



# Lean Government

## Region 10 Clean Air Act State Implementation Plan (SIP) Process Lean Event Case Study

### Summary

EPA Region 10 conducted a Lean kaizen event in June 2012 to improve the efficiency and effectiveness of the Clean Air Act State Implementation Plan (SIP) process in the region. Every state is required to develop an implementation plan for meeting Clean Air Act requirements, and when national rules, state rules, or National Ambient Air Quality Standard (NAAQS) attainment status changes, states must submit revised SIPs to EPA for review and approval. This event focused on the SIP process in state and local agencies in Washington State; but, as the event related to EPA's regional SIP review process, it also has broader applications in the region. Prior to the event, it took an average of 18.75 months to complete the SIP process in Region 10, from the time a state submits a rule through SIP approval. Delays in final approval of rules that had been submitted to EPA were sometimes resulting in lead times as long as 130 months. Wasted time and wasted labor were costing up to \$240,000 per year. With the new process that the kaizen event team developed, the Region 10 SIP process could take significantly less time; on average 12 months but in some cases as little as 8.4 months (55 percent less).

During the event, participants developed a map of the existing SIP process, identified ways to reduce waste in the SIP process, and developed a map for a new process that will improve efficiency by eliminating unnecessary steps and documenting standard work steps. Since the event, the team has implemented these improvements. The team has communicated about the new process to colleagues at EPA, other state and local agencies, and has engaged in efforts to ensure implementation of the new process, including creating a "kaizen newspaper" log of implementation items.

### Results

The team developed a new process that is split into separate tracks for review of SIPs and differentiated based on the expected level of difficulty and likelihood of potential controversy. By creating this division in the new process, the team allowed the process for the "fast track" SIPs to be streamlined even further. The improved state will achieve the following results:

- The "New Normal" track will achieve a 36 percent reduction in lead time from the current state, and an elimination of 29 percent of process steps.
- The "Fast Track" will achieve a 55 percent reduction in lead time, and a 48 percent reduction in process steps.
- A limited number of SIPs are high involvement. These are highly variable cases where there may be a need to resolve legal or consistency issues across all 10 EPA regions. Since headquarters and other regions are involved in these cases, the SIP lean event did not result in any changes to high involvement SIPs steps outside of Region 10.

The event also helped participants to strengthen the relationship among EPA, state, and local partners, as they are now better able to understand each others' processes and challenges.

As of March 2014, data on the SIP processing time indicated a trend toward improvement; however, more time will be needed to determine the actual results for processing lead time. SIP actions completed in calendar year 2012 were processed within 12 months, an improvement from the pre-Lean submittal average of 18.75 months. While this improvement may be due to several factors (new staffing, etc.), the kaizen event may have contributed to an improvement in SIP processing time.

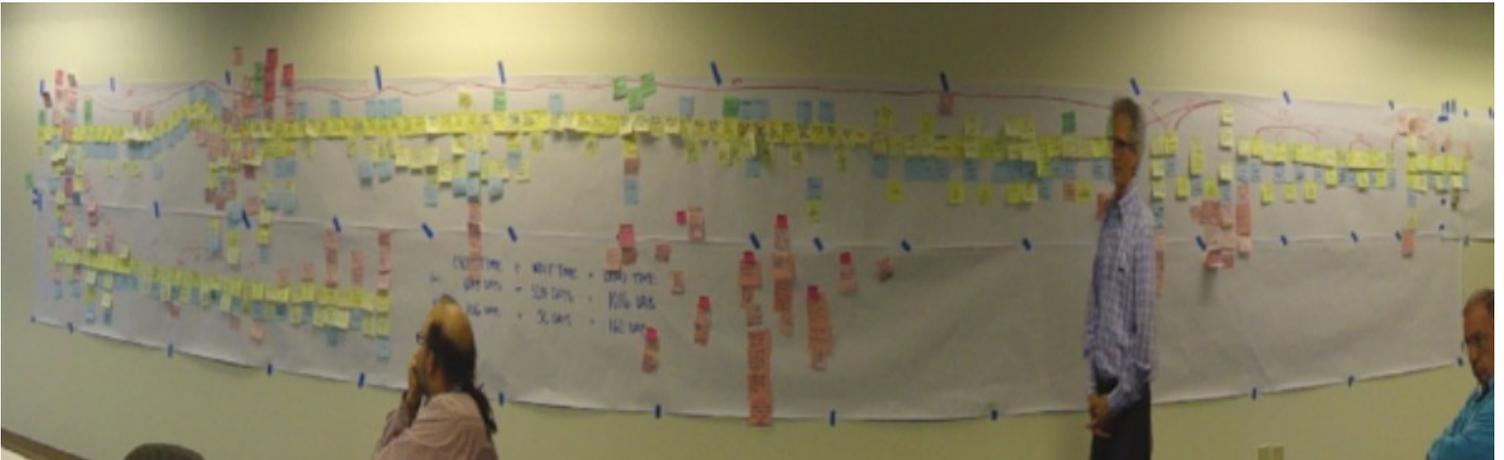
## Scope of the Lean Project

**Project Scope:** The Clean Air Act State Implementation Plan (SIP) review process from the time Washington State or EPA initiates a SIP rule change through final EPA approval of the SIP.

**Goal:** To reduce average lead time for new SIP actions from 18.75 months to 12 months; a 36 percent reduction.

## Process Changes and Improvements

Participants in the Lean event mapped the current SIP process, analyzed the process to identify waste, brainstormed solutions, and streamlined the process to create a new, desired future state process map. They used trystorming (a form of brainstorming for generation of simple, action-oriented ideas) to generate solutions, guided by the criteria that solutions should be ready to “implement on Monday,” and that they be limited to areas that the region has control over. Under the improved future state, SIP review will occur in a tiered system along three separate tracks, called “New Normal,” “Fast Track,” and “High Involvement.” The tracks are based on the difficulty, priority, and controversial nature of the SIPs, with the assumption that New Normal would be the middle track. They identified several steps to take to begin implementing the new process.



**Figure 1: Current Process Map**

The team identified the following changes to improve the process:

- Eliminate unnecessary EPA approval steps and other bottlenecks
- Establish key process points for peer review and meetings between EPA, state, and local agencies
- Standard criteria for defining new process tracks (“New Normal,” “Fast Track,” and “High Involvement”)
- Document the following:
  - Criteria for the three priority tracks
  - Qualitative metrics for how closely the new process is followed
  - Acceptable risk criteria
  - Standard work processes
  - Submittal criteria
  - Points of contact
  - Communications processes
  - Dispute resolution criteria
- Processes to identify and prioritize future rule changes to the SIP
- Quality measures for the SIP process (e.g., that there should be no “redo” loops)

The team developed timelines and performance expectations for the three process tracks. The team created a visual control board to monitor progress of the SIPs in the tracks against the targets. The visual control board serves as a quick and visual tool to show where SIPs are in the process. If the targets are not met, then the SIP review team will meet to discuss what is needed to get the process on track.

## Implementation

The team identified the following steps to implement the improvements identified during the event, all of which have been implemented:

1. Communicate with colleagues in EPA, other states, and local agencies about the new process.
2. Create a “kaizen newspaper” that will serve as a tracking log for implementation action items.
3. Conduct regular check-in meetings with the EPA team to track follow-up.
4. Plan and hold 30-, 60-, and 90-day follow-up meetings.
5. Develop a SharePoint site on which team members will be able to track implementation items and check-in schedules.

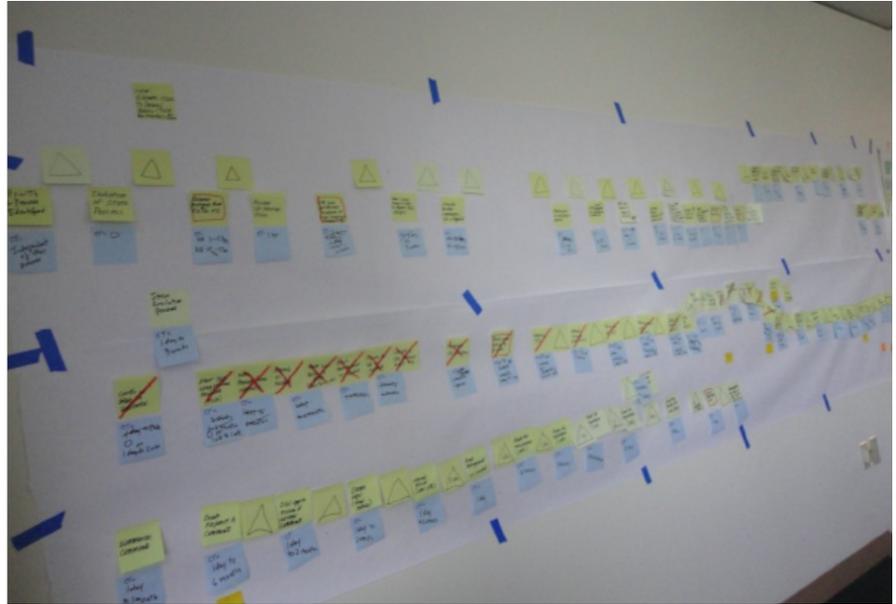


Figure 2: Future Process Map

Since the SIP event, the team has made the following changes:

- Designated a subset of SIP submittals to require fewer approval steps by being designated “Fast Track” to eliminate unnecessary approval steps.
- Established points in the process for peer review and meetings between agencies.
- Developed criteria and processes for Fast Track and New Normal tracks.
- Created a pre-approval letter for some SIPs.
- Documented the following:
  - Quantitative metrics based on the total time for action on a new SIP, SIP backlog, and for how well states and EPA are following the new process
  - Standard work processes (revisions to existing SIP process manual)
  - Draft dispute resolution criteria

One of the significant outcomes from the event was a validation of the principles of SIP PIP (SIP Process Improvement Project). In 2002, Region 10, with support from each state and local air agency, developed recommendations for improving the SIP process. Since the Lean event, the SIP Team has been working with states to reinvigorate SIP PIP, which has led to better coordination between agencies and improved SIP processing. The team amended the existing SIP PIP manual to:

- Update it to reflect the outcomes of the Lean event.
- Document a process for EPA SIP staff and states to meet annually to identify upcoming SIP actions, to prioritize future rule changes to the SIP, and to discuss points of contact for upcoming SIP actions.
- Document communications processes in the planning and development of a SIP.

The team also developed acceptable criteria for fast-track SIPs in the form of a new checklist. This new checklist includes questions about the type of SIP (e.g. a limited maintenance plan), the SIP’s effect on emissions, and other criteria.

## Lessons Learned

After the event, some of the team members reflected on the SIP event and identified the following lessons:

- The SIP process is a very complex, highly variable process and it was a challenging project to take on early in the Region's experience with Lean. Agencies that are new to Lean may want to consider choosing very simple processes for initial experiences with Lean. Processes with little variation and those that are transactional may be easier to Lean as organizations are learning.
- The SIP Lean Charter contained nearly 10 goals. Given the complexity of the SIP process, and lack of a lot of prior experience with Lean, it would have been better to have no more than three simple, measurable goals.
- While the just-in-time training component of the Kaizen event provided a good opportunity for training, a pre-Kaizen workshop orientation may have helped team members by clarifying what to expect and an explanation of how the week would progress. Agencies that are new to Lean may need an orientation for team members prior to entering a week-long Kaizen event.
- Executive and middle manager support for process change is critical. Many of the process changes identified during the workshop were led by or confirmed by middle and executive level management.
- Stand-up meetings after the event, as well as progress tracking, will be needed after the kaizen event and implementation can take time. It is important to clarify this for participants prior to Lean exercises, particularly when taking on large, complex processes.
- The SIP Team had developed process improvements to the SIP process in the past, so conducting a Lean on the entire Region 10 SIP process resulted in some team members feeling unacknowledged for these earlier efforts. This presented morale challenges for the team. A sharper focus on one or two components of the SIP process in Region 10 or a SIP lean event that would have engaged headquarters and other regions to address the national consistency process may have yielded better results and improved morale among Team members.

### For More Information:

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