

**PENNTEC 2022 ANNUAL CONFERENCE |  
UTILITY MANAGEMENT TECHNICAL PROGRAM**

**OPTIMIZING ASSET MANAGEMENT WITH GIS  
JUNE 6, 2022 9:15 – 9:45 AM**

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[ssmgroup.com](http://ssmgroup.com)

OPTIMIZE ASSET MANAGEMENT WITH GIS

## Clean Water Act

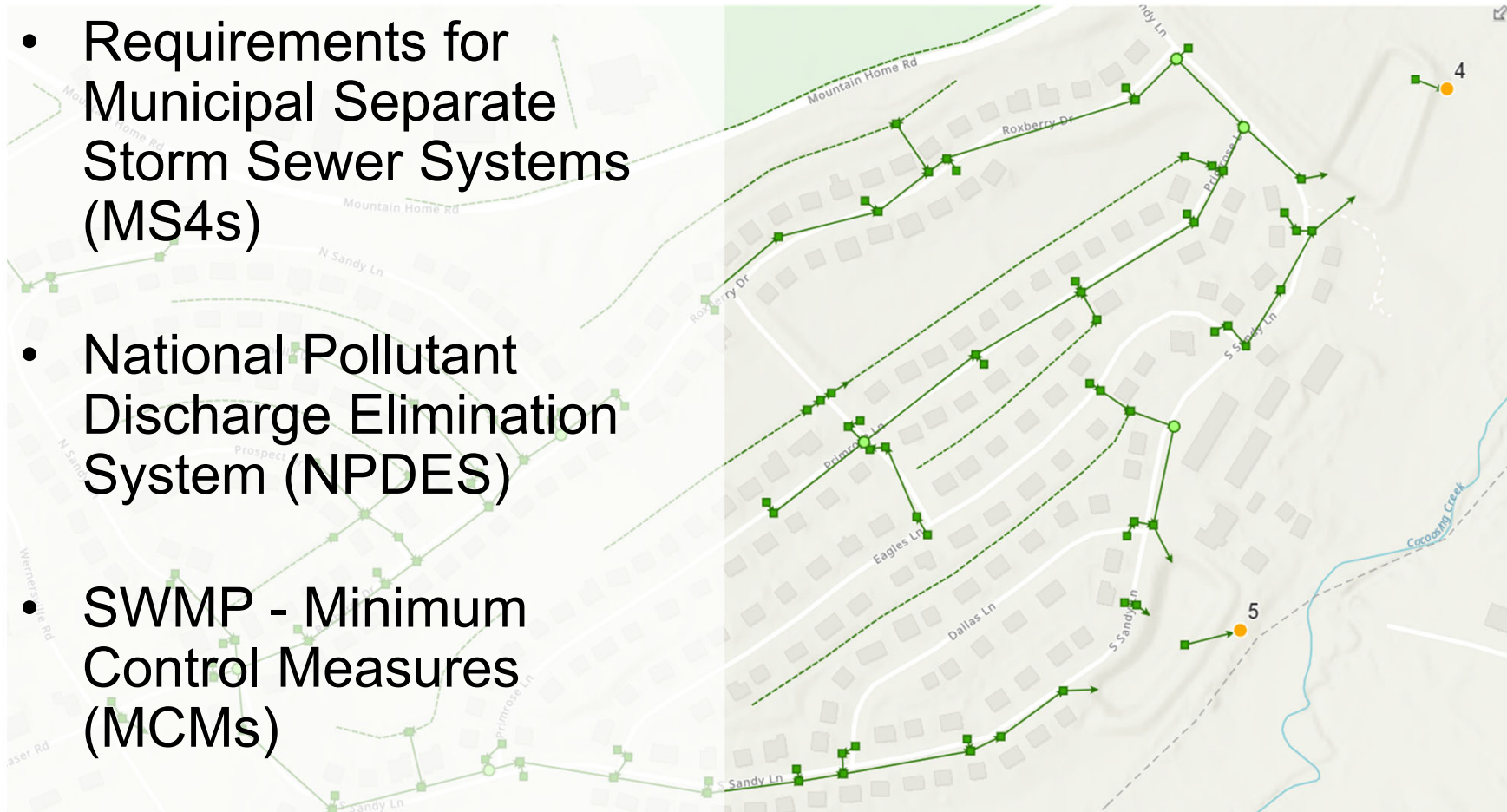


- Established in an effort to regulate discharges of pollutants to United States waters
- National Pollutant Discharge Elimination System (NPDES) Permit Program

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# MS4 Program

- Requirements for Municipal Separate Storm Sewer Systems (MS4s)
- National Pollutant Discharge Elimination System (NPDES)
- SWMP - Minimum Control Measures (MCMs)



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# Minimum Control Measures (MCMs)



1. Public Education/Outreach
2. Public Participation
3. Construction Site Runoff Control
4. Post-Construction Management
5. Pollution Prevention
6. Illicit Discharge Controls



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## Illicit Discharge Detection & Elimination

1. Develop a program
2. Map the storm sewer collection system and hydrological features
3. Outfall Inspection
4. Stormwater management ordinance
5. Educational outreach



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# Case Study: South Heidelberg Township

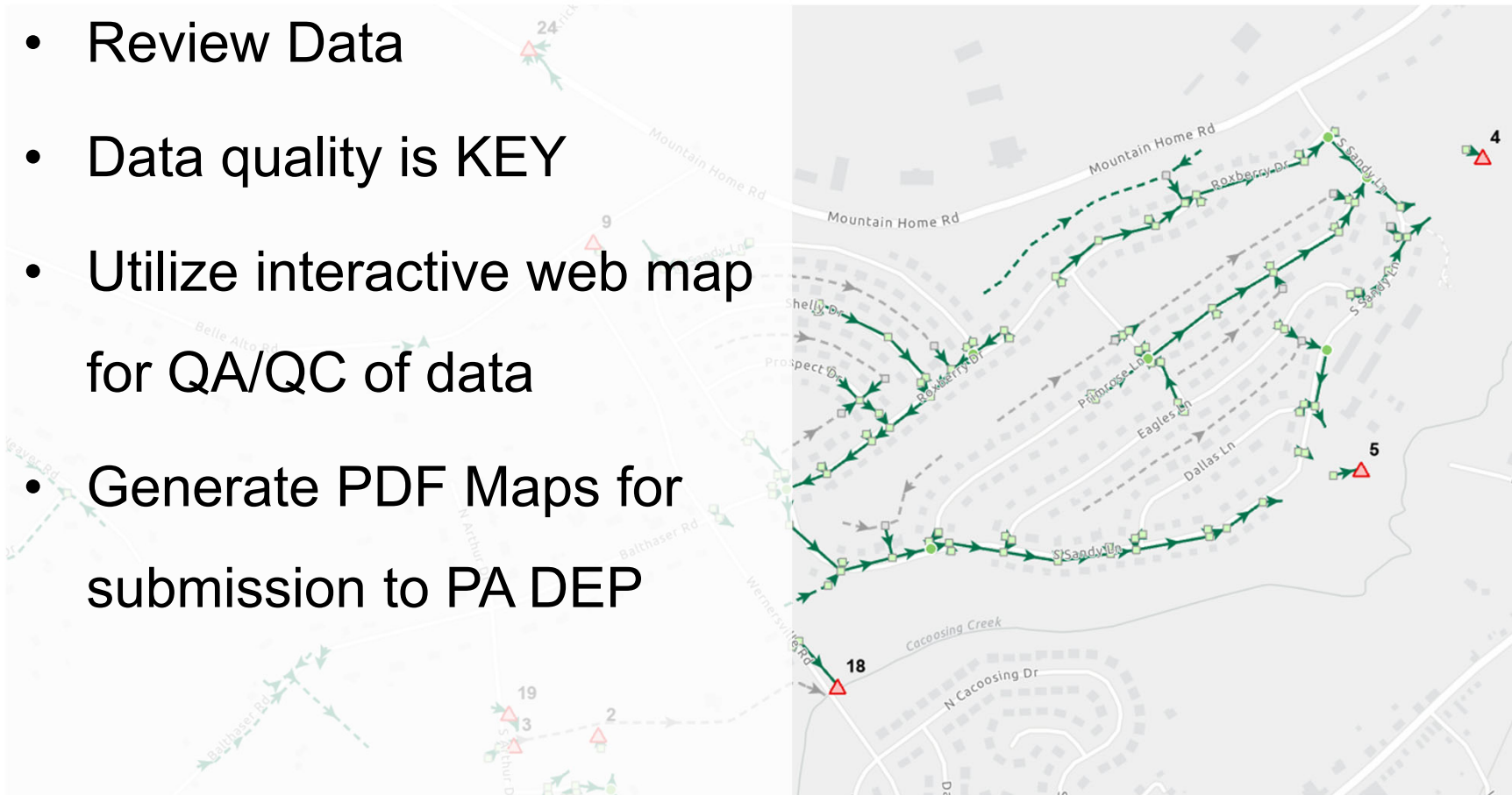
- Kickoff Meeting
  - Client Goals/Needs
  - Level of involvement
  - Set up Online GIS Platform
  - Obtain GIS Data
- Rough draft of workflow



## OPTIMIZE ASSET MANAGEMENT WITH GIS

# Evaluate the GIS Data

- Review Data
- Data quality is KEY
- Utilize interactive web map for QA/QC of data
- Generate PDF Maps for submission to PA DEP



## OPTIMIZE ASSET MANAGEMENT WITH GIS

# Prepare the GIS Data

- Develop field list based off PA DEP Outfall Field Screening Report Document
- Prep Attribute Data
- Add outfall inspection table and relationship class
- Publish data and set up data collection map

3800-FM-BCW0521 12/2015  
MS4 Outfall Field Screening Report

COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
BUREAU OF CLEAN WATER

pennsylvania  
DEPARTMENT OF ENVIRONMENTAL PROTECTION

MS4 OUTFALL FIELD SCREENING REPORT

INFORMATION

Current Layer: ssOutfall\_Inspections

<input checked="" type="checkbox"/> Visible	<input type="checkbox"/> Read Only	Field Name	Alias
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	OBJECTID	OBJECTID
<input checked="" type="checkbox"/>	<input type="checkbox"/>	OUTFALL_NO	Outfall ID
<input checked="" type="checkbox"/>	<input type="checkbox"/>	LU_Ind	Industrial Land Use
<input checked="" type="checkbox"/>	<input type="checkbox"/>	LU_URes	Urban Residential Land Use
<input checked="" type="checkbox"/>	<input type="checkbox"/>	LU_Comm	Commercial Land Use
<input checked="" type="checkbox"/>	<input type="checkbox"/>	LU_SRes	Suburban Residential Land U
<input checked="" type="checkbox"/>	<input type="checkbox"/>	LU_OS	Open Space Land Use
<input checked="" type="checkbox"/>	<input type="checkbox"/>	LANDUSE_other	Other Land Use Description
<input checked="" type="checkbox"/>	<input type="checkbox"/>	OF_TYPE	Outfall Type
<input checked="" type="checkbox"/>	<input type="checkbox"/>	OF_MTRL	Outfall Material
<input checked="" type="checkbox"/>	<input type="checkbox"/>	OF_MTRL_other	Other Outfall Material
<input checked="" type="checkbox"/>	<input type="checkbox"/>	OF_SHP	Outfall Shape
<input checked="" type="checkbox"/>	<input type="checkbox"/>	OF_SHP_other	Other Outfall Shape
<input checked="" type="checkbox"/>	<input type="checkbox"/>	OF_SHP2	Outfall Shape Type
<input checked="" type="checkbox"/>	<input type="checkbox"/>	OF_SHP2_other	Other Outfall Shape Type
<input checked="" type="checkbox"/>	<input type="checkbox"/>	PIPE_DIAM	Closed Pipe Diameter (in)





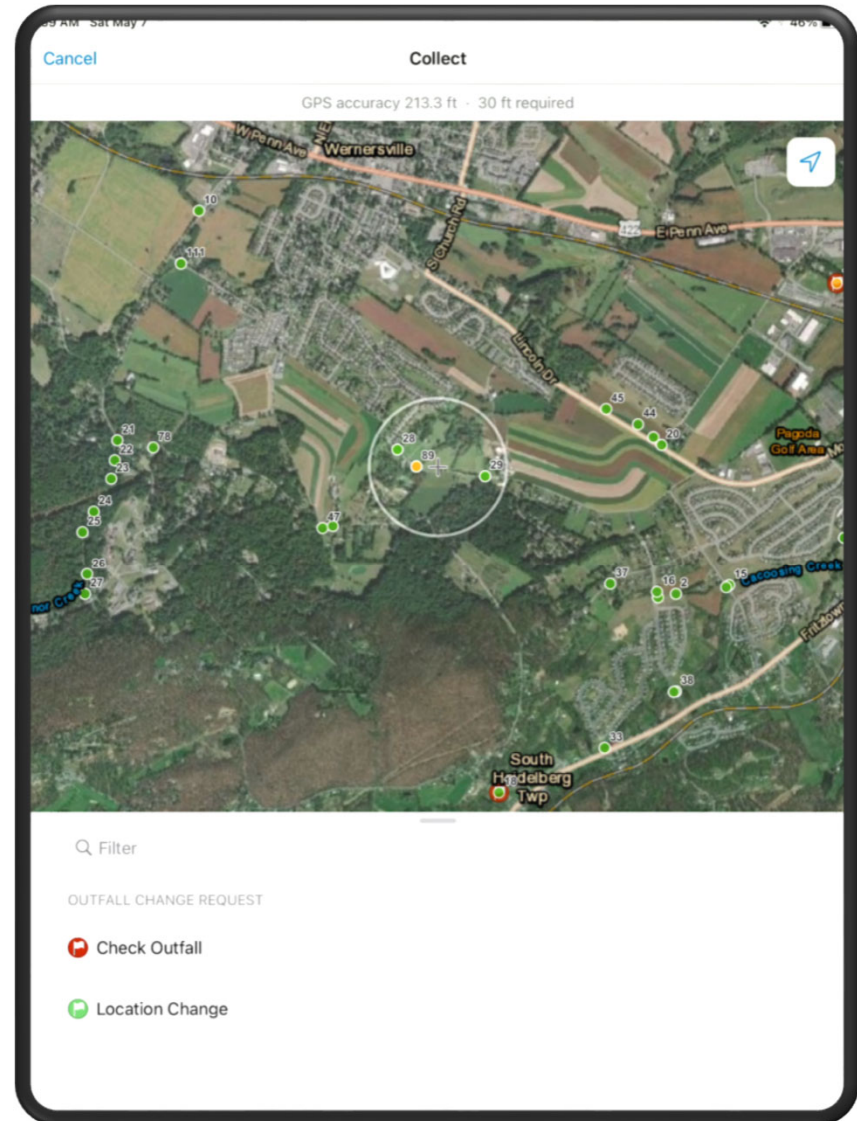
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## **Build the Inspection Form**



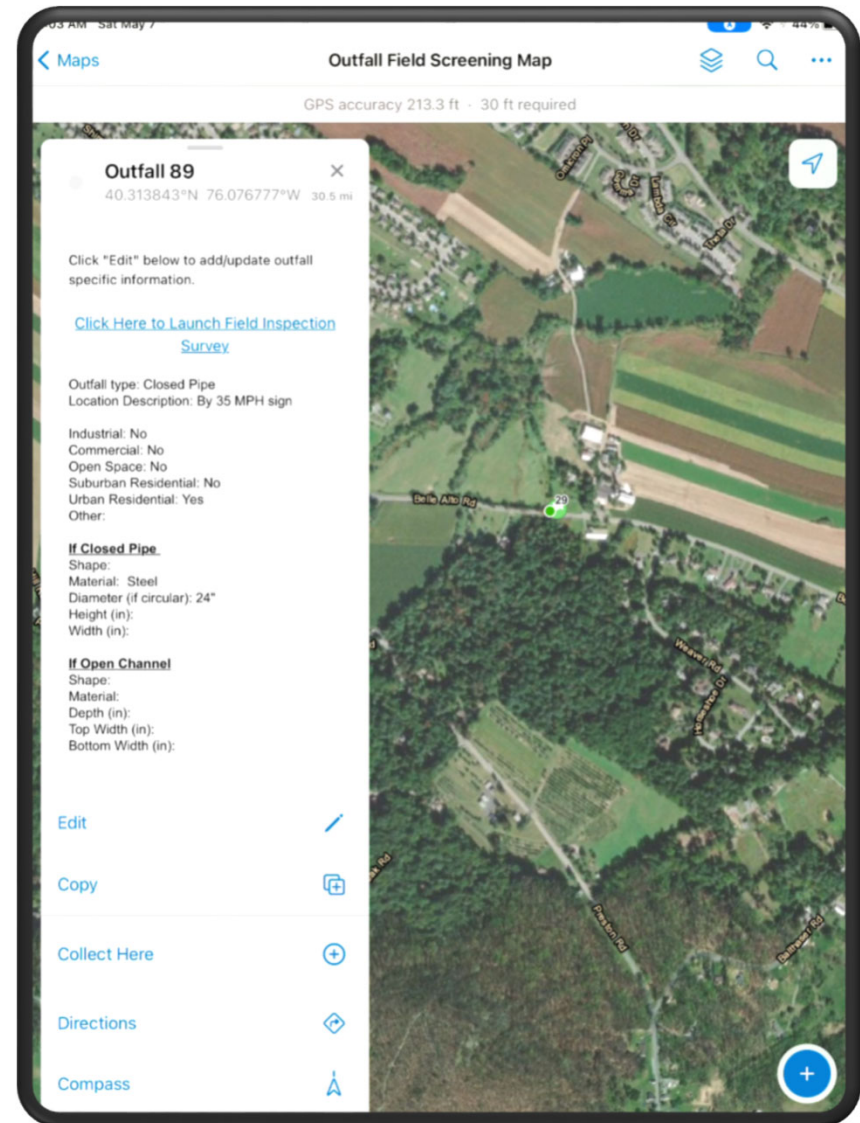
# Mobile Data Collection

- Interactive map of MS4 assets
- Ability to flag assets
- Visually see status of Outfall Inspection
- Add or Update Outfall Attribute Information
- Launch the Inspection App



# Mobile Inspection

- Configured for Client's need
- Ability to auto-populate questions in inspection form
- Attach photos or files to inspection
- Submit inspection right away for QA/QC





# Inspection QA/QC Dashboard



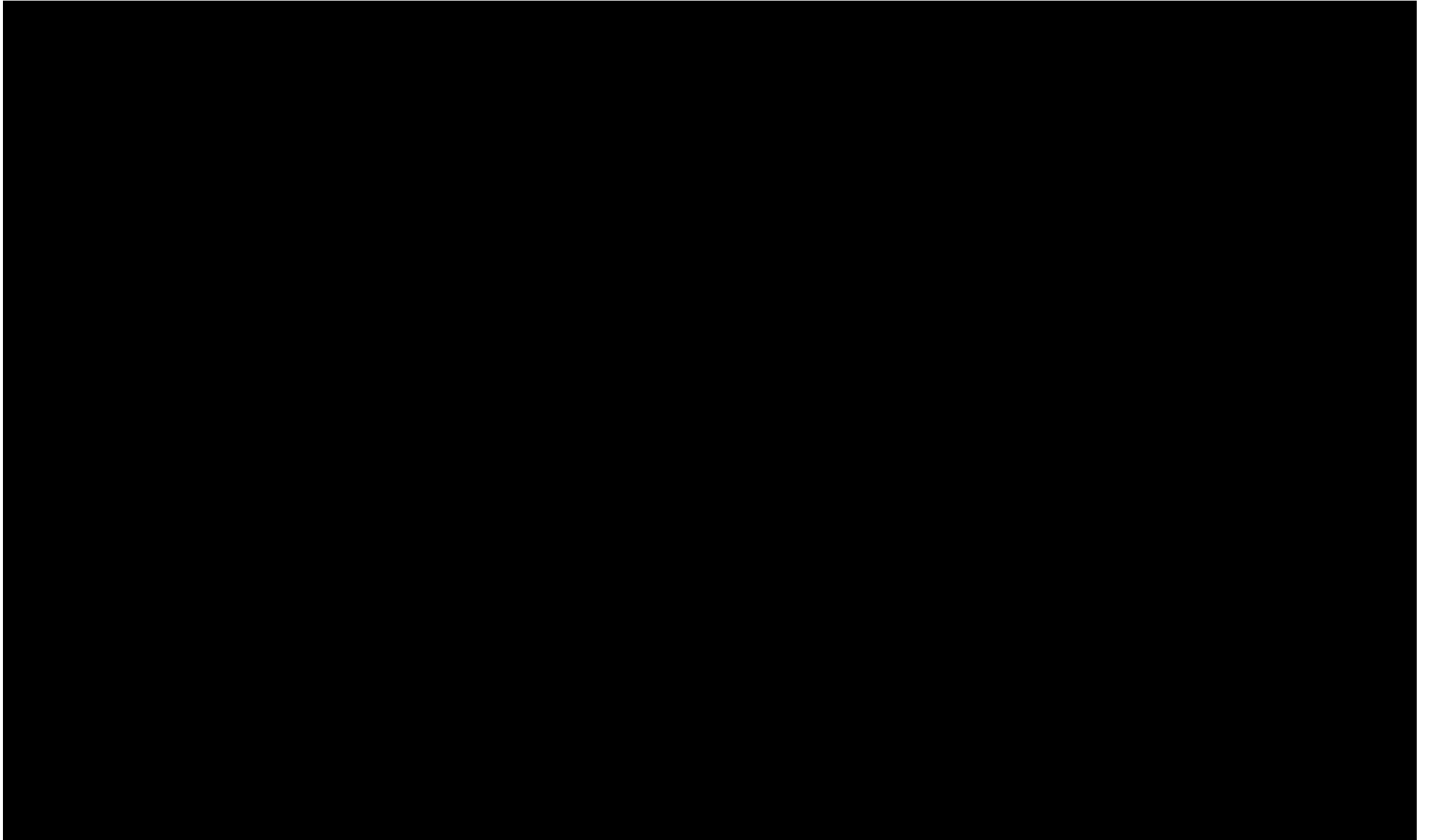




# Engineer Review Dashboard



# MS4 Report Generation for DEP





## Other Applications

- Manhole Inspections
- Street Sign Management & Inspections
- Leak Investigations
- Main Break Tracking



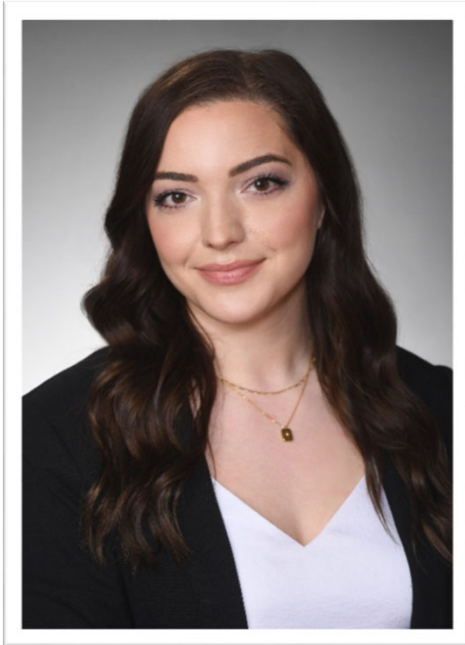
## Other Applications





## What we've learned!

- Asset management for a digital world
- Collaborative data exchange
- Mobile database population
- Products for outreach
- Catch us at Booth #83 for a Mobile Session today – we'll take a deep dive into the tools behind data collection!



**Thanks for joining us!**  
Download the slides at [ssmgroup.com](https://ssmgroup.com)

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