Wisconsin Department of Transportation

Highway Signing Lean Initiative Report

Project Summary

The Wisconsin Department of Transportation's Division of Transportation System Development (DTSD) manages the identification, ordering, delivery and installation of state highway signs. Signs are manufactured by private vendors and installed by county highway departments.

The goal of this project is to reduce the average time between ordering and installation of signs, reduce the installation costs per sign and reduce the backlog of signs beyond life expectancy.

All portions of the revised process will be implemented in fall 2014 for signs to be installed in 2015. However, several incremental changes have been made for 2014 sign installations, including the elimination of partial order deliveries.

Improvements

- Order signs for complete replacement of all signs within defined highway segments
- Eliminate partial order deliveries
- Reduce number of sign installation providers
- Ship directly to county highway departments
- Utilize performance based maintenance practices

MAPSS Core Goal Area

- Accountability
- Preservation
- Safety

Statewide Goal Area

- Cost of government
- Customer satisfaction
- Government work culture

Issue

The current process for ordering, delivery and installation of state highway signs involves several duplicated and inefficient steps. Signs currently are first identified by the regions, compiled and ordered by Bureau of Traffic Operations (BTO) from several vendors, the signs are shipped to the BTO sign shop, then to the region, and finally to individual counties. Duplicate steps include checking orders for proper signs, sorting of signs, and quality assurance/quality control at each level. The multiple steps in the current process also create opportunity for error, lengthening of the lead time to final installation and increased cost.

Lean Six Sigma Process

- Completed a comprehensive assessment of current state workflow and business procedures at each of the regional offices and bureaus
- Developed and collected current state performance metrics
- Held a two-day kaizen event with team members, subject matter experts and other stakeholders to develop the current workflow process map and to analyze the current process
- Developed proposed state process map
- Developed performance metrics for future process control

Results

Cost of government: Implementation of the proposed process will increase efficiencies and be more cost effective, allowing WisDOT to install more signs with the funding allocated toward highway signing. The proposed process changes are expected to result in a thirty percent cost savings ($360,000) statewide per year for sign installation and a reduction in staff time of approximately eight full time staff positions that will be reallocated to other high priority activities in the division.

Customer satisfaction: Implementing the proposed process steps will translate to improved highway safety through the replacement of approximately 3,500 additional signs per year through reinvestment of the cost savings. The time between identifying a sign replacement need to installation for routine sign replacements reduced from 377 days to 253 days (33 percent reduction).

Government work culture: Baseline data on cost per sign, sign age and process flow was gathered and will be used to compare to the proposed process once implemented. Twenty-four WisDOT and county staff were involved in the kaizen event and received basic Lean Six Sigma training.

Next Steps

- Integrate the new highway signing process into the CY 2015 Performance Based Maintenance effort.
- Develop training for WisDOT and County Highway Department staff on new process
- Identify technology needs to improve efficiencies and data integrity