

MNDOT Pipe Inspection

CASE STUDY:

The Problem:

Minnesota Department of Transportation (MNDOT) was tasked with acquiring accurate and timely data on all pipes/culverts in district 7--approximately 250 individual inspections across 13 counties and nearly 8000 square miles--and over 80% of these pipes haven't been inspected since 2011 or earlier (some as early as 1999!). There is limited budget for replacement and repair of culverts, so the data provided by WSP|PB inspectors will be used to prioritize and allocate funds appropriately. However, none of this data can be analyzed until it is exported into MNDOT's proprietary and unique Hydinfra System.

The Solution:

Various WSP|PB teams have used the GRAiT System on previous projects and recognized the impact it could have on this project, which was short on budget and under a compressed timeline. Because the GRAiT System is a geospatial based application, WSP|PB was able to, at a glance, develop a plan of attack for inspecting these 250 culverts. Furthermore, having each pipe plotted on the GPS map allowed inspectors to access their current location in the field and reduce headaches in determining exact pipe locations as well as eliminating any doubt about which pipe is directly in front of them. The capacity of the GPS view proved to be invaluable for WSP|PB to complete the project in a timely manner in order to stay within budget constraints.

Each pipe asset in the GRAiT System has an individual, Hydinfra-based checklist, and inspection information collected in these assets' checklists automatically associates with the correct pipe. The intuitive architecture allowed inspectors to collect photos, comments, checklist responses, statuses, ratings, and all required Hydinfra data points from one single screen. The simplicity of data collection, combined with the geospatial nature of the GRAiT System allowed WSP|PB inspectors to reduce their inspection time to **5-7 minutes per pipe!** *Despite minor obstacles, such as late-stage configuration changes and pipes which could not be found, and thanks to the hard work of the WSP|PB team, the entire inspection was, remarkably, completed in 3 weeks.*

The strict requirements of the Hydinfra system presented a minor reporting challenge for Raxar--the data has all been collected but it must be formatted to meet the standards set forth by the Hydinfra System. The talented development team, in conjunction with the GRAiT System's powerful reporting tool, was able to format a report to match standards. Furthermore, the project team exceeded requirements by providing MNDOT with a highly detailed recommendation for each pipe backed up by **over 1300 photos** taken and stored by the GRAiT System during inspection.

The Results:

- >Inspected 244 culverts across 13 counties and 8000 square miles in just 3 weeks
- >Reduced average pipe inspection time to 5-7 minutes
- >Completed under WSP|PB budget
- >Automated creation of Hydinfra-formatted report
- >Additional custom reports and dashboard for project status updates
- >Provided detailed recommendations, including custom report for over 1300 photos
- >QCing
- >Implementation in 2 weeks, training in 30 minutes.