Lean Government Implementation Guide

Make Changes Stick and Sustain Gains from Lean Projects

September 2017

Lean INTO CHANGE

UNITED STATES • ENVIRONMENTAL PROTECTION AGENCY •

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TABLE OF CONTENTS

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INTRODUCTION

This *Lean Government Implementation Guide* is designed to help agencies successfully manage one of the more difficult aspects of process improvement—follow-up and implementation. This work begins after you decide how to improve your process. The focus of this Guide is on Lean, which is an improvement philosophy and set of methods that seek to eliminate non-value added activity or "waste" from processes. Environmental agencies use Lean to deliver higher quality, faster, and less costly programs and services that protect human health and the environment. You can use this Guide whether you are conducting a rapid improvement event or using a different Lean method to improve your process. This Guide is most applicable to a team lead or implementation manager, but can also provide relevant background information to other staff or managers involved in Lean project implementation. In this Guide, "Lean event" refers to a rapid improvement event or "kaizen" event, which is a 2-5 day period when a team analyzes a process and makes changes to create a new, more efficient way to work.

This *Implementation Guide* contains guidance, tips, and resources to help you:

1. Understand the importance of planning for implementation associated with Lean events and projects
2. Learn strategies and actions to take during and after Lean events or project meetings to get better and more sustainable results
3. Support successful Lean implementation efforts and address common implementation challenges

LEAN GOVERNMENT IMPLEMENTATION GUIDE KEY CONTENT

This Guide is a product of the U.S. Environmental Protection Agency's Lean Government Initiative (www.epa.gov/lean) and supplements the Lean in Government Starter Kit, which provides guidance and practical resources on how environmental agencies can use Lean to improve their operations.

WHY DO I NEED A LEAN IMPLEMENTATION GUIDE?

As a Lean manager or implementer, you may be asking yourself:
Why do I need an Implementation Guide? Isn't the Lean event what matters?

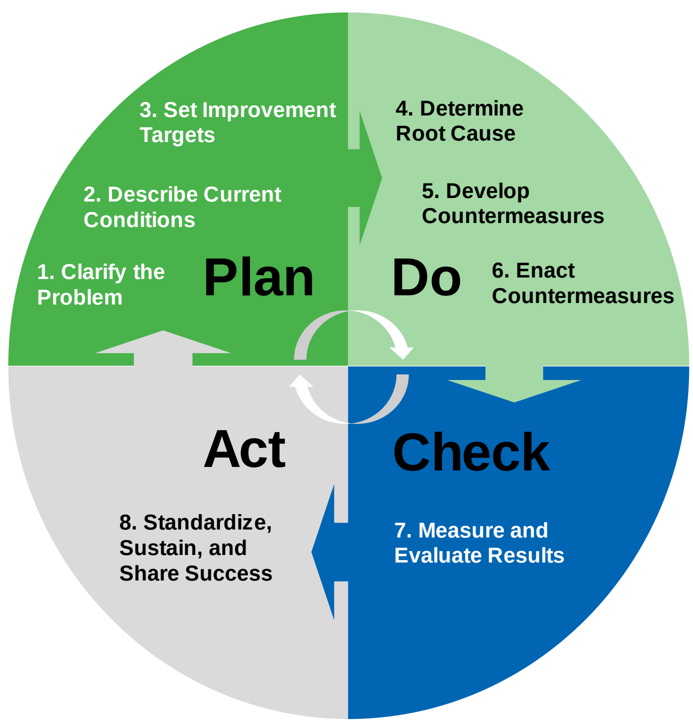
- Rapid improvement events drive dramatic improvements as teams identify ways to eliminate handoffs, rework, delays, and other wastes that slow down and complicate processes.
- However, identifying these process changes is just the beginning. Implementing a new process during and after the Lean event takes work. Despite your best intentions, it is all too easy to go back to the way you did things before.
- This Guide will help you think proactively about the "implementation" phase of Lean and give you step-by-step guidance and tools to make sure you realize the full potential from your Lean project.
- Even when a Lean project does not involve a rapid improvement event, the tips and resources in this Guide can help you keep on track with process improvements.

What Is Lean Implementation and Why Focus on It?

What Do We Mean by Lean Implementation?

Environmental agencies are using a range of process-improvement methods, including Lean methods, to speed processes, provide better services, and focus staff time on "mission-critical" work. Lean uses a "Plan-Do-Check-Act" (PDCA) problem-solving framework to support continual improvement (see Figure 1). The PDCA problem-solving framework provides a scientific, systematic approach for addressing continuous improvement that can be used to guide the execution of projects. In this Guide, we refer to **Lean implementation** or **Lean follow-up** as the Do, Check, and Act phases of this cycle – that is, what happens after a team or individual plans how to improve a process. In the context of Lean events, implementation includes developing an implementation plan, making changes to improve the process, monitoring results and adjusting the process as necessary, sharing project successes, and related activities.

Figure 1: Plan-Do-Check-Act Problem-Solving Framework

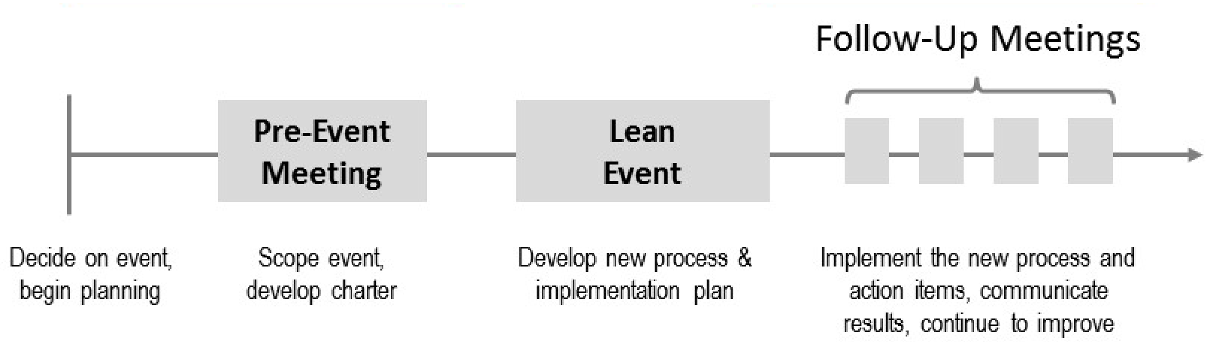


Lean projects that use rapid improvement events include three main components:

- **Planning and preparing for the event,** including scoping the event, developing the charter, assembling the team, arranging logistics, and conducting background research. These activities align with the "Plan" phase in PDCA.

- **Holding the team-based event,** including mapping the current process, designing a new process, implementing changes to improve the process, and developing an implementation plan for remaining improvements. These activities align with the "Plan" and "Do" phases in PDCA.
- **Following up from the event** to implement the new process and implementation plan, verify and evaluate results including at 30-, 60-, and 90-day report-out meetings, and sustain and share project successes. These activities align with the "Do," "Check," and "Act" phases in PDCA.

Figure 2: Key Components of a Rapid Improvement Event



This Guide builds from the Lean in Government Starter Kit discussion of follow-up and implementation.

Why Focus on Implementation?

Implementation sounds simple, but lack of sufficient follow through can be a key reason for failure of Lean projects. Three reasons why follow-up is critical to the success of Lean projects include:

1. Without follow-up, a Lean effort may result only in *plans for improvement,* not actual results. An implementation plan or new process design does not mean much if it is not acted upon.
2. Without follow-up, any process changes made during and following an event or project meetings (e.g., changes to the organization of a work area in a 5S event) will be at risk of backsliding. The tendency will be for things to go back to the way they always have been.
3. Without follow-up, you and others may miss opportunities for additional improvements to the target process or other processes. Lean follow-up communications can help raise awareness about Lean and encourage greater success.

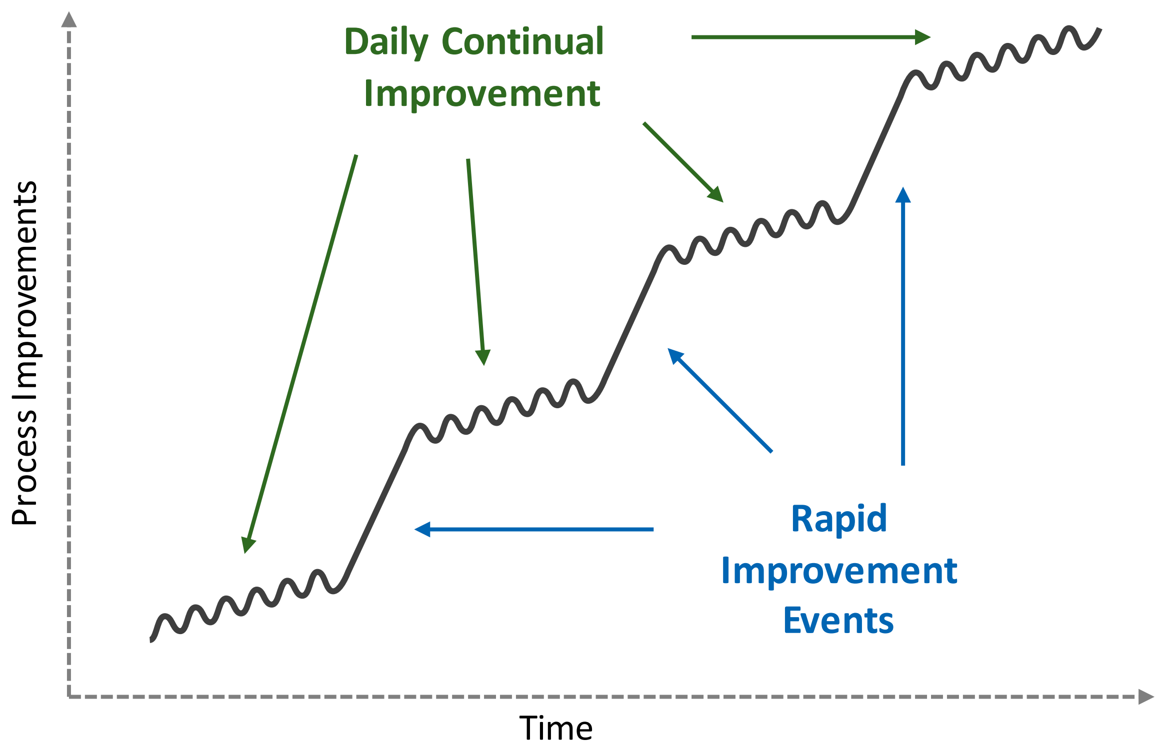
KEY FOLLOW-UP ACTIVITIES AFTER LEAN PROJECTS

The implementation team leader and project team should coordinate the following key follow-up actions after Lean projects with oversight by the project sponsor.

- Complete action items in the implementation plan.
- Conduct training and outreach on the new process.
- Measure and report on key performance indicators to compare process performance to targets.
- Evaluate the effects of process changes, and identify countermeasures to address any issues.
- Standardize and share successful practices.

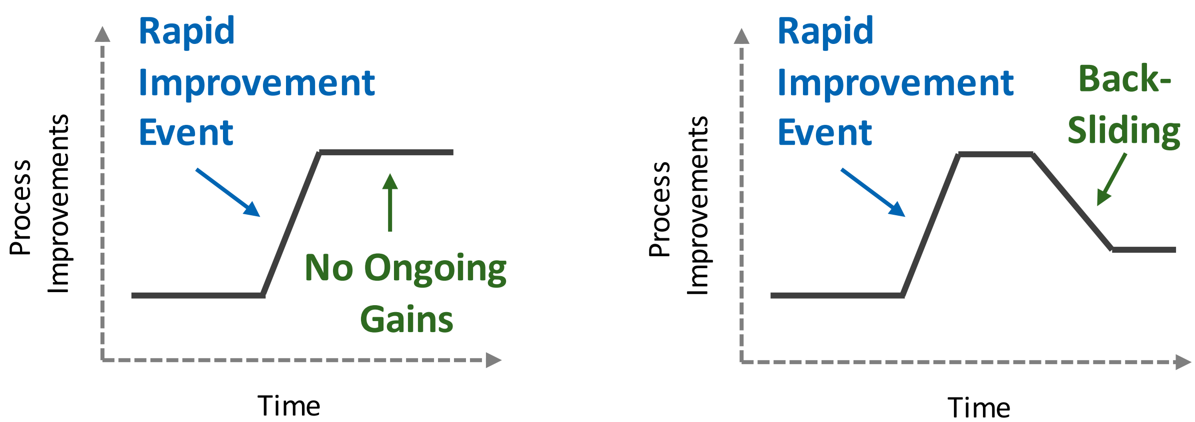
Ideally, your organization will periodically conduct targeted process-improvement projects, such as rapid improvement events, to address pressing problems, and will develop a culture of continual improvement using the Plan-Do-Check-Act cycle in which everyone is looking for ways to make efficiency or quality gains in their day-to-day work. Lean projects can reduce processing times and process steps by 50 percent or more. Regular improvement activities can also add up over time to generate significant gains. In this best-case scenario, the improvement curve might look something like the following diagram.

Figure 3: Process Improvement Curve over Time with Rapid Improvement Events and Ongoing Improvements



Unfortunately, Lean implementation does not always meet this picture in practice, and lack of sufficient attention to follow-up is one key reason. As illustrated in Figure 4, unless you dedicate adequate attention to follow-up and implementation, your process may backslide or you may shortchange additional improvements.

Figure 4: Common Problems with Lean Event Implementation: Lack of Continued Improvement and Backsliding



What to Expect in Lean Implementation

In the Implementation Step-by-Step Guide that follows this chapter, we provide guidance and resources for each of the following critical areas for implementation to make follow-up easier and more effective.

A. **Set Up for Success.** Successful follow-up starts with effective planning, preparation, and execution of the Lean project. Keep implementation in mind as you scope and set goals for your project, and make sure that leadership is involved from the start. Develop clear, realistic goals and objectives for your project, and start or even complete implementation during a rapid improvement event or project meetings. Ensure that your project involves process stakeholders and achieves buy-in from staff and managers. Setting up for success is part of the “Plan” phase of the PDCA framework.

B. **Develop an Implementation Plan.** When your project team identifies a new “future state” process design, the team should develop an implementation plan for how to put it into practice. A well-designed implementation plan—with clear assignments for who will implement action items, by when, and lines of accountability—will facilitate effective follow-up. Developing an implementation plan is part of the “Do” phase of the PDCA framework.

C. **Complete and Track Actions.** Making sure that follow-up activities happen and generate desired results requires accountability. This involves: (1) leadership that expects results and removes barriers to achieve them; (2) a team leader who makes sure staff execute actions on time; and (3) a structured process for tracking progress and addressing implementation challenges. Completing and tracking actions also represent the “Do” phase of the PDCA framework.

D. **Measure and Evaluate Results.** Not only will your project team need to carry out the actions in the implementation plan, it will also need to measure and evaluate how those actions change the performance of the process. At regular intervals, compare the performance of the process on key performance indicators to baseline data before your team made improvements. Measuring and evaluating results is central to the “Check” phase of the PDCA framework.

E. **Standardize and Socialize Process Changes.** To put the new process your team designed into place, your team will need to communicate the new process to those involved in the process, both inside and outside the agency. This can involve developing simplified process maps, refining standard work, and training employees on new procedures. To sustain the improvements over time, you'll need to periodically evaluate your efforts and identify when to reinforce process changes and/or look for new improvement opportunities. Standardizing and socializing process changes is part of the "Act" phase of the PDCA framework.

F. **Celebrate and Share Success.** It is important to highlight the successes that your agency has achieved with Lean and share your project experience so others can learn from it. Develop a presentation and visually appealing documentation of your project to help tell your story, and acknowledge your project team's work. Identify what process changes could be applied elsewhere and share those approaches with others. Celebrating and sharing successes is also part of the "Act" phase.

G. **Manage Change and Avoid Pitfalls.** Many people involved in the process (especially those who did not participate in on the project team or in the event) will resist change, and the natural tendency will be to go back to easier, business-as-usual practices. To combat this tendency, strategies you can take to manage change and avoid follow-up pitfalls include: starting follow-up early, effectively managing expectations, creating capacity to carry out follow-up, engaging your sponsor and employees, communicating frequently, and exhibiting patience in the improvement effort. Managing change and avoiding pitfalls is a critical part of sustaining gains in the "Act" phase of the PDCA framework.

Table 1. Lean Implementation Steps and the PDCA Problem-Solving Framework

PDCA PHASE	IMPLEMENTATION STEP
Plan	Set Up for Success
Do	Develop an Implementation Plan
	Complete and Track Actions
Check	Measure and Evaluate Results
Act	Standardize and Socialize Process Changes
	Celebrate and Share Successes
	Manage Change and Avoid Pitfalls

Follow-up is often simple in concept, but hard in practice. The box below summarizes key actions in the Implementation Step-by-Step Guide that follows this chapter.

KEY IMPLEMENTATION ACTIONS

Scoping and Planning Improvement Efforts (see Set Up for Success):

- ✓ Engage Leadership throughout your project, ensuring that sponsors help develop the project charter, attend the kick-off, report-out, and management briefings in the event, and oversee follow-up activities
- ✓ Set clear goals and objectives for your Lean project
- ✓ Schedule 30-, 60-, and 90-day follow-up meetings

During Improvement Events or Project Meetings (see Develop an Implementation Plan):

- ✓ Accomplish as much implementation as you can during the event or project meetings
- ✓ Create an implementation plan that clearly identifies follow-up actions and responsibilities
- ✓ Schedule implementation team check-in meetings and project progress meetings with the project sponsor

After Developing an Implementation Plan (see Complete and Track Actions, Measure and Evaluate Results, Standardize and Socialize Process Changes, and Celebrate and Share Success):

- ✓ Hold weekly meetings to make progress on implementation, and monthly meetings to report to management
- ✓ Track follow-up actions using color-coding in your implementation plan
- ✓ Track metrics to measure results
- ✓ Communicate process changes to internal staff and external parties
- ✓ Celebrate the team's success and identify solutions that could be shared elsewhere

Implementation Step-By-Step Guide

A. Set Up for Success

Your Lean team can do several things early on in projects to make Lean implementation easier and more successful. These include establishing key roles for implementation, setting clear goals and expectations, and focusing on implementation during events and project meetings (thereby creating less need for follow-up!).

Steps to Set Up for Success

- **Step 1:** Establish Key Roles for Lean Implementation
- **Step 2:** Set Clear Goals and Expectations for Your Lean Project
- **Step 3:** Maximize Implementation During Lean Events

Step 1: Establish Key Roles for Lean Implementation

There are four key roles for guiding Lean projects through their successful completion:

- **Sponsor:** The sponsor is the executive who leads the charge for process improvement and supports the Lean project from start to finish. Sponsors both enable Lean teams to be successful and hold them accountable to produce results. Without effective leadership, Lean often fails.
- **Facilitator:** In a rapid improvement event, the facilitator works with the team to properly scope the Lean project, and facilitates discussions during the event to ensure the team understands the current process, identifies and implements process changes to address root causes of problems, and develops an implementation plan for follow-up after the event.
- **Implementation Team Leader:** Under oversight of the sponsor, the team leader manages day-to-day implementation of process changes after the Lean event, or throughout the improvement effort if the project did not involve a rapid improvement event. The team leader does not do all the follow-up, but organizes others involved to make sure it gets done.
- **Team Member:** Team members serve as foot soldiers working with the implementation team leader to improve the process. Team members participate in project team meetings and take on assigned actions and tracking duties to implement process changes.

Identify your project's sponsor and select a facilitator early in the planning and scoping phase, since the sponsor and facilitator have key roles in developing the project charter. Often, the team leader for the Lean event or project will continue as the team leader during implementation, but you may want to designate someone else instead and/or identify one or two others to assist the team lead. Confirm responsibilities for managing implementation when you develop your implementation plan (typically during an event). Team member participation involves a longer-term commitment than the duration of the rapid improvement event or once solutions are identified. Team members are critical to carrying out action items to put the new process in place.

Table 2: Lean Implementation Roles

Role	Activities
Sponsor	*Planning/Scoping Phase:* • Help develop the Lean project charter, including identifying goals and objectives, setting the scope, and recommending participants. • Authorize the Lean project. • Approve staff time for planning, Lean event (if applicable), and follow-up. • Communicate project direction. *Lean Event or Other Process Improvement Activities:* • Participate and provide input at the project kick-off and final report-out presentation. • Attend management briefings during the event (e.g., daily) *OR* participate fully in the event. • Reiterate project goals/objectives and encourage the team to succeed. • If your project is not a rapid improvement event, participate in management briefings and major project team meetings throughout the improvement effort. *Follow-Up Phase:* • Keep the team accountable for results and implementation of process changes (e.g., where appropriate, engage with management of participants that have a significant role in implementation). • Demonstrate commitment to full implementation and keep the team motivated • Participate in routine check-ins with the Implementation Team Leader (e.g., weekly or bi-weekly 15-minute stand-up meetings). • Attend major follow-up meetings (i.e., 30-day, 60-day, 90-day, 6-month, 1-year, etc.) to review process performance data and discuss project progress with the project team. • Help make implementation successful by removing barriers when needed (e.g., reducing competing demands on staff time).

Facilitator	*Planning/Scoping Phase:*
	• Facilitate the pre-event scoping meeting or meetings.
	• Work with the team to develop the Lean project charter, select the team, and prepare for the event.
	
	Lean Event or Other Process Improvement Activities:
	• Facilitate the Lean event, including working with the team to:
	  o Map the current and desired future state of the process.
	  o Identify and, if possible, implement process changes (e.g., develop standard work).
	  o Develop an implementation plan for follow-up after the event.
	  o Prepare for the event report-out presentation.
	• If your project is not a rapid improvement event, facilitate project meetings to guide the team to analyze and improve the process using Lean or other methods.
	
	Follow-Up Phase:
	• If requested, facilitate major follow-up meetings.

Role	Activities
Implementation Team Leader	*Lean Event or Other Process Improvement Activities:* • Participate in the Lean event and the development of the implementation plan. • If your project is not a rapid improvement event, participate in project team meetings to make changes to improve the process and organize follow-up items that cannot be implemented immediately into an implementation plan. *Follow-Up Phase:* • Organize and facilitate weekly project stand-up meetings or other check-ins to make sure the team is on track with follow-up items. • Participate in routine check-ins with the project sponsor (e.g., weekly or bi-weekly 15-minute stand-up meetings). • Encourage the team to make progress with implementation and help troubleshoot follow-up when needed (elevate issues to the sponsor or other senior managers if needed). • Track progress with implementation, and keep the implementation plan or other action-tracking tool up to date. • Organize the team for major follow-up meetings with management. • Ensure that data on key process performance metrics are collected at regular intervals, reported to the project sponsor and other key managers, and shared with agency-wide results tracking systems, such as EPA's Lean Results Tracking System.
Team Member	*Lean Event or Other Process Improvement Activities:* • Participate in the Lean event and the development of the implementation plan. • If your project is not a rapid improvement event, participate in ongoing efforts to identify and implement improvements, including project team meetings. *Follow-Up Phase:* • Participate in project team meetings with the implementation team leader. • Make changes to improve the process by carrying out actions in the implementation plan. • Monitor, evaluate, and communicate the results of process changes, based on assigned duties.

Tips for Identifying Individuals for These Roles

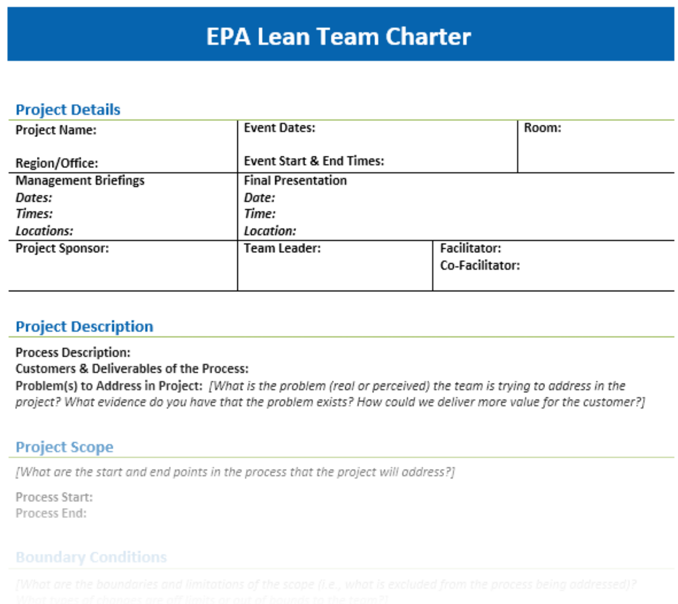
- **Sponsor.** Involve the highest level sponsor you can who will also be able to invest the time to make the project a success, particularly in scoping the project, attending at least portions of the Lean event or other project team meetings and all major follow-up meetings, and holding the team accountable for results.
- **Facilitator.** Selecting a skilled Lean facilitator is critical to successful Lean projects. Choose someone who knows Lean concepts and tools, is familiar with Lean in office or government contexts, has people skills to effectively manage groups, and has experience facilitating successful projects. The Lean in Government Starter Kit has tips for how to select a facilitator.
- **Implementation Team Leader.** Your implementation team leader should be someone from within the process who played an active role in the Lean effort. Select someone with good organization and communication skills, who can help keep the project team on track and the sponsor apprised of progress. Supervisors will likely need to take responsibilities off the plate of the team leader to ensure there is adequate time to support the process-improvement work.

- **Team Members.** Your project team for implementation will often be similar to the original Lean project team, but should focus on individuals needed to execute the implementation plan and monitor progress. Coordinate with appropriate supervisors to make sure that team members understand the time commitment and have the time to participate in improvement activities.

Step 2: Set Clear Goals and Expectations for Your Lean Project

It may not seem like a follow-up strategy, but having clear goals and expectations for Lean projects is essential for success, both for determining how you will improve your process and for implementing the process changes. Your team will develop goals and objectives for your Lean project through a **Lean Project Charter.** This charter will help your team to do the following, among other things:

Figure 5: EPA Lean Team Charter Template


EPA Lean Team Charter

Project Details

Project Name: Region/Office:	Event Dates: Event Start & End Times:	Room:
Management Briefings *Dates:* *Times:* *Locations:*	Final Presentation *Date:* *Time:* *Location:*	
Project Sponsor:	Team Leader:	Facilitator: Co-Facilitator:

Project Description

Process Description:
Customers & Deliverables of the Process:
Problem(s) to Address in Project: *[What is the problem (real or perceived) the team is trying to address in the project? What evidence do you have that the problem exists? How could we deliver more value for the customer?]*

Project Scope

[What are the start and end points in the process that the project will address?]

Process Start:
Process End:

Boundary Conditions

[What are the boundaries and limitations of the scope (i.e., what is excluded from the process being addressed)? What types of changes are off limits or out of bounds to the team?]

- **Clarify the scope of the project, including any boundary conditions for the types of process changes that the project team should consider.** For example, your team may limit the scope of the project to a particular segment or aspect of the process, or you may decide that certain changes (e.g., regulatory changes or capital-intensive IT improvements) will not be considered.

- **Delineate aspirational goals and use metrics to set specific, measurable objectives for your project prior to identifying solutions or holding a rapid improvement event.** Express your objectives in terms of changes you would like to see in key metrics related to your process, setting targets such as a percent reduction in the total lead time for your process. The best objectives are S.M.A.R.T.: specific, measurable, actionable, realistic, and time-bound.

- **Set expectations for pre-work and baseline data collection before the event or kick-off of the improvement effort and follow-up meetings.** Many charters outline the activities that the team will conduct prior to the event or initial project team meetings, including plans for collecting baseline data about the process. The charters also often set the schedule (or tentative schedule) for major follow-up meetings, so that managers and team members can make advance plans.

- **Allow for engagement of senior management in project design.** The facilitator should work closely with the sponsor and team leader to develop a draft charter. The sponsor, facilitator, and team leader all sign and approve the charter, and help to socialize it with the rest of the project team. Having the signatures on the charter empowers the project team to operate within the boundaries of the document, and socializing the charter with leaders and team members prior to launching the improvement effort ensures there is agreement with its contents.

- **Identify participants for the Lean project and any outside support you may need.** The charter identifies the full team who will participate in the Lean event, or otherwise in the effort to identify improvements. For a rapid improvement event, you may want to identify other individuals who may be available to provide "on-call" support during the event. if needed (e.g., to answer questions, provide technical expertise, or make decisions).

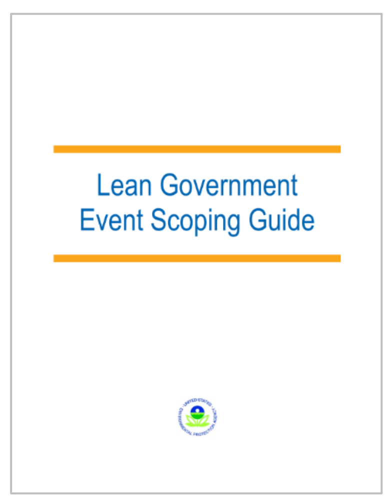
WHAT HAPPENS IF YOU LAUNCH A PROCESS IMPROVEMENT EFFORT WITHOUT DOING ALL THE RIGHT PREP WORK?

Although not ideal, if you have not done everything to set yourself up for success for implementation, not all is lost. Problem solve with your team to identify how you can get back on track. Examples include:

- **Failure to Get Charter Signed by All Parties:** The charter is a critical way to get leadership buy-in on your project. In general, you should not do a project without leadership support. You can use the start of the Lean event, or the first project team meeting, to review, revise, and get additional signatures on the charter, if needed. If you need additional leadership support after designing the future state process, consider getting approval on the implementation plan.
- **Insufficient Current State Data Collected:** You may be able to collect some process performance data during a rapid improvement event if you did not collect data beforehand. If more research is needed to establish a baseline, add a task of collecting baseline data for key metrics to the implementation plan. Provide clear expectations for who should collect data, and when and where to report it.

With a robust, detailed charter that your sponsor and team have agreed upon, you will have a strong foundation for a successful project. You will also want to use the charter development process to make sure the sponsor and Lean project participants understand the steps of Lean implementation, including expectations for their involvement in follow-up activities after the event occurs or improvements have otherwise been identified.

Figure 6: Lean Government Event Scoping Guide



Tips for Setting Clear Goals and Expectations

- **Project sponsors should provide direction as well as motivation for projects.** Your project sponsor should be closely involved in the development of the charter, and then empower your team to find its own solutions within the scope and boundary conditions of the project.
- **Be realistic about the commitment for all project phases.** This tip is especially relevant for rapid improvement events where, despite the name, much of the work often occurs after the event as the team puts the new process in place. Your team can maximize implementation during events to minimize this (see next step), but you should be realistic with

the project sponsor and project team about the ongoing commitment to process improvement.

- **Do not tackle too much with your Lean project.** One of the most common challenges with Lean government projects is the tendency for agencies to conduct process improvement efforts that are too large in scope. This makes it difficult to achieve all of the objectives in a designated timeframe or a rapid improvement event, and complicates follow-up. See EPA's Lean Government Event Scoping Guide for guidance on how to scope a Lean event.

Step 3: Maximize Implementation during Lean Events

Perhaps the most straightforward way to make follow-up easier is to not have to do it in the first place. Traditionally, rapid improvement events, also called kaizen events, focus on implementation during the event. In the spirit of the "rapid improvement" title, a team convenes for a few days to analyze a process, problem solve, and implement process changes. In government contexts, sometimes Lean events focus more on planning process changes, rather than putting those changes into practice. The events can be highly effective in improving communication and understanding, and in developing a roadmap for improvement, but a lot of work needs to be done after the event to make the future state a reality. Examples of the types of implementation tasks that can be completed during events or other project meetings are shown in the box.

COMMON TYPES OF IMPLEMENTATION THAT CAN OCCUR IN LEAN GOVERNMENT EVENTS

- Development of standard work or other standard operating procedures (checklists, simplified process maps, templates, etc.)
- Changes to databases, tools, or other systems (e.g., to clarify instructions, remove unnecessary fields, consolidate forms, etc.)
- Decisions within the control of the team
- Training of staff on the new process
- Stakeholder outreach on the new process

There are several things you can do to shift from "rapid planning events" to "rapid implementation events." While some Lean projects do not hold standalone events, the tips below can be applied to help maximize implementation opportunities during meetings with the project team.

Tips for Maximizing Implementation during Lean Events or Meetings

- **Set expectations with your facilitator and team that you want to implement changes during the event or meetings whenever possible.** Remember, it is better to get something done "quick and dirty" during the event than to leave the entire action for the future – you can always improve it later.
- **Anticipate and plan for implementation needs you may have during the event or scheduled meetings.** As part of your pre-work and planning for the Lean project, you can identify the types of implementation issues that may arise, and then arrange to accommodate those during the event or when the project team meets.
    - For example, training on the new process is a common follow-up step from Lean events. You may wish to invite a broad group of people to the event or project report-out

presentation to begin that training, or to schedule time for training on specific changes during a rapid improvement event.

  - It is also useful to anticipate the kinds of on-call support you may need during the event or throughout the effort, and then have those people available to answer questions or participate in portions of the event or major meetings as needed. This may include decisions from other supervisors or changes to support processes or IT systems. Identify these individuals on your project charter, as discussed above.

- **Allocate sufficient time within the event or project meetings for working on process changes and implementation.** Work with your facilitator to balance time in the rapid improvement event or meetings between understanding the current process and developing a future state, and beginning implementation of those process changes (e.g., developing standard work, such as checklists, for the new process), as well as preparing for and giving the report-out presentation.
- **Collect process performance data during rapid improvement events.** During a Lean event, your project team will review background data your team collected about the process before the event, and estimate anticipated results from process changes. If applicable to your process, your team can also use time during the event to start measuring the effects of any process changes you've made.

Resources

- EPA Lean Leadership Guide
- Lean Team Charter Template
- EPA Lean Government Event Scoping Guide

DOWNLOADABLE RESOURCE:
LEAN TEAM CHARTER TEMPLATE

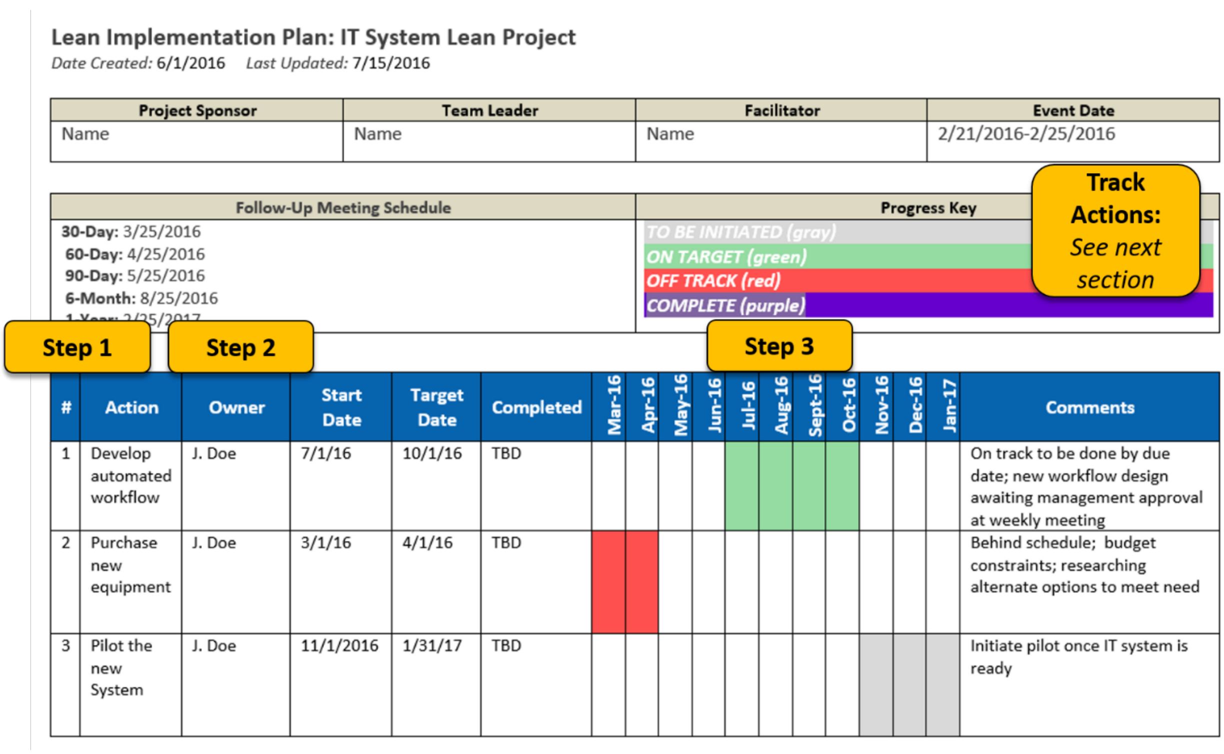
B. Develop an Implementation Plan

What Is an Implementation Plan?

The implementation plan created for a Lean project, often during a rapid improvement event, provides a roadmap to lead the project through completion. For tasks remaining after the event, or following project meetings if the team does not hold an event, the implementation plan assigns a person in charge of each action and a timeline for its completion. Clear ownership for each action is critical to ensuring that all actions identified will be completed on schedule. When full implementation cannot be achieved at a rapid improvement event, **do not walk away from the event without defining the follow-up action, the action owner, and the timeline in your implementation plan.** An example implementation plan is below with the steps to develop it highlighted.

> **STEPS TO DEVELOP AN IMPLEMENTATION PLAN**
>
> - **Step 1:** Determine Action Items
> - **Step 2:** Assign Tasks to an Owner
> - **Step 3:** Establish a Timeline to Complete Actions

Figure 7: Example Implementation Plan with Steps Highlighted



Lean Implementation Plan: IT System Lean Project

Date Created: 6/1/2016 *Last Updated:* 7/15/2016

Project Sponsor	Team Leader	Facilitator	Event Date
Name	Name	Name	2/21/2016-2/25/2016

Follow-Up Meeting Schedule	Progress Key
30-Day: 3/25/2016 **60-Day:** 4/25/2016 **90-Day:** 5/25/2016 **6-Month:** 8/25/2016 **1-Year:** 2/25/2017	*TO BE INITIATED (gray)* *ON TARGET (green)* *OFF TRACK (red)* *COMPLETE (purple)*

#	Action	Owner	Start Date	Target Date	Completed	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sept-16	Oct-16	Nov-16	Dec-16	Jan-17	Comments
1	Develop automated workflow	J. Doe	7/1/16	10/1/16	TBD												On track to be done by due date; new workflow design awaiting management approval at weekly meeting
2	Purchase new equipment	J. Doe	3/1/16	4/1/16	TBD												Behind schedule; budget constraints; researching alternate options to meet need
3	Pilot the new System	J. Doe	11/1/2016	1/31/17	TBD												Initiate pilot once IT system is ready

Step 1: Determine Action Items

In a rapid improvement event, your team brainstorms a set of recommendations for improving the process, prioritizes those ideas, and then designs a new, more streamlined process by mapping the process out on paper or a whiteboard. On the final 1-2 days of the event, your team makes progress on implementation where possible (see the last section on Set Up for Success) and will identify actions to accomplish the remaining high-priority recommendations. You will track these action items in the implementation plan. In many cases, the only follow-up needed for the process changes (e.g., for changing to concurrent instead of sequential reviews) will be communication and training on the new procedures. In other cases, more elaborate actions may be needed that could involve IT systems, coordination with outside agencies, development of guidance materials, or other strategies.

> **"The secret of getting ahead is getting started. The secret of getting started is breaking your complex overwhelming tasks into small manageable tasks, and starting on the first one."**
>
> – *Mark Twain*

Tips for Developing Action Items

- **Keep the "action" in action items.** That is, do not just list items in need of completion, list out what needs to be done to complete the action.
- **Specify the "next action."** When identifying actions, keep tasks manageable by *breaking larger implementation tasks into several actions, with each specifying the next action in sequence,* rather than using one action to encompass the entire task.
    - For example, the action, "develop an online database to manage permit applications," could seem overwhelming if assigned to one individual; however, an action such as, "set up a meeting with IT staff to outline system requirements for an online database and discuss next steps" could be easily accomplished.
- **Identify the outcome.** Clearly identify the specific outcome of each action, such as a deliverable or product to produce (i.e., a report or website page).

EXAMPLE ACTION ITEMS

- Transfer current state/future state flowcharts into an electronic format
- Develop a standard work checklist that lists the new steps in the review process
- Set up a training on a new IT program
- Research new equipment to purchase
- Collect data on key metrics to measure and report on process performance

Step 2: Assign Tasks to an Owner

The **owner** is the person responsible for completing an action. Actions can be led by one individual or a small group. A group or committee could also be responsible for several related actions. Each person within the group should know his or her role.

Tips for Assigning Tasks

- **Consider availability and likelihood of success.** Rather than just finding an available person to complete the action, *find the person who is best equipped to succeed.* Where possible, shift priorities to minimize workload conflicts. Additional guidance on selecting between competing priorities is provided in the "Manage Change and Avoid Pitfalls" section later in this Guide.
- **Identify additional resources needed**. Identify other resources or people that the action owner may require to complete the action. For example, a process change may require a supervisor's signature or necessitate support from the IT department.

Step 3: Establish a Timeframe and Deadline for Completion

Always define a firm timeline for each action and clearly identify a deadline for the completion. Set a rigorous pace for implementation, but be realistic enough to set the team up for success. The next section discusses tracking actions according to these deadlines.

Tips for Assigning Deadlines

> **"The ultimate inspiration is the deadline."**
> – *Nolan Bushnell, Atari Founder*

- **Discuss and address obstacles to immediate implementation**. During the creation of each action, discuss any potential obstacles that could derail efforts to complete the action. For a rapid improvement event, obstacles to implementation within the first 30 days following the event are critical to avoid while momentum and enthusiasm are high. Brainstorm ways to navigate around these obstacles (i.e., identify countermeasures to address the obstacle).
- **Coordinate deadlines with scheduled follow-up meetings**. Follow-up meetings with managers (e.g., monthly the initial months after your project) provide an opportunity to discuss progress, results, and next steps. Determine which tasks, including data collection, should be completed by each major follow-up meeting and establish deadlines based on those timeframes. Clear deadlines are particularly important for process improvement projects that do not hold a rapid improvement event. A series of scheduled meetings can keep the project team on track to develop and implement a new process.
- **Keep a timeline of future actions**. Assign timelines for action items that do not require immediate attention to keep these actions on the horizon and keep the project team on track for full implementation. The Lean Project Implementation Plan Template provides a timeline template to visually map out the schedule for each action item (see the Resources below).

Resources

- Lean Project Implementation Plan Template (Word and Excel Formats)

- Lean Expert Karen Martin offers a downloadable implementation plan template on The Karen Martin Group website at http://www.ksmartin.com/downloads.
- The Minnesota Office of Continuous Improvement also has a downloadable implementation plan template at http://mn.gov/admin/continuous-improvement/resources/projects/toolbox/ (Scroll down to find "Action Plan Template" under Facilitator tools).

DOWNLOADABLE RESOURCE:
LEAN PROJECT IMPLEMENTATION PLAN TEMPLATE
(WORD AND EXCEL FORMATS)

C. Complete and Track Actions

After you have created your implementation plan, it is very important to carry out the actions and track the progress of your team's efforts. The implementation team leader is responsible for making sure the team makes progress and is accountable to the project sponsor.

STEPS TO COMPLETE AND TRACK ACTIONS

- **Step 1:** Coordinate with Team Members to Complete Action Items
- **Step 2:** Track Progress of Implementation Actions

Step 1: Coordinate with Team Members to Complete Action Items

The implementation team leader should keep up communication with team members in order to maintain momentum and to help ensure that if any obstacles come to light, action items stay on track. If the team leader cannot resolve these issues, the sponsor should be involved to help "unstick" issues. Follow these tips to keep the team on track with implementation.

Tips for Coordinating with Team Members

- **Conduct weekly implementation check-in meetings.** The implementation team lead should set up brief weekly meetings with the project team to check in on progress with implementation, and meet regularly with the project sponsor. The meetings can be as short as five or ten minutes, and even held standing up. If an individual's tasks are not getting completed, document issues and identify countermeasures to address those issues. Countermeasures could include freeing the individual's time for the work, or finding alternate ways to complete the actions. The check-in meetings should occur until all actions are complete. These quick check-ins can play a major role in reinforcing a collaborative, team-centered organizational culture.
- **Remind participants to complete their action items.** Implementation of follow-up actions is easy to forget as participants return to their daily activities. The implementation team leader is responsible for reminding others to complete their actions. Send email reminders about action teams and project progress to team members between check-in meetings. People will be more inspired to conduct their actions if they are held accountable.
- **Post action lists on a website or in a shared place onsite.** Posting implementation plans or action lists so team members can easily view them provides greater transparency and accountability for completing tasks. A collaboration website can be a useful place to track actions and post relevant post-event information, especially if some team members are off-site. Send reminders when there are significant updates so that people remember to check the site.
- **Conduct monthly report-out meetings.** Most organizations conduct 30-, 60-, and 90-day report-out meetings to supplement weekly team meetings. Six- and 12-month report-out meetings also help ensure that results are sustained and identify the need for future projects. These major follow-up meetings, sometimes run by the event faciliator, are typically more formal than the weekly check-ins (e.g., involve more managers) and provide an opportunity to report on key metrics, think strategically about the new process, and drive ongoing improvement.

    - Confirm the dates for these major follow-up meetings with your team when you develop your implementation plan. Then your full team will know when they will need to report back to management on their progress with implementation.

- **Walk the process**. If feasible, project sponsors and implementation team leaders should periodically walk around the office following the flow of the process. These should not be considered audits, but rather learning, problem-solving, and encouragement opportunities. Checking in with staff sends a message that their work, and the changes made and planned through the Lean project, are important. These interactions can also provide real-time feedback on process performance, allowing for quick troubleshooting where needed.

Step 2: Track Progress of Implementation Actions

Tracking the progress of each action will keep implementation on schedule by identifying what items are moving forward, and which process changes have stalled. The implementation plan your team created will serve as an effective system for keeping the team organized and ensuring that items are neither postponed nor forgotten. Follow these tips to ensure that the "owner" that has taken responsibility for each action in the implementation plan is proactive and completes these actions in a timely manner.

Tips for Tracking Implementation Progress

- **Use standard tags or labels to identify not started, on target, off track, or completed actions**. The implementation team leader and project team can refer to these tags to quickly assess the status of implementation. Provide additional details on actions' status in a separate notes column in the implementation plan.

- **Use color codes on the implementation plan to quickly assess status.** Color coding is particularly helpful when there are numerous open actions. For example, EPA's Implementation Plan Template includes the following four color codes:
    - **To Be Initiated (Gray):** Indicates an action that the team is scheduled to begin in the future.
    - **On Target (Green):** Identifies an action that is progressing according to schedule.
    - **Off Track (Red):** These actions are behind schedule and in need of intervention to get back on track.
    - **Complete (Purple):** Indicates an action that has been fully executed.

Figure 8: Example color coding system to note progress on action items

To Be Initiated
On Target
Off Track
Complete

Resources

- The Lean Enterprise Institute has resources on how to conduct process walks. See, for example, John Shook, "How to Go to the Gemba: Go See, Ask Why, Show Respect," 21 June 2011, http://www.lean.org/shook/DisplayObject.cfm?o=1843.
- See the downloadable Lean Project Implementation Plan Template for an example color-coded action tracking system.

DOWNLOADABLE RESOURCE:

LEAN PROJECT IMPLEMENTATION PLAN TEMPLATE
(WORD AND EXCEL FORMATS)

D. Measure and Evaluate Results

Carefully track process metrics to assess the performance of your new process, compare that performance to your targets, and make necessary adjustments to sustain or improve results. By monitoring progress after the event, you can ensure that your team achieves the project objectives and that these changes make a lasting positive impact.

STEPS TO MEASURE AND EVALUATE RESULTS

- **Step 1:** Measure Results Using Metrics
- **Step 2:** Compare Actual Performance to Targets

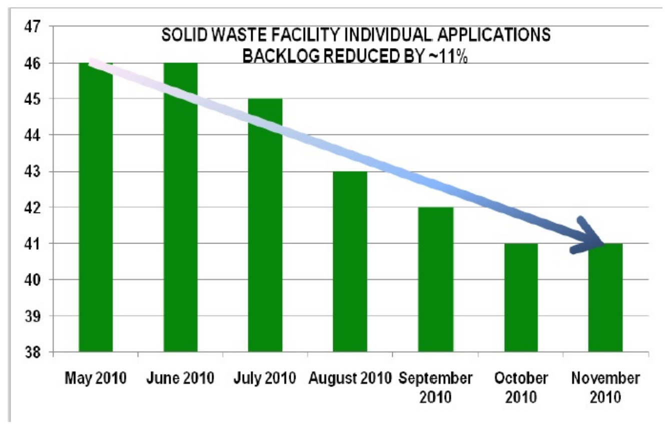
Step 1: Measure Results Using Metrics

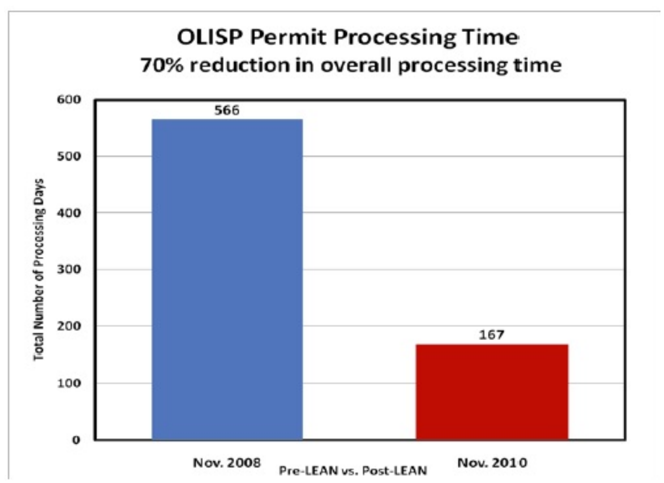
Follow these tips to measure the impacts of your implementation efforts.

Tips for Measuring Results Using Metrics

- **Make sure you have clear assignments for data collection and reporting.** Your implementation plan should clearly identify who will be collecting data on key process metrics, when those data will be collected, and when those data will need to be reported to leadership and the reporting systems. If you missed this responsibility in your initial implementation plan, add it in during your first team meeting.
- **Collect and report data on process performance at regular intervals.** Typically, you will need baseline data on key metrics (such as lead time, processing time, process steps) before making process improvements – collect this information before and/or during rapid improvement events, if possible. You will also want to collect data on how your process performs over time. Establish timeframes for data collection, such as before each monthly follow-up meeting with management. Report

Figure 9: Connecticut Department of Energy and Environmental Protection Lean Project Results Graphs





Source: Connecticut Department of Energy and Environmental Protection, Permitting Open House Poster, Lean Celebration 2010, www.ct.gov/deep/lib/deep/lean/lean_open_house_2010_Permitting_poster.pdf.

changes in key performance metrics at major follow-up meetings and through internal tracking systems.

- EPA asks Team Leaders to report anticipated and/or actual results from Lean projects periodically to demonstrate progress and show results after improvements are implemented. These data are reported in **EPA's LEANTrack system**, and then EPA prepares a graphical summary of all project results.

Step 2: Compare Actual Performance to Targets

As part of the "check" stage of Plan-Do-Check-Act, it is important to validate the results by evaluating how process changes are affecting actual performance, and comparing that to the objectives your team set for the Lean project.

Tips for Comparing Actual Performance to Targets

- **Compare the actual performance of your process to the desired future state.** Set up a simple table (such as the example below) to compare the performance of your process on key metrics before the project, the anticipated results of the process changes, and the actual results your team has achieved thus far. You also could compare actual results to both the projected future state targets *and* more ambitious "ideal state" targets, to keep an eye on longer term objectives.

Table 3: Example Lean Project Results Confirmation Table

Metric	Current State (Before Event)	Projected Future State	Projected % Change	Actual Results*	Actual % Change
Lead Time	80 days	30 days	↓63%	40 days	↓50%
Processing Time	120 hours	70 hours	↓42%	90 hours	↓25%
Process Steps	50	30	↓40%	30	↓40%
Customer Satisfaction (1-5 scale)	2.5	4.5	↑80%	4	↑60%

*Last Measured: 6/15/2016 by Jane Smith
Measurement frequency: Monthly for time and process-step metrics; every 6 months for customer satisfaction survey

- **Use visual displays or dashboards**. Visual displays of process data can show progress towards objectives and motivate additional improvements. Many organizations use a whiteboard or color-coded wall chart to track how the process is performing on key metrics. It is important to keep displays simple, so they are easy to understand and do not take much time to update.
- **Discuss process performance at the monthly report-out meetings.** A key focus of the 30-, 60-, and 90-day report-out meetings is to assess the post-event performance of the process and to make adjustments to sustain or improve results. At these times, your project team regroups and steps back from day-to-day activities to report to leadership on progress, results, and next steps.
- **Validate results over time.** Validating your data measures the quality and stability of your results since the process has been fully implemented. Depending on the frequency of your

process, you may want to validate the results after you've collected data for 6 months, or after the first full year to assess whether the improvements have been sustained. Some organizations may consider inviting a third party to examine the accuracy of the results.

Resources

- EPA Lean Government Metrics Guide
- Lean Project Metrics Checklist
- Lean Project Performance Tracking Template

DOWNLOADABLE RESOURCES:

LEAN PROJECT METRICS CHECKLIST

LEAN PROJECT PERFORMANCE TRACKING TEMPLATE

E. Standardize and Socialize Process Changes

Documenting the new process and communicating process changes to staff working within the process and external parties affected by the process is a critical component of Lean implementation. There are three steps for communicating process changes: documenting the new process, refining standard work for the process, and training people on new procedures and tools.

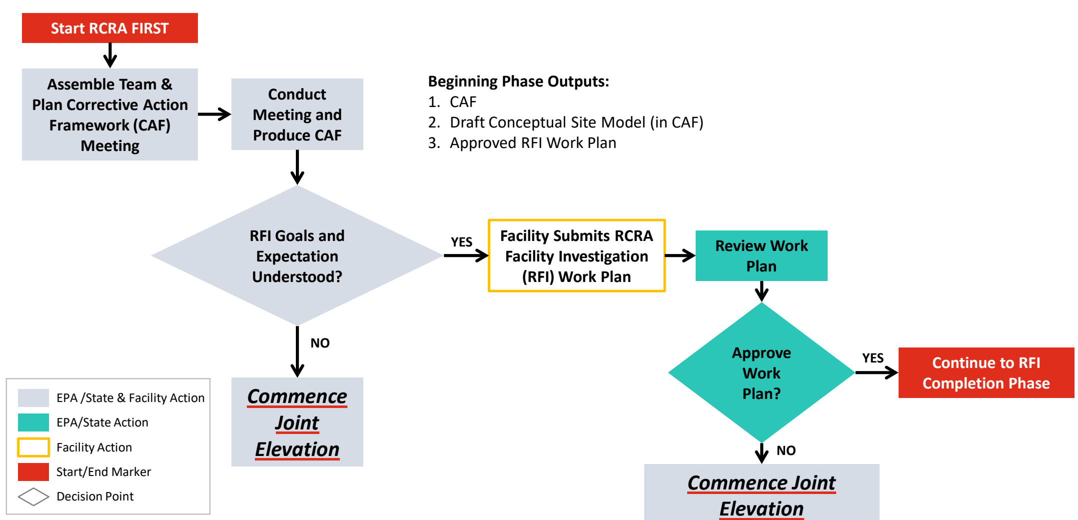
STEPS TO STANDARDIZE AND SOCIALIZE PROCESS CHANGES

- **Step 1:** Document the New Process
- **Step 2:** Refine Standard Work Procedures
- **Step 3:** Train Participants in the New Process

Step 1: Document the New Process

To put the new process your team developed in a Lean project into place, you will need to document the new process so that others can understand it. Process mapping during a rapid improvement event is both an art project and an analytic exercise, as your team fashions a new, improved process out of post-it notes and butcher paper (or draws it on a whiteboard). After the event, consider how you can formalize the future state process map into a concise, visual tool that can easily be printed, shared, and understood. Software tools can also help you create an electronic version of your process map.

Figure 10: Resource Conservation and Recovery Act (RCRA) Facility Investigation New Process Map

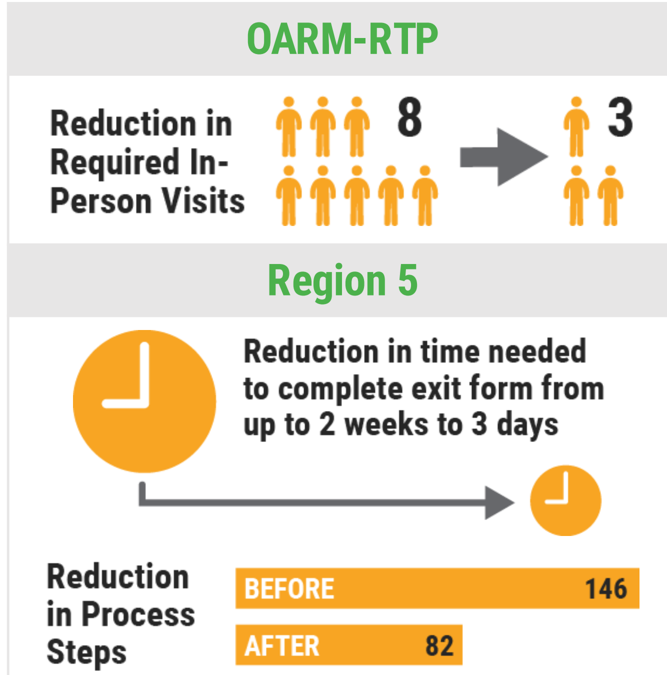


Tips for Documenting the New Process

- **Use readily available software tools to create an electronic rendering of the new process.** Figure 10 above presents a simplified process map from a Resource Conservation and Recovery Act (RCRA) Facility Investigation Lean event held by EPA Regions 3 and 7. It was rendered using Microsoft PowerPoint. The map only includes primary steps critical to understanding the process and what changed. It also identifies stakeholders using color coding.

- **Create an infographic or simplified map to highlight key differences between the old and new processes.** For example, you might illustrate the time it took for different phases of the process before and after the process improvements, without detailing all of the steps within each of those phases.
- **Post the map where it can be seen by those who have a role in the process.** For example, you might post the map of the new process at a workstation, conference room, or Intranet site.

Figure 11: Example Results Infographic from two Employee Exit Process Lean Projects



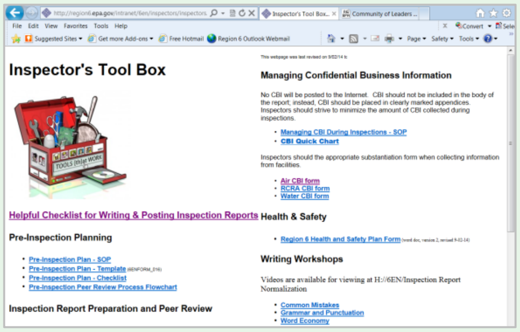
Step 2: Refine Standard Work Procedures

In the Lean project, your team created a new way of doing things—a streamlined process. Standard work (e.g., checklists or templates describing the new process) is a way to put that new approach into practice consistently across your organization.

> EXAMPLES OF STANDARD WORK
>
> - Process step checklist
> - Document templates
> - Form letters
> - Tracking sheet or online tracking tool
> - Labels, color-coding, or other visuals

Standard work can take several forms (see box). If you started creating standard work during a Lean event, you will likely need to refine it after the event. Documenting the improvements made during process improvement efforts as standard work ensures consistency, reduces chances for error, and can prevent backsliding into old habits. It also creates a checkpoint from which the Lean team can measure deviations from the new process and more easily identify where further refinement to the process steps may be needed.

LEAN PROJECT HIGHLIGHT: EPA REGION 6 INSPECTION REPORT NORMALIZATION



EPA Region 6 completed a project to improve the quality and timeliness of inspection reports. To ensure consistency of reporting information across enforcement programs, the Lean project team created an Inspectors Toolkit to package and share templates created at the Lean event to be used by all inspectors.

Tips for Developing Standard Work

- **Make it visual**. Incorporate pictures, color-coding, and/or other visuals to make it easy to execute tasks and check progress.
- **Engage employees**. Involve the employees who perform the process in developing standard work documentation.
- **Train staff**. Integrate standard work procedures and visuals into staff training.
- **Keep it flexible and amendable**. Standard work should not eliminate room for employee creativity, but rather free up staff time to add more value to the process. Never consider standard work permanent; always look for ways to improve procedures.

Step 3: Train Participants in the New Process

Once the new process is documented with process maps and/or standard work, the project team will need to train employees and others on how to integrate the new process into their day-to-day tasks. The first question you may ask is, *who needs training?* The short answer is anyone connected to the process, which may include:

- Employees working within the process who were not involved in the Lean project or Lean event
- Employees working upstream or downstream of the process
- Stakeholders associated with the process, such as unions and other external review parties
- Customers, such as a state or tribe submitting a grant, or a company reporting or applying for a permit through the new process

Along with training those involved in the process on the changes that affect them, you will also need to provide background information on the Lean project, why it is important, and what it means for them. Your messaging for employees will be different than for stakeholders and customers. Below are separate tips for the two audiences.

Tips for Training Employees

> **"I cannot say whether things will get better if we change; what I can say is they must change if they are to get better."**
> – *Georg C. Lichtenberg*

- **People will process change differently**. While the project team may be enthusiastic about their hard work coming to fruition in the implementation of the new process, not all employees will feel the same level of enthusiasm about things that have been shifted, changed, eliminated, or added.
- **Allay concerns about job security**. Job duties may change for some employees as the new process is implemented. Employees are likely to be most concerned with how the Lean project will affect their job duties, so it is important to address these changes directly to alleviate any concerns.
- **Highlight the benefits**. The benefits of the Lean effort may not be immediately apparent to employees not involved in designing the new process. Lean seeks to establish simpler, faster processes that minimize unnecessary steps, rework, and waiting time to leave more time for employees to focus on meaningful, value-added work.
- **Address frustration and present solutions**. Often, Lean improvements provide solutions to frustrations expressed by staff working within the process. Present process changes as solutions rather than an overhaul of existing procedures.
- **Do not hide challenges**. Be clear about any potential negatives and solicit feedback from staff on their ideas for mitigating challenges that could arise. Establishing an outlet for employees to ask questions, voice concerns, and provide feedback is critical to creating lasting change.
- **Use documentation to guide training**. Comprehensive documentation of the new process such as the creation of simplified process maps and standard work can make training staff on the changes easier. Visual displays of standard work where applicable can also reinforce how to perform the new process.

ADDRESSING EMPLOYEE CONCERNS

As you explain the new process to employees, some people may raise concerns. People might feel that their jobs are at risk of being cut, or that they are being inconvenience for no benefit. Organizational leadership can allay potential concerns by taking the following measures:

- Repeatedly reinforce the message that no jobs will be cut
- Tell project participants that their input and role in developing the new process is valuable and appreciated
- Keep the messaging focused on the process, not the people – Lean addresses deficiencies in the process to make everyone's performance improve

Tips for Training and Outreach for Stakeholders and Customers

Stakeholders and customers involved in the process will also need to know how their role has changed or will change, and training these parties will help mitigate bottlenecks to improvements. For example, a new permit review process that seeks to reduce the number of incomplete permit applications upon submission relies on external parties submitting complete applications to start the review process. Your team may need to train stakeholders on how to complete an application to meet submission requirements. Targeted outreach to stakeholders during or following a Lean project is also common when process improvements emphasize enhanced communication and engagement between outside stakeholders and agency staff, such as increasing opportunities for state or tribal engagement in a process.

For stakeholders and customers, training and outreach should emphasize the following:

- **Revised process timelines**, especially timelines for outside stakeholder review or engagement periods
- **Updates to forms or templates** used externally (e.g., specific information that needs to be collected, and forms that will reach stakeholders)
- **Changes in submission procedures** (e.g., a switch from a paper submission process to an electronic submission process)
- **Where to get what they need** to conduct the new process, and what new types of information will be needed, and how to deliver it to customers and stakeholders

Resources

- *iSix Sigma*, "Practical Guide to Creating Better Looking Process Maps": http://www.isixsigma.com/tools-templates/process-mapping/practical-guide-creating-better-looking-process-maps/
- Case studies featuring standard work and communications best practices:
    - EPA Region 7 Clean Air Act State Implementation Plan (SIP) Kaizen Event Case Study
    - EPA Region 10 New Personnel Workstation Setup Process Lean Event Case Study
- The Resource Conservation and Recovery Act Facility Investigation Remedy Selection Track Toolbox for Corrective Action (find examples of simplified process maps on pages 7, 9, and 11; find examples of standard work in Appendix A, starting on page 28)

F. Celebrate and Share Success

An important aspect of follow-up from Lean projects is recognizing the successes of your project team, sharing successful results and transferable strategies with others, and sustaining the motivation among your team to continue improving.

STEPS TO CELEBRATE AND SHARE SUCCESS

- **Step 1:** Recognize the Lean Project Team for Their Work
- **Step 2:** Celebrate and Broadcast the Success of Your Lean Project
- **Step 3:** Identify What Lean Solutions You May Want to Share Elsewhere
- **Step 4:** Share Information and Transferable Solutions with Others

Step 1: Recognize the Lean Project Team for Their Work

At the end of a Lean event, your project team has spent up to 4-5 days (plus pre-event prep work) taking a close look at a process, analyzing and prioritizing process changes to improve it, beginning implementation of those changes, and developing an implementation plan to achieve an improved future state process. That's a lot of work! Even if you did not hold a Lean event, your team likely put a significant amount of time and energy into the project. To recognize your team for their work, and keep them motivated for continuing improvements after the event or project meetings, project sponsors and other leaders can take the following actions:

- **Encourage the Project Sponsor and other managers to attend a management briefing or event report-out presentation.** This can send a powerful signal to the team about the importance of the project and encourage knowledge sharing among your agency.
  - The team may also use the briefing or report-out presentation to test some of the process changes with managers. To avoid situations where key managers reject the team's ideas during the report-out, consider inviting your project sponsor and/or other key supervisors to key project meetings or short, daily management briefings during the rapid improvement event to avoid surprises later on.
- **Provide Lean project participants with a certificate or award recognizing their work in the event or project.** Having something tangible to recognize their participation in a Lean project can be helpful for motivating employees.
  - Success stories, posters, newsletters, blog posts, or other communications (see next step) that highlight the team's work also can be motivating. Individuals feel more acknowledged when the materials include a team photo and/or list participants.

Figure 12: An Example of a Certificate of Lean Accomplishment

- **Acknowledge the Lean team's work in meetings or other settings.** Leaders have an important role in encouraging process improvement in their agencies, and acknowledging the work of the Lean project team in meetings can help not only motivate the team to deliver results but also encourage others to consider their own improvement efforts.

- Note that timeliness is important for recognition of employees, so do not wait too long after the Lean project or event finishes before individually and/or publicly recognizing the team's work.

Step 2: Celebrate and Broadcast the Success of Your Lean Project

As you implement process changes, it is useful to not only track the results of the changes (see Section D above) but also to share those results within and outside your agency. The reasons for this vary (see box) and include supporting improvement across your agency, showcasing results, and disseminating best practices.

Fundamentally, this type of communication involves describing the "story" of your Lean project and its results, and then sharing it with others. You probably will want to use at least two formats for sharing information about your project:

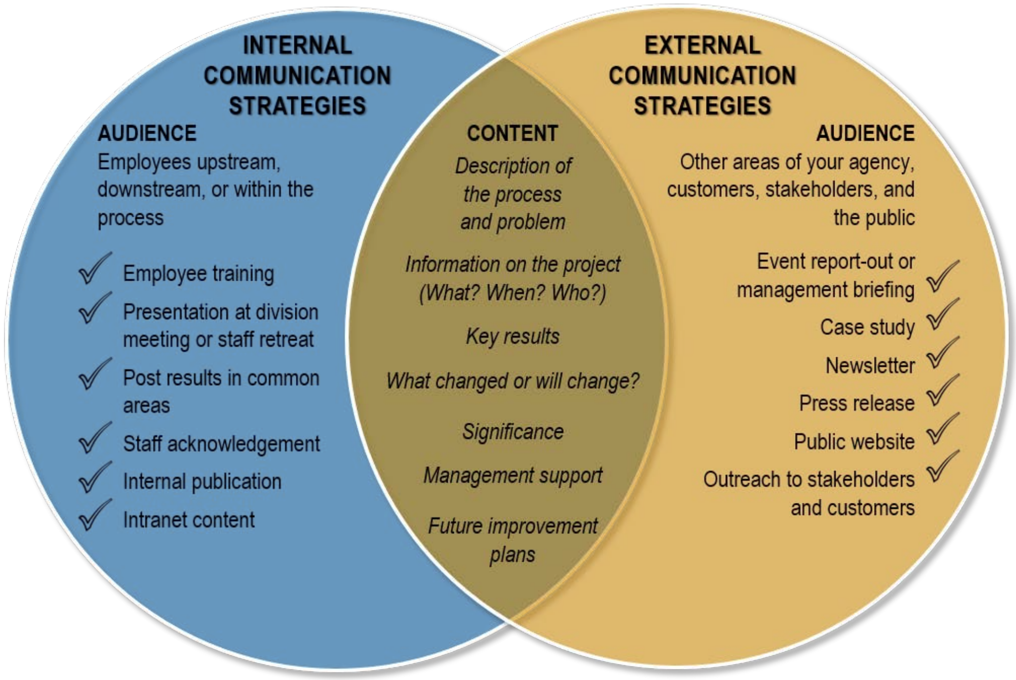
- **a presentation** that your team could use to present highlights of the project and its results to other audiences inside or outside your agency
- **a stand-alone summary of the project** that could be understood without additional explanation in person (This could be a poster, a case study, a success story blurb, blog post, newsletter article, a video, or other written/visual description of the project.)

KEY REASONS FOR LEAN PROJECT COMMUNICATIONS

- **Raise awareness** about Lean to other divisions/offices
- **Showcase results** to management and customers
- **Inform** customers and stakeholders of product or service changes
- **Share lessons** learned and solicit feedback
- **Create accountability** to the project goals and implementation
- **Celebrate success** and foster an environment for continual improvement
- **Share transferable solutions** with others in your agency who might be able to use them

Although you will want to tailor communications, particularly presentations, to different audiences, there are many similarities between the messages you will want to convey to external audiences and those you will use for managers and staff from your agency. Figure 13 below shows the overlap of internal and external communications in terms of messages about the Lean project, and the various means of communicating the Lean project story and results to those audiences.

Figure 13: Key Lean Project Communication Audiences, Messages, and Methods



For your communications activities, consider developing a simple communications plan (such as Table 4 below) to outline key audiences you plan to reach, the purpose and content of your communications, the format and timing of the communications, and who is responsible.

Table 4: Communications Plan Example

Audience	Purpose	Key Topics	Format	Target Date	Person Responsible	Notes
Staff	Train staff on new process	• Benefits/ Expected Results • New procedures and forms	2-hour meeting	X/XX/XXXX	Team Leader	
Senior Executives	Update on project results	• Project scope and results	Update at regular monthly meeting	X/XX/XXXX	Project Sponsor	
Public	Share benefits of Lean project	• Project scope, key process changes, and results	Case study	X/XX/XXXX	Team member (assigned)	
Customer	Explain new process	• Why agency changed process / benefits of new process • New forms/procedures relevant to customer	Website updates and FAQ document	X/XX/XXXX	Team member (assigned)	
Etc.						

Strategies for Communicating Your Lean Activities and Results to Others

- **Presentations:** Develop a presentation for broader audiences based on the event report-out presentation or a briefing your team has provided for management or staff. Present project highlights and results at a department or division meeting, and at meetings with co-regulators or stakeholders.
- **Case Studies and Posters:** Create a case study, success story blurb, and/or poster describing the goals, process changes, and results from your event. Include photos or other graphics to make it visually appealing. The Lean Project Poster Template can help you create a poster to share with others.
- **Newsletters and Blogs:** Write an article for an internal newsletter, a blog for your agency's website, and/or public newsletter that outlines your Lean activities. Several state agencies, including Ohio and Minnesota, publish a Lean newsletter summarizing recent and upcoming Lean activities (see Figure 13).
- **Bulletin Boards and Display Areas:** Post project information and results on bulletin boards, closed-circuit LCD monitors, and/or exhibit areas in your agency's lobby or common spaces.
- **Acknowledgment and Awards:** Acknowledge Lean project results or activity at a staff meeting or at an agency awards ceremony (as discussed in Step 1 above).
- **Intranet or Shared Repository:** Post information, project materials, and photos of the Lean event, as well as contact information, on your agency's Intranet, shared server, or other repository of project examples.

Figure 14. Minnesota's Monthly Continuous Improvement Newsletter, CI Circular

The CI Circular

Continuous Improvement · Improving Minnesota Government

December 2014

Governor's Awards Recognize State Teams for Achievements Improving Government

On Tuesday, December 9, the 2014 recipients of the Governor's Continuous Improvement (CI) Awards were unveiled. This year 33 projects across state government were nominated, reflecting a strong year for Minnesota's state agencies. Seven agency teams were ultimately chosen to receive awards.

This year, improvement projects from the Departments of Health, Transportation, Revenue, Natural Resources, Veterans Affairs, Human Rights, Education, and the Minnesota Pollution Control Agency were selected for a diverse set of achievements. A recurring theme in this year's award recipients is pristine customer service.

Inside this issue
Governor's CI Awards
What's the CI Index?
New Flyers Advertise CI
Upcoming Training & Events

Season's Greetings
The CI User Group continues in December with a fun and festive session. Come share in holiday cheer with CI friends around Minnesota!

The Department of Health received a special Agency Achievement Award recognizing multiple impressive projects nominated for the awards. These projects significantly improved procedures for both flu testing and timely birth defect identification, as well as enforcement documents that protect public health. Additionally, another project team implemented more efficient and effective monitoring and evaluation methods for the Statewide Health Improvement Program.

At left, Commissioner of Administration Matt Massman presents the Department of Health with its agency achievement award. At right, state leaders in attendance applaud the winning teams. Photo credit: Scott Andre, Pollution Control Agency. More photos of the 2014 CI Award winners can be found in our Photo Gallery.

Source: Minnesota Continuous Improvement, http://mn.gov/admin/lean/resources/newsletter/

- **Website:** Maintain an attractive, interesting website that informs people about Lean activity in your agency. Post results from projects and team photos, keeping content updated and fresh.

Step 3: Identify What Lean Solutions to Share Elsewhere

Although not all Lean projects are successful, many produce impressive efficiency and quality gains once fully implemented. Given these successes, agencies often ask: *How can we share successful results from implemented Lean projects elsewhere?*

> **SHARING LEAN PROJECT SUCCESSES**
>
> The Lean way of transferring successes is accomplished by sharing information on effective practices and the problems those practices were designed to address. In Japanese, this is called *yokoten.* It is important to not simply copy a practice from elsewhere, but to "go see" the situation in which it was developed, and then adapt the practice for one's own situation.

There are four key dimensions to help identify what projects and practices make good candidates for transferring and adapting elsewhere.

- **Value:** Did the Lean project (or element of the project) you are considering transferring produce meaningful results? Have the results been validated after full implementation or piloting the new process? Which process changes were essential to producing the results?
- **Similarity:** Did the Lean project address challenges (e.g., root causes of inefficiency or quality issues) that might be common to other similar processes ?
- **Transferability:** Were the process changes from the Lean project documented in standard work (e.g., checklists, templates, process maps, etc.) that a new project team could review and adapt?
- **Connectivity:** Is there a representative from the Lean project (a transference coach) who could help others learn more about the issues and solutions identified?

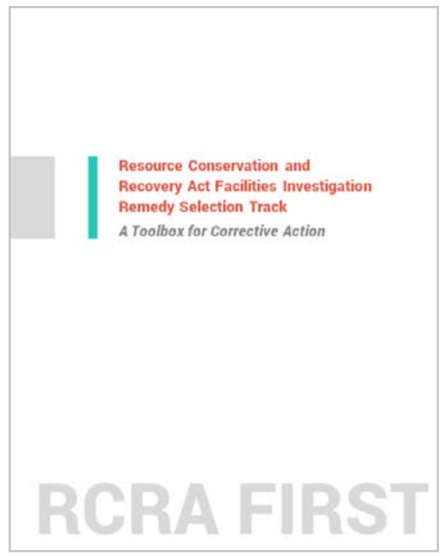
Step 4: Share Information and Transferable Solutions with Others

Once you have identified whether your project is a good candidate for transferring elsewhere, there are several steps you can take to share the good ideas from your project, as follows.

- **Identify a representative or transference coach from your project to help transfer knowledge to others.** By designating a transference coach (or a couple of representatives) who is willing to serve as a resource for others, you can provide a point of entry for people who are unsure how to start transferring your improvements. The transference coach should be available to discuss the problems identified, what solutions the team discovered, and troubleshoot ideas to overcome obstacles.
- **Share materials from your project with others.** If your agency has a central repository of project examples (e.g., a shared website, Intranet, or database), post materials such as your project charter, report-out presentation, success story, and any tools, standard work, process maps, or other products your team developed on that repository. Alternatively, share the materials directly with others who are interested in learning about your project. The Lean Project Poster Template can help you create a poster to share your project with others.

- **Find opportunities to tell others about your project through presentations and meetings.** In-person meetings, webinars, and conference calls offer opportunities for you to explain the results of your Lean project, the problems you addressed, and how the process changes could be useful elsewhere.
    - Community of practice calls with others implementing Lean at your agency (e.g., Lean facilitators, Lean project participants, and/or Lean sponsors) can be a particularly valuable way to encourage peer-to-peer exchange of knowledge and ideas.
- **Document the elements of your new approach that could be relevant to other organizations.** To make it easier for others to understand the process improvements from your project and how they might be used elsewhere, you can distill the essential elements of your new process and document them in a way that others can easily understand and use (see Figure 14 for an example). Explain the context behind the improved process and package the new methodology into standard work that others can easily translate and adapt to their organizations, such as templates. Provide examples and case studies, if possible, to showcase your standard work as it has functioned in the real world and communicate the benefits.

Figure 15. Resource Conservation and Recovery Act Corrective Action Toolbox
EPA developed a toolbox for implementing facility investigations and selecting remedies in the RCRA corrective action process based on tools developed from Lean events with EPA Regions 3 and 7, States, and stakeholders.



- **Support other offices or agencies seeking to use similar Lean solutions.** Transference is a two-way process, involving exchange of ideas and information from the original Lean project and a new process that seeks to adapt solutions from that project. There are several ways you can help other offices or agencies in their efforts to take your ideas and run with them, including:
    - **Invite observers or participants from similar processes to attend your Lean event or project meetings.** If they attend your event, they can learn firsthand how the process changes identified may apply in their own circumstances and how the solutions may need to be adapted. They may also have useful perspectives and ideas to contribute.
    - **Provide coaching support and/or project materials for teams seeking to conduct mini-Lean events, pilot projects, or other efforts to deploy the Lean solutions.** Other Lean teams may want to conduct a Lean event or mini-Lean event on a similar process or using the standard work (e.g., templates/tools) from your project. Or, they may want to pilot the process changes (e.g., a new streamlined process or support tool) and see how they work in a different area of the agency. By consulting with a team leader, pilot project leader, and/or facilitator, you can communicate any lessons your team learned, and help answer questions as they plan for and implement their event or pilot project.

Resources

- Lean Project Report-Out Presentation Template
- Lean Project Certificate of Accomplishment Template
- Lean Project Poster Form
- EPA Lean Government Case studies
- Minnesota Continuous Improvement Newsletter archive
- EPA Lean Transference Primer

DOWNLOADABLE RESOURCES:

LEAN PROJECT REPORT-OUT PRESENTATION TEMPLATE

LEAN PROJECT POSTER FORM

LEAN PROJECT CERTIFICATE OF ACCOMPLISHMENT TEMPLATE

G. Manage Change and Avoid Pitfalls

This Guide has covered six crucial aspects of Lean implementation: *(1) Set Up for Success, (2) Develop an Implementation Plan, (3) Complete and Track Actions, (4) Measure and Evaluate Results, (5) Standardize and Socialize Process Changes, and (6) Celebrate and Share Success.* While these steps outline how to conduct implementation, successful implementation requires an element of managing change within each step to minimize resistance and to combat the natural tendency to return to the way things were. This section covers strategies to effectively manage change and common pitfalls to avoid.

COMMON IMPLEMENTATION CHALLENGES

Has your Lean project team struggled with follow through on all the great ideas and action items in your implementation plan? You are not alone. Common reasons why process changes do not go as planned include:

- Process changes get started, but are not finished on time.
- Competing priorities crowd out time for process improvements.
- The changes are deemed unnecessary.
- There is insufficient management support and/or staff buy-in.
- Staff with key responsibilities for implementation change or turn over.

Strategies to Manage Change

STRATEGIES FOR MANAGING CHANGE

- Start Early
- Manage Expectations
- Monitor and Track Progress
- Prioritize and Remove Responsibilities
- Engage Your Sponsor
- Instill Employee Ownership
- Communicate, Communicate, Communicate
- Be Patient
- Document Challenges and Learn from Failures

- **Start Early.** This Guide recommends initiating implementation activities early—even during the planning and scoping phases of a rapid improvement event—rather than after the team walks out of an event. Refer back to the “Set Up for Success” section for guidance on what to accomplish before the completion of the Lean event or project meetings to better equip your team to stay on track throughout the project.

- **Manage Expectations.** Involve employees and managers in discussions about what is feasible for the process and what could create barriers to full implementation, and be realistic about what the process improvement effort can achieve. Expectations for the outcome may vary based upon several factors, including your team or office’s familiarity with Lean, the complexity of the process, resources available, and/or political, legal, or technological barriers at play. See the “Set Up for Success” Section for discussion of setting goals and expectations.

- **Monitor and Track Progress.** Implementation should not go unmonitored. Track implementation progress like you would a project: assign tasks, set deadlines, and hold the Lean team accountable. Identify one member of the project team, an implementation team leader, to lead and coordinate the effort and establish frequent face-to-face check-ins rather than limiting coordination to email.

- **Prioritize and Remove Responsibilities.** Too often, implementation momentum is challenged by competing demands for staff time. Successful implementation requires that managers and staff acknowledge that the improvement effort is high priority and then make time for it by removing other responsibilities. In Lean, this process is known as "deselection." Identify low-priority tasks on the plates of employees involved in implementation (e.g., meetings or committees to skip) and obtain permission from supervisors to shift commitments to make time for staff to remain engaged in the Lean effort during implementation.
- **Engage Your Sponsor.** Orient your Lean project sponsor to understand that his or her role is not only to authorize the project, but also to champion its implementation, which includes involvement throughout the project (See Table 2 on "Lean Implementation Roles" earlier in this Guide). Leaders should understand that their role is not to enforce the new process, but rather to inspire an office culture where employees feel motivated and comfortable with acting on opportunities to improve their work.[1]
- **Instill Employee Ownership.** Engage and communicate with employees who work in the process at all phases of the Lean effort to cultivate a sense of ownership over the Lean effort and new process. Resistance to change is natural, but it can be managed effectively with consistent communication and engagement. Establish outlets for feedback on the new process and standard work, and to propose further areas for improvement. During implementation, communicate progress, celebrate successes, and acknowledge employee efforts to learn and embrace the new process.
- **Communicate, Communicate, Communicate.** Communication is critical to successful implementation. As discussed above, consistent communication with employees cultivates ownership and acceptance of the new process. It also helps foster dissemination of successful practices. Communication about Lean between managers or senior leadership and employees generates momentum for improvements and reinforces a continuous improvement culture.
- **Be Patient.** Do not expect success overnight with Lean. In a blog post for the Association for Manufacturing Excellence, author and management consultant Shawn Casemore emphasizes that Lean is about "evolution not revolution."[2] Achieving real, lasting change takes time, patience, and a decent amount of work; but, the rewards can be significant (and worth it).
- **Document Challenges and Learn from Failures.**. Sometimes, despite the best preparation and planning, Lean projects do not achieve some or all of their desired goals. Organizations can use these "failures" as teaching moments. If, ultimately, your team is unable to make full progress despite appropriate countermeasures, it is useful to briefly document the project outcomes and implementation challenges so that others can learn from the experience.

Taken together, these strategies can help you overcome many common obstacles with Lean implementation, as listed in Table 5 below.

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[1] Steve Denning, "Why Lean Programs Fail -- Where Toyota Succeeds: A New Culture of Learning," *Forbes,* 5 Feb 2011, Accessed June 20, 2014, http://www.forbes.com/sites/stevedenning/2011/02/05/why-lean-programs-fail-where-toyota-succeeds-a-new-culture-of-learning.

[2] Shawn Casemore, "A Lean Journey: Not for the Faint of Heart," *Association for Manufacturing Excellence*, 12 Mar 2014, accessed Feb. 25, 2015. http://www.ame.org/target/articles/2014/lean-journey-not-faint-heart.

Table 5: Lean implementation Pitfalls and Strategies to Overcome Them

Pitfall	Strategies
Unrealistic expectations	• Set expectations for the outcome of the Lean effort early when planning for the event and be transparent about accomplishments and obstacles.
Not enough time to complete tasks, or competing priorities	• Talk to supervisors about opportunities to remove other responsibilities to create time for employees involved in implementation to complete tasks.
Follow-up stalls or takes longer than it should	• Use weekly meetings to keep the project team on track with action items. • Engage the sponsor when the project team cannot address issues on its own. • If the delays for some changes are out of your control, identify other process improvements your team can make in the meantime.
Key staff leave and their implementation responsibilities do not get completed	• Make sure that there is always someone assigned the responsibilities of the implementation team leader. Reassign this role if this person leaves. • If other staff leave, identify new staff to carry out action items assigned to the departing staff, and revise the action items if needed.
Implementation goes unmonitored	• Identify an implementation team leader to coordinate implementation. • Assign action items to an owner who holds responsibility for completion. • Track progress on action items using an Implementation Plan. • Schedule frequent, in-person check-ins to hold your team accountable.
Limited support from leadership	• Involve leadership early when planning for the Lean project. • Select a sponsor who will advocate for the improvement effort. • Obtain buy-in from both senior leadership and middle managers.
Employees resistant to change	• Cultivate ownership over the new process by establishing a system to collect input and feedback from staff/stakeholders. • Communicate frequently with process staff at all stages of the Lean project and make information on the Lean event available and accessible.

Resources

- Shawn Casemore, "A Lean Journey: Not for the Faint of Heart," *Association for Manufacturing Excellence*. 12 Mar 2014. http://www.ame.org/target/articles/2014/lean-journey-not-faint-heart.
- Steve Denning, "Why Lean Programs Fail -- Where Toyota Succeeds: A New Culture of Learning," *Forbes*. 5 Feb 2011. http://www.forbes.com/sites/stevedenning/2011/02/05/why-lean-programs-fail-where-toyota-succeeds-a-new-culture-of-learning/.
- Charles Duhigg, *The Power of Habit: Why We Do What We Do in Life and Business.* New York: Random House, 2012.
- John Kotter*, Leading Change.* Boston: Harvard Business School Press, 2012.
- Minnesota Office of Continuous Improvement, "Leading and Managing Change." http://mn.gov/admin/images/leading_and_managing_change.pdf.
- University of Victoria, Centre for Excellence and Learning, "Managing Change and Transition: An Overview." http://www.uvic.ca/hr/assets/docs/od/Workbook%20-%20Managing%20Change%20and%20Transition2.pdf.

CONCLUSION

Implementation and follow-up are key to maintaining the momentum inspired during the Lean event or improvement effort to achieve full implementation of process changes. Successful implementation depends on the support and engagement of leadership, managers, and employees, and the diligent efforts and accountability of the Lean project team. It is hard work, but successful implementation will extend and sustain the gains made during the Lean effort and help people develop a continuous improvement mindset.

We hope this Guide will help you be more successful with Lean implementation. We wish you luck in your process improvement efforts, and encourage you to share your ideas and experiences.

TO LEARN MORE OR SHARE YOUR EXPERIENCES

For more information and resources about Lean government, visit the EPA Lean website at www.epa.gov/lean. To share your ideas and experiences, please email lean@epa.gov.

This document was prepared for EPA by Ross Strategic.

United States Environmental Protection Agency
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