



# Leveraging GIS Technology for Improved Infrastructure Management

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*SCAUG April 24, 2024*





# Agenda

- **What is SSES**
- **How GIS Powers Infrastructure Management**
- **Case Study**
- **Q&A**



# What is SSES



# What is SSES

Sanitary Sewer Evaluation Surveys (SSES) are comprehensive assessments conducted on wastewater collection systems to identify and prioritize areas of concern, such as;

- Pipe Defects
- Infiltration
- Inflow
- Structural Deficiencies
- Capacity Issues



# What is SSES

SSES are essential for municipalities and utilities to effectively manage and maintain their sewer systems by helping to:

- Identify and remove system bottlenecks
- Resolve chronic operational and management hotspots
- Prioritize rehabilitation efforts by focusing on defects that will reduce flows immediately and significantly
- Implement CMOM programs
- Comply with the Clean Water Act requirements



# Dated Field Data



A long time ago in 1999 or before

- Field Reports
- CDs
- Print Outs
- A bunch of 3-Ring Binders
- Word Documents, if they were fancy

“It kind of sucked, honestly”

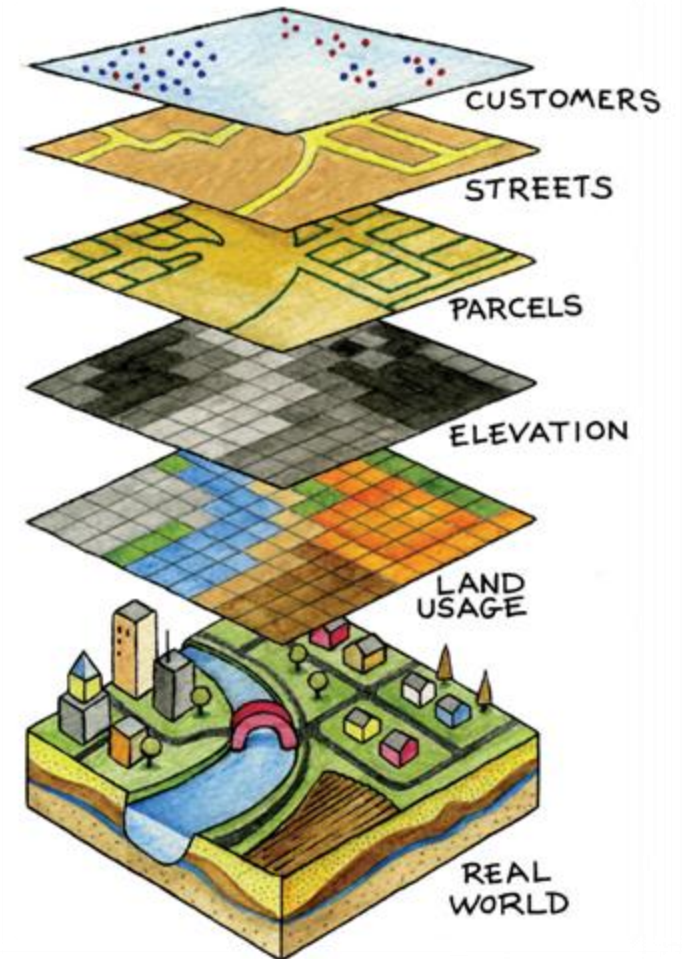
*-Brian Granger*

# GIS Powered Infrastructure Management



# Powered Infrastructure Management

- GIS allows for geographic approach to planning and operations which helps leaders understand how infrastructure projects relate to surrounding environments.
- Improve data visualization
- Enhance data analysis capabilities
- Better decision-making processes
- Increase efficiency in managing sewer systems





# Powered Infrastructure Management



- Analyze system performance and identifying issues
- Use predictive modeling for proactive maintenance

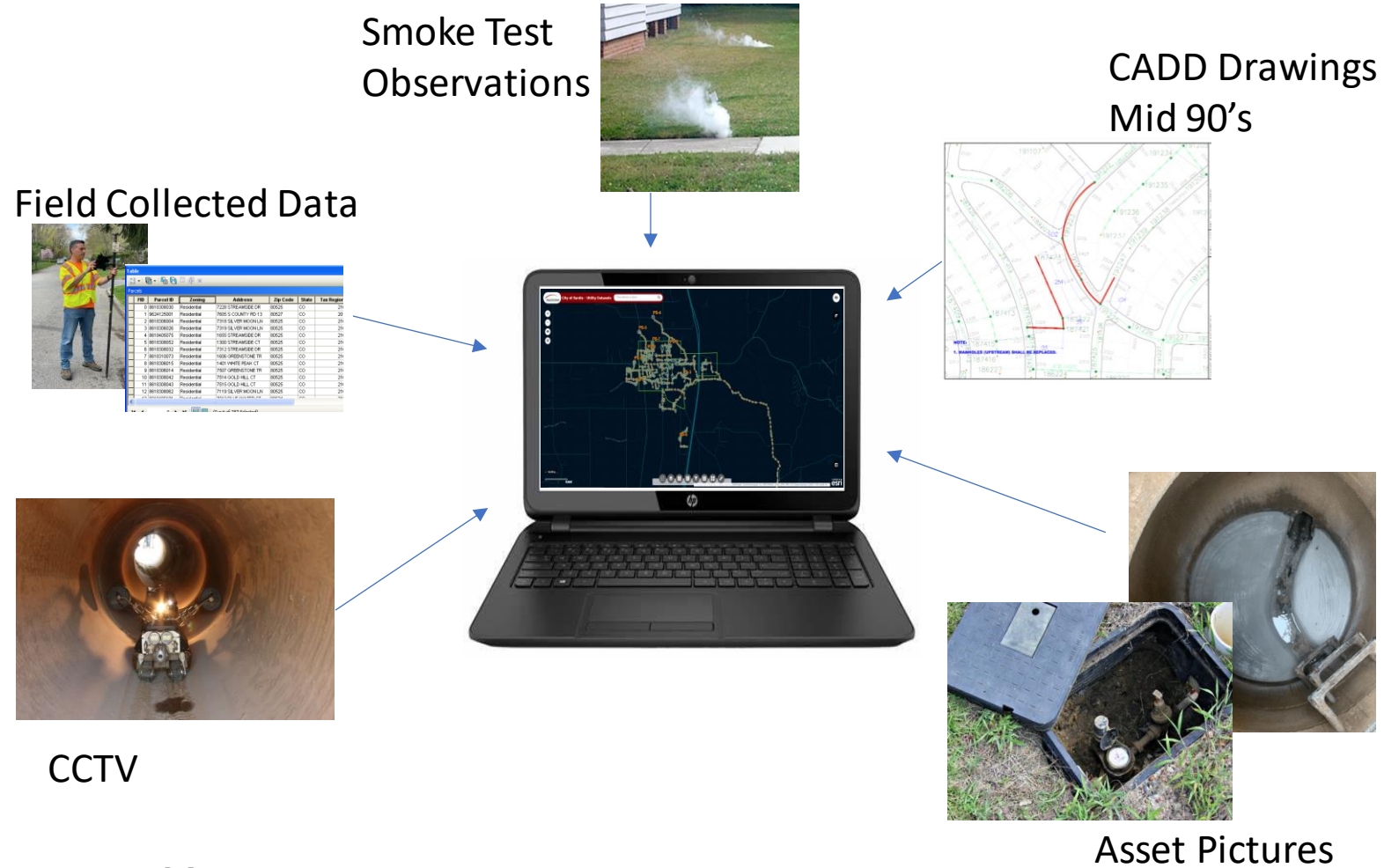


# GIS Powered Infrastructure Management



GIS allows for combining multiple data sources and types in one user-friendly interface

- Integrate survey data into GIS platforms
- Map infrastructure assets
- Documents, PDF, spreadsheets, charts graphs
- CCTV, Pictures



*Leveraging GIS Technology for Improved Infrastructure Management*



# Case Study

# Case Study

- Sardis is a town in **Panola County**, Mississippi
- Sardis has a 2024 population of **1,642**



## Town of Sardis

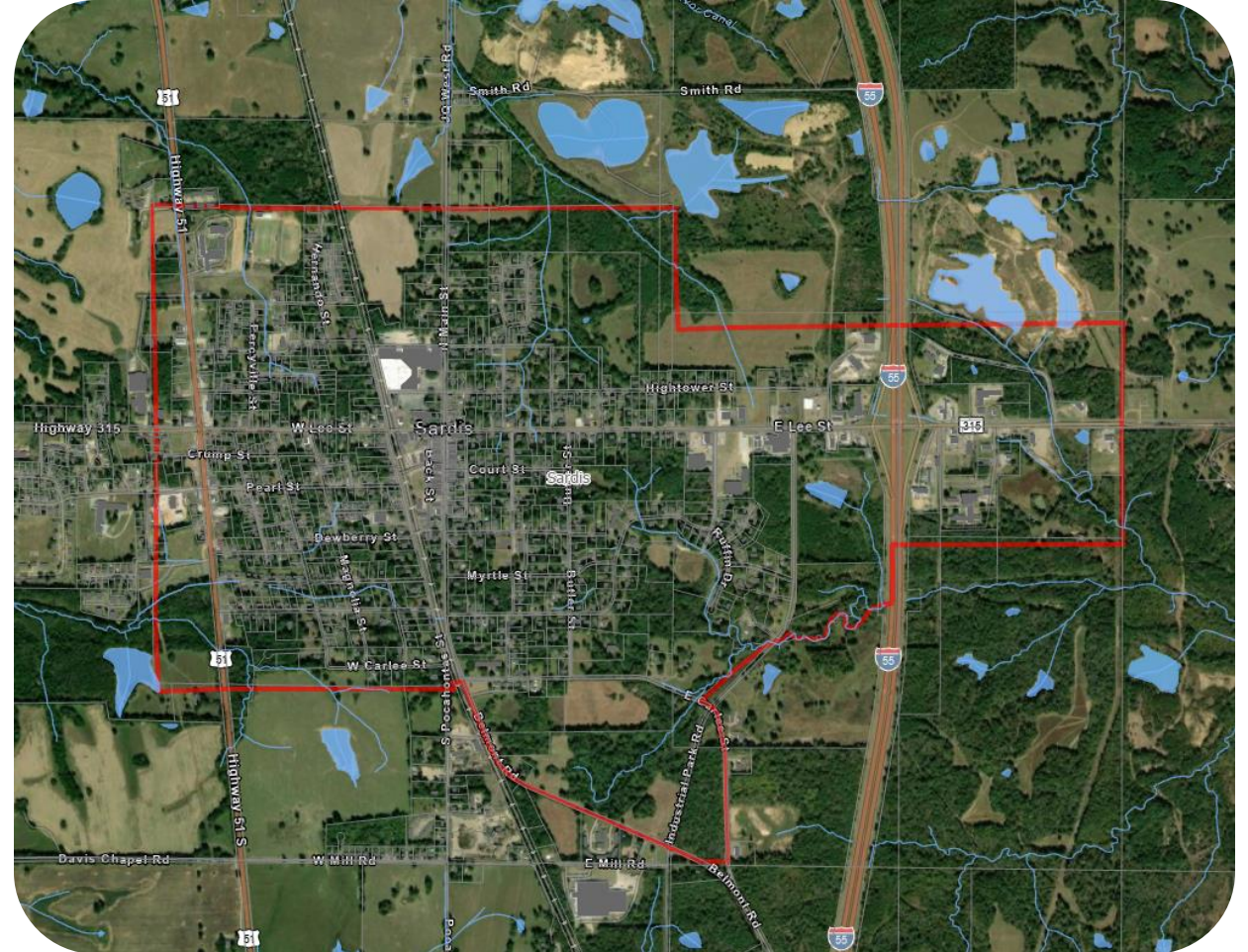




# Case Study

## Sardis Sewer and Water GIS Development

- Georeferenced old CAD dwg from mid 1990's to real world coordinates  
*(dwg was in paper space) (no As-builts)*
- Linked SSES data to each sewer asset
- Collected GPS for visible water features and took pictures (meters, valves, hydrants, tanks)
- Adjusted georeferenced water lines to better fit
- Created interactive web application
- Provided cloud storage, updates and maintenance support



# Access to Web Application



## Town of Sardis—Water & Sewer System GIS Web Application Quick Reference Guide

Click here → <https://waggoner.maps.arcgis.com/apps/webappviewer/index.html?id=3a67d2cf4c8e46b0a8b021b227ce47c3>

**Zoom in to a features**  
(Option: Scroll up in)

**Zoom Out to a features**  
(Option: Scroll Down in)

**The Home Button** zooms the map to the initial map extent

**My Location** allows to detect your physical location and zoom the map to it

Search Here to view the particular location or places in the Sardis City

**ArcGIS Online Credentials:**  
Username: SardisMS\_Waggoner  
Password: Wuw05421

**Sharepoint Credentials:**  
Username: SardisMS@waggonereng.com  
Password: Wuw05421

**To View Legend of Layers**  
(Turned on in Layer List)

**To View Layers in Application**

**To View Gravity Main Layer** contains only CCTV Video Link (Turn off to View all features)

**Allows you to select one from the gallery** as the basemap for your app

**Allows to measure the area of region or length of lines**

**Allows to stores map view extents collections**

**To View Sewer Manholes** Summary as Total Count and Maximum depth (ft)

**To View Sewer GravityMains** Summary as Total Count and GravityMains Length (ft)

**To View WaterMains** Summary as Total Count and WaterMains Length (ft)

**Displays a tabular view** of operational layers attributes (opens at the bottom)



# Q&A



# THANK YOU!

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