

Wisconsin Department of Transportation

Culvert Inspection Process

Lean Summary Report



Project Summary

Regional offices in the Division of Transportation System Development (DTSD) inspect roadway maintenance culverts on an annual basis in order to meet the Maintenance manual's guidelines that culverts be inspected on a four year cycle. The information gathered from the inspections is utilized when scoping a highway improvement project or assigning region-wide locations of culvert replacements.

The goals of this project were to ensure resources were dedicated to the collection process and reduce process time by inputting all data out in the field.

This project was completed in February 2017.

Improvements

- Reduce overdue inspections by dedicating resources to this effort
- Reduce process time by utilizing mobile technology (IPads) to collect/enter out in the field without having to duplicate the effort in the office

MAPSS Core Goal Area

- Preservation

Statewide Goal Area

- Cost of government
- Customer satisfaction

Issue

As of May 2016, the NC region has inspected 1,016 culverts annually over the inspection cycle of 2011-2015. In order to conform to the Maintenance manual guidelines (HMM 04-15-15 (2.0)), the region should be completing 2,338 inspections per year. The lack of inspections has led to emergency culvert repairs (Maintenance), inaccurate culvert information at project scoping (Planning) and contract change orders to project development (PDS). Since 2011, the Region has shifted resources to other functional areas. As a result, the Region has fallen behind on inspections. In order to allow the NC Region to get back to regular inspections, the region will re-dedicate at least 2 resources towards this effort per year. With this effort, the NC Region will cut its 56% overdue inspections down to less than 20%.

Lean Six Sigma Process

A cross-division team used the DMAIC (Define, Measure, Analyze, Improve and Control) methodology to:

- Define the needs of Maintenance, Planning, PDS and other customers
- Map the inspection process and define stakeholder participation
- Measure time and resources spent on culvert inspections
- Analyze best use of resources and ways to cut inspection process time
- Identify improvements to the process via training documents, software updates and Central Office guidelines based on culvert size
- Develop an implementation plan that includes making changes to the Region training document, identifying and updating BHM maintenance guidelines to reflect the new inspection process, and checking in with the Region on an annual basis to summarize achievements in the process

Results

Cost of Government: The Region will be prioritizing culvert inspection by redistributing work to allow for more time spent on inspection. In addition, the region believes utilizing mobile technology will reduce processing time from 160 hours to 40hours. We anticipate a reduction of culverts overdue inspections from 56% down to 41% in calendar year 2017. Each year with reduction in process time and staff time repurposed, the region expects overdue inspections going down by 15%. Over the next four years, NC Region hopes to be 100% inspected.