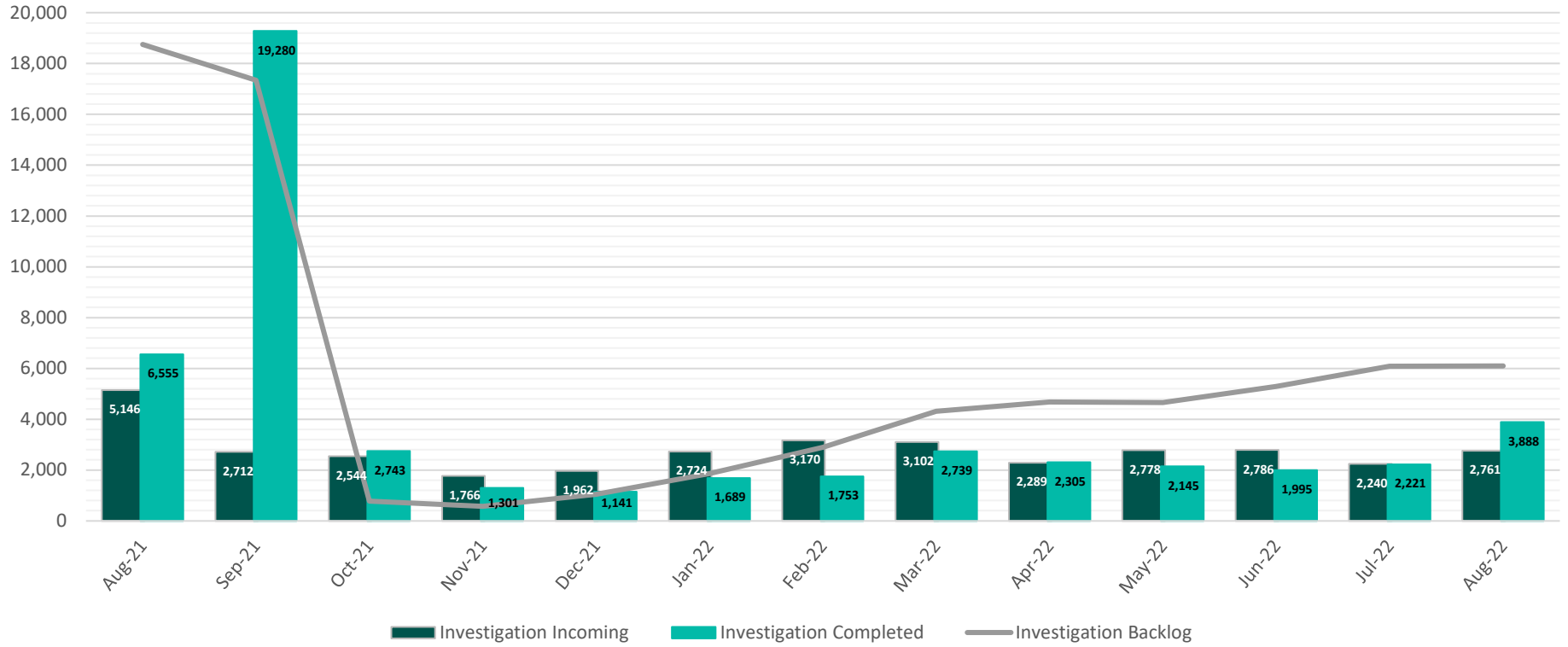




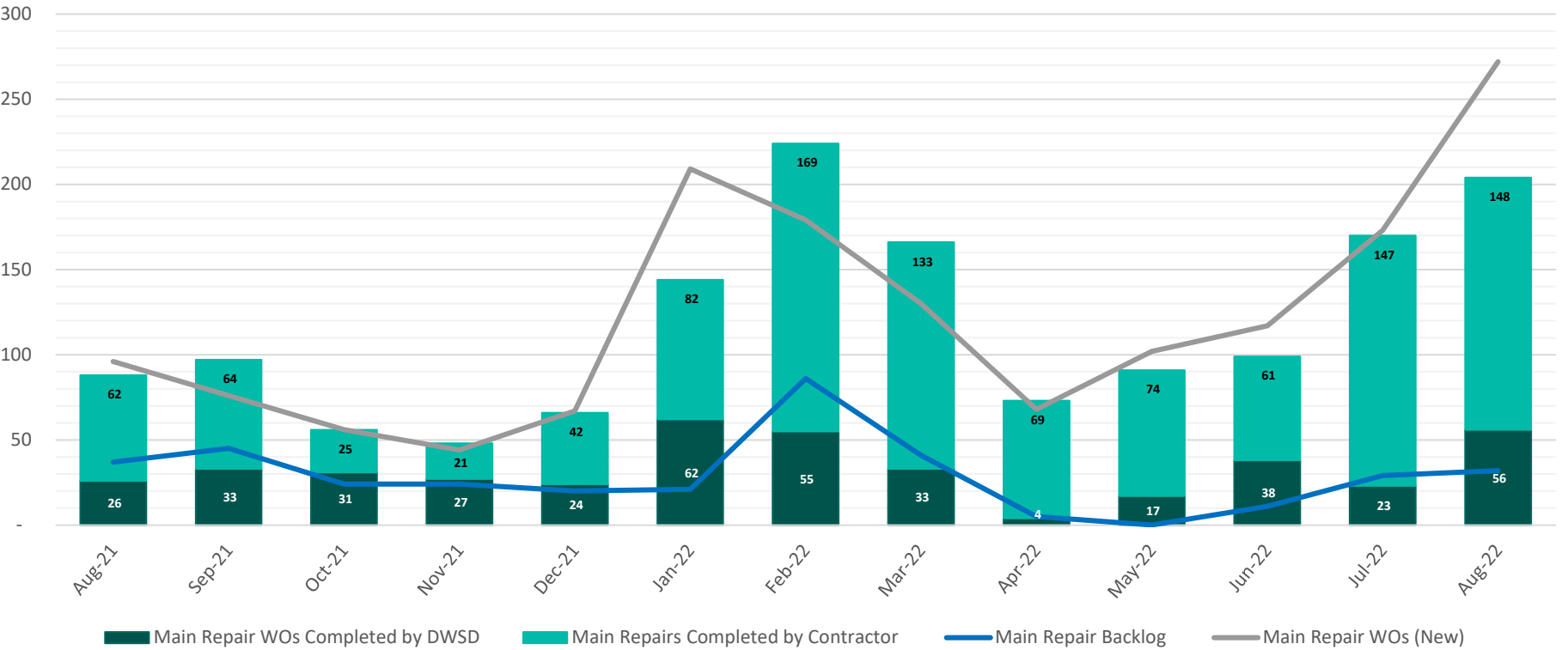
**Water & Sewerage  
Department**

# **Maintenance and Repair Update**

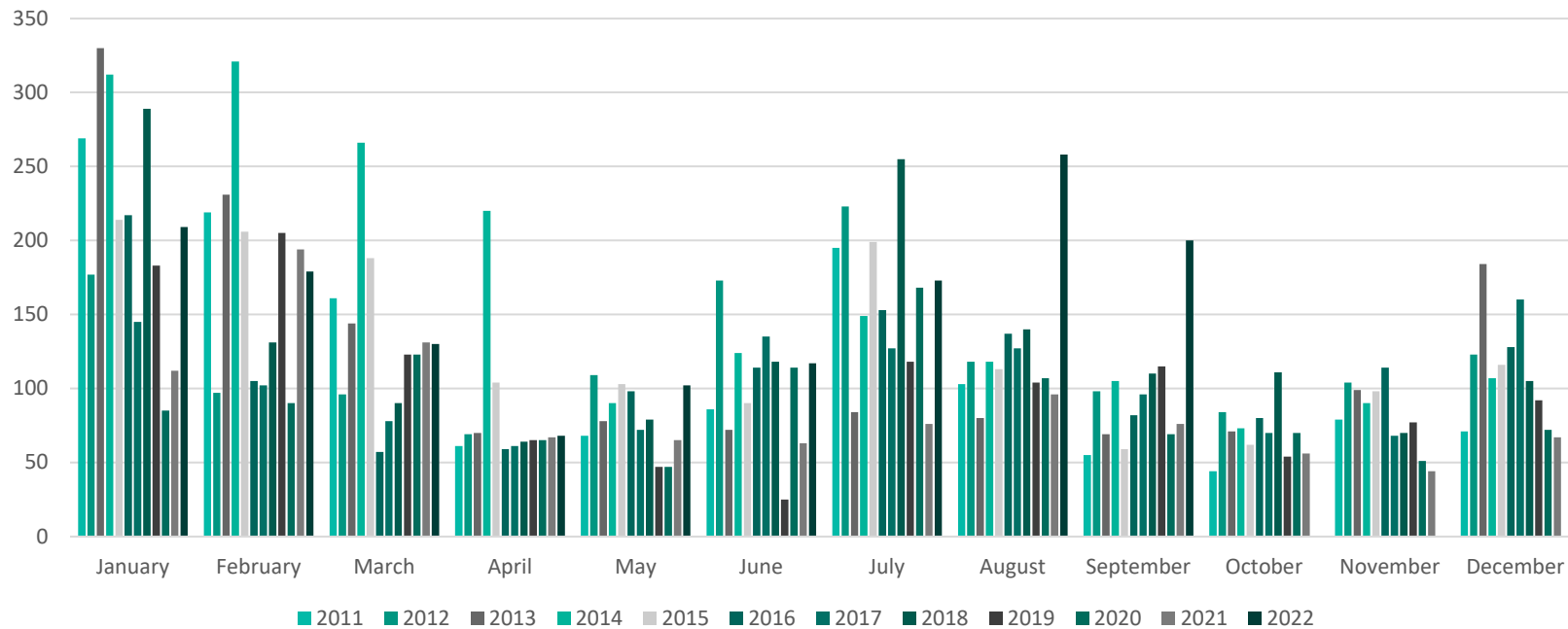
# Investigations



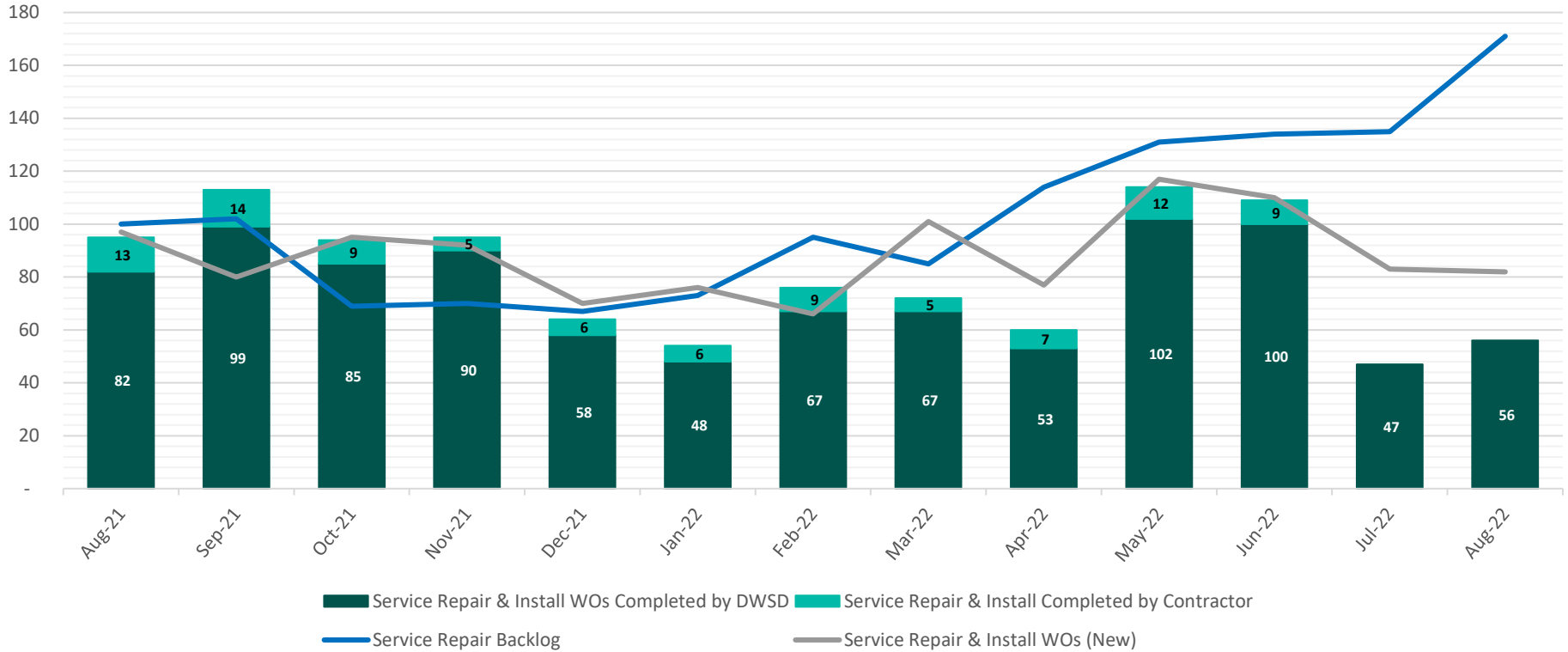
# Water Main Repair



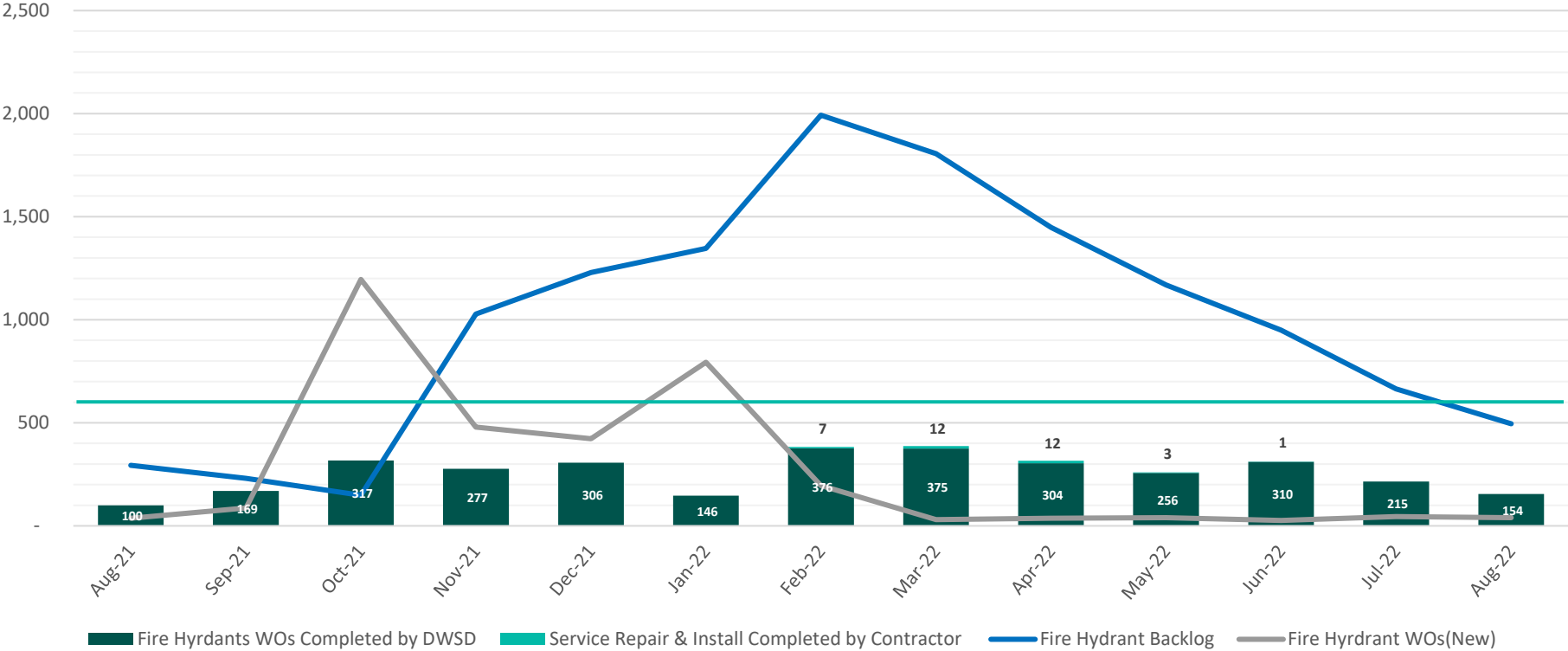
# Annual Water Main Breaks by Calendar Year



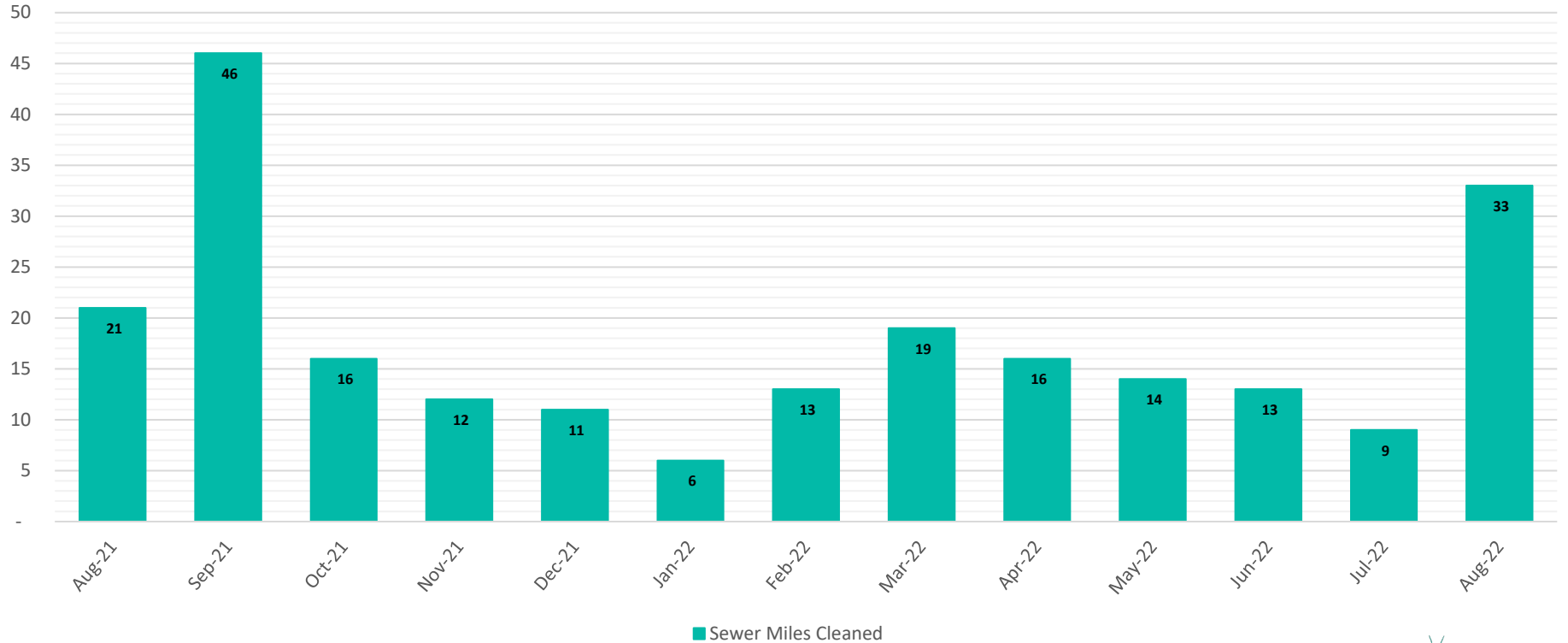
# Service Repairs



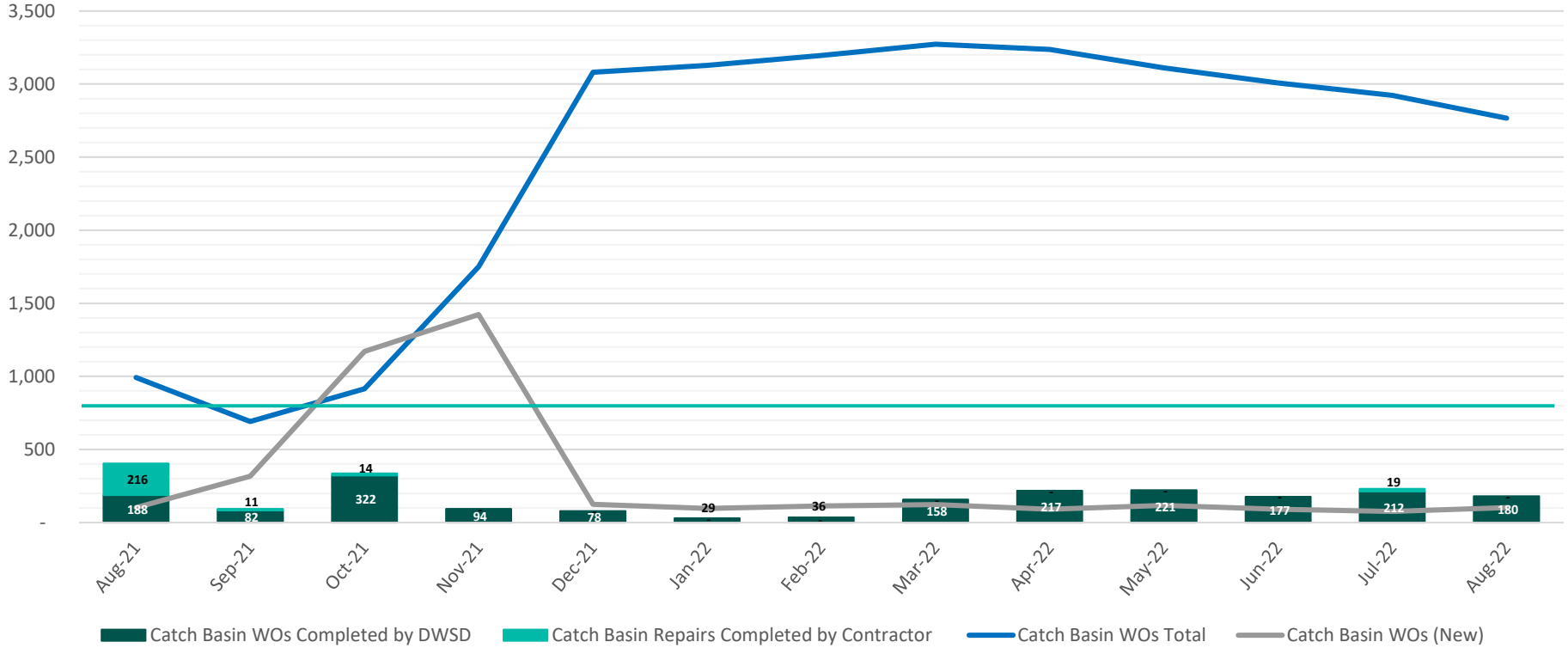
# Fire Hydrants



# Sewer Cleaning

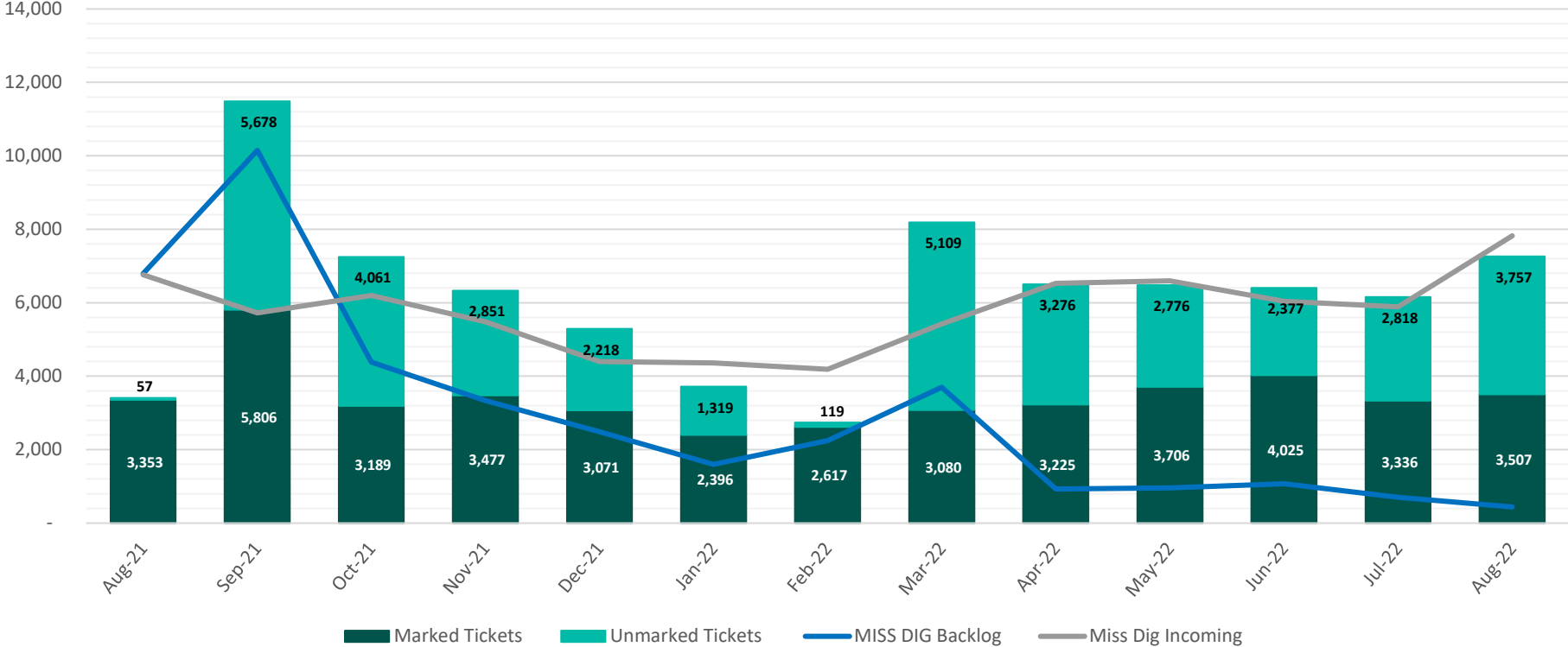


# Catch Basin Cleaning

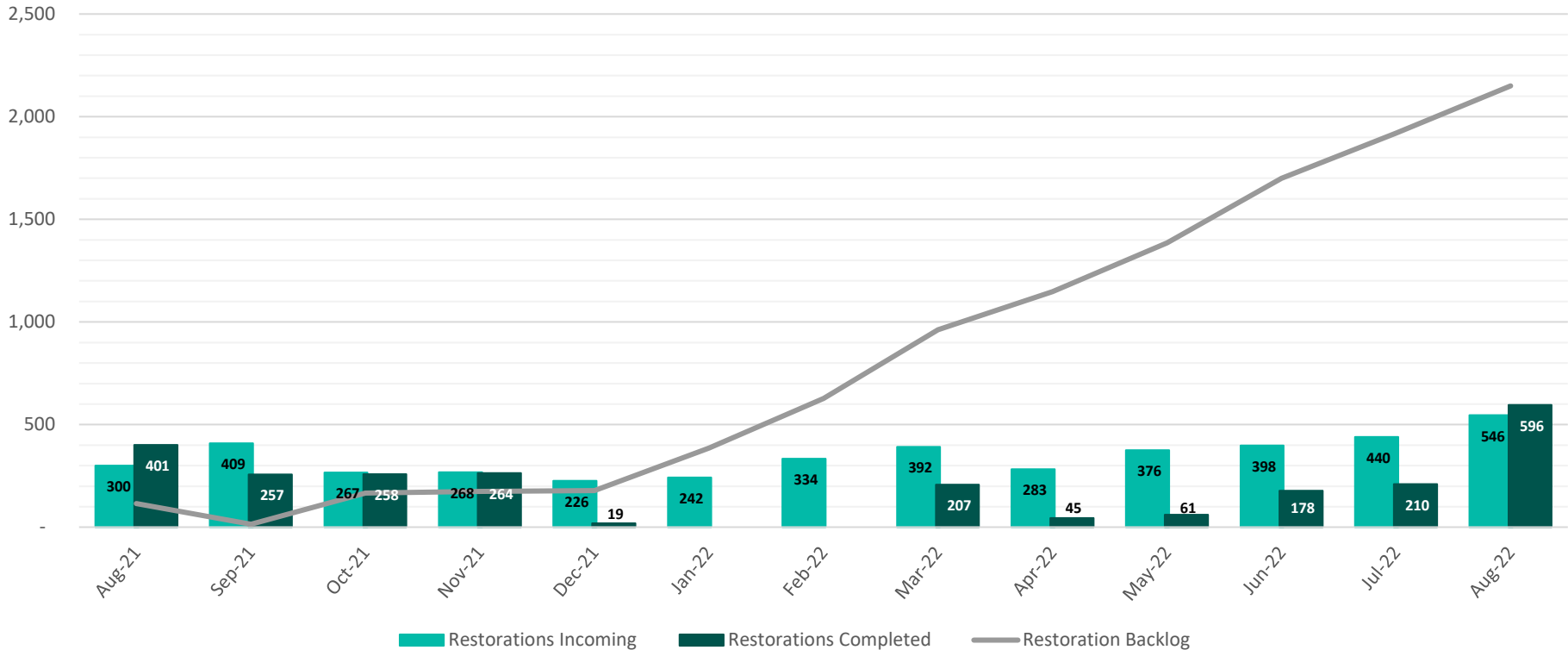




# MISS DIG

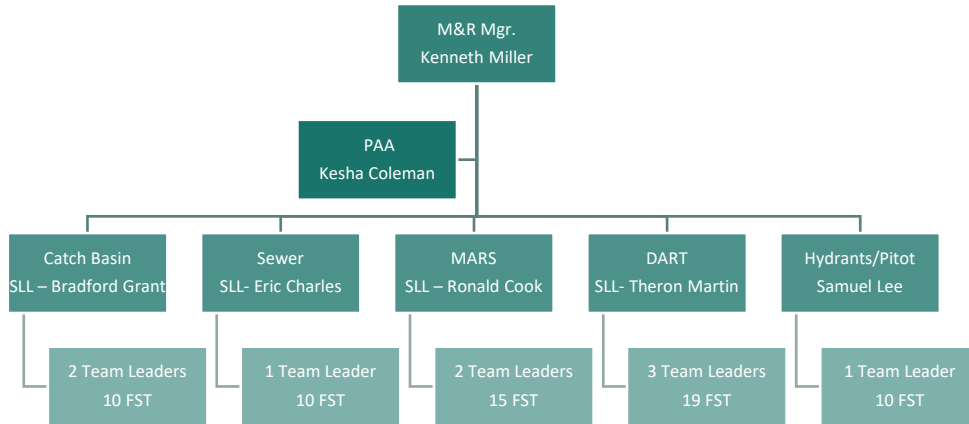


# Restorations

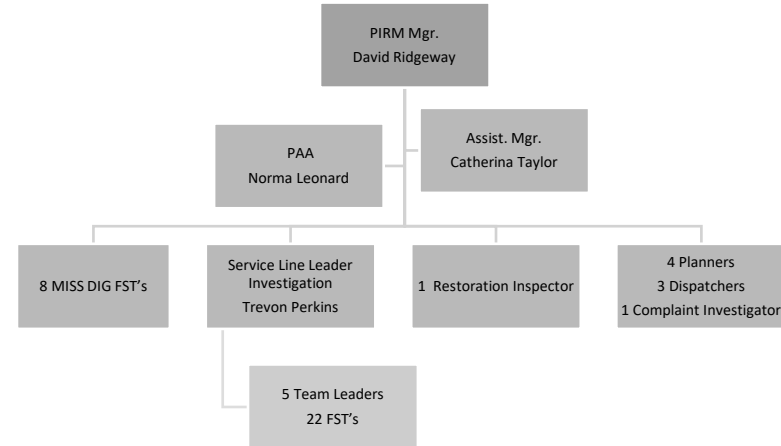


# Field Services Operation Organization Chart

## M&R – Maintenance and Repair



## PIRM- Planning, Investigation, Restoration and MISS DIG GROUP



**FST Needed: 140 (estimated)**  
**Budget: 121**



# Maintenance Tasks

Code	Description	Quantity	# of FTE required to perform task	# of hours per task	Total time required to complete task	Annual labor hours to complete work	Number FTE to complete work annually (Required 141)	
INVBBA	CLEAN CATCH BASIN	10000 each	2	0.75	1.5	15000	11.1	
BR	REPAIR CATCH BASINS	1000 each	4	4	16	16000	11.9	
INVC1	INVESTIGATE CAVE IN	400 each	2	1	2	800	0.6	
GVR	REPAIR GATE VALVE	100 each	2	3	6	600	0.4	
HGV	HYDRANT GATE VALVE	25 each	4	4	16	400	0.3	
HMAJ	HYDRANT DIG UP/NOT OPERABLE	15 each	2	4	8	120	0.1	
HMAJ	HYDRANT MAJOR/SCREW IN	1000 each	2	2	4	4000	3.0	
HMIN	HYDRANT MINOR OR FROZEN	1500 each	2	1.5	3	4500	3.3	
INVLP	LOW PRESSURE	1000 each	2	0.5	1	1000	0.7	
INVCBC	MISSING BASIN COVER	300 each	2	0.5	1	300	0.2	
INVMHC	MISSING MANHOLE COVER	250 each	2	0.5	1	250	0.2	
MHR	MANHOLE REPAIR (MOSTLY CONTRACTED OUT)	15 each	3	3	9	135	0.1	
INVREST	RESTORATION	166 each	2	0.5	1	166	0.1	
REST	RESTORATION	1169 each	2	2	4	4676	3.5	
DEMO	DEMO DISCONNECT	200 each	4	4	16	3200	2.4	
WSK	SERVICE KILL	300 each	4	4	16	4800	3.6	
INVSL	SERVICE LEAK	750 each	2	1	2	1500	1.1	
SL	SERVICE LEAK	700 each	4	4	16	11200	8.3	
SL	SERVICE LEAK - TURN OFF VACANT MR	2300 each	2	1	2	4600	3.4	
SNL	STOP BOX DIG UP-LOCATE OR RECONDITION	2400 each	2	2	4	9600	7.1	
SNL	SERVICE REQUEST 1554 RECONDITION- T-OFF (COVID)	100 each	2	4	8	800	0.6	
INVSO	SEWER ODOR	200 each	2	1	2	400	0.3	
SR	SEWER REPAIR		<b>MAJORITY CONTRACTED OUT</b>					0.0
INVWIB	WATER IN BASEMENT	3000 each	2	1.5	3	9000	6.7	
INVWMB	INVESTIGATE WATER MAIN BREAK	1500 each	2	1.75	3.5	5250	3.9	
WMB	REPAIR WATER MAIN BREAK (40% IN HOUSE)	600 each	4	6	24	14400	10.7	
INVWQ	WATER QUALITY	375 each	2	0.75	1.5	563	0.4	
WATER SERVICE	REPLACE LEAD SERVICE	40 each	4	8	32	1280	0.9	
MISS DIG	MISS DIG LOCATES	85000 each	1	0.75	0.75	63750	47.3	
EMER SEWER CLEAN		1 miles (180)	2	18	36	6480	4.8	
CCTV Sewer Mains	PM Activities	1 miles (300)	2	16	32	9600	7.1	
Clean Sewer Mains	PM Activities	1 miles (300)	2	16	32	9600	7.1	
						<b>188970</b>	<b>140.1</b>	

**DATA DOES NOT INCLUDE**

\*MPS or Dispatch, \*Team Leader or Service Line Leader, \*Transmission Main Work



# Assumptions on Available Work Hours

Hours	Activity
2080	Working hours/year
136	Vacation Average = 17 days/year
56	Sick Days = 7 days/year
96	Holidays = 12 days/year
40	Training = 5 days/year
	Actual Work days/year = 220
110	Breaks = 2 @ 15 min/day
110	Lunch = 30 min
73.33333333	Distribution of work assignments = 20 min/day
55	Vehicle inspection and restocking = 15 min/day
55	End of day vehicle fueling and paperwork =15 min/day
1349	Total Available Work Hours per employee per year



# 2021 Highlights

- 141,199 City Work orders addressed
  - 50,892 service request completed
  - 90,307 work orders completed
- 500 miles of sewer cleaned (with contractor assistance)
- 5 people received S-License or upgraded current licensing
- 4 employees trained in-house and received their CDL's with N Endorsement
- 45-day restoration for hard surface sites

# 2021 Flood Responses

31,798 WIB -  
June Rain Event

5,731 WIB - July  
Rain Event

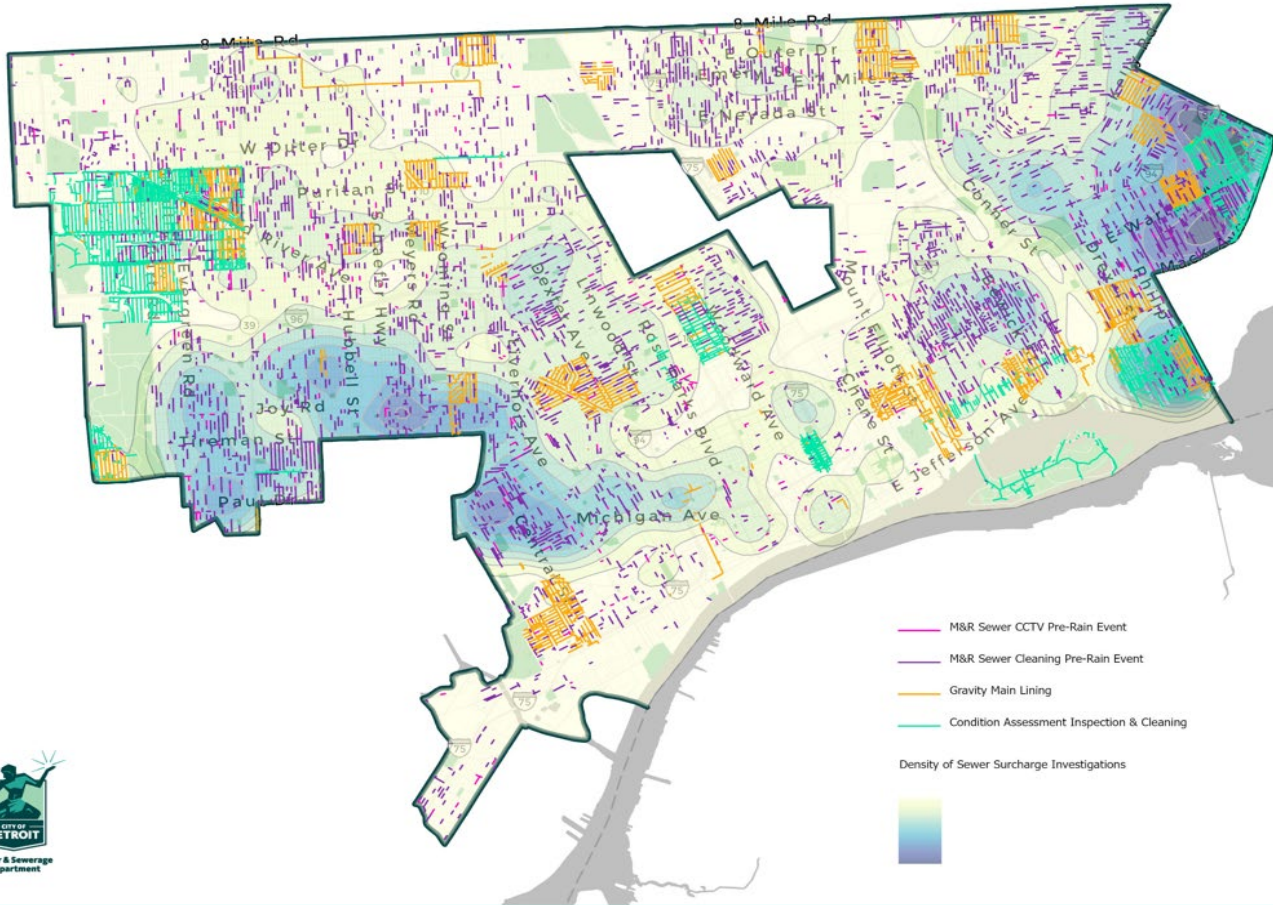
308 Blocked  
Basins


342 Cave Ins

1,178 Sewer  
Roddings

# DWSD Wastewater Collection System Maintenance

Prior to June 25th, 2021 Rain Event



- M&R Sewer CCTV Pre-Rain Event
  - M&R Sewer Cleaning Pre-Rain Event
  - Gravity Main Lining
  - Condition Assessment Inspection & Cleaning
- Density of Sewer Surge Investigations
- 



# City Works Enhancements

- Allows use of application while in the field
- Allows insertion of photos of all work sites
- Customer call history with name & phone number
- Provides export data reporting for analytics
- Allows contractors to enter data directly
- Offline application where cell service is not available
- Allows tracking of effort and expense to specific assets

# Goals and Accomplishments

## Sewer Miles Cleaned

- Goal: 59 Miles Clean
- Results: 500 Miles Clean

## Hydrants:

- Goal: 2% of Non Operable Hydrant
- Results: 2% of Non Operable

## Water Main Repair

- Goal: 40% of WMB in house
- Results: 40% of WMB in house

## MISS DIG Goal:

- Goal: 100% compliance on emergency, rush and normal tickets
- Results: 100% compliance on emergency and rush tickets 30% compliance on normal tickets

## Hard Surface:

- Goal: 90 day restoration period in season
- Results: 45 day restoration period in season

# DWSD GIS

## GIS Application Update:

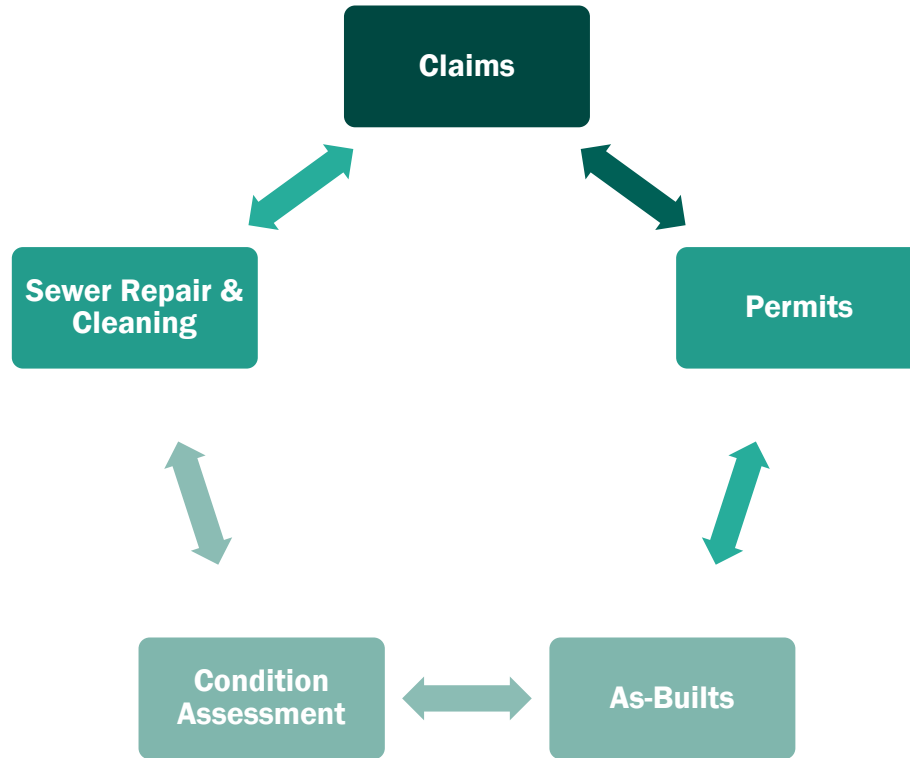
- Mapping
- Verification of Service Materials
- ESRI field maps deployment
- Full integration of GIS into City Works

## Updates In Progress to be fully functional:

- Input of Stop Box Locations
- Improve inventory of our assets
- Input of As-builts of Water & Sewer assets



# Collaboration with Engineering



# 2021 Contractor Resources

- Homrich - Vacant Floodings
- Lakeshore Global - Leak Repairs, Hard and Soft Restoration
- WCI - Soft Surface Restoration
- Major Cement - Leak Repairs & Hard Surface Restoration
- Pipetek - WIB & SCR
- Wade Tree Trimming

## Challenges & Needs

- 14 Linear miles of 24" & greater of transition main have been transferred from GLWA
- Contract for Traffic Control
- 3<sup>rd</sup> Party CDL & Heavy Equipment Training
- Vehicles
- Staffing

# Thank You

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**Detroit Water & Sewerage Department**

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**Phone:** 313-410-1099

For more information visit: [www.detroitmi.gov/dwsd](http://www.detroitmi.gov/dwsd)

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# Training & Safety

## TRAINING

### **S License Certification- 8 people certified**

- 3 - Currently Certified
- 5 - Newly Certified

### **Michigan Public Service Institute- 16 people certified**

- 11 - Currently Certified
- 5 - Newly Certified

### **Backhoe Operator/ Mini Excavation Training Currently in-House**

- 14 - Certified

### **Commercial Driver's License (CDL)**

- 21 – Currently Certified
- 4 - Newly Certified

## SAFETY

- MISS DIG 811 Safe Excavation Practices
- MISS DIG 811 Field Basic Training
- Trench and Shoring
- Confine Space Training

