



INSPECT YOUR
INSPECTION PROGRAM...

AND SEE EVERYTHING!

Presented by:
Gwinnett Water Resources
and Woolpert

John Butler

Gwinnett Water Resources

- Helped pilot pole camera inspections in 2009
- Worked with IDIC compliance based off of pipe inspections





Richard Washington

Woolpert

- Project Manager on project since 2015
- Certified Floodplain Manager, 13 years of experience



James Lawrence

Woolpert

- Quality Assurance Leader
- Former field technician on this project

Inspection Program Drivers

- MS4 Requirements
- 100% in 5 years
- All Structures (125,000)



Inspection Program Drivers

MS4 Requirements

- Head-in-the-Hole Inspections
- Pole Camera Inspections



Inspection Program Drivers

Condition Assessment

- 100% in 10 years
- All structures (125,000) and associated pipes



Inspection Program Drivers

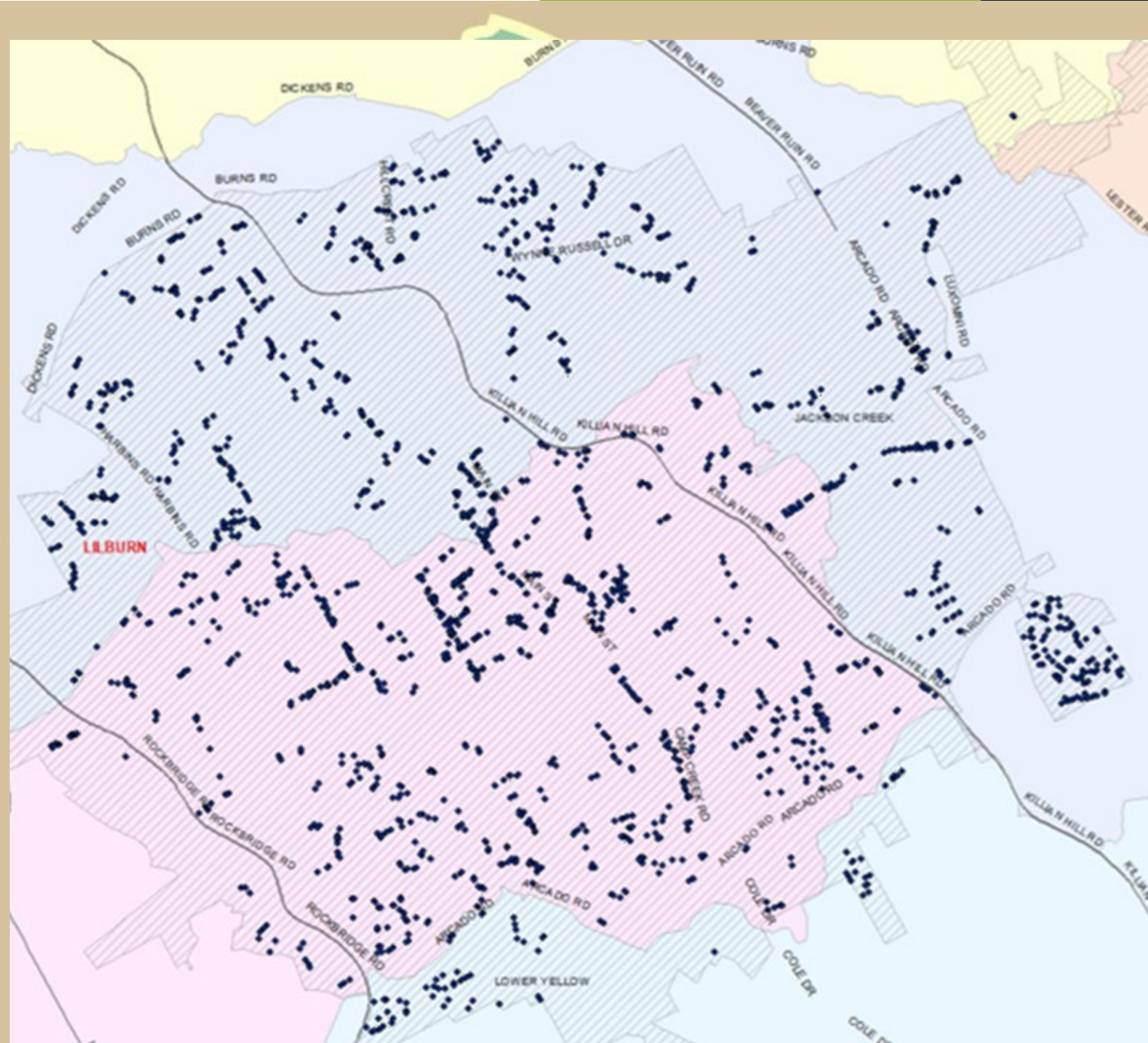
Condition Assessment

- Pole Camera Inspections



How It's Done

- Divide and conquer!
- Divide based on basins and structure number



Divide and conquer!

- Half gets condition assessment and IDIC
- Half gets Head-in-Hole only
- Switch after 5yrs



NASSCO

**NATIONAL ASSOCIATION OF
SEWER SERVICE COMPANIES**

- PACP and MACP guidelines



NASSCO

NATIONAL ASSOCIATION OF SEWER SERVICE COMPANIES

Common defects:

- Corrosion
- Hole (soil/void visible)
- Crack (long/multiple)
- Deformity
- Deposits Settled (fine/compacted)
- Joint (offset/separated)
- Obstruction
- Infiltration
- Surface Damage

Inspection Setup

Inspected Date *
2/28/2022

Inspected Time
2:29 PM

Date Reviewed

QAQC Fail Check in Field

Clean?

Inspection By
WOOLPERT

Inspection Type
9 Lamping

Repair?

24

Debris Type



TV



Odor



Cleaning



Overall Condition

3 Fair



Color



Floatables



Odor



Color



Floatables



Inspection Totals

Total Cleaning #

0

Cleaning Rating

0

Total Structural #

3

Structure Rating

1500

Odor



Code	Type
0	None
1	Sewage
2	Sulfide (Rotten Eggs)
3	Rancid/Sour
4	Petroleum/Gas
5	Fragrant
999	Other

Page 1 of 1 | 1 - 7 of 7 items

Cancel

Edit List

Select

Color



Code	Type
0	None
1	Clear
2	Brown
3	Blue
4	Green
5	Gray
6	Black
7	White
8	Orange
9	Red
10	Yellow

Page 1 of 1 | 1 - 11 of 11 items

Cancel

Edit List

Select

Floatables



Code	Type
0	None
1	Sewage
2	Petroleum
3	Surface Scum
4	Foams/Suds
999	Other

Cancel

Edit List

Select

WOOLPERT

Woolpert At A Glance



Equipment and Software Used

- Cues QZIII Pole Camera
- Cues GraniteNet Software
- Panasonic CF-33 Toughbooks



The Process

Condition Assessment

- 2015 – 2019
 - 1 video of entire inspection
- 2020+
 - Minimum of 3 videos per structure



The Process

Condition Assessment

- 2015 – 2019
 - 1 video of entire inspection
- 2020+
 - Minimum of 3 videos per structure



The Process

Condition Assessment

Layout of 3 videos:

1. Structure
2. Incoming Pipe
3. Outgoing Pipe



The Process

Condition Assessment

Layout of 3 videos:

1. Structure
2. Incoming Pipe
3. Outgoing Pipe



Condition Assessment

Data Deliverable

- Export from Granite to Access
- Data QAQC
- Compatible with County's Asset Management Software (Lucity)

InspectionID	Reviewed_By	Own	Inspector	Inspection	Inspection_T	Inspection_S	Inspection_S	Pipe_Segment_Referen	Street	City	Pipe_Use	Height	Wid
1	WOOLPERT	GCDWR	20220103	7:54	✓	Lamping	CI	3436912	BECKENHAM PL	DACULA	SW		24
2	WOOLPERT	GCDWR	20220103	8:05	✓	Lamping	CI	3436934	BECKENHAM PL	DACULA	SW		18
3	WOOLPERT	GCDWR	20220103	8:06	✓	Lamping	CI	1251883	GRAN HERITAGE WAY	Dacula	SW		15
4	WOOLPERT	GCDWR	20220103	8:08	✓	Lamping	CI	3436912	BECKENHAM PL	DACULA	SW		18
5	WOOLPERT	GCDWR	20220103	8:13	✓	Lamping	CI	334145	STOCKBRIDGE WAY	Dacula	SW		15
6	WOOLPERT	GCDWR	20220103	8:15	✓	Lamping	CI	1251884	GRAN HERITAGE WAY	Dacula	SW		15
7	WOOLPERT	GCDWR	20220103	8:17	✓	Lamping	CI	1251883	GRAN HERITAGE WAY	Dacula	SW		15
8	WOOLPERT	GCDWR	20220103	8:27	✓	Lamping	CI	1251885	GRAN HERITAGE WAY	Dacula	SW		15
9	WOOLPERT	GCDWR	20220103	8:37	✓	Lamping	CI	1251884	GRAN HERITAGE WAY	Dacula	SW		15
10	WOOLPERT	GCDWR	20220103	8:39	✓	Lamping	CI	1251885	GRAN HERITAGE WAY	Dacula	SW		15
11	WOOLPERT	GCDWR	20220103	8:42	✓	Lamping	CI	3436934	BECKENHAM PL	DACULA	SW		18
12	WOOLPERT	GCDWR	20220103	8:51	✓	Lamping	CI	1251886	LAKOTA TRACE	Dacula	SW		15
13	WOOLPERT	GCDWR	20220103	8:56	✓	Lamping	CI	1251887	HANRIVA COURT	Dacula	SW		15
14	WOOLPERT	GCDWR	20220103	8:58	✓	Lamping	CI	1251886	LAKOTA TRACE	Dacula	SW		15
15	WOOLPERT	GCDWR	20220103	8:59	✓	Lamping	CI	524130	HEVER CASTLE WAY	DACULA	SW		18
16	WOOLPERT	GCDWR	20220103	9:04	✓	Lamping	CI	1251888	HANRIVA COURT	Dacula	SW		15

	A	B	C
1	Pipe_Segment_Reference	PACP_Inspection Diameter	GIS Diameter
2	650177	24	18
3	754409	15	14
4	650449	42	96
5	733202	18	12
6	768144	12	14
7	524129	24	18
8	650183	24	18

Mapping / Inventory Updates

- Locate and Inspect New Inventory
- Geolocate Coordinates (Survey/GPS)
- Add to existing GIS



Odor	Color	Floatables	IDIC	
None	None	None	No	
None	None	None	No	
None	None	None	No	
None	None	None	No	
None	None	None	No	NOT FOUND: UNABLE TO LOCATE
None	None	None	No	
None	None	None	No	
None	None	None	No	
None	None	None	No	

Receive Inspection Results

Inspected By Woolpert	0	N/A	0
INSP Purpose 5 CA-Ex	Surface Condition		Wall Dia/Length
Structure 3 Headv	0	N/A	0
Inlet Shape 20 WG	Ring Condition		Wall Dia/Width
Cleaning 1 No Pre	0	N/A	0
Pipe Seal	Wall Condition		
Surface Type 4 Dirt/G	5	Structural Failure	
Cover Cond 0 N/A	Overall Condition		
Wall Infiltrat 0 N/A	4	Poor	
Top Condition 1 Good	Overall Condition 4 Poor		

Receive Inspection Results

LIVE ASSET MANAGEMENT John DeGiov

Home | Woolpert

Pipe Facility ID	Date Inspected	Rating	Status	Location
770902	11/30/2021	2	Good	7707
770903	11/30/2021	5	Failed/Will Fail	3414
770901	11/30/2021			
770900	11/30/2021			
774854	11/30/2021			
770905	11/30/2021			
770904	11/30/2021			
3414064	11/30/2021			

Conduit Inspection Observ (4)

Observation #	Distance (ft)	Description Text	Location Text	Rating
890	0	MANHOLE		
891	0	WATER LEVEL		
892	0	DEPOSITS SETTLED COMP		5
893	0.2	ABANDONED SURVEY		

Page 1 of 1 | 10 items per page | 1 - 4 of 4 items

655978 | 11/30/2021 | 5 | Failed/Will Fail | 655885 | 3414062 | 655885 | 10:00 AM | Upstream to Downstream | Lamping

Receive Inspection Results

Crew

WOOLPERT

Surface Condition

1 Excellent

Cover Condition

1 Good

Wall Condition

1 Good

Top Condition

1 Good

Ring Condition

Weather

1 Dry

Clean? IDIC? Repair? Duplicate OK

Debris

0 None

Color

2 Brown

Floatables

4 Foams/Suds

Odor

Receive Inspection Results

CuesQz3



County QA/QC

- Focus on worst scores
- 4 or 5 on a scale of 1-5
- Defects





Time for Action!

- Review problems
- Assign to workgroups



Time for Action!

- Repair
- Rehabilitation
- Replacement
- Maintenance

Case Study – Castlebrooke Way

	Pipe Facility ID	US Structure	DS Structure	Most Recent Insp	Date Reviewed	Date Inspected	Deliverable	Inspec Dir Text	Struc Insp. From	Inspection Type
+	728570	728505	728521	<input checked="" type="checkbox"/>	3/25/2022	2/28/2022	FEB22G	Upstream	728521	Lamping
+	728571	728521	728522	<input checked="" type="checkbox"/>	3/28/2022	2/28/2022	FEB22G	Downstream	728521	Lamping
+	728568	728473	728472	<input checked="" type="checkbox"/>	3/25/2022	2/28/2022	FEB22G	Upstream	728472	Lamping
-	362639	362623	363636	<input checked="" type="checkbox"/>	3/25/2022	2/24/2022	FEB22G	Upstream	363636	Lamping

Conduit Inspection Observ (4)



	Observation #	Distance (ft)	Description Text	Rating	Starting Clock	Ending Clock	% Loss	General Comment
	971	0	MANHOLE					363636
	972	0	WATER LEVEL				5	
	973	0	DEPOSITS SETTLED COMP 5		3	9	50	
	974	0.2	ABANDONED SURVEY					363636

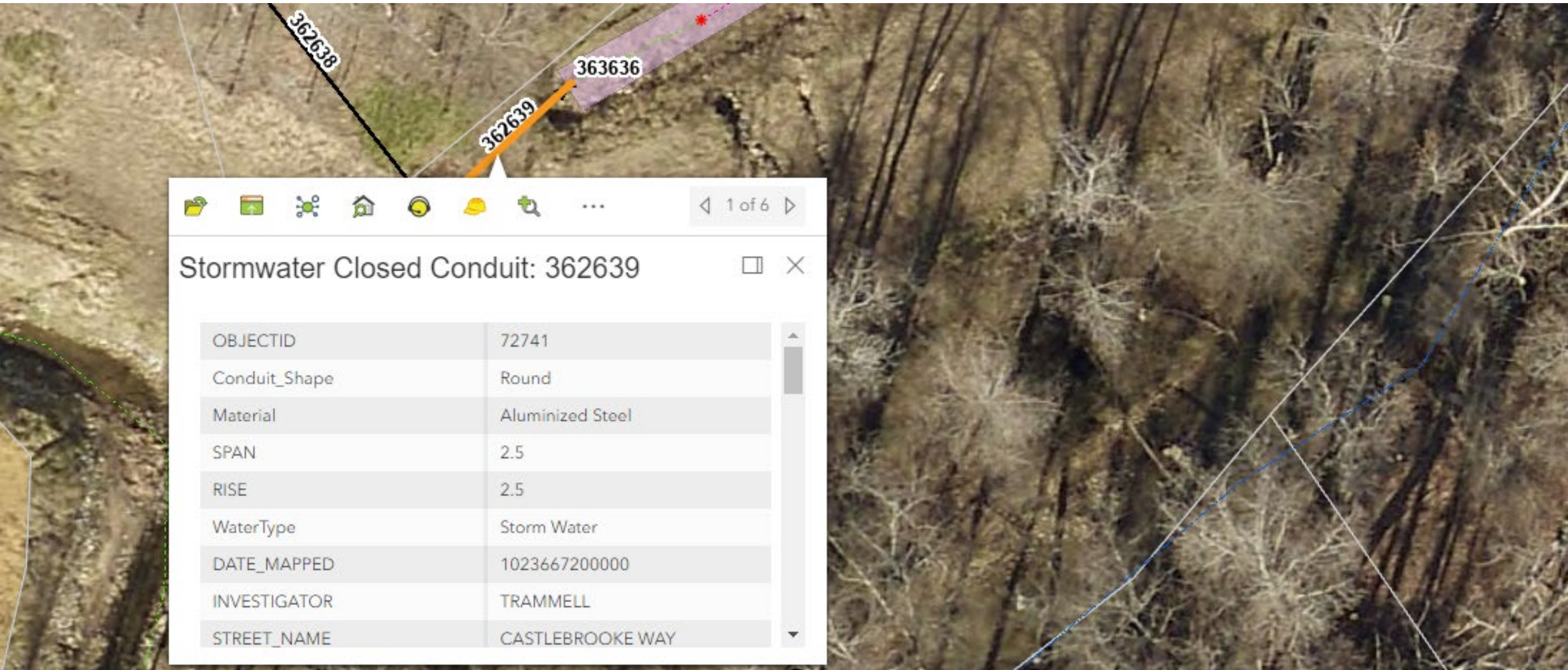
Page 1 of 1 10 items per page

+	362638	362622	362623	<input checked="" type="checkbox"/>	3/25/2022	2/24/2022	FEB22G	Upstream	362623	Lamping
+	362639	362623	363636	<input type="checkbox"/>	3/25/2022	2/24/2022	FEB22G	Downstream	362623	Lamping
+	341928	341916	341908	<input checked="" type="checkbox"/>	3/25/2022	2/22/2022	FEB22G	Upstream	341908	Lamping
+	341927	341915	341916	<input checked="" type="checkbox"/>	3/25/2022	2/22/2022	FEB22G	Upstream	341916	Lamping
+	341928	341916	341908	<input type="checkbox"/>	3/25/2022	2/22/2022	FEB22G	Downstream	341916	Lamping
+	728549	728512	728465	<input checked="" type="checkbox"/>	3/28/2022	2/22/2022	FEB22G	Upstream	728465	Lamping

Case Study – Castlebrooke Way



Case Study – Castlebrooke Way




Case Study – Castlebrooke Way

362639 362623 363636 Most Recent Inspection

Inspection Setup


Inspected Date *

2/24/2022 

Inspected Time

1:18 PM 

Date Reviewed

3/25/2022 

QAQC Fail Check in Field

Inspection By

WOOLPERT

Inspection Type

9 Lamping 

Weather

1 Dry 

Struc Insp. From

363636


Conduit Direction




Dir of Inspection *

2 Upstream 

INSP Pipe Shape

1 Round Pipe 

INSP Material

1 Aluminized Steel 

Rim To Crown (ft)

0

Rim To Invert (ft)

5.6

Material

1 Aluminized Steel

Clean?

Repair?

Replace?

CON-Clean?

ROE?

Easement?

Inspection Dia

Case Study – Lena Raechel Cir

Pipe Facility ID	US Structure	DS Structure	Most Recent Insp	Date Reviewed	Date Inspected	Deliverable	Inspec Dir Text	Struc Insp. From	Inspection Ty
518481	518466	518467	✓	12/20/2021	11/5/2021	Nov21G	Upstream	518467	Lamping

Conduit Inspection Observ (5)

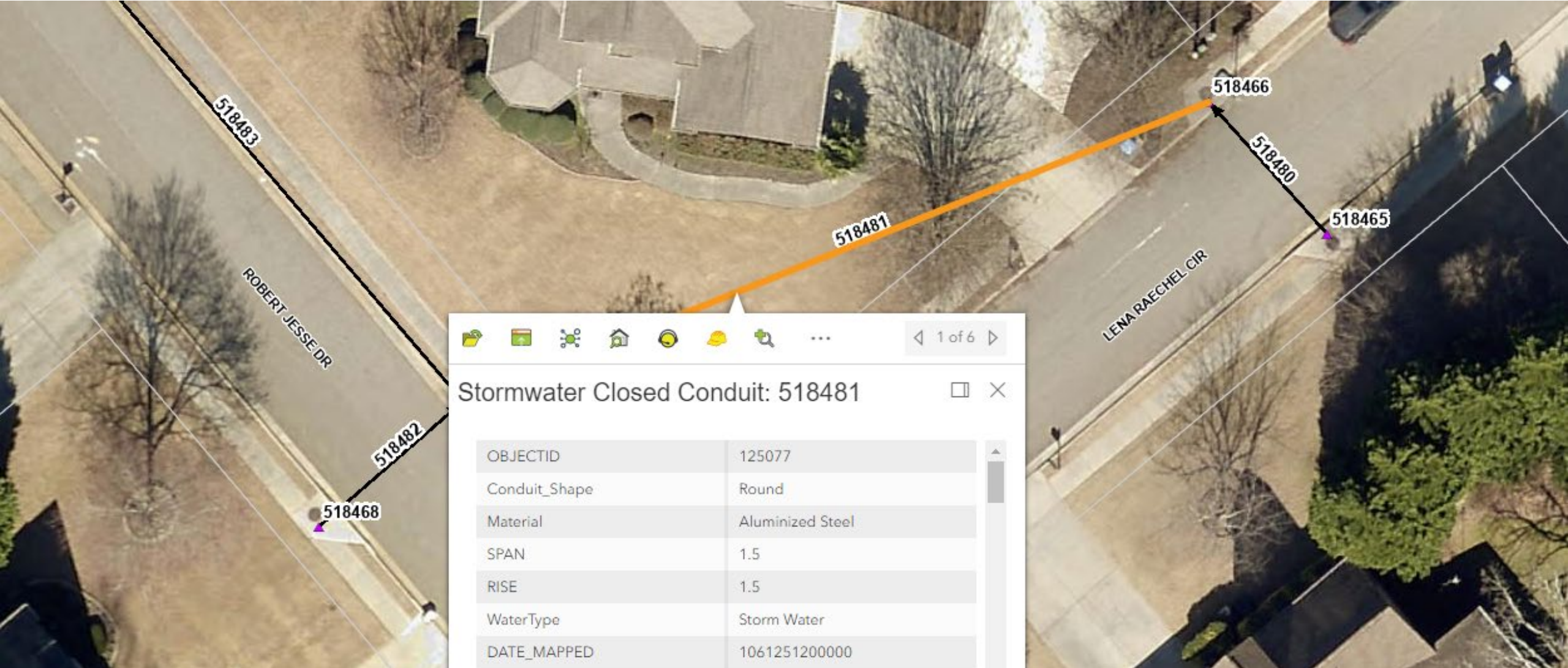


Observation #	Distance (ft)	Description Text	Rating	Starting Clock	Ending Clock	% Loss	General Comment
561	0	MANHOLE					518467
562	0	WATER LEVEL				5	
563	0	HOLE VOID VISIBLE	5	10	11		
564	0	SURF CORROSION METAL	3	5	7		
565	0.2	ABANDONED SURVEY					518467

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+	518481	518466	518467	<input type="checkbox"/>	12/20/2021	11/5/2021	Nov21G	Downstream	518466	Lamping
+	835278	835238	835239	<input checked="" type="checkbox"/>	12/20/2021	11/2/2021	Nov21G	Upstream	835239	Lamping
+	344253	344220	344221	<input checked="" type="checkbox"/>	12/20/2021	11/1/2021	Nov21G	Upstream	344221	Lamping
+	3426456			<input checked="" type="checkbox"/>	12/20/2021	4/23/2021	Nov21G	Upstream		Lamping
+	3392010	3392011	3392012	<input checked="" type="checkbox"/>	12/20/2021	4/23/2021	Nov21G	Downstream	3392011	Lamping
+	841442	841374	841356	<input checked="" type="checkbox"/>	12/21/2021	12/31/2019	Nov21G	Upstream	841356	Lamping
+	841439	841379	841288	<input checked="" type="checkbox"/>	12/20/2021	12/31/2019	Nov21G	Upstream	841288	Lamping
+	841437	841287	841373	<input checked="" type="checkbox"/>	12/20/2021	12/31/2019	Nov21G	Upstream	841373	Lamping
+	841438	841373	841355	<input checked="" type="checkbox"/>	12/20/2021	12/31/2019	Nov21G	Downstream	841373	Lamping


Case Study – Lena Raechel Cir



Case Study – Lena Raechel Cir

Inspection Setup


Inspected Date *

11/5/2021 

Inspected Time

9:05 AM 

Date Reviewed


12/20/2021 

QAQC Fail Check in Field

Inspection By

WOOLPERT

Inspection Type

9 Lamping 

Struc Insp. From

518467

Dir of Inspection *

2 Upstream 

INSP Material

1 Aluminized Steel 

Material

1 Aluminized Steel

Cleaning

Weather

1 Dry 

Conduit Direction



INSP Pipe Shape

1 Round Pipe 

Rim To Crown (ft)

0

Rim To Invert (ft)

3.9

Inspection Dia

18

Debris Type

Clean?

Repair?

Replace?

CON-Clean?

ROE?

Easement?

Send to E&C?

Questions?



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