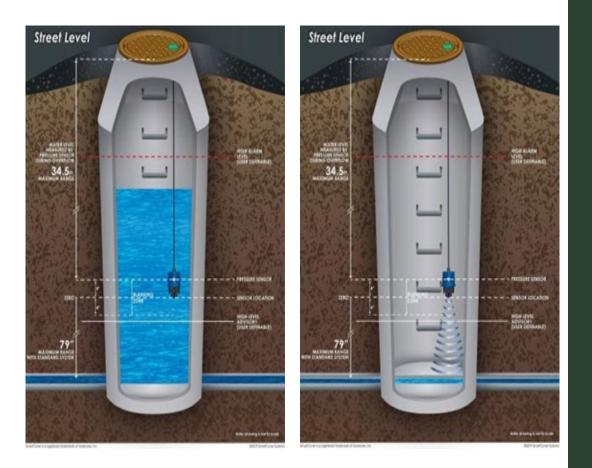
## SUBSONIC DUAL SENSOR



- Highest accuracy on narrow inverts
- Drop lowest & closest to the channel
- Reliable during surcharges



- Real-time trend analysis
- Satellite communications impervious to power or cell outages
- No confined space entry
- Low maintenance

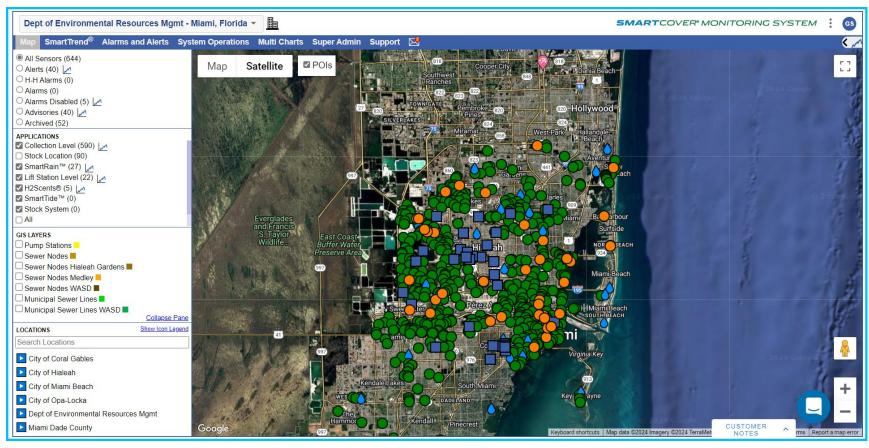


Ideal for remote locations Integration with rain, river, tidal data



#### CLOUD BASED WEB PORTAL

- www.mysmartcover.com
- SmartCover Dashboard
- DERM SmartCover units in the Utilities Dashboard
- SmartCover units for Utilities
   without a Dashboard are included
   in the DERM Dashboard
- All utilities have access to the units installed within their jurisdiction
- Utilities respond to the alarms and take actions to prevent SSOs.
- The utilities and DERM received the alarms via text message and via email.



SmartTrend <sup>®</sup> Al	arms and Aler	ts System O	perations Multi Cl	narts Super Admin	Support 🖂	
rtCover⊚ Unit Locatio	DERM -	- HGD-18-1	-	Application: Collect	ion Level	
harts Managen	nent Stat	us Alarm S	Settings Info	Maintenance		
DERM - HGD-18-	<u>1</u>				<u>Static</u>	: Charts (?
		Distar	nce below Manhole Co	ver		
HH Level Alarm = 0		ligh Level Alarm =		evel Advisory = 51.8 in	Sensor Position = 1	159.0 in
Channel Bottom = 17		3.3   Max: 174.2		0004.00.00	17.00 0004	4 40 44 47
	24n 48n 1	w 1m 3m	om All	2024-08-29	17:36 → 2024-1	11-18 11:17
18 in -						
36 in 🚽						
54 in 🗕						
72 in 🚽						
90 in -						
90 in - 108 in -				1		1
90 in - 108 in - 126 in -						
90 in - 108 in - 126 in - 144 in -						
90 in - 108 in - 126 in - 144 in - 162 in -						
90 in 108 in 126 in 144 in 162 in 180 in	-09-24	09-23-24	10-07-24	10-21-24	11-04-24	11-18-24
90 in 108 in 126 in 144 in 162 in 180 in	-09-24	09-23-24		10-21-24	11-04-24	11-18-24
90 in 108 in 126 in 144 in 162 in 180 in	1	09-23-24		10-21-24	11-04-24	11-18-24
90 in 108 in 126 in 144 in 162 in 180 in 09. 09. 09. 09. 09. 09. 09. 09.			10-07-24	10-21-24		11-18-24
90 in - 108 in - 126 in - 144 in - 162 in - 180 in - 09- 09- 09- 09- 09- 09- 09- 09	2024-09	<u>/_</u>	10-07-24 2024-10	Zoom Type		
90 in - 108 in - 126 in - 144 in - 162 in - 180 in - 09- 09- 09- 09- 09- 09- 09- 09			10-07-24 2024-10	5y Zoom Type © Default	2024-11 Long Fil	lter <sub>DS</sub>
90 in 108 in 126 in 144 in 162 in 180 in 09. 09. 09. 09. 09. 09. 09. 09.	2024-09 Time Period	1m <b>3m</b> 6n	10-07-24 2024-10 n 1y 2y 3y	5y Zoom Type © Default O Auto	2024-11 <b>Long Fil</b> () Gap () Fill (	Iter Ds Gaps
90 in - 108 in - 126 in - 144 in - 162 in - 180 in - 09- 09- 09- 09- 09- 09- 09- 09	2024-09	<u>/_</u>	10-07-24 2024-10	Zoom Type	2024-11	
90 in 108 in 126 in 144 in 162 in 180 in 09- 0 Level O PowerPack Voltage	2024-09	1m <b>3m</b> 6n	10-07-24 2024-10	5y Zoom Type © Default	2024-11 Long Fil	Iter Ds Gaps



#### SmartCover Units Chart

Description of the dash lines shown in the graph

- ✤ Green = Sensor Position
- Orange line = High level Advisory
- Red line = High level Alarm
- Dark Red line = H-H level Alarm

#### **Multi Charts Selection**

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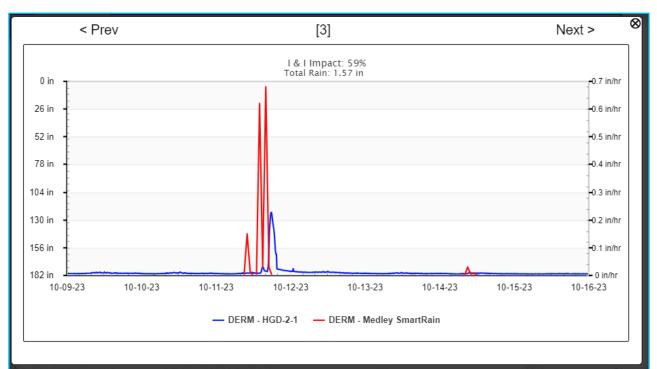


ap SmartTrend <sup>®</sup> Alarm	ns and Alerts System Operations M	Multi Charts Super Admi	in Support 🔀	
SmartTrend <sup>®</sup> Report S	martTrend <sup>®</sup> Dashboard SmartTrend	d <sup>®</sup> Settings I & I Rep	ort	
nflow and Infiltratio	on Report		Create New Report	?
Reports				
I & I Impact Filter: 0% to 10	0%	(54 / 60 shown)		
			Advanced Settings	
Download CSV		Se	earch:	
.ocation	Report from 2023-10-09 to 2023-10	0-15 - Gloria Suarez Me Chart	endez I & I Impact	
DERM - HGD-18-1	DERM - Medley SmartRain	haven	60%	
DERM - MED -MH-100-D	DERM - Medley SmartRain	www	60%	
DERM - HGD-2-1	DERM - Medley SmartRain	won	59%	
DERM - MED -MH-200	DERM - Medley SmartRain	www	52%	
DERM - HGD-13-1	DERM - Medley SmartRain	www.	47%	
DERM - MED -MH-11-D	DERM - Medley SmartRain	ww	39%	
DERM - MED -MH-600-1	DERM - Medley SmartRain	han	34%	
DERM - HGD-10-1	DERM - Medley SmartRain	1900m	34%	
DERM - MED -MH-300	DERM - Medley SmartRain	and a	30%	
DERM - MED -MH-205	DERM - Medley SmartRain	wan	30%	
DERM - MED -MH-105-1	DERM - Medley SmartRain	1900m	29%	
DERM - HGD-10-34	DERM - Medley SmartRain	www	24%	
DERM - MED -MH-500	DERM - Medley SmartRain	wan	15%	
DERM - MED -MH-700	DERM - Medley SmartRain	work	14%	
DERM - HGD-11-1	DERM - Medley SmartRain	work	12%	
Location •	Rain Site 🔻		I & I Impact	

### I/I Impact



- Identify, in priority order, the SmartCover sites at high risk for significant I/I
- Utilize time series data from the SmartCover site and the closest SmartRain to calculate a cross-correlation score (Pearson Coefficient)



#### Preventing SSOs, Contamination of Surface Waters and Protecting Wildlife

- Previous SSOs in the corner of NW 14 ST and NW 12 AVE
- > DERM W&WWD and WASD team coordinated the installation of a SmartCover
- Prevented a significant SSO into Wagner Creek!



	County Water and Se Miami, Florida	ewer	SMART	COVER® MONIT	ORING SYSTEM
p SmartTre	end® Alarms and Ale	rts System Op	erations Mult	Charts Support	3
nartCover® Ur	nit Location OERM	I Basin 0001 MH	270 EAMS ID# 3.	+ Application: Co	llection Level
Charts	Management St	atus Alarm	Settings In	o Maintenance	
DERM Ba	sin 0001 MH 0270	EAMS ID# 382	095		Static Charts
	High Level Alar Sensor Positio	m = 41.0 in	ce below Manhol	e Cover High Level Advisory Channel Bottom =	= 43.0 in
0 in F	ndow 6h 24h 48h	1w 1m 3m	6m All	2023-03-	11 11:09 - 2023-03-11 21:56
19 in -				~	
38 in -			- <b>F</b> -W	N*	
57 in	03-11-23 12:00	03-11-23 14:00	03-11-23 16:00	03-11-23 18:00	03-11-23 20:00
	03-11-23	im	03-12-23		03-13-23
<ul> <li>Level</li> <li>PowerPad</li> <li>Signal Str</li> <li>Signal Qui</li> </ul>	rength Date Range		n 1y 2y 3 32 - 2023-03-13 16	Defau	It Gaps Fill Gaps
<ul> <li>Temperation</li> </ul>	ure	U	date Chart		Download Data

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COUNTY

BRG: 228\*5W (f) POB: 25\*53\*32\*N. 80\*8\*0\*W

<u>The system has also</u> <u>helped to identify</u> :

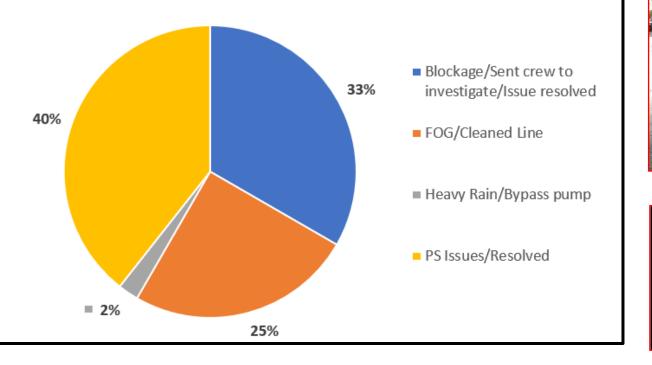
- Illegal Discharges
- RDII
- Changes on the operation of the sewer system due to force main breaks.



The RER-DERM SmartCover Pilot Study has helped to PREVENT 150 SSOs from January 2023 to October 2024

99 PREVENTED SSOs during Phase 1 (January 2023 – March 2024) 51 PREVENTED SSOs during Phase 2 (April 2024- October 2024)

> Prevented SSOs by Cause and Actions Taken Phase I & 2





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### **RER-DERM SmartCover Pilot Study**

#### Questions



ENVIRONMENTAL RESOURCES



# RER-DERM Efforts to Eliminate Septic Systems Impacting the Miami River and Tributaries



# RER-DERM NORC Program Sanitary Sewer Systems

WATER AND WASTEWATER DIVISION



# RER-DERM NORC Code Requirements Section 24.43.1(7)

A sanitary sewer <u>Gravity Main</u> or <u>Force Main</u> Should Be **Abutting**, **Available**, and **Operative**.

All Pump Stations Down Stream must be in OK or AC Status, or equivalent. METROPOLITAN DADE COUNTY FLORIDA

ENVIRONMENTAL PROTECTION



# Septic Tank Areas in Miami-Dade County

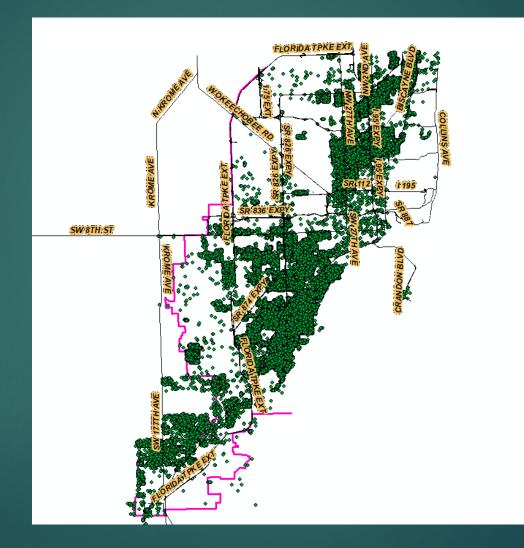
# Non-Vacant & Not-Connected Properties

# June 1, 2024 - Utility Reports

**POTENTIAL NORCs** 

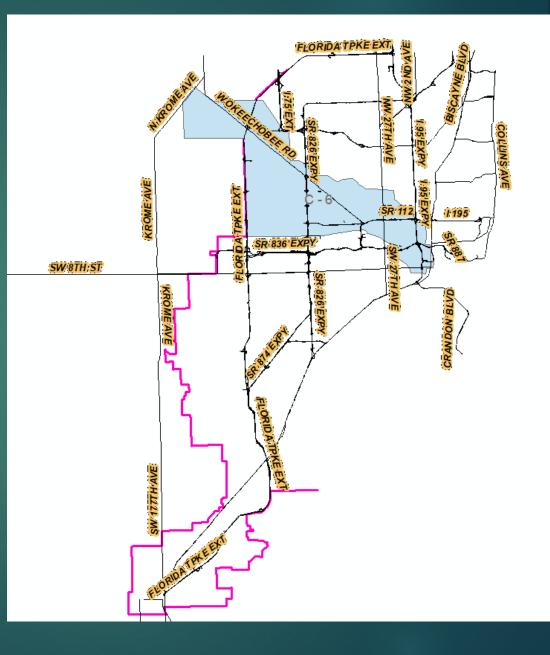


#### June 1, 2024 Reports Non-Vacant Non-Connected Properties



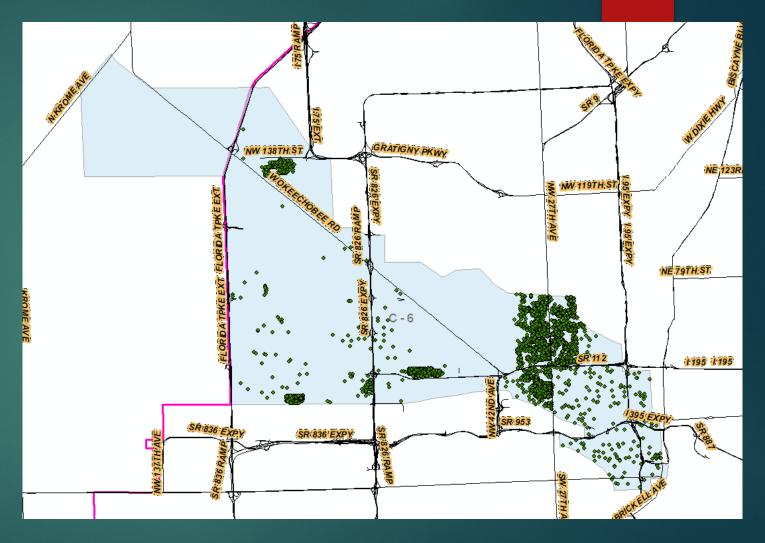


## Miami River Primary Canal Basin C-6



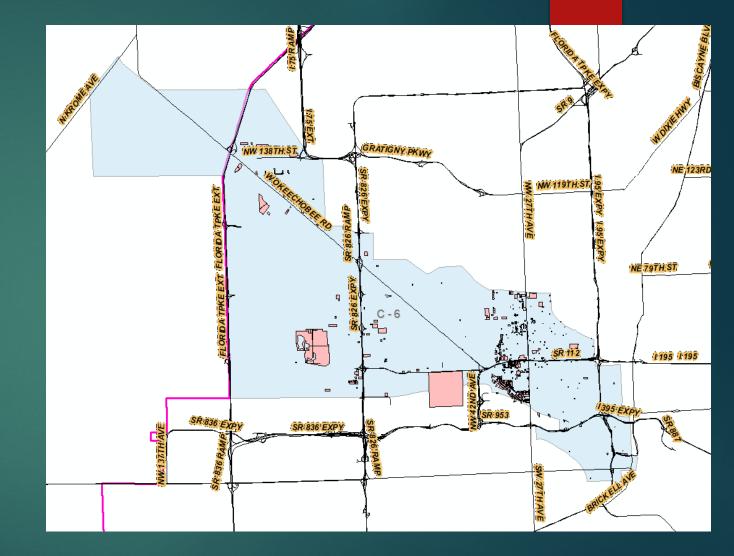


# Non-Vacant Non-Connected Properties Reported by Utilities Within Basin C-6





# RER-DERM Active NORCs Within Basin C-6





# Summary of NORCs and Non-Vacant and Non-Connected Properties Within C-6

Number of potential septic systems in C-6	3,683
Properties with Abutting Sewers	2,039
Properties with Sewer Laterals	247
Number of active NORCs for sewer connection in C-6 (Issued, In-Progress, EQCB & Enforcement)	369
Number of NORCs connected in C-6	308

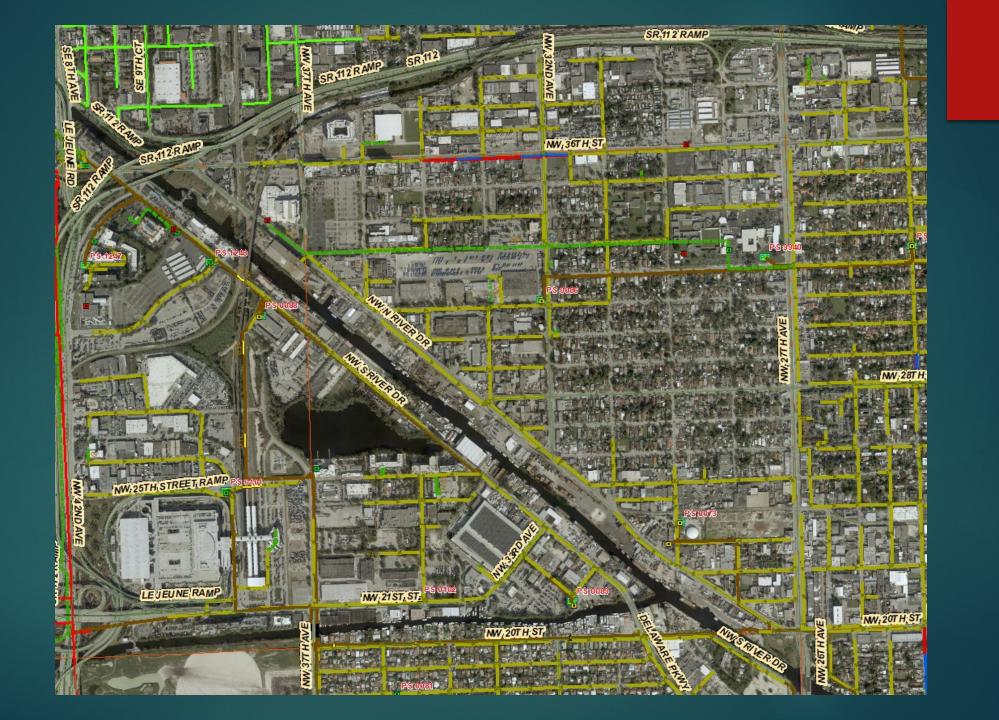


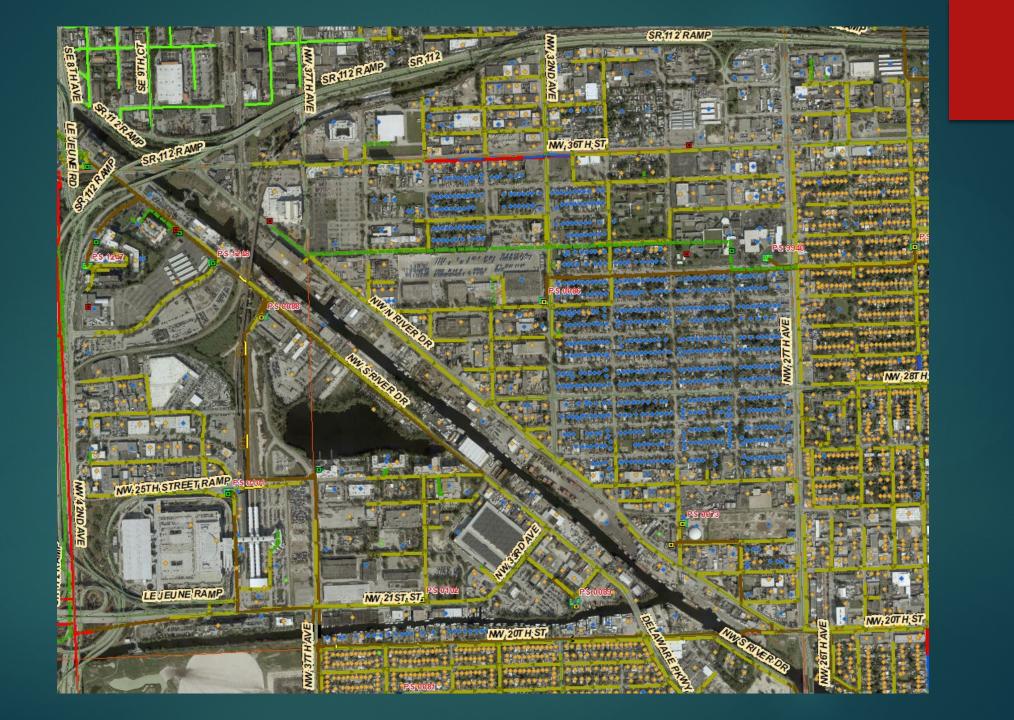
# Sewer Connection Efforts within the Melrose Area

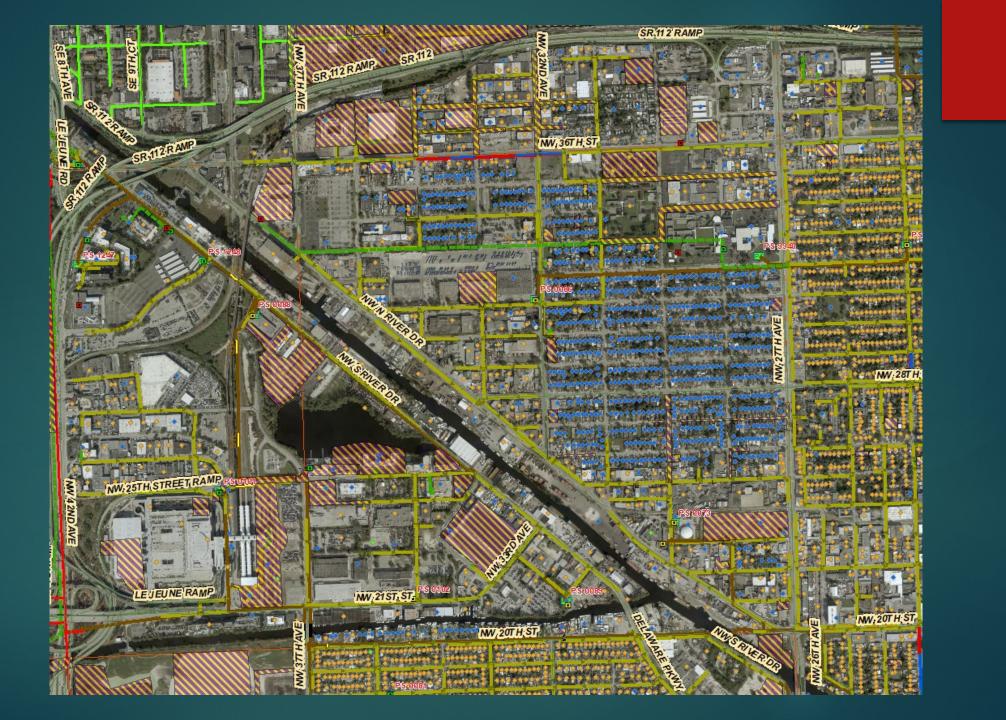




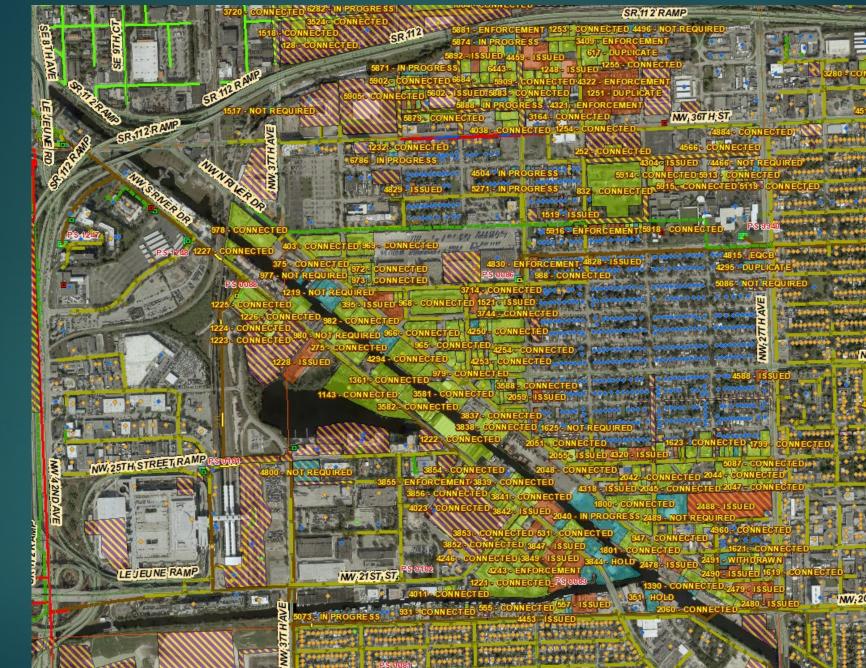












A REAL PROPERTY.

28T H

NW. 20TH ST





## Questions



**Thank you!** 



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