



EPA Lean Government Initiative

How to Replicate Lean Successes

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This Lean Replication Primer describes how EPA Offices and Regions can identify and adapt successful practices from previous Lean projects to “replicate” their successes and generate further improvements.

Lean is an improvement approach and set of methods that can dramatically enhance the speed, quality, and transparency of processes by eliminating all forms of non-value added activity or “waste.” EPA and other environmental agencies have used Lean process-improvement events and other methods to improve all kinds of agency processes—ranging from permitting and enforcement processes to administrative processes such as communications, hiring, and grants. Given these successes, you may ask, ***How can we replicate successful results from Lean projects in our programs and processes?***

To answer that question, this primer provides guidance on: how to find information on past Lean projects, how to determine what projects to replicate, what approaches to consider for replication, and how to facilitate the replication process.

HOW TO FIND PROJECTS TO REPLICATE

The first step in successful replication efforts is to learn from other Lean projects to identify ideas that could be replicated in your Office or Region to solve existing problems. There are several ways you can find information about other Lean projects at EPA:

- **Review Lean project information on EPA Headquarters and/or Regional Office Lean web sites.** Look at the case studies and synopses of past projects, focusing on projects addressing processes similar to those that your Office or Region wants to improve (if known). EPA’s Lean government website also has case studies. Links to some of EPA’s Lean Intranet and SharePoint sites include:
 - [EPA-Wide Lean Intranet](#)
 - [Region 7 Process Excellence SharePoint Site](#)
 - [Region 8 Lean Intranet](#)
- **Contact representatives from past Lean projects to learn more about them.** Once you know the process you want to improve, it is helpful to do benchmarking research to learn what others have done with similar processes. If you think a project is relevant, ask a project representative to share materials from the project, such as the charter, presentations, process maps, and any standard work (templates, forms, etc. documenting the new process) or other tools the team developed. You may also want to set up time to talk about any lessons learned from the project.
- **Attend Lean event report-out presentations or events on processes of interest.** Look at the schedule of upcoming Lean events on EPA’s Lean Community of Practice Calendar on SharePoint (access calendar [here](#)) to identify projects that might be of interest. If you are considering leaning the same process in your Region or Office, contact the event team leader to ask whether you can participate in the event as an observer or attend the report-out presentation.

What is Lean Replication?

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



- **Participate in EPA Lean Summits, Lean Community of Practice Calls, and other meetings or forums for sharing Lean project information.** If you have identified a process to improve in your Office or Region, ask questions about the root causes of problems the previous Lean project addressed, along with the solutions to those problems, so you can determine whether those solutions are appropriate for the issues you face.
- **Research whether State agencies have done or are planning Lean events on similar processes.** Many state environmental agencies have implemented Lean for multiple years, and several states (e.g., Connecticut, Iowa, Minnesota, New Hampshire, Ohio, Washington, and others) have websites that compile information on past Lean projects and results. It may be useful to talk with your state contacts to see whether they are familiar with Lean events on similar processes. There may be opportunities to share ideas from past projects or collaborate on future projects.

When in doubt, just ask! Most people who have participated in Lean projects are very willing to talk to others about their experience.

WHEN TO REPLICATE LEAN PROJECT SUCCESSES

After identifying projects that have the potential to solve a problem in your Office or Region, you will want to evaluate whether they would make good candidates for replication. Not every Lean project is easily replicable, and not every aspect of a Lean project will make sense to use elsewhere. Here are four key dimensions to help identify what to replicate:

- **Value:** Did the Lean project (or element of the project) you are considering replicating produce meaningful results? Do you know which process changes were critical to producing the results?
- **Transferability:** Have the process changes from the previous Lean project been documented in standard work (e.g., checklists, templates, process maps, etc.) that your team could review and adapt to its process?
- **Connectivity:** Does your project team have the ability to consult with someone who was involved in the previous Lean project to learn more about the issues and solutions identified?
- **Similarity:** Did the previous Lean project address similar challenges (e.g., root causes of inefficiency or quality issues) to what you find in the analogous process in your Office or Region?

Projects (or aspects of projects) meeting those criteria—demonstrated value, documented standard work, available contact person, and similar to your process—are the best candidates for replication.

WAYS TO REPLICATE LEAN SUCCESSES

Once you have determined that a Lean project is a good candidate for replication based on the criteria discussed above, there are four primary techniques to replicate the results and successes from one Lean project to another process or area, as follows.

1. **Adapt and Implement.** An “Adapt and Implement” approach to replication involves adjusting your process to incorporate simple improvements identified through a separate Lean effort without initiating a formal or team-based effort to generate buy-in or customize the changes.
2. **Conduct a Mini-Lean Event.** Mini-Lean events can be carried out in less than a half day or as long as three days, depending on the scope and complexity of the improvements. Your Office or



Region can use a mini-Lean event to have a team customize a tool or simple process change (e.g., a new checklist for a procedure) developed elsewhere for your needs. Alternatively, if your project team is familiar with Lean, you may be able to shorten the timeframe for planning and execution of a Lean event on your process by drawing on ideas and materials from other projects. This will likely only work for projects of smaller scope.

- 3. Conduct a Full Lean Event.** When used for Lean replication, a full Lean event should follow the structure of a standard kaizen event, but draw from the experiences of previous Lean projects to better scope and target improvements. This type of replication can help Lean projects be more successful, even though it may not shorten the time the team spends in the event.
- 4. Pilot New Changes.** Piloting involves testing process changes from one project elsewhere, typically in a small area and over a limited period, learning from the testing, and adapting and refining the changes to better meet the specific needs and culture of the agency adopting the changes. The time frame for piloting varies with the scale of the process changes being tested.

Replication Examples from EPA

- **EPA Regions 3 and 7** coordinated with State agencies and industry representatives to improve the Resource Conservation and Recovery Act (RCRA) corrective action process. The team created a toolbox to guide other regions in implementing the new process, featuring guidance, flowcharts, tools, and case studies. After the EPA Region 3 and Region 7 RCRA corrective action Lean events, Regions pilot-tested the tools with facilities. To deliver the toolbox, the RCRA Lean team is planning a series of mini-Lean events and trainings to help other regions adapt the approach into their processes.
- **EPA Region 6** is evaluating several potential Lean projects to replicate solutions and lessons learned from previous Lean events on similar processes, including the Region's State Implementation Plan process and National Pollutant Discharge Elimination System (NPDES) Permitting process.
- **EPA Region 7** invited the training officers from Regions 5 and 6 to participate in a weeklong Lean event on the Region's training program. Having understood the need for the changes identified for Region 7, the training officers implemented some of the improvements in their home regions without holding a Lean event.
- **EPA Region 10 and the Office of Air and Radiation** conducted separate Lean events on the Correspondence Management System (CMS) process, and then coordinated on a white paper outlining potential improvements to EPA's IT system. Region 10 also provided information and materials to Region 6 as it was considering another CMS Lean event.

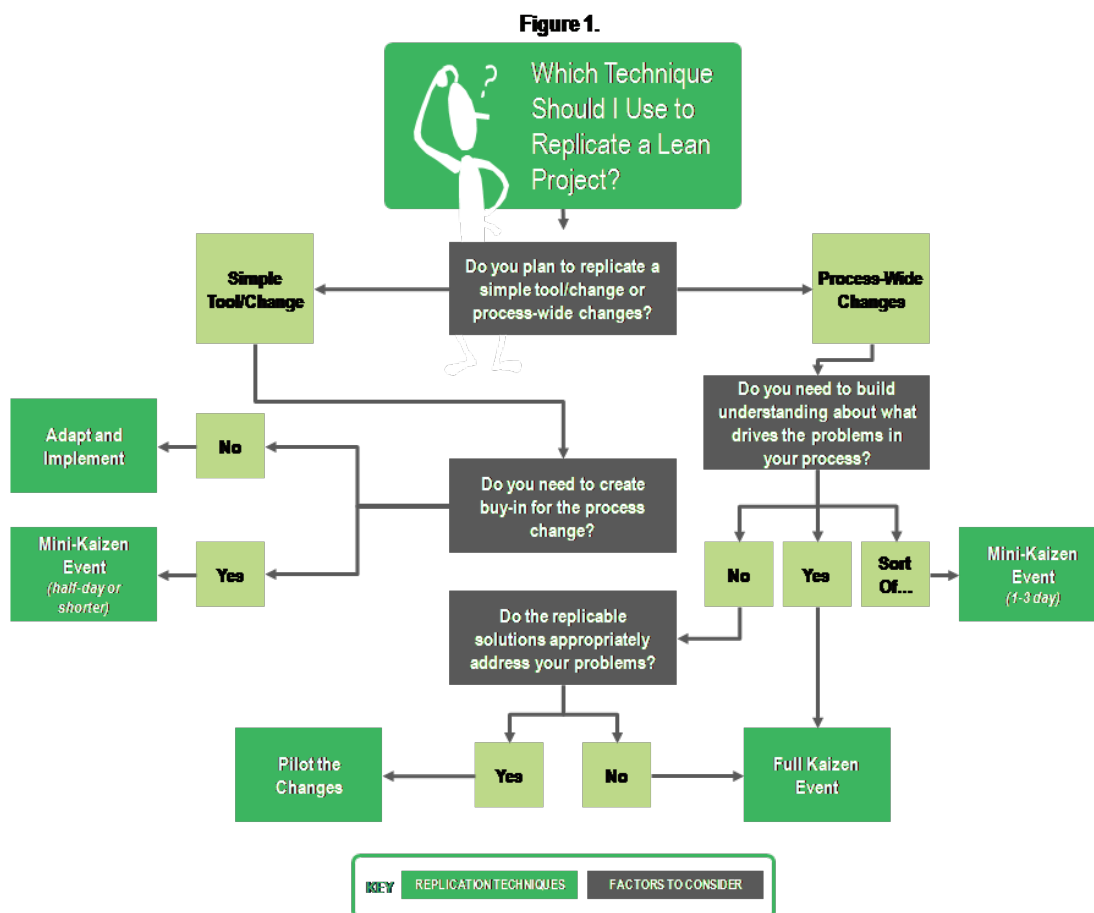
HOW TO SELECT A REPLICATION TECHNIQUE

Determining which replication technique will work best for your effort depends on several factors:

- 1. Is the process improvement you plan to replicate simple or complex?** Adapting a simple tool or process change, such as a new template or checklist, from a previous Lean project into your process is easier and requires less buy-in from staff and management than replicating a Lean project that overhauls the way your process currently functions.



- 2. Do you need to create buy-in for the process change?** If staff and managers are slow to trust change, quick and direct replication efforts like “adapt and implement” might not be effective at generating the level of buy-in needed for success. Additionally, the level of buy-in for Lean replication may depend on where the replication project idea originated. When a replication idea is suggested by people involved in the process, staff are more likely to be supportive.
- 3. Do you need to build understanding about what drives the problems in your process?** Whereas replication can present a fast track to process improvement by not re-inventing the wheel, it is difficult to determine whether the solutions identified by a previous Lean project are applicable if your team does not have a full understanding of the current process. When a project team works together to map out the current process, identify the issues in it, and develop solutions to address them, such as in a Lean event, participants have more ownership over the changes and can customize the changes to their specific problems.
- 4. Do the replicable solutions appropriately address your problems?** Just like any other Lean effort, Lean replication will not succeed if you do not fix the problems in your process. While a process may be similar, pain points can differ based on differences in internal structures, people involved, or internal processes built up over time. The decision tree in Figure 1 provides a graphical illustration of how you might weigh different factors to select one of the four Lean replication techniques.





FACILITATING THE REPLICATION PROCESS

Lean replication is a two-way process involving an exchange of ideas and information from the original Lean project and a new process that seeks to adapt solutions from that project. A Lean project team can do several things to make it easier for others to learn from and replicate a project's successes (see box).

Sharing Lean Project Information to Encourage Replication

If you are planning a Lean event or have participated in a successful Lean project, you can take several steps to spread good ideas from your project elsewhere, as follows.

- Identify a representative or coach from your project to help transfer knowledge to others.
- Share materials from your project (e.g., project charter, presentations, success story, and any tools, standard work, process maps, or other products your team developed) with others. Consider sending materials out to people you think might be interested (e.g., members of your program's community in other EPA offices or regions), not simply sharing materials upon request.
- Translate outputs from your Lean project into a universal context. Distill the essential elements of your new approach, describe the benefits of the approach, and document the new approach and tools in a way that others can easily understand and use.
- Find opportunities to tell others about your project through presentations, meetings, and/or community of practice calls.
- Invite people from similar processes to attend your Lean event or report-out presentation.

Lean replication promises to accelerate efficiency and quality improvements with less effort. However, as with any process improvement, there may be resistance to change and other implementation difficulties. See the table below for a discussion of common pitfalls and strategies to address them.

Replication Pitfalls and Strategies to Overcome Them

Pitfall/Obstacle	Strategies to Overcome
People are resistant to adopt new ways of doing things because they feel the solutions are not relevant to their work.	Senior and middle management can provide leadership to establish a Lean culture to minimize this resistance. Use replication strategies that promote buy-in, such as piloting and Lean events, over those that do not, such as adapt and implement, to allow employees to make the process changes their own.
People feel it is easier to keep doing things the same way rather than to replicate another organization's results.	Focus your process-improvement and replication efforts on areas where there is a compelling need for change – managers and staff should be able to identify “what’s in it for me” with your improvement efforts. If you do not have buy-in that your process needs to be improved and that it is worth people’s time to change their work, then you will need to start by making the case for change.



Pitfall/Obstacle	Strategies to Overcome
People copy the solution without considering the context.	Learn about the root causes of problems addressed in the original Lean project along with the process changes. Only try to replicate solutions if they will help with the problems in your process. Engage staff in adapting the process changes as needed to fit your process.
People only coordinate within their own organization and are unaware of other efforts.	Use tools such as the EPA Lean Intranet and Community of Practice calls to learn about Lean project experiences and find case studies, points of contact for projects, and information about upcoming events.
There is not enough time for Lean project teams to document and share results.	Invite people who might be interested in a Lean project to attend the report-out presentation or participate in the event as an observer. Base any future presentations on the Lean event report-out presentation. Assign a person to write a short success story as an action item from the event, and then check on progress in follow-up meetings.
Project teams do not measure and document their success.	Establish metrics you will track in your Lean project upfront in the event charter. Assure implementation of planned process changes occurs. Track results from Lean projects to monitor their success and entice others to replicate successful projects. Share these results with others who might be interested and in venues such as Lean Community of Practice calls, Division Director meetings, and staff meetings.

For More Information

For guidance and resources on implementing Lean projects, see EPA's Lean Government website (www.epa.gov/lean/government) or Intranet site (<http://intranet.epa.gov/lean/leanatepa/index.htm>). You may also contact the EPA Office of Policy Lean support team at lean@epa.gov for more information.