Lean in Government Starter Kit Version 2.0

How to Implement Successful Lean Initiatives at Environmental Agencies

OTHER PUBLICATIONS FROM THE LEAN GOVERNMENT INITIATIVE

- *Working Smart for Environmental Protection: Improving State Agency Processes with Lean and Six Sigma*
- *Lean in Air Permitting Guide: A Supplement to the Lean in Government Starter Kit.*
- Case studies and other information about EPA and State Lean activities can be found at EPA's Lean and Environment website (www.epa.gov/lean).

Acknowledgments

We are pleased to announce the release of version 2.0 of the *Lean in Government Starter Kit*. In the spirit of Lean and continuous improvement, version 2.0 (released May 2009) builds on the information, guidance, and resources included in the original Starter Kit published in 2007. In particular, version 2.0 includes new and expanded sections and resources on metrics, Lean event follow-up, and strategic deployment of Lean within an agency.

This Starter Kit was developed through a collaborative process involving representatives from five States—Delaware, Iowa, Michigan, Minnesota, and Nebraska, the Environmental Council of the States (www.ecos.org), and the U.S. Environmental Protection Agency (www.epa.gov). EPA's National Center for Environmental Innovation (NCEI) provided advisory and contractor support to this effort. Ross & Associates Environmental Consulting, Ltd. (www.ross-assoc.com) prepared this Starter Kit under subcontract to Industrial Economics, Inc. (EPA Contract # EP-W-04-023 and EP-W-04-093).

The EPA-state workgroup coordinating the development of this Starter Kit included the following agencies:

- Delaware Department of Natural Resources and Environmental Control (www.dnrec.delaware.gov)

- Iowa Department of Management (www.dom.state.ia.us)

- Michigan Department of Environmental Quality (www.michigan.gov/deq)

- Minnesota Pollution Control Agency (www.pca.state.mn.us)

- Nebraska Department of Environmental Quality (www.deq.state.ne.us)

Special recognition should be given to the Iowa Department of Management's Office of Lean Enterprise. Many of the resources in this Starter Kit are based on resources that have been prepared for agency managers in Iowa (these resources are available at http://lean.iowa.gov).

Version 2.0 of this Starter Kit includes more recent input from the Environmental Council of the States (ECOS) and state environmental agencies. Additionally, this version draws on experience and lessons with Lean implementation shared by representatives at EPA and other federal agencies who have used Lean.

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GUIDE TO RESOURCES IN THE LEAN IN GOVERNMENT STARTER KIT

This Starter Kit contains three types of resources:

⇨ **Practical guidance and background information on how to use Lean methods to improve agency processes (Chapters 1–4)**
  - o Look for "Resources" textboxes throughout the document for links to supporting tools in the Appendices
⇨ **Bibliography of Lean References (Appendix A)**
⇨ **Resources, tools, and templates to support agency Lean implementation efforts (Appendix B), covering the following topics:**
  - o Getting started with Lean
  - o Event planning
  - o Lean event implementation
  - o Lean event follow-up
  - o Sustaining and diffusing Lean activity

This website version of the *Lean in Government Starter Kit* contains downloadable versions of all the resources in Appendix B. You may access the Starter Kit webpage through EPA's Lean and Environment website (www.epa.gov/lean) and through the website of the Environmental Council of the States (http://www.ecos.org/content/project/detail/2292/).

Chapter 1. Introduction

Since 2003, several state environmental agencies and the U.S. Environmental Protection Agency (EPA) have achieved impressive results improving government processes using Lean methods. Numerous other federal, state, and local government agencies have also turned to Lean to improve the effectiveness, efficiency, and transparency of government programs and services. Environmental agencies have used Lean methods to advance their mission—protecting human health and the environment—in better, faster and cheaper ways. This *Lean in Government Starter Kit – Version 2.0* is designed to assist interested government agencies in planning and implementing successful Lean improvement events. The Starter Kit builds on ideas presented in Volume 1 of EPA and ECOS' Lean in Government Series, *Working Smart for Environmental Protection: Improving State Agency Processes with Lean and Six Sigma.*

The Starter Kit contains practical tools, resources, and tips for:

- How to get started with Lean;
- How to implement and manage the phases of a Lean event; and
- How to sustain and diffuse Lean activity within an organization.

The Starter Kit answers questions to help agency managers determine whether Lean is right for their agency, and presents ideas for agencies interested in expanding their Lean initiatives. Each section includes a set of downloadable resources that can be tailored to meet the specific needs of an agency.

Conducting a Lean improvement event is an eye-opening experience for agencies just getting started as well as agencies with significant experience implementing Lean. The rapid, dramatic, and transformative improvements that several public environmental agencies have achieved in recent years using Lean has piqued the interest of many more agency managers—even in large governmental agencies. At the same time, this excitement raises important questions:

⇨ **How can we get started with Lean?**

⇨ **How do we implement Lean events?**

⇨ **How can we sustain and diffuse the successes of our initial Lean activity?**

Organized around three topics—getting started with Lean, implementing Lean events, and sustaining and diffusing Lean activity within an agency—this Starter Kit provides practical answers to questions that are likely on the minds of government agency managers. The Starter Kit focuses on ways to ensure that initial time and resource investments in Lean are highly successful. As some agencies are painfully aware, one or two poorly planned and executed Lean events can sour the agency on Lean and undo past progress. Conversely, a few well-executed

Lean events can transform how agency personnel think about what is possible to achieve in terms of excellence in government.

Getting Started with Lean

Chapter 2 introduces Lean methods, explains how Lean is different from other initiatives, and helps agency decision makers consider whether Lean is right for their agencies. Key topics include:

- <u>What Is Lean?:</u> Lean is a process improvement approach and set of methods that seek to eliminate non-valued added activities or waste. Lean kaizen events enable rapid, breakthrough improvements in as little as a few days, while creating a continual improvement culture. *Kaizen* means "to change for the good of <u>all</u>" in Japanese.

- <u>Why Do Lean?:</u> Lean can dramatically improve the performance and effectiveness of agency processes in a relatively rapid time frame. Lean increases transparency and actively engages employees in finding ways to work better and smarter.

- <u>How to Select a Lean Project:</u> Focus Lean improvement efforts on processes with the most "pain" or the greatest perceived problems or in areas where there are supportive champions.

- <u>How to Find Technical Assistance for Lean Efforts:</u> There are a variety of technical assistance providers that exist to assist agencies through Lean implementation.

Implementing Lean Events

Lean event implementation consists of three phases: event planning, event implementation, and event follow-up. Chapter 3 provides guidance, resources, and tips for conducting a Lean event from start to finish, including:

- <u>Event Planning</u>: This phase ensures that a Lean event is well scoped and planned. From team selection to logistics to communication, preparation is essential for a productive Lean event.

- <u>Event Implementation</u>: Each Lean event is a journey that requires skilled facilitation and guidance as well as hard work from a committed team.

- <u>Event Follow-up</u>: Once the event has ended, effective follow-up is essential to complete remaining action items, to prevent backsliding, and to sustain the team-based focus on continuous improvement.

Sustaining and Diffusing Lean Activity

Once your agency has completed a Lean event, it is important to think strategically about how to sustain the improvements and, if desired, diffuse Lean throughout your agency. Chapter 4 discusses four models for deploying Lean in an organization, along with specific steps to sustaining and diffusing Lean activity. The chapter also discusses key strategies for getting more value out of Lean and for building a strong continual improvement culture across an agency.

The possibilities are exciting, whether you plan to use Lean for targeted problem-solving or to transform the culture of your agency. Whatever your path, this Starter Kit will help you get the most out of your Lean events and activities.

Chapter 2. Getting Started with Lean

As your agency considers getting started with Lean or begins its Lean journey, you will likely encounter questions from managers and staff. This chapter discusses some of these common questions and topics, including:

⇨ **What is Lean?**
⇨ **Why do Lean?**
⇨ **How to select a Lean project**
⇨ **How to find technical assistance for Lean efforts**

What Is Lean?

Lean refers to a collection of principles and methods that focus on the identification and elimination of non-value added activity (waste) involved in producing a product or delivering a service to customers.[1] While Lean process improvement approaches were developed originally for use in the private sector to target manufacturing processes, there has been steady progress towards adapting these approaches for use on service and administrative processes. The adjacent textbox lists examples of Lean wastes relevant to administrative processes. Public sector interest in Lean is increasing rapidly, fueled by strong improvement results and in some cases, economic hardship. Lean methods include value stream mapping and kaizen events; Six Sigma refers to a set of tools that is increasingly used in conjunction with Lean. It is often said that Lean is "common sense uncommonly applied."

WASTES	EXAMPLES
Inventory	Backlog of work (permits, plan approvals), excess materials/info, obsolete databases/files/folders
Defects	Data errors, missing info, errors in documents, confusing instructions or requirements, typos
Overproduction	Unneeded reports and copies, excess e-mail messages, doing work not requested
Complexity	Unnecessary process steps, too many signature levels, unclear job descriptions
Waiting	Time for approval cycles, waiting for information or decisions, waiting for people in meetings
Excess Motion	Trips to printer and copier, unnecessary movement to find files or supplies, travel to meetings
Moving Items	Report routing, transport of documents, document storage

Value Stream Mapping (VSM). Value stream mapping refers to the activity of developing a high-level visual representation, from start to finish, of the process flow involved in delivering a

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[1] James Womack, Daniel Jones, and Daniel Roos coined the term "lean" in their 1990 book *The Machine that Changed the World* to describe the manufacturing paradigm (often referred to as the Toyota Production System) developed by the Toyota Motor Company based on principles pioneered by Henry Ford.

desired outcome, service, or product (a "value stream") to customers. In the context of environmental agencies, a value stream could be the process of enabling redevelopment of brownfield sites or attracting and hiring new agency staff. The typical products of a two to five day VSM event are two maps—a "current state" map of the targeted processes (see photo below) and a "future state" map of the desired process flow—and an implementation plan for future process-improvement activities. Because value stream maps help people see not only waste but the source of the waste, they enable an agency to target future kaizen improvement events on specific processes or process steps in the value stream to help move the agency towards its desired "future state" value stream map.

Kaizen Events. Kaizen is a combination of two Japanese words: *kai* meaning "to change" and *zen* meaning "for the good of <u>all</u>." Kaizen is founded on the belief that small, incremental changes routinely applied and sustained over a long period result in significant performance improvements. Kaizen events—also called rapid process improvement events

<table>
<tr><td style="background-color:green">Resources</td></tr>
<tr><td>• Lean Overview Presentation</td></tr>
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or kaizen blitz events—focus on eliminating waste in a targeted system or process, improving productivity, and achieving sustained improvement. Though sometimes kaizen events are as short as two days, they often last about five days. Whereas VSM events focus on the big picture and future directions, kaizen events dig deep into the specific steps of a process to identify sources of waste and implement process changes.

Current State Map

Six Sigma. Six Sigma is often used in conjunction with Lean, but is a distinct process-improvement methodology that uses a collection of statistical tools to analyze causes of variation in a process and to identify and test improvements. Trained Six Sigma experts, called "black belts" and "green belts," typically support teams in using Six Sigma tools in a project context. While this Starter Kit does not focus much on Six Sigma, Lean and Six Sigma methods can be effectively combined (often called "Lean Six Sigma"). Lean eliminates unnecessary time and process wastes, while Six Sigma targets quality improvements and variation.

What Other Tools Are in the Lean Toolbox?

Along with value stream mapping, kaizen events, and Six Sigma, agencies are using a variety of other Lean tools, such as the following.

- **5S**: 5S is an improvement process involving five steps (Sort, Set in order, Shine, Standardize, and Sustain) to create and maintain a clean, neat, and high-performance workplace. 5S is often used to ready the workplace for future kaizen events and continual improvement efforts. Some organizations add a sixth "S" for Safety.

- **Standard Work**: Standard work represents the sequence of activities needed to perform a given operation. Improvements made during kaizen events are immediately documented as standard work to ensure that all employees understand and consistently implement the new process.

- **Visual Controls:** Visual controls are used to reinforce standardized procedures and to display the status of an activity so every employee can see it and take appropriate action. Visual controls are frequently implemented during kaizen events to simplify the workplace and provide visual feedback on process performance.

HOW TO LEARN MORE ABOUT LEAN

- Read *Working Smart for Environmental Protection*, which provides additional information on Lean methods, describes the activities and lessons learned from several state Lean efforts, and includes contact information for staff involved in those efforts. You can find this publication and additional information on public agencies and companies implementing Lean at EPA's Lean and Environment website (www.epa.gov/lean) and on Lean Project page of the Environmental Council of the States' website (http://www.ecos.org/content/project/detail/2292/).

- Consult the bibliography (Appendix A) of this Starter Kit for a list of resources and websites geared towards agencies interested in learning more about Lean principles and methods.

- Go to EPA's Lean Government website for more information and case studies on federal and state environmental agencies using Lean (www.epa.gov/lean/admin.htm), including a *Lean in Air Permitting Guide* focusing on air permitting examples.

- Talk to other agencies implementing Lean. Agencies are generally excited to share their experiences and can be helpful resources for agencies considering Lean.

Why Do Lean?

Lean can dramatically improve the performance and effectiveness of agency processes in a relatively short timeframe (see textbox for a list of typical benefits from Lean). The impressive results from environmental agency Lean efforts also speak for themselves. Here are a few examples:

- **EPA's Office of Water, EPA Region 7, and four States** (Iowa, Kansas, Missouri, and Nebraska) are using Lean to significantly improve water quality standard (WQS) setting and NPDES processes, reducing WQS process steps from 50 to 26 (a 48 percent reduction), cutting the length of the process from a few years to several months.

- **Delaware Department of Natural Resources and Environmental Control** lowered a backlog of air construction permits from 199 to 25, while reducing the average permit processing time to less than 76 days.

- **Iowa Department of Natural Resources** streamlined the corrective action process activities in the Leaking Underground Storage Tank program, reducing the number of decisions by 80 percent and the total number of process steps from 43 to 26 (a 40 percent reduction). This dropped the average decision-making timeframe in the program from 38 months to 3 months.

- **Michigan Department of Environmental Quality** decreased the time needed to process major air construction permits from 422 days to 98 days. Quality also improved, with initial application administrative completeness rising from 82 to 95 percent.

- **Vermont Agency of Natural Resources** decreased the time needed to process an on-site wastewater permit from as high as 542 days to 34 days (a 94 percent reduction) and cut the number of steps in the permitting process from 150 to 38.

States achieved these results by using value stream mapping, kaizen events, and other Lean methods. Because of their initial success with Lean, these agencies have also conducted Lean events on a range of other processes.

BENEFITS OF LEAN

By using Lean tools, an agency can expect to:
- Eliminate or dramatically reduce backlogs
- Reduce lead times by more than 50%
- Decrease the complexity of processes and eliminate unneeded process steps
- Improve the quality and consistency of work products and activities
- Allocate more staff time to "mission critical" work
- Improve staff morale
- Enhance process transparency to internal and external audiences

Example Improvements in Air Permitting Timeframes Resulting from Lean Events

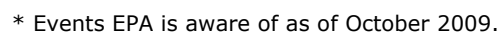| State Agency	Specific Air Permitting Process	Permitting Timeframe Before Lean Event (in days)	Permitting Timeframe After Lean Event (in days)	Total Decrease (in days)
Idaho Department of Environmental Quality	Permit to construct	270	97	173
Indiana Department of Environmental Management	Title V permit modifications	164	144	20
Iowa Department of Natural Resources	Standard air quality construction permits	62	6	56
Iowa Department of Natural Resources	Air quality complex permits	214	180	34
Michigan Department of Environmental Quality	Major air construction permits	422	98	324
Michigan Department of Environmental Quality	Minor air construction permits	143	50	93

Distinguishing Lean from Other Improvement Initiatives

Lean is different from past improvement efforts in several key ways. Lean:

- Takes a "customer service" perspective that seeks to optimize value delivered to the environment, the public, and the regulated community;

- Involves employees and external stakeholders in continual improvements and problem-solving activities;

- Deploys a rapid continual improvement framework that emphasizes implementation rather than prolonged planning;

- Seeks to reduce the complexity of processes; and

- Uses metrics and visual controls to provide rapid feedback to improve real-time decision-making and problem-solving.

By eliminating non-value added activities, environmental agencies can redirect staff time to higher-priority activities related to their core mission of environmental protection.

Using Lean to achieve process excellence is a growing trend among state and federal government agencies, including those focused on environmental protection. The 2006 *Working Smart for Environmental Protection* primer looked in depth at the Lean experiences of five state environmental agencies, all of which have continued with Lean implementation efforts. In addition, as of October 2009, there are about 26 state environmental agencies that have conducted Lean events or are planning Lean events in the near future (See "Inventory of State Lean Events" at ECOS website: http://www.ecos.org/content/project/detail/2292/). The map below displays state environmental agencies that have conducted Lean events or shown interest in using Lean methods to improve government processes as of October 2009.

Resources
• **Lean Inventory**

Lean and State Environmental Agencies

* Events EPA is aware of as of October 2009.

ISN'T LEAN JUST THE LATEST "FLAVOR OF THE MONTH"?

If your agency is typical, most management trends that have come around in the last fifteen years have been tried. Total Quality Management? Continuous Quality Improvement? What makes Lean any different? Isn't this just the latest way for consultants to line their pockets? There are some key differences.

Remember TQM? After several days of training on what seemed like obtuse principles, staff were sent back to their regular duties and told to improve the quality of their work process. No one typically thought their process was broken so there wasn't a lot of incentive to change anything and besides, they were already behind from all those days in training. Once a TQM team was formed, they likely met once a week for six months or until they forgot why they were meeting. If the team ran into conflict about what the "problem" was or how it might be solved, there was a good chance team members started dropping out and the team dissolved. Kaizen teams receive a half-day of just-in-time training and learn how to improve their process by actually making changes directly to the process. Events never last for more than five days (including the training time) and kaizen events can be as short as one or two days. Kaizen team leaders push the team through the cycle of change, and conflict if it arises, to ensure a successful conclusion.

TQM teams developed a list of recommendations and sent them up the chain of command. If they were lucky, they heard back from the powers that be and some of their recommendations might be implemented--eventually. Kaizen teams are empowered and actually change the process during the course of the event. Management is kept abreast of what is happening in the event but the team has the authority, and the expectation, to change the process. (Sound scary? Letting a team change things on their own? Remember, the team is changing process, not policy.)

Another significant difference is that TQM focused exclusively on quality while Lean addresses quality, cost, and delivery simultaneously and all in the context of time. All of these components play a crucial role in the success of our work and are inextricably linked. Additional distinctions include kaizen team composition (ensuring that the customer is part of the team), standardized follow-up to the event at 30, 60 and 90 day intervals, and gathering data as pre-work rather than during the improvement process.

TQM wasn't bad in theory but it lacked in execution. Lean is all about execution—getting good improvement ideas implemented in a rapid timeframe and then making adjustments to continually improve. The implementation results experienced by government organizations using Lean suggests that Lean will become a core improvement strategy for many agencies.

How to Select a Lean Project

Most agencies begin their Lean implementation efforts with a pilot project (a kaizen event or value stream mapping event) to improve an existing agency process. If this is your agency's first event, it may be useful to start with a relatively simple permitting process (e.g., air construction permitting for minor sources or a permit modification process) or even an internal process (e.g., audit action tracking), to get a feel for Lean methods. The selected process should be sufficiently important to capture organizational attention. It is critical to start with a process area where there is a high level of management support and commitment to ensuring a successful Lean event. However, other circumstances may dictate which process is the best candidate for a Lean event. For example, it may make sense to hold the Lean event in conjunction with another major change within the agency during the implementation of a new rule or major staffing changes.

Although each agency weighs its own criteria to select a target process for a Lean event, agencies often focus initial Lean events on processes that have the most "pain," that is, the greatest perceived problems. Problems could include backlogs, bottlenecks, complaints, funding constraints, and quality and performance concerns. It is also important to consider improvement projects that could free staff capacity to address mission-critical work, address stakeholder concerns, or alleviate budget or fiscal pressures. Once an agency has conducted several events, it often makes sense to take a more strategic approach to selecting events that is linked to the agency's strategic plan and workforce development goals.

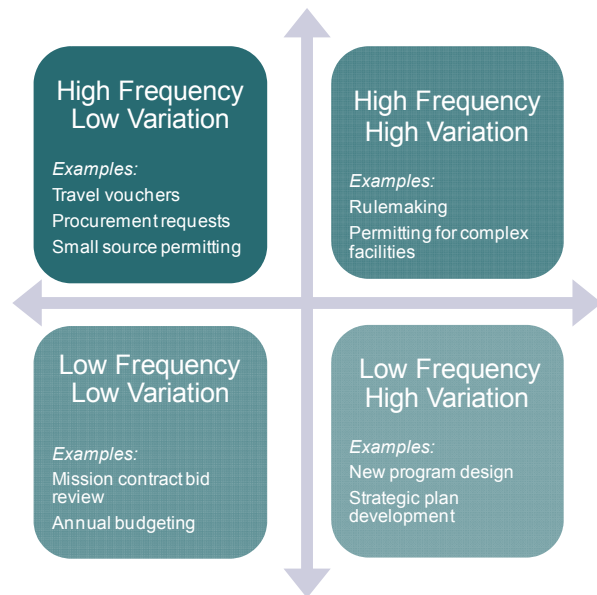Potential criteria for project and process selection include:

- Funding concerns
- Degree of criticality to agency mission
- Number of customer and staff complaints
- Productivity problems
- Backlogs and amount of work in progress (WIP)

- Administrative bottlenecks and delays
- Existence of a project "champion"
- Staff willingness and energy
- Process type (frequency and variation)

When selecting areas to target with Lean, it is also important to keep in mind that there are different types of government processes. While all processes can benefit from Lean implementation, the types of Lean results—time, quality, and cost—can vary depending on the type of government process that is targeted. Quick, impressive process improvement results are often important for building organizational support and momentum, while freeing resources and time to focus on more mission-critical work. While applying Lean to more complex processes may not yield quick time and cost savings, sustained focus on Leaning complex processes may yield dramatic improvements in the agency's ability to achieve its mission. The textbox below discusses how different government process types can affect Lean results.

GOVERNMENT PROCESS TYPES AND IMPLICATIONS FOR LEAN RESULTS

Government processes can vary both by *frequency* and *variation*. Process frequency refers to how often a process is executed. Process variation refers to the degree of change or difference among outcomes or products produced by a process. These attributes can have important implications for the types of results—time, quality, and cost—that can be achieved and should be expected from Lean implementation. For example:

- *High frequency-low variation processes*. Lean results can be particularly compelling for high frequency-low variation processes, particularly in terms of time and cost savings. The benefits from Lean improvements accrue each time a high frequency process is executed. For example, Lean improvements to a travel authorization/travel voucher process or a procurement/purchase card process can save time and money every time the process is executed. When these processes are exercised thousands of times per year, benefits add up quickly. Low variation processes are often less complex, making is easier to use Lean tools to drive out non-value added activity. Think about opportunities for building momentum with Lean success on high frequency, low variation processes.

High Frequency Low Variation

Examples:
Travel vouchers
Procurement requests
Small source permitting

High Frequency High Variation

Examples:
Rulemaking
Permitting for complex facilities

Low Frequency Low Variation

Examples:
Mission contract bid review
Annual budgeting

Low Frequency High Variation

Examples:
New program design
Strategic plan development

- *Low frequency-high variation processes*. It can take longer to realize impressive Lean results with low frequency-high variation processes. These processes are typically more complex and do not occur as often as high frequency processes. While the initial time and cost savings can be less dramatic than for high frequency-low variation processes, Lean methods can be highly effective for improving the quality and effectiveness of low frequency-high variation processes. For example, applying Lean to a periodic strategic plan development process or a rulemaking process can produce meaningful time and cost savings, but the real value may lie in improvements to the quality, effectiveness, and transparency of these processes. Value stream mapping and other Lean methods are powerful tools for reducing the complexity of high variation processes. Lean also creates more robust institutional memory of the process that avoids reinventing the wheel in the future.

Another Dimension that Can Affect Lean Results: *Multi-Agency Processes*

Processes that involve hand-offs among multiple government agencies or offices pose unique challenges and opportunities. Each agency has its own internal process that interfaces with other agencies' processes. These agency-specific processes may not be well-aligned and process "ownership" boundaries may not be clear. Value stream mapping can be a powerful tool for building cross-agency understanding, trust, and alignment. Kaizen improvement events can help improve internal agency processes that interface with the multi-agency process. Leadership and political will across the participating agencies is typically needed to navigate obstacles arising from differences in agencies' missions, goals, and organizational cultures.

Think carefully about which processes types you want to target first and set realistic expectations for results.

How to Find Technical Assistance for Lean Efforts

All Lean events are led by a Lean facilitator who organizes and manages the discussions. Most agencies have sought outside technical assistance for their initial Lean implementation efforts; even agencies that have developed in-house capacity for lean training and facilitation occasionally seek additional assistance, especially for larger or more complex projects. There are a range of technical assistance providers that facilitate Lean events, including private consultants, non-profit National Institute of Standards and Technology (NIST) Manufacturing Extension Partnership (MEP) centers, and university-based training programs.[2] Private sector companies who are using Lean have also provided technical support to agencies by allowing agency staff to attend industry trainings and providing Lean facilitators for agency events.

When evaluating a potential Lean facilitator, it is important to consider the facilitator's past experience, areas of expertise (e.g., supporting Lean in government and office settings), price, and availability. In general, the cost of an experienced Lean facilitator ranges from approximately $2,000 to $3,400 per day. The cost of having an experienced facilitator is typically well worth it to ensure a successful Lean event. The next chapter provides additional guidance on how to select a Lean facilitator.

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[2] A directory of NIST MEP centers is available at: www.mep.nist.gov/about-mep/center-info.html.

Chapter 3. Implementing Lean Events

This chapter assumes that your agency has chosen a Lean project focus and outlines the three main phases for conducting a successful Lean event: event planning, event implementation, and event follow-up. A Lean event is a highly structured, two to five day facilitated event involving a team of agency staff and stakeholders that is designed to rapidly make progress in identifying and implementing improvements to a process.

STARTER KIT RESOURCES SUPPORT KAIZEN AND OTHER LEAN EVENTS

While most guidance and resources in this Starter Kit were developed to support kaizen events, the information and resources are also useful for planning and implementing other types of Lean events, including value stream mapping (VSM) events and 5S events.

Lean Event Planning

Once you have decided to conduct a Lean event, effective planning and scoping are essential for success. There are three major phases of activity prior to conducting a successful Lean event. These phases are outlined below, along with key activities associated with each phase. It is important to note that some activities in each phase should occur concurrently, rather than in sequence. For example, it may be necessary to address some logistics, such as setting event dates or securing a conference room, well in advance of the pre-event meeting.

PHASES IN PLANNING FOR A LEAN EVENT

Phase 1: Initial Planning and Scoping
⇨ Secure a Lean facilitator
⇨ Scope the event
⇨ Identify the Lean method to use
⇨ Identify the Lean event sponsor and team leader

Phase 2: Pre-event Meeting
⇨ Refine the event scope and objectives
⇨ Set clear boundaries for the event
⇨ Identify performance metrics and pre-work needed
⇨ Select participants and determine roles

Phase 3: Event Preparation and Logistics
⇨ Prepare the event agenda
⇨ Arrange logistics
⇨ Collect needed data and information
⇨ Communicate about the event

Phase 1: Initial Planning and Scoping

Secure a Lean Facilitator

The importance of securing an experienced Lean facilitator cannot be overstated. The Lean facilitator serves as a team's guide throughout the Lean process, helping to scope the Lean event, facilitate the event, and advise on follow-up activities. Sometimes the Lean facilitator is referred to by the Japanese term *sensei* (SEN-SAY), meaning teacher or "one who has gone before."

While it is possible to cultivate experienced Lean facilitators within an organization, most organizations seek the external consulting services of a Lean facilitator, at least for the first few years of Lean implementation. It should be noted, however, that even experienced Lean organizations retain outside *senseis* to bring fresh perspectives to their Lean implementation efforts, help facilitate larger or more complex events, and push them to make more progress than they otherwise would.

Several helpful tips for securing a Lean facilitator include:

> **Resources**
>
> - **Event Preparation Checklist**
> - **Lean Facilitator Request for Proposal**

- Talk with representatives from other government agencies to ask for recommendations for potential Lean facilitators.

- Consider issuing a request for proposal to help with the selection of an experienced Lean facilitator. The sample Lean Facilitator Request for Proposal resource document in this Starter Kit should give you some ideas of the types of information to request.

- When evaluating potential Lean facilitators, take into consideration the facilitator's past experience, areas of expertise (e.g., supporting Lean in government and office settings), references, price, and availability.

- Remember that securing a talented facilitator is not the same as getting a talented facilitator who has experience running Lean events.

Additional roles that you will want to identify for a Lean event are defined in the following table. These common Lean roles and responsibilities are described in more detail further in this chapter and in Chapter 4.

LEAN EVENT ROLES	
Role	**Description**
Lean Facilitator	The Lean facilitator runs the pre-event meeting, the Lean event, and certain follow-up meetings (e.g., 30-day follow-up meeting). The Lean facilitator has training and experience in Lean facilitation.
Sponsor	The sponsor provides resources and senior leadership support for the Lean event and has the authority to remove obstacles to implementation of the new process. This person should be a senior leader of the division within which the Lean event is taking place.
Team Leader	The team leader is responsible for helping to plan the event, including the logistics, and assisting the facilitator during the event.
Implementation Manager	The implementation manager is responsible for ensuring that a clear and effective event follow-up process is established and conducted. This person should have sufficient authority to lead follow-up activities, remove barriers, and drive accountability.

Scope the Event

Early on in the planning process, it is important to answer three key questions:

- What is the purpose of the event?

- What value stream or process will be targeted in the Lean event?

- What are the desired outcomes?

The answers to these questions will guide initial planning activities, such as making sure the right people participate in the pre-event meeting (Phase 2). During the pre-event meeting, the scope, goals, objectives, and boundaries for the event will be further refined and documented.

Making sure the scale and scope of the Lean project is manageable and will allow for a successful event is crucial. In particular, managers should consider the breadth and complexity of the process and be realistic about how much of the process can be tackled in four or five days.

Identify the Lean Method to Use

Once the initial scope of the event has been determined, consider which Lean methods to use. As discussed in Chapter 2, there are a variety of methods to choose from for your event. Two common Lean methods are value stream mapping and kaizen events. Six Sigma is also used by some agencies to drive improvement projects, but organizations are increasingly viewing Six Sigma as a powerful

Resources

- **Pre-Screening Application for Value Stream Mapping Events**

collection of statistical analysis tools and methods that can be used during or in conjunction with a kaizen event. Your Lean facilitator can guide you in choosing the methods that are right for your agency and process.

Agencies just starting out with Lean often use kaizen events to quickly achieve the results that have interested many in Lean. Conducting one or a few kaizen events can help build momentum for a Lean initiative. Some agencies choose value stream mapping (or simplified process mapping) for their first event, since this method can help an agency clearly understand its process and identify areas of waste that can be targeted through future kaizen events. Other agencies have integrated value stream mapping and kaizen rapid implementation techniques in the same event.

Identify the Lean Event Sponsor and Team Leader

Sponsor

Identifying a Lean event sponsor is critical to success. Ideally, the sponsor is a director or leader of a division within which the Lean event is taking place. Having a sponsor for an event can also increase buy-in within the agency and among upper management, and assist with removing any obstacles in getting the event planned and implemented. This role is especially useful when trying to ensure that team members can get two to five days worth of time away from their regular duties and responsibilities to participate in the event. The sponsor participates at key times during the event and helps with follow up.

The sponsor should be enthusiastic, committed to the process, willing to take risks, and be open-minded and communicate this spirit to the team members. At times it can be difficult to sustain creative thinking and risk taking. The sponsor's role is to help infuse the team with energy and direction, and to encourage openness to out-of-the-box thinking. Specific responsibilities of the Lean event sponsor include:

- Provide the necessary financial resources for the event.
- At the event kick off, communicate expectations to the team and set the direction of the Lean event.
- Clearly state that the process that the Lean team develops during the event will be the new process—the team is not making recommendations.
- State that the sponsor will do everything possible to support the new process developed by the team.
- Challenge the team to develop innovative solutions and ideas without introducing pre-conceived ideas.
- Be visible during the event and provide enthusiastic support of the participants.
- Attend team leader meetings and daily management briefings and provide redirection if needed.
- Assist in removing obstacles.
- Be strategic: use the event to advance agency objectives by improving the performance of the targeted process while being aware of the impact to the total system.
- Attend the report-out session for the event to show support and congratulate team members on a job well done.

- Track the status of implementation efforts following the event to make sure the team continues to make progress and does not backtrack.

A Lean event sponsor contract can be used to affirm a sponsor's responsibilities and to demonstrate his or her commitment of support.

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Resources

- **Lean Event Sponsor Contract**

</div>

Team Leader

The team leader is usually determined after the initial event focus and scope have been decided. The team leader assists the Lean event facilitator in setting the stage for a productive event. There are differing opinions on whether the team leader should work in the area of the event's focus. On one hand, an outsider can sometimes help the team navigate entrenched perspectives, creating a more open and transparent environment for team members to be creative. On the other hand, it can be useful to have a well-respected individual from the work area that can help drive and sustain commitment to improvements made by the team through assistance with follow-up activities. Think about what makes most sense for your organization. It is common for the team leader to have participated previously in one or more Lean events. Often the team leader helps coordinate event logistics, including securing the event space, arranging for meals, and purchasing supplies. Ideally, the team leader has an assistant who can help support them with administrative tasks that need to be accomplished prior to and during a Lean event. Specific roles and expectations of the team leader include:

- Support the team members in finding solutions.

- Help facilitate an open exchange of ideas.

- Encourage creative thinking and problem-solving.

- Support the team during event implementation.

- Ensure that all event objectives are met.

- Help prepare for the event.

- Assist in selecting team members.

- Prepare the schedule and agenda.

- Gather needed materials and tools.

- Keep up to date on all aspects of the event.

- Assist with documentation and reporting.

- Secure external consulting services of Lean facilitators.

- Arrange a site visit for the Lean team to talk with the workers and see the process in action.

When the team leader is from outside the specific content area in which the event is occurring, good communication is crucial. Team leaders will need to know the goals and objectives of the event, any process requirements, and the expectations of the team members. Any contextual

information, such as past problems encountered and gains achieved should be shared with the team leader.

Phase 2: Pre-event Meeting

The pre-event meeting occurs between three and six weeks prior to the Lean event. It is probably the most crucial step in planning and preparing for a successful Lean event. The pre-event meeting is commonly held in the venue in which the Lean event training will take place. The pre-event meeting should involve the Lean facilitator, the event sponsor, the team leader, and key managers and staff who oversee or are involved in the process to be targeted by the Lean event. Pre-event meetings typically last between two and four hours, depending on the complexity of the process and event and the Lean experience of the participants. The following topics should be addressed and finalized during the pre-event meeting:

> ### Resources
>
> - **Pre-event Meeting Agenda**
> - **Team Charter**
> - **Example Team Charter**

- Refine the event scope and objectives

- Set clear boundaries for the event and establish ground rules.

- Identify performance metrics and pre-work.

- Select participants and determine roles.

Document decisions made at the pre-event meeting in a *team charter*. The team charter sets out the scope of the process that will be addressed in the event, establishes the goals and objectives of the event, identifies any work that must be completed prior to the event, and identifies the team members.

Refine the Event Scope and Objectives

The sample team charter referenced above includes examples of how the event scope and key goals and objectives can be clearly and concisely documented. Key tips from Lean practitioners include:

- Once a production process, administrative process, or area is selected, choose the specific "waste elimination" problem within that area to focus the Lean event. Consider which metrics you'll use to measure the results from the event (see the metrics section below).It is important to select an event scale (breadth and complexity) that can be accomplished within the timeframe allotted for the event.

- Ask your Lean event facilitator for help with appropriately scoping a Lean event. Additionally, talk with other environmental agencies that have targeted similar processes using Lean. Staff at these agencies may be able to offer suggestions for scoping and planning your Lean event.

Set Ground Rules for the Event

Setting ground rules for the event helps ensure that all participants respect and hear all ideas and viewpoints expressed during the event. Ground rules also remind participants to keep an open mind and to "think outside of the box." Ground rules are reviewed during the kick-off meeting and are prominently posted for all participants to see. Example ground rules are included in the adjacent resources box.

Set Clear Boundaries for the Event

During the event scoping discussions, it is crucial that the event sponsor, possibly in coordination with other key agency managers, set clear boundaries for the Lean event. Setting boundaries in advance helps enable a Lean team to keep its focus on those aspects of the process and potential solutions it has reasonable control over. It is important that the scope for the event include areas to which the Lean team is empowered to make changes and decisions. There are two key types of boundaries:

- *Process-scope boundaries.* It is important to clearly identify where the process starts and ends, at least insofar as which parts of the process will be discussed during the Lean event. It may also be necessary to draw clear lines where hand-offs are made to other processes. For example, it may be appropriate for a state Lean event to set an external review process (e.g., EPA review, public comment process) as a part of the broader value stream or process that is "out of bounds" during the Lean event.

- *Solution-scope boundaries.* It may also be important to set limits on the types of changes that are allowed as part of the Lean event. For example, it is typically appropriate to say that policy changes are off-limits.

Establishing clear boundary conditions for the Lean event can address potential concerns that some agency staff or stakeholders may have while also clarifying team expectations about aspects that are fair game for improvement. Key examples include:

- *Clear boundary conditions ensure that agency objectives—such as environmental protection and public participation—are not undermined.* For example, changes that would require rulemaking action are generally considered out of bounds during a Lean event, although these ideas could be held in a "parking lot" for future consideration.

- *Boundary conditions can be helpful in addressing key stakeholder concerns up front.* For example, when conducting a Lean event on a permitting process it may be necessary to clearly state that public comment and participation opportunities will not be lessened, or that the time for substantive analysis and review by permit engineers will not be lessened.

- *Boundary conditions can help set clear expectations about the availability of resources.* Lean events are designed to strongly encourage creativity to find ways to reduce costs rather than to increase capital expenditures.

> **EXAMPLE LEAN EVENT GROUND RULES**
>
> - Keep an open mind to change
> - Maintain a positive attitude
> - Never leave in silent disagreement
> - Create a blameless environment
> - Practice mutual respect everyday
> - Treat others as you want to be treated
> - One person–one voice, regardless of position or rank
> - There is no such thing as a dumb question

While it is okay to allow teams to set some boundary conditions during the event, it is important to identify which boundary conditions must be set in advance.

Identify Pre-Work and Metrics

Pre-work and collecting data on baseline metrics are important for effectively using your time in a Lean event. Collecting data on the current state of a process enables a Lean team to understand the process, to identify areas for improvement, and to assess the effectiveness of potential changes to the process. Often, pulling together information at the sub-process level can help inform the team's understanding of the current state of the targeted process. It is not enough to know the overall process performance, it is also necessary to understand how things work at the process step level. In addition, there may be other materials to assemble before the event and other tasks that need to be completed ahead of time, such as getting approvals for making certain types of changes during the event.

Pre-work

In many cases, it may be helpful to assign responsibility for "pre-work," the tasks that need to be completed before the Lean event. Pre-work can include collecting data prior to the event that is needed to establish baseline metrics and gathering background documents that are likely to be useful during the Lean event, such as existing process maps, procedures, or examples of process outputs (e.g., recurring reports). Although Lean events usually include some time to collect baseline data, it can be quite valuable to gather these data in advance, if possible, so that the Lean event team can spend more time working on solutions to eliminate waste in the process.

Sometimes it can also be helpful to have information on how key "customers" or stakeholders perceive the targeted process and its outputs. Getting a sense of the "customer's voice" prior to the Lean event can be helpful, particularly if key customer groups will not be represented on the

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[3] Example "In Scope, Out of Scope" list based on a presentation of the Delaware DNREC.

Lean event team. It may take some time to get customer input, through interviews or surveys, so plan for and collect this information in advance of the Lean event.

Metrics

Current state metrics establish the baseline by which to measure the outcome of a Lean event. Metrics should be quantified before, during, and after Lean events. The Lean Government Metrics Guide (see resource) provides definitions and examples of metrics often used in Lean government efforts. There are several categories of metrics for evaluating improvements to specific processes, as follows.

- *Time metrics*. What is the total lead time for the process (e.g., start-to-finish time for a permit application review)? What percentage of that time adds value from the customer's perspective? How long does it take to complete a cycle or transaction within the process? What percent of products (e.g., permits and travel authorizations) are delivered on time?

- *Cost metrics.* How much does the process cost to operate (e.g., the number of full time equivalent employees)? What cost savings did the team identify in the Lean event?

- *Quality metrics*. How often does the process lead to mistakes (e.g., incomplete or inaccurate forms) that require rework? How do customers view the effectiveness and efficiency of the process?

- *Output metrics.* How many products (e.g., permits) are completed or processed each month or year? What backlogs exist in the process?

- *Process complexity metrics*. How many steps are in the process? How many of those steps add value, from the customer's perspective? How many times is a document handed off between individuals, offices, or departments in the process?

> **Resources**
>
> - **Pre-event Data Collection Guide**
> - **Lean Government Metrics Guide**

LEAN GOVERNMENT PROCESS METRICS		
Time Metrics	*Cost Metrics*	*Quality Metrics*
⇨ Lead Time ⇨ Best and Worst Completion Time ⇨ Percent On-Time Delivery ⇨ Processing Time ⇨ Activity Ratio ⇨ Value Added Time ⇨ Non-Value Added Time ⇨ Non-Value Added but Necessary Time ⇨ Percent Value Added Time	⇨ Labor Savings ⇨ Cost Savings ⇨ Cost per Product	⇨ Customer Satisfaction ⇨ Rework ⇨ Percent Complete and Accurate ⇨ Rolling First Pass Yield

Output Metrics	Process Complexity Metrics
⇨ Production ⇨ Backlog ⇨ Work in Process ⇨ Inventory	⇨ Process Steps ⇨ Value Added Process Steps ⇨ Decisions ⇨ Delays ⇨ Handoffs ⇨ Loops ⇨ Black Holes

MEASURING ENVIRONMENTAL OUTCOMES

The ultimate goal of using Lean and Six Sigma in environmental agencies is to improve environmental outcomes more efficiently and effectively. The metrics listed in this Starter Kit provide a number of ways to track and evaluate the efficiency of government processes and the operational benefits from process improvement efforts; however, making the connection between process efficiency improvements and environmental outcomes is more challenging. Measuring the contributions of specific Lean events or Six Sigma projects to environmental outcomes—such as drinking water quality, human exposure to air pollutants, changes in greenhouse gas emissions, and habitat condition—is difficult, given the variety of variables that influence environmental outcomes. In most cases, administrative processes targeted by Lean (e.g., a permitting process or grant distribution process) are removed from having direct impacts on environmental outcomes. Occasionally, the process targeted by a Lean event can have a more direct impact on environmental outcomes. In such cases, the project team should consider whether it is appropriate to set a baseline environmental outcome measure and evaluate the changes to the measure as a result of the improvements made to the process. Consider asking the question: "How does the targeted process affect environmental outcomes?"

In addition to measuring the results of individual Lean events, environmental agencies may also want to track the progress and results of Lean implementation at an organizational level. Types of metrics relevant in this context include the following.

- *Lean deployment metrics.* How many Lean events have we completed this year? How many employees have participated in at least one Lean event? How many employees have participated in Lean training classes or certification programs?

- *Morale metrics.* How satisfied are employees with the agency or office? What is the staff turnover rate and how does it compare to the average for government agencies?

METRICS FOR EVALUATING AGENCY-WIDE LEAN EFFORTS	
Lean Deployment Metrics	**Morale Metrics**
⇨ Lean Events Conducted ⇨ Lean Event Participation ⇨ Lean Training	⇨ Employee Satisfaction ⇨ Turnover

Consider these points when identifying key metrics:

- *Determine the purpose of the metrics.* Measuring the wrong things can waste people's time or, in the worst cases, reinforce undesirable behaviors. In selecting metrics, consider questions such as:
    - o What is the purpose of the metric? What wastes are we trying to eliminate? What behaviors are we trying to reinforce?
    - o Who are the key audiences for the metric?
    - o How will we use the measurement data?

- *Just use a few metrics.* No more than a few metrics per category are needed. Having too many metrics dilutes the focus of the improvement efforts and can create unnecessary work.

- *Use only the appropriate metrics.* Ask whether there is something important about a targeted process related to each category of process metrics, and do not worry if the answer is "no." Also consider which metrics would be useful to evaluate across the agency, depending on the status and goals of the Lean or Six Sigma initiative.

- *Focus on customers and agency leadership needs.* While many metrics can show improvements made during Lean events (e.g., reductions in the number of process steps), only a few metrics matter to customers, including the time it takes to receive a service or product (lead time) and the quality of the service or product. Make sure to include some metrics that reflect key interests of customers, along with metrics that will resonate with agency leaders and support the agency's strategic goals.

- *Engage data users in the design of the metrics.* It is important to engage people who are familiar with the process in the design of metrics and the development of a system for collecting and reporting performance data. Without consulting front-line employees, agencies risk choosing metrics that are poorly understood, irrelevant, or inconsistently used by the people who do the work.

Select Participants and Determine Roles

Thoughtful participant selection can ensure a successful and productive event, making it important to carefully select external stakeholders and agency staff participants. Team members are expected to attend the entire event and fully participate by providing input and ideas. Team members are also expected to complete assignments identified during the meeting or tasks that may be defined after the event. Here are some things to consider when selecting participants and determining roles:

- Ensure the team has cross-functional representation. The "thirds rule" provides a good guide for structuring the Lean team composition (see textbox). It is important that members of the team are empowered to make commitments about process improvement ideas that are within the scope of the event.

- It is often helpful to have a representative from the agency's information technology group, since most processes have some important relationship to agency databases or information systems. It may also be useful to consider whether people from the agency who are indirectly affected by the process or representatives from other support functions, such as accounting, legal, or human resources would be helpful to involve.

- Participant selection can help secure buy-in from all levels of an agency for the process improvement efforts. Most importantly, you should include staff and managers on the team that can continue implementation beyond the event itself. Consider involving informal as well as formal leaders on your Lean event team.

- Lean event teams are typically comprised of 12-18 members. However, some processes are extremely complex and it may take additional participants to get all the right players at the table. If additional participants are required, the largest size recommended is 20. Once the group size gets beyond the mid-twenties, it can become very challenging to manage, especially for the facilitator.

- If you cannot pare down your list of critical participants for an event below 20, another option to consider is to convene off-site meetings on specific topics, such as holding a meeting that deals exclusively with a specific aspect of the process that some participants may care most about, such as legal review. This approach is suggested for highly complex processes or issues.

- One strategy for getting more people into the room during a Lean event is to distinguish between observers and participants. Observers should be limited in number and should not outnumber team members as too many observers may cause team members to be uncomfortable or hesitant to express their viewpoints. While observers are welcome, it is critical to communicate that they are observers only.

- Team members are expected to shed <u>all</u> of their operational responsibilities during the course of the event, thereby allowing them to completely focus on the event. It is highly disruptive and disrespectful to the team if a senior manager is routinely taking calls, checking email, or leaving the room for other meetings. Ensure that each team member's responsibilities are delegated to other staff during the event and communicate the expectation that team members should not be doing other work during the event.

- If you are having trouble selecting team members, it may be useful to hold a pre-event meeting with a small group of staff to identify all the activities included in the event

scope and which staff members are connected to these activities. In addition, the Lean facilitator can provide advice on how to select participants (e.g., qualities/characteristics to look for).

Phase 3: Event Preparation and Logistics

Prepare the Event Agenda

Prior to the Lean event, prepare an event agenda that clearly articulates the objectives and timing for the event. An effective agenda ensures that the objectives and goals of the event match the given timeframe. The Lean facilitator is typically responsible for preparing the agenda, or at least reviewing it prior to sharing it with participants. It is important to distribute the agenda to participants before the event.

> **Resources**
>
> - **Kaizen Event Agenda**

Arrange Logistics

All events require a certain amount of logistical planning, such as selecting a date, reserving meeting space, re-distributing staff workloads, and securing meals during the event. Addressing these logistical questions before the event helps to ensure smooth implementation and create a comfortable, stress-free environment for participants.

- *Schedule the event*. The typical duration for a kaizen or value stream mapping event is 3-5 days. Thus, it is important to consider these timeframes when scheduling a Lean event, as holidays or staff vacations could interfere with event timing. If you have opted to hire a Lean facilitator, keep the same scheduling considerations in mind.

> **Resources**
>
> - **Lean Event Supplies List**
> - **Lean Event Logistics Checklist**

- *Reserve sufficient meeting space*. During some Lean events, participants may need to break out into smaller groups for part of the event, so it is important to ensure that there is space and materials available for breakout sessions and the group as a whole. Furthermore, it may be helpful to reserve additional space for the initial training session and/or final report-out presentation.

- *Finalize logistics and schedules.* Logistical preparations such as setting aside space for the Lean event team or meal orders and the finalization of the agenda should be addressed or completed prior to the event.

- *Send reminder e-mail.* It is helpful to send a reminder e-mail or calendar invitation to ensure that team members have the correct dates and times blocked on their calendars.

Collect needed data and information

Prior to the event, collect background materials and data about the current state of the process, based on the performance metrics and pre-work identified during the pre-event meeting.

Communicate About the Event

Communicating proactively is critical to building organizational buy-in to process improvement efforts. Transparent communications, particularly with employees whose work may be affected by the Lean event is vital to ensuring success.

- *Schedule a briefing with senior management once the scope and objectives of the Lean event has been set.* Top management support is crucial for a successful Lean event, in part because it can affect budget and staff availability. It is also important for senior management to approve many of the aspects of a Lean event, including:

    o The process that will be addressed;

    o The decision to hire an external Lean facilitator;

    o The anticipated timeframe, products, and results; and

    o How the event will affect staff availability and workload.

- *Inform staff about the Lean event.* Notifying internal staff that a Lean event will occur provides transparency to the process and is a great opportunity to solicit feedback and ideas on event scope or "areas of pain" in the targeted process. Communications with staff should include information on the Lean event as well as background information on Lean

Resources
• **Frequently Asked Questions About Lean**

methods and how the Lean event could affect staff. It may be helpful to directly address potential concerns that some employees may have about Lean or the focus of a particular event. For example, it may be helpful to clearly indicate that no staff will lose their jobs as a result of improvements made from the Lean effort. The "Frequently Asked Questions about Lean" resource contains information that is often helpful to communicate to others in the organization.

Lean Event Implementation

This section addresses key activities and steps involved in conducting a successful Lean event, including the following:

> ## LEAN EVENT IMPLEMENTATION STEPS
>
> ⇨ **Lean Event Overview**
> ⇨ **Kick off a Lean Event**
> ⇨ **Manage the Phases of a Lean Event**
> ⇨ **Manage Change During a Lean Event**
> ⇨ **Identify Follow-Up Action Items from the Event**
> ⇨ **Report Out at the End of the Event**
> ⇨ **Celebrate a Successful Event**

Lean Event Overview

The diagrams below lay out the main phases of a kaizen event and VSM event. Kaizen and VSM events often take place over a 5-day period. They can be shorter, however, if the scope of the process being addressed is more limited. Some organizations conduct one-day "point kaizen" events that focus on a very specific area for improvement. Most events follow the steps outlined below. Lean leaders highly discourage efforts to short cut the kaizen or VSM process, since much of the power of Lean lies in following the methods closely.

Kaizen Event Overview

Day 1	Day 2	Day 3	Day 4	Day 5
Training Day Lean training; begin mapping and measuring current work process	**Discovery Day** Measure and analyze current work process	**Do Day** Create and map new process	**Do, Re-Do, Document Day** Evaluate improvements, operate using new process, finalize	**Celebration Day** Present results and celebrate

Some Lean facilitators describe the flow of a kaizen event as (1) measure, (2) analyze, (3) improve, (4) control, and (5) report and celebrate. While the terminology may vary slightly, the steps and flow of a kaizen event tends to vary little whether it is being applied to a manufacturing workshop or an office administrative environment.

Value Stream Mapping Event Overview

One of the main differences between a VSM event and a kaizen event is that a VSM event typically focuses at a higher level, mapping the entire chain of processes that create and deliver something of value to a customer. While the general structure of a VSM event is similar to that of a kaizen event, the VSM event is typically designed to develop a roadmap to guide future kaizen events that target specific areas where improvement is needed. VSM events emphasize planning and prioritization of future activities, while kaizen events focus on implementing process changes.

Day 1	Day 2	Day 3	Day 4	Day 5
Training Day Training on VSM tools and how to draw a VSM map	**Current State** Draw a map of the current state and identify problems	**Future State** Map the shared vision of the new process	**Planning** Evaluate how to implement the future state map and create a plan	**Celebration Day** Present results and celebrate

The Detailed Event Agenda

In addition to the event agenda prepared prior to the Lean event (see section under Phase 1 above), it is also important to prepare a *team leader daily agenda*. This detailed agenda is essential for identifying the team leader's responsibilities and actions throughout the event. This agenda also ensures that the flow between the main phases of a Lean event is smooth and that all activities are well executed.

> **Resources**
>
> - **Team Leader Daily Agenda**

Kick Off a Lean Event

Planning for the kick-off of your Lean event is essential for success. The kick-off session is typically introduced by the Lean event sponsor and the Lean team leader, and then handed off to the Lean facilitator. The kick-off session should include the following activities.

- *Introduce all team members and observers.* Ask each team member to briefly address a few key questions:

    (1) Who are you and where do you work?

    (2) What are your goals for this event?

    (3) What do you like to do when you are not at work?

- *Capture team members' goals on a flipchart and post them on the wall.* By understanding participants' goals, it is often possible to create improvements in a form and manner that meet diverse needs.

- *Have the event sponsor say some opening words*. This can be helpful to clearly articulate the event scope and boundaries, while encouraging (or even inspiring) team members to work towards the desired outcomes and event goals.

- *Review ground rules for the event*. It is important to review the ground rules that were established during the pre-event meeting and post them prominently for all participants to see.

- *Briefly review key performance data and background materials that have been assembled.* This can help anchor the team around desired outcomes and key reasons for working creatively to improve the process.

- *Set a tone for having fun!* Team engagement is key to success. Make the event fun for everyone, including staff and support personnel. If the event facilitator and team leader are fully engaged and show enthusiasm, it will be co*ntagious.*

Training

*Lean training is typically a core part of the first day of a Lean eve*nt. For many people this may be their first event and it is important that all participants be on the same page about how the Lean event will work. Think of this as just-in-time training—where participants learn about Lean immediately prior to implementation. Most organizations continue to have training as part of the kick-off for every Lean event, even if most or all team members have previously participated in a Lean event. Most organizations find that the just-in-time training provides invaluable reminders, gets everyone on the same page, and serves as an icebreaker to get the team warmed up for several days of intensive activity. Training is also discussed in Chapter 4.

Manage the Phases of a Lean Event

While much of the success of a Lean event rests on careful planning and preparation, managing the event phases is also a significant responsibility. During the Lean event it is easy for the process and participants to get off track. While your Lean facilitator will help keep discussions on track, it is important for the team leader to maintain the focus on the event's objectives. A few tips include:

- *Develop and adjust the agenda daily and post it in a high traffic area for all participants to see*. The agenda should be accessible to all participants as a reminder of the day's events.

- *Ensure that the team members understand Lean terms conceptually and in practice.* One of the underlying goals of an event is to identify waste or non-value added activity in a process. While some terminology can sound negative, waste in Lean terminology refers to anything that adds cost or time without adding value from the perspective of the customer.

- *Promote and encourage creative problem-solving*. It is critical to the success of Lean that the event fosters creative thinking. The facilitator and team leader must work to create space in which all team members feel safe to bring up ideas, even if the ideas seem non-conventional.

- *End each day at a reasonable hour.* Working late into the evening is not necessary and can hurt team morale. If the work is complete, don't hesitate to end early. If longer hours are needed, all participants must agree to this schedule.

- *Assign homework during the event to track actions and the work completed.* Homework often includes ideas that participants did not have the time or resources to complete and can be used to track actions for event follow-up (see the "Lean Event Homework" form included as a resource).

> **Resources**
>
> - **Lean Event Homework**

A few method-specific tips include:

- *When doing process mapping in a Lean event, don't assume that the process works as it is intended to work.* Develop the current state map based on actual data and observations about how the process works in practice, even if that makes the map messy.

- *Techniques for helping people get to the root cause of an issue or problem.* When people are stuck on something there are a variety of techniques that a team leader with some Lean facilitation experience can use.

  o One approach is the *5 Whys method.* The approach of asking "why" five times is used to identify the root causes of problems in a process or value stream. By applying the 5 Whys method an agency can identify waste and improvement opportunities. You may find that there no longer are good reasons why a process is implemented a certain way.

  o Another common technique is *Cause-and-Effect (aka fishbone) Diagram*: This is a useful technique that is used to trigger ideas and promote a balanced approach in group brainstorming sessions where individuals list the causes and effects of problems.

Manage Change During a Lean Event

Real change is difficult. There are often a thousand reasons to maintain the status quo. Yet it is vital to trust the insights and ideas that emerge during the Lean event. Lean methods are specifically designed to help people see processes in a new light, making it painfully clear where improvement is needed and opening paths for change that were not previously evident.

Diverse emotions are often stirred when individuals involved in the targeted process watch the Lean team rip into the work they do on a daily basis and highlight large amounts of non-value added activity. Be sensitive to this, remembering that the focus is on the process, not on the performance or accomplishments of individuals. The team goal is to forge a process that increases all participants' ability to add value and to perform meaningful work. Note that these emotions can be magnified for those who are involved in the targeted process but who may not be participating on the Lean team.

Give some thought to how to best reach out during and after the Lean event to others whose jobs may be directly affected by changes made during the event.

A few tips include:

- *Brainstorm new ways to eliminate waste and/or to re-conceptualize a process or an entire value stream.* Stay innovative. Don't be limited by what has been tried before.

- *Be flexible and willing to try new things.* Keep testing new ideas during kaizen events but avoid the paralysis of over-analysis. Create value stream maps using sticky notes on white boards or butcher paper, so that they can be easily adjusted during the event. Expect to revisit and revise "future state" implementation plans.

- *Test improvement ideas as much as possible in an event before changing the layout or order of a process.* Afterwards, implement the new plan. Lean encourages testing new improvement ideas and utilizing creative thinking. In VSM events, it is common to develop several iterations of your future process map before settling on one that the team agrees on.

- *Communicate with management.* Immediate supervisors should to be kept informed about changes to the process. One way to do this is to hold a 15--20 minute daily briefing for the event sponsor and other key managers and supervisors each afternoon of the event. These brief meetings can help ensure management buy-in and tap help in removing any obstacles the team may be facing.

- *Hold trainings for staff about process changes and future plans.* Explain to workers not involved in the event how the new process will make their jobs easier and more rewarding. Let them know how to get involved in future process improvement efforts.

Identify Follow-up Action Items from the Event

While conducting your Lean event, you may discover other areas or processes that would benefit from Lean. While common, it is important to maintain the group's concentration on the focus of the current Lean event. *For tracking purposes, make note of these opportunity areas for future projects.* On the final day of the event document action items your team was not able to complete in the event, assign responsibilities and due dates for individual tasks, and select one person to serve as an overall implementation manager to track follow-up efforts.

Report Out at the End of the Event

Participants give a report-out presentation at the end of the Lean event. The event sponsor and other senior managers who did not participate in the Lean event often attend the report-out presentation. The report-out serves as a forum for exchanging ideas and informing others of the team's accomplishments. It also helps to solidify the shared experience during the event.

Resources
- **Report-Out Summary**
- **Event Report-Out Presentation**
- **Event Evaluation Form**

Generally, the presentation includes an overview of the event objectives, activities, and results. A few tips include:

- Assign individual team members with presenting part of the presentation. It is helpful to involve all team members if possible.

- Conduct a "dry run" presentation so team members are comfortable with their roles.

- Focus on the highlights of participants' experience rather than presenting a verbatim recap of the entire event.

- Keep the presentation to less than 45 minutes, leaving approximately 10 minutes for questions and comments by the audience.

- Hand-out an event evaluation form prior to the presentation. This allows participants to share their experiences confidentially and can be used to identify possible process candidates for future Lean events.

Celebrate a Successful Event

Upon completing the Lean event, it is important to celebrate the achievements and hard work of the event. An event celebration is a great way to extend thanks to participants, planners, and managers, and to recognize the team's contributions.

- Coordinate with the event sponsor or staff support to plan the celebration.

- Consider providing each team member with a certificate or a small token of appreciation to commemorate the event.

- Take a team photo and make copies for all team members.

- Consider sharing the results of the event through an agency newsletter, a posting on a bulletin board, or in a press release. (See additional ideas in the next section).

- Give credit to support personnel, other staff in the area, and the team members for making the gains possible.

Lean Event Follow Up

Now that you have completed your Lean event, effective follow-up is vital to realizing and sustaining the benefits.

⇨ **Track and Implement Event Follow-up Actions**
⇨ **Document the New Process and Communicate Internally**
⇨ **Evaluate Performance**
⇨ **Communicate Externally**

Track and Implement Event Follow-up Actions

Follow-up is necessary to reap the full benefit of your Lean event. One of the most important products of a value stream mapping event is the "future state" implementation plan, yet that only delivers value to the extent it results in future process improvements. In addition, while kaizen events encourage implementation of many process changes during the event, there is often a list of follow-up actions that the team was not able to make during the event. Effective follow-up is also vital to sustaining the team-based culture that is often created during Lean events.

Action items should be clearly documented and tracked carefully to ensure completion by target dates. Prompt follow-through on incomplete actions is vital to overcome inertia that can cause an organization to revert to the old process. Move forward with implementation on the Monday following your Lean event.

Implementation Manager

One of the most essential steps to ensure effective follow-up is to identify an "implementation manager." The implementation manager (could also be called the "process champion," among other titles) is responsible for ensuring that a clear and effective event follow-up process is established and conducted. Specific responsibilities of the implementation manager include:

- Schedule and run event follow-up meetings;

- Lead efforts to identify and remove obstacles to effective follow-up;

- Hold the team accountable for follow-through on actions;

- Ensure that progress is periodically evaluated and corrective actions are implemented, as needed; and

- Ensure that post-event communication plans are executed.

> **COMMON FOLLOW-UP PITFALLS**
>
> - Monitoring follow-up requires a lot of effort. This effort can get lost if it is not an assigned part of an individual's day-to-day work.
> - Coordinating follow-up solely by email has pitfalls, as it is easy for people to ignore, neglect, or misinterpret email messages.
> - If the implementation manager is offsite and/or does not work directly within the implementation team, it is harder to play a motivational role on follow-up activities.

Carefully select the implementation manager. This role can be filled by the Lean event team leader or another qualified person in the agency. The individual should have sufficient stature, authority, and connection to the process to lead follow-up activities, remove barriers, and drive accountability. The individual must also be able to make sufficient time available to ensure follow-up activities happen. It can be helpful to select an implementation manager who is somewhat familiar with Lean and who is co-located with other team members.

Tracking Follow-Up Actions

Another important step is to establish an effective system to document and track follow-up actions to ensure their completion. In particular, make sure there is a person responsible (an "owner") and a deadline associated with each action item.

When tracking actions and results, keep in mind the following tips:

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EXAMPLE AGENDA FOR WEEKLY MEETINGS

- Review progress in addressing action items
- Identify obstacles to follow-up
- Agree on a plan to address the obstacles
- Update action item list as needed

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- *Stretch, but be realistic.* While it is important to keep pressure on to quickly address Lean event follow-up actions, try to set the team up for success. Discuss potential obstacles that could derail efforts to complete actions within the first 30 days and brainstorm ways ("countermeasures") to navigate around these obstacles.

- *Track follow-up actions in a centralized place.* Consider using the Lean event follow-up action tracking template provided in the Starter Kit. Someone on the team should be tasked with keeping track of the status of follow-up actions. Post follow-up action lists in a shared place onsite. If some team members are offsite, an online collaboration website may be a useful place to track actions and post relevant post-event resources and information. Using color codes on an action list can make it easier to quickly assess follow-up status, particularly when there are numerous open actions.

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Resources

- **Lean Event Follow-Up Action Tracking Form**

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Color Coded Signals on Action Item Tracking List

Green =	On track
Yellow =	Needs attention to keep on track
Red =	Off track; needs urgent attention

- *Conduct daily or weekly implementation check-in meetings with the core members of the Lean team.* Set up brief daily or weekly meetings with a small implementation team comprised of team members with event follow-up responsibilities. In some cases, the check-in meetings can be piggybacked on another project or staff meeting, if the appropriate team members are present. The meetings can be quick (e.g., 5-15 minutes) and even held standing up–-some organizations try to make these check-ins have a distinct feeling and energy that differentiates them from conventional meetings. The tone of these check-in meetings should be one of team-based problem solving. If an individual's follow-up actions are not getting completed, have the team explore ways to free the individual's time or consider alternatives for getting the actions completed.

The weekly check-in meetings should take place until all follow-up actions have been completed. If possible, hold these meetings where the work is actually performed to provide an opportunity for the implementation team to talk with workers, see the process in action, and hear firsthand what is going well and where there are obstacles. See the textbox above for an example weekly check-in agenda.

While it may sound like an unnecessary hassle, holding a 5-15 minute daily or weekly stand-up team check-in meeting can do a lot to both ensure effective event follow-up and to sustain a sense of teamwork. These quick check-ins can play a major role in reinforcing a collaborative, team-centered organizational culture.

- *Walk the process.* Implementation managers and other team members should periodically walk around the office, following the flow of the process work and checking in with staff involved in the process. Too often, managers do not leave their offices. Checking in with staff involved in the process sends a message that their work, and the changes made and planned through the Lean event, are important and valued. These interactions can also provide real-time feedback on process performance and follow-up action status, allowing for quick troubleshooting where needed.

- *Conduct monthly report-out meetings.* Most organizations conduct 30-, 60-, and 90-day report-out meetings to supplement the weekly check-in meetings. Six- and 12-month report-out meetings are also important to ensure that improvement results are sustained and to identify the need and scope for potential Lean events in the future.

These meetings are typically more formal than the weekly check-ins and provide an opportunity to measure process performance and drive ongoing improvement (see the section below on "Evaluating Performance" for more discussion of the monthly report-out meetings). The focus of weekly meetings described above is more tactical—to ensure that event follow-up actions are being completed. In the monthly report-out meetings, the Lean team can think more strategically about the new process and evaluate the process performance using key metrics identified during the event.

It is best if the full Lean event team, including consultant support, members from outside the process, and management sponsors, can attend (in-person or via teleconference) the monthly report-outs. These meetings give team members a chance to see the results of their labor, assist with identifying and removing obstacles to improvement, and strenghten their ownership of the improved process. Many agencies endeavor to make these meetings fun, which helps keep enthusiasm high among all particpants.

Document the New Process and Communicate Internally

The new work process resulting from a Lean event needs to be clearly documented and communicated to all involved in the process. Transparency is vital to ensuring that changes are understood and executed. When documenting the new process, keep in mind the following tips:

- *Prepare and post a clear map of the new process.* A concise, visual map of the new process can be a powerful tool for communicating key steps and elements of the process. Think creatively about where to post the map to ensure that it is seen by those who have a

role in the process. For example, process maps can be displayed on bulletin boards or white boards in hallways or conference rooms, and/or on a web page on the agency's intranet. Placemat-sized maps can even be developed (with color and graphics) and laminated for hanging in employees' work stations.

- *Develop "standard work" procedures.* Standard work procedures are highly-effective Lean tools for ensuring that a new process is implemented in a clear and consistent manner. Standard work procedures should be clear and concise and use consistent formatting. They should be prominently displayed where the work is actually performed; procedures that sit in binders on shelves typically do little to influence behavior. Involving employees who perform the process step to assist with developing the standard work documentation can both increase ownership and capture valuable knowledge. Standard work documentation can help ensure expectations are clear regarding desired work approaches under the new process. Standard work can also help an agency prevent backsliding when staffing transitions occur.

- *Boldly express management support for the new process.* Managers can play a key role in event follow-up by expressing unambiguous support for the new process developed during the Lean event. Managers can also allay employee concerns. For example, some employees may fear that development of "standard work" procedures and a more transparent process may affect their job security or eliminate room for employee creativity within the process. Managers can make it clear that the goal is to free employees to have the time and space to add more value to the process and other activities for which they have responsibility.

In addition to documenting and communicating about the new process, it is important to consider implementing other communication activities that can generate momentum for success.

- Send thank-you letters to all internal and external participants.

- Present event results at a department or division meeting or retreat.

- Post results on bulletin boards or "exhibit areas" in the agency lobby or common spaces.

- Acknowledge Lean event results or activity at a staff meeting or an agency awards ceremony.

- Write an article in your agency's internal newsletter that outlines your Lean implementation experience.

- Post information and photos of the Lean event, as well as follow-up information, on the agency's intranet/internet.

Evaluate Performance

Regularly evaluating performance and analyzing results is a critical component of Lean. Lean's continual improvement focus means that the Lean event marks the beginning of improvement efforts. Continue to monitor the performance of the process over time, and be on the lookout for countermeasures

Resources

- **Lean Government Metrics Guide**

needed to address problems as well as additional process improvement opportunities. It is important to both evaluate performance based on the key metrics identified during the pre-event meeting and to track the extent to which the event achieved the goals and objectives set for the event. For more information on metrics, see the Lean Event Planning section in Chapter 3 or the Lean Government Metrics Guide resource available on EPA's Lean Government website.

Keep the following tips in mind when evaluating post-event process performance:

- *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. Consider using the questions in the box below as a guide for these meetings.

KEY QUESTIONS TO EXPLORE DURING MONTHLY REPORT-OUTS

- Are all employees following the process as designed in the event (or as modified since the event)?
- Is there evidence that all employees, including those new to the area, have been trained on the new process?
- Is process performance being measured and reported as set forth in the kaizen event?
- Is the implementation manager monitoring and supporting compliance to the new process?
- Is the appropriate leadership informed of and engaged in the process?
- Are consequences for not following the new process design in place?
- Have any unintended consequences (positive or negative) arisen? Check with downstream customers.
- Are workers pleased with the improvements? Do they feel their work has been simplified?

- *Use the event objectives as targets for monitoring the performance of the process.* Referring back to the team charter and other early documents can help ground the results. It also may be useful to identify milestones that represent interim steps to reaching the final performance objectives.

- *Consider using visual displays or dashboards to show progress towards the performance objectives and to motivate additional improvement efforts.* Visual displays can be powerful communication and motivational tools. It is important to keep them simple, so that they are easy to understand and do not become a time-consuming task to create and update. Many organizations use a whiteboard or color-coded wall chart to track how the process is performing. If updated for the weekly meetings, the chart can serve as a focal point and motivational tool.

- *Consider adjusting key performance metrics to ensure that you have a clear dashboard to monitor the future performance of the process.* For example, in value stream mapping events, you should rely on the initial metrics identified in the current state map and future state maps as indicators of success. These metrics should be reported on at 30, 60, and 90 day events. Having a few good measures can help identify potential backsliding and spur action to sustain momentum for improvement. This information can also help identify appropriate timing for a follow-up Lean event, if warranted.

Communicate Externally

Making process description and performance information available to key stakeholders and the public can be a powerful means for improving transparency and participation in government processes. External communications can also be important to ensure that external parties involved in or affected by a process are sufficiently aware of changes made. It may be useful to solicit feedback from affected parties to ensure that process improvements are having their intended effects.

Consider developing an external communication plan related to the Lean event. A communication plan can help ensure that your agency proactively publicizes the improvements and addresses any potential stakeholder concerns that may arise around process changes. Potential communication activities include:

- Reach out to your customers and key stakeholders to identify any changes to the process that affect their involvement.

- Write an article for your agency's website or public newsletter that outlines your Lean implementation activities.

- Conduct a webinar to brief key stakeholders and interested members of the public on process changes and improvement results.

- Post information on your Lean events, including results, on your agency's website.

Consider including the following types of information in communication materials:

- Brief description of the *process* and the *problem* (What was not working well?)

- Basic information on the event (What? When? Who?)

- Key results related to time, cost, quality, and other outcomes

- Key differences between the old process and the new process (What has changed or will change? What types of improvements were made?)

- Brief statements on the significance of the improvements

- Outline of future improvement plans

Follow-up is an integral component of a successful Lean event. It is hard work and requires a lot of effort, but is key to maintaining the momentum of fast-paced improvement inspired during the Lean event. In addition, conscientious follow-up activities help people to develop a continuous improvement mindset.

The next chapter describes how to sustain and diffuse Lean within a government agency.

Chapter 4. Sustaining and Diffusing Lean Activity

Doing one (or a few) Lean events at a government agency can be an eye-opening and exciting experience. Observing rapid and dramatic improvements in an agency process can offer a glimpse into what is possible to accomplish—even in a large government bureaucracy. Yet running a few successful Lean events may not sustain the benefits. It is important to remember that sustaining and diffusing Lean into an agency is a critical part of the overall Lean work. After the first few Lean events, inevitable questions arise:

> ⇨ **How can we sustain and diffuse the successes of our initial Lean activity?**
>
> ⇨ **What does Lean mean for our agency for the long term?**

Responses to these questions can range significantly, from "we are done with Lean" to "let each part of the agency pursue use of Lean on its own" to "we are going to incorporate Lean into how our agency does its business." Each agency must decide whether it sees sufficient value to continue using Lean. If the agency decides to continue with Lean, then it must decide how. There is no right answer to this question, but failure to strategically consider it can be disastrous. At best, failure to think strategically about sustaining and diffusing Lean activity will increase the cost of capacity building, Lean training and facilitation, and Lean tool development. Far worse, one or two poorly planned and executed Lean events can sour the agency on Lean and undo past progress. Furthermore, given the frequency of changes in agency leadership, initiatives that are not well-planned or entrenched in the agency can be vulnerable to elimination.

This chapter is designed to help you think strategically about how your agency can sustain and diffuse Lean continual improvement activity. The topics covered in this chapter include:

- Sustaining Lean Improvements
- Understanding the Lean Journey
- Getting Started with Lean Diffusion
- Four Deployment Models for Lean Diffusion
- Future Directions—Building a Lean Continual Improvement Agency

Sustaining Lean Improvements

While Lean methods can be used for one-time, one-shot improvement efforts, the real value of Lean lies in its focus on continual improvement. Follow-up from Lean events is critical to sustaining success and preventing back-sliding in process execution and performance. Three activities are vital for sustaining Lean improvements: champion event follow-up, revisit processes with future Lean events, and cultivate employee ownership of process improvement.

Champion Event Follow-up

The event follow-up activities discussed in Chapter 3 directly prevent back-sliding by focusing attention on completing open action items and addressing challenges that may have arisen after the Lean event. Someone with sufficient authority must champion the event follow-up, help remove obstacles, and hold team members accountable for closing out action items. Chapter 3 discusses this important role for an "implementation manager" or "process champion." The brief weekly check-in meetings, coupled with 30-, 60-, and 90-day report-out meetings, are essential investments to ensure that the results from Lean events are sustained and enhanced.

Revisit Processes with Future Lean Events

Lean is not a one-time event. First, follow-up is essential to ensure that the new process takes hold, runs smoothly, and achieves the desired results. Second, significant improvements can result from conducting periodic improvement events on the same process every one to five years or more frequently. World-class Lean organizations are often amazed at the magnitude of process improvement results that can be achieved when processes are targeted multiple times over a few years. Fresh thinking and perspectives often unleash time, quality, and cost improvement ideas that could not have been imagined during the first Lean event. Third, other Lean methods, such as 5S and visual controls, focus on sustaining Lean improvements by keeping workspaces well organized and making potential problems visible so they can be quickly addressed.

Cultivate Employee Ownership of Process Improvement

Empower employees involved in a process to become active stewards of the process. By actively engaging those involved in a process to "own" its activities and performance, it is possible to identify and address improvement opportunities "on the fly." Managers should routinely ask employees for their improvement ideas and process "malfunctions" should be examined for lessons and improvement options. Another way to get fresh ideas is to give employees the opportunity to exchange roles for a few hours and learn how different parts of a process work. The new vantage points can help team members see the process—and improvement opportunities—in a new light. Consider developing formal or informal systems for collecting improvement suggestions from employees (such as idea boards) and make sure to recognize employees for their suggestions and initiatives.

Understanding the Lean Journey

Achieving the desired Lean approach to expand Lean activity, a deployment model, does not happen overnight. Lean organizations often describe their efforts as a "journey," consisting of various phases of Lean activity and culture change. The figure below describes three key stages that typically occur as an organization matures in its use of Lean: improving, optimizing and transforming.

The Lean Journey

Transforming	• Continuous improvement is everyone's job • Improvement is driven by strategy and scoreboard • Lean is "the way we work" • Result: value delivered to taxpayers and customers
Optimizing	• Management team leads process improvement • Opportunity-focused clusters • Managers applying the Lean methodology • Result: better strategy execution and expertise established
Improving	• Lean teams drive deployment • Ad hoc projects focused on financial benefits • Learning the Lean and Six Sigma tools • Result: identify and eliminate waste and process variation

▶▶▶▶▶ **Three to Five Years to a Lean Culture** ▶▶▶▶▶

The road is not always smooth and many organizations implementing Lean experience a greater chance of failure between 6 and 18 months into their Lean journey. This often occurs due to a lack of strategic focus to the Lean activities, a lack of management passion and commitment to successful Lean implementation, and a lack of staff time and money devoted to support the journey. During this period, initial excitement and momentum from the first few Lean events can subside, especially without active leadership or a clear plan for continuing and diffusing Lean activity.

It is common for organizations to conduct one or more Lean events that are not viewed as a success. The text box below lists several factors that can lead to a Lean event being viewed as unsuccessful. It is important to remember that such "failures" do not mean that Lean cannot work in your agency. Leader organizations use these "failures" as teaching moments. Diagnose the event and make a follow-up plan that directly addresses the key factors that undermined past success.

Getting Started with Lean Diffusion

While a hands-off, grassroots approach to Lean may be appealing in some agencies, some cross-agency coordination and planning is invaluable for effective Lean implementation. Lean leaders in the public and private sectors have found strategic ways to expand Lean activity at a lower cost and with better consistency and results. There are six important steps for diffusing Lean within an agency.

Lean Diffusion Steps

1. **Implement Lean in several areas and share results**
2. **Send clear and consistent supportive messages from agency leadership**
3. **Establish an agency Lean coordinator**
4. **Build a core Lean team and expand staff capacity through cross-training**
5. **Develop a consistent approach and tools for implementing Lean**
6. **Keep at Lean to sustain momentum, but do not push too hard too fast**

1. Implement Lean in Several Areas and Share Results

The best way to sustain and expand Lean activity is to achieve results and to share them throughout the agency. Identify several departments or programs in the larger agency that may be good places to conduct Lean events and to build staff experience with Lean. Conducting single events throughout an agency can yield good improvement results and expose many

personnel to Lean, but this approach will not necessarily build centers of Lean experience that are sufficient to sustain organizational interest and attention and to champion Lean activity. After your first Lean event, consider these four factors when selecting areas for Lean activity:

- One or more processes in the area have significant improvement needs and/or opportunities for impressive results

- Managers and/or key personnel in the area are highly receptive to using Lean

- Managers and/or key personnel in the area are well respected throughout the agency and could become an effective champion and/or advocate for Lean within the agency

- Personnel in the area have previous experience using Lean methods

After completing Lean events, share the results and let them speak for themselves. Chapter 3 includes information on measuring and communicating Lean results. Prepare a brief, attractive presentation that shares key information on Lean events conducted throughout the agency. Involve key personnel from other departments and divisions in Lean events to help introduce key personnel and "idea leaders" within the agency to Lean.

2. Send Clear and Consistent Supportive Messages from Agency Leadership

Strong support from agency leaders is critical to both effective implementation and diffusion of Lean. Without the personal and visible support of senior managers, the effectiveness of Lean events can be undermined. Effective Lean implementation requires sustained attention and resources, along with an openness to change. Visible leadership commitment and support are also vital to encourage other parts of an organization to step forward and try Lean. Leadership commitment is crucial to ensuring that the agency will back and support the work of Lean practitioners, both during specific Lean events and in broader organizational deployment of Lean. Several actions that Lean leaders must take are outlined in the box below.

KEY ACTIONS FOR LEAN LEADERS

Create a clear and compelling case for change.
- Communicate continually with internal and external constituents
- Address employees' questions about "what's in it for me?"
- Define success – and celebrate when it occurs

Build the infrastructure for change.
- Align employee rewards and compensation to support process improvement efforts
- Clear obstacles to change and improvement as they arise
- Identify and nurture leaders who emerge during Lean implementation

Establish metrics and reinforce accountability.
- Expect follow-through and track open actions
- Encourage the use of visual management approaches to share results

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Visible leadership is also critical to help many managers who are new to Lean overcome the perceived risk of trying a new and unfamiliar process improvement method.

POSSIBLE INITIAL REACTIONS TO LEAN

- ✓ We've already tried that.
- ✓ We're too busy to take time out for an improvement event.
- ✓ We don't have time to focus on process improvement.
- ✓ It will cost too much to do a Lean improvement event.
- ✓ It will never work in our area or department.
- ✓ Nothing's broken, so why fix it.
- ✓ We're not like a manufacturing company; those concepts and tools don't apply to us.

Most organizations that embark on a Lean journey soon discover that the excuses for not trying Lean are unfounded and that the payback from Lean implementation can be quick and dramatic. (Also see the textbox, "Isn't Lean Just the Latest "Flavor of the Month"?" on page 10.)

3. Establish an Agency Lean Coordinator

Once your agency has committed to implementing multiple Lean events, it is critical to identify an agency Lean coordinator to help guide and keep track of Lean activity throughout the agency. An agency Lean coordinator can help prevent unnecessary rework by linking those interested in using Lean with potential consultants or event facilitators, training resources, and lessons learned and other helpful information. Some government agencies have found it useful to task the Lean coordinator with leading the development of an organizational Lean deployment strategy. Such a strategy can support organization-wide Lean activity and ensure that it is connected to the organization's overall mission, strategic plan and other priorities. An agency Lean coordinator can also track the use of Lean across other government agencies and look for benchmarking and information sharing opportunities.

> **Resources**
>
> - **Sample Lean Coordinator Job Description**

4. Build a Core Lean Team and Expand Staff Capacity Through Cross-training

Begin to build Lean expertise in your organization by having a few employees participate in multiple Lean events across your agency (or at other public agencies). The best way to learn about Lean and become skilled as a Lean practitioner is by observing and participating in Lean events. While training courses can be useful, they are no substitute for time spent in Lean events, even if the events are focused on processes different than those an individual works on.

Many organizations report that assistance with Lean event facilitation and deployment from experienced Lean consultants is essential until an organization has developed sufficient internal capacity. Leverage consultant support for Lean events to advance broader capacity building and

deployment goals. Over time, this can reduce dependence on Lean consultants for event facilitation services, which can be costly. Many experienced Lean organizations retain some level of strategic advising and support on Lean deployment from Lean consultants. Another strategy that some organizations take is to hire Lean expertise by bringing in one or more experienced Lean practitioners who have successfully led Lean events or deployment efforts on administrative processes elsewhere in public or private sector organizations.

Invest in several employee team members who demonstrate interest and skills with Lean. Get these team members to participate in as many Lean events as possible. Give them increasing responsibility for leading Lean teams and facilitating Lean events (sometimes with consultant help). While it may take 3-4 years of practice to independently lead Lean efforts, these team members can assume significant responsibility for Lean implementation quite quickly, reducing the need for consultant time. As discussed below, it may be useful to build a Lean training program within your organization to speed capacity-building efforts and ensure the use of consistent methods and tools.

5. Develop a Consistent Approach and Tools for Implementing Lean

As lean is diffused across the organization, avoid having each office or department reinvent existing Lean tools or processes. This Starter Kit provides a variety of templates that can be adapted to meet your agency's needs. Experienced Lean government practitioners report that without a consistent organization-wide approach, it is difficult to replicate performance improvements from one department to another. Many organizations have found that a consistent approach to implementing Lean methods and tools can still accommodate sufficient flexibility to meet the needs of diverse offices, programs, and processes.

Government organizations should consider employing a common approach for selecting and contracting with a Lean facilitator. This can be an important way to ensure that each project or event uses a common approach to Lean. Agencies also may find that a standardized approach may reduce transaction costs associated with hiring and retaining Lean consultants. When an organization is ready to build internal capacity for Lean facilitation through training and certification, a single Lean training curriculum will enable internal Lean event facilitators to implement Lean events throughout the agency.

6. Keep At It to Sustain Momentum, But Do Not Push Too Hard Too Fast

Successful Lean implementation requires a lot of hard work, but the results are often well worth the effort. Consider holding at least three to four Lean events per year at your agency to sustain interest and momentum. Many Lean leader organizations report that a good general rule of thumb is to hold at least one kaizen event per month per 100 employees, once an organization has matured on its Lean journey. While it is not uncommon for leading Lean organizations in the public and private sector to run numerous Lean events each year, remember to pace yourself. Moving too aggressively with Lean implementation when the agency is not ready can quickly turn people off and make it seem like too much attention has shifted to Lean efforts, at the expense of the agency's core mission.

Four Deployment Models for Lean Diffusion

Once an agency decides to expand its use of Lean, the challenge shifts to how to effectively and efficiently proceed. There are four main models for deploying Lean in an organization, including: *Agency-Wide, Department/Division, Targeted, and Grass Roots*.

LEAN DEPLOYMENT MODELS		
	Characteristics:	*Deployment Considerations:*
Agency-Wide Model	⇨ Top down driven ⇨ Comprehensive ⇨ Major culture change ⇨ Rapid, highly visible deployment	⇨ Solid leadership from the top management is essential ⇨ Large infrastructure and full-time staff ⇨ Significant planning and management ⇨ Integration with other management systems ⇨ Need for common language and problem-solving methodology ⇨ Need to address cross-agency processes ⇨ 5+ years to achieve lasting culture change
Department/ Division Model	⇨ Department leadership but agency management support ⇨ Department pilot for agency ⇨ Comprehensive at the department level ⇨ Culture change	⇨ Easier to start due to smaller scale ⇨ Slower pace is possible; scale up after initial success ⇨ Greater use of consultants and outside training ⇨ Less integration with management systems ⇨ Similar to agency-wide model but on a smaller scale ⇨ Risk of not getting beyond the department level
Targeted Model	⇨ Top management leadership ⇨ Focused on a few specific agency problems ⇨ Driven by a desire for strategic impact ⇨ Culture change is not a deployment objective	⇨ Easy to get started ⇨ Can work in smaller agencies ⇨ Quick results because problems are identified ahead of time ⇨ Infrastructure needs are small; use contracted resources ⇨ Risk of not sustaining the gains
Grass Roots Model	⇨ Originates at the bottom of the agency ⇨ Highly motivated individuals lead the effort ⇨ Project or problem specific ⇨ Culture change is not an objective	⇨ Relatively easy to do but difficult to sustain over time ⇨ Track record for sustainable improvement is not good ⇨ Very vulnerable to changes affecting staffing ⇨ Few if any infrastructure needs

Most world-class organizations in the public and private sectors have found that having a guiding vision and clear goals is critical for effective change management. Long-term agency goals, resources, and leadership commitment should drive which model is selected. Key goals to consider include:

- Organizational culture and transformation
- Strategic improvement
- Problem-solving
- Cost reduction
- Image

When selecting a model for diffusion, careful thought should be given to three factors: desired impact, implementation scale, and organizational readiness (see table below).

DIFFUSION MODEL SELECTION FACTORS		
Desired Impact	**Implementation Scale**	**Organizational Readiness Factors**
⇨ *Business Transformation* ▪ Agency-wide deployment ▪ Major culture change ⇨ *Strategic Improvement* ▪ Targeted deployment on critical problems ▪ Projects necessary for success or survival ⇨ *Problem-solving* ▪ Specific operational problems ▪ Incremental improvements in agency performance	⇨ Entire agency ⇨ Department/division ⇨ Project/Section/Team	⇨ Culture ⇨ Past process experience ⇨ Management team ⇨ Stability

There is no one "right" Lean deployment model, although many Lean leader organizations voice strong support for the agency-wide model. Regardless which model is selected, management support and commitment is an essential ingredient for long term success. Select a deployment model and adapt it to best fit your agency's situation.

Future Directions—Building a Lean Continual Improvement Agency

The experiences of world-class companies show us that Lean can be much more than a process improvement tool to be used only when a process seems broken. There are many opportunities for environmental agencies to implement Lean to improve existing programs and processes or to efficiently create new ones.

Develop New Programs, Regulations, and Initiatives Using Lean

While improving existing processes is important, environmental agencies can realize significant value by designing new programs and processes to be efficient and effective from the start. Methods such as Design for Lean Six Sigma and Production Preparation Process (3P) offer powerful approaches and tools for designing new processes to be highly effective and efficient. These methods can also be used to design or redesign products, processes, and programs. (See Appendix A for a Bibliography of Lean Resources.)

Improve and Manage Agency Value Streams

Most world-class Lean organizations work to manage and improve key value streams—the full chain of processes and activities that deliver value to customers or stakeholders. For an environmental agency, this could be the services the agency provides to society and to key constituents and working to optimize these flows of value. This may lead to more holistic approaches to environmental management that go beyond the traditional air, water, and waste silos. For example, a state or local environmental agency could look comprehensively at how it delivers all environmental protection services (permitting for air, wastewater, and hazardous waste impacts, as well as technical assistance with pollution prevention and sustainability initiatives) to businesses seeking to locate in the state, rather than focusing on optimizing just air permitting or another specific part of that value stream.

Lean approaches offer some useful lessons in how to effectively plan, organize, and manage organizations to optimize their value streams. Such lessons may open up exciting possibilities for environmental agencies.

Link Lean Improvement Events to Agency Mission and Strategy

World-class Lean organizations are increasingly linking their improvement activities to their strategic planning and goal-setting processes. A powerful method known as "strategy deployment" (also known as *hoshin kanri*, *hoshin* planning, and policy deployment) elegantly links the strategic goals of an organization with a cascade of increasingly specific programs and activities that support those goals. Strategy deployment typically has a one to five year focus (updated annually), taking longer-term strategic planning goals and objectives and honing in on what needs to be accomplished in the coming year. A3 is a powerful Lean method that complements strategy deployment by clearly displaying the connections between an organization's priorities and tactical Lean implementation efforts on a single piece of paper. (A3 refers to the paper size.)

The visual presentation of this highly interactive strategy deployment planning process using the A3 method incorporates key performance measures and assigns specific responsibilities for achieving the goals to individuals at all levels of the organization. This creates a powerful means for connecting Lean initiatives with an organization's mission and strategy. The end result is a living, dynamic strategic planning process that is intrinsically linked to the activities and improvement efforts that are planned and executed in the organization.

Concluding Thoughts

While the Lean journey takes hard work and perseverance, the power of harnessing the hearts and minds of employees for achieving excellence can be transformative. World-class Lean organizations find that freeing employees to focus more time on value-added mission-critical work dramatically improves performance outcomes, customer and stakeholder satisfaction, and employee morale. The Lean journey can lead to satisfied constituents, empowered and engaged employees, passionate leaders, and better environmental quality. Best wishes for a productive and successful Lean effort.

Appendix A. Bibliography of Lean References

Lean Government Resources

Articles, Reports, and Presentations

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U.S. Environmental Protection Agency, Lean and Environment website, www.epa.gov/lean. (This is an EPA website providing resources and information on Lean and the environment for the private and public sector. This website includes Lean Government tools, methods, and resources as well as information on Lean initiatives at state environmental agencies, EPA, and other federal agencies.)

State of Iowa, Office of Lean Enterprise website, http://lean.iowa.gov. (This website provides background information on Lean concepts and tools, a series of downloadable resources for Lean events, and information about Iowa agency Lean efforts.)

State of Minnesota, Enterprise Lean website, http://www.lean.state.mn.us/. (This website provides information on Lean tools, resources, training opportunities, and Minnesota agency Lean efforts.)

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National Institute of Standards and Technology, Manufacturing Extension Partnership, www.mep.nist.gov. (NIST MEP centers are non-profit Lean technical assistance providers.)

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Appendix B. Resources

This appendix includes practical tools and resources for (1) how to get started with Lean, (2) how to implement and manage the phases of a Lean event, and (3) how to sustain and diffuse Lean activity across an agency. A summary description of each resource is below. The resources are organized according to the chapter and section in which the Starter Kit references them. *All of the resources are available for download from EPA's Lean and Environment website, www.epa.gov/lean.*

Starter Kit Resources

Chapter 2: Tools and Resources for Getting Started with Lean

Lean Overview Presentation
Lean Inventory

Chapter 3 (A): Tools and Resources for Lean Event Planning

Event Preparation Checklist
Lean Facilitator Request for Proposal
Pre-Screening Application for Value Stream Mapping Events
Lean Event Sponsor Contract
Pre-event Meeting Agenda
Team Charter
Example Team Charter
Pre-event Data Collection Guide
Kaizen Event Agenda
Lean Event Supplies List
Lean Event Logistics Checklist
Frequently Asked Questions about Lean

Chapter 3 (B): Tools and Resources for Lean Event Implementation

Team Leader Daily Agenda
Lean Event Homework
Report-out Summary
Event Report-out Presentation
Event Evaluation Form

Chapter 3 (C): Tools and Resources for Event Follow-up

Lean Event Follow-up Action Tracking Form

Chapter 4: Tools and Resources for Sustaining and Diffusing Lean Activity
      Agency Lean Coordinator Job Description
      Lean Deployment Presentation

Chapter 2: Tools and Resources for Getting Started with Lean

1. **Lean Overview Presentation.** *This presentation introduces senior agency management to Lean principles, methods, and key success criteria, and offers example results from past agency improvement efforts.*

2. **Lean Inventory.** *This inventory summarizes Lean implementation efforts at state environmental agencies. It can be used with managers and staff to provide context for your agency's Lean initiative.*

Chapter 3 (A): Tools and Resources for Lean Event Planning

1. **Event Preparation Checklist.** *This event preparation checklist provides a summary of key actions needed across the phases of Lean event planning and implementation.*

2. **Lean Facilitator Request for Proposal.** *This sample request for proposal describes potential qualifications to look for in a Lean facilitator and how to rank candidates.*

3. **Pre-Screening Application for Value Stream Mapping Events.** *Once an agency has conducted its first Lean event, it is helpful to have a standard form for evaluating and prioritizing potential future events. This application outlines questions for agency managers and staff to answer about potential value stream mapping projects.*

4. **Lean Event Sponsor Contract.** *This contract is signed by the team sponsor and team leader to ensure that the sponsor understands the event's focus and the critical role that the sponsor plays.*

5. **Pre-event Meeting Agenda.** *This agenda includes a set of objectives and guiding questions to discuss with the event team during the pre-event meeting.*

6. **Team Charter.** *This team charter allows an agency to articulate the scope, goals, and objectives of the event, along with follow-up dates to ensure that the process will move forward after the event.*

7. **Example Team Charter.** *This is an example of a completed team charter.*

8. **Pre-event Data Collection Guide.** *This guide outlines critical steps and questions associated with gathering baseline or "current state" data before a Lean event.*

9. **Kaizen Event Agenda.** *This kaizen event agenda provides an example of time allocation over a five-day kaizen event. The agenda is a high-level guide and can be easily modified to be more event-specific.*

10. **Lean Event Supplies List.** *This supplies list includes materials frequently used at Lean events. To help ensure smooth event functioning, come prepared with the right supplies on hand.*

11. **Lean Event Logistics Checklist.** *This checklist provides a chronological guide for making food and logistical arrangements for a Lean event. While food and logistics preparation may seem like minor issues, they ensure that an event functions smoothly and allow participants to focus on the process.*

12. **Frequently Asked Questions about Lean.** *This sample Question and Answer document answers many of the key questions that get raised about Lean events. The document can be distributed to agency staff prior to an event.*

Chapter 3 (B): Tools and Resources for Lean Event Implementation

1. **Team Leader Daily Agenda.** *This detailed agenda outlines specific roles and responsibilities of a team leader over a five-day Lean event.*

2. **Lean Event Homework.** *This homework sheet is a useful way to track action items and assignments identified during a Lean event.*

3. **Report-Out Summary.** *The event report-out summary is a one-page "snapshot" of the event results. The summary includes the event scope, objectives, goals, a tabular representation of improvements, and a list of actions implemented.*

4. **Event Report-Out Presentation.** *This presentation provides an example of the type of information shared in a Lean event report-out presentation.*

5. **Event Evaluation Form.** *This form is used to evaluate and solicit feedback from event participants. It is important to listen to participant's perspectives since their responses can inform the success of future events.*

Chapter 3 (C): Tools and Resources for Event Follow-up

1. **Lean Event Follow-up Action Tracking Form.** *This tracking sheet is a useful way to track action items assigned during the event report-out. The sheet identifies who is responsible for completing an action item and when the item is due.*

Chapter 4: Tools and Resources for Sustaining and Diffusing Lean Activity

1. **Agency Lean Coordinator Job Description.** *This job description outlines the roles and responsibilities of an agency Lean coordinator; it can be used by agencies interested in expanding their Lean efforts.*

2. **Lean Deployment Presentation.** *This presentation outlines several options as well as key considerations for broader agency Lean deployment.*

Event Preparation Checklist

Planning

- ❑ Scope of event
- ❑ High level process steps
- ❑ Data available (time, quantity, frequency)
- ❑ Budget (cost center)
- ❑ Potential internal and external team members
- ❑ Identify support staff (refer to support staff role)
- ❑ Identify communication staff (prints team certificate, communicates with other employees)
- ❑ Identify staff with Microsoft Visio software (installed on laptop)
- ❑ Reserve room for pre-event, event, and report-out presentation
- ❑ Reserve laptop, projector and speakers
- ❑ Send invitation/email to team members about pre-event and event date, time, and location

Pre-event Meeting

- ❑ Setup room
- ❑ Setup projector and laptop (for Lean overview)
- ❑ Setup 1 easel stand and pad, provide easel markers
- ❑ Develop scope, goals, and objectives for event
- ❑ Identify pre-work
- ❑ Finalize team member selection
- ❑ Identify sub-team leader
- ❑ Finalize team members meal selection

Before Event

- ❑ Order meals, snacks and drinks
- ❑ Order supplies (refer to supplies List)
- ❑ Print/order training manuals
- ❑ Prepare folder and nametag (include training manual, agenda, scope, goals, and objective)
- ❑ Invite management to daily report (e.g., Tuesday and Wednesday from 4:00 to 4:30 p.m.)
- ❑ Invite interested parties and employees to report-out (e.g., Friday from 10:00 to 11:00 a.m.)
- ❑ Arrange a site visit for the Lean team to talk with the workers and see the process in action during the event.

Event

- ❑ Setup room and layout folders and nametags
- ❑ Setup projector, laptop and speakers
- ❑ Setup 2 easel stands and pads, provide easel markers
- ❑ Event supplies available in the room
- ❑ Provide meals, snacks, and drinks
- ❑ Take team picture on Tuesday morning (for team certificate)
- ❑ Setup room with 2-3 computer/laptop on Wednesday and Thursday (connected to network for accessing files if possible)
- ❑ Print and distribute team certificate on Friday
- ❑ Communicate with other staff via website or email on progress of team

After Event

- ❑ Email team member report-out presentation and other relevant files to event participants
- ❑ Fill out travel payment form
- ❑ Send thank-you letters to team members
- ❑ Setup 30-day follow-up date, time, and location
- ❑ Develop communication plan (e.g. update website with event results, inform stakeholder groups)

RESOURCES

Lean Facilitator Request for Proposal

Please describe in detail how you will meet each requirement. The successful Vendor will work the [insert Agency name] (the Agency) to facilitate the expansion of lean process improvement methodology in executive branch agencies. Such services shall include, but are not limited to, the following:

A. Lead department Kaizen events, Design for Lean Six Sigma events, value stream mapping events, conduct 5S training and audits, and consult with the Agency on other relevant Lean tools and methodologies. While serving as the lead consultant, the service provider will also coach and mentor state employees, serving in the capacity of team lead, to build the Agency's capacity to successfully lead Lean events.

B. Meet with Agency leadership to identify potential Lean projects. Conduct pre-work events that result in the identification of project scope, objectives, goals and data compilation. The consultant will also guide the Agency in team member selection for participation in Lean events.

C. Provide follow-up services, on an as needed basis, to ensure sustainability of Lean process improvement efforts.

D. Work with department leadership to implement policy deployment so that Agency improvement efforts are linked to strategic goals.

If a Vendor's proposal does not meet the required services, the proposal will be rejected.

3.2   QUALIFICATIONS AND INFORMATION

Vendors should offer detailed answers to the questions in this section.

A. Please describe your experience facilitating and consulting on Lean in a public sector organization.

B. Please describe the methodology used to implement Lean in an organization. Please outline basic methodology as well as tools.

C. Please describe in detail any additional services that you believe would assist the Agency in this project. The benefit that is provided to the Agency should be specifically addressed.

3.5   VENDOR INFORMATION

The following information is required of prospective Vendors and will be used to evaluate their qualifications:

A.   Name of Vendor

B.   Form of business entity (e.g. corporation, partnership, etc.).

C.   State of incorporation (if a corporation).

D.   Home office address and telephone number.

E.   List of branch locations.

F.   Provide a description of your background, organizational history, size and years in business.

G.   Specialized services, if any, and years of experience in each such area.

H.   Minimum of three (3) business references from companies or government agencies that use services within the scope of this RFP.

4.4   SELECTION PROCESS

B.   Evaluation criteria and assigned point values**:**

- Credentials and Qualifications   *35 points*
  - Demonstration of vendor's qualifications and expertise
  - Number of years experience in providing service sought by RFP
  - Level of experience providing types of services sought in RFP in a public sector organization
  - List of services similar to those sought by RFP that vendor has provided to other organizations.
- Proposal Meets Mandatory Requirements   *35 points*
- References   *10 points*
- Completeness and Organization of Bid   *10 points*
- Costs   *10 points*

                                                    Total   100 points

The cost will be used in the cost formula below to compute the relative number of cost points awarded to each proposal. The lowest cost will receive the maximum number of cost points.

$$\frac{\text{Lowest Cost}}{\text{Vendor Cost}} \quad X \quad \text{Available Points} = \text{Points}$$

RESOURCES

Pre-Screening for Application for Value Stream Mapping Events

Identify the area of study:

Is the anticipated field of view manageable?

What are the current problems with the "value stream" for this area of study (from the organization's perspective and from the customer's perspective)?

What is the extent of variation in the area of study?

What data is currently collected to measure activities in/about the area of study?

Who touches the "value stream"?

What is in and out of scope for the proposed value stream mapping workshop?

Who is directing the process?

What do your customers want that you are currently not able to supply?

Is there senior executive leadership support for this area of study?

Is there sufficient funding available to support the VSM for this area of study?

What is the anticipated schedule for the workshop(s)?

Lean Event Sponsor Contract

The purpose of this contract is to help you and your team achieve successful event outcomes. Critical behaviors to help ensure your team's success include:

Passionate—Enthusiastic support of the team to ensure team success.

Strategic—Using the event activity to advance a business objective by improving the performance of the targeted process while being aware of the impact to the total system.

Committed—Engaged from pre-event planning through sustainment.

Risk Taking—Encourage creative thinking to drive paradigm-breaking results.

Open Minded—Influence the team to develop the best solution without introducing pre-conceived ideas.

It is the responsibility of the team sponsor to ensure clarity regarding the coverage of event expenses including team members coming in from other locations. It is suggested that the team sponsor review with the team leader, as well as parties who may be covering the event expenses, early in the planning stages of the event activity.

I have read and support the position paper for this event and understand the critical role that I play within the event process. As a team sponsor, I will follow the event-planning checklist to ensure my role to support the overall success of the team.

Event Sponsor Signature: _____

Team Leader Signature: _____

Date: _____

Team leader is to retain the signed contract along with all other event documentation.

Pre-event Meeting Agenda

[Date, Time]
[Location]

I. Understand critical issues

- o What is the purpose of this event?

- o Why is it taking place?

- o What is the desired outcome?

- o What are the boundaries of the activity?

II. Understand and discuss high-level process steps

III. Develop scope statement based upon agreement of critical issue focus

IV. Define goals and objectives for the event

V. Identify pre-work for event: what, who to complete, etc.

VI. Which resources must/can be utilized?

Team Charter

[Agency]
[Division/Bureau of event and event name]
[Event Date]

SCOPE
The breadth, or area, of opportunity to change and improve [e.g., *this event will address the process from / of _____to _____.*]

OBJECTIVES
[A narrower version of the scope of the improvement event.]

GOALS
Specific numbers or percentages
For example:
1. Reduce lead-time by XX%, from ___ to ___.

PARTICIPANTS
Team leader   Team Leader Name, Agency, bureau
Sub-team leader   Sub-team leader Name, Agency, bureau
Consultant   Consultant Name
Members   Name, Agency, bureau
                     Name, Agency, bureau
                     Name, Agency, bureau
                     Name, Company Name

                     (No more than 20 people/event)

PRE-WORK
1. [e.g., determine average lead time] (name person responsible)
2.

FOLLOW-UP DATES
Month, day, year – 30 day
Month, day, year – 60 day
Month, day, year – 90 day
Month, day, year – 6 month
Month, day, year – 1 year

Example Team Charter

SCOPE

This event will address the Iowa DNR's Air Quality Bureau – Construction Permits section, and the process for reviewing and issuing Complex Construction Projects.

Complex construction projects are generally those that involve Prevention of Significant Deterioration (PSD) permitting, Air Toxics review under 112g of the federal Clean Air Act, Netting evaluations for PSD credit, Non-attainment State Implementation Plan (SIP) permitting, and other permitting that involves establishing facility-wide or extensive permitting to limit potential emissions to reduce the facility's regulatory burden.

OBJECTIVES

1. Streamline the process to review and issue Complex Construction Projects and reduce variability.
2. Develop a standard operating procedures guide for project reviewers and project applicants.

GOALS

1. Issue 100% of Complex PSD permits in a maximum of 180 calendar days (132 work days) from the application received date.
2. Reduce lead time for processing projects from 210 days (including 40-day comment period) to 125 days (including 40-day comment period). (Reduction of 50% not including comment period).
3. Reduce requests for additional information by 50%.
4. Reduce the number of unanticipated comments in the comment period by 50%.

Team	Daily Briefing Participants:
Consultant:	[Insert name here]
Team leader: [Insert name here]	[Insert name here]
[Insert name here]	[Insert name here]

PRE-WORK

- Process Mapping   ([Insert name here]) – Completed draft 8/16/04
- Matrix Construction ([Insert name here])
- Data Collection   ([Insert name here])
- Guide Materials   ([Insert name here])

EVENT DATES, TIME, AND LOCATION

- Monday, Noon to 6:00 PM, Tuesday through Thursday, 7:30 AM to 7:00 PM, Friday, 7:30 AM to Noon
- Some additional after hours work may be required during the week.
- Location: Air Quality Bureau, 7900, Suite 1, Hickman Road, Urbandale
- Pre Event Meeting will be held at the Air Quality Bureau – October 5, 1:30-3:00

Pre-event Data Collection Guide

Pre-event Data Collection Steps

1) Initial map of the current process developed by the area that is going through the kaizen event.
2) Determine from the map steps that can and cannot be changed, i.e., identify those steps that are mandatory by rule.
3) Outline what items are currently tracked for time.
4) For those items currently tracked for time, determine longest item, quickest item and an average of the items. Do not try to gather data here that you do not already know.
5) Have the staff write down what they do for a week. This includes the projects, as well as meetings, site visits, telephone calls, regular meetings, etc.

The "Voice of the Customer" Data Considerations
Some questions to ask as part of the "voice of the customer" are the following:

1. What do they want?
2. When do they want it?
3. Why do they want it?
4. How do they use the product and how much of it do they use?

These questions will ultimately help in determining the "value-added" steps in the process, as well as provide potential design criteria for the final "product." The best approach would be to ask our customers (select a few), or at least think through these questions from their perspective. If the process has different customer segments, the questions could be asked for each one. As above, this information would be useful for goal setting purposes.

Bench marking would also be helpful in establishing goals for the event. Additionally, it could equip the team with example strategies for achieving the goals for the event.

OTHER POTENTIAL BASELINE METRICS INCLUDE:

- Number of process steps
- Total lead time
- Data on staffing needs
- Data on staff time
- Cycle time
- Data on transaction volume in process (e.g., number of applications)
- Number of handoffs
- Amount of backlog
- Rework percentage (e.g., percent of permits needing rework)

Kaizen Event Agenda

[Date]
[Location]

Monday: *Training Day*

1:30 P.M.   Team member introduction.
1:45 P.M.   Training.
4:30 P.M.   Adjourn for the day.

Tuesday: *Day of Discovery*

8:00 A.M   Work on process mapping, data needs, opportunities for waste
                elimination, and review ideas against scope and objectives.
12:00 P.M.   Working lunch.
12:30 P.M.   Continue with previous work. Create implementation plan.
5:00 P.M.   Draft Wednesday assignment.
5:30 or later   Adjourn for the day.

Wednesday: *Do Day*

8:00 A.M.   Review Tuesday work. Begin working on selected projects.
                Sub-teams report progress.
12:00 P.M.   Working lunch.
12:30 P.M.   Continue with previous work. Sub-teams report progress.
5:00 P.M.   Sub-teams report-out. Make Thursday assignments.
5:30 or later   Adjourn for the day.

Thursday: *Do, Re-Do, Document Day*

8:00 A.M.   Review Wednesday work. Continue Wednesday's work.
                Sub-teams complete specific opportunities for improvement and report-
                out. Implement new process operation procedures, forms, process map,
                and baseline data.
12:00 A.M.   Working lunch.
12:30 P.M.   Continue with previous work. Document changes and complete the new
                process. Report out from sub-teams and review all work to ensure
                everything is complete.
5:00 P.M.   Prepare for Friday's presentation.
5:30 or later   Adjourn for the day.

Friday: *Day of Celebration*

7:30 A.M.   Finish work on presentation.
10:00 A.M.   Team presentation.
11:00 A.M.   Adjourn event. Thank you!

Lean Event Supplies List

Note: Supplies quantities are for an event with approximately 18 people.

Description	Qty	Estimated List Price	Estimated Total Cost
Perforated Note Pads (White)	2	$12.73 DZ	$25.46
Butcher Paper Roll 36" W X 150' L	1	$13.04 RL	$13.04
Self Stick Easel Pads	2	$25.26 PK	$46.52
Construction Paper (assorted)	4	$1.36 PK	$5.44
Sticky Notes (pastel color) 3"X5"	3	$5.05 PK	$15.15
Sticky Notes (florescent color) 3"X5"	1	$5.91 PK	$5.91
Ballpoint pens (Black or Blue)	20	$.60 EA	$12.00
Permanent Markers (Black)	6	$.75 EA	$4.50
Flip Chart Markers (4 color)	4	$1.95 ST	$7.80
Removable Glue Stick	4	$.84 EA	$3.36
Adhesive Spray	2	$8.12	$16.24
Masking Tape 1"X 60yards	2	$5.71 RL	$11.42
Scissors	8	$1.45 EA	$11.60
Twin Pocket Portfolios 25 per box	1	$4.21 BX	$4.21
Hang Name Badges 50 per box	1	$10.95 BX	$10.95
Easels for easel pads	4	$14.12 EA	$56.48
GRAND TOTAL			**$250.08**

Lean Event Logistics Checklist

6 weeks before event
- ❑ Aid in finding meeting rooms
    - ▫ Monday 1:30 – 4:30 - T-TH 8-5:30 - F 7:30-noon
    - ▫ Fridays – Reserve the report-out location
- ❑ Order supplies

2 weeks before event
- ❑ Order meals
- ❑ Make nametags (get list from team leader)
- ❑ Prepare team member folder (agenda, charter, nametags)

1st Day of event
- ❑ Help team leader setup room
- ❑ Make coffee, setup all coffee supply (1 hour before start of event)
- ❑ Set out team member folder
- ❑ End of day disconnect coffee pot

2nd, 3rd, and 4th Day of event
- ❑ Make coffee
- ❑ Bring breakfast into room
- ❑ Fill cooler with pop, juice and water
- ❑ Bring lunch into room
- ❑ Bring snacks into room
- ❑ Order dinner (if necessary)
- ❑ Assist in clean up at the end of the day

5th Day of event
- ❑ Make coffee
- ❑ Bring breakfast into room
- ❑ Setup snack/coffee/drink to the report-out location (if necessary)
- ❑ Assist in clean up at the end of report
- ❑ Collect and store all extra meal supplies

After the event
- ❑ Gather all receipts
- ❑ Fill out Travel Payment to pay vendors
- ❑ Summarize event evaluations

Frequently Asked Questions about Lean

1. **Are we compromising environmental protection?**
   This is not about loosening environmental regulations or our agency's commitment to environmental protection. We are looking for efficiencies in workflow, paper processing, number of steps in our process, etc. In fact, our goals are to enhance our ability to protect the environment by being able shift more time and resources on environmental protection activities.

2. **Will anyone lose his or her job by making this process so efficient?**
   Our people are very important and will continue to be part of this agency. Some people's job duties may change and some may have different office locations or configurations. But all staff will remain part of this agency.

3. **Municipalities, consulting engineers, and other external entities slow down the permitting process. How are they involved, and who will make them more efficient?**
   Outside stakeholders will take part in the event to help identify opportunities and concerns. However, this is not about how other organizations conduct processes, which we cannot control. Rather, we are focusing on what we can control, and that is how we move a permit through the approval process.

4. **What guarantees do we have that this will actually help the process?**
   Lean is a proven methodology used to break through barriers and cut through bureaucracy, helping teams reach their goals.

5. **Why are we doing this on [Event Name]? Why not another issue?**
   First, [Event Name] meets the three criteria for undertaking a Lean event: it should be a large-volume process; it should use the same steps every time; and it should be a core business activity. Second, we see this issue as an integral step to improving the water quality in the State.

6. **Have we messed up? Have we done something wrong?**
   The [Agency] is proud of the professionalism and performance of this staff. Conducting a Lean event is a way to enhance that performance. The goal is to give people the tools to do their jobs better. Each of us, in our own work areas, could benefit from that type of assistance.

7. **Is this a test of my job performance? Will I get in trouble for not doing well in my job?**
   These events are performed under the assumption that everyone involved is already doing their best—but that with some assistance, efforts can be altered to lessen steps, delays, and time, with no loss of performance or quality. Improvements will focus on reducing the time that no one is working on a project. The time it sits in someone's in-box or is waiting for a reply is waste that can be reduced.

8. **How can you expect to get meaningful change in one week?**
   These events are specifically engineered to achieve results in an intense, one-week work session. Additionally, preparation has taken place prior to the actual event.

9. **How can they understand something as complex as [Event Name or Process] in a week?**
   The participants will learn the steps in the process, not how to conduct the process. The process will be laid out in graphical form to make it easier to understand the sequence and how steps are interrelated.

10. **Who is involved and why?**
    The team that will be designing the new process is composed of [Team Members], other Agency employees involved in the [Event Name], and some of the people who are impacted by the process or who impact the process. All of these different viewpoints are important in designing a better process.

11. **Even if I'm not directly involved on the team, what will I need to do during that week?**
    You may be asked questions by the team members to clarify your part in the process. Please take the time to answer their questions completely. Team members may also ask to observe and time you while you complete a step in the process or discuss the time necessary to complete a step.

12. **Will people be in my office? Will they observe us talking about confidential issues, sensitive operations, controversial issues, sensitive policy issue debates, and phone calls that all occur each week?**
    The team is not interested in specific projects, but how the process works in general.

13. **What happens if I have to leave during the week?**
    If you are a member of the team, please coordinate your absence with the team leader, [team leader name]. If you are not on the team, you only need to coordinate your absence with your supervisor, as usual.

14. **Will the recommendations be rigid or able to change in the future if they fail or cause unintended consequences?**
    The team will not be making recommendation—they will design an improved process that will be implemented immediately. The new process will be tested during the event, but if adjustments need to be made later, they will be made.

15. **How is this process to be judged a success or failure?**
    Data are being gathered on how well the process performs before the event and data will be collected after the event for comparison.

Team Leader Daily Agenda

Day 1

Morning

- Arrange the room in the picture shown (get someone to help)
- Get the supplies, easel and easel pad
- Setup 1 easel and easel pad
- Setup the laptop, projector and speakers
- Set out the folder, training manual and nametag

Afternoon

- Greet everyone when they arrive
- Start promptly at 1:30 p.m.
- Welcome everyone and introduce yourself
- Go through logistics (parking, building access, cell phones, restrooms, meals, etc.)
- Go through agenda (warn team of potential late nights on Tuesday, Wednesday, and Thursday)
- Go through ground rules
- Have everyone introduce themselves
  1. Who are you? Where do you work?
  2. What are your goals this week?
  3. What you like to do when you are not at work?
- On the easel pad, write "Goals of Team Members" and capture the team member goals
- Post "Goals of Team Members" on the wall
- Introduction from senior manager
- Introduce consultant and/or trainer (begin training)
- Review the goals and objectives
- Discuss pre-event data collected
- Let team know they can leave folder in the room
- Remind team of start time tomorrow

Evening

- Disconnect laptop and projector (store in save location overnight)
- Tape roll paper on the East and West wall (get 1-2 people to help)
- Spray paper with adhesive glue
- Setup 2 easels and easel pad
- Write on easel pad and post on the wall "Parking Lot/Bike Rack" and "Homework"

- ❑ Layout scissors, color pad, and markers for team member to volunteer for flow mapping
- ❑ Tidy up the room (unplug the coffee pot, pick up bottles and cups)

Day 2

Morning

- ❑ Start on time
- ❑ Ask if anyone have question about yesterday's training
- ❑ Start training on flow mapping
- ❑ Ask for volunteer for each flow mapping task
- ❑ Review the goals and objectives
- ❑ Start mapping current state (Identify functions, steps, handoffs)
- ❑ Visit process site for walk through of process.
- ❑ Identify value-added activities and delays on map
- ❑ Estimate lead time (best case, worst case, and average) based on data collected

Afternoon

- ❑ Count the number of steps, handoffs, loops, delay, value add, delay
- ❑ Calculate lead time (best case, worst case, and average)
- ❑ Make arrangements for dinner by 3 p.m. if it is needed
- ❑ Attend 4 p.m. daily report out to management
- ❑ Remind team of start time tomorrow

Evening

- ❑ Setup 3 easels and easel pad
- ❑ Tidy up the room (unplug the coffee pot, pick up bottles and cups, markers and note pads)

Day 3

Morning

- ❑ Start on time
- ❑ Communication staff takes team pictures
- ❑ Ask if anyone have questions or comments about the current process
- ❑ Give the team 20 minutes to write down what they think the ideal state should be individually
- ❑ Capture the team members ideas on easel pad
- ❑ Break up team into groups (5-6 people per group)
- ❑ Give each group some of the ideas and ask them to apply it to de-selection matrix

- ❑ Ask group to write down on easel pads 7 ways of implementing the ideas in the High Impact and Low Difficulty quadrant
- ❑ Have each group report to the team

Afternoon

- ❑ Start to map the ideal/future process
- ❑ Capture Parking Lot/Bike Rack and Homework items on easel pad
- ❑ Identify value-added activities and delays on new process map
- ❑ Estimate lead time (best case, worst case, and average) based on data collected
- ❑ Count the number of steps, handoffs, loops, delay, value add, delay
- ❑ Calculate lead time (best case, worst case, and average)
- ❑ Make arrangements for dinner by 3 p.m. if it is needed
- ❑ Attend 4 p.m. daily report out to management
- ❑ Remind team of start time tomorrow

Evening

- ❑ Setup 3 easels and easel pad
- ❑ Tidy up the room (unplug the coffee pot, pick up bottles and cups, markers and note pads)

Day 4

Morning

- ❑ Setup laptop and projector
- ❑ Ask if anyone have concerns or comments about the new process map
- ❑ Review the goals and objectives
- ❑ Review the parking lot and homework items
- ❑ Ask team to volunteer to work on homework items
- ❑ Collect the completed homework items from each group

Afternoon

- ❑ Assign/Volunteer team member to homework items that are incomplete
- ❑ Review "Goals of Team Members"
- ❑ Prepare report-out presentation
- ❑ Inform team about flow of report-out presentation (where to stand, introduce next speaker, what to expect, who answer questions from audience)
- ❑ Assign/Volunteer team member to different slides in the presentation
- ❑ Vote on team name
- ❑ Send team name to communication staff
- ❑ Prepare report-out summary
- ❑ Make 50 copies of report-out summary

□ Attend 4 p.m. daily report out to management
□ Remind team of start time tomorrow

Evening

□ Disconnect laptop and projector (store in save location overnight)
□ Tidy up the room (unplug the coffee pot, pick up bottles and cups, markers and note pads)

Day 5

Morning

□ Setup laptop, projector and speaker
□ Show "Staff Motivation" video
□ Distribute "Kaizen Event Evaluation" to team members
□ Collect filled out "Kaizen Event Evaluation"
□ Setup laptop and projector in the auditorium
□ Practice report-out presentation
□ Collect team participation certificate from communication staff
□ Distribute report-out summary to audience
□ Report-out presentation
□ Return supplies to team leader
□ Put the room back in order (get 1-2 people to help)

Afternoon

□ Give kaizen event evaluation to team leader
□ Place all files for event on computer server

RESOURCES

Lean Event Homework

As of:
Event #:
Event Name:
Owner:

Item	Item Description	Person Responsible	Due Date
1	Hold Meeting to Standardize "Front End" Documents With Other Funders/Agencies	Gabe	02/17/06
2			
3			
4			
5			
6			
7			
8			

Notes:

Report-out Summary

DATE:

SCOPE:

OBJECTIVE:

GOALS:

RESULTS:

	Old	New	% Change
Steps			1 - (new # / old #)
Value Added Steps			
Decisions			
Loop Back			
Handoffs			
Delays			
Functions in Process			

IMPLEMENTED

[List actions implemented]

RESOURCES

Event Evaluation Form

Event: _____   Date: _____

Facilitator: _____

Team Leader: _____

You have just completed an event to improve one of your processes. We are interested in your opinion on how things went during the event. We are continuously trying to improve the effectiveness of the events. Below is a list of questions that will help us improve future events. Please be open and honest with your ratings and comments. Thank you.

On a scale of 1 to 5 please rate the questions below.

1 – Strongly Disagree   **2** – Disagree   **3** – Neutral   **4** – Agree   **5** – Strongly Agree

Rating	Questions
	I was given at least 2 weeks notice prior to the event.
	The training on Day 1 was effective and prepared me for the event.
	The consultant was effective teaching and guiding the team through the event.
	The consultant listened to my ideas and suggestions.
	The team leader was effective and helpful through the event.
	When my ideas or suggestions were not used, the reasons were explained to me.
	Management support and direction was adequate.
	The time spent this week was productive.
	I have increased my understanding of the value of continuous improvement.
	The material provided was useful.
	The food and beverages provided were adequate.

What did you find most useful during the event?

What suggestions or comments do you have that could help us improve future events?

Lean Event Follow-up Action Tracking Form

As of:
Event #:
Event Name:
Owner:

Item	Item Description	Person Responsible	Due Date	Revised/ Completed Date	Expected Results
1	Hold Meeting to Standardize "Front End" Documents With Other Funders/Agencies	Gabe	02/17/06		
2					
3					
4					
5					
6					
7					
8					

Notes:

Parking Lot Issues:

o [Add outstanding parking lot issues here]

RESOURCES

Agency Lean Coordinator Job Description

This position is located in the Director's Office under the immediate supervision of the Deputy Director and functions as a program manager for the Agency's process improvement program. The person in this position is responsible for implementing and managing the department's Lean process improvement program, including the deployment of training and other duties that will enhance organizational efficiency and support a culture of continuous improvement and customer satisfaction.

Lean Deployment and Facilitation: Develop and implement an action plan for the deployment of all aspects of the Department's Lean process improvement program, including, but not limited to kaizen, 5S and Design for Lean Six Sigma Events. Responsible for working with department managers in identifying areas for process improvement events, establishing objectives for each project, and selecting cross-functional team members and leaders. Act in the capacity of the facilitator for each event. Coordinate each project/event phase and ensure that participants and stakeholders have the tools and resources they need, necessary information, and guidance to enable them to fully engage in the process and maximize the potential outcome of each event.

Tracking Progress: Develop and implement an action plan for tracking, analyzing and reporting return on investment of departmental programs that have undergone process improvement initiatives. Monitor the progress of projects, including ongoing status reviews. Ensure that the database is current relative to process improvement activities. Responsible for coordinating and participating in 30 day, 60 day, 90 day, 6 month, and 1 year follow-up meetings for each event to ensure follow-up activities are completed and improvements are realized and maintained. Develop a comprehensive report which delineates the status and outcomes of each event, including, but not limited to efficiencies gained, increased customer satisfaction and or reduced costs or savings realized. Conduct formal reviews with the management team on a quarterly basis to review accomplishments, identify areas for improvement, and respond to questions.

Training: Coordinate the training of Agency staff on Lean process improvement techniques, including a plan for deployment of training to all departmental staff. Ensure that tools, resources and instructional materials are developed, updated as necessary and maintained to meet ongoing needs. Responsible for tracking participation and associated costs of time and materials for training deployment. Establish a library of learning materials, both electronic and paper that can be made available to interested staff. Conduct research focused on benchmarking world-class business process performance and utilize findings to assist supervisors in establishing tangible measures of time, cost, and quality.

Communications: Develop and implement an effective strategy for communicating the status and results of the Agency improvement efforts to department partners, customers and staff. This includes, but is not limited to the development of an Internet presence to showcase departmental activities. Keep staff informed of revised procedures and methods and related work changes as implemented.