

Minnesota Wastewater Permitting Process Six Sigma Project Case Study

State Agency: Minnesota Pollution Control Agency

Method Implemented: Six Sigma

Summary: In 2003, the Minnesota Pollution Control Agency (MPCA) initiated the Six Sigma Water Permitting Process Improvement Project to address concerns about the wastewater permitting process. This was the first MPCA program to apply the principles of six sigma. The project team developed an ambitious goal of issuing 90 percent of permits within 180 days of receiving the permit application. Before the project, MPCA issued less than 10 percent of permits within 180 days. The team set out to meet the 90 percent goal by the end of 2005. MPCA personnel trained as six sigma black belts and green belts oversaw the project through the six phases of six sigma implementation—Define, Measure, Analyze, Improve, and Control. The project is currently in the control phase. Although the goal of completing 90 percent of the permits within 180 days has not yet been met, MPCA continues to see an overall reduction in the average number of days it takes to issue permits and has increased the percentage of permits issued within 180 days to 75 percent.

Scope of the Six Sigma Project

Process Involved: Wastewater Permitting Process (Water quality minor facility point source permitting program)

Goals:

The goals of the six sigma project were:

- Increase the percentage of permits issued within 180 days from 9.42 percent to 90 percent by December 2005.
- Reduce work time for 90 percent of non-construction permits from less than 251 days to 90 days by October 2004.
- Reduce work time for 90 percent of municipal construction permits from less than 419 days to 120 days by March 2005.

Year Conducted: 2003-04

Consultant Support: University of Minnesota Carlson School of Management trained MPCA staff as champions and coaches at the six sigma green and black belt levels. Together with trained staff, University instructors assisted in the development of deployment models for the NPDES project.

Process Changes and Results

The MPCA project team conducted the following activities to improve the permitting process:

- Used information gathered from interviews with internal customers (water permit staff and other staff who contribute to water permitting) and external customers (governmental and private permit applicants and environmental consultants) to clarify the problem and then summarized customer needs.
- Used a risk matrix to propose permit options and to determine the depth of review needed for different types of permit applications.
- Established and aligned program priorities among functional areas.

- Formalized decision-making processes and set timelines for decisions at all levels.
- Revised the permit content to reduce length.
- Improved the functionality of permit writing tools and databases.
- Created manuals for permit writers and formalized staff mentoring processes.
- Created a permit forum process to allow permit writers a place to quickly discuss and decide issues with senior staff. This forum process builds consensus and consistency.
- Designed an application review process to determine administrative and technical “completeness” of permits.
- Instituted a time tracking process to understand and better manage how staff time is spent.
- Hired a permit coordinator to “manage” the permit processes.
- Focused on issuing more general permits since they are easier and faster to issue than individual permits.
- Created feedback loops to improve communication, manage expectations, and ensure progress towards goal is being made.

The project yielded the following results:

- Increased the percentage of permits that are issued within 180 days from 9.42 percent in 2003 to 75 percent in 2006.
- Reduced the time needed to issue permits from an average of 300 days in 2003 to 191.8 days in January 2005.
- Decreased the point source permit backlog from 20 percent to 8.5 percent.
- Reduced permit application review time so that all applications are reviewed faster (typically within two weeks) and incomplete applications are identified sooner.

For More Information

Minnesota Pollution Control Agency website: <http://www.pca.state.mn.us/water/wastewater.html>

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