

Water Board Lean Six-Sigma Projects

Program Summary:

In 2014, The Governor's Office of Business and Economic Development (GO-Biz) and the Government Operations Agency (Gov. Ops.) partnered together to offer a LEAN 6-SIGMA implementation program to state departments that address process-based issues that are causing delays in services to both internal and external stakeholders. Over a 6 month period, participants receive training on complex analytical and statistical tools applied within Green Belt projects that identify waste and inefficiencies in processes.

This certification program is not your typical training. While classroom training is a valuable and necessary component, certification is gained through the completion of a project within the Green Belt's department. As a result, the participants have completed projects that have vastly improved the efficiency and operation of a number of processes within each department. The resulting improvements have a direct positive impact on governments' interaction with the public.

Definitions:

"Lean Six Sigma is a fact-based, data-driven philosophy of improvement that values defect prevention over defect detection. It drives customer satisfaction and bottom-line results by reducing variation, waste, and cycle time, while promoting the use of work standardization and flow, thereby creating a competitive advantage. It applies anywhere variation and waste exist, and every employee should be involved." (From ASQ.org). It is a combination of two management tools: "Lean manufacturing", usually abbreviated to simply Lean, and Six-Sigma.

Lean: Focuses on waste reduction. Lean achieves its goals by using less technical tools such as workplace organization and visual controls. It was largely originated by Toyota (Japan) in the 1930's.

Six-Sigma: Focuses on variation reduction. Six-Sigma achieves its goals by relying heavily on statistical data analysis. It originated by Motorola in 1980s.

Three Cohorts So Far, with Water Board Participation in All of Them:

January 2014 – July 2014

Green Belt: Micah Reich, Associate Governmental Program Analyst, Division of Financial Assistance

Champion: Lisa Babcock, Manager, Underground Storage Tank Cleanup Fund

Problem Statement: Currently, only 9% of final determinations of claim eligibility are completed within 60 days. Applicant claimants who are small businesses and residential tank owners rely on the Cleanup Fund for timely reimbursement of corrective action costs incurred at their site, and often do not perform corrective action until their claim is determined eligible. Submittal of incomplete claim applications precludes timely claim processing requiring considerable staff time soliciting complete applications. During the time that elapses between claim application and final determination, staff receives repeated status inquiries from claimants and their representatives which add to the staff workload.

Project Goal: To increase the percentage of final determinations of claim eligibility completed within 60 days to >25%.

Project Achievement: Quality standards applied to incoming applications to assure completeness and time tracking system implemented to avert delays. Implemented standard 12-day limit for final review upon receipt of application. Time studies performed on new process show that the percentage of final determinations completed within 60 days will increase from 9% to 75%.

January 2015 – July 2015

Participants	Project Description
<p>Green Belt: Aylin Mentesh, Program Analyst, Division of Water Quality</p> <p>Champion: Tim O'Brien, Senior Engineering Geologist</p> <p>Executive Sponsor: Victoria Whitney, Deputy Director, Division of Water Quality</p>	<p>Problem Statement / Baseline: Development of a general waste discharge requirement (WDR) order is a time consuming and resource intensive process, taking an average of 1,047 days to complete. Because general orders can address a large number of facilities, differing viewpoints on the best approach are often encountered.</p> <p>Project Achievement: Process mapping and FMEA revealed the critical inputs of this process to be stakeholder engagement (incl. sequencing and level of controversy with the WDR), critical staff engagement (incl. sequencing and workload prioritization), and the large number of reviews/approvals that were taking place. The project simplified and rationally sequenced events utilizing the systems engineering design feature of stage gates to better utilize and schedule resources while clarifying the requirements at each point in the process. The improved process is projected to result in a 69% reduction in the average completion time of WDRs to 322 days.</p>

Participants	Project Description
<p>Green Belt: Russell Norman, Water Resources Control Engineer, Statewide SSO & NPDES Programs</p> <p>Champion: Diana Messina, Supervising Engineer</p> <p>Executive Sponsor: Victoria Whitney, Deputy Director, Division of Water Quality</p>	<p>Problem Statement / Baseline: Development of new or amended general NPDES permit is a time consuming and resource intensive process. The internal agenda development and execution process, although a core process to permit development work, takes a long time, averaging 116 days with significant outliers that can double that time. The objective of this project was to reduce the average completion time to less than 90 days, even in light of several regulatory steps.</p> <p>Project Achievement: The project utilized a combination of process step time analysis, fishbone, and FMEA to identify several controllable critical X's, which included re-scheduling delays, handoffs, wait time, scope definition. Non-controllable X's included complexity, contentiousness, external request for more time, and Board and Leadership prioritization. Improvements for the team focused on minimizing rescheduling and the streamlining of review and approval steps (which cut the number of process steps in half). The improved process is projected to meet the target objective of 90 days while eliminating large variances.</p>

Participants	Project Description
<p>Green Belt: Scott Hatton, Water Resource Control Engineer</p> <p>Champion / Executive Sponsor: Andrew Altevogt, Assistant Executive Officer, Sacramento Office</p>	<p>Problem Statement / Baseline: Currently there is a backlog in processing Waste Discharge Requirement (WDR) Permits in the Non-Chapter 15, for dischargers who have submitted Reports of Waste Discharge to Region 5 staff. Excessive process steps with many rework loops contribute to over 3.2 years average completion times for complex permits.</p> <p>Project Achievement: The completion time statistics of each process step were collected which revealed excessive times to obtain information that is missing from the original permit application. Improvements included a clarification of the information that is required from the permit applicant with an emphasis in obtaining that information earlier in the permit process. The elimination of rework loops, coupled with the streamlining of other process steps is expected to yield a completion time reduction of 73%. Process controls include a traveler which will follow the permit and visual management featuring an electronic calendar for scheduling and permit tracking.</p>

January 2016 – July 2016

Participants	Project Description
<p>Green Belt: Jean Bandura, Associate Governmental Program Analyst</p> <p>Champion: Bill Orme, Senior Environmental Scientist</p> <p>Executive Sponsor: Phil Crader, Assistant Deputy Director, Water Quality Division</p>	<p>Problem Statement / Objective: Processing applications and issuing 401 Water Quality Certifications is a time consuming and resource intensive process. The process is laden with many rework loops that contain multiple requests for information and numerous reviews. The objective of this project is to reduce 401 Certification processing times from 273 days to 90 days.</p> <p>Baseline: 401 Water Quality Certification completion time averages 273 days</p> <p>Project Achievement / New Capability Analysis: The revised process initiates early cross-functional coordination and frontloads the process so that necessary information is gathered early, mitigating the need for wasteful rework. The team also incorporated improved visual management including certification templates and updated application tracking. With these improvements the process is projected to meet the target completion time of 90 days.</p>

Participants	Project Description
<p>Green Belt: Tiffany Donohue, Staff Service Manager II, Procurements and Contracts</p> <p>Champion: Shannon Similai, Manager, Business Management Branch</p> <p>Executive Sponsor: John Russell, Assistant Deputy Director, Cleanup & Bonds Branch</p>	<p>Problem Statement / Objective: Contract execution is a time consuming and confusing process, creating customer dissatisfaction and a drain on staff resources. Delays in contract execution significantly impact the Water Board's ability to carry out mission critical work and can result in loss of funding at fiscal year end.</p> <p>Baseline: Contract execution completion time averages 145 days with less than 4% occurring within 45 days</p> <p>Project Achievement / New Capability Analysis: A complete reengineering of the process focused on the elimination of NVA activities, the mistake proofing of intake and contract documents, greater face-to-face participation to increase quality in the early stages of the process, and holding staff accountable to meeting action item deadlines. Pilot results indicate that these changes are providing outstanding results. Contract completion times are now averaging 33 days with 91.4% occurring within 45 days.</p>

Participants	Project Description
<p>Green Belt: Justine Herrig, Environmental Scientist</p> <p>Champion: Matthew McCarthy, Senior Environmental Scientist</p> <p>Executive Sponsor: Barbara Evoy, Deputy Director, Division of Water Rights</p>	<p>Problem Statement / Objective: Making a decision on a minor protested application for a water right permit has become an extremely lengthy process taking an average of 6 years to resolve. The objective of this project is to reduce completion times to less than 180 days from the date that the State Water Board intervenes in the protest process.</p> <p>Baseline: Protest resolution completion time averages 2158 days with 4% completed in 180 days.</p> <p>Project Achievement / New Capability Analysis: Staff indecision, lack of accountability, lack of clear direction, and lack of communication has been replaced by a process that features a clear and concise process map, the implementation of timeline milestone accountability, and visual management to track the status of projects. With these improvements and controls the revised process is projected to meet the target resolution completion time of 180 days.</p>