Manhole Inspections

Manhole inspections are vital for maintaining the integrity of wastewater collection systems. Inspections confirm the location of the asset and assess the structural integrity of the manhole to prevent overloading the system and reducing treatment costs. Checking for cracks, corrosion, and other forms of damage helps identify potential issues before they escalate into major problems and inspections can also reveal signs of inflow and infiltration.

Duke's has the capability to perform this service for off-road and challenging locations.

Technology and Deliverables

Manhole inspections are performed with 360-degree camera technology to provide a complete view of the sewer manhole in a matter of minutes. Using a 3D Optoscanner, two high resolution digital cameras with specially designed distortion-free wide-angle lenses are available for viewing. These optically scan the entire interior of the manhole in a few seconds with a single vertical run. The digitally transmitted image data can be viewed by the operator as if it were a live picture and the condition of the manhole is assessed back in the office or directly on site.
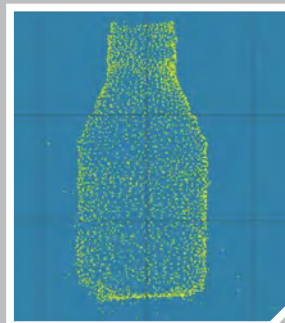
Unlike a video film from a conventional pan and rotating camera, which only shows the section of view saved at the time of filming, the viewer software provides an all-around inspection to assist with planning for sewer rehabilitation or maintenance. The inspector can stop at any position in the manhole, do a 360° pan or zoom, and take snapshots. Simultaneously, an unfolded view of the manhole can be generated. This gives a rapid overview of the condition of the manhole and enables the user to measure objects on the walls.

360 Perspective View   Unfolded View   Point Cloud View

Level 1 MACP Inspection Specifics

Complete full Level 1 MACP basic field inspection.

Level 2 MACP Inspection Specifics

Complete inspection using 360-degree camera equipment to perform full Level 2 MACP inspections.

Once the field data is collected, Dukes NASSCO certified Team members perform defect coding and assemble the final NASSCO-compliant MACP Database.
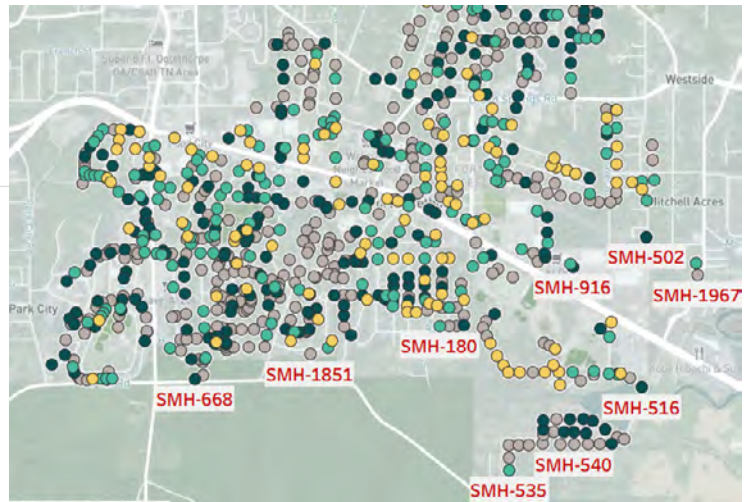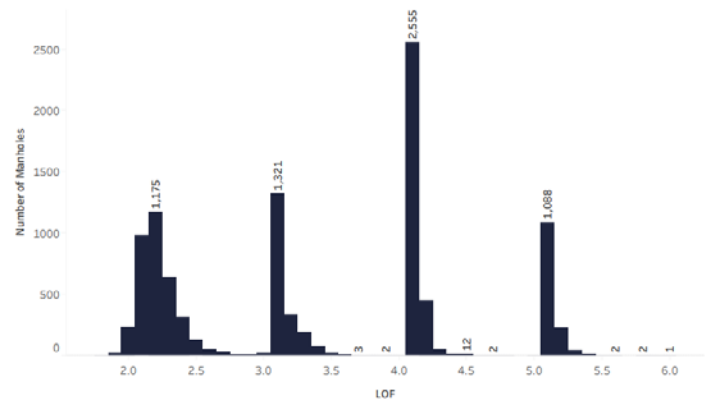
![DUKE'S 360 logo]

Duke's Insight 360

Insight 360 is an intuitive online platform for identifying defects in your sewer collection systems. With the click of a button, users can easily access comprehensive data on:

- Severity of Manholes

- Defects by Section/Number of Defects per Manhole

- Likelihood of Failure

- Number of Defects per Manhole

- Repair Breakdown/Budget Cost of Repair (with optional Condition Assessment Report – CAR)

Users can quickly identify problem areas and view data from anywhere with an internet connection, providing updates on manholes upon project completion allowing for efficient management of sewer systems.

Likelihood of Failure

Number of Manhole Inspections: 10,087

Severity of Manholes (scoring range: 1-5, 5 = Severe, 1 = Good)

Score	Manholes
5	596
4	1,381
3	2,836
2	3,075
1	1,469
0	730

![DUKE'S ROOTED IN INNOVATION logo]